

# TTC PRODUCT SELECTION GUIDES



## Index

### RECORDERS

48 Mbps IRIG-106 Chapter 10 Recorder/Multiplexer .....	2
200 Mbps IRIG-106 Chapter 10 Recorder/Multiplexer .....	3
1000 Mbps IRIG-106 Chapter 10 Recorder/Multiplexer .....	4
2800 Mbps IRIG-106 Chapter 10 Recorder/Multiplexer .....	6
PCM-Based Compact Flash Recorders .....	7
PCM-Based PCMCIA Recorders.....	8

### NETWORK PRODUCTS

Network Switches .....	9
Network Recorders .....	10
Network-Based Data Acquisition .....	11
Miniature Network-Based Data Acquisition .....	12
Miniature Specialized Network-Based Data Acquisition .....	14

### RF PRODUCTS

Airborne Transmitters .....	15
Airborne Multimode Transmitters.....	16
Airborne Receivers (Standard & Multimode).....	17
PC-Based Receivers .....	18
QPSK Modems Selection Guide .....	19

### DATA ACQUISITION PRODUCTS

CAIS Remote Acquisition Units .....	20
CAIS Remote MUX/Recorder Acquisition Units .....	21
E-Bus Remote Acquisition Units.....	22
Miniature CAIS Remote Acquisition Units .....	23
Miniature PCM Standalone Acquisition Units .....	24
PCM Controllers .....	25
PCM-Based Mid-Range Solid State Recorders.....	26
PCM-Based PCMCIA Recorders (MMSM-XXXX) .....	27
PCM-Based PCMCIA Recorders (SSR-XXXX) .....	28
PCM Standalone Acquisition Units .....	29
Small Standalone Acquisition Encoder Units.....	30

### GROUND PRODUCTS

PC-Based CAIS Controllers .....	31
MUX/DEMUX Data Link Units .....	32

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# RECORDERS & MULTIPLEXERS SELECTION GUIDES

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## 48 Mbps IRIG-106 Chapter 10 Recorder/Multiplexer Selection Guide

	MSSR-2010SAR	MSSR-2010-SA	Stackable MSSR	Stackable MSSR
ARCHITECTURE	Standalone		Stackable in following products: <b>MCD AU-2000</b> <b>MEDA U-2000</b> <b>MWDA U-2000</b> <b>MARM-2000</b>	
COMPATIBLE CONTROLLER MODULES	<b>MCFM-110R-1</b> <b>MSSR-110C-1</b>  Media is plugged in on the opposite side of the unit's connectors	<b>MCFM-110-1</b> <b>MSSR-110C-1</b>  Media is plugged in on the same side of the unit's connectors	<b>MCFM-110R-1</b> <b>MSSR-110C-1</b>  Media is plugged in on the opposite side of the unit's connectors	<b>MCFM-110-1</b> <b>MSSR-110C-1</b>  Media is plugged in on the same side of the unit's connectors
I/O MODULES PER RECORDER	Up to 8 I/O modules subject to power limitations and maximum record rate			
COMPATIBLE I/O MODULES	<b>MPCM-102M-1</b> : 2-20 Mbps (maximum) channel PCM input modules <b>MBIM-553M-1</b> : 1-channel MIL-STD-1553 module <b>MVID-121M-1</b> : 1-channel MPEG-2 video/audio acquisition module <b>MIRG-220M-2</b> : IRIG time module			
MEDIA	One or two high-speed compact Flash drives up to 16 GB each or higher based on market availability.			
MEDIA MODEL NUMBERS & CAPACITY	<b>MMCF-2000HS</b> (2 GB), <b>MMCF-4000HS</b> (4 GB), <b>MMCF-8000HS</b> (8 GB), and <b>MMCF-16000 HS</b> (16 GB)			
RECORD RATE	Up to 48 Mbps using TTC-approved media			
FILE SYSTEM	STANAG-4575 directly on the recording media per IRIG-106 chapter 10			
TIME SUPPORT	IRIG-B AC/DC using an MIRG-220M-2, which uses an internal real-time clock with battery backup			
NETWORK STATUS	Supports SNMP including recorder statistics, internal voltages, temperature, performance, memory remaining, recording packets per second and real-time health.			
CONTROL & STATUS	RS-232/422 and/or 5 control and 5 discrete I/O modules			
DATA DOWNLOAD	Remove the compact Flash drive and insert it into a PC or use the USB 2.0 port on the recorder			
POWER SUPPLY	Uses 28VDC +/- 8V input <b>MSSR-2010-SA(R)-1</b> uses <b>MPSM-2305</b> (15 W) <b>MSSR-2010-SA(R)-2</b> uses <b>MPSM-2515/MPFM-461</b> (30 W)		From the stack backplane.	
ENVIRONMENTAL	Operating temperature: -40° C to +85° C Vibration: 15 grms, 20 to 2,000 Hz, 10 minutes, any axis Acceleration: 20 g indefinite duration, any axis Humidity: 5-95% RH, non-condensing Altitude: 0 to 70,000 ft.			
SIZE	2.5" W x 2.6" D x variable height			



