

Product Catalog



Your Solution Provider for...

Connectivity

Power

Control



Table of Contents

Connectivity	1
Data Bus	2
Systems	3
Boards - 1553	4
Boards - 429	5
Components - 429	5
Components - 1553	6
Transformers	7
Optional Software	7
Fibre Channel & High Speed Solutions	26
Boards	26
Transformers	26
Radiation Tolerant Microelectronics	29
Computers	29
Analog-to-Digital Converters	29
Digital-to-Analog Converters	29
Low Voltage +3.3V EEPROM	29
5.0V EEPROM	29
Low Voltage 3.3V SRAM	30
SDRAM	30
PROM	30
Flash	30
Nuclear Event Detectors	30
Processor & Peripherals	30
Multiplexers	30
Amplifiers & Comparators	30
Logic	31
Optocoupler	32
Power	38
Solid-State Power Controllers	39
Solid-State Power Controllers	40
Transformers	40
Power Supplies	47
Signal Processing	49
Control	51
Motor Drives and Controllers	52
Motor Drives / Controllers	52
Motor Controllers	52
Motor Drives	52
Space Grade Hybrids	52
Motion Feedback — Synchro/Resolver	57
Boards	58
USB	58
Components — Resolver, Synchro, LVDT, RVDT, Inductosyn, MR, and Hall Converters	58
Components — Digital-to-Synchro and Resolver Converters	59
Components and Boards — Synchro and Resolver Special Function	59
Transformers	59
Custom Hybrids and ASICs	68
Custom Hybrids	69
Custom ASICs	70
Space Level Capabilities	71
Quality	72

Connectivity



Data Bus and Network Solutions Experts

DDC is the market leader in data bus solutions for MIL-STD-1553/1760, ARINC 429/717, Fibre Channel, Ethernet, CANbus, Serial I/O, and other protocols.

- Maximize system performance with the most advanced data bus components
- Utilize the most compact cards to optimize SWaP constrained systems
- Access and test avionics systems from anywhere on an Ethernet network computer
- Minimize development time with advanced software tools and automated code generation

More Efficiency

- Optimize SWaP
 - Multi-protocol and high channel cards
 - The industry's smallest components, like the Total-AceXtreme®
- Save Time
 - BusTrACER®... save time with one-click code generation
 - Common API... save time using the same software for test and embedded
 - Ethernet Attached Tester... access data from MIL-STD-1553, ARINC 429 and other protocols via Ethernet
 - Value-added integrated solutions from custom hybrids and ASICs to fully optimized LRUs.

More Reliability

- Boards based on ASICs instead of FPGAs... higher MTBF
- ASIC's with more than 200 million hours of in-service history enables DO-254 Design Assurance Level (DAL) A
- Rugged boards, components and box solutions engineered for harsh environments, including single board computers for space flight applications
- RAD-PAK® technology provides high radiation protection for space qualified products
- Triple redundant single board computers for space, providing 99% operational reliability

More Performance

- Advanced MIL-STD-1553 solutions provide fast access time, low CPU utilization and low power
- Smart protocol converter enables system upgrades by bridging legacy and emerging data bus and network protocols
- Processor-based modules that convert messages in real-time between Ethernet, MIL-STD-1553, and ARINC 429, as well as function as a standalone computer
- SWAP-optimized, scalable compact computer solutions with best-in-class performance from Intel's® embedded computer architecture

Data Bus



MIL-STD-1553/1760 | ARINC 429/717 | Ethernet

As the leading global supplier of data bus components, boards, modules, computers, and software solutions for the military and commercial aerospace markets, DDC's data bus networking solutions encompass the full range of data interface protocols to support the real-time processing demands of field-critical data networking between systems and subsystems on the platform. These products, along with our traditional MIL-STD-1553 solutions, represent a wide and flexible array of performance and cost solutions, enabling DDC to support multi-generational programs.

Whether employed in increased bandwidth, high-speed serial communications, or traditional avionics and ground support applications, DDC's data bus solutions fulfill the expanse of military, civil aerospace, and space requirements including reliability, determinism, low CPU utilization, real-time performance, and ruggedness within harsh environments. Our use of in-house intellectual property ensures superior multi-generational support, independent of the life cycles of commercial devices. Moreover, we maintain software compatibility between product generations to protect our customers' investments in software development, system testing, and end-product qualification.

MIL-STD-1553

DDC, the world leader in MIL-STD-1553 technology, provides the broadest selection of quality MIL-STD-1553 rugged embedded and lab grade computers, boards and components to meet your data conversion and data interface needs. Our 1553 data bus board solutions are integral elements of military, aerospace, and industrial applications. Our extensive line of military and space grade components provide MIL-STD-1553 interface solutions for microprocessors, PCI buses, and simple systems. Our 1553 data bus solutions are designed into almost every aircraft, helicopter, unmanned vehicle, missile programs, and space system that utilizes MIL-STD-1553.

ARINC 429

DDC has a wide assortment of quality ARINC 429 embedded and lab grade boards, LRUs, and components, to serve your data conversion and data interface needs. DDC's ARINC 429 components ensure the accurate and reliable transfer of flight-critical data. Our 429 interfaces support data bus development, validation, and the transfer of flight-critical data aboard commercial aerospace platforms.

Ethernet

DDC offers convenient solutions to convert MIL-STD-1553, ARINC 429, and Ethernet protocol in any direction, in real-time, without a host computer, enabling seamless and cost saving multi-protocol connectivity for test and embedded applications.

Extensions to MIL-STD-1553

DDC offers a wide variety of solutions based on extensions of MIL-STD-1553 for emerging aerospace applications. Turbo 1553 increases the data rate of 1553 from 1 Mbps to 5 Mbps while maintaining the architectural features of MIL-STD-1553. Hyper 1553 provides high speed communication (50 to 100+ Mbps) over MIL-STD-1553 buses while operating concurrently with legacy 1 Mbps 1553 (similar to ADSL for telephone networks).

Form Factors, Software, & Drivers

DDC supplies MIL-STD-1553 and ARINC 429 board level products in a variety of form factors including USB, PCI-Express, PCMCIA, ExpressCard, AMC, PMC, XMC, PCI-104, PC/104-Plus, PC/104, PCI, cPCI, VME, and ISA bus boards. Our laboratory simulation and in-flight products include multi-function and single-function for system integration and production test environments. Our extensive line of military and space grade components provide MIL-STD-1553 interface solutions for microprocessors and simple systems. Our software is supplied in the form of menus, libraries, and drivers. We also offer additional software to expand our data networking range of options.

Systems																																				
Product Number	Max # of Channels											Mode of Operation				Memory				I/O		Environment			Page											
	1553		429		717		USB 2.0	GPIOs	Ethernet	CANbus	RS-232	RS-422/485	Digital Discrete	Avionics Discrete	EBR/MVMSI 1553 Hub	Secure Data Filtering	Protocol Conversion	Remote Access	Standalone	DDR-3 DRAM		SSD		Front		Rear	Air Cooled	Rugged	Air Cooled	Conduction Cooled						
	Single-Function	Multi-Function	Rx	Tx	Rx	Tx														2GB	4GB	8GB	16GB								8GB	30GB	120GB	up to 512GB		
Avionics Interface Computer (AIC)																																				
BU-67125W000R																																				
1x 1553 Mini-PCle	2						3	16	2			1	1	16																						
1x 429 Mini-PCle			6	4	2	2	3	16	2			1	1																							
1x 1553 & 1x 429 Mini-PCle	2		6	4	2	2	3	16	2			1	1																							
BU-67124W00R																																				
1x 1553 XMC	8						2							16																						
1x Multi-I/O XMC	4		20	20	2	2	2			2	8	8	10	10																						
2x 1553 Mini-PCle	4						2		1		1																									
2x 429 Mini-PCle			12	8	4	4	2		1		1																									
BU-67121WX0X																																				
2x 1553 PMC	16	8					2		1		1		16	16																						
2x 429 PMC			72	72	4	4	2		1		1			32																						
2x 1553 Mini-PCle	4						2		1		1																									
2x 429 Mini-PCle			12	8	4	4	2		1		1																									
AceXtreme® Bridge Device																																				
BU-67115WX																																				
	2		6	6					2					12																						
BU-67116WX																																				
	2		6	6					2					12																						
BU-67119WX																																				
	2		6	6					2					12																						
Secure 1U Dual Server (per side)																																				
BU-67127WX																																				
							1		1																											
BU-67128WX																																				
							1		1																											

Visit www.ddc-web.com/db for complete product information.

History of Innovation

Increased Functionality In a Smaller Package

Timeline of products and features:

- 1983: BUS-65401
- 1986: BUS-65106, BUS-65410, BUS-66111
- 1989: AIM
- 1992: ACE
- 1996: Mini-ACE
- 1998: Enhanced Mini-ACE
- 2002: Micro-ACE
- 2008: Total-ACE
- 2011: Total-AceXtreme
- 2012: SPACE-PHY
- 2013: PCIe-AceXtreme
- 2014: Nano-ACE
- 2015: TotalSPACE

Product Categories:

- Transceivers: 1983, 1986, 1989, 1992, 1996, 1998, 2002, 2008, 2011, 2012, 2013, 2014, 2015
- Protocol: 1986, 1992, 1996, 1998, 2002, 2008, 2011, 2012, 2013, 2014, 2015
- Transformers: 1983, 1986, 1989, 1992, 1996, 1998, 2002, 2008, 2011, 2012, 2013, 2014, 2015
- Rad Tolerant: 1983, 1986, 1989, 1992, 1996, 1998, 2002, 2008, 2011, 2012, 2013, 2014, 2015

Boards - MIL-STD-1553																							
Product Number	Max # of Channels											Optional Software				I/O		Environment			Page		
	1553		429		717		Ethernet	CANbus	RS-232	RS-422/485	Digital Discrete	Avionics Discrete	EBR/IMSI 1553 Hub	dataSIMS	LabVIEW®	BustRACE®	Commercial Avionics	Front	Rear	Air Cooled		Rugged Air Cooled	Conduction Cooled
	Single-Function	Multi-Function	Rx	Tx	Rx	Tx																	
PCI-Express																							
BU-67X06K	4	4								8	8		■	■	■		■		■				9
Mini-PCIe																							
BU-67114Hx	2												■	■	■		■				■		10
ExpressCard																							
BU-67101Q	2									2	2		■	■	■		■		■				10
XMC																							
BU-67112Y/Z	8										16		■	■	■		■	■		■	■		11
BU-67118Z	4		20	20	2	2		2	8	8	10	10	■	■	■	■		■		■	■		
PMC																							
BU-67X10F/M	8	4								8	16		■	■	■		■	■	■	■	■		11
BU-67118M	4		20	20	2	2		2	8	8	10		■	■	■	■		■		■	■		12
BU-65596/7F/M	4										16		■	■	■		■	■		■	■		12
BU-67107F/M	4		16	6				2	2	6			■	■	■	■		■	■		■	■	⌄
BU-65580Mx	1									8		4	■	■	■			■		■	■		⌄
BU-65578F/M	8									8	8		■	■	■		■	■		■	■		⌄
USB																							
BU-67X02/3U	2	1	4	2						8			■	■	■	■		■		■	■		13
BU-67211UX	2	2	8	8	2	2		2	4	4	2	2	■	■	■	■		■		■			13
BU-67102Ux1	2		4	2						8			■	■	■	■		■		■		■	⌄
BU-67113Ux	2												■	■	■		■			■	■		13
PCI																							
BU-67107i	4		16	4				2	2	6			■	■	■	■		■		■			14
BU-67X10i	8	4								8	8		■	■	■		■		■				14
BU-67301i	1									8			■	■	■		■		■				⌄
BU-65569i	4												■	■	■		■		■				⌄
PC/104-Plus, PCI-104																							
BU-67104/5C	4									5			■	■	■					■	■		14
BU-67108/9C	2		16	8						9	8		■	■	■	■				■	■		14
BU-65577/8C	4									5			■	■	■					■	■		⌄
BU-65590/1C	2		16	8						9	8		■	■	■	■				■	■		⌄
cPCI / PXI																							
BU-67107T	4		16	4				2	2	6			■	■	■	■		■		■			15
BU-67X10T	8	4								8	8		■	■	■		■		■				15
BU-65569T/Bx	4												■	■									⌄
AMC																							
BU-65590A	4		8	4				2	2	6			■	■	■	■							⌄
PCMCIA																							
BU-65553	1													■	■								⌄
PC/104																							
BU-65567/8	4																						⌄

⌄ - Visit www.ddc-web.com/db for complete product information.

Boards - ARINC 429																		
Product Number	Max # of Channels								Optional Software				I/O		Environment			Page
	429				717				dataSIMS	LabVIEW®	BustTRACE®	Commercial Avionics	Front	Rear	Air Cooled	Rugged Air Cooled	Conduction Cooled	
	Rx	Tx	Rx	Tx	CANbus	Digital Discrete	Avionics Discrete											
PCI-Express																		
DD-4000K	36	36	2	2			16	■	■		■	■		■				9
Mini-PCIe																		
DD-4001H060	6	4	2	2				■	■		■	■				■		10
XMC																		
DD-40002Z	16	16	1	1	1	8		■	■	■			■	■			■	11
PMC																		
DD-40002M	16	16	1	1	1	8		■	■	■			■	■			■	12
DD-40100F	36	36	2	2			16	■	■		■	■		■				12
PCI																		
DD-40100i	36	36	2	2			16	■	■		■	■		■				14
cPCI / PXI																		
DD-40100T	36	36	2	2			16	■	■		■	■		■				15
PCMCIA																		
DD-42912/24M3	4	4				2		■			■							16

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Components - ARINC 429																			
Product Number	429 Functions									Supply Voltages		Package				Temperature Range (°C)		Page	
	Channels		FIFO		Label Filter Depth	Integrated Line Driver	Integrated Line Receiver	Test Mode	Tri State Output	Digital		Line Driver	TQFP	PQFP	SOIC	TSSOP	Operating		Storage
	TX	RX	TX	RX						3.3V	5V								
Controllers																			
DD-00429	2	4	32	32	128			■			■		■	■			-40 to +85	-85 to +125	19
DD-42900	2	4	32	32	128		■	■			■		■	■			-40 to +85	-85 to +125	19
Line Driver																			
DD-4107X	1					■		■	■		■	±9.5V to ±16.5V			■		-55 to +125	-65 to +150	20
Single Line Receiver																			
DD-4104X		1					■			■	■			■			-55 to +125	-65 to +150	20
Quad Line Receiver																			
DD-41044		4					■	■		■	■			■			-55 to +125	-65 to +150	20

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Components - MIL-STD-1553																					
Product	Product Number	1553 Function						Subsystem Interface				Package				Temperature Range (°C)		Page			
		Transceiver	Transformer	Protocol	RAM	BC	RT	MT	Local Bus	PCI	PCIe	Simple System	SPI	BGA	Flat Pack	Gull Wing	DIP		LPCC/QFN	Operating	Storage
Fully Integrated 1553 Package (includes Protocol, Transceivers, and Transformers)																					
Total-AceXtreme®	BU-67301B	■	■	■	■	■	■	■	■					■					-55 to +125	-65 to +150	16
Total-ACE®	BU-6X8X3T/U/H/I8	■	■	■	■	■	■	■	■					■					-55 to +125	-65 to +150	
Plastic Multi-Chip 1553 Module (includes Protocol and Transceivers)																					
Nano-ACE	BU-67743LC	■		■	■		■	■				■						■	-55 to +125	-65 to +150	16
PCI-Express AceXtreme®	BU-67302B0C0L	■		■	■	■	■	■			■			■					-40 to +85	-65 to +150	16
Micro-ACE-TE	BU-64X4XBX-E02	■		■	■	■	■	■			■			■					-55 to +125	-65 to +150	17
Micro-ACE®	BU-61XX0B3	■		■	■	■	■	■						■					-40 to +85	-65 to +150	17
PCI Micro-ACE-TE	BU-65XX3BX-E02	■		■	■	■	■	■			■			■					-55 to +125	-65 to +150	17
Ceramic Hybrid 1553 Terminal (includes Protocol and Transceivers)																					
Mini-ACE® Mark3	BU-64XX3	■		■	■	■	■	■						■	■				-55 to +125	-65 to +150	17
PCI Mini-ACE Mark3	BU-65XX3	■		■	■	■	■	■			■			■	■				-55 to +125	-65 to +150	17
Enhanced Mini-ACE	BU-61XXX	■		■	■	■	■	■						■	■				-55 to +150	-65 to +150	17
PCI Enhanced Mini-ACE	BU-62XXX	■		■	■	■	■	■			■			■	■				-55 to +125	-65 to +150	17
Mini-ACE®	BU-65178	■		■	■	■	■	■						■	■				-55 to +125	-65 to +150	⌘
SSRT Mark3	BU-64703	■		■	■	■	■	■						■	■				-55 to +125	-65 to +150	⌘
SSRT	BU-6170X	■		■	■	■	■	■						■	■				-55 to +125	-65 to +150	⌘
ACE	BU-6158X	■		■	■	■	■	■						■	■				-55 to +125	-65 to +150	⌘
PCI Bridge																					
ACE Bridge	BU-66318										■								-55 to +150	-65 to +150	⌘
Radiation Tolerant 1553 Physical Layer for Space (includes Transceivers and Transformers)																					
SPACE-PHY	BU-67402Fx0HL	■	■											■	■				-55 to +125	-65 to +150	17
Radiation Tolerant Fully Integrated 1553 Package for Space (includes Protocol, Transceivers, and Transformers)																					
Total-Space ACE	BU-6752xFHL	■	■	■	■	■	■	■						■	■				-55 to +125	-65 to +150	18
Total-Space RT	BU-67502	■	■	■	■	■	■	■			■			■	■				-55 to +125	-65 to +150	18
Radiation Tolerant 1553 Space Terminals (includes Protocol and Transceivers)																					
SP ¹ ACE RT II	BU-63705	■		■			■				■			■	■	■			-55 to +125	-65 to +150	18
SP ¹ ACE II BC/RT/MT	BU-63825	■		■	■	■	■	■						■	■	■			-55 to +125	-65 to +150	
1553 IP																					
ACE Flex-Core	BU-692X0IX																		—	—	⌘
SSRT-Core	BU-69210I1																		—	—	⌘

⌘ - Visit www.ddc-web.com/db for complete product information.

Components - MIL-STD-1553															
Product	Product Number	1553 Function		Supply Voltages		Package				Turns Ratio		Temperature Range (°C)		Page	
		Transceiver	Transformer	Digital		Flat Pack	Gull Lead	DIP	LPCC/QFN	Direct Coupled	Transformer Coupled	Operating	Storage		
				3.3V	5V										
1553 Transceivers															
Single 5V Transceiver	BU-63155	■			■					■	1:2.5	1:2.07	-55 to +125	-65 to +150	19
Dual 3.3V Transceiver	BU-67401L	■		■						■	1:2.65	1:1.79	-55 to +125	-65 to +150	19
Dual 5V Transceiver	BU-63152	■			■			■			1:2.5	1:1.79	-55 to +85	-65 to +150	19
	BU-631X7	■			■		■		■		1:1.25	1:1.79	-55 to +150	-65 to +150	⌘
Single 3.3V Transceiver and Transformer	NHI-15LV901	■	■	■						■	1:3.54	1:2.5	-55 to +125	-65 to +150	21
Dual 5V Transceiver	NHI-1565CSP	■			■					■	1:3.54	1:2.5	-55 to +125	-65 to +150	21
Dual 5V Transceiver	NHI-1565ESOIC-1	■			■			■			1:3.54	1:2.5	-55 to +125	-65 to +150	21
Dual 5V Transceiver	NHI-1567	■			■		■	■			1:3.54	1:2.5	-55 to +125	-65 to +150	21

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Transformers																	
Product Number	# of Channel Configurations			Coupling Ratio		Transceiver Voltage				Mounting			Series Type				Page
	Single	Dual		Direct	Transformer	3.3	5	12	15	Through Hole	Flat Pack	SMT	GPL	Legacy	High Perform.	Hermetic	
		Side by Side	Stacked														
Single Channel Transformers																	
B-22XX	■			■	■		■	■	■	■			■				22
B-23XX	■			■	■		■	■	■	■	■	■	■				22
B-32XX	■			■	■		■	■		■	■	■	■				22
DHP-1000		■		■	■	■	■	■	■		■	■				■	22
HLP-60XX	■			■	■	■	■	■	■		■	■				■	22
LVB-4230	■				■	■					■		■				22
MLP-22XX	■			■	■	■	■	■	■			■			■		22
MLP-23XX	■			■	■	■	■	■	■	■					■		22
Dual Channel Transformers																	
DLVB-4XXX		■			■	■						■		■			23
DSS-1XXX		■		■	■	■	■	■	■			■		■			23
DSS-2XXX		■		■	■	■	■	■	■			■			■		23
DSS-33XX		■		■	■	■	■					■			■		23
TSM-2XXX			■	■	■	■	■	■	■			■			■		23
TST-90XX			■	■	■		■	■	■	■	■	■			■		23
Couplers																	
BXC-A-X111-1X-XX	Full MIL-STD-1553 Compatibility; Standard Single, Dual, Triple, and Quad-stub Version Box Coupler															24	
BCS-A-X111-XX-XX	Full MIL-STD-1553 Compatibility; Standard Single, Dual, Triple, and Quad-stub Versions; MIL-STD-981 for Space Flight Box Coupler															24	
ICS-XX-XXX-XXX	Full MIL-STD-1553 Capability; Single, Dual, and Triple-stub Versions; MIL-STD-981 for Space Flight In-line Coupler															24	
Cables																	
CBL-10101XXX-XX	M17/176-00002 Cable; Lengths: 36", 72", 120"; Industry Standard Connectors															24	

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Optional Software				
Feature	Product			
	dataSIMS	LabVIEW® Support Package	BusTrACER®	Commercial Avionics Utilities
	Avionics Data Bus Test and Analysis Software BU-694X4DS	Easy and Efficient LabVIEW Development Software BU-69093	Data Bus Analyzer and Monitor Software BU-69066	Data Bus Analyzer and Data Loader Software DD-42999SX
Supported Protocols	MIL-STD-1553 / ARINC 429 / Other I/O	MIL-STD-1553 / ARINC 429	MIL-STD-1553	ARINC 429
MIL-STD-1553 Monitoring and Generation	■		■	
ARINC 429 Transmit and Receive	■			■
Integrate				
Synchro/Digital/Ethernet Protocol Support	■	■		
ICD Database Import Capability	■			
Code Generation			■	
Open Plug-In Based Architecture	■			
Analyze				
Engineering Unit Conversion	■			■
Data Triggering	■	■	■	■
Data Filtering	■	■	■	■
Visualize				
Real-Time Data Display	■	■		■
Report Generation	■			
Drag and Drop Dashboard Creation (Graphs, Knobs, LEDs)	■			
Simulate				
MIL-STD-1553 Reconstruction	■	■	■	
ARINC 429 Reconstruction	■	■		■
ARINC 615 Data Loader				■
Error Injection	■		■	
Page	25	25	25	25

Avionics Interface Computer (AIC)

Compact Rugged Version



MIL-STD-1553

ARINC 429

MIL-STD-1760

ARINC 429

ARINC 717

DISCRETE

CANbus



ACEXTREME®

Model: BU-67125W

Features:

- Intel Atom Processor Module
- 4GB DDR3 Memory
- 2x 10/100/1000 Ethernet Networking
- Solid-State Drive 64GB to 512GB Storage
- Supported with (2) Mini-PCle Sites and Optional Expansion Slots (contact factory)
- Ruggedized Module Qualified for Rugged Air and Ground Environments

Applications:

- Military Aerospace
 - Fixed Wing
 - Rotary
- Commercial Aerospace
 - Fixed Wing
 - Rotary
- UAVs
- Ground Vehicles

Complete Info: www.ddc-web.com/BU-67125W

Rugged Version



MIL-STD-1553

ARINC 429

MIL-STD-1760

ARINC 429

ARINC 717

DISCRETE

CANbus



ACEXTREME®

Model: BU-67124W

Features:

- Scalable Processing from Intel Core i3, i5, to i7 Dual or Quad Core Processor
- Dual Gigabit Ethernet Interfaces for Network Connectivity and Bridging to 1553 and ARINC 429
- Many Configuration Options Supported with (1) XMC Site and (2) Mini-PCle Sites
- Ruggedized Module Qualified for Rugged Air and Ground Environments

Applications:

- Military Aerospace
 - Fixed Wing
 - Rotary
- Commercial Aerospace
 - Fixed Wing
 - Rotary
- UAVs
- Ground Vehicles

Complete Info: www.ddc-web.com/BU-67124W

Lab Version



MIL-STD-1553

ARINC 429

ARINC 717

DISCRETE

ACEXTREME®



Model: BU-67121W

Features:

- Programmable Protocol Converter
 - Intel Atom E3845 Quad Core 1.91GHz Processor
 - 2 GB DDR3L SDRAM
 - 30 GByte SSD
 - 2 PMC and 2 Mini-PCle Expansion Slots
 - 10/100/1000 Base-T Ethernet, USB 2.0, RS-232
 - Linux Operation System
 - Lab Grade, Rack-Mountable Chassis
- Modular Architecture Supports a Variety of I/O Options and Avionic Interfaces

Applications:

- Systems Integration Labs
- Simulators
- Production Test Stands
- System Troubleshooting
- Software Development
- Data Recording
- MIL-STD-1553/429 Test and Simulation

Complete Info: www.ddc-web.com/BU-67121W

3 Modes of Operation

Remote Access Mode

Uses Ethernet as a virtual backplane between applications running on a host computer and 1553/429 Interfaces located within the AIC. The AIC Utilizes network connectivity to allow physical separation between the computer and the avionics interfaces.

Available for:

- Avionics Computer Interface (AIC)
- AceXtreme® Bridge Device (ABD)

Protocol Conversion Mode

Features the BU-69094S1 Bridging SDK (software development kit) running on the processor within the AIC. The bridging SDK allows users to easily create embedded software on the AIC that will autonomously forward data between MIL-STD-1553, ARINC 429, and Ethernet interfaces

Available for:

- Avionics Interface Computer (AIC)
- AceXtreme® Bridge Device (ABD)

Standalone Mode

Allows the AIC to operate as a user programmable computer system. Software Development Kits (SDKs) are provided for MIL-STD-1553 and ARINC 429 to facilitate the development of applications requiring communication on these avionics I/Os

Available for:

- Avionics Interface Computer (AIC)

Intel, the Intel logo, the Intel Inside logo and Intel Atom are trademarks of Intel Corporation in the U.S. and/or other countries

AceXtreme® Bridge Device



Model: BU-67119W, BU-67116W, BU-67115W

Features:

- Channels:
 - 2 10/100/1000 Ethernet
 - 4 Dual Redundant 1553/1760
 - 6 Prog Rx/Tx ARINC 429
- Up to 12 Discrete I/Os
- 28Vdc Input Power, per MIL-STD-704 and MIL-STD-1275
- Low Power 1GHz Intel Atom Processor
- 8 GBytes SSD
- Bridge Between Ethernet, MIL-STD-1553, and/or ARINC 429
- Remote Access to 429 or 1553 Data via Ethernet

Applications:

- Upgrade & Retrofit
- Protocol Conversion
- Mission Computers
- Displays
- Test & Systems Integration
- Situational Awareness
- Simulators
- Data Loading
- Data Monitoring

Complete Info: www.ddc-web.com/BU-6711XWX

Secure 1U Data Diode



Model: BU-671127W, BU-67128W

Features:

- Platform Features:
 - Dual 2.6Ghz Intel i7 Quad Core Haswell Processors
 - USB Key Boot-Up
 - Multiple 10/100/1000 Ethernet Network Ports
 - Security-Enhanced (SE) Linux
 - Hardware Isolated Between Red and Black Sides
- Security Benefits:
 - Best-In-Class Transfer Rates: 700Mbps & Latency as low as 3 Milliseconds
 - Certified at PL-5 Against the DCID 6/3 & Listed on UCDSMO Capabilities Report

Applications:

- Streaming ISR Data Into SOC or Fusion Centers
- Transferring Integrated Vehicle Health Management Data to Ground-Base Logistics Systems
- Sharing Data with Coalition Partners
- Integrating Data Sources Into Off-Board Mission Planning Systems

Complete Info: www.ddc-web.com/BU-67127W
www.ddc-web.com/BU-67128W

PCI-Express



Model: BU-67106K, BU-67206K

Features:

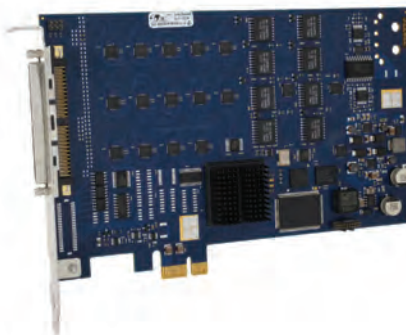
- Channels:
 - 4 Dual Redundant MIL-STD-1553
- BC/Multi-RT/Monitor Per Channel*
- Test and Simulation Toolkit*
- 8 User-Programmable Digital & Avionics Discrete I/O
- IRIG-B Time Code Input/Output
- IRIG-106 Chapter 10 Monitor
- 48-bit/100ns Time Stamp
- Time Tag Clock Input/Output
- Variable Voltage Amplitude
- Programmable Bus Coupling and Termination*

*Multi-Function 206K Series

Applications:

- New Product Development
- Simulation
- Systems Integration
- Bus or Network Analysis
- Production Test
- System Troubleshooting
- Data Recording
- Automatic Test Applications
- Data Monitoring

Complete Info: www.ddc-web.com/BU-67206K



Model: DD-4000K

Features:

- Channels:
 - 6, 10, 18, or 36 Prog. Tx/Rx ARINC 429
 - Up to 2 Prog. Tx/Rx ARINC 717
- Up to 16 Avionics Discrete I/O
- IRIG-B Input/Output
- Variable Output Voltage on 8 Channels
- Voltage Monitoring with Scope View on 8 Channels
- 48-bit/100ns Time Tag
- Prog. Speed Per Channel (500bps - 200Kbps)

Applications:

- Systems Integration Labs
- Simulators
- Production Test Stands
- Automated Test
- Commercial Aerospace
- New Product Development
- System Troubleshooting
- Portable Testers
- Flight Line Diagnostics
- Flight Testing
- Software Development
- Data Loading
- Data Monitoring
- Bus Debugging & Diagnostics

Complete Info: www.ddc-web.com/DD-4000K

Mini-PCle



MIL-STD-1553

DISCRETE

Total-ACE^{XTREME}

ARINC 429

ARINC 717

DISCRETE

ACE^{XTREME}

Model: BU-67114Hx

Features:

- Miniature Size PCI-Express Board
- 30mm x 50.95mm x 4.7mm (1.18in. x 2.01in. x 0.185in.)
- Very High Reliability (MTBF)
- Ultra Low Power
- Comprehensive Built-In Self Tests
- 2 Dual Redundant MIL-STD-1553 Channels
- MIL-STD-1553 BC or Multi-RT with Concurrent Bus Monitor

Applications:

- Rugged Small Embedded Systems
- Laptops or Tablets
- Bus Troubleshooting
- Diagnostic Systems
- Hand Held Test Equipment
- Small Displays

Model: DD-40001H060

Features:

- PCI Express Mini Card Form Factor
- 30mm x 50.95mm x 4.7mm (1.18in. x 2.01in. x 0.185in.)
- Very High Reliability (MTBF)
- Low Power
- 6 ARINC 429 Channels
 - (2) ARINC 429 Receive Ch.
 - (4) Transmit/Receive (Tx/Rx) ARINC 429 Ch, (2) can be Programmed as Tx/Rx ARINC 717

Applications:

- Rugged Small Embedded Systems
- Laptops or Tablets
- Bus Troubleshooting
- Diagnostic Systems
- Hand Held Test Equipment
- Small Displays

Complete Info: www.ddc-web.com/BU-67114Hx

Complete Info: www.ddc-web.com/DD-40001H

ExpressCard



MIL-STD-1553

DISCRETE

ACE^{XTREME}

Model: BU-67101Q

Features:

- Channels:
 - 2 Dual Redundant MIL-STD-1553
- 2 User-Programmable Digital Discrete I/O
- 2 User-Programmable Avionics Discrete (+35V) I/O
- IRIG-B Time Code Input/Output
- IRIG-106 Chapter 10 Monitor
- 48-bit/100 ns Time Stamp
- Time Tag Clock Input

Applications:

- Box-Level Troubleshooting
- Simulation
- Portable Test Equipment
- Flight Line and Diagnostic Testing
- Software Development
- System Integration
- Automatic Test Applications (ATP)

Complete Info: www.ddc-web.com/BU-67101Q

Did You Know?