**200 Mbps IRIG-106 Chapter 10 Recorder/Multiplexer Selection Guide**

	<b>MUX-3003</b>	<b>MUX-3003R</b>	<b>MUX-3005R</b>	<b>MUX-3006</b>
ARCHITECTURE	Full-sized chassis with three slots for I/O cards.	Full-sized chassis with three slots for I/O cards and one slot for a recorder module.	Full-sized chassis with five slots for I/O cards and one slot for a recorder module.	Full-sized chassis with six slots for I/O cards.
NUMBER OF I/O SLOTS	3	3	5	6
MEDIA	External	Internal <b>XRMM-1XXX(E)</b> and/or external		External
INTERNAL MEDIA CAPACITY	N/A	Up to 128 GB or higher based on market availability		N/A
EXTERNAL MEDIA	<p><b>Using a Fibre Channel interface with an XFCH-302E 2-channel I/O card</b> An <b>MSR-2001-PS</b> with one MSC-XXXX-FS cartridge provides up to 130 GB of solid-state storage An <b>MSR-2002-PS</b> with up to 2 MSC-XXXX-FS cartridges provides up to 130 GB of solid-state storage per cartridge. Also can be used with any commercial RAID, JBOD or Fibre Channel drive.</p> <p><b>Using a 1394B FireWire interface with an XBIM-394 2-channel 1394B I/O card</b> An XMSR-2001-PS with a single <b>XRMM-1XXX(E)</b> cartridge provides up to 128 GB of solid-state storage. Also can be used with any commercial 1394B media and drive. Multiple units can be cascaded.</p> <p><b>10/100BaseT Ethernet</b> An <b>nREC-4000</b> with RMM-4XXX-IS cartridge provides up to 128 GB of solid-state storage. Also compatible with COTS Ethernet media and drives.</p> <p><b>Serial output up to 20 Mbps</b> The following TTC products accept serial output: The MSSR-100C (16 GB of compact Flash), <b>MSSR-2000C</b> (16 GB of compact Flash), <b>MMSM-100C</b> (16 GB of PCMCIA), and the SMS-4000 with a single RMM-4XXX-IS cartridge (43 GB of solid-state storage)</p>			
RECORD RATE	Up to 200 Mbps			
FILE SYSTEM	Stanag-4575 directly on the media per IRIG-106 chapter 10			
TIME SUPPORT	IRIG-B AC / DC or built-in GPS receiver			
CONTROL & STATUS	RS-232/422 and/or 6 control and 6 status I/O ports			
SIMULTANEOUS RECORDING	Up to 4 internal and/or external media can record data simultaneously using different media types and interfaces.			
DATA DOWNLOAD	Using internal media, with a 1394B FireWire connection on the media when it is installed in or removed from the MUX or a 1 Gbps Fibre Channel connection when a <b>XFCH-302</b> card is installed. Using external media, with a 1 Gbps Fibre Channel connection when a <b>XFCH-302</b> card is installed.			
ENVIRONMENTAL	Operating temperature: -40°C to +85°C Storage temperature: -55°C to +125°C Weight: 10 lbs. (approximate) Power supply: +28VDC +/-4VDC			
SIZE	6"W x 4.49"H x 5.29"D	6"W x 4.49"H x 6.69"D	6"W x 4.49"H x 8.09"D	6"W x 4.49"H x 7.39"D



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## 1000 Mbps IRIG-106 Chapter 10 Recorder/Multiplexer Selection Guide (page 1 of 2)

	AIM-2004	AIM-2006	AIM-2005R	HSAVDAU-2004 HSAVDAU-2006
FUNCTION	High-speed data multiplexer and recorder media interface unit.			High-speed remote data multiplexer and AIM-200X interface unit.
OVERHEAD CARD (FIRST GENERATION)	<b>OVH-300A</b> and <b>RCI-305</b>	<b>OVH-330A</b> and <b>RCI-305</b>	<b>OVH-330A</b> and <b>RCI-305</b>	HSAVDAU-2004: <b>OVH-300H</b> and <b>RCI-305</b> HSAVDAU-2006: <b>OVH-330H</b> and <b>RCI-305</b>
OVERHEAD CARD (SECOND GENERATION)	<b>OVH-300-11</b> and <b>RCI-305</b>	<b>OVH-330A-11</b> and <b>RCI-305</b>	<b>OVH-330A-11</b> and <b>RCI-305</b>	HS-AVDAU-2004: <b>OVH-300-12</b> and <b>RCI-305</b> HS-AVDAU-2006: <b>OVH-330H-12</b> and <b>RCI-305</b>
OVERHEAD (WITH 2 GB ETHERNET PORTS)	<b>OVH-350-1</b> and <b>RCI-305</b>	<b>OVH-350-31</b> and <b>RCI-305</b>	<b>OVH-350-31</b> and <b>RCI-305</b>	HS-AVDAU-2004: <b>OVH-350-2</b> and <b>RCI-305</b> HS-AVDAU-2006: <b>OVH-350-32</b> and <b>RCI-305</b>
MEDIA	External	External	Internal RMM-3XXX cartridge(s) and/or external standalone recorders	N/A
INTERNAL MEDIA CAPACITY	N/A		128 GB or higher based on market availability	N/A
EXTERNAL MEDIA	<p><b>Using a Fibre Channel interface with an XFCH-302E 2-channel I/O card</b></p> <p>An <b>MSR-2001-PS</b> with one <b>MSC-XXXX-FS</b> cartridge provides up to 130 GB of solid-state storage. An <b>MSR-2002-PS</b> with up to 2 <b>MSC-XXXX-FS</b> cartridges provides up to 130 GB of solid-state storage per cartridge. Also can be used with any commercial RAID, JBOD or Fibre Channel drive.</p> <p><b>Using a 1394B FireWire interface with an BIM-394Q 4-channel 1394B I/O card</b></p> <p>An <b>XMSR-2001-PS</b> with a single <b>XRMM-1XXX(E)</b> cartridge provides up to 128 GB of solid-state storage. Also can be used with any commercial 1394B media and drive. Multiple units can be cascaded.</p> <p><b>10/100/1000Base-T (Gigabit) Ethernet</b></p> <p>An <b>nREC-6000</b> with <b>MSA-XXXXS-1</b> cartridge or an <b>nREC-4000S</b> with <b>RMM-4XXXXS-1</b> cartridge (128 GB of solid-state storage). Gb Ethernet requires an <b>OVH-350</b> series overhead card.</p>			
RECORD RATE	Up to 1000 Mbps	Up to 500 Mbps	Up to 200 Mbps using internal media and up to 500 Mbps using combined internal and external media.	Operates as a slave multiplexer to the <b>AIM-2004, AIM-2005R, or AIM-2006</b>
FILE SYSTEM	STANAG-4575-compliant data files are recorded directly to the media per IRIG-106 chapter 10.			



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**1000 Mbps IRIG-106 Chapter 10 Recorder/Multiplexer Selection Guide (page 2 of 2)**

	AIM-2004	AIM-2006	AIM-2005R	HSAVDAU-2004 HSAVDAU-2006
TIME SUPPORT	IRIG-B AC/DC			
CONTROL & STATUS	Using the RS-232/422 port and/or discrete I/O ports			
SIMULTANEOUS RECORDING	Up to 4 internal and/or external media can record data simultaneously using different media types and interfaces.			
DATA DOWNLOAD OPTIONS	Using internal media, with a 1394B FireWire connection on the media when it is installed in or removed from the MUX, a 1 Gbps Fibre Channel connection when a <b>FCH-302</b> card is installed and a 10/100/1000Base-T Ethernet port with an <b>OVH-350</b> -series overhead card. Using external media, with a 1 Gbps Fibre Channel connection when a <b>FCH-302</b> card is installed and a 10/100/1000Base-T Ethernet port with an <b>OVH-350</b> -series overhead card.			
SIZE	6.3" W x 6.0" H x 6.6" D	6.3" W x 6.0" H x 8.2" D	6.3" W x 6.0" H x 9.8" D	<b>HS-AVDAU-2004:</b> 6.3" W x 6.0" H x 6.6" D <b>HS-AVDAU-2006:</b> 6.3" W x 6.0" H x 8.2" D



**2800 Mbps IRIG-106 Chapter 10 Recorder/Multiplexer Selection Guide**

	<b>AIM-4004</b>	<b>AIM-4006</b>
ARCHITECTURE	The chassis has two physical bus segments. Each segment has two overhead cards and one I/O slot for four overhead cards and two I/O slots total.	
SEGMENT OVERHEAD CARDS	The <b>OVH-350-1</b> with two 10/100/1000Base-T Ethernet ports for data, two RS-232/422 ports, one 10/100Base-T Ethernet port and a discrete I/O port and the <b>RCI-305-2</b> with IRIG-B time in and time out and a CAIS bus.	
COMPATIBLE I/O CARDS	All I/O cards available for the AIM and <b>HSAVDAU-2000</b> series	
MEDIA USED	The <b>nREC-6000</b> network-based recorder with two 10/100/1000Base-T (Gigabit) Ethernet data ports	
MEDIA CAPACITY	Up to 1TB (1024 GB) or higher based on market availability	
MEDIA INTERFACE	Each physical bus segment has two 1000Base-T (Gigabit) Ethernet interfaces for one nREC-6000 recorder.	
RECORD RATE	Up to 180 MBps (1400 Mbps) per segment. The combined rate using two <b>nREC-6000s</b> simultaneously is up to 360 MBps (2800 Mbps)	
SIMULTANEOUS RECORDING	Two <b>nREC-6000</b> can record simultaneously using one recorder per segment.	
RECORDING FORMAT	TTC NPD Packet Protocol. For other formats contact TTC.	
FILE SYSTEM	STANAG-4575 directly on the media per IRIG-106 chapter 10	
TIME SUPPORT	IRIG-B AC/DC and the recorder supports IEEE 1588. IRIG-B AC/DC and the recorder supports IEEE 1588.	
CONTROL AND STATUS	RS-232/422, Ethernet and/or discrete I/O ports.	
DATA DOWNLOAD	Remove the media from the recorder or use one 1000Base-T Ethernet port for recording and the other for data download.	
ENVIRONMENTAL	Operating temperature: -40° C to +85° C Storage temperature: -55° C to +125° C Vibration: 15 grms, 10 to 2,000 Hz, any axis Humidity: 10-100% RH, non-condensing Acceleration: 25 g indefinite duration, any axis - peak acceleration, 20 g, 11 milliseconds, any axis Altitude: -1,300 to +65,000 ft.	
SIZE	6.3" W x 6.00" H x 6.60" D	6.3" W x 6.0" H x 8.2" D



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**PCM-Based Compact Flash Recorder Selection Guide**