DDC offers new licensing options for MIL-STD-1553 and ARINC 429 Software Solutions

■ 3 Flexible Licensing Options to Fit ALL Needs:

- USB Dongle — for ultimate mobility
- Node Locked — secure and dongle-free, ideal for dedicated computers and secure labs
- Network License — offers distributed networking flexibility across multiple labs

■ Available for all DDC Data Bus Analysis Software Packages

- *dataSIMS*
- BusTrACer[®]
- ARINC Data Bus Analyzer
- LabVIEW[®] Support Package

■ Security of 12 or 24 Month Maintenance Contracts

(See page 25 for more on Data Bus Software Solutions)

XMC



MIL-STD-1553
 MIL-STD-1760
 ARINC 429
 ARINC 717
 DISCRETE
 RS-422/485
 RS-232
 CANBUS 2.0
 Total-ACE^{XTREME}

Model: BU-67118Z

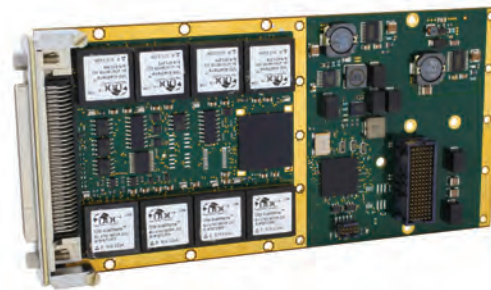
Features:

- Up to 4 Dual-Redundant MIL-STD-1553 Channels
 - Supports MIL-STD-1553A/B, MIL-STD-1760, and MacAir
 - BC Disable for RT Only
 - Tx Inhibit for MT Only
- Up to 20 Programmable Tx/Rx ARINC 429 Channels
- Up to 2 Programmable Tx/Rx ARINC 717 Channels
- Up to 2 CANbus 2.0/ARINC 835 Channels
- Up to 8 Programmable RS-232/422/485 Channels
- Up to 10 Avionics/Digital Discrete I/O

Applications:

- Mission Computers
- Displays and LRUs
- Digital Data Recorders
- Radar Systems/Situational Awareness
- Commercial Aerospace
- Flyable Avionics/UAVs
- Data Loading
- Data Monitoring
- Ground Vehicles

Complete Info: www.ddc-web.com/BU-67118x



MIL-STD-1553
 MIL-STD-1760
 DISCRETE
 Total-ACE^{XTREME}

Model: BU-67112Y, BU-67112Z

Features:

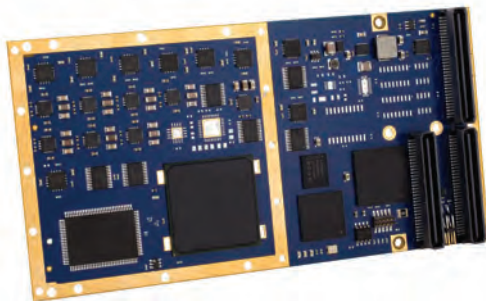
- Low 1553 Transceiver Power
- High MTBF for Rugged Environments
- Front or Rear I/O
- 8 Dual-Redundant MIL-STD-1553 Channels
 - BC/MT or Multi-RT/MT per Ch
 - Supports MIL-STD-1553A/B, MIL-STD-1760, and MacAir
- 16 Avionics Digital I/O
- IRIG-106 Chapter 10 Monitor
- 48-bit/100nS Time Stamp
- IRIG-B & Time Tag Clock Input

Applications:

- Mission Computers
- Displays and LRUs
- Digital Data Recorders
- Radar Systems/Situational Awareness
- Commercial Aerospace
- Flyable Avionics/UAVs
- Data Loading
- Data Monitoring
- Ground Vehicles

Complete Info: www.ddc-web.com/BU-67112

PMC



ARINC 429
 ARINC 717
 DISCRETE
 CANBUS

Model: DD-40002Z

Features:

- 16 Rx Only ARINC 429 Channels
- 16 Prog. Tx/Rx ARINC 429 Channels
 - Up to 1 Prog. Tx/Rx ARINC 717 Channel
 - Up to 1 CANbus 2.0/ARINC 485 Channel
 - Up to 8 Avionics Discrete I/Os
 - IRIG-B Input & Output
- 3V or 5V Configurations
- 48-bit/100ns Time Tag
- Programmable Speed Per Channel (500bps - 200Kbps)
- DMA Engine for Ultra Low CPU

Applications:

- Commercial Aerospace
- In-Flight Entertainment
- Mission Computers
- Digital Data Recorders
- Data Loading
- Data Monitoring

Complete Info: www.ddc-web.com/DD-40002X



MIL-STD-1553
 MIL-STD-1760
 DISCRETE
 ACE^{XTREME}

Model: BU-67110F/M, BU-67210F/M

Features:

- 8 Dual Redundant 1553 Channels
- BC/Multi-RT/Monitor Per Channel*
- Error Injection*
- Test and Simulation Toolkit*
- Up to 8 Digital Discrete I/O
- Up to 16 Avionics Discrete I/O
- IRIG-B Time Code Input/Output
- 48-bit/100ns Time Stamp

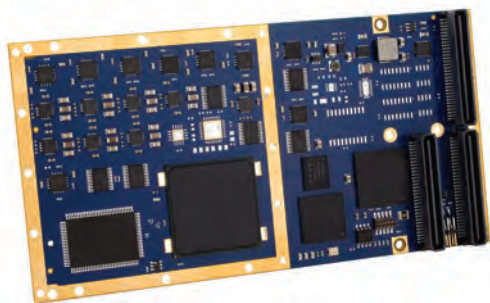
*Multi-Function 210F/M Series

Applications:

- Mission Computers
- Displays
- Digital Data Recorders
- Radar Systems/Situational Awareness
- Systems Integration Labs
- Simulators
- Production Test Labs
- Box-Level Testing and Debugging
- Software Development

Complete Info: www.ddc-web.com/BU-67210FM

PMC



- ARINC 429
- ARINC 717
- DISCRETE
- CANBUS

Model: DD-40002M

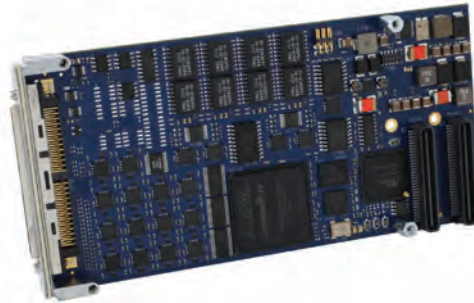
Features:

- 16 Rx Only ARINC 429 Channels
- 16 Prog. Tx/Rx ARINC 429 Channels
 - Up to 1 Prog. Tx/Rx ARINC 717 Channel
 - Up to 1 CANbus 2.0/ARINC 485 Channel
 - Up to 8 Avionics Discrete I/Os
 - IRIG-B Input & Output
- 3V or 5V Configurations
- 48-bit/100ns Time Tag
- Programmable Speed Per Channel (500bps - 200Kbps)
- DMA Engine for Ultra Low CPU

Applications:

- Commercial Aerospace
- In-Flight Entertainment
- Mission Computers
- Digital Data Recorders
- Data Loading
- Data Monitoring

Complete Info: www.ddc-web.com/DD-40002X



- ARINC 429
- ARINC 717
- RoHS Compliant

Model: DD-40100F

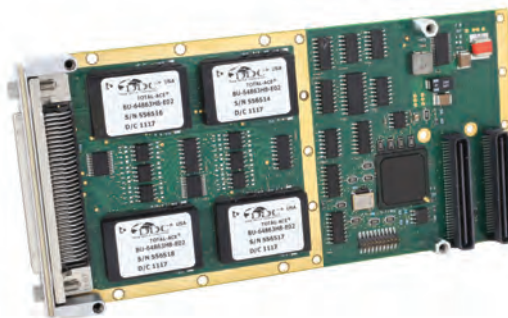
Features:

- Channels:
 - 6, 10, 18, or 36 Prog. Tx/Rx ARINC 429
 - Up to 2 Prog. Tx/Rx ARINC 717
- Up to 16 Avionics Discrete I/O
- IRIG-B Input/Output
- Variable Output Voltage on 8 Channels
- Voltage Monitoring with Scope View on 8 Channels
- 48-bit/100 ns Time Tag
- Prog. Speed Per Channel (500bps - 200Kbps)

Applications:

- Systems Integration Labs
- Simulators
- Production Test Stands
- Automated Test
- Commercial Aerospace
- New Product Development
- System Troubleshooting
- Portable Testers
- Flight Line Diagnostics
- Flight Testing
- Software Development
- Data Loading
- Data Monitoring
- Bus Debugging & Diagnostics

Complete Info: www.ddc-web.com/DD-40100F



- MIL-STD-1553
- MIL-STD-1760
- DISCRETE
- CERTIFIABLE TO DO-254
- RoHS Compliant

Model: BU-65596F/M, BU-65597F/M

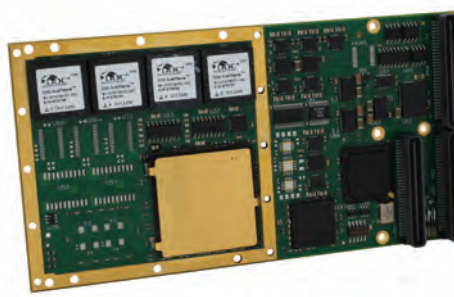
Features:

- 4 Dual Redundant MIL-STD-1553 Channels
 - BC, RT, MT, or RT/MT Operation
 - Supports MIL-STD-1553A/B and MIL-STD-1760
 - Transformer and/or Direct Coupled
- High MTBF - Rugged Environments
- Up to 16 Avionics Discrete I/O
- Front or Rear I/O
- Shock & Vibration per VITA-47 Class V3
- Conforms to ANSI VITA 20-20005 CCPMC Spec

Applications:

- Mission Computers
- Displays
- Digital Data Recorders
- Radar Systems/Situational Awareness
- Communication Radios
- Ground Maintenance
- Commercial Aerospace

Complete Info: www.ddc-web.com/BU-65596FM



- MIL-STD-1553
- MIL-STD-1760
- ARINC 429
- ARINC 717
- DISCRETE
- RS-422/485
- RS-232
- CANBUS 2.0
- Total-ACE XTREME

Model: BU-67118M

Features:

- Up to 4 Dual-Redundant MIL-STD-1553 Channels
 - Supports MIL-STD-1553A/B, MIL-STD-1760, and MacAir
 - BC Disable for RT Only
 - Tx Inhibit for MT Only
- Up to 20 Programmable Tx/Rx ARINC 429 Channels
- Up to 2 Programmable Tx/Rx ARINC 717 Channels
- Up to 2 CANbus 2.0/ARINC 835 Channels
- Up to 8 Programmable RS-232/422/485 Channels
- Up to 10 Avionics/Digital Discrete I/O

Applications:

- Mission Computers
- Displays and LRUs
- Digital Data Recorders
- Radar Systems/Situational Awareness
- Commercial Aerospace
- Flyable Avionics/UAVs
- Data Loading
- Data Monitoring
- Ground Vehicles

Complete Info: www.ddc-web.com/BU-67118x

USB



BU-67X02U



BU-67103U

MIL-STD-1553

ARINC 429

DISCRETE

ACEXTREME®

Model: BU-67102U, BU-67202U, BU-67103U**Features:**

- Channels:
 - 2 Dual Redundant MIL-STD-1553
 - 4 Receive & 2 Transmit ARINC 429/575
- 8 User-Programmable Digital Discrete I/O
- IRIG-B Time Code Input
- IRIG-106 Chapter 10 Monitor
- 48-bit / 100ns Time Stamp
- 1 Pulse per Second Output

Applications:

- Box-Level Troubleshooting
- Simulation
- Portable Test Equipment
- Flight Line and Diagnostic Testing
- Software Development
- Systems Integration
- Automatic Test Applications (ATP)

Complete Info: www.ddc-web.com/BU-67102U**Model: BU-67113Ux****Features:**

- Miniature Size USB to 1553 Board
- 49.94mm x 63.50mm x 10.46mm (1.966in. x 2.50in. x 0.41in.)
- Very High Reliability (MTBF)
- Ultra Low Power
- Comprehensive Built-In Self Tests
- 2 Dual Redundant MIL-STD-1553 Channels

Applications:

- Rugged Small Embedded Systems
- Laptops or Tablets
- Bus Troubleshooting
- Diagnostic Systems
- Hand Held Test Equipment
- Small Displays

Complete Info: www.ddc-web.com/BU-67113Ux

MIL-STD-1553

ARINC 429

ARINC 717

DISCRETE

RS-422/485

RS-232

CANBUS 2.0

ACEXTREME®

Model: BU-67211UX**Features:**

- Channels:
 - 2 Dual Redundant MIL-STD-1553
 - 8 Rx/Tx ARINC 429
 - 2 Rx/Tx ARINC 717
 - 2 CANbus 2.0
 - 4 RS-232/422/485 Serial I/O
- Standard Twinax MIL-STD-1553 Connectors
- 2 Digital and 2 Avionics-Level Discrete I/O
- Multi-Function: BC+Multi-RT+ Monitor Operation
- Test and Simulation Toolkit

Applications:

- New Product Development
- Simulation
- Systems Integration Labs
- Bus or Network Analysis
- Production Test Stands
- System Troubleshooting

Complete Info: www.ddc-web.com/BU-67211UX

MIL-STD-1553

DISCRETE

Total-ACEXTREME®

**Did You Know?**

DDC services the world through our headquarters in Bohemia, New York, and our sales offices in England, France, Germany, India, Japan, and Singapore.

We have a global network of Field Applications Engineers, Sales Representatives, and manufacturing operations in New York, California, Mexico, and the United Kingdom,

PCI



- MIL-STD-1553
 - MIL-STD-1760
 - ARINC 429
 - DISCRETE
 - RS-422/485
 - RS-232
- ACEXTREME®**

Model: BU-67107i

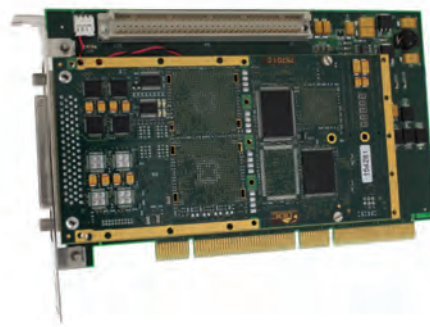
Features:

- Channels:
 - 4 Dual Redundant MIL-STD-1553
 - 16 Receive & 4 Transmit 429
 - 2 RS-232 & 2 RS-422/485
- BC/Multi-RT/Monitor Per Channel
- Test and Simulation Toolkit
- ARINC 429 Only Model Available
- Up to 6 Digital Discrete I/O
- IRIG-B Time Code Input
- 48-bit/100ns Time Stamp

Applications:

- Commercial Aerospace
- Systems Integration Labs
- Simulators
- Production Test Labs
- Box-Level Testing and Debugging
- Software Development

Complete Info: www.ddc-web.com/BU-67107i



- MIL-STD-1553
 - MIL-STD-1760
 - DISCRETE
- ACEXTREME®**

Model: BU-67110i, BU-67210i

Features:

- Channels:
 - 8 Dual Redundant MIL-STD-1553
- BC/Multi-RT/Monitor Per Channel*
- Test and Simulation Toolkit*
- Up to 8 Digital Discrete I/O
- Up to 8 Avionics Discrete I/O
- IRIG-B Time Code Input/Output
- 48-bit/100ns Time Stamp

Applications:

- Commercial Aerospace
- Systems Integration Labs
- Simulators
- Production Test Labs
- Box-Level Testing and Debugging
- Software Development

*Multi-Function 210i Series

Complete Info: www.ddc-web.com/BU-67210i

PC/104-PLUS, PCI-104



- ARINC 429
 - ARINC 717
- Relis Compliant**

Model: DD-40100i

Features:

- Channels:
 - 6, 10, 18, or 36 Prog. Tx/Rx ARINC 429
 - Up to 2 Prog. Tx/Rx ARINC 717
- Up to 16 Avionics Discrete I/O
- IRIG-B Input/Output
- Variable Output Voltage on 8 Channels
- Voltage Monitoring with Scope View on 8 Channels
- 48-bit/100 ns Time Tag
- Prog. Speed Per Channel (500bps - 200Kbps)

Applications:

- Systems Integration Labs
- Simulators
- Production Test Stands
- Automated Test
- Commercial Aerospace
- New Product Development
- System Troubleshooting
- Portable Testers
- Flight Line Diagnostics
- Flight Testing
- Software Development
- Data Loading
- Data Monitoring
- Bus Debugging & Diagnostics

Complete Info: www.ddc-web.com/DD-40100i



- MIL-STD-1553
 - MIL-STD-1760
 - ARINC 429
- ACEXTREME®**

Model: BU-67104/5C, BU-67108/9C

Features:

- Channels:
 - 4 Dual Redundant MIL-STD-1553
 - 16 Receive & 8 Transmit 429*
- Up to 9 Digital Discrete I/O
- Up to 8 Avionics Discrete I/O
- IRIG-B Time Code Input/Output
- 48-bit/100ns Time Stamp
- +5V only operation
- 104/5C Series = MIL-STD-1553 only
- *108/9C Series = Multi-I/O

Applications:

- Digital Flight Data Recorders
- Telemetry/Instrumentation Recorders
- Mission Computers
- Small Avionics Displays
- Line Replaceable Units (LRUs)
- Radar Systems/Situational Awareness
- Munitions
- Ground Vehicles
- Avionics Labs

Complete Info: www.ddc-web.com/BU-67104C
www.ddc-web.com/BU-67108C

cPCI/PXI



MIL-STD-1553

MIL-STD-1760

ARINC 429

DISCRETE

RS-422/485

RS-232

ACEXTREME®

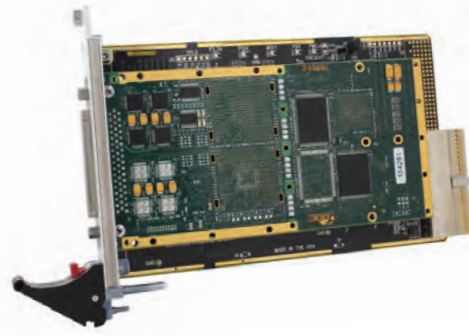
Model: BU-67107T

Features:

- Channels:
 - 4 Dual Redundant MIL-STD-1553
 - 16 Receive & 4 Transmit 429
 - 2 RS-232 & 2 RS-422/485
- BC/Multi-RT/Monitor Per Channel
- Test and Simulation Toolkit
- Up to 6 Digital Discrete I/O
- IRIG-B Time Code Input
- 48-bit/100ns Time Stamp

Applications:

- Commercial Aerospace
- Systems Integration Labs
- Simulators
- Production Test Labs
- Box-Level Testing and Debugging
- Software Development

Complete Info: www.ddc-web.com/BU-67107T

MIL-STD-1553

MIL-STD-1760

DISCRETE

ACEXTREME®

Model: BU-67110T, BU-67210T

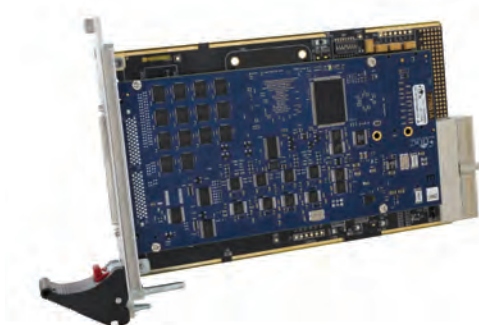
Features:

- Channels:
 - 8 Dual Redundant MIL-STD-1553
- BC/Multi-RT/Monitor Per Channel*
- Test and Simulation Toolkit*
- Up to 8 Digital Discrete I/O
- Up to 8 Avionics Discrete I/O
- IRIG-B Time Code Input/Output
- 48-bit/100ns Time Stamp

Applications:

- Commercial Aerospace
- Systems Integration Labs
- Simulators
- Production Test Labs
- Box-Level Testing and Debugging
- Software Development

*Multi-Function 210T Series

Complete Info: www.ddc-web.com/BU-67210T

ARINC 429

ARINC 717



Model: DD-40100T

Features:

- Channels:
 - 6, 10, 18, or 36 Prog. Tx/Rx ARINC 429
 - Up to 2 Prog. Tx/Rx ARINC 717
- Up to 16 Avionics Discrete I/O
- IRIG-B Input/Output
- Variable Output Voltage on 8 Channels
- Voltage Monitoring with Scope View on 8 Channels
- 48-bit/100ns Time Tag
- Prog. Speed Per Channel (500bps - 200Kbps)

Applications:

- Systems Integration Labs
- Simulators
- Production Test Stands
- Automated Test
- Commercial Aerospace
- New Product Development
- System Troubleshooting
- Portable Testers
- Flight Line Diagnostics
- Flight Testing
- Software Development
- Data Loading
- Data Monitoring
- Bus Debugging & Diagnostics

Complete Info: www.ddc-web.com/DD-40100T

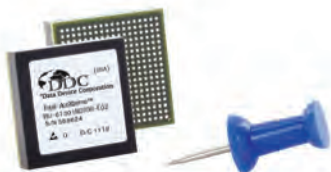
Did You Know?

DDC offers a line of MIL-STD-1553 components that are certifiable to DO-254 Level A.

The DO-254 standard provides guidelines for design assurance of airborne electronic hardware and calls out objectives that must be met by avionics equipment manufacturers to ensure continued airworthiness.

DDC offers DO-254 certifiable MIL-STD-1553 interfaces, such as the ACE family of products which have extensive in-service history, and that are supported by detailed documentation packages, as well as DDC's proven performance, experience, and reliability.

Total-AceXtreme®



MIL-STD-1553

DISCRETE

MIL-STD-1760

Total-ACE[®]X^{TREME}

Model: BU-67301B

Features:

- Fully Integrated 1553 Terminal & Transformer in a BGA Package
 - 324 Ball BGA 16mm x 16mm (0.63in. x 0.63in.)
 - Protocol, 2Mb RAM, Transceivers & Transformers
- Ultra Low Transceiver Power
- Built-In Self Test & JTAG Support
- 1 Dual Redundant 1553 Channel
- BC or Multi-RT with Bus Monitor
- Temp Range: -40°C to +100°C
- Access Time as low as 12.5ns
- User Selectable & Flexible PCI or Generic Processor Interface

Applications:

- Mission Computers
- Data Recorders
- LRUs
- Radios/Modems
- Displays
- Ground Vehicles
- Radar Systems/Situational Awareness
- Small Form Factor Boards
- Commercial Aerospace

Evaluation Card and SDK
www.ddc-web.com/BU-67301i

Complete Info: www.ddc-web.com/BU-67301B

PCI-Express AceXtreme®



MIL-STD-1553

MIL-STD-1760

ACE^XTREME[®]

Model: BU-67302B0C0L

Features:

- Protocol, RAM, and Transceivers in a Single Package
 - 234 Ball JEDEC Standard Size Fine Pitch Ball Grid Array
 - 0.8 mm Ball Pitch
- Ultra Low Transceiver Power
- High Performance PCI-Express X1 Serial Host Interface
 - DMA Engine with 264 MB/sec Burst Transfer Rate
- 1 Dual Redundant 1553 Channel
- BC or Multi-RT with Bus Monitor
- 2Mb (64K x 36) RAM
- Temp Range: -40°C to +85°C

Applications:

- Mission Computers
- Digital Data Recorders
- Radios/Modems
- Displays and LRUs
- Ground Vehicles
- Radar Systems/Situational Awareness
- Small Form Factor Boards
- Commercial Aerospace

Complete Info: www.ddc-web.com/BU-67302B

Total-ACE®



MIL-STD-1553

MIL-STD-1760



Model: BU-64843T/U/H/i8

Features:

- Fully Integrated 1553 Terminal & Transformer in a BGA Package
- Small 312 Ball BGA Package 27.9mm x 15.2mm (1.1in x 0.6in)
- 0.185in Max Height
- 1 Dual Redundant 1553 Channel
- BC, RT, MT or RT/MT Functionality
- Temp Range: -40°C to +100°C
- 4K x 16 RAM up to 64K x 16 RAM
- +3.3V Only Operation
- Generic Processor or PCI Interface

Applications:

- Mission Computers
- Data Recorders
- LRUs
- Displays
- Ground Vehicles
- Commercial Aerospace

Complete Info: www.ddc-web.com/BU-64843T

Nano-ACE®



MIL-STD-1553

MIL-STD-1760

Model: BU-67743LC

Features:

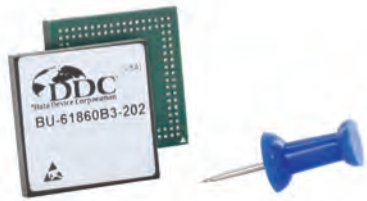
- Protocol, RAM, and Dual Low Power Transceivers in a Single Package
 - 48 Pin QFN Package
- Ultra Low Transceiver Power
 - 50MHz 4-Wire Serial Peripheral Interface (SPI) to the Host Processor
- 1 Dual Redundant 1553 Channel
- RT or RT/MT Operation
- 4K x 16 SRAM
- Temp Range: -55°C to +125°C

Applications:

- Displays
- Simple Systems
- Radios/Modems
- Stores Management

Complete Info: www.ddc-web.com/BU-67743LC

Micro-ACE® Series



MIL-STD-1553

MIL-STD-1760



Model: BU-61XX0B3, BU-64X4XBX-E02, BU-65XX3BX-E02

Features:

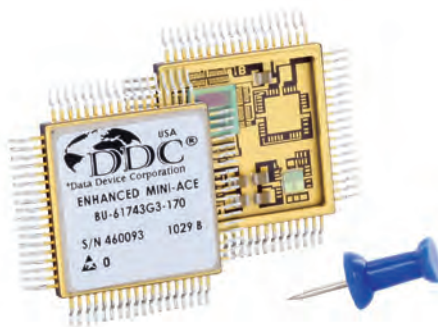
- 128-Ball Plastic BGA Package (BU-61XX0B3)
- 324-Ball Thermally Enhanced (TE) Package (BU-64X4X/BU-65XX3)
- Supports 1553A/B Notice 2, McAir, STANAG 3838 Protocols
- Compatible with Mini-ACE and ACE Generations
- Temp Range: -40°C to +85°C (-40°C to +100°C Micro-ACE-TE)
- Generic Processor or PCI Interface

Applications:

- Mission Computers
- Data Recorders
- LRUs
- Displays
- Ground Vehicles
- Commercial Aerospace

Complete Info: www.ddc-web.com/BU-64X4X
www.ddc-web.com/BU-61XX0

Enhanced Mini-ACE® Series



MIL-STD-1553

MIL-STD-1760

Model: BU-61XXX, BU-62XXX

Features:

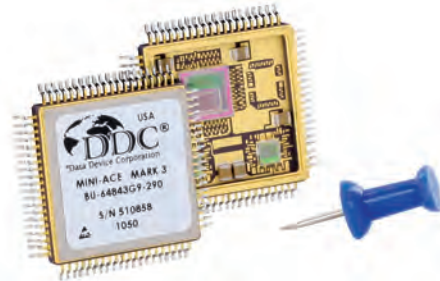
- Fully Integrated 1553A/B Notice 2, McAir, STANAG 3838 Protocols
- 1 inch square Ceramic Flat Pack or Gull Wing
- Enhanced Mini-ACE Architecture
- 5V or 3.3V Logic
- Temp Range: -55°C to +150°C
- Generic Processor or PCI Interface
- For Simple System RT (BU-64170X)
visit: www.ddc-web.com/BU-6170X

Applications:

- Mission Computers
- Data Recorders
- LRUs
- Displays
- Ground Vehicles
- Commercial Aerospace

Complete Info: www.ddc-web.com/BU-61XX3

Mini-ACE® Mark3 Series



MIL-STD-1553

MIL-STD-1760



Model: BU-64XX3, BU-65XX3

Features:

- World's only 3.3V Only or 5V Only Terminal (No other power supplies required)
- Smallest CQFP
22.35mm x 22.35mm x 3.3mm (0.88in. x 0.88in. x 0.130in.)
- Supports 1553A/B Notice 2, McAir, STANAG 3838 Protocols
- Highly Flexible Host Side Interface
- Generic Processor or PCI Interface
- Temp Range: -55°C to +125°C
- For Simple System RT (BU-64703)
visit: www.ddc-web.com/BU-64703

Applications:

- Mission Computers
- Data Recorders
- LRUs
- Displays
- Ground Vehicles
- Commercial Aerospace

Complete Info: www.ddc-web.com/BU-64XX3

SPACE-PHY



MIL-STD-1553



Model: BU-67402F30HL, BU-67402F80HL

Features:

- +5V and +3.3V
- Dual-Redundant, Side-by-Side, MIL-STD-1553 Transceiver/Transformer Combo
 - Ceramic Flatpack Package
 - 25.4mm x 25.4mm x 6.35mm (1in. x 1in. x 0.25in.)
- Temp Range: -55°C to +125°C
- Radiation Specifications:
 - Total Dose: 100kRads (+5V)
300kRads (+3.3V)
 - Latchup Immunity Minimum LET Threshold:
85.4 MeV-cm²/mg
- MIL-PRF-38534

Applications:

- Launch Vehicles
- Military Satellites
- Research Satellites
- International Space Station
- Commercial Telecommunication Satellites

See Page 29 for more space-grade products

Complete Info: www.ddc-web.com/BU-67402F

Total-Space ACE

MIL-STD-1553



Model: BU-6752XFHL

Features:

- Fully Integrated 1553 Terminal & Transformer in a Single Package
 - Ceramic Flatpack Package
 - 41.4mm x 28.7mm x 6.35mm (1.63in. x 1.13in. x 0.25in.)
- +3.3V Only Operation
- 1 Dual Redundant 1553 Channel
- BC, RT, MT or RT/MT Functionality
- Temp Range: -55°C to +125°C
- Radiation Specifications:
 - Total Dose: 300kRads
 - Latchup Immune: 75MeV

Applications:

- Launch Vehicles
- Military Satellites
- Research Satellites
- International Space Station
- Commercial Telecommunication Satellites

See Page 29 for more space-grade products

Complete Info: www.ddc-web.com/BU-6752xF

Total-Space RT

MIL-STD-1553



Model: BU-67502

Features:

- +3.3V Only Power
- Complete Integrated Remote Terminal Including: Dual Low-Power Transceivers/Complete RT Protocol
- Direct Interface to Systems With No Processor
- Radiation-Tolerant to 300kRads
- Space-Qualified
- High Reliability Screening Available
- Temp Range: -55°C to +125°C

Applications:

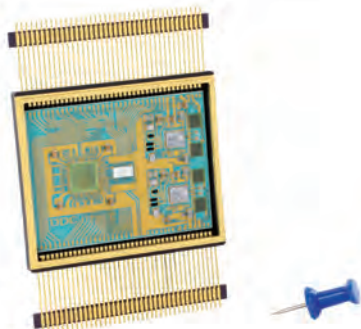
- Launch Vehicles
- Military Satellites
- Research Satellites
- International Space Station
- Commercial Telecommunication Satellites

See Page 29 for more space-grade products

Complete Info: www.ddc-web.com/BU-67502

SP'ACE RT II

MIL-STD-1553



Model: BU-63705

Features:

- +5V Only, +5/-15V, or +5/-12V Power
- Complete Integrated Remote Terminal Including: Dual Low-Power Transceivers/Complete RT Protocol
- Direct Interface to Systems With No Processor
- Radiation-Tolerant to 300kRads
- Space-Qualified
- High Reliability Screening Available
- Temp Range: -55°C to +125°C

Applications:

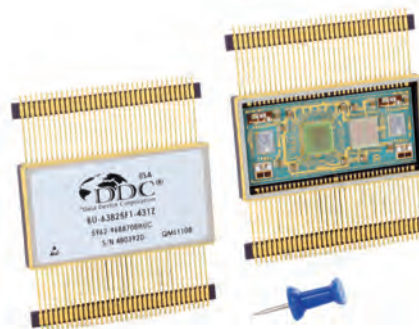
- Launch Vehicles
- Satellites
- International Space Station

See Page 29 for more space-grade products

Complete Info: www.ddc-web.com/BU-63705

SP'ACE II BC/RT/MT

MIL-STD-1553



Model: BU-63825

Features:

- +5V Only, +5/-15V, or +5/-12V Power
- Radiation-Tolerant to 1mRad Available
- Flexible Processor/Memory Interface
- 16K x 16 Internal RAM
- Automatic BC Retries
- Programmable BC Gap Times
- BC Frame Auto-Repeat
- Flexible RT Data Buffering
- Temp Range: -55°C to +125°C

Applications:

- Launch Vehicles
- Satellites
- International Space Station

See Page 29 for more space-grade products

Complete Info: www.ddc-web.com/BU-63825

Single/Dual 5V Transceivers

MIL-STD-1553



BU-63155

BU-63152

Model: BU-63155, BU-63152

Features:

Single 5V Transceiver (BU-63155)

- World's Smallest +5V 1553 Transceiver
- Temp Range: -55°C to +125°C
- 7mm x 7mm x 1mm (0.28in. x 0.28in. x 0.040in.)
- Requires +5V Power Supply
- 32-Pad LPCC Package
- Low Power Consumption

Dual 5V Transceiver (BU-63152)

- Requires +5V Power Supply
- Temp Range: -55°C to +85°C
- Harris I/O Compatibility
- Conforms Fully to MIL-STD-1553A/B, and 1760
- Low Power Consumption

Applications:

- Military
- Commercial Aerospace
- Industrial

Complete Info: www.ddc-web.com/BU-63155
www.ddc-web.com/BU-63152

Dual 3.3V Transceiver

MIL-STD-1553



Model: BU-67401L

Features:

- World's Lowest Power MIL-STD-1553 Transceiver
- Temp Range: -55°C to +125°C
- 7mm x 7mm (0.28in. x 0.28in.)
- Requires +3.3V Power Supply
- Small 48-Pad LPCC Package
- MIL-STD-1553A/B, MIL-STD-1760, and MacAir Compatible Transceiver

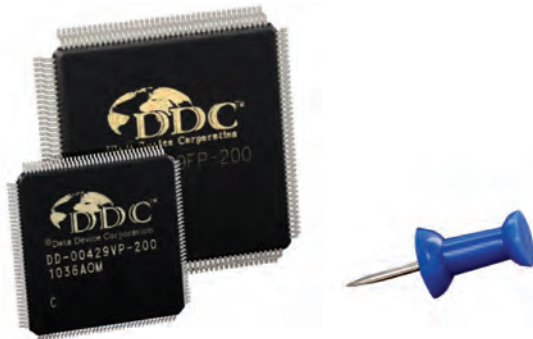
Applications:

- Mission Computers
- Digital Data Recorders
- LRUs
- Radios/Modems
- Displays
- Ground Vehicles
- Commercial Aerospace
- Radar Systems/Situational Awareness

Complete Info: www.ddc-web.com/BU-67401L

ARINC 429 Controllers

ARINC 429



Model: DD-00429

Features:

- 128 x 32 Shared RAM Interface
- Temp Range: -55°C to +85°C
- Label and Destination Decoding and Sorting
- Two 32 x 32 Transmit FIFO's
- Four 32 x 32 Receive FIFO's
- Built-in Fault Detection
- Free "C" Library Software

Applications:

- Military
- Commercial Aerospace
- Industrial

Complete Info: www.ddc-web.com/DD-00429

ARINC 429



Model: DD-42900

Features:

- 128 x 32 Shared RAM Interface
- Label and Destination Decoding and Sorting
- Two 32 x 32 Transmit FIFO's
- Four 32 x 32 Receive FIFO's
- Built-in Fault Detection
- Temp Range: -40°C to +85°C
- Free "C" Library Software
- Interfaces Easily to 8- or 16-bit Microprocessors

Applications:

- Military
- Commercial Aerospace
- Industrial

Complete Info: www.ddc-web.com/DD-42900

ARINC 429 Line Receivers

Quad Line Receiver

ARINC 429



Model: DD-41044, DD-41045

Features:

- Converts ARINC 429 Levels to TTL/CMOS Digital Data
- Inputs Internally Protected to Lightning Requirements of DO-160D Level A3
- Operates at Data Rates Beyond ARINC 429 Specifications to 5MHz
- 5V or 3.3V Operation
- 20L TSSOP Package
- One-half Volt Receiver Hysteresis

Applications:

- Avionics Data Communication
- ARINC Level to CMOS/TTL Conversion

Complete Info: www.ddc-web.com/DD-4104X

ARINC 429 Line Drivers

ARINC 429



Model: DD-41070

Features:

- TTL/CMOS ARINC 429 Line Driver
- Hi/LO Speed Control Pin for Hi (100KBS) or Lo (12.5KBS) Speed Slew Rates
- $\pm 9.5V$ to $\pm 16.5V$ Supplies
- Drives Full ARINC Load
- Output Resistor Options: 0, 10, or 37.5 Ohms
- Tristate Output Options
- 8 Lead SOIC Package with Exposed Pad for Thermal Enhancement

Applications:

- Avionics Data Communication
- CMOS/TTL to ARINC Level Conversion

Complete Info: www.ddc-web.com/DD-4107x

Single Line Receiver

ARINC 429



Model: DD-41041

Features:

- Converts ARINC 429 Levels to TTL/CMOS Digital Data
- Inputs Internally Protected to Lightning Requirements of DO-160D Level A3, Waveforms 3, 4, and 5 with No Additional Protection Required
- 3.3V and 5V Operation
- 8 Lead SOIC Package
- Two Volt Receiver Hysteresis

Applications:

- Avionics Data Communication
- ARINC Level to CMOS/TTL Conversion

Complete Info: www.ddc-web.com/DD-41041

Did You Know?

DDC MIL-STD-1553 components have been in service since the early 1980's. From 2000 to 2007, DDC had over 200 million hours of in-service history on the EMACE ASIC.

DDC's data bus solutions have been designed into many military and commercial platforms, including:

- Airbus A350-XWB
- The F-16 Falcon
- The B-1 Bomber
- The F-35 (JSF)
- The AH-64 Apache attack helicopter
- M1A2 Abrams
- The Space Shuttle
- The EuroFighter
- The International Space Station
- The New Horizons Space Craft
- Boeing 767 Tanker Aircraft
- F-15
- F-22
- Rafale
- Tornado

NHi Transceivers

Single 3.3V Transceiver



MIL-STD-1553

MIL-STD-1760

Model: NHi-15LV901

Features:

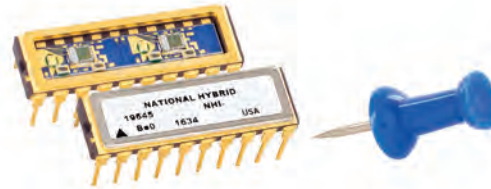
- Compliant with MIL-STD-1553 and MIL-STD-1760
- NHi Proprietary Transceiver ASIC
- Pulse 1553 Dual Ratio Transformer
- Short Circuit Tolerant
- Low Dissipation Power
- Superior Noise Filter

Applications:

- Mission Computers
- Digital Data Recorders
- LRUs
- Radios/Modems
- Displays
- Ground Vehicles
- Commercial Aerospace
- Radar Systems/Situational Awareness

Complete Info: www.ddc-web.com/NHi

Dual 5V Transceiver



MIL-STD-1553

MIL-STD-1760

Model: NHi-1567

Features:

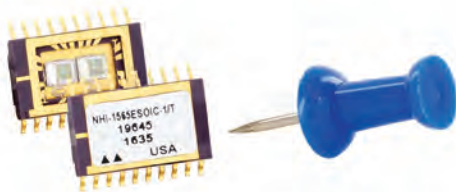
- Fully Compliant MIL-STD-1553 A&B, MIL-STD-1760, and MacAir Dual Transceivers
- Single 5V $\pm 10\%$ Supply
- 0.95 Watts Max Power Dissipation at 100% Duty Cycle
- Output Driver Withstands Short Circuit Fault Indefinitely with Built-In Shutdown/Recovery Circuit
- Proprietary Monolithic Design Provides Superior Reliability, Noise Performance, and Thermal Impedance

Applications:

- Mission Computers
- Digital Data Recorders
- LRUs
- Radios/Modems
- Displays
- Ground Vehicles
- Commercial Aerospace
- Radar Systems/Situational Awareness

Complete Info: www.ddc-web.com/NHi

Dual 3.3V/5V Transceivers



MIL-STD-1553

MIL-STD-1760

Model: NHi-1565ESOIC-1

Features:

- Single Supply 5V or 3.3V
- Output Driver Withstands Short Circuit Fault
- Proprietary Monolithic Design Provides Outstanding Thermal Impedance Characteristics
- Superior Noise Performance

Applications:

- Mission Computers
- Digital Data Recorders
- LRUs
- Radios/Modems
- Displays
- Ground Vehicles
- Commercial Aerospace
- Radar Systems/Situational Awareness

Complete Info: www.ddc-web.com/NHi



MIL-STD-1553

MIL-STD-1760

Model: NHi-1565CSP

Features:

- Smallest Available MIL-STD-1553 A&B, MIL-STD-1760 Dual Transceivers
- Dimensions: 7mm x 7mm x 2mm
- Single Supply 5V or 3.3V
- 1.5 Watts Max Power Dissipation
- Output Driver Withstands Short Circuit Fault
- Proprietary Monolithic Design Provides Outstanding Thermal Impedance Characteristics
- Superior Noise Performance
- Drop-In Replacement for Holt Devices

Applications:

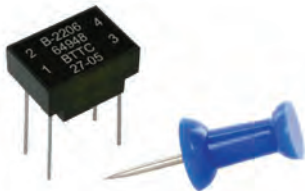
- Mission Computers
- Digital Data Recorders
- LRUs
- Radios/Modems
- Displays
- Ground Vehicles
- Commercial Aerospace
- Radar Systems/Situational Awareness

Complete Info: www.ddc-web.com/NHi

Single Channel MIL-STD-1553 Transformers

QPL B-2200/2300/3200 Series

MIL-STD-1553



Model: B-22XX, B-23XX, B-32XX

Features:

- Fully Qualified to DESC Specification No. 21038/27
- For use with MIL-STD-1553A/B, MacAir A-5690, A-5232, and A-4905
- 5V, 12V, and 15V Ratios
- Temp Range: -55°C to +130°C
- Built and Tested to MIL-PRF-21038 Level M and Level T
- Listed on QPL-21038-31
- Qualification Validated Annually
- Multitapped to Accommodate Existing System Configurations

Applications:

- Mission Computers
- Digital Data Recorders
- LRUs
- Radios/Modems
- Radar Systems/Situational Awareness
- Displays
- Ground Vehicles
- Commercial Aerospace
- Space Flight

Complete Info: www.BTTC-Beta.com/1553

MLP-2000 Series

MIL-STD-1553



Model: MLP-2XXX, MLP-3XXX

Features:

- Miniature, Low-Profile 0.815" Maximum Height Surface Mount Transformer
- 3.3V, 5V, and 15V Ratios
- For use with MIL-STD-1553A/B, MacAir A-5690, A-5232, and A-4905
- Withstands Conventional IR/Convection Reflow Process
- Temp Range: -55°C to +130°C
- Built and Tested to MIL-PRF-21038 and MIL-STD-202

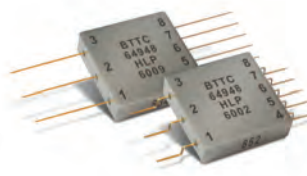
Applications:

- Mission Computers
- Digital Data Recorders
- LRUs
- Radios/Modems
- Radar Systems/Situational Awareness
- Displays
- Ground Vehicles
- Commercial Aerospace
- Space Flight

Complete Info: www.BTTC-Beta.com/1553

HLP-6000 Series

MIL-STD-1553



Model: HLP-60XX

Features:

- Hermetically Sealed, Ultra-Low Profile 0.175" Maximum Height, Surface Mount Flat Pack
- 3.3V, 5V, 12V, and 15V Ratios
- For use with MIL-STD-1553A/B, MacAir A-5690, A-5232, and A-4905
- Temp Range: -55°C to +130°C
- Built and Tested to MIL-PRF-21038 and MIL-STD-202
- Designed to Meet ESDS Test, MIL-STD-883, Method 3015.3 Category B

Applications:

- Mission Computers
- Digital Data Recorders
- LRUs
- Radios/Modems
- Radar Systems/Situational Awareness
- Displays
- Ground Vehicles
- Commercial Aerospace
- Space Flight

See Page 29 for more space-grade products

Complete Info: www.BTTC-Beta.com/1553

Dual Channel 1553 Transformer

DHP-6000 Series

MIL-STD-1553



Model: DHP-60XX

Features:

- Hermetically Sealed, Ultra-Low Profile 0.175" Maximum Height, Surface Mount Flat Pack
- 3.3V, 5V, 12V, and 15V Ratios
- For use with MIL-STD-1553A/B, MacAir A-5690, A-5232, and A-4905
- Temp Range: -55°C to +130°C
- Built and Tested to MIL-PRF-21038 and MIL-STD-202
- Designed to Meet ESDS Test, MIL-STD-883, Method 3015.3 Category B

Applications:

- Mission Computers
- Digital Data Recorders
- LRUs
- Radios/Modems
- Radar Systems/Situational Awareness
- Displays
- Ground Vehicles
- Commercial Aerospace
- Space Flight

Complete Info: www.BTTC-Beta.com/1553

Dual Channel MIL-STD-1553 Transformers

DSS-2000 Series

MIL-STD-1553



Model: DSS-2XXX

Features:

- Dual Side-By-Side Pulse Transformers
- 0.130" Overall Height
- Built and Tested to MIL-PRF-21038 and MIL-STD-202 Level M and Level T
- 3.3V, 5V, 12V, and 15V Ratios
- For use with MIL-STD-1553A/B, MacAir A-5690, A-5232, and A-4905
- Temp Range: -55°C to +130°C
- Peak Reflow Temperature +225°C

Applications:

- Mission Computers
- Digital Data Recorders
- LRUs
- Radios/Modems
- Radar Systems/Situational Awareness
- Displays
- Ground Vehicles
- Commercial Aerospace
- Space Flight

Complete Info: www.BTTC-Beta.com/1553

TSM-2000 Series

MIL-STD-1553



Model: TSM-2XXX

Features:

- Twin Stacked Miniature Dual Pulse Transformers
- For use with MIL-STD-1553A/B, MacAir A-5690, A-5232, and A-4905
- Withstands Conventional IR/Convection Reflow Process
- Temp Range: -55°C to +130°C
- Built and Tested to MIL-PRF-21038 and MIL-STD-202
- 3.3V, 5V, 12V, and 15V Ratios

Applications:

- Mission Computers
- Digital Data Recorders
- LRUs
- Radios/Modems
- Radar Systems/Situational Awareness
- Displays
- Ground Vehicles
- Commercial Aerospace
- Space Flight

Complete Info: www.BTTC-Beta.com/1553

DSS-3000 Series

MIL-STD-1553



Model: DSS-33XX

Features:

- Smallest Dual Side-By-Side Pulse Transformers 0.400" x 0.675"
- Built and Tested to MIL-PRF-21038 and MIL-STD-202 Level M and Level T
- 3.3V, 5V, 12V, and 15V Ratios
- For use with MIL-STD-1553A/B, MacAir A-5690, A-5232, and A-4905
- Temp Range: -55°C to +130°C
- Peak Reflow Temperature +225°C

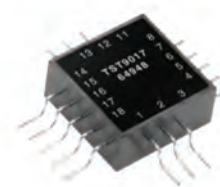
Applications:

- Mission Computers
- Digital Data Recorders
- LRUs
- Radios/Modems
- Radar Systems/Situational Awareness
- Displays
- Ground Vehicles
- Commercial Aerospace
- Space Flight

Complete Info: www.BTTC-Beta.com/1553

TST-9000 Series

MIL-STD-1553



Model: TST-90XX

Features:

- Twin Stacked 0.280" Maximum Height 1553 Transformers
- PC Mount, Flat Pack, and Surface Mount
- For use with MIL-STD-1553A/B, MacAir A-5690, A-5232, and A-4905
- Temp Range: -55°C to +130°C
- Built and Tested to MIL-PRF-21038 and MIL-STD-202
- 5V, 12V, and 15V Ratios

Applications:

- Mission Computers
- Digital Data Recorders
- LRUs
- Radios/Modems
- Radar Systems/Situational Awareness
- Displays
- Ground Vehicles
- Commercial Aerospace
- Space Flight

Complete Info: www.BTTC-Beta.com/1553

Couplers

Box Coupler



MIL-STD-1553

Model: BXC-A-X111-1X-XX

Features:

- Full MIL-STD-1553 Compatibility
- Standard 1, 2, 3, 4, 5, or 6 Stub Versions Available
- Custom Multi-Stub Designs Accepted
- Miniature Configurations
- Industry Standard Connectors, Equivalent to Emerson P/N BJ-770
- MIL-R-39007 Q.P.L Resistors

Applications:

- Systems Development
- Bench Top Test
- Flight Line Maintenance

Complete Info: www.BTTC-Beta.com/BXC

Space Grade In-line Coupler



MIL-STD-1553



Model: ICS-XX-XXXX-XXXX

Features:

- Full MIL-STD-1553 Compatibility
- Designed to Meet MIL-STD-981
- Standard Single, Dual, and Triple-Stub Versions
- Custom Multi-Stub Designs Accepted, Up to 6 Stubs Available
- M17/176-00002 Cable,
- MIL-R-39007 Q.P.L Resistors, Product Level Type S
- Outgassing Levels that Meet NASA Requirements
- Soldering to J-STD-001, Module 6

Applications:

- Space Applications
- Satellites
- Launch Vehicles

See Page 29 for more space-grade products

Complete Info: www.BTTC-Beta.com/ICS

Space Grade Box Coupler



MIL-STD-1553



Model: BCS-A-X111-XX-XX

Features:

- Full MIL-STD-1553 Compatibility
- Designed to Meet MIL-STD-981
- Standard Single, Dual, Triple, and Quad-Stub Versions
- Custom Multi-Stub Designs Accepted
- Miniature Configurations
- Industry Standard Connectors, Equivalent to Emerson P/N BJ-770
- MIL-R-39007 Q.P.L Resistors
- Outgassing Levels that Meet NASA Requirements
- Soldering to J-STD-001, Module 6

Applications:

- Space Applications
- Satellites
- Launch Vehicles

See Page 29 for more space-grade products

Complete Info: www.BTTC-Beta.com/SpaceBXC

Cables



MIL-STD-1553

Model: CBL-10101XXXX-XX

Features:

- M17/176-00002 Cable, Others Available
- Standard Cable Lengths: 36", 72", 120"
- Custom Lengths Available
- Industry Standard Connectors, Equivalent to Emerson P/N PL-75, Other Connectors Available
- Temp Range: -55°C to +200°C

Applications:

- Systems Development
- Bench Top Test
- Flight Line Maintenance

Complete Info: www.BTTC-Beta.com/BXC

System Level Software

dataSIMS

Avionics Data Bus Test and Analysis Software



MIL-STD-1553

ARINC 429

DISCRETE

SYNCHRO

User Defined

AFDX

Model: BU-694X4DS

Features:

- Accelerates development and deployment
- Eliminates cost of learning and maintaining separate software programs
- Easy-to-use and customize
- Supports all data protocols and I/O formats

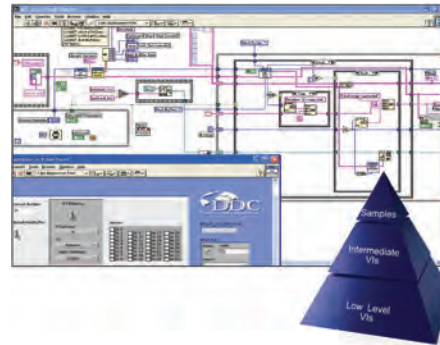
Applications:

- New Product Development
- Systems Integration
- Bus or Network Analysis
- Production Testing
- Troubleshooting
- Data Recording
- Depot/Flight Line Testing
- Automatic Test

Complete Info: www.ddc-web.com/datasims

LabVIEW® Support Package

LabVIEW® & LabVIEW® Real-Time/LabWindows®



MIL-STD-1553

ARINC 429

DISCRETE

Model: BU-69093

Features:

- Simple interface for quick startup and easy programming
- Access real-time 1553/429 data using LabVIEW
- Easily integrate data from different types of instruments and sensors
- Create custom user interface from scratch or by modifying samples provided

Applications:

- Box Level Testing
- Simulation
- Portable Test Equipment
- Flight Line Test and Diagnostic
- Software Development
- System Integration
- Debugging

Complete Info: www.ddc-web.com/labview

Protocol Analyzers

BusTrACer®

Data Bus Analyzer and Monitor Software



MIL-STD-1553

DISCRETE

Model: BU-69066

Features:

- Generate or monitor live MIL-STD-1553 data without writing any code
- Saves time and reduces development costs
- Program in minutes with one-click ANSI 'C' application source code generation
- Rapid creation and setup of custom applications

Applications:

- Software Development
- Box Level Testing
- Simulation
- Portable Test Equipment
- Flight Line Test and Diagnostic
- Systems Integration

Complete Info: www.ddc-web.com/bustracer

Commercial Avionics Utilities

Data Bus Analyzer and Data Loader Software



ARINC 429

ARINC 615

Model: DD-42999SX

Features:

- Graphical ARINC 429 data bus analysis and simulation
- Advanced filtering, message scheduling, and triggering
- Graphical ARINC 615 data loader
- Software interface to load data to and from airborne computers

Applications:

- Monitoring
- Analysis
- Simulation
- Airborne Computers
- Flight Data Acquisition Units

Complete Info: www.ddc-web.com/arincsw

Fibre Channel & High Speed Solutions



High Speed and High Reliability Data Networking

DDC developed its line of Fibre Channel network access controllers and switches to support the real-time processing demands of field-critical data networking between sensors, computer nodes, data storage, displays, and weapons for air, sea, and ground military vehicles. Fibre Channel's architecture is optimized to meet the performance, reliability, and demanding environmental requirements of embedded, real-time, military applications, and designed to endure the multi-decade life cycle demands of military/aerospace programs.

DDC's Fibre Channel product line includes the FibreACCESS[®] Network Access Controller (NAC) card and the FibreMATRIX[®] Switch, both specifically designed to support high-speed and high-reliability data networking applications. These products were developed using in-house intellectual property independent of the life cycles of commercial devices. Ruggedness options for DDC's Fibre Channel cards include a choice of air and conduction cooling, enabling operation over extended temperature ranges without the need for upscreening. The Fibre Channel cards come with software drivers for multiple operating systems, including VxWorks[®], Windows[®], and Linux[®].

DDC supplies Fibre Channel PMC cards supporting MIL-STD-1760E Class I, aka "High-Speed 1760". The High-Speed 1760 cards also support the SAE 5725 Miniature Munitions Store Interface and SAE 5726 Interface for Micro Munitions (IMM) standards. These PMC cards are supplied for use in stores management systems, launchers, bomb racks, weapons, and test equipment. The cards enable the transmission and receipt of MIL-STD-1553 command and control messages, along with higher speed data transfers, including for program files, terrain maps, target templates, and digitized images and video.

Platforms and Programs

Fibre Channel is deployed on a number of military/aerospace platforms and programs including the F/A-18E/F, F-16, F-35, B-1B, B-2, E-2D, the AH-64D and MMH helicopters, and AESA Radar. Applications for Fibre Channel include mission computers, processor and DSP clusters; data storage; video processing, distribution, and displays; sensors such as radar, FLIR, and video; serial backplanes and IFF.

Boards															Page	
Product Number	Number of Channels	Gb/s Operation		Class 2 & 3 Service Support			Interface		Protocol Support							
		1	2	Broadcast	Multicast	Hunt Groups	Copper	Fiber Optic	ASM	TCP/IP	SCSI Initiator	UDP/IP	Raw Mode	FC-AE-1553		
FibreACCESS[®]																
FC-75000	2	■	■	■	■		■	■	■	■	■	■	■	■	■	27
FC-75100	2	■	■	■	■		■	■	■	■	■	■	■	■	■	27
FC-75300	2	■	■	■	■		■	■	■	■	■	■	■	■	■	27
FC-75500	2	■	■	■	■		■	■	■	■	■	■	■	■	■	27
High Speed 1760																
FC-752XX	2	■		■			■							■	■	27
FC-75400	2	■		■			■	■						■	■	27
FibreMATRIX[®] Switch																
FC-76000	16	■	■	■	■	■		■								27

☞ Visit www.ddc-web.com/fc for complete product information.