	MSSR-100	MSSR-100C	MSSR-2000	MSSR-2000C
APPLICATION	Stackable to: <b>MCD AU-2000</b> <b>MWDAU-2000</b> <b>MEDA U-2000</b> <b>MARM-2000</b>		Standalone	
MEDIA TYPE	Compact Flash (CF) Card			
SCALABILITY	Up to 2 Cards			
RECORD RATE	Up to 5 Mbps	Up to 10 Mbps	Up to 5 Mbps	Up to 10 Mbps
CAPACITY	Up to 4 Gbyte (Up to 2 Gbyte per CF Card)	Up to 16 Gbyte (Up to 8 Gbyte per CF Card)	Up to 4 Gbyte (Up to 2 Gbyte per CF Card)	Up to 16 Gbyte (Up to 8 Gbyte per CF Card)
RECORD MODE	1) Use internal Frame Correlator & Pack data or word align 2) Throughput mode (bypass Frame Correlator)			
FILE SYSTEM	Fat-16	Fat-16 or Stanag-4575	Fat-16	Fat-16 or Stanag-4575
IRIG TIME SUPPORT	Yes			
CH10 MUX-3000 COMPATIBILITY	N/A	Yes	N/A	Yes
DATA INTERFACE	TTL/RS-422 Data & Clock			
CONTROL/STATUS	RS-232/422 and/or Discrete (4 Control & 4 Status)			
SIZE	2.5"W x 3.6"D x 1.4"H		2.5"W x 2.6"D x 2.2"H (no IRIG-B Time Module) 2.5"W x 2.6"D x 2.6"H (with IRIG-B Time module)	



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**PCM-Based PCMCIA Recorder Selection Guide (MMSM-XXXX)**

	MMSM-100(L)-ST	MMSM-100(L)-SA	MMSM-100(C)-ST	MMSM-100(C)-SA	MMSM-100-ST	MMSM-100-SA
APPLICATION	Stackable to: <b>MCD AU-2000</b> <b>MED AU-2000</b> <b>MWDAU-2000</b> <b>MARM-2000</b>	Standalone	Stackable to: <b>MCD AU-2000</b> <b>MED AU-2000</b> <b>MWDAU-2000</b> <b>MARM-2000</b>	Standalone	Stackable to: <b>MCD AU-2000</b> <b>MED AU-2000</b> <b>MWDAU-2000</b> <b>MARM-2000</b>	Standalone
MEDIA TYPE	PCMCIA Card					
SCALABILITY	Up to 2 Cards					
RECORD RATE	Up to 10 Mbps			Up to 5 Mbps		
CAPACITY	Up to 32 Gbyte (Up to 16 Gbyte per PCMCIA Card)			Up to 4 Gbyte (Up to 2Gbyte per PCMCIA Card)		
FILE SYSTEM	Fat-16 or Stanag-4575			Fat-16		
IRIG TIME SUPPORT	No, (Elapse time only)		Yes		No, (Elapse time only)	
CH10 MUX-3000 COMPATIBILITY	N/A		Yes		N/A	
DATA INTERFACE	TTL/RS-422 Data & Clock					
CONTROL/STATUS	RS-232/422 and/or Discrete (4 Control & 4 Status)					
SIZE	2.5"W x 2.6"D x 5.34"H	2.5"W x 2.6"D x 5.74"H	2.5"W x 2.6"D x 5.34"H	2.5"W x 2.6"D x 5.74"H	2.5"W x 2.6"D x 5.34"H	2.5"W x 2.6"D x 5.74"H



**Network-Based Switch Selection Guide**

	<b>NSW-8GT-TG-D-1</b>	<b>NSW-5FT-TG-(E)-1</b>	<b>MNSW-503</b>
ETHERNET PORTS	8 ports non-blocking	5 ports non-blocking	3 ports non-blocking
RATE PER PORT	10/100/1000Base-T (Gigabit) Ethernet	10/100Base-T Ethernet	10/100Base-T full duplex
NUMBER OF MULTICAST ADDRESSES SUPPORTED	64K	4K	Unlimited. Fixed multicast switching rules
SWITCHING CAPACITY	Up to 20 M packets/second	Up to 1.79 M packets/second	Up to 1.07 M packets/second
MANAGEMENT	Managed switch which allows for: <ul style="list-style-type: none"> <li>bandwidth control</li> <li>Quality of Service (QOS)</li> <li>Simple Network Management Protocol (SNMP)</li> <li>port mirroring</li> <li>port trunking</li> <li>static multicast routing</li> </ul>		Unmanaged switch module compatible with any TTC miniature data acquisition unit ( <b>MnDAU</b> ).
MAXIMUM DATA BANDWIDTH AGGREGATION	Up to 8 Gbps	Up to 500 Mbps	Up to 100 Mbps. Data is aggregated in one direction only.
IEEE 1588 TIMING MODEL	Boundary clock	Boundary clock	End-to-end transparent clock
INTERNAL PTP GRANDMASTER-CAPABLE	Yes	Yes	No
PTP GRANDMASTER TIME SOURCE	<ul style="list-style-type: none"> <li>IRIG-B time (AC or DC)</li> <li>GPS time with included GPS receiver and an attached GPS antenna</li> <li>Internal real-time PTP clock with built-in ten-year battery backup.</li> </ul>		N/A
TIME GENERATOR	Generates IRIG-B (AC and DC) time that is synchronized to the internal PTP clock.		N/A
INTERNAL CLOCK DRIFT	<ul style="list-style-type: none"> <li>2 PPM over temperature, free-running during loss of master clock.</li> <li>3.5 PPM over temperature for the battery-backed-up real-time clock in its powered-off state.</li> </ul>		N/A
ADDITIONAL PORTS	1 PPS output signal and RS-232/422		None
ENVIRONMENTAL	Operating temperature: -40° C to +85° C (for extended range of -55° C to +105° C contact TTC) Random vibration: 15 grms, 20 to 2,000 Hz, 10 minutes, any axis Acceleration: 25 g indefinite duration , any axis Shock: 15 g, half-sine, 11 mS, 6 shocks, any axis Humidity: 5-95% RH, non-condensing EMI/EMC per MIL-STD-461 Altitude: 0 to 70,000 ft. (for altitude above 70,000 ft, contact TTC)		
PACKAGING	Standalone unit with built-in power supply		Stackable module that can be added to any MnDAU to allow multiple MnDAU-cascading
POWER	28 VDC +/- 8 V		Powered through the host stack bus
SIZE	2.5" H x 8.3" W x 7.13" D	1.25" H x 5.335" W x 4.4" D (NSW-5FT-TG-1) 1.15" H x 5.39" W x 4.45" D (NSW-5FT-TGE-1)	0.4" H x 2.6" W x 2.5" D