Transformers		
Product Number	Description	Page
TGB-XXXX	Low-profile; Compliant with ANSI X3T11, Fibre Channel, FC-PH-3	28
FWT-1394	Military Qualified Firewire Transformer	
GEM-1000	10/100/1000 Base-T Single and Dual Port	

FibreACCESS® XMC Controller



Fibre Channel

Model: FC-75500

Features:

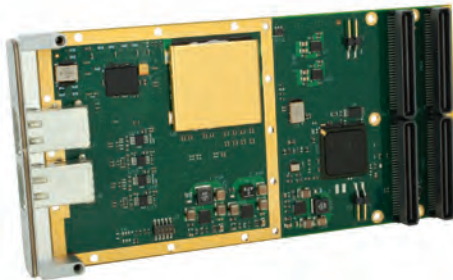
- Dual-Channel Operation
- XMC Board with x4 PCI Express Interface
- Conduction or Air Cooled PMC for Extended Temperature Operations
- 1 or 2Gb/s Operation
- Class 2 and 3 Service Including Broadcast and Multicast
- Memory-to-Memory Latency under 10µs
- ASM, TCP/IP, SCSI Initiator, Raw Mode, and FC-AE-1553 Protocols

Applications:

- Mission Computers
- Radar
- IFF
- Displays and Digital Maps
- FLIR/Night Vision
- File Servers
- Signal Processing Computers
- Test

Complete Info: www.ddc-web.com/FC-75500

High Speed 1760



Fibre Channel

Model: FC-75400

Features:

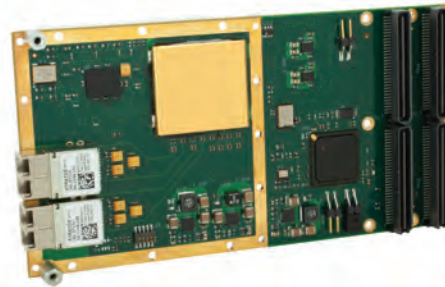
- High-Speed 1760 PMC Card
- 66MHz/64-Bit PMC Board
- Two Independent Channels
 - Each can be FC-AE-1553 NC or NT
- NC: NC-to-NT/NT-to-NC Transfers, Mode Codes, & Broadcast
- NT: Multiple Subaddress Buffering Options, NC-to-NT/NT-to-NC Transfers, Mode Codes, & Broadcast
- Supports Large Transfers for Files and Images
- 3.3V, 64-bit, 66MHz PCI Initiator/Target

Applications:

- Weapons Interfaces
- Stores Management Systems
- Launcher and Rack Interfaces
- Weapons Programmers
- Test Equipment
- Simulation

Complete Info: www.ddc-web.com/FC-75400

FibreACCESS® Network Controller



Fibre Channel

Model: FC-75300

Features:

- Dual-Channel Operation
- 66MHz/64-Bit PMC Board
- Conduction or Air Cooled PMC for Extended Temperature Operations
- 1 or 2Gb/s Operation
- Class 2 and 3 Service Including Broadcast and Multicast
- Memory-to-Memory Latency under 20µs
- ASM, TCP/IP, SCSI Initiator and Raw Mode Protocols

Applications:

- Mission Computers
- Radar
- IFF
- Displays and Digital Maps
- FLIR/Night Vision
- File Servers
- Signal Processing Computers
- Test

Complete Info: www.ddc-web.com/FC-75300

FibreMATRIX® Switch



Fibre Channel

Model: FC-76000

Features:

- 16 Optical Port
- Conduction or Air Cooled VME64x Form Factor
- 1 or 2Gb/s Data Rate per Port
- Ethernet and RS-232 Configuration Ports
- Class 2 and 3 Service Including 127 Priority Levels, Broadcast, Multicast, and Hunt Groups
- Supports Implicit or Explicit Fabric Login
- Maximum 2µs Port-to-Port Delay
- ELS Clock Sync Client and Server

Applications:

- Military Programs
- Aerospace Programs
- Sensor Interfaces
- High Speed Networking
- Storage Networks
- Test Labs
- Video Transfer

Complete Info: www.ddc-web.com/FC-76000

Fibre Channel, Firewire, & Ethernet Transformers

TGB Series

Fibre Channel



Model: TGB-XXXX

Features:

- Twin Gigabit Ethernet/Fibre Channel Transformer
- Low Profile: 0.185" Maximum Height
- Weighs Less than 1.0 Gram
- Temp Range: -40°C to +85°C
- Compliant with ANSI X3T11, Fibre Channel, FC-PH-3
- IR/Convection Reflow Compatible

Applications:

- Mission Computers
- Radar
- IFF
- Displays and Digital Maps
- FLIR/Night Vision
- File Servers
- Signal Processing Computers
- Test

Complete Info: www.BTTC-Beta.com/TGB

Firewire

Fibre Channel



Model: FWT-1394-X

Features:

- Industry-Leading Firewire Transformer
- Meets IEEE 1394B Specifications
- Low Profile: 0.18" Maximum Height
- Weighs Less than 1.0 Gram
- Temp Range: -55°C to +125°C

Applications:

- Mission Computers
- Radar
- IFF
- Displays and Digital Maps
- FLIR/Night Vision
- File Servers
- Signal Processing Computers
- Test

Complete Info: www.BTTC-Beta.com/FWT

GEM Series

Fibre Channel



Model: GEM-1000

Features:

- 10/100/1000 Base-T Single and Dual Port
- IEEE 802.3ab for 1000Base-T Compliant
- 350µH OCL with 8mA Bias Over Operating Temperature Range
- IPC-9503 Level 5A Compliant
- Temp Range: -55°C to +125°C Available

Applications:

- Mission Computers
- Digital Data Recorders
- LRUs
- Radios/Modems
- Radar Systems/Situational Awareness
- Displays
- Ground Vehicles
- Commercial Aerospace
- Space Flight
- Video Data

Complete Info: www.BTTC-Beta.com/GEM

Did You Know?

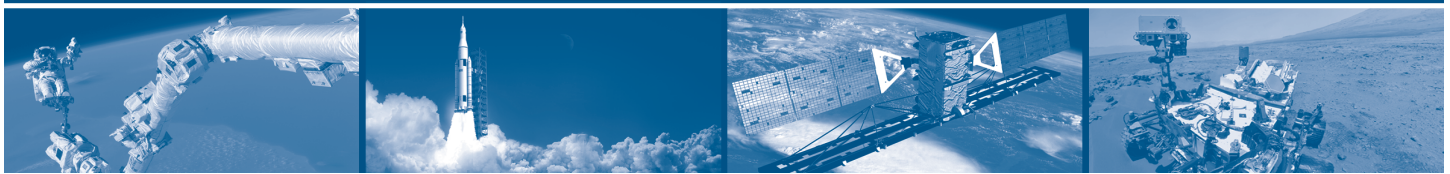
DDC expanded our transformer solutions and capabilities with the acquisition on North Hills™ Signal Processing Corporation.

North Hills Signal Processing has combined with Beta Transformer Technology Corporation, and together will provide best-in-class signal and power transformer/magnetic solutions for the defense, civil aerospace, and space industries.

Our expanded product offering now includes new MIL-STD-1553 couplers, active MIL-1395b (FireWire) transformers, RF wideband transformers, MIL-STD-1553 transformers, power transformers, and Scott-T transformers.

For more information, please visit:
www.ddc-web.com/northhills

Radiation Tolerant Microelectronics



Space-Qualified, DLA Approved

The DDC Microelectronics group, formerly part of Maxwell Technologies, has provided space-qualified products to the space industry for over two decades. The microelectronics group develops radiation-tolerant and radiation-shielded products, including semiconductors and single-board computers. The group specializes in understanding the radiation performance of commercial semiconductors, qualifying selected components for use in space, integrating them with our proprietary radiation mitigation technologies, and manufacturing and screening our products in our DLA approved MIL-PRF-38534 facility.

Products

DDC's Microelectronics are available in many different form factors: Single Board Computers, Amplifiers and Comparators, A to D Converters, D to A Converters, Interface Logic, Memories, Microprocessors, Nuclear Event Detectors, Optocouplers, and Switches and Multiplexers. DDC is the exclusive sales and support channel for Isocom optocouplers in North America.

Product Description	Part Number	Radiation Technology							Package Style # Of Pins			Specs		Status		Screening Level (DDC's Classes)	Page	
		Error Detection	Latchup Protection	Rad Hard @ Die	RAD-PAK®	RAD-STAK®	Rad Tol 10/25/40 Krad	Triple Redundant Process	X-ray-Pak®	Flat Pack	DIP	QFP	Data Sheet	SMD	Active			Contact Factory
Computers																		
Single Board Computer, PowerPC® Based	SCS750®	■		■	■	■		■		Standard 6U cPCI		■		■			FS, FB, E	33
Single Board Computer, PowerPC® Based	SCS750P®	■		■	■	■		■		Standard 6U cPCI		■		■			Prototype	☞
Analog to Digital Converters																		
ADC, 8 Bit, 73.5 kSPS	7820				■					20		■		■			S, B, I, E	☞
ADC, 12 Bit, 100 kSPS	7672				■					24	24	■		■			S, B, I, E	☞
ADC, 12 Bit, 41 MSPS	9042				■					28		■		■			K, H, I, E	☞
ADC, 14 Bit, 10 MSPS	9240LP		■		■						44	■		■			K, H, I, E	33
ADC, 14 Bit, 83 kSPS, Single Supply	7872A				■					16	16	■		■			S, B, I, E	☞
ADC, 16 bit, 100 kSPS, Serial	7809ALP		■		■					24		■		■			K, H, I, E	☞
ADC, 16 bit, 200 kSPS	976A				■					28		■		■			S, B, I, E	☞
Digital to Analog Converters																		
DAC, 12 Bit Serial	8143				■					16		■		■			S, B, I, E	☞
DAC, 12 Bit, Buffered, Multiplying	7545B				■					20	20	■		■			S, B, I, E	33
DAC, 16 Bit, Low Power	7846B				■					28		■		■			S, B, I, E	☞
DAC, 16 Bit, 30 MSPS	768A						■			28		■		■			S, B, I, E	☞
Low Voltage 3.3V EEPROM (200ns or 250ns Access Time) (Available in RAD-Hard and RAD Tolerant Versions)																		
EEPROM, 1 Mb (128kb x 8) .480" Wide	28LV010				■		■			32	32	■		■			S, B, I, E	33
EEPROM, 1 Mb (128kb x 8) .410" Wide	28LV011				■		■			32		■		■			S, B, I, E	☞
EEPROM, 4 Mb (512kb x 8)	79LV0408				■		■		■	40		■		■			K, H, I, E	☞
EEPROM, 8 Mb (256kb x 32)	79LV0832				■		■				96	■		■			K, H, I, E	☞
EEPROM, 20 Mb (512kb x 40) Rad-Stak®	79LV2040					■	■			100		■			■		K, H, I, E	☞
EEPROM, 20 Mb (512kb x 40) Dual-Cavity	79LV2040B				■		■			100		■		■			K, H, I, E	☞
5.0V EEPROM (120 ns, 150ns, or 200ns Access Time) (Available in RAD-Hard and RAD Tolerant Versions)																		
EEPROM, 1 Mb (128kb x 8) .480" Wide	28C010T				■		■			32	32	■	■	■			V, Q, S, B, E, I	34
EEPROM, 1 Mb (128kb x 8) .410" Wide	28C011T				■		■			32		■	■	■			V, Q, S, B, E, I	☞
EEPROM, 4 Mb (512kb x 8)	79C0408				■		■		■	40		■		■			K, H, I, E	☞
EEPROM, 8 Mb (256kb x 32)	79C0832				■		■				96	■		■			K, H, I, E	☞
EEPROM, 20 Mb (512kb x 40) Rad-Stak®	79C2040					■	■			100		■			■		K, H, I, E	☞
EEPROM, 20 Mb (512kb x 40) Dual-Cavity	79C2040B				■		■			100		■		■			K, H, I, E	☞

☞ - Visit www.ddc-web.com/me for complete product information.

Product Description	Part Number	Radiation Technology								Package Style # Of Pins			Specs		Status		Screening Level (DDC's Classes)	Page
		Error Detection	Latchup Protection	Rad Hard @ Die	RAD-PAK®	RAD-STAK®	Rad Tol 10/25/40 Krad	Triple Redundant Process	X-ray-Pak®	Flat Pack	DIP	QFP	Data Sheet	SMD	Active	Contact Factory		
Low Voltage 3.3V SRAM (20ns, 25ns or 30ns Access Time)																		
SRAM, 4 Mb (512kb x 8)	33LV0408				■					32			■		■		S, B, I, E	34
SRAM, 16 Mb (512kb x 32)	89LV1632				■							68	■		■		K, H, I, E	34
SDRAM (100MHz Operating Frequency)																		
SDRAM, 256 Mb (16Mb x 16)	48SD1616				■					72			■		■		K, H, I, E	34
SDRAM, 256 Mb (32Mb x 8)	48SD3208				■					72			■		■		K, H, I, E	34
SDRAM, 1.0 Gb (32Mb x 32)	72SD3232B				■					72			■		■		K, H, I, E	34
SDRAM, 1.25 Gb (32 Mb x 40) Rad-Stak®	97SD3240					■						132	■		■		K, H, I, E	34
SDRAM, 1.25 Gb (32 Mb x 40) Dual-Cavity	97SD3240B				■							132	■		■		K, H, I, E	34
SDRAM, 1.5 Gb (32Mb x 48) Rad-Stak®	97SD3248					■						132	■		■		K, H, I, E	34
SDRAM, 1.5 Gb (32Mb x 48) Dual-Cavity	97SD3248B				■							132	■		■		K, H, I, E	34
PROM - OTP EROM (120ns, 150ns or 200ns Access Time)																		
PROM, 512kb (64kb x 8)	27C512T				■					32	32		■		■		S, B, I, E	34
PROM, 512kb (32kb x 16)	27C1512T				■						40		■		■		K, H, I, E	34
PROM, 1 Mb (128kb x 8)	27C010T				■					32	32		■		■		S, B, I, E	34
Flash																		
FLASH, NAND, 32 Mb (4Mb x 8)	29F0408				■					44			■		■		S, B, I, E	34
FLASH, NAND, 128 Mb (16Mb x 8)	69F1608				■					24			■		■		K, H, I, E	34
FLASH, NAND, 32 Gb x8 - High Density	29F32G08				■					68			■		■		S, B, I, E	34
FLASH, NAND, 64 Gb x16 - High Density	69F64G16				■					68			■		■		K, H, I, E	34
FLASH, NAND, 128 Gb x16 - High Density	69F128G16				■					68			■		■		K, H, I, E	34
FLASH, NAND, 256 Gb x16 - High Density	69F256G16				■					68			■		■		K, H, I, E	34
FLASH, NAND, 12 Gb x24 - High Density	69F12G24				■					70			■		■		K, H, I, E	34
FLASH, NAND, 24 Gb x24 - High Density	69F24G24				■					70			■		■		K, H, I, E	35
FLASH, NAND, 96 Gb x24 - High Density	69F96G24				■					70			■		■		K, H, I, E	34
FLASH, NAND, 192 Gb x24 - High Density	69F192G24				■					70			■		■		K, H, I, E	34
FLASH, NOR, 512 Mb (x 8 or x16) - HD	56F6408				■					56			■		■		S, B, I, E	35
Processor and Peripherals																		
Microprocessor, 32 Bit, 25 MHz	80386DX				■							164	■		■		S, B, I, E	35
Math Co-Processor	80387DX				■							68	■		■		S, B, I, E	34
Multiplexers																		
8 Channel, Fault Protected	358				■					16			■		■		S, B, I, E	34
16 Channel	306				■					28			■		■		S, B, I, E	34
16 Channel, Fault Protected	338				■					16			■		■		S, B, I, E	35
128 Channel, Fault Protected	81840				■							256	■		■		K, H, I, E	34
Nuclear Event Detectors																		
Designed In Rad-Hard	HSN-500				■					14	14		■		■		H	34
Designed In Rad-Hard w/Event Flag	HSN-1000				■					14	14		■		■		H	34
Guaranteed Rad-Hard	HSN-2000				■					14	14		■		■		H	34
Guaranteed Rad-Hard w/Event Flag	HSN-3000				■					14	14		■		■		H	36
Amplifier and Comparators																		
Comparator, High Speed	903				■					8			■		■		S, B, I, E	36
Operational Amplifier, Quad, Rail to Rail	6484				■					14			■		■		S, B, I, E	34
Operational Amplifier, Dual	OP220				■					8			■		■		S, B, I, E	34
Operational Amplifier, Dual, 4 MHz	OP284B				■					8			■		■		S, B, I, E	34
Operational Amplifier, Quad	OP400A				■					16			■		■		S, B, I, E	36
Operational Amplifier, Quad, Low Voltage	OP490				■					16			■		■		S, B, I, E	34

☞ Visit www.ddc-web.com/me for complete product information.

Product Description	Part Number	Radiation Technology							Package Style # Of Pins			Specs		Status		Screening Level (DDC's Classes)	Page	
		Error Detection	Latchup Protection	Rad Hard @ Die	RAD-PAK®	RAD-STAK®	Rad Tol 10/25/40 Krad	Triple Redundant Process	X-ray-Pak®	Flat Pack	DIP	QFP	Data Sheet	SMD	Active			Contact Factory
Logic																		
Buffer/Driver, 8 Bit	54BCT244									20							S, B, I, E	☞
Transceiver, 8 Bit	54BCT245									20							S, B, I, E	☞
Buffer/Driver, 16 Bit with 3 State Outputs	54LVTH162240									48							S, B, I, E	☞
Buffer/Driver, 16 Bit, 3.3V	54LVTH162244									48							S, B, I, E	36
Transceiver, 16 Bit, 3.3V	54LVTH162245									48							S, B, I, E	☞
Interface, D-Latch, 16 Bit, 3.3V	54LVTH16373									48							S, B, I, E	☞
Buffer/Driver, 8 Bit, 3.3V	54LVTH244A									20							S, B, I, E	☞
Transceiver, 8 Bit, 3.3V	54LVTH245A									20							S, B, I, E	☞
Programmable Skew Clock Buffer	7B991									32							S, B, I, E	☞

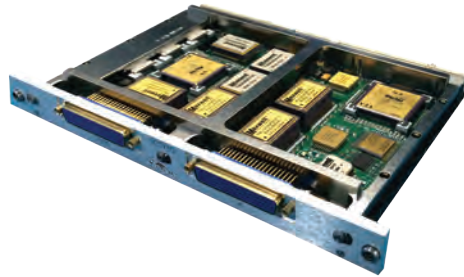
Part Number	CTR (IF = 10 mA) MIN (%)	Isolation Breakdown Voltage VDC	Continuous Forward Current MAX (mA)	VF(V)@IF = 10 mA		BVceo @1 mA MIN (V)	ICEO (Dark) MAX (nA)	VCE Sat MAX				Package Type										Page				
				Min	Max			IF (mA)	IC (mA)	V	Pin				DIP	Flat Pack	Hybrid	LCC	LLC	TO-5	Unique Pinout		Single	Dual		
											10	0.2	2.5	10											4/5	6
Optocouplers - Transistor																										
CS200/ 201	100	1500	50	0.7	1.8	40	$\frac{100}{VCE = 20V}$				0.3															37
CD500/ 501	50	1500	50	0.7	1.8	40	$\frac{100}{VCE = 20V}$				0.3															☞
CH300/ 301A	50	1500	50	0.7	1.8	40	$\frac{100}{VCE = 20V}$				0.25															☞
4N24	50	1500	50	0.7	1.8	40	$\frac{100}{VCE = 20V}$				0.3															☞
4N49	50	1500	50	0.7	1.8	40	$\frac{100}{VCE = 20V}$				0.3															☞
CS224	50	1500	50	0.7	1.8	40	$\frac{100}{VCE = 20V}$				0.3															☞
CSM200	50	1500	50	0.7	1.8	40	$\frac{100}{VCE = 20V}$				0.3															☞
CSM1200	50	1500	50	0.7	1.8	40	$\frac{100}{VCE = 20V}$				0.3															☞
CSM1224	50	1500	50	0.7	1.8	40	$\frac{100}{VCE = 20V}$				0.3															☞
CSM2224	50	1500	50	0.7	1.8	40	$\frac{100}{VCE = 20V}$				0.3															☞
CSM165-2	50	1500	50	0.7	1.8	40	$\frac{100}{VCE = 15V}$				0.9															☞
CSM165-4	50	1500	50	0.7	1.8	40	$\frac{100}{VCE = 15V}$				0.9															☞
IS49	50	1500	50	0.7	1.8	40	$\frac{100}{VCE = 20V}$				0.3															☞

☞ Visit www.ddc-web.com/me for complete product information.

Note: DDC offers radiation tolerant solutions, located throughout this catalog. Look for the Radiation Tolerant Shield logo on our space grade products.



Single Board Computer



Model: SCS750, SCS750G4

Features:

- Proven in Space - TRL-9
- Operating Capability
 - 200 - 1800 MIPS,
 - 7 - 30 Watts Typical
- Speed and Power Settings can be Managed via Software in Real Time; No Reboot Required
- Outstanding SBC Radiation Hardness
 - TID Greater than 100krad (Si)
 - SEU Hard
 - SEL Immune
- Only 1 Uncorrected Upset Every 80 Years in a Typical GEO Mission
- New G4 Version Available with SpaceWire and 64 GBytes of NAND Flash
- Standard Development Platform, VxWorks®, RTEMS & Linux under development

Applications:

- Space

Complete Info: www.ddc-web.com/SCS750

Digital-to-Analog



Model: 7545BRP

Features:

- RAD-PAK® Radiation-Hardened Against Natural Space Radiation
- Total Dose Hardened to 50krads (Si), Dependent on Space Mission
- Excellent Single Event Effects
 - SELTH: >120MeV/mg/cm²
 - SEUTH: >120MeV/mg/cm²
- Available in 20-pin RAD-PAK® Flat Pack or 20-pin RAD-PAK® DIP
- Low Gain Temperature Coefficient: 5ppm/°C Typ.
- Fast Interface Timing
- Single +5V to +15V Supply

Applications:

- Space

Complete Info: www.ddc-web.com/DtoA

A to D Converter



Model: 9240LPRP

Features:

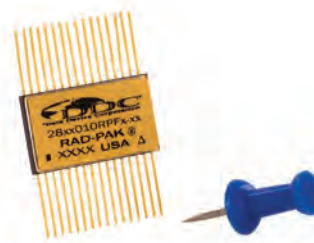
- RAD-PAK® Radiation-Hardened Against Natural Space Radiation
- Low Power Dissipation: 285mW
- Single 5V Supply
- Integral Nonlinearity Error: 2.5LSB
- Differential Nonlinearity Error: 0.36LSB
- On-chip Sample-and-Hold Amplifier and Voltage Reference
- Signal-to-Noise and Distortion Ratio: 77.5dB
- Spurious-Free Dynamic Range: 90dB
- Total Dose Hardened to 100krads (Si), Dependent on Orbit and Mission Duration

Applications:

- Space

Complete Info: www.ddc-web.com/AtoD

Low Voltage 3.3V EEPROM



Model: 28LV010

Features:

- 3.3V Low Voltage Operation 128k x 8 Bit EEPROM
- RAD-PAK® Radiation-Hardened Against Natural Space Radiation
- Total Dose Hardened > 100krads (Si), Dependent on Space Mission
- Excellent Single Event Effects
 - SEL: >120MeV/cm²/mg
 - SEU: >85MeV/cm²/mg
- Available in 32-pin RAD-PAK® Flat Pack or 32-pin RAD-PAK® DIP
- Low Power Dissipation
 - 20 mW/MHz Active Current
 - 72 μW Standby (maximum)

Applications:

- Space

Complete Info: www.ddc-web.com/EEPROM

5V EEPROM



Model: 28C010T

Features:

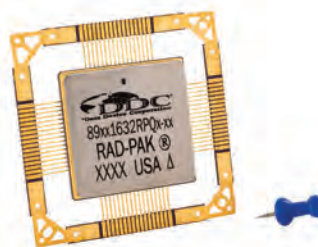
- 128k x 8 Bit EEPROM
- RAD-PAK® Radiation-Hardened Against Natural Space Radiation
- Total Dose Hardened > 100krads (Si), Dependent on Space Mission
- Excellent Single Event Effects
 - SEL_{TH}: >120MeV/cm²/mg
 - SEU_{TH}: >90MeV/cm²/mg
- Available in 32-pin RAD-PAK® Flat Pack or 32-pin RAD-PAK® DIP
- JEDEC-Approved Byte-Wide Pinout
- Low Power Dissipation
 - 20 mW/MHz Active Current
 - 110 μW Standby (maximum)

Applications:

- Space

Complete Info: www.ddc-web.com/EEPROM

Low Voltage 3.3V SRAM



Model: 89LV1632

Features:

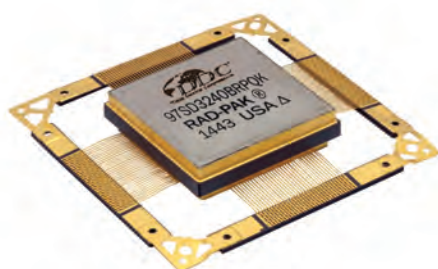
- Four 512k x 8 SRAM Die
- RAD-PAK® Radiation-Hardened Against Natural Space Radiation
- Total Dose Hardened > 100krads (Si), Dependent on Space Mission
- Excellent Single Event Effects
 - SEL: >68MeV/cm²/mg
 - SEU Threshold: 3MeV/cm²/mg
 - SEU Saturated Cross Section: 6E-9cm²/bit
- Available in 68-pin QFP
- 3.3V ±10% Power Supply
- Completely Static Memory - No Clock or Timing Strobe Required

Applications:

- Space

Complete Info: www.ddc-web.com/SRAM

SDRAM



Model: 97SD3240B

Features:

- 1.25 Gigabit: 8Meg x 32-Bit x 4-Banks
- RAD-PAK® Radiation-Hardened Against Natural Space Radiation
- Total Dose Hardened >100krads (Si), Dependent on Space Mission
- Excellent Single Event Effects
 - SEL_{TH}: >85MeV/mg/cm² @25°C
- Available in 132 Lead Quad Stack Pack Flat Package
- JEDEC Standard 3.3V Power Supply
- 100MHz Operation Clock Frequency

Applications:

- Space

Complete Info: www.ddc-web.com/SRAM

PROM



Model: 27C010T

Features:

- 1 Megabit 128K x 8 Bit OTP EPROM Organization
- RAD-PAK® Radiation-Hardened Against Natural Space Radiation
- Total Dose Hardened >100krads (Si), Dependent on Space Mission
- Excellent Single Event Effects
 - SEL_{THLET}: >80MeV/mg/cm²
 - SEU_{THLET}: >80MeV/mg/cm²
- Available in 32 Pin RAD-PAK® DIP
- Fast Access Time: 120, 150, 200ns (max) Times Available
- Low Power Dissipation
 - 50 mW@10MHz Active Current
 - 5μW Standby

Applications:

- Space

Complete Info: www.ddc-web.com/PROM

NAND Flash



Model: 69F256G16

Features:

- RAD-PAK® Radiation-Hardened Against Natural Space Radiation
- Total Dose Hardened > 100krads
- High Density 64, 128, or 256Gb
- NAND Flash Interface: Single Level Cell (SLC) Technology, ONFI 2.2 Compliant
- Operating Voltage: Vcc 3.0 - 3.6V, Vccq 1.7 to 1.95 or 3.0 to 3.6V
- High Reliability Data Storage for Demanding Space Applications
- Ceramic Hermetic Package with Built-in TID Shielding
- Class E, I, H, or K Certified

Applications:

- Space

Complete Info: www.ddc-web.com/Flash

NOR Flash



Model: 56F6408

Features:

- Single Power Supply Operation
- RAD-PAK® Radiation-Hardened Against Natural Space Radiation
- Total Dose Hardened > 100krads
- Single Event Effects: SEL > 60MeV*cm²/mg at 85°C
- Flexible Sector Architecture: 512 64K Word Sectors
- Hardware and Software Data Protection
- 56-Pin RAD-PAK Flat Pack
- 100,000 Erase/Program Cycles per Sector
- Low Power Consumption: 25mA read, 50mA erase/program, 1µA Standby mode

Applications:

- Space

Complete Info: www.ddc-web.com/Flash

Microprocessor



Model: 80386DX

Features:

- 32-Bit Microprocessor
- RAD-PAK® Radiation-Hardened Against Natural Space Radiation
- Total Dose Hardened >100krads (Si), Dependent on Space Mission
- Excellent Single Event Effects
 - SEL_{TH}: 37-60MeV/mg/cm²
 - SEU_{TH}: 3.4MeV/mg/cm²
 - SEL Cross Section 1E-3cm²/bit
- 164 Lead Quad Flat Pack
- 8, 16, 32-Bit Data Types
- 8 General Purpose 32-Bit Registers
- Very Large Address Space
 - 4GB Physical
 - 64TB Virtual
 - 4Gb Maximum Segment Size

Applications:

- Space

Complete Info: www.ddc-web.com/Microprocessor

Multiplexers



Model: 338

Features:

- RAD-PAK® Radiation-Hardened Against Natural Space Radiation
- Total Dose Hardened >100krads (Si), Dependent on Space Mission
- 16 Pin RAD-PAK® Flat Pack
- On-resistance, <400Ω Max
- Transition Time, <500ns
- On-resistance match, <10Ω
- NO-Off Leakage Current, <20pA @ 25°C
- Single-Supply Operation (4.5V to 30V) Bipolar-Supply Operation (±4.5V to ±20V)
- Plug-in Upgrade for Industry Standard DG508A/DG509A

Applications:

- Space

Complete Info: www.ddc-web.com/Multiplexers

Amplifier



Model: OP400A

Features:

- RAD-PAK® Radiation-Hardened Against Natural Space Radiation
- Total Dose Hardened > 100krads (Si), Dependent on Space Mission
- 16-pin RAD-PAK® Flat Pack
- Low Input Offset Voltage 150μA Max
- Low Offset Voltage Drift: +1.2μV/°C Max (Over -55 to +125°C)
- Low Supply Current (Per Amplifier): 725 μA Max
- High Open-Loop Gain: 5000V/mV Min
- Input Bias Current: 3nA Max

Applications:

- Space

Complete Info: www.ddc-web.com/Amplifier

Comparator



Model: 903RP

Features:

- High-Speed, Low-Power Voltage Comparator
- RAD-PAK® Radiation-Hardened Against Natural Space Radiation
- Total Dose Hardened > 100krads (Si), Dependent on Space Mission
- 8ns Typ Propagation Delay
- 18mW Power Consumption (Typ at +5V)
- Separate Analog and Digital Supplies
- Flexible Analog Supply: +5V to +10V or ±5V
- Input Range Includes Negative Supply Rail

Applications:

- Space

Complete Info: www.ddc-web.com/Comparator

Buffers/Drivers/Transceivers



Model: 54LVTH16224A

Features:

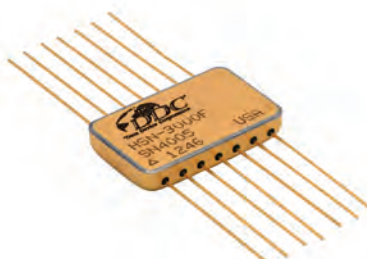
- RAD-PAK® Radiation-Hardened Against Natural Space Radiation
- Total Dose Hardened > 100krads (Si), Dependent on Space Mission
- No External Resistors Required, Output Ports Have Equivalent 22-Ω Series Resistors
- Supports Mixed-Mode Signal Operation: 5V Input & Output Voltages with 3.3V Vcc
- 48-Pin RAD-PAK Flat Pack
- Supports Unregulated Battery Operation Down to 2.7V
- Typical VOLP <0.8V at Vcc = 3.3V, TA = 25°C

Applications:

- Space

Complete Info: www.ddc-web.com/Buffers

Nuclear Event Detectors



Model: HSN-3000

Features:

- Detects Ionizing Radiation Pulses
- 100% Tested/Certified Detection Threshold Level
- Adjustable Circumvention Period
- 100% Testable with Built-In Test
- Flat Pack or DIP Package
- Single +5V Operation
- Radiation Hardness Guaranteed
 - Compliant to MIL-PRF-38534 Class H
 - Dose Rate: 1x10¹²rad(Si)/sec
 - Total Dose: 1x10⁶rad(Si)
 - Neutron Fluence: 5x10¹⁰n/cm²
 - Approximate Detection Range: 2x10⁵ - 2x10⁷rad(Si)/sec

Applications:

- Defense

Complete Info: www.ddc-web.com/NED

Optocouplers

Transistor



Model: CS200, CS201

Features:

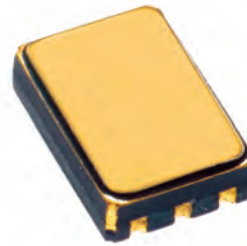
- Released to European Standard and Complies MIL-STD
- Hermetically Sealed
- High Isolation: 1500Vdc
- 6-Pin Dual In-Line Package
- Low Input Requirements
- High Current Transfer Ratio
- Total Ionizing Dose Tested to 150krad (Si)
- Displacement Damage Tested to $1 \text{ MEV} \times 10^{12}$

Applications:

- Space
- Defense

Complete Info: www.ddc-web.com/Optocouplers

High Speed



Model: CSM-1800

Features:

- Released to European Standard and Complies MIL-STD
- Hermetically Sealed
- High Isolation Voltage
- 6-Pin LCC Package
- Low Input Requirements
- High Speed; Typically 2Mhz
- Total Ionizing Dose Tested to 1mrad (Si)
- Displacement Damage Tested to $3 \text{ MEV} \times 10^{12}$

Applications:

- Space
- Defense

Complete Info: www.ddc-web.com/Optocouplers

High Gain



Model: 6N140A

Features:

- Hermetically Sealed
- High Density Packaging
- 1500V DC Withstand Test Voltage
- Low Input Requirements: 0.5mA
- High Current Transfer Ratio: 100% Typical
- RoHS Compliant

Applications:

- Space
- Defense

Complete Info: www.ddc-web.com/Optocouplers

High Gain Photon



Model: CS600

Features:

- Hermetically Sealed
- High Density Packaging
- 1500V DC Withstand Test Voltage
- Low Input Requirements
- High Current Transfer Ratio
- RoHS Compliant

Applications:

- Space
- Defense

Complete Info: www.ddc-web.com/Optocouplers

Power



Smart Power Management

DDC offers proven Smart Power solutions that enable land, sea, air, and space vehicle systems the ability to utilize and distribute raw and conditioned power more efficiently and reliably. The combination of power management via our Solid-State Power Controller (SSPC) technology, which replaces electromechanical switches, relays, and circuit breakers, integrated with DDC Electronics Limited (Pascall) Power Conversion Systems, provide high quality power in a reliable, field-proven, custom "fit and forget" design for the most demanding applications.

DDC solutions provide higher efficiency, reducing fuel consumption, heat dissipation and simplifying integration. These systems enjoy the benefits of:

- Increased Reliability and load protection
- Greater Efficiency through automated load shedding and state of the art power conversion technology.
- Enhanced Performance through operator control with programmable user interfaces.
- Performance through reduced size, weight, and power (SWaP) dissipation

DDC continues to be a technology leader in the design of smart power systems to meet challenging customer demands. Our track record of product developments & improvements are the choice of system integrators worldwide as the smart choice for power solutions.

More Efficiency

- Network control... saves operator effort and time with centralized system management
- Vehicle health and diagnostics monitoring... eliminates need for unnecessary scheduled maintenance and provides fast identification of faults to be addressed
- Programmable power distribution... saves operator time by allowing power control of multiple loads with a single command
- Reduced size, weight, and power (SWaP)... saves fuel and extends mission range
 - 7x improvement in power/volume density
 - 5x improvement in power/weight density
 - 70% reduction in dissipated power
- Best in industry noise floor... 2 magnitudes lower than the competitors

More Reliability

- Over 25x Improvement in MTBF... extends mission readiness, range, and effectiveness
 - No vibration-sensitive contacts or wearing parts to fail
- Reduced EMI from controlled switching time... promotes safe and reliable operation of other onboard electronics
- Low risk battle proven technology... High TRL solutions controlling more than 1,000,000 deployed nodes since 1988
- Instant trip, and true I2T wire protection... safeguards mission critical electronics

More Performance

- Programmable power distribution... reduces logistics costs through flexible software configuration of channels
 - Easily reconfigure trip levels and power up defaults to respond to ever changing mission parameters
 - Channel paralleling to support high current loads
- Faster response... at least 40 times faster fault clearance time (less than 1ms) allows operator to quickly bring vehicle electronics back on line to continue mission
- Vehicle health and diagnostics monitoring... quickly identifies potential faults to maintain peak vehicle operation
- Flexible architecture reduces total ownership cost through adaptability to new mission requirements
- Optimized custom solutions engineered for maximum performance to serve specific application needs

Solid-State Power Controllers



Smart Power Management

DDC is the world leader in the design and manufacture of programmable solid-state power controllers (SSPC) for military vehicles, with more than 1,000,000 nodes installed since 1988. In addition to distributing and controlling power with reduced SWaP, while protecting loads and wire harnesses with higher reliability and longer life, DDC SSPCs also enable smart power management that simplifies vehicle power control and provides health and diagnostics data that allows the operator to focus on other mission critical activities.

SSPCs replace traditional electromechanical relays and thermal circuit breakers in power distribution systems, offering more accurate trip protection with solid-state reliability, while reducing overall vehicle-level weight.

DDC was the first to offer SSPCs for ground vehicles, UAVs, and non flight critical civil aerospace platforms. Highly reliable, these products are used in the M2 Bradley Fighting Vehicles, M1 Abrams Main Battle Tank, M109A7 Paladin Howitzer, Oshkosh Defence's family of Joint Light Tactical Vehicles (JLTV), and other high performance/severe environment applications.

DDC's SSPCs support real-time digital status reporting and computer control, and are equipped with instant trip, true I²T wire protection, multiple value added options, and supports multiple communications protocols. DDC offers custom SSPC modules that are rated up to 400A, and multi-channel boards that are rated up to 100A per channel. SSPCs offer reduced size and weight compared to electromechanical approaches, while also providing enhanced performance and functionality.

History of Innovation

Year	Product/Innovation
1980	DDC Innovations <ul style="list-style-type: none"> • Solid State Protection • Remote Control • Controlled Rise/Fall Times
1990	DDC Innovations <ul style="list-style-type: none"> • Programmable Trip • Channel Paralleling • Network Control
2000	DDC Innovations <ul style="list-style-type: none"> • Increased Accuracy • Load Health Monitoring • Autonomous Alarms
2010	DDC Innovations <ul style="list-style-type: none"> • Stand Alone Controller • High Power • Smart Point-of-Load Modules
2011	DDC Innovations <ul style="list-style-type: none"> • Ruggedized Enclosures with Standardized Connectors • Improved Mission Safety & Longevity • Reduced Weight and Space
2012	DDC Innovations <ul style="list-style-type: none"> • High Power PDU's (Power Distribution Units)
2013	DDC Innovations <ul style="list-style-type: none"> • Light Weight PDU's for Aerospace • Standard LRM's (Line Replaceable Modules)
2014	DDC Innovations <ul style="list-style-type: none"> • PDU's Engineered for Industrial and Commercial Vehicles • Increased and Flexible Channel Count • High Power 100 A Channels • 32 Channel High Density Boards
2015	DDC Innovations <ul style="list-style-type: none"> • Flight Safety-Critical PDU • Redundancy & Fail-Safe Features • Designed to meet DO-178 & DO-160
2017	DDC Innovations <ul style="list-style-type: none"> • Aircraft Mission Power Management • Combined 115VAC / 28VDC Power Distribution System • Power Management Software Suite

More than 1,000,000 DDC SSPC nodes installed on Military Vehicles since 1988

Solid-State Power Controllers																		
Product Number	Package						Voltage		Current (A)	Features						Page		
	20 Pin	Module	Circuit Card Assembly	IP-67 Enclosure	IP-65 Enclosure	Connector	Power Studs	DC		AC	Programmable	EMI - Tolerant	EMI Reduction	Low Power Dissipation	I ² t & Instant Trip Protection		Channel Count	High Voltage
Power System																		
RP-2A000000X		■			■	■		28	115	<1500	■	■		■	■	>150	■	41
Power Distribution Units																		
RP-20161XXXX/D1				■		■		28		238	■		■	■	■	16		41
RP-201617XXXS1							■	28		140	■		■	■	■	16		41
RP-20321X					■	■		28		120	■		■	■	■	32		41
RP-2F241XXXX					■			28		260	■		■	■	■	24		41
RP-20S14000				■			■	28		300	■		■	■	■	4		42
RP-20S16000				■			■	28		300	■		■	■	■	8		42
RP-20S19000				■				28		200	■		■	■	■	8		42
SSPC Modules																		
RP-21203XX	■	■						100		1-3	■	■						☰
RP-21209XX	■	■						100		3-9	■	■						☰
RP-21225XX	■	■						100		9-25	■	■						☰
RP-2001160S0		■					■	25		3.5-35	■		■	■	■	1		42
RP-22000 Series	■	■					■	28		35-150	■	■						42
SSPC Boards																		
RP-23031M1		■				■		28		35	■		■	■	■	1		45
RP-26231000N1			■			■		28		250	■		■	■	■	20		43
RP-27001X			■			■			115	120	■		■	■	■	10		43
RP-28001000N0			■			■		270		150	■		■	■	■	12	■	43
RP-2621X00NX			■			■		28		238	■		■	■	■	16		44
RP-2640X000NX			■			■		28		200	■		■	■	■	8		44
RP-266XX000N			■			■		28		280	■		■	■	■	32		44
RP-26321000NX			■			■		28		200	■		■	■	■	2		45
RP-2630X00XNX			■			■		28		300	■		■	■	■	4		45
RP-26311000NX			■			■		28		400	■		■	■	■	4		45
RP-2341000			■			■	■	28		400	■		■	■	■	4		44
RP-26200			■			■		28		238	■		■	■	■	16		☰

☰ Visit www.ddc-web.com/pc for complete product information.

Transformers												
Product Number	MIL-PRF-27	Customizable	Operating Frequency				Phase		Electrical Isolation	High Performance Materials	Small Footprint	Page
			50Hz	60Hz	400Hz	Up to 3MHz	1	3				
Power												
MPT-XX-X-XXX	■	■			■			■	■	■	46	
Custom	■	■	■	■	■			■	■	■	46	
Switch Mode												
Custom	■	■				■		■	■		46	

☰ Visit www.ddc-web.com/beta for complete product information.

SSPC Power System

Mission System PDU



Model: RP-2A00000X

Features:

- 115VAC and 28VDC PDU System
- MIL-STD-704F, MIL-STD-1275E
- EMI MIL-STD461F, ENV DO-160G
- Supports 4 RP-2702X 115VAC SSPC and 4 RP-26622X 28VDC Boards
- Up to 6 115VAC Input Buses with 42 1 ϕ (or 14, 3 ϕ) Load Inputs
- Up to 8 28VDC Input Buses with 117 Load Outputs
- CANbus & RS-485 (future option) Communication Interfaces
- Supported by DDC's Power Management Controller Unit, Based on the BU-67125X Avionics Computer

Applications:

- Aircraft Mission System Power Distribution

Complete Info: www.ddc-web.com/RP-2A00000x

Flight Safety-Critical PDU



Model: RP-2F241XXXX

Features:

- Nominal 28VDC Operation, MIL-STD-461, MIL-STD-810, DO-160G Compliant
- MIL-STD-1275E, MIL-STD-704 Compliant
- Total Continuous Current of 260A
- 24 Independent Load Channels
- Channels with 10:1 Current Programmability
- Redundant Channel Failsafe Mechanism
- Dual Redundant Host Controllers
- Dedicated Controller per ECB/ Load Channel
- Redundant Serial Interface

Applications:

- Commercial and Military Aircrafts
- Unmanned Aerial Vehicles

Complete Info: www.ddc-web.com/RP-2F241X

SSPC Power Distribution Units

32 Channel, Light-Weight PDU



Model: RP-20321X

Features:

- Optimized Weight for Flight < 3lbs
- Nominal 28VDC Operation, MIL-STD-1275E, MIL-STD-704 Compliant
- Total Continuous Current of 120A
- 32 Independent Load Channels
- 5A, 10A, and 20A Channels with 10:1 Current Programmability
- 1A, Low Side Channels
- Instant Trip and I²t Protection/ Thermal Memory
- Controlled Rise/Fall Times
- Channel Paralleling for High Loads

Applications:

- Military Land Vehicles
- Commercial Trucks
- Military and Commercial Ships
- Weapon Systems
- Unmanned Vehicles
- Industrial Controls

Complete Info: www.ddc-web.com/RP-20321X

16 Channel



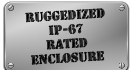
RP-20161XXC1



RP-20161XXD1



RP-20161XXS1



Model: RP-20161XXC1, RP-20161XXD1, RP-20161XXS1

Features:

- Nominal 28VDC Operation, MIL-STD-1275D, MIL-STD-461, MIL-STD-810, and Def Stan 61-5 Compliant
- Ruggedized, IP-67 Rated Enclosure with Military Connectors
- Total Continuous Current of 238A
- 16 Independent Load Channels
- 8A, 10A, and 25A Channels with 10:1 Current Programmability
- Programmable Channel Trip
- Diagnostics: Load Voltage, Current, & Temperature Monitoring
- Controlled Rise/Fall Times
- Channel Paralleling for High Loads

Applications:

- Military Land Vehicles
- Commercial Trucks
- Military and Commercial Ships
- Weapon Systems
- Unmanned Vehicles
- Industrial Controls

Complete Info: www.ddc-web.com/RP-2016

SSPC Power Distribution Units (PDU)

8 Channel Small Form Factor



RUGGEDIZED
IP-67
RATED
ENCLOSURE

Model: RP-20S19

Features:

- Nominal 28VDC Operation, MIL-STD-1275D, MIL-STD-461, MIL-STD-704F and MIL-STD-810 Compliant
- Ruggedized, IP-67 Rated Enclosure with Military Connectors
- Total Continuous Current of 200A
- 8 Independent Load Channels
- 25A Channels with 10:1 Programmability

Applications:

- Military Land Vehicles
- Commercial Trucks
- Military and Commercial Ships
- Weapon Systems
- Unmanned Vehicles
- Industrial Controls

Complete Info: www.ddc-web.com/RP-20S19X

4 Channel Small Form Factor



RP-20S14



RP-20S16

RUGGEDIZED
IP-67
RATED
ENCLOSURE

Model: RP-20S14, RP-20S16

Features:

- Nominal 28VDC Operation, MIL-STD-1275D, MIL-STD-461, MIL-STD-704F and MIL-STD-810 Compliant
- Ruggedized, IP-67 Rated Enclosure with Military Connectors
- Total Continuous Current of 300A
- 4 Independent Load Channels
- 75A Channels with 3:1 Programmability

Applications:

- Military Land Vehicles
- Commercial Trucks
- Military and Commercial Ships
- Weapon Systems
- Unmanned Vehicles
- Industrial Controls

Complete Info: www.ddc-web.com/RP-20S1XX

SSPC Modules

Point-of-Load Module



Model: RP-20011601S0

Features:

- Ruggedized Conduction Cooled
- Total Module Current of 35 Amps
- 3.5A - 35A Programmable Current
- Instant Trip and I²t Protection/ Thermal Memory
- Controlled Rise/Fall Times
- SAE J1939 Compatible CANbus Interface
- Measurement Accuracy Better Than 5%
- Low Power Dissipation

Applications:

- Military Land Vehicles
- Weapon Systems
- Military and Commercial Ships
- Industrial Controls

Complete Info: www.ddc-web.com/RP-200116

Legacy Point-of-Load Modules



Model: RP-22XXX

Features:

- Nominal 28VDC Operation
- Programmable Current Ranges
- EMI-Tolerant
- I²t and Instant Trip
- Opto-Isolated Control Circuitry
- MIL-STD-704 Compliant
- MIL-STD-1275B Compliant
- Status Outputs
- Circuit Breaker Emulation with Coordinated Tripping
- Thermal Memory
- No Thermal Derating
- Battle Short Input

Applications:

- Military Land Vehicles
- Weapon Systems
- Military and Commercial Ships
- Industrial Controls

Complete Info: www.ddc-web.com/RP-22XXX

SSPC Boards

115V AC, Multi-Channel



Model: RP-27001X

Features:

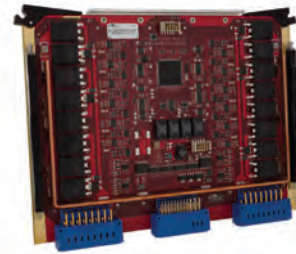
- Nominal 115VAC Operation, MIL-STD-704F Compliant
- Ruggedized Conduction Cooled
- Total Continuous Current of 120A
- 10 Independent Load Channels
- 7.5A and 15A Channels with 10:1 Current Programmability
- Controlled Rise/Fall Times
- Channel Paralleling for High Current Loads
- Configurable for Three Phase (Wye/Delta) Operation
- Instant Trip and I²t Protection/ Thermal Memory

Applications:

- Commercial and Military Aircrafts
- Unmanned Aerial Vehicles
- Military and Commercial Ships
- Weapon Systems
- Unmanned Vehicles
- Industrial Controls

Complete Info: www.ddc-web.com/RP-27001X

270V DC, 12 Channel



Model: RP-28001000N0

Features:

- Nominal 270VDC Operation, MIL-STD-1275E, MIL-STD-704F, and Def Stan 61-5 Compliant
- MIL-STD-1275D option
- Ruggedized Conduction Cooled
- Total Continuous Current of 238A
- 16 Independent Load Channels
- 8A, 10A, and 25A Channels with 10:1 Current Programmability
- Instant Trip and I²t Protection/ Thermal Memory
- Controlled Rise/Fall Times
- Channel Paralleling for High Loads

Applications:

- Military Land Vehicles
- Commercial Trucks
- Military and Commercial Ships
- Weapon Systems
- Unmanned Vehicles
- Industrial Controls

Complete Info: www.ddc-web.com/RP-28001X

Line Replaceable Module (LRM)



Model: RP-26231000N1

Features:

- Nominal 28VDC Operation, MIL-STD-1275E and MIL-STD-704F Compliant
- Field Replaceable Form Factor
- Ruggedized Conduction Cooled
- Total Continuous Current of 50A
- 16 Independent Load Channels, 20 Channel Option
- 8A, 10A, and 25A Channels with 10:1 Current Programmability
- Instant Trip and I²t Protection/ Thermal Memory
- Controlled Rise/Fall Times
- Channel Paralleling for High Loads

Applications:

- Military Land Vehicles
- Commercial Trucks
- Military and Commercial Ships
- Weapon Systems
- Unmanned Vehicles
- Industrial Controls

Complete Info: www.ddc-web.com/RP-262310

Did You Know?

Data Device Corporation's field-proven Solid-State Power Controller technology is now optimized for airborne applications.

Aircrafts require high reliability solutions, with minimal weight and footprints. DDC's power distribution units combine the reliability of smart power management with flight safety requirements, in a compact and light-weight package.

SSPC Boards

32 Channel



Model: RP-266XX000N0

Features:

- Nominal 28VDC Operation, MIL-STD-1275E and MIL-STD-704F Compliant
- Split Input Bus
- Ruggedized Conduction Cooled
- Total Continuous Current of 280A
- 32 Independent Load Channels
- 10A Channels with 10:1 Current Programmability
- Instant Trip and I²t Protection/Thermal Memory
- Controlled Rise/Fall Times
- Channel Paralleling for High Loads

Applications:

- Military Land Vehicles
- Commercial Trucks
- Military and Commercial Ships
- Weapon Systems
- Unmanned Vehicles
- Industrial Controls

Complete Info: www.ddc-web.com/RP-26611

8 Channel



Model: RP-2640X000NX

Features:

- Nominal 28VDC Operation, MIL-STD-1275E, MIL-STD-704F, and Def Stan 61-5 Compliant
- MIL-STD-1275D Option
- Ruggedized Conduction Cooled
- Total Continuous Current of 200A
- 8 Independent Load Channels
- 25A Channels with 10:1 Current Programmability
- Instant Trip and I²t Protection/Thermal Memory
- Controlled Rise/Fall Times
- Channel Paralleling for High Loads

Applications:

- Military Land Vehicles
- Commercial Trucks
- Military and Commercial Ships
- Weapon Systems
- Unmanned Vehicles
- Industrial Controls

Complete Info: www.ddc-web.com/RP-2640X

16 Channel



Model: RP-2621X00XNX

Features:

- Nominal 28VDC Operation, MIL-STD-1275E, MIL-STD-704F, and Def Stan 61-5 Compliant
- MIL-STD-1275D option
- Ruggedized Conduction Cooled
- Total Continuous Current of 238A
- 16 Independent Load Channels
- 8A, 10A, and 25A Channels with 10:1 Current Programmability
- Instant Trip and I²t Protection/Thermal Memory
- Controlled Rise/Fall Times
- Channel Paralleling for High Loads

Applications:

- Military Land Vehicles
- Commercial Trucks
- Military and Commercial Ships
- Weapon Systems
- Unmanned Vehicles
- Industrial Controls

Complete Info: www.ddc-web.com/RP-26200

4 Channel, High Power



Model: RP-2341000NX

Features:

- Nominal 28VDC Operation, MIL-STD-1275E and MIL-STD-704F Compliant
- Ruggedized Conduction Cooled
- Total Continuous Current of 400A
- 4 x 100 Amp Channels with 4:1 Programmability and Independent Inputs
- Controlled Rise/Fall Times
- Channel Paralleling up to 200A

Applications:

- Military Land Vehicles
- Commercial Trucks
- Military and Commercial Ships
- Weapon Systems
- Unmanned Vehicles
- Industrial Controls

Complete Info: www.ddc-web.com/RP-23410

SSPC Boards

4 Channel, High Power



Model: RP-2630X00NX

Features:

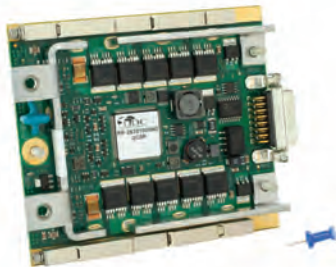
- Nominal 28VDC Operation, MIL-STD-1275E and MIL-STD-704F Compliant
- MIL-STD-1275D Option
- Ruggedized Conduction Cooled
- Total Continuous Current of 300A
- 4 Independent Load Channels
- 75-Amp Channels with 3:1 Programmability
- Controlled Rise/Fall Times
- Channel Paralleling for High Loads

Applications:

- Military Land Vehicles
- Commercial Trucks
- Primary Power Switching
 - Generators
 - Batteries
- Military and Commercial Ships
- Weapon Systems
- Unmanned Vehicles
- Industrial Controls

Complete Info: www.ddc-web.com/RP-26300

2 Channel, High Power



Model: RP-26321000NX

Features:

- Nominal 28VDC Operation, MIL-STD-1275E and MIL-STD-704F Compliant
- Ruggedized Conduction Cooled
- Total Continuous Current of 200A
- 2 Independent Load Channels
- 100-Amp Channels with 4:1 Programmability
- Controlled Rise/Fall Times
- Channel Paralleling for High Loads
- Small Footprint: 114mm x 100mm x 25.42 (4.5in x 3.94in x 1in)

Applications:

- Military Land Vehicles
- Commercial Trucks
- Military and Commercial Ships
- Weapon Systems
- Unmanned Vehicles
- Industrial Controls

Complete Info: www.ddc-web.com/RP-26321

4 Channel, High Power



Model: RP-26311000NX

Features:

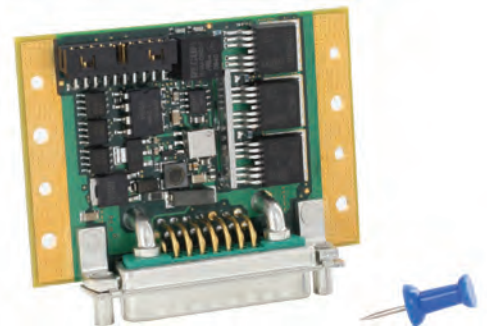
- Nominal 28VDC Operation, MIL-STD-1275E and MIL-STD-704F Compliant
- Ruggedized Conduction Cooled
- Total Continuous Current of 400A
- 4 Independent Load Channels
- 100-Amp Channels with 4:1 Programmability
- Controlled Rise/Fall Times
- Channel Paralleling for High Loads

Applications:

- Military Land Vehicles
- Commercial Trucks
- Military and Commercial Ships
- Weapon Systems
- Unmanned Vehicles
- Industrial Controls

Complete Info: www.ddc-web.com/RP-26311

1 Channel



Model: RP-23031M1

Features:

- Nominal 28VDC Operation, MIL-STD-1275E and MIL-STD-704F Compliant
- Ruggedized Conduction Cooled
- Total Module Current of 35 Amps
- 10:1 Current Programmability
- Instant Trip and I²t Protection/ Thermal Memory
- Controlled Rise/Fall Times

Applications:

- Military Land Vehicles
- Weapon Systems
- Military and Commercial Ships
- Unmanned Systems
- Industrial Controls

Complete Info: www.ddc-web.com/RP-23031M

Transformers

Power



Model: MPT-XX-X-XXX

Features:

- MIL-PRF-27, QLP-DSCC Qualified
- Designation MIL-PRF-27/43-01 A/B Through MIL-PRF-27/44-46 A/B
- Temp Range: -55°C to +130°C
- Toroidal Construction for Minimal Size/EMI
- Extensive List of Standard Output Voltages
- Split Secondary Winding Available for Design Flexibility
- Available from 2.0VA to 9.0VA
- Standard Primary Voltage 115V, 26V Available

Applications:

- Mission Computers
- Digital Data Reorders
- LRUs
- Radios/Modems
- Radar Systems/Situational Awareness
- Displays
- Ground Vehicles
- Commercial Aerospace
- Space Flight
- Power Supplies

Complete Info: www.BTTC-Beta.com/MPT



Model: Custom

Features:

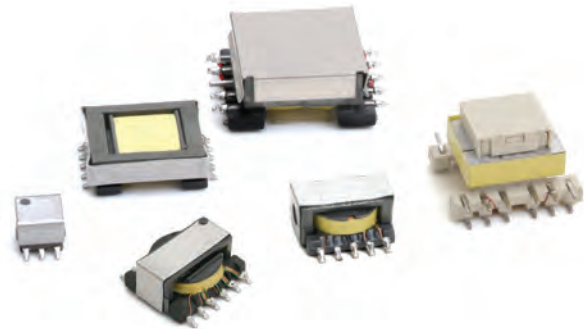
- Designed and Manufactured to Meet MIL-PRF-27, Class S, Grade 5 Requirements
- High Performance Materials Enable the Smallest Footprint and Volume
- Available from 1VA to 10kVA
- 50, 60, or 400Hz
- Single or Three Phase
- Custom Designed/Manufactured Transformers Available

Applications:

- Mission Computers
- Digital Data Reorders
- LRUs
- Radios/Modems
- Radar Systems/Situational Awareness
- Displays
- Ground Vehicles
- Commercial Aerospace
- Space Flight
- Power Supplies

Complete Info: www.BTTC-Beta.com/PT

Switch Mode



Model: Custom

Features:

- Operating Frequency Up to 3MHz
- Low Profile Packages
- Custom Input & Output Windings
- Provides a Smaller, Lighter, and More Efficient Means for Converting Voltages
- Allows for a Wide Range of Voltages or Current Conversion, as Compared to Inductors
- MIL-PRF-27 Grade 6 Construction
- Isolation Up to 2500 Volts
- Available from 0.7 to 15 Watts
- Custom Designed/Manufactured Transformers Available

Applications:

- Power Supplies, AC-DC
- Power Supplies, DC-DC
- Power Over Ethernet
- Point of Load
- Gate Drive
- Current Transformers

Complete Info: www.BTTC-Beta.com/SMT

Did You Know?

Beta's power transformers can be fully customized, offering:

- One Phase or Three Phase
- Up to 2000 Volts
- Up to 100 Amps
- Up to 10 kW of Power
- Space Qualification
 - MIL-STD-981
 - MIL-PRF-27

Power Supplies



Pascall | XCEL

DDC Electronics, Ltd. specializes in the design and manufacture of power supply solutions for extreme environments. With over 30 years of experience in the defence, aerospace and industrial sectors, DDC Electronics, Ltd. is a trusted source for complete solutions in the design, development and manufacture of electronic power conversion products – from single converters to complex multi-function conversion systems. DDC Electronics products are the first choice for power with In-Flight Entertainment & Connectivity (IFEC) and defense systems. There are more than 170,000 Pascall power supply units installed on commercial aircraft. XCEL and Pascall power supply units are in service with Ground, Air and Naval forces across the world, powering state of the art electronic systems, and trusted by industry leaders to deliver reliable proven performance in some of the most challenging environments to be found anywhere. Our power supply solutions are completely customizable.

IFEC Systems

Pascall is renowned within the aerospace industry for producing high performance and high reliability cabin and electronics bay power solutions. Our products are currently used in applications such as seat boxes, media file servers, satcom antennas, passenger display screens, direct broadcast satellite TV, cellular phone communications & USB charging for portable electronic devices, with high power capability.

Frequency Generation

DDC is a specialist supplier of RF & Microwave components, and sub-systems specifically for frequency generation.

With over 30 years designing and manufacturing for the main primes in the United States, Europe and Asia, the RF division has established Pascall as a leading supplier of reliable products on programs with applications including Radar, Communications, Air Traffic Control, ELINT, SIGINT, Marine and Weather radar.