**Network-Based Recorder Selection Guide**

	nREC-4000S	nREC-6000
ARCHITECTURE	Network-based recorder in a single chassis with a removable media cartridge.	
INTERFACE PORTS	Up to two 10/100Base-T Ethernet ports <ul style="list-style-type: none"> <li>• One 10/100/1000Base-T (Gigabit) Ethernet port for data download</li> <li>• RS-232/422 port</li> <li>• Discrete I/O ports</li> </ul>	Up to two 10/100/1000Base-T (Gigabit) Ethernet ports One 10/100Base-T port RS-232/422 port Discrete I/O ports
MEDIA	Solid-state cartridge with a built-in serial SATA drive.	Solid-state cartridge with RAID 0 support. Up to 8 built-in serial SATA drives per cartridge.
MEDIA CAPACITY	Up to 128 GB or higher based on a market availability.	Up to 1 TB (1024 GB) or higher based on market availability.
RECORD RATE	Up to 20 MBps (160 Mbps) using both 10/100Base-T Ethernet ports	Up to 180 MBps (1600 Mbps) using both 10/100/1000Base-T Ethernet ports
FILE SYSTEM	STANAG-4575 directly on the media per IRIG-106 chapter 10	
RECORDING FORMAT BY DATA SOURCE	<ul style="list-style-type: none"> <li>• AIM-4XXX data source : IRIG-106 Chapter 10</li> <li>• TTC Network Products data source : TTC NPD Packet Protocol</li> <li>• iNET equipment data source : iNET data format (definition in process)</li> <li>• Others: PCAP</li> </ul>	
TIME SUPPORT	IEEE 1588 PTP and IRIG-B AC/DC	
NETWORK STATUS REPORTING	Supports SNMP including recorder statistics, internal voltages, temperature, performance, memory remaining, recording packets per second and real-time health.	
CONTROL AND STATUS	RS-232/422, Ethernet and/or discrete I/O ports.	
SIMULTANEOUS READ/WRITE CAPABLE?	Yes	
DATA DOWNLOAD	Remove the media from the recorder or use the 10/100/100Base-T Ethernet port	Remove the media from the recorder, use one 10/100/1000Base-T Ethernet port for recording and the other for data download or use the 100Base-T Ethernet port
ENVIRONMENTAL (XXXX = GB STORAGE)	RMM-4XXX-SS cartridge (-35° C to 85° C) RMM-4XXXC-SS cartridge (0° C to 70° C) MSA-XXXXS-1 cartridge (-35° C to 85° C) RMM-4XXXXSC-1 cartridge (0° C to 70° C) Humidity range: 5% to 95% RH, non-condensing Vibration: 10 grms Acceleration: up to 16 g on all axis Shock: 15 g, 11ms	
SIZE	3.264" H x 7.0" W x 6.075" D	4.88" H x 7.5" W x 9.46" D



**Network-Based Data Acquisition Unit (nDAU) Selection Guide**

	nDAU-2008	nDAU-2010	nDAU-2012	nDAU-2016
CHASSIS TYPE	Fixed capacity full-size chassis.			
SIZE	4.97" W x 5.4" H x 8.62" L	4.97" W x 5.4" H x 9.96" L	4.97" W x 5.4" H x 11.3" L	4.97" W x 5.4" H x 13.98" L
I/O CARD CAPACITY	8	10	12	16
I/O CARD FUNCTIONS AVAILABLE	Many I/O cards are available, including analog conditioning, digital bi-level, temperature (for example RTD and thermocouple), pressure, LVDT, RVDT, synchro/resolver, video, voice, frequency/period/totalizer, 1553, ARINC, CAN bus, PCM, ASB bus, acceleration, bridge, power measurements and RMS.			
MAXIMUM DATA THROUGHPUT	Up to 1.25 MSPS (2.5 MBps)			
OVERHEAD CARD NAME AND DESCRIPTION	The PPC-520-1, which provides IEEE 1588 time conversion to internal-bus IRIG time.			
TIME-STAMP METHOD	IEEE 1588 slave mode time support. Accurate within < 150 nsec between nodes connected to the same switch.			
INTERFACE PORTS	<p>Transformer-coupled 10/100Base-T Ethernet for:</p> <ul style="list-style-type: none"> <li>• data packet output to the network</li> <li>• IEEE 1588 time synchronization</li> <li>• device configuration, SNMP messaging, and status and control.</li> </ul> <p>One RS-232/422 general-purpose, six general-purpose differential I/O and two optically-isolated general-purpose output ports</p>			
MULTICAST ADDRESS	Up to 256 addresses based on user-programmable rules.			
ENVIRONMENTAL	<p>Operating temperature -40° C to +85° C (for extended range of -55° C to +105° C contact TTC)            Random vibration 15 grms, 20 to 2,000 Hz, 10 minutes, any axis            Acceleration 25 g indefinite duration , any axis            Shock 15 g, half-sine, 11 mS, 6 shocks, any axis            Humidity 5-95% RH, non-condensing            EMI/EMC per MIL-STD-461            Altitude 0 to 70,000 ft. (for altitude above 70,000 ft., contact TTC)</p>			
POWER	28 VDC +/- 8 V			