The RF division has particular expertise in ultra low noise frequency sources including the company's industry leading ultra low noise VHF crystal oscillator range and customized low noise multi-channel fast switching synthesizers.

Airborne Defense Systems

DDC has over 30 years of experience designing power conversion products for airborne applications. Our products are in service on many fighter aircraft platforms including Hawk Trainers, F16, Jaguar, Tornado and EuroFighter Typhoon. We also provide solutions for the Nimrod MR2 and MR4 reconnaissance aircraft, Tiger Helicopter, and Watchkeeper Unmanned Aircraft.

Maritime Defense Systems

DDC designs and manufactures power supply products for a wide variety of maritime applications, where robust, rugged construction is required to offer high reliability and protection from some of the most demanding environmental conditions, including salt fog, ice and total immersion. On board military surface vessels we provide power for data networking and communications equipment thermal imagers and electronic warfare systems, including radar control and weapons guidance.

Ground Defense Systems

DDC has been providing state of the art power conversion solutions for military ground equipment for over 30 years. Our products are in service with ground forces across the world, providing high reliability power for secure communications, optical and infrared imaging, missile command and control systems, and mobile power conditioning solutions for both command centre and remote operated man-portable applications.

Design Capabilities

DDC's design capabilities include: AC to DC Converters (Single and Three Phase), DC to DC Converters, Custom Discrete Designs, Typical Power Range 10W to 4KW, Insulated Metal Substrate (MS) Thermal Management, Multiple Outputs, Active Power Factor Correction, Battery/Capacitor Backup, High Vibration/Shock Environments, Motor Controllers, Wide Temperature Range (-55°C to +100°C), RTCA-DO-160 Current Harmonics, EMI Filter Design, DC - 13GHz, Complies with Military Standards (MIL-STD-461, MIL-STD-704, MIL-STD-810, MIL-STD-1275, and Def-Stan 59-41).

Cabin Power Solutions



Model: 1-14683-R

Features:

- 60V to 122Vrms 1Ø, 360Hz - 800Hz Voltage
- 280W Output Power
- 1 x 28V @ 10A Output, Current Limit Protected, Can be Provided Without for PED Power Solutions
- 200ms Hold-Up Capability
- Compliant to RTCA-DO-160G
- Convection Cooled Chassis
- Isolated RS-485 half-Duplex Serial Interface
- Meets Requirements of EU ROHS Directive 2011/65/EU

Applications:

- USB PED Power Systems
- Connectivity Systems
- Display Power
- Lighting

Complete Info: www.ddc-web.com/114683

Frequency Generation Solutions



Model: Custom

Features:

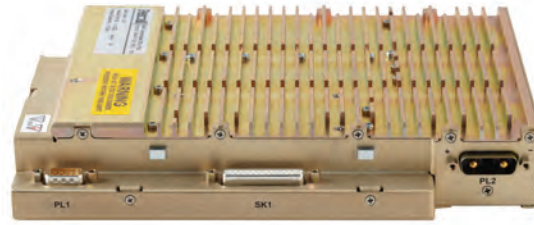
- Customized Low Noise Multi-Channel Fast Switching Synthesizers
 - C, L, S, and X Band
 - Marine X & S Band Radar Transponders
- OXC0 and OXC0F Series:
- Ultra Low Noise Crystal Oscillators
 - 40 - 160MHz
 - Guaranteed Noise Floors of -182dBc/Hz
- XMN and XMNP Series:
- Ultra Low Noise Signal Sources
 - Integrated Multiplies Covering 200MHz - 3.0GHz

Applications:

- Frequency and Timing Systems
- Lightweight UAV Radar
- Naval Radar
- EW/ECM Receivers
- MRI Scanner
- Missile Seeker
- AESA Fire Control Radar
- Ground Radar

Complete Info: www.ddc-web.com/FG

IFEC System Solutions



Model: Custom

Features:

- Reliable, Field-Proven Custom "Fit and Forget" IFEC Solutions
- Line Replaceable Units, Integrated Assemblies, and Embedded Power Supplies
- Power Ranges from 10 Watts to Several Kilowatts
- Inputs of 115VAC, 28VDC, or Dual 115VAC/28VDC
- Additional Battery or Capacitor Backup Capability
- Full Conformance to RTCA-DO-160 Requirements, Airbus, and Boeing Specifications

Applications:

- Crew Terminals
- Cell Phone Communications
- SATCOM Antenna Control
- Video Display Unit
- Overhead Display Unit
- Wireless Access Point
- Cabin Lighting
- AC Power
- Portable Electronics Power
- Power Distribution Unit
- IFE Seat Display
- Seat Actuation
- External Camera System
- Flight Data Acquisition

Complete Info: www.ddc-web.com/IFEC

Defense System Solutions



Model: Custom

Features:

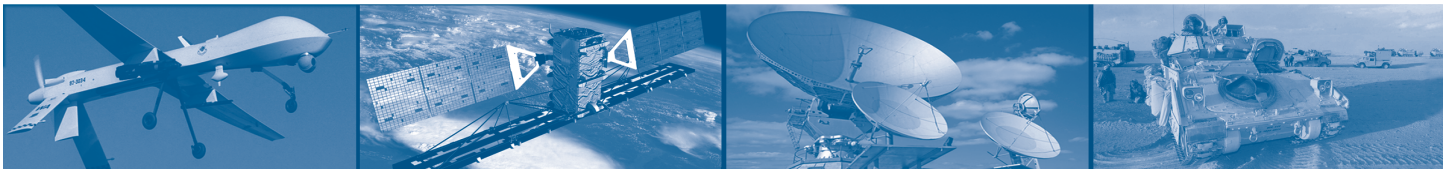
- Airborne:
- MIL-STD-704 Input Supply Transient Conditions
 - MIL-STD-461 EMC Requirements
 - DO-160 Civil Aircraft EMC
- Maritime:
- MIL-STD-1399 Shipboard Power
 - STANAG 1008 NATO Power
 - MIL-STD-461 EMC Requirements
- Ground:
- MIL-STD-1275 Input Supply Transient Conditions
 - DEF STAN 59-411 EMC to Land Class A Requirements
 - MIL-STD-810 Environmental

Applications:

- Defensive Aids Sub System
- Cockpit Displays
- Airborne Radar Processing
- Helicopter Helmet Display
- UAV Radar
- Laser Targeting Power
- Data Network Tactical Comm
- Navy Warship ESM System
- Opto-Electronic Periscope
- Ship-to-Air Defense Weapons
- Subsea Electronics
- Ground-to-Air Defense
- Military Vehicle Power
- Optical Imaging/ Infrared

Complete Info: www.ddc-web.com/DDCEL/Defense

Signal Processing



North Hills: Interconnect | Interface | Wideband | Power

North Hills, acquired by Data Device Corporation in May 2017, is a leading provider of measurement and connectivity solutions. Since 1952, its leading-edge products continue meeting the demanding needs of OEM customers in the military, aerospace, instrumentation, medical and industrial process control markets. North Hills is a leading manufacturer of MIL-STD-1553 data bus couplers, network testers, and related hardware, including cables, connectors, and terminators. North Hills is also a leading manufacturer of RF wideband video and RF transformers, offering superior performance and product consistency.

Data Bus Products

North Hills is a leading world wide supplier of MIL-STD-1553 data bus couplers, testers, and accessories such as cable, connectors, terminators, dust caps, etc. We are a one-stop shop with a variety of custom and off-the-shelf products. Our data bus couplers use transformers with superior performance and product consistency, manufactured in accordance with MIL-PRF-21038 with excellent common mode rejection ratios. North Hills has been designing and manufacturing transformers since 1953 and is an approved supplier for all major military programs.

High Speed Products

North Hills' high speed product line includes a large selection of interface cable products targeting the high speed data interconnect market. Cable assembly products for signaling technologies including IEEE1394b / AS5643 FireWire, IEEE 802.3 Ethernet, Fibre Channel, and SMPTE comprise the High Speed Interconnect Product Line and join the legacy MIL-STD-1553 products of North Hills.

Wideband Products

North Hills' wideband product line has been providing leading solutions for signal processing needs in wideband frequency range. Impedance matching transformers, balun transformers, DC isolation transformers and ground isolation solutions are all available in packages tailored for instrumentation test, flight and bench testing needs. Products are currently available in numerous configurations and the web-based product finder is a helpful tool to identify the particular product of your design needs.

Power Products

North Hills Signal Processing offers a complete line of board mounted magnetics for use in all high reliability environments including military and space applications. Products include numerous transformers topologies including fly-back, push-pull, full bridge, gate drive and buck-boost. Also available are inductors for use in current sense and noise filtration. All magnetics are built in full compliance to MIL-STD-981, MIL-PRF-27, EEE-INST-002 and J-STD-001 and can be configured to meet all NASA outgassing requirements.

Development, Testing, and Validation Capabilities

North Hills complies with the following standards: MIL-STD-981, NASA EEE-INST0002, IPC J-STD-001DS, MIL-PRF-21038, MIL-STD-1553, MIL-PRF-27, MIL-STD-202, ECSS-Q-ST-70-38C, SSQ-21676, MIL-STD-883, Custom Power Magnetics Design/Build, Custom Signal Magnetics Design/Build, ITAR Compliant, AS9100C Certified, ISO9001-2008 Certified.

DDC will be releasing documentation for the complete line of North Hills products. For further information, please email info@ddc-web.com, or visit www.ddc-web.com/northhills.

Interconnect Solutions



Model: Data Bus

Features:

- Single/Multi-Stub Configurations
- In-Line Couplers/Box Couplers:
- Lightweight, Compact Construction
- Thru-Hole Mounting
- Flight Qualified
- Cable Assemblies:
- Custom Configurations
- Space Qualified
- Extended Temperature: -110°C to +135°C
- Space Rated Couplers/Assemblies:
- Extended Temperature: -110°C to +135°C
- Meets NASA Outgassing Req.
- Lightweight, Rugged Construction
- Space Flight Qualified
- Accessories:
- Terminators, Plugs, Jacks, Caps, Adaptors
- Hand Held Databus Testers

Applications:

- Fixed Wing and Rotor Aircraft
- Manned Space Applications
- Satellites
- Rocket Lift Systems

Complete Info: www.ddc-web.com/northhills

Wideband Solutions



Model: Wideband

Features:

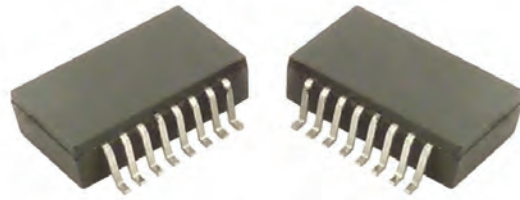
- Video Isolation:
- Humstoppers, Humbuckers
- Flat Frequency Performance
- Linear Phase Response
- Ultra-Wide Bandwidth
- Instrumentation:
- Longitudinal Balance Bridges
- Common Mode Injectors
- Return Loss Bridges
- Signal Converters
- Baluns:
- High Frequency to 1.5Ghz
- Low Insertion/Return Loss
- Custom - Wide Bandwidth
- SMTPE Applications
- Isolation Transformers:
- RF Power Series
- Extended Video Series
- Coaxial Impedance Adaptors
- Video Splitter/Combiner

Applications:

- Ground Based Radar Systems
- UAV Flight Control Base Stations
- Flight Systems Test
- Instrumentation Bench Test

Complete Info: www.ddc-web.com/northhills

Interface Solutions



Model: High Speed

Features:

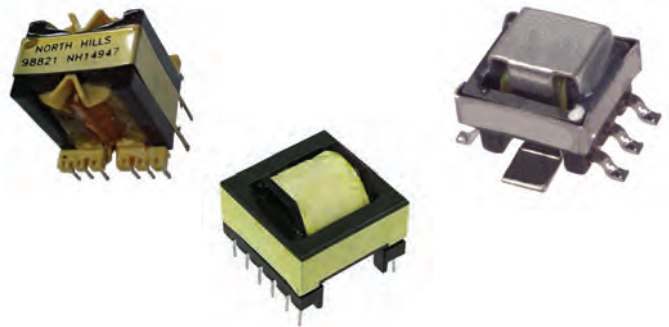
- Transformers:
- Isolation/Circuit Protection
- Single/Dual Channel
- Ethernet/Firewire/SMPTE/Fibre Channel
- Up to 3.2Gb/s
- Active Transceivers/Active Transformers:
- AS5643 Firewire
- Fibre Channel
- SMPTE - 292M
- 802.3 Ethernet

Applications:

- Mission Computers
- Radar Systems
- Displays and Digital Maps
- FLIR/Night Vision
- Flight Mission Systems
- Avionics Flight Control Systems

Complete Info: www.ddc-web.com/northhills

Power Solutions



Model: Power

Features:

- Current Transformers:
- Single/Multi Phase
- 50kHz to 1MHz
- Transformers:
- Custom Designs
- Flyback
- Push-Pull, Buck/Boost, Buck-Boost
- Gate Drive
- Power Inductors:
- Surface Mount/Thru-Hole
- Toroid/Header Configurations
- Transformers:
- Common Mode
- Differential Mode
- Custom Designs
- Shielded Options Available

Applications:

- Board Level Power Conversion
- Current Sense Circuits
- Power Filtration
- IFE Power Systems

Complete Info: www.ddc-web.com/northhills

Control



Compact and High Reliability Motion Control Solutions

DDC is a market leader in high reliability motor control and synchro/resolver positioning solutions for aerospace, military, space, and industrial environments. DDC's products deliver high accuracy positioning and dependability, while being cost effective solutions, to provide much greater reliability and load protection

- COTS/MOTS solutions for synchro/resolver feedback, and motor drive and control
- High accuracy position feedback
- High-performance position, torque, and speed controllers and drives for 3-phase brushless DC motors
- Optimized custom integrated high reliability motion control solutions available to support specific application requirements

More Efficiency

- Low-cost BLDC motor controllers deliver high performance torque, speed and position control
- Integrated single-module solutions offer the highest power density available
- Synchro/Resolver converters can interface with Synchro, Resolver, LVDT, RVDT, MR, and Hall sensors
- Multi-channel Synchro/Resolver hybrids and cards help reduce overall design cost
- Portable USB Synchro/Resolver test system simplifies motion control testing

More Reliability

- High MTBF increases system dependability and longevity
- Class H and K Rad Tolerant hybrids meet the extreme demands of space applications
- Field proven Synchro/Resolver converters have years of service history to achieve high Technology Readiness Level (TRL)
- Rugged Synchro/Resolver hybrids are engineered for hermeticity, dust, fluid, shock, vibration and extreme temperatures

More Performance

- Programmability allows common design to be used across multiple application platforms
- Faster response... at least 40 times faster fault clearance time (less than 1ms) allows operator to quickly bring vehicle electronics back on line to continue mission
- Complementary drives provide reduced power dissipation, along with a smooth transition through zero torque with no "dead zone" for critical applications
- Synchro/Resolver converters provide high precision accuracy, resolution and repeatability
- Synchro/Resolver converters provide a Velocity output for speed monitoring and closing speed loops
- Programmable PCI Express Digital to Synchro/Resolver card offers versatility in motion feedback testing and simulation with instrument grade accuracy
- Widest selection of accuracy and temperature options tailored to fit a vast range of applications

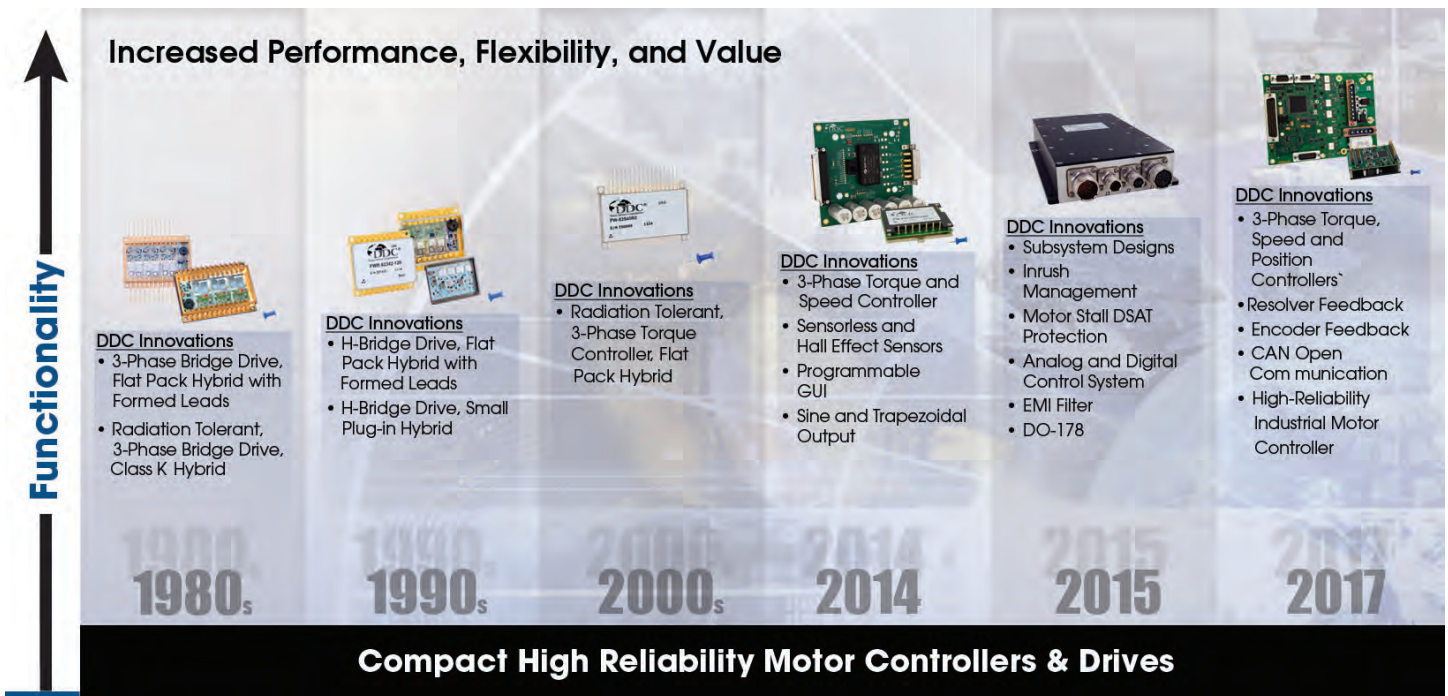
Motor Drives and Controllers



High Precision, Plug-in Modules and Space Grade Hybrids

DDC is the leading manufacturer of high reliability motor drives and controllers for brushed, brushless and induction motors ranging from 100Vdc to 600Vdc. Our optimized torque and speed control solutions are engineered for demanding environments... from military grade environmental cooling systems, turrets, and radars, to space grade actuators, solar arrays, and reaction wheels, to industrial grade valves, pumps and fans. With more than 50 years of field proven performance in the most critical applications, DDC is uniquely qualified to serve your motor drive and control needs.

History of Innovation



Motor Controllers

DSP Speed/Torque Controllers



Models: PW-82560NX, PW-82562NX, PW-82564NX

Features:

- Self-contained 3-Phase Motor Controller
- Multiple Voltage/Current Ratings: 100V/30A, 200V/10A, 400V/5A
- Up to 95% Duty Cycle Operation
- 7% Linearity, 3% Current Regulating Accuracy
- Programmable via Easy-to-Use GUI or Direct Control Interfaces
- Torque and Speed Control Modes
- 10kHz - 40kHz PWM Frequency
- Hall Effect or Sensorless Feedback
- CANbus and RS-422/RS-485 Control Interfaces

Applications:

- Pump Control for Fuel Pumps
- Electric Actuators
- Electric Valve Control
- Industrial Robotics
- Antenna/Camera Position Control
- Gun Turrets
- Unmanned Vehicle Electric Drives and Thrusters
- Missile Fin Control
- Fans
- Ammunition Loaders

Evaluation Board Available,
See Page 54

Complete Info: www.ddc-web.com/PW-8256XNX

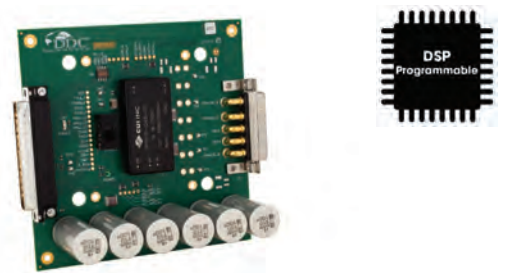
Did You Know?

DDC's manufacturing facility is ISO 9001:2008 Certified, MIL-PRF-38534 Class H compliant, and DSCC certified as MIL-PRF-38534 Class K compliant—the highest quality level for hybrid microcircuits.

The facility combines the precision of clean room manufacturing and environmental conditioning labs with the in-house support of design, process, and application engineering to closely monitor all phases of product fabrication.

Five decades of quality manufacturing and process control has earned DDC the time-honored trust and confidence of a global network of customers.

Evaluation Board



Model: PW-8256XEX

Features:

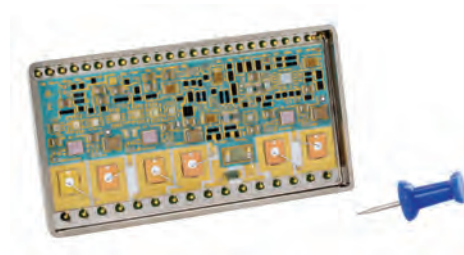
- Includes DDC's PW-8256X Self-Contained 3-Phase Motor Controller
- 28VDC Bus Powered Version Available
- 10kHz - 40kHz PWM Frequency
- Serial Communication Interface
- Programmable Control Loop Parameters
- Compact Size
- Integrated Control and Power Stages with up to 30A Output Current Capability
- Digital or Analog Current Command Input Options

Applications:

- Fans
- Compressors
- Pump Control
- Valve Control
- Electric Actuators
- Electric Valve Control
- Fuel Pumps
- Environmental Cooling Systems
- Industrial Robotics
- Antenna/Camera Position Control
- Gun Turrets
- UUV Electric Drive Systems
- Missile Fin Control

Complete Info: www.ddc-web.com/PW-8256XEX

Torque Loop Controllers



Models: PW-82540NX, PW-82541N0, PW-82550NX, PW-82551N0

Features:

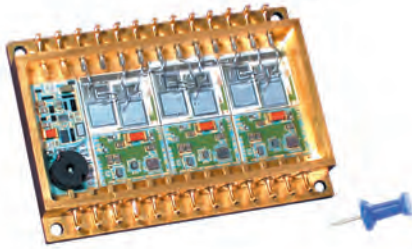
- Self-contained 3-Phase Motor Controller
- Operates as Current or Voltage Controller
- 1, 3, or 10A Output Current
- 1.5% Linearity
- 3% Current Regulating Accuracy
- User-Programmable Compensation
- 10kHz - 100kHz PWM Frequency
- Holding Torque through Zero Current
- Cycle-by-Cycle Current Limit

Applications:

- Robotics
- Electromechanical Valve Assemblies
- Actuator Systems
- Antenna and Solar Radar Positioning
- Fan and Blower Motors for Environmental Conditioning
- Reaction Wheels
- Compressor Motors for Cryogenic Coolers

Complete Info: www.ddc-web.com/PW-825XXN

Motor Drives



Model: PWR-82331, PWR-82333, PWR-82335

Features:

- 3-Phase BLDC Motor Drive Hybrid
- Small Size 76.2mm x 53.3mm x 9.91mm (3.0in x 2.1in x 0.39in)
- +200V and +500V Capability
- 30A Current Capability
- High-Efficiency MOSFET or IGBT Drive Stage
- Direct Drive from PWM
- Supports Switching Frequencies from DC to 50kHz
- 0.85°C/W θ_{j-c} Max
- Military Processing Available
- Operating Temperature: -55°C to +125°C

Applications:

- Robotics
- Electromechanical Valve Assemblies
- Actuator Systems
- Antenna and Solar Radar Positioning
- Fan and Blower Motors for Environmental Conditioning
- Reaction Wheels
- Compressor Motors for Cryogenic Coolers

Complete Info: www.ddc-web.com/PWR-8233X



Model: PWR-82340, PWR-82342

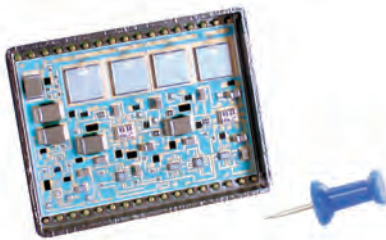
Features:

- H-Bridge Motor Drive Hybrid
- Small Size 57.1mm x 53.3mm x 9.91mm (2.25in x 2.1in x 0.39in)
- +200V and +500V Capability
- 30A Current Capability
- High-Efficiency MOSFET or IGBT Drive Stage
- Direct Drive from PWM
- Drives Brush or Brushless DC Motors
- 0.85°C/W θ_{j-c} Max
- Military Processing Available
- Operating Temperature: -55°C to +125°C

Applications:

- Robotics
- Electromechanical Valve Assemblies
- Actuator Systems
- Antenna and Solar Radar Positioning
- Fan and Blower Motors for Environmental Conditioning
- Reaction Wheels
- Compressor Motors for Cryogenic Coolers

Complete Info: www.ddc-web.com/PWR-8234X



Model: PWR-82341

Features:

- H-Bridge Motor Drive Hybrid
- Small Size 45.7mm x 35.6mm x 6.35mm (1.8in x 1.4in x 0.25in)
- +100Vdc Rating
- 5A Current, 10A Peak Capability
- High-Efficiency MOSFET Drive Stage
- Direct Drive from PWM
- Drive Brushless DC or Brush Motors
- Operating Temperature: -55°C to +125°C

Applications:

- Robotics
- Electromechanical Valve Assemblies
- Actuator Systems
- Antenna and Solar Radar Positioning
- Missile Fin Actuators
- Fan and Blower Motors for Environmental Conditioning
- Reaction Wheels
- Compressor Motors for Cryogenic Coolers

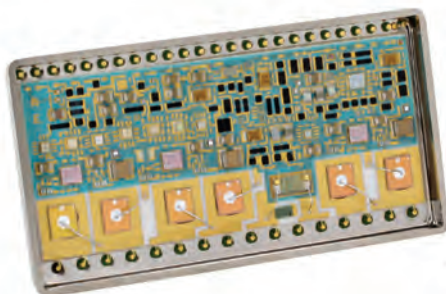
Complete Info: www.ddc-web.com/PWR-82341

Did You Know?

Since 2013, DDC has acquired five companies, expanding our product offering.

- National Hybrids (2013):
 - MIL-STD-1553 Components
 - Opto Couplers
 - Oscillators
- Pascall Electronics Ltd (2015):
 - Power Supplies (custom & sub system)
 - Radio Frequency Products
- XCEL Power Systems (2015):
 - Power Supplies (for avionics, land, sea, and industrial)
- Maxwell Technologies' Microelectronics Product Line (2016):
 - Radiation Tolerant Space Solutions
- North Hills Signal Processing (2017):
 - Transformers and Box Couplers

Space Grade Hybrids



Model: PW-82336

Features:

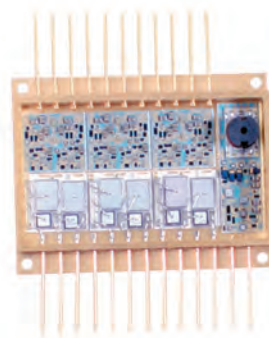
- 3-Phase Motor Drive Hybrid
- Small Size 66mm x 35.6mm x 6.35mm (2.6in x 1.4in x 0.25in)
- 100VDC Rating
- 3A Continuous, 6A Peak Current Capability
- Designed to Meet the Following Radiation Levels
 - 100kRad Total Dose
 - 36MeV SEU
- Operating Temperature: -55°C to +125°C

Applications:

- Pump Control
- Electric Actuators
- Electric Valve Control
- Fuel Pumps
- Robotics
- Antenna/Camera Position Control
- Reaction Wheels

See Page 29 for more space-grade products

Complete Info: www.ddc-web.com/PW-82336



Model: PWR-82332

Features:

- Small Size 76.2mm x 53.3mm x 10.2mm (3.0in x 2.3in x 0.40in)
- 400 VDC Rating
- 19A Continuous Current Capability
- Class K Processing
- SEU Immune for LET Level of 36 MeV/mg/cm²
- Can Withstand 10kRad (Si) Total Dose Radiation
- Space Station Qualified
- High-Efficiency MOSFET Drive Stage
- Direct Drive for Commutation Logic

Applications:

- Robotics
- Electromechanical Valve Assemblies
- Actuator Systems
- Antenna and Solar Radar Positioning
- Fan and Blower Motors for Environmental Conditioning
- Reaction Wheels
- Compressor Motors for Cryogenic Coolers

See Page 29 for more space-grade products

Complete Info: www.ddc-web.com/PWR-82332

Did You Know?

DDC has been recognized for our outstanding performance and customer service by the industry. The following is a listing of these awards.

- Raytheon:
 - 3 Star Supplier Excellence: 2012, 2011, 2010, 2009, 2008, 2007
 - 2007 Network Centric Systems 3 Star Supplier Excellence Award
- Lockheed Martin:
 - 2010 Platinum Level Preferred Supplier Award
 - 2006 STAR Supplier Award
- General Atomics 2010 Supplier Excellence Award
- Honeywell Sensor and Guidance Supplier Excellence Award
- L-3 Communication Systems West Platinum Level Supplier Award: 2011
- BAE 2015 #1 Supplier Award
- Northrop Grumman:
 - Aerospace Systems Gold Supplier: 2008
 - Aerospace Systems Silver Supplier: 2006, 2007



Model: PW-82540R0

Features:

- Self-contained 3-Phase Motor Controller
- Controller for Current or Voltage
- 1, 3, or 10A Output Current
- 1.5% Linearity
- 3% Current Regulating Accuracy
- User-Programmable Compensation
- 10kHz - 100kHz PWM Frequency
- Designed to Meet the Following Radiation Levels
 - 100kRad Total Dose
 - 36MeV SEU
- Operating Temperature: -55°C to +125°C

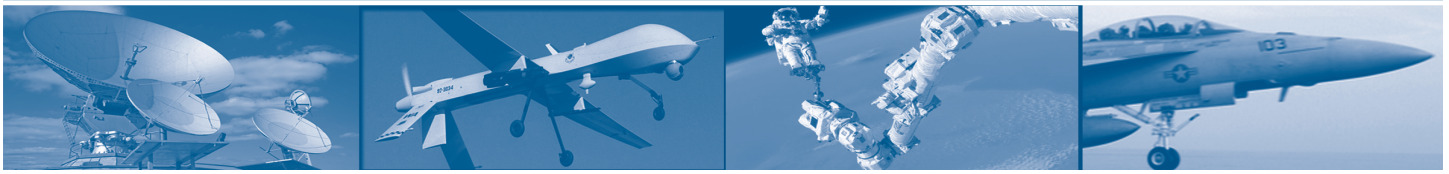
Applications:

- Robotics
- Electromechanical Valve Assemblies
- Actuator Systems
- Antenna and Solar Radar Positioning
- Fan and Blower Motors for Environmental Conditioning
- Reaction Wheels
- Compressor Motors for Cryogenic Coolers

See Page 29 for more space-grade products

Complete Info: www.ddc-web.com/PW-82540R0

Motion Feedback — Synchro/Resolver



Synchro, Resolver, LVDT, RVDT, Inductosyn, MR, and Hall Conversion Solutions

Since introducing the first Synchro converter module in 1968, DDC has served as the world leader in the design and manufacture of Synchro/Resolver-to-Digital and Digital-to-Synchro/Resolver components – offering the smallest, most accurate, widest temperature range data converters available. Additionally, DDC offers a complete line of Synchro/Resolver instrument-grade cards and test equipment including angle position indication and simulation, plus a variety of hardware and software to meet today's commercial, military, space, and COTS/MOTS requirements.

DDC's Synchro / Resolver-to-Digital (S/D or R/D) and Digital-to-Synchro / Resolver (D/S or D/R) microelectronic components are the smallest, most accurate converters available, and the building blocks for DDC's card-level products. Most of these single chip and hybrid converters are based on custom monolithic designs, and are the most reliable converters ever offered. Many products are available with MIL-PRF-38534 processing.

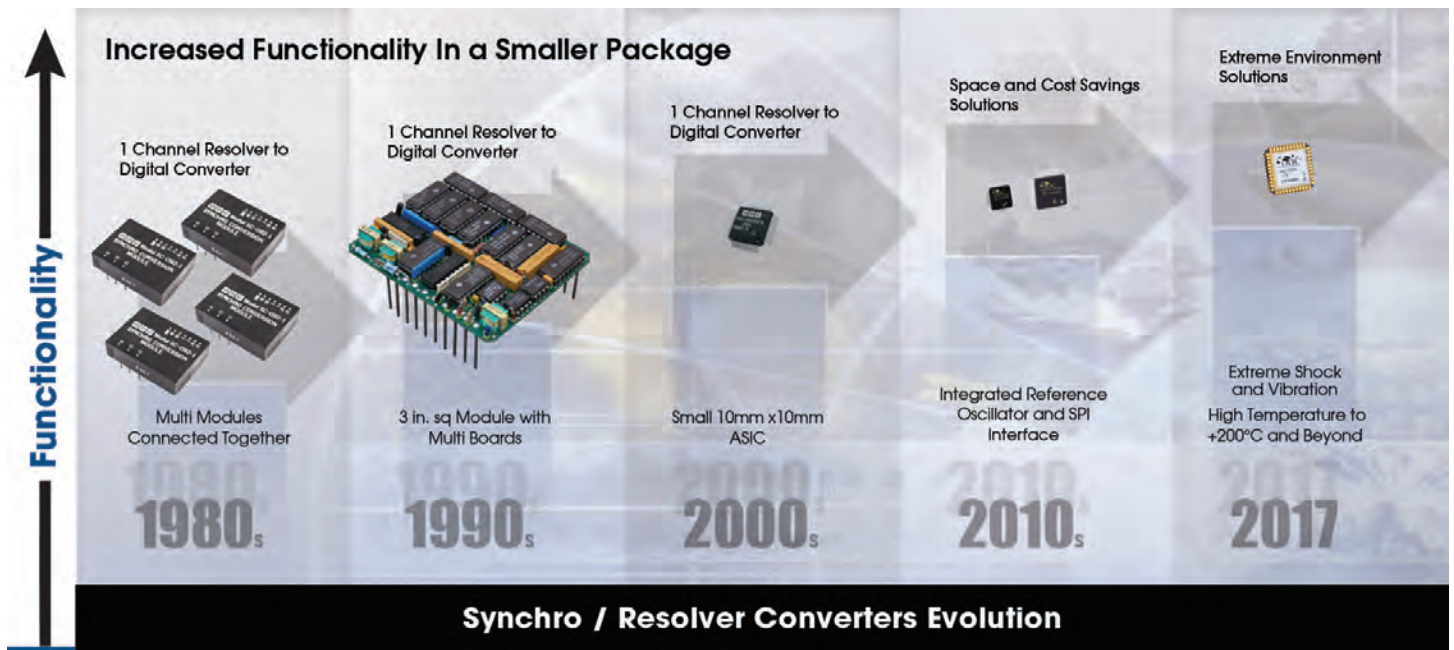
Military, commercial and industrial applications include gimbals, radar, and navigation systems, fire control, flight control surfaces & instrumentation/simulators, motor/motion feedback controls and drives, CNC and robotics systems.

Written by our expert staff, the Synchro/Resolver Conversion Handbook was the first integrated reference source on synchro/resolver data converters, and has served as a teaching aid for many engineers and operators over the years.

Form Factors, Software, & Drivers

DDC is a global leader in Synchro / Resolver Solutions. We offer a broad line of Synchro / Resolver instrument-grade cards including angle position indicators and simulators, plus supporting software to meet today's COTS / MOTS needs. Board form factors include PCI, PMC, PC/104, cPCI, VME and USB with software support for Windows®, Linux®, LabVIEW®, and VxWorks®.

History of Innovation



Boards																													
Product Number	Basic Function	No. of Channels		Accuracy To	Operating System								Software		Page														
		S/R to D	D to S/R		Windows								GUI/Menu	Lib/Driver															
					2000	XP	Vista	7	8	10	NT	Linux				VxWorks													
USB																													
SB-3661XUX-3L0	Portable USB Synchro/Resolver Interface Input Device	2		1 min		■	■	■					■	■	■	60													
cPCI																													
SB-36XXTX	Combo Card (API/SIM)	3 - 9	6	2 min		■							■		■	60													
PMC																													
SB-36410IX	Resolver/Synchro-to-Digital Conversion (API) Input	8		1 min	■	■		■	■	■	■	■			■	60													
SB-3642X	Resolver/Synchro-to-Digital Conversion (API) Input	8		1 min				■	■	■	■	■			■	60													
SB-3644X	Resolver/Synchro-to-Digital Conversion (SIM) Output	4		1 min				■	■	■	■	■			■	60													
VME																													
SB-36110VX	12-Channel Synchro/Resolver-to-Digital	12		1 min									■		■	60													
PCI-Express																													
SB-3623X	Digital-to-Resolver/Synchro Conversion (SIM) Output		6	30 sec		■	■	■	■	■			■		■	61													
SB-3625XX	Digital-to-Resolver/Synchro Conversion (SIM) Input	4/8		1 min		■		■	■	■			■		■	61													
PCI																													
SB-3624X	Resolver/Synchro-to-Digital Conversion (API)	6		1 min	■	■		■	■	■			■		■	61													
SB-3620XIX	Combination S/R-to-Digital and Digital-to-S/R Converter	2	2	1 min	■	■						■	■		■	61													
PC/104 * Sample Application for Windows XP Available.																													
SB-36320CX*	Digital-to-Resolver/Synchro Conversion (SIM)		2	1 min												62													
SB-36330CX*	Resolver/Synchro-to-Digital Conversion (API)	4		1 min								■																	
SB-36340CX	Transformer																												
SB-36350CX*	Oscillator																												
Evaluation Boards																													
RD-19230EX-300	Resolver/Synchro-to-Digital Conversion Development Kits (API)	1		2 min												61													
RD-19240EX-300		1		8 min																									
RD-19232EX-3L0		1		1 min											■														
RD-19242EX-3L0		1		8 min											■														
RD-19243EX-3L0		1		5.2 min											■														
Components — Resolver, Synchro, LVDT, RVDT, Inductosyn, MR, and Hall Converters																													
Product Number	Package									# of Channels	Accuracy (Arc-Min)						Resolution					Special Features					Page		
	Pin	DIP	DDIP	TDIP	FP	QFP	MQFP	J	Leadless		Module	1	2	4	5	6	8	21	10	12	13	14	16	Synthesized Reference	Hybrid	Monolithic		Program Resolution	+5V Only
Resolver-to-Digital																													
RD-19230	64					■				1	■	■	■				■	■		■	■	■	■		■	■	■	■	63
RD-19240	52						■			1					■		■	■		■	■	■	■		■	■	■	■	63
RD-19242	52					■				1					■		■	■		■	■	■	■		■	■	■	■	63
RD-19243	48								■	1			■				■	■		■	■	■	■		■	■	■	■	63
RD-1930X	48					■				1					■		■	■		■	■	■	■		■	■	■	■	64
RDC-19220/2/4	44, 40		■				■	■		1		■	■				■	■		■	■	■	■		■	■	■	■	64
RDC-19220/2S	44, 40		■					■		1		■	■				■	■		■	■	■	■		■	■	■	■	64
Synchro/Resolver-to-Digital																													
SD-14531	36		■							1	■	■	■							■	■	■	■		■	■	■	■	65
SD-14550	34	■			■					1	■	■	■					■	■	■	■	■	■		■	■	■	■	65
SD-14590/1/2	36		■							1	■	■	■							■	■	■	■		■	■	■	■	65
SD-14595/6/7	36		■							1	■	■	■							■	■	■	■		■	■	■	■	65
SD-14620	54	■			■					2	■	■	■					■	■		■	■	■		■	■	■	■	65
SDC-14560	36		■							1	■	■	■		■			■	■		■	■	■		■	■	■	■	65
SDC-14580	36		■							1	■	■	■					■	■		■	■	■		■	■	■	■	65
SDC-14600/05	28		■							2	■	■	■					■	■		■	■	■		■	■	■	■	65
SDC-14610/15	36		■							3	■	■	■					■	■		■	■	■		■	■	■	■	65
SDC-630/2/4A/ST	28								■	1		■	■			■	■	■		■	■	■	■		■	■	■	■	65
Synchro-to-Digital																													
SDC-14545	24		■							1					■	■				■	■	■	■		■	■	■	■	65

⌘ Visit www.ddc-web.com/sr for complete product information.

Components — Digital-to-Synchro and Resolver Converters

Product Number	Package						Output Voltage						Output Current	Special Features						Page
	Pin			TDIP	DDIP	Module	2	6.8	6.81	11.8	90	Scalable		Hybrid	DC to		60/400 Hz	Low Profile	2 Channel	
	32	36	40												1 KHz	10 KHz				
Digital-to-Resolver																				
DR-11525		■			■		■		■			■	2mA	■		■			65	
DRC-10520	■				■			■				■	2VA	■	■				65	
DRC-11522		■			■			■				■	2mA	■	■				65	
Digital-to-Synchro																				
DSC-10510			■	■					■		■		7VA	■	■				66	
DSC-544/545						■					■		4.5VA			■			66	
Digital-to-Synchro/Resolver																				
DSC-11520		■			■			■		■	■		2mA	■	■				66	
DSC-11524		■			■			■		■	■		15mA	■	■				66	
DSC-644						■			■	■	■		1.5VA			■	■		66	

Components and Boards — Synchro and Resolver Special Function

Product Number	Package							Special Features						Page	
	Pin			DIP	DDIP	SM	Module	Thin Film	Differential	Hybrid	Volts				Other
	16	18	36								2	11.8	90		
Synchro Booster Amplifier															
SBA-3500x						■								90V Synchro or 2V, 5V, 6.8V, 90V Resolver input to 90V Synchro 25VA, 60/400Hz output	64
Resistor Network															
DDC-49530	■			■				■				■		High Precision Tolerance (0.02%)	66
DDC-49590	■			■				■				■		High Precision Tolerance (0.02%)	66
DDC-55688-1	■			■				■		■				High Precision Tolerance (0.02%)	66
DDC-57470	■					■		■			■			High Precision Tolerance (0.02%)	66
DDC-57471	■					■		■				■		High Precision Tolerance (0.02%)	66
DDC-73089	■					■		■	■			■		High Precision Tolerance (0.02%)	66
Oscillator															
OSC-15801		■			■									Programmable Frequency, 47Hz to 20kHz	66
OSC-15802		■			■									Programmable Frequency with AGC Amplitude Control, 47Hz to 10kHz	66
OSC-15803		■			■									Radiation Tolerant Synchro/Resolver/Inductosyn® Reference Oscillator	66

Transformers

Product Number	Type				Input Voltage					Output Voltage										Terminals		Mounting		Page			
	Synchro to Resolver	Resolver to Synchro	Resolver to Resolver	Resolver to Resolver	6.8	11.8	26	90	115	1	2	3.4	5.8	6.3	11.8	13.6	16	26	39	57	90	Sn63 solder dipped			Sn90 plated alloy 42	Through Hole	SMT
																						brass	copper				
Input Scott-T																											
2104X	■			■		■	■	■		■													■		■	■	67
5023X	■			■		■	■	■			■												■		■	■	67
Output Scott-T																											
29XXX		■	■	■										■									■		■	■	67
3XXX		■	■	■								■											■		■	■	67
4073X			■	■										■				■					■		■	■	67
B-10XX			■	■									■		■		■						■		■	■	67
B-XXX		■	■	■													■						■		■	■	67
Reference																											
21049								■									■						■		■	■	67
B-4XX								■			■												■		■	■	67
B-7XX					■	■		■		■				■									■		■	■	67
B-8XX							■						■					■					■		■	■	67
B-10XX							■			■	■												■		■	■	67

Visit www.ddc-web.com/sr for complete product information.

USB**Synchro/Resolver-to-Digital****Model: SB-3661XUX-3L0****Features:**

- 2 Input Channels
- BIT Output for Each Channel
- Self Test Mode
- ± 1 Arc Minute Accuracy
- 2VA On-Board Programmable Reference Sine Oscillator
- Driver and API Libraries for Windows® XP/Vista/7 and Linux®
- LabVIEW® Support

Applications:

- Motor Control Lab Testing
- Machine Tool Control Lab Testing
- Antenna Control Lab Testing
- Robotics Lab Testing
- Process Control Systems Lab Testing
- Lab Testing
- Production Testing

Complete Info: www.ddc-web.com/SB-3661XUX**PMC****Synchro/Resolver-to-Digital****Model: SB-3641X, SB-3642X, SB-3644X****Features:**

- Programmable Two-Speed Mode
 - ± 1 Arc Minute Accuracy
 - Each Channel with Independent Reference Input
 - User Friendly Windows® GUI
- SB-3641X & SB-3642X Only:
- 4 or 8 Synchro or Resolver Input Channels
 - Prog. Resolution and Bandwidth
- SB-3644X Only:
- 2 or 4 Synchro or Resolver Input Channels
 - Prog. Two Speed Mode

Applications:

- High Performance Industrial and Military Position Feedback and Control Systems
- Ship Navigation
- Motor Control
- Machine Tool Control
- Antenna Control
- Robotics and Process Control Systems
- Engineering Development and Production Test

Complete Info: www.ddc-web.com/SB-36410ix
www.ddc-web.com/SB-3642X
www.ddc-web.com/SB-3644X

cPCI**Combination S/R-to-D & D-to-S/R****Model: SB-36XXXXX****Features:**

- Three Independent Angle Position Indication Channels
- Six Independent Simulation Channels
- Unpopulated Simulation Channels may be used as Additional Isolated API Channels
- Built-in Test Diagnostics
- Supports +3.3V or +5V PCI Bus
- Driver and API Libraries for Windows® XP and Linux
- Temp Range: 0°C to +55°C

Applications:

- Motor Control
- Machine Tool Control
- Naval Ship Navigation
- Antenna Control
- Process Control Systems

Complete Info: www.ddc-web.com/SB-36XXXXX**VME****Synchro/Resolver-to-Digital****Model: SB-36110VX****Features:**

- Up to 12 Independent Converter Channels
- Each Channel Accepts Synchro or Resolver Inputs
- Software Programmable Resolution and Bandwidth
- ± 1 Arc Minute Accuracy
- Synthesized Reference
- 16-, 24-, and 32-Bit Addressing Modes
- Temp Range: -40°C to +85°C
- VxWorks® Support

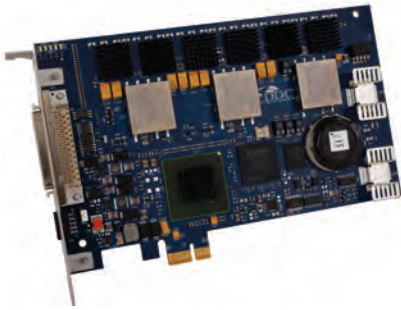
Applications:

- Gimbal Control
- Antenna Position
- Machine Tool Control
- Process Control
- Motor Control

Complete Info: www.ddc-web.com/SB-36110VX

PCI-Express

Digital-to-Synchro/Resolver



Model: SB-3623X

Features:

- 6 Synchro or Resolver Output Channels with independent Reference input
- ± 30 Arc Second Accuracy
- Programmable Dynamic Rotation
- Programmable Two-Speed
- On-Board Reference Sine Oscillator
- Temp Range: 0°C to +55°C
- Driver and API Libraries for Windows® XP/7/8/10 and Linux®
- LabVIEW® Support

Applications:

- High Performance Industrial and Military Position Feedback and Control Systems
- Motor Control
- Machine Tool Control
- Antenna Control
- Robotics and Process Control Systems

Complete Info: www.ddc-web.com/SB-3623X

Evaluation Boards



Models: RD-19230EX-300, RD-19240EX-300, RD-19242EX-3LO, RD-19243EX-30LO

Features:

- Easy On-Card Programmable Features of the RD-19230, RD-19240, RD-19242, & RD-19243 Converter
 - Pre-Installed RD-19230/40/42/43 Converter on Associated Development Board
- RD-19230EX/RD-19240EX Only:
- On-Card Visual LED Indicators for Output Angle and Fault Indicator
- RD-19242EX/RD-19243EX Only:
- Serial and USB Data Output
 - Onboard Ref Sine Oscillator

Applications:

- Prototyping New Designs

Complete Info: www.ddc-web.com/RD-19230EX
www.ddc-web.com/RD-19240EX
www.ddc-web.com/RD-19242EX
www.ddc-web.com/RD-19243EX

Digital-to-Synchro/Resolver



Model: SB-3625XKX

Features:

- 4 or 8 Synchro/Resolver Input Channels with independent Reference input
- 1 Arc Minute Accuracy
- Programmable Resolution and Bandwidth
- Programmable Two-Speed
- Temp Range: 0°C to +55°C
- Driver and API Libraries for Windows® XP/7/8/10 and Linux®
- User-Friendly Windows® Graphical User Interface
- LabVIEW® Support

Applications:

- High Performance Industrial and Military Position Feedback and Control Systems
- Motor Control
- Machine Tool Control
- Antenna Control
- Robotics and Process Control Systems

Complete Info: www.ddc-web.com/SB-3625XKX

PCI

Synchro/Resolver-to-Digital



Model: SB-3624X

Features:

- 6 Input Channels
- Software Programmable Resolution and Bandwidth
- ± 1 Arc Minute Accuracy
- Onboard Programmable Reference Sine Oscillator
- Universal (+3.3 or +5V) PCI Signaling
- Internal Synthesized Reference
- Half-Size PCI Form Factor
- Transformer Isolation Available
- Temp Range: 0°C to +71°C
- Driver and API Libraries for Windows® 2000/XP/7/8/10 and Linux®

Applications:

- Motor Control
- Machine Tool Control
- Antenna Control
- Robotics
- Process Control Systems
- Lab Testing
- Production Testing

Complete Info: www.ddc-web.com/SB-3624X

PC/104

Digital-to-Synchro/Resolver

**Model: SB-36320CX****Features:**

- 2 Independent Output Converter Channels for Synchro, Resolver, or SIN/COS Outputs
- Low (2mA) or Medium (15mA) Power Outputs
- 16-Bit Resolution
- ± 1 Arc Minute Accuracy
- Opto-Isolated Discrete I/O for External Control Functions
- Temp Range: -40°C to $+85^{\circ}\text{C}$

Applications:

- ATE
- Displays
- Positioning Applications

Complete Info: www.ddc-web.com/SB-36320C

Synchro/Resolver-to-Digital

**Model: SB-36330CX****Features:**

- Up to 4 Independent Input Channels for Synchro/Resolver
- Velocity Output
- Software Programmable Resolution and Bandwidth
- Jumper Programmable Reference Voltage Inputs
- ± 1 Arc Minute Accuracy
- Discrete I/O for External Control Functions
- Temp Range: -40°C to $+85^{\circ}\text{C}$

Applications:

- Motor Control
- Machine Tool Control
- Antenna Control
- Robotics
- Process Control Systems
- Gimbal Control

Complete Info: www.ddc-web.com/SB-36330C

Output Isolation

**Model: SB-36340CX****Features:**

- Up to 2 Channels of Output Isolation
- Converts Low Voltage to 90 Vrms/ 400Hz Synchro Output
- Reference Input Isolation
- Conformal Coated
- Mates Directly with SB-36320CX PC/104 Synchro Output Card
- Temp Range: -40°C to $+85^{\circ}\text{C}$

Applications:

- Naval Navigation Systems
 - Gyro
 - Antenna
 - Steering
- Naval Firing Control Systems
- Military Control Systems
- 90V Synchro Positioning/ Simulations

Complete Info: www.ddc-web.com/SB-36340C

Reference Sine Oscillator

**Model: SB-36350CX****Features:**

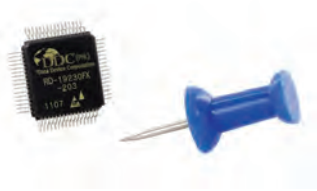
- Software Programmable Voltage and Frequency
- Isolated Differential Output
- 5 VA Reference Sine Drive
- 400Hz to 8192Hz
- 2V to 123V
- Temp Range: -40°C to $+85^{\circ}\text{C}$

Applications:

- ATE
- Displays
- Aircrafts
- Ground Vehicles
- Robotics

Complete Info: www.ddc-web.com/SB-36350C

Resolver, Synchro, LVDT, RVDT, Inductosyn, MR & Hall Converters



Model: RD-19230

Features:

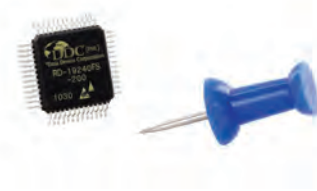
- ± 1 Arc Minute Accuracy
- Programmable Resolution (10, 12, 14, 16 Bits)
- Parallel Data Output
- Up to 45 Degree Phase Shift Correction
- +5V Only Option
- Dual Bandwidth
- A Quad B Encoder Emulation
- 13.22 mm 64-pin Quad Flat Pack
- Temp Range: -40°C to $+85^{\circ}\text{C}$

Applications:

- Military Fire Control Systems
- Naval Navigation and Weapons Systems
- Industrial Control
- Motor Control
- Machine Tool Control
- Robotics
- Factory Automation
- Hybrid Electric Vehicles
- Aviation Flight Control Surfaces
- Unmanned Vehicles

Evaluation Board Available,
See Page 61

Complete Info: www.ddc-web.com/RD-19230



Model: RD-19240

Features:

- ± 8 Arc Minute Accuracy
- Programmable Resolution (10, 12, 14 Bits)
- Parallel Data Output
- Up to 45 Degree Phase Shift Correction
- +5V Only Option
- Dual Bandwidth
- A Quad B Encoder Emulation
- 13.22mm 52-pin Quad Flat Pack
- Temp Range: -55°C to $+125^{\circ}\text{C}$

Applications:

- Industrial Control
- Motor Control
- Machine Tool Control
- Robotics
- Factory Automation
- Hybrid Electric Vehicles
- Aviation Flight Control Surfaces

Evaluation Board Available,
See Page 61

Complete Info: www.ddc-web.com/RD-19240



Model: RD-19242

Features:

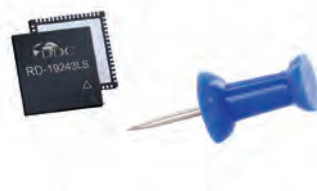
- ± 8 Arc Minute Accuracy
- Programmable Resolution (10, 12, 14 Bits)
- Serial Data Output
- Built-in Reference Oscillator
- Up to 45 Degree Phase Shift Correction
- +5V Only Option
- Dual Bandwidth
- A Quad B Encoder Emulation
- 13.22mm 52-pin Quad Flat Pack
- Temp Range: -55°C to $+125^{\circ}\text{C}$

Applications:

- Hybrid Electric Vehicles
- Automotive Position Sense
- Factory Automation
- Aviation Flight Control Surfaces
- Motor Control
- Industrial Control
- Robotics

Evaluation Board Available,
See Page 61

Complete Info: www.ddc-web.com/RD-19242



Model: RD-19243

Features:

- Up to 5.2 Arc Minute Accuracy
- Programmable Resolution (10, 12 Bits)
- SPI and Encoder Emulation (A Quad B) Interface Outputs
- Integrated Programmable Reference Oscillator
- 1152 RPS Maximum Tracking Rate, 10-bit Resolution
- DC, 1kHz to 20kHz
- +5V Only Option
- Dual Bandwidth
- 48-pin Leadless Package
- Temp Range: -40°C to $+85^{\circ}\text{C}$

Applications:

- Industrial Motor Control
- Factory Automation
- Robotics
- Hybrid Electric Vehicles
- Automotive Position Sense

Evaluation Board Available,
See Page 61

Complete Info: www.ddc-web.com/RD-19243

Resolver, Synchro, LVDT, RVDT, Inductosyn, MR & Hall Converters



Model: RDC-19220/2/4

Features:

- ± 2 Arc Minute Accuracy
- +5V Only Option
- Only 5 External Passive Components Needed
- Programmable Resolution, Bandwidth, and Tracking
- Differential Resolver and LVDT Input Modes
- Small Size, Available in DDIP, J-Lead, or MQFP Packages
- RoHS Compliant Available
- Temp Range: -55°C to $+125^{\circ}\text{C}$

Applications:

- Motor Control
- Machine Tool Control
- Robotics
- Flight Surface Control
- Radar Antenna Positioning
- Process Control
- Military Fire Control Systems
- Navigation

Complete Info: www.ddc-web.com/RDC-19220



Model: RDC-19220/2S

Features:

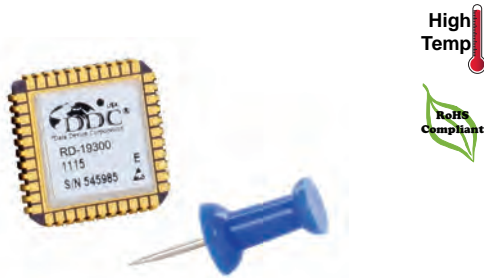
- ± 2 Arc Minute Accuracy
- +5V Only Option
- Programmable Resolution, Bandwidth, and Tracking
- Up to 45° Phase Shift Correction
- Small Size, Available in DDIP, J-Lead, or MQFP Packages
- RoHS Compliant Versions Available
- Temp Range: -55°C to $+125^{\circ}\text{C}$

Applications:

- Motor Control
- Machine Tool Control
- Robotics
- Flight Surface Control
- Radar Antenna Positioning
- Process Control
- Military Fire Control Systems
- Navigation

Complete Info: www.ddc-web.com/RDC-19220S

High Temperature



Model: RD-1930X

Features:

- ± 8 Arc Minute Accuracy
- Programmable Resolution (10, 12, 14 Bits)
- Up to 45° Degree Phase Shift Correction
- +5V Only Option
- Programmable Tracking Rate
- 17.53mm 44-pin Ceramic Quad Flat Pack
- RoHS Compliant Available
- Temp Range: -55°C to $+200^{\circ}\text{C}$
- Parallel Data Output (RD-19300)
- Serial Data Output (RD-19302)
- Built-in Ref Oscillator (RD-19302)

Applications:

- Down Hole Drilling
- Extreme Temperature Environments

Complete Info: www.ddc-web.com/RD-1930X

Synchro Booster Amplifier



Model: SBA-3500x

Features:

- Powered from Reference
- 90V, 60 or 400Hz Synchro Outputs
- Amplifies 90V Synchro, 6.81V, 5V, and 2V Resolver Inputs
- 25 VA Output Drive
- Protected Against Short Circuits, Overloading, Load Transients, Temperature, and Reference Supply Shutdown
- "Power-Up" in Disable or Enable Mode
- Drop-in Replacement for SBA-25001/2/3/4 Series

Applications:

- Training Simulators
- Remote Indicators
- Gunfire Control
- Navy Retransmission Systems

Complete Info: www.ddc-web.com/SBA-3500x

Synchro/Resolver-to-Digital Converters



Model: SD-14550

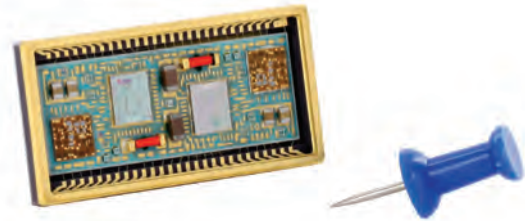
Features:

- ± 1 Arc Minute Accuracy
- Single +5V Power Supply
- 10, 12, 14, or 16 Bit Programmable Resolution
- Synthesized Reference Option
- Small 34-Pin Ceramic Package
- $\overline{\text{BIT}}$ Output
- Velocity Output Eliminates Tachometer
- High Reliability Single Chip Monolithic
- Temp Range: -55°C to $+125^{\circ}\text{C}$

Applications:

- Radar Antenna Positioning
- Navigation Systems
- Fire Control Systems
- Motor Control

Complete Info: www.ddc-web.com/SD-14550



Model: SD-14620

Features:

- 2 Channels in One Package
- Single +5V Power Supply
- 10, 12, 14, or 16 Bit Programmable Resolution
- Synthesized Reference Option
- Small 54-Pin Ceramic Package
- $\overline{\text{BIT}}$ Output
- Velocity Output Eliminates Tachometer
- High Reliability Single Chip Monolithic
- Temp Range: -55°C to $+125^{\circ}\text{C}$