**Miniature Network-Based Data Acquisition Unit (MnDAU) Selection Guide (page 1 of 2)**

	MnACQ-2000	MnACQ-2000	MnHSD-2000
CHASSIS TYPE	Stackable miniature modules ranging from .5" to 1" in height each.		
SIZE	2.5" W x 2.6" D - variable height		
MAXIMUM NUMBER OF I/O MODULES	Up to 31 per stack. More than 150 modules are compatible.		Up to 16 modules or 16 channels. Fewer channels are supported if modules with more than one channel are used.
CHANNELS PER I/O MODULE	Variable from 1 to 24 channels per module.		Variable from 1 to 2 channels per module.
MAXIMUM DATA THROUGHPUT	Many I/O cards are available, including analog conditioning, digital bi-level, temperature (for example, RTD and thermocouple), pressure, LVDT, RVDT, synchro/resolver, video, voice, frequency/period/totalizer, 1553, ARINC, CAN bus, PCM, ASB bus, acceleration, bridge, power measurements and RMS.		<ul style="list-style-type: none"> <li>• 1-channel high-resolution video (<b>MVID-501J-1</b>)</li> <li>• 1-channel standard resolution video (<b>MCVC-501J</b>)</li> <li>• 2-channel RS-232 serial (<b>MBIM-232N</b>)</li> <li>• 1-channel MIL-STD-IEEE1553 (<b>MBIM-553B</b>)</li> <li>• 2-channel Link 16 (<b>MLIN-516B</b>)</li> <li>• 2-channel audio (<b>MAUD-102N</b>)</li> </ul>
OUTPUT FORMAT	Packetized, iNET-ready PCM-based output using NPD Packet Protocol V3.		Each input channel is associated with a user-programmable multicast address, and its data is repackaged and communicated to the network using NPD Packet Protocol V3.
MAXIMUM CHANNELS PER UNIT	Variable based on the number and type of modules in use.		16
MAXIMUM DATA THROUGHPUT	Up to 1.25 MSPS (2.5 MBps)		Up to 50 Mbps (6.25 MBps)
COMPATIBLE OVERHEAD MODULES	<b>MPPC-500-1</b> <b>MACQ-500-1</b>	<b>MPPC-500-1</b> <b>MACQ-500-2</b> - converts IEEE 1588 to IRIG time for use by I/O modules	<b>MPPC-500-1</b> <b>MGPI-500J-1</b>
TIMESTAMP METHOD	IEEE 1588 slave mode time support. Accurate within < 150 nsec between nodes connected to the same switch.		
NETWORK PORT	Transformer-coupled 10/100Base-T Ethernet for: <ul style="list-style-type: none"> <li>• data packet output to the network</li> <li>• IEEE 1588 time synchronization</li> <li>• device configuration, SNMP messaging and status and control</li> </ul>		N/A



**NETWORK PRODUCTS  
SELECTION GUIDES**

**Miniature Network-Based Data Acquisition Unit (MnDAU) Selection Guide (page 2 of 2)**

	MnACQ-2000	MnACQ-2000	MnHSD-2000
INTERFACE PORTS	One RS-232 for engineering use, one RS-232/422 general-purpose, two general-purpose input and two optically-isolated general-purpose output ports.		One RS-232 for engineering use, one RS-232/422 general-purpose, two general purpose input/output and two optically-isolated general-purpose output ports.
MULTICAST ADDRESS	Up to 256 addresses based on user-programmable rules.		
ENVIRONMENTAL	Operating temperature: -40° C to +85° C (for an extended range of -55° C to +105° C contact TTC) Random vibration: 15 grms, 20 to 2,000 Hz, 10 minutes, any axis Acceleration: 25 g indefinite duration , any axis Shock: 15 g, half-sine, 11 mS, 6 shocks, any axis Humidity: 5-95% RH, non-condensing EMI/EMC per MIL-STD-461 Altitude: 0 to 70,000 ft. (for altitude above 70,000 ft., contact TTC)		
POWER	28 VDC +/- 8 V Power supplies from 30 W to 210 W are available.		



**Miniature Network-Based Specialized Acquisition Unit Selection Guide**

	<b>Mn553-2000</b>	<b>Mn429-2000</b>	<b>MnENT-2000</b>	<b>MnVID-2001</b>
CHASSIS TYPE	Stackable miniature modules ranging from .5" to 1" in height each		Stacked miniature modules with fixed height	
SIZE	2.5" W x 2.6" D - variable height		2.5" W x 2.6" D x 2.75" H	2.5" W x 2.6" D x 2.35" H
MAXIMUM NUMBER OF I/O MODULES	Up to 8		1 set	1
CHANNELS PER I/O MODULE	dual-redundant MIL-STD-1553 ( <b>MBIM-553B</b> )	4-ARINC-429 with auto-rate detect per channel ( <b>MBIM-429B</b> )	1 - 10/100Base-T Ethernet	1 - video - composite, S-video or RGB input and 2-audio
MAXIMUM CHANNELS PER UNIT	8-dual-redundant MIL-STD-1553	32-ARINC-429	1-10/100Base-T	1-video and 2-audio
MAX DATA THROUGHPUT	2 MBps	1 MBps	6 MBps	1 MBps
COMPATIBLE OVERHEAD MODULES	<b>MPPC-500</b> <b>MPGI-500J</b>	<b>MPPC-500</b> <b>MARC-500</b>	<b>MPPC-500</b> <b>MGPI-500</b>	<b>MPPC-500</b> <b>MGPI-500</b>
TIMESTAMP METHOD	IEEE 1588 slave mode time support. Accurate within < 150 nsec between nodes connected to the same switch.			
NETWORK PORT	Transformer-coupled 10/100Base-T Ethernet for: <ul style="list-style-type: none"> <li>• data packet output to the network</li> <li>• IEEE 1588 time synchronization</li> <li>• device configuration, SNMP messaging and status and control</li> </ul>			
INTERFACE PORTS	One RS-232 for engineering use, one RS-232/422 (reserved) and three opto-isolated general-purpose output	One RS-232 for engineering use, one RS-232/422 (reserved) and two opto-isolated general-purpose output	One RS-232 for engineering use and one RS-232 general-purpose	
MULTICAST ADDRESS	Up to 256 addresses based on user-programmable rules.			
ENVIRONMENTAL	Operating temperature: -40° C to +85° C (for an extended range of -55° C to +105° C contact TTC) Random vibration: 15 grms, 20 to 2,000 Hz, 10 minutes, any axis Acceleration: 25 g indefinite duration , any axis Shock: 15 g, half-sine, 11 mS, 6 shocks, any axis Humidity: 5-95% RH, non-condensing EMI/EMC per MIL-STD-461 Altitude: 0 to 70,000 ft. (for altitude above 70,000 ft, contact TTC)			
POWER	28 VDC +/-8 V			



**RF PRODUCTS**  
**SELECTION GUIDES**

TELETRONICS TECHNOLOGY CORPORATION  
15 Terry Drive, Newtown, PA | phone 267-352-2020

For more information visit [www.ttc das.com](http://www.ttc das.com) or contact [Sales@ttcdas.com](mailto:Sales@ttcdas.com).

**Airborne Transmitters Selection Guide**

	<b>TTS-1000</b>	<b>TTS-3000</b>	<b>TTS-4000</b>	<b>TTS-9000</b>	<b>TTS-1100</b>	<b>TTS-1300</b>
SIZE	1.3 Cubic Inch (1.25" x 3.4" x 0.3")	3.3 Cubic Inch (2.0" x 3.0" x 0.66")	4.8 Cubic Inch (2.0" x 3.0" x 0.8")	9 Cubic Inch (2.5" x 3.5" x 1.0")	11 Cubic Inch (2.5" x 3.5" x 1.3")	4.8 Cubic Inch (2.0" x 3.0" x 1.5")
TYPE	Telemetry Digital Wideband Video			Telemetry Digital Wideband Video Hypermod		SOQPSK Multi-H CPM Telemetry Digital Wideband Video
FREQUENCY BANDS	L & S Bands					
OUTPUT POWER	0.5 to 2 Watt			2, 5, 10 or 20 Watt		
INPUT VOLTAGE	12 VDC	28 VDC				



## RF PRODUCTS SELECTION GUIDES

TELETRONICS TECHNOLOGY CORPORATION  
15 Terry Drive, Newtown, PA | phone 267-352-2020

For more information visit [www.ttcas.com](http://www.ttcas.com) or contact [Sales@ttcdas.com](mailto:Sales@ttcdas.com).