Applications:

- Radar Antenna Positioning
- Navigation Systems
- Fire Control Systems
- Motor Control

Complete Info: www.ddc-web.com/SD-14620

Digital-to-Resolver Converters



Model: SDC-630/2/4A/ST

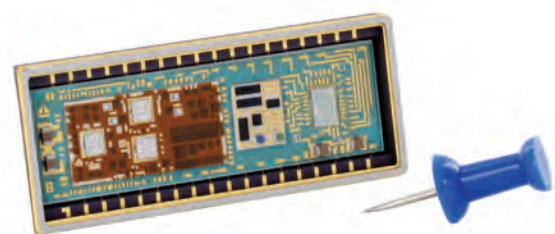
Features:

- Internal Transformer Isolation
- 10, 12, 14, or 16 Bit Resolution
- ± 2.6 Arc Minute Accuracy
- Options for Velocity, BIT (Built-In Test)
- Temp Range: -55°C to $+105^{\circ}\text{C}$

Applications:

- Radar Tracking Systems
- Navigation Systems
- Motor Control

Complete Info: www.ddc-web.com/SDC-630ST



Model: DR-11525

Features:

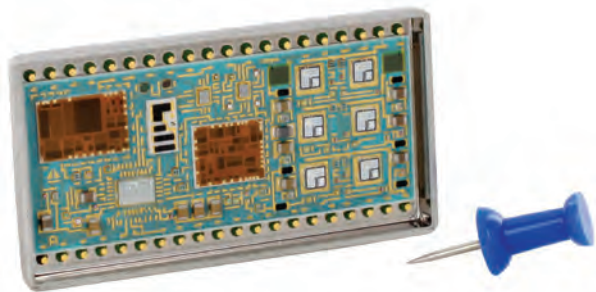
- ± 1 Arc Minute Accuracy
- Operational Up to 10 kHz
- 2Vrms, 6.81Vrms, 11.8VL-L, or Scalable Resolver Outputs
- 2mA RMS Output
- 16 Bit Resolution
- 8 Bit/2 Byte Double Buffered Transparent Latches
- DC-Coupled Reference Accepts Any Waveform
- High-Rel CMOS D/R Chip
- No +5V Supply Required
- Temp Range: -55°C to $+125^{\circ}\text{C}$

Applications:

- Synchro/Resolver Simulators
- Flight Trainers
- Flight Instrumentation
- Fire Control Systems
- IR
- Radar
- Navigation Systems
- Motor Control Test Systems
- Robotic Control Test Systems

Complete Info: www.ddc-web.com/DR-11525

Digital-to-Synchro Converters



Model: DSC-10510

Features:

- ± 2 Arc Minute Accuracy
- 7VA Drive Capability for CT, CDX, or TR Loads
- Double Buffered Transparent Input Latch
- 16 Bit Resolution
- Power Amplifier Uses Pulsating or DC Supplies
- Built-in Test (BIT) Output
- Temp Range: -55°C to $+125^{\circ}\text{C}$

Applications:

- Flight Simulators
- Flight Instrumentation
- Fire Control Systems
- Flight Data Computers

Complete Info: www.ddc-web.com/DSC-10510



Model: DSC-544, DSC-545

Features:

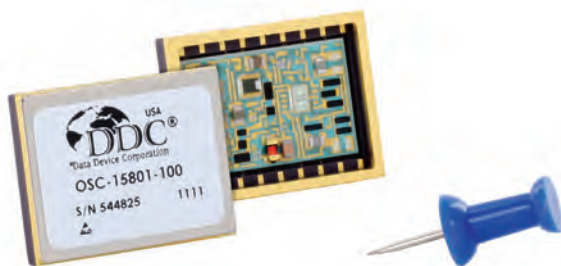
- 90V, 4.5VA Output
- Powered from Reference Input
- Power Dissipation Cut in Half
- No External $\pm 15\text{V}$ Supplies Required
- No External Transformer Required at 60Hz
- Short Circuit Protection
- Rugged Power Amplifiers with Current Limiting
- Overvoltage Transient Protection
- Thermal Cutoff
- Temp Range: -55°C to $+85^{\circ}\text{C}$

Applications:

- Simulators
- Flight Trainers
- Flight Instrumentation
- Fire Control Systems

Complete Info: www.ddc-web.com/DSC-544

Oscillator Components



Model: OSC-15801, OSC-15802

Features:

- Programmable Output Frequency from 400Hz to 20kHz
- Scalable Reference Output
- Small 18-Pin DDIP
- Temp Range: -55°C to $+125^{\circ}\text{C}$

OSC-15801 Only:

- Quadrature Reference Output (-90°) Voltages for Inductosyn Applications

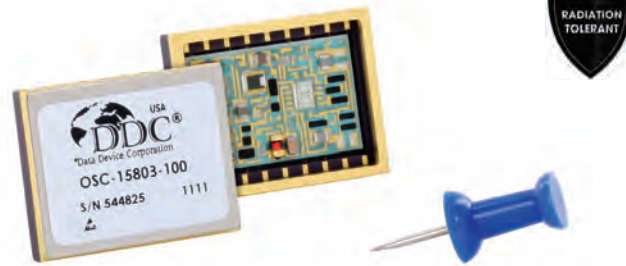
OSC-15802 Only:

- ADI Alternate Source
- Quadrature Reference Output ($+90^{\circ}$) Voltages for Inductosyn Applications

Applications:

- Radar Antenna Positioning
- Navigation Systems
- Fire Control Systems
- Motor Control
- Robotics
- Inductosyn Applications

Complete Info: www.ddc-web.com/OSC-15801
www.ddc-web.com/OSC-15802



Model: OSC-15803

Features:

- Programmable Output Frequency from 400Hz to 20kHz
- Quadrature Reference Output Voltages for Inductosyn Applications
- Small 18-Pin DDIP
- Scalable Reference Output
- Radiation Tolerant
 - Contact DDC for Rad Report Details
- Temp Range: -55°C to $+125^{\circ}\text{C}$

Applications:

- Space
- Nuclear
- Military
- Inductosyn Applications

See Page 29 for more space-grade products

Complete Info: www.ddc-web.com/OSC-15803

Transformers

Input Scott-T Series



Model: 2104X, 5203X

Features:

- Designed and Manufactured to Meet MIL-PRF-27, Class S, Grade 5 Requirements
- High Input Impedance
- Precise Angle Accuracy Up to 1 Min Max
- Long Life Expectancy - 10,000 Hours
- Rugged, Flame Resistant Case
- Available in Through-hole or Surface Mount Configurations

Applications:

- Motor Control
- Radar Antenna Positioning
- Machine Tool Control
- Robotics
- Process Control

Complete Info: www.BTTc-Beta.com/Scottt

Reference Series



Model: 21049, B-4XX, B-7XX, B-8XX, B-10XX

Features:

- Designed and Manufactured to Meet MIL-PRF-27, Class S, Grade 5 Requirements
- High Input Impedance
- Precise Angle Accuracy Up to 1 Min Max
- Long Life Expectancy - 10,000 Hours
- Rugged, Flame Resistant Case
- Available in Through-hole or Surface Mount Configurations

Applications:

- Motor Control
- Radar Antenna Positioning
- Machine Tool Control
- Robotics
- Process Control

Complete Info: www.BTTc-Beta.com/Scottt

Output Scott-T Series



Model: 29XXX, 3XXXX, 4073X, B-10XX, B-XXX

Features:

- Designed and Manufactured to Meet MIL-PRF-27, Class S, Grade 5 Requirements
- High Input Impedance
- Precise Angle Accuracy Up to 1 Min Max
- Long Life Expectancy - 10,000 Hours
- Rugged, Flame Resistant Case
- Available in Through-hole or Surface Mount Configurations

Applications:

- Motor Control
- Radar Antenna Positioning
- Machine Tool Control
- Robotics
- Process Control

Complete Info: www.BTTc-Beta.com/Scottt

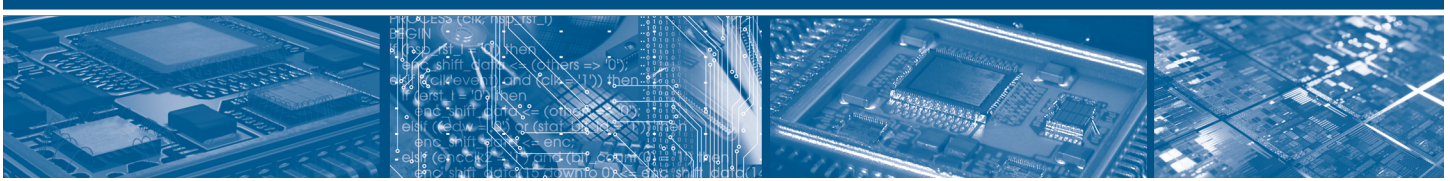
Did You Know?

Beta Transformer Technology Corporation (BTTc) expanded production capabilities in 2014 with the acquisition of our partner in Mexico.

Beta Transformer Mexico, S. de R.L. de C.V. is a DLA certified facility that manufactures products, including QPL MIL-STD-1553 transformers, exclusively for BTTc.

BTTc, located in Bohemia, NY, continues to manufacture high performance military, commercial, and space-level magnetic components.

Custom Hybrids and ASICs



Core Competencies and Unique Suite of Capabilities

Data Device Corporation, a world leader in the design and manufacture of high-reliability Connectivity, Power and Control solutions, has been producing custom hybrid and ASIC solutions for use in military, commercial aerospace, space, and industrial applications, for more than 40 years.

DDC's core competencies and unique suite of capabilities for the production of hybrid and ASIC solutions span every stage of development including electrical design, mechanical design, test engineering, process engineering, manufacturing, and product assurance. DDC is uniquely qualified to support a wide range of application requirements and technologies based upon our decades of experience in analog and digital microelectronics, magnetics, power supplies, radiation mitigation technology and quality certifications for AS9100 Rev C, ISO 9001:2008, EN9100, JIS Q9100, and through the DLA MIL-PRF-38534.

For space and extreme environmental conditions, DDC's microcircuit experience includes the design and manufacturing of power hybrids, hybrids for space applications, and hybrids designed for high temperature (200°C+) environments such as down-hole oil and gas exploration, and aircraft engines.

Our comprehensive range of capabilities enables DDC to deliver optimized custom hybrid and ASIC solutions to support all application requirements, including build-to-spec, build-to-schematic, and build-to-print. Additionally, DDC has the capacity to support high volume packaging and testing through partnerships with industry leading semiconductor foundries and suppliers.

Custom Hybrids

For more than 40 years, DDC has been a trusted manufacturer of highly reliable hybrid microelectronic solutions, supporting the critical, long life cycle requirements of military, industrial and space applications worldwide. DDC's experience and expertise includes the design and manufacture of all types of hybrid microelectronics, including analog, digital, mixed signal, power, radiation tolerant/space grade, and high temperature. Our designs are built upon DDC's extensive process engineering capabilities in hybrid construction and screening, including metal, ceramic, and plastic packages; thick film, thin film, and beryllium substrates; all types of conductors and dielectrics; chip-and-wire, flip chip, and stacked die construction; and a myriad of capabilities in die bonding, wire bonding, lid sealing, and automated test. Additionally, DDC has the capacity to support high volume packaging and testing through partnerships with industry leading semiconductor foundries and suppliers.

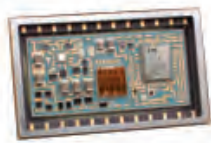
Custom ASICs

DDC's engineering staff includes a team of dedicated ASIC design and test engineers that bring decades of experience, along with design tools and test capabilities to produce analog, digital, and mixed signal ASICs. As the worldwide leader in MIL-STD-1553 data bus, synchro/resolver conversion, and highly reliable solid state power controllers, DDC is uniquely positioned to leverage our in-house experience and expertise to create low-risk, high Technology Readiness Level (TRL) custom ASIC solutions. In addition to our custom ASIC capabilities, DDC designs the ASICs utilized in our standard products, including MIL-STD-1553 transceivers and protocol, resolver-to-digital conversion, and ARINC 429 line drivers and receivers.

DDC's ASIC engineers are experts in many types of common ASIC building blocks, including linear operational amplifiers, power amplifiers, bandgap references, OTAs, voltage references, various A/D and D/A converter designs, and power electronics including switching regulators, motor controllers and power FETs and diodes. We maintain a transistor-level design library using Cadence design tools to accelerate development. Additionally our ASIC design team has expertise with high-voltage processes and the design of radiation tolerant, latchup-free ASICs with high total dose (100 krads and higher) and SEE/SEU immunity. For safety-critical applications, we also offer the capability for developing DO-254 compliant designs. Additionally, DDC has the capacity to support high volume packaging and testing through partnerships with industry leading semiconductor foundries and suppliers.

Custom Hybrids

Types of Hybrids



Metal/Thick Film Substrate



Metal/Thick Film Substrate (Power Hybrid)



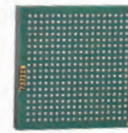
Ceramic/Thin Film Substrate



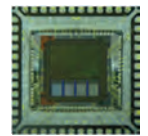
Co-Fired Ceramic



Plastic BGA



Flip-Chip



Stacked Die

Assembly & Processing

Hybrid Assembly and Processing:

- Current Annual Volumes > 120,000 Hybrid/MCMs Devices
- Die Bond Counts From 1 to 90
- Current Die Bond Capacity: > 150,000 Bonds/Month --- 1,800,000 Bonds/Year

Die Bonding:

- Conductive and Non-Conductive Epoxy
- Eutectic Bonding

Wire Bonding:

- Thermosonic ball bonding 1 or 2 mil gold wire for signals
- Ultrasonic bonding for 1.25-20 mil aluminum wires for high current

Flip-Chip Capability:

- Die handling from 0.17 mm to 50 mm, handles 300mm wafer magazines
- Placement accuracy of $\pm 10 \mu\text{m}$ @ 3s
- Uptime of better than 98 percent

Die Handling:

- Established supply chain relationships with franchised distributors for procurement of die components
 - Currently utilizing Micross, Semi Dice and ES Components
 - Follows DDC's standard purchasing operating procedures
- Established material handling process for storage of die components
 - Raw material storage room contains nitrogen dry box chambers in 100K clean room

Deposition:

- Hybrid Substrate Fabrication
- Multi-layer Silk-Screening
- Conductive and Non-conductive Materials
- Gold, Ceramic, Resistive Ink

Curing/Drying:

- In-house Conveyor Furnace
 - Temperatures up to +925° C
 - Substrate Built-up Layer upon Layer
 - Interconnections Between Layers

Vacuum Sealing/Solder Reflow Furnace:

- Vacuum Sealing/Solder Reflow Furnace
 - For near void free die attachment of high power dissipating devices (e.g., MOSFETs)
 - Uses Enables positive pressure and vacuum for die attach at temperatures up to 1000° C
 - Hydrogen furnace
 - Pressure furnace forces die down on solder
 - Vacuum to draw out voids
- Solders:
 - Sintered Silver
 - Gold Tin

Trim:

- Trim resistor values for thick film and thin film substrates
- Laser burns portions of resistors to increase resistance value
- Passive trim for high accuracy resistor tolerance
- Active trim for high accuracy voltage or current tolerance

Conductors:

- Conductor Materials
 - Gold
 - Platinum Gold
 - Palladium Gold
 - Platinum Palladium Gold
 - Silver
 - Platinum Silver
 - Palladium Silver
- Conductor Types
 - 5 mil Standard
 - Eutectic Attach
 - Solderable
 - Wire Bondable

Automated Test:

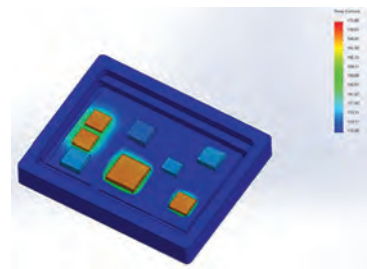
- Fully Automated Testing
- Test Engineers Involved with all Phases of Product Development
- VXI Test Stands
- Power Supplies, Voltmeters, Digitizing Oscilloscopes, Load Banks, etc.
- Hybrid-Specific Interface Test Adaptors (ITAs)
- PC Based Test Software

Design Tools

- Computer Aided Design (CAD)
- Thermal Models
- Mozaix - Schematic Capture
- Pantheon - PC Board Layout
- Specetra - PC Board AutoRouting
- Algor - Three-dimensional Conduction - cooled thermal analysis
- CFDesign - Air-cooled thermal analysis
- AutoCAD - Two-dimensional drawings
- SolidWorks - Three-dimensional mechanical drawings



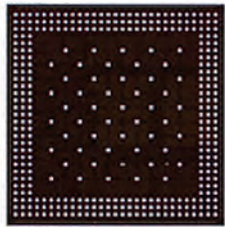
Computer Aided Design (CAD)



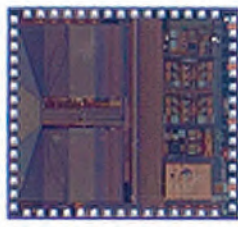
Thermal Models

Custom ASICs

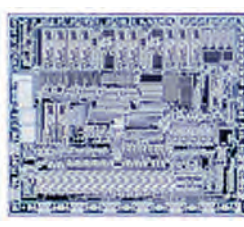
Examples of ASICs



MIL-STD-1553 Protocol/Memory Digital ASIC



MIL-STD-1553 Radiation Tolerant Protocol ASIC



Resolver-to-Digital Mixed Signal ASIC



Resolver-to-Digital Converter



ARINC 429 Line Driver

ASIC Capabilities

Unique Capabilities:

- Dedicated ASIC Design Team
- Experience in High Voltage Processes
- DO-254 and DO-178 Compliant
- Radiation Hard ASICs with High TID and SEE/SEU Immunity
- Experience in a wide range of processes including:
 - CMOS (down to 90nm)
 - BiCMOS
 - BCDMOS
 - HVIC

Core Expertise:

- Analog
- Digital
- Mixed Signal
- Power
- Radiation Tolerant/Space Grade
- RF
- Hybrid/MCM Packaging

Design Complexity Experience:

- High transistor counts – up to 60,000
- High logic gate counts – up to 50,000
- High precision – 16-bit resolver-to-digital converters, with accuracies down to ± 1 minute

Building Blocks:

- Linear Amplifiers
- OTAs
- Voltage References
- A/D and D/A Converters
- Oscillators
- Power Electronics

ASICs for DDC Standard Products:

- MIL-STD-1553
- ARINC 429
- Synchro/Resolver

Complete Info: www.ddc-web.com/ASICs

Did You Know?

DDC's RAD-PAK® Solutions have been used in space-qualified products in the space industry for over two decades, and has the following features:

- High Radiation Protection (TID 100krad for Typical Missions)
- RAD-PAK® Reduces the Number of Electrons and Protons Inside the Package (i.e., Less Total Dose on the Die)
- Up to 500x Improvement for GEO Missions
- Up to 10x Improvement for LEO Missions

Did You Know?

To help our customers save time and money when developing systems, DDC created a common API for our Test and Embedded cards.

This common API allows engineers to use the same program they have written for the hardware in their test application, with the hardware in their embedded application.

Additionally, DDC's BusTrACeR™ Graphical Monitor/Generator Software offers an Automated Source Code Generation feature, allowing you to output ANSI 'C' source code of your setup file in minutes. It will detect which board is connected and generate a C file for the appropriate SDK.

Space Level Capabilities

DDC has more than 30 years of experience in the design and manufacture of hybrids for space applications. This includes supplying MIL-STD-1553, motion feedback, and motor drive and controller hybrids for use on launch vehicles, satellites, deep space applications, and the International Space Station. In satisfying customers' needs to achieve the highest levels of reliability, DDC is fully qualified to build, test and qualify our hybrid circuits in accordance with MIL-PRF-38534 for all classes including class K.

DDC can also screen to specific profiles, enabling customers to choose from a menu including element evaluation, particle impact noise detection (PIND) testing, 320 hour burn-in, 100% nondestructive wire bond pull, and/or radiographic (X-ray) analysis. Additionally, DDC Microelectronics, formerly Maxwell Technologies, offers radiation mitigation RAD-PAK® Technology. RAD-PAK® enables DDC to deliver reduced cost space grade solutions providing total dose immunity of 100 krad or higher utilizing standard commercial chips. RAD-PAK-based solutions have been qualified for use by NASA.

Materials and Components - Element Evaluation

Active Elements (every wafer lot):

- 100% high magnification visual
- 100% probe at room temperature
- Samples assembled and put through standard environmental screening, including burn-in and electrical at min, max, and room temperature
- Life Test
- Scanning electron microscope (SEM)
- Wire bond pull

Passive Elements (capacitors, resistors, inductors):

- 100% visual
- 100% electrical on select parameters at room temperature
- Sample assembled and screened, including voltage conditioning and full electrical at room temperature
- Wire bond pull

Hybrid Microcircuit 100% Testing:

- Non-destructive bond pull
- Internal visual inspection
- Temperature cycling 10 times from -65°C to +150°C
- Constant acceleration 3,000 G
- PIND 1% PDA on 5th run and under 25% total
- Burn-in 320 hours at +125°C, PDA 2% second half of burn in/ Burn-in 160 hours at +125°C, PDA 10%
- Seal (fine and gross)
- Full electrical test at min, max, and room temperature
- Radiography
- External visual
- Material Control
- Full lot traceability to individual wafer
- Lot homogeneity

DDC Quality Reference Documents & MIL-PRF-38534 Certifications

Commitment to Excellence:

- Certificates & Awards
- ISO 9001:2008 Certificate
- AS9100, Rev. C Certificate

MIL-PRF-38534 Certifications:

- Class K Certificate
- Class H, D, & G Certificate
- MIL-PRF-38534 Guidelines

DDC Microelectronics Standard Product Flows:

- Stacked MCM Screening Flow
- Monolithic Screening Flow
- MCM Screening Flow

Did You Know?

DDC's Synchro Conversion Handbook was conceived in 1973 during a series of technical seminars. It was the first integrated reference source on synchro/resolver data converters.

The handbook serves as a practical tutorial and reference source, describing the theory of operation of data converter products, performance parameters, and design factors for typical applications.

Visit: www.ddc-web.com/synchrohandbook

Did You Know?

DDC has partnered with the following manufacturers to develop the highest quality products for our customers:

- Advanced Digital Logic
- ADLINK Technology Inc.
- Admotec
- AMCI
- AMREL
- Curtiss Wright
- Dynapar
- Getac
- Green Hills Software, Inc.
- LTN
- LynuxWorks
- Mercury Systems, Inc.
- National Instruments
- Neptune Mobile Devices
- Stratos Optical Technologies
- TE Connectivity
- Tresys
- VadaTech Inc.
- VersaLogic
- Wind River

Quality



DATA DEVICE CORPORATION
REGISTERED TO:
ISO 9001:2008, AS9100C:2009-01
EN9100:2009, JIS Q9100:2009
FILE NO. 10001296 ASH09

DDC Headquarters &
DDC Microelectronics



Environment
ISO 14001
SAI GLOBAL



SAI GLOBAL
ISO 9001
Quality

Beta Transformer
Technology Corporation



SAI GLOBAL
AS9100
Aerospace



DDC Electronics Ltd.
(Pascall & XCEL)



DDC's Product Assurance team is dedicated to employing and maintaining a strong quality system in compliance with MIL-PRF-38534, AS9100, ISO 9001:2008, and to support the long life cycle requirements of aerospace and defense programs.

DDC has been granted certification by the Defense Logistics Agency, Land & Maritime (DLA) for manufacturing Class K, H, G and D hybrid products in accordance with MIL-PRF-38534. The Quality System, as outlined in DDC's Product Assurance Manual, assures product conformance to specified requirements through controlled processes and Quality Assurance planning. The Management Review process evaluates quality indicators to ensure that the Quality System continues to be suitable and effective.

Certifications & Qualifications:

- ISO-9001:2008
- AS9100 Rev. C
- EN9100 Compliant
- JIS Q9100 Compliant
- MIL-PRF-38534; Class D, G, H, and K Qualified
- Capability to Design to DO-254, DO-178, and DO-160

Life Cycle Management:

- Vendor Life Cycle Checks
 - Life Time Buy
 - Customer Notification prior to Obsolescence (goal is 2 years)
- Configuration Management
 - Class 1 for Standard Product
 - Class 2 Notification Available
- Generation-to-Generation Compatibility
- Use of In-House Intellectual Property
- Boeing Approval to D6-82479

Did You Know?

DDC now offers processor-based modules!

These systems provide a scalable, programmable, and portable platform to develop and test MIL-STD-1553 and ARINC 429 system applications via an Ethernet network... eliminating the need and cost of long cabling/wire runs from the test lab to the onboard 1553/429 interfaces under test.

See Data Bus Systems on pages 8 and 9.

Did You Know?

DDC has an over 99% On Time Delivery Performance Average.

Data Device Corporation

Leadership Built on Over 50 Years of Innovation

Military | Civil Aerospace | Space | Industrial

Data Device Corporation (DDC) is a world leader in the design and manufacture of high-reliability Connectivity, Power and Control solutions (Data Networking; Power Distribution, Control and Conversion; Motor Control and Motion Feedback) for aerospace, defense, space, and industrial applications. With awards for quality, delivery and support, DDC has served these industries as a trusted resource for more than 50 years... providing proven solutions optimized for efficiency, reliability, and performance. Data Device Corporation brands include DDC, Beta Transformer Technology Corporation, National Hybrid Inc., North Hills Signal Processing Corporation, Pascall Electronics Ltd., and XCEL Power Systems Ltd. DDC is headquartered in Bohemia, NY and has manufacturing operations in New York, California, Mexico, and the United Kingdom.

Beta Transformer Technology Corporation, a subsidiary of DDC and leader in high reliability transformer, magnetic and cable assembly solutions for the aerospace, defense, and space industries, offers field proven transformer solutions for the most demanding industrial environments... extreme temperature, shock, vibration, dust, fluid, and radiation. Beta Transformer developed many of the world's smallest transformers and inductors, and is recognized for superior quality and performance. Beta Transformer headquarters along with their main design and manufacturing operations are located in Bohemia, NY. Beta has expanded production capabilities through their manufacturing operations at Beta Transformer Mexico, S. DE R L. DE C.V., located in Ensenada, Mexico, and North Hills Signal Processing Corporation in H. Matamoros Tamaulipas, Mexico, both subsidiaries of Beta Transformer Technology Corporation.

XCEL Power Systems and Pascall Electronics are divisions of DDC Electronics, Ltd., a subsidiary of Data Device Corporation. DDC Electronics, Ltd. specializes in the design and manufacture of power supply solutions for extreme environments. With over 30 years of experience in the defense, aerospace and industrial sectors, DDC Electronics is a trusted source for complete solutions in the design, development and manufacture of electronic power conversion products – from single converters to complex multi- function conversion systems. DDC Electronics products are the first choice for power with In-Flight Entertainment & Connectivity (IFEC) and defense systems. There are more than 170,000 Pascall power supply units installed on commercial aircraft. XCEL and Pascall power supply units are in service with Ground, Air and Naval forces across the world, powering state of the art electronic systems, and trusted by industry leaders to deliver reliable proven performance in some of the most challenging environments to be found anywhere. DDC Electronics, Ltd. headquarters, along with the XCEL Power Systems design operations and the Pascall Electronics factory are located in the UK.

DDC Microelectronics, a division of Data Device Corporation and formerly the space microelectronics division of Maxwell Technologies, is a leading developer and manufacturer of innovative, cost-effective, space-qualified microelectronics solutions for satellites and spacecraft. DDC Microelectronics has provided space-qualified radiation-tolerant and radiation-shielded products, including semiconductors and single-board computers, to the space industry for more than two decades. DDC radiation mitigated power modules, memory modules, and single board computers incorporate powerful commercial silicon for superior performance and high reliability in space applications. DDC Microelectronics specializes in understanding the radiation performance of commercial semiconductors, qualifying selected components for use in space, integrating them with proprietary radiation mitigation technologies, and manufacturing and screening these products in a DLA approved MIL-PRF-38534 facility, located in southern California.

Your Solution Provider for... Connectivity, Power, and Control

Connectivity

Data Bus Solutions

DDC is the market leader in high reliability data bus solutions for MIL-STD-1553/1760, ARINC 429, Fibre Channel, Ethernet, CANbus, Serial I/O and other protocols, and is one of the few companies able to provide a full range of computers, boards, hybrids and ASIC solutions for aerospace, defense and space applications.

Power

Power Supplies

DDC supplies highly customized power products to the aerospace, defense, maritime and satellite communications industries.

Solid-State Power Controllers

DDC's programmable solid-state power controllers provide simple and reliable power management for aerospace and defense systems.

Control

Motor Controllers and Drives

DDC is the world leader in high reliability torque, speed, and position controllers and drives engineered to operate in demanding environments.

Motion Feedback

DDC is the world leader in the design and manufacture of Synchro/Resolver-to-Digital and Digital-to-Synchro/Resolver converters.

Certifications

Data Device Corporation is ISO 9001:2008, AS 9100 Rev C, EN 9100, and JIS Q9100 certified. DDC has been granted certification by the Defense Logistics Agency, Land & Maritime (DLA) for manufacturing Class D, G, H, and K hybrid products in accordance with MIL-PRF-38534. Industry documents used to support DDC's certifications and Quality system are MIL-STD-883, ANSI/NCSS Z540-1, IPC-A-610, MIL-STD-202, JESD-22, and J-STD-020.

Beta Transformer Technology Corporation (BTTC) and its subsidiaries are ISO 9001:2008 and AS 9100 Rev C certified. BTTC has been granted certification as a qualified source of transformers by the Defense Logistics Agency, Land & Maritime (DLA) and is listed on the QPL for products MIL-PRF 21038/27-01 through -31 Product Levels C, M and T.

DDC Electronics, Ltd.'s XCEL Power Systems and Pascall Electronics manufacturing operations are ISO 9001:2008, AS 9100 Rev C, EN9100 and ISO 14001:2004 certified.



Your Solution Provider for... Connectivity, Power, and Control



The first choice for more than 50 years—DDC

DDC is the world leader in the design and manufacture of high reliability data interface products, motion control, and solid-state power controllers for aerospace, defense, and industrial automation.

Inside the U.S. : Call Toll-Free 1-800-DDC-5757



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