### Airborne Multimode Transmitters Selection Guide

	TTS-5500	TTS-6510	TTS-9600	TTS-9700
SIZE	0.8" H x 2.0" W x 3.0" D	1.0" H x 2.5" W x 3.5" D	1.0" H x 2.5" W x 3.5" D	1.0" H x 2.5" W x 3.5" D
FREQUENCY BAND	1435-1540 MHz 1700-1850 MHz 2200-2300 MHz 2300-2400 MHz 2200-2450 MHz	1435-1540 MHz	1350-1540 MHz	4400-4950 MHz 5091-5150 MHz 5925-6700 MHz
MODULATION TYPE	PCM/FM SOQPSK CPM M/H			
RF POWER	5, 10, 20 Watts min	20 Watts min	20 Watts min	5, 10, 20 Watts min
INPUT DATA INTERFACE	RS-422			
BIT RATE (AUTO TRACKING):				
PCM/FM	80 Kbps to 20 Mbps	160 Kbps to 10 Mbps	160 Kbps to 10 Mbps	80 to 20 Mbps
SOQPSK & CPM M/H	160 Kbps to 40 Mbps	320 Kbps to 20 Mbps	320 Kbps to 20 Mbps	160 Kbps to 40 Mbps
COMMAND PROTOCOL	Appendix N or Custom	Custom	Custom	Appendix N or Custom
COMMAND PORT INTERFACE	RS-232, -422, or -485			
ENVIRONMENTAL	Operating temperature: -40° C to +85° C Random vibration: 20 Grms, 20 to 2,000 Hz, 10 minutes, any axis Acceleration: 100g indefinite duration, any axis Shock: 100g, half-sine, 11 mS, 6 shocks, any axis Humidity: 5-95% RH, non-condensing EMI/EMC per MIL-STD-461 Altitude: 0 to 100,000 ft			
INPUT VOLTAGE	28 VDC ± 6V			
CURRENT DRAW (MAX @ 28VIN) CONSTANT POWER	5 W: 0.8 Amps 10 W: 1.3 Amps 20 W: 2.5 Amps	20 W: 2.8 Amps	20 W: 2.8 Amps	5 W: 0.8 Amps 10 W: 1.3 Amps 20 W: 2.5 Amps
RF CONNECTOR	SMA	SMA	TNC	SMA
INPUT CONNECTOR	MDM-15			



**Airborne Receivers (Standard & Multimode) Selection Guide**

	TRS-920	TRS-930	TRS-1100	TRS-1600	TRS-4800
SIZE	9 Cubic Inches (2.5" x 3.5" x 1")		11 Cubic Inches (2.5" x 3.5" x 1.3")	16 Cubic Inches 3.25" x 5.00" x 1.00"	48 Cubic Inches (4" x 6" x 2")
TYPE	Telemetry Receiver	Video Receiver	Digital Receiver	5, 10, 20 Watts min	Telemetry Receiver, Digital RCVR, Video RCVR
FREQUENCY BANDS	L & S Bands				
FREQUENCY SELECTION	in 1 MHz steps				
INPUT IMPEDENCE	50 ohms				
IF BANDWIDTH	1.4 times specified Bit Rate	4 MHz	4 MHz	Auto Tracking via Bit Rate Selection	4 MHz
DEMODULATED OUTPUT	Bit Rates up to 15 Megabits per sec	10 Hz to 4.5 MHz, $\pm 1.5$ dB Frequency response	10 Hz to 4.5 MHz, $\pm 1.5$ dB Frequency response		



**PC-Based Receivers Selection Guide**

	RCVR-105	RCVR-210S	RBDS-120(D)(T)	RMDS-300
FORM FACTOR	PCMCIA		PCI full-size	
FEATURES	Receiver Bit Sync	Receiver Bit Sync	Receiver Bit Sync Decom Timecode (D) Dual Receiver (T) Tracking	Receiver Clock Recovery Decom Timecode
FREQUENCY BANDS	1435 – 1540 MHz 2200 – 2300 MHz 2300 – 2400 MHz 2200 – 2450 MHz			
IF BANDWIDTHS	Auto Tracking via Bit Rate Selection			
MODULATION TYPE	PCM/FM	PCM/FM SOQPSK	PCM/FM	PCM/FM SOQPSK
BIT SYNCHRONIZER	Bit Rate Range:			
PCM/FM	80K to 5 Mbps	160K to 5 Mbps	160K to 10 Mbps	80K to 20 Mbps
SOQPSK		320K to 10 Mbps		160K to 10 Mbps
COMMAND PROTOCOL / SOFTWARE	TTCVision & TTCGSS			
COMMAND PORT INTERFACE	PCMCIA		PCI	
ENVIRONMENTAL	Temperature (operating): 0° C to +50° C Temperature (non-operating): -20° C to +85° C Humidity: 5% to 95% Non-condensing Altitude (operating): 15,000 feet Altitude (non-operating): 30,000 feet EMI: Designed to MIL-STD461D			
INPUT VOLTAGE	+3.3 Volts DC		+5, +3.3, +12, & -12 Volts DC	
CURRENT DRAW / WATTS	800mA Max		+5V @ 700mA +3.3V @ 650mA +12V @ 400mA -12V @ 10mA	
CONNECTORS	SMA			
APPLICATIONS	Lab Test		Flight Line	



**QPSK Modems Selection Guide**

	<b>MODEL 5140</b>	<b>MODEL 5450</b>	<b>MODEL 5960</b>
DATA RATES	56 Kbps to 10 Mbps including T1/E1		Agile 56 Kbps to 10 Mbps including T1/E1
DATA TRANSMISSION	Transmits Data over Analog Microwave (DaV, DiV)	Transmits Data over AM/FM Fiber, Broadband Coax, or Wideband Microwave	
OPERATING MODE	Synchronous, Full Duplex		
FREQUENCY AGILE	0.5 - 40 MHz	5 - 400 MHz	5 - 960 MHz
SPACING	0.7 x Data Rate		0.7 x Data Rate for QPSK, 1.4 x Data Rate for BPSK
LOOPBACK	Yes		
BER GENERATION	QPSK		Yes
TYPE OF MODULATION	PCMCIA		QPSK and BPSK



**CAIS Remote Acquisition Unit Selection Guide**

	WDAU-2010/12/16	CDAU-2010/12/16	CDAU-2020	MRTM-2048
CHASSIS TYPE	Fix Volume System			
SIZE	WDAU/CDAU-2010: 4.97"W x 5.4"H x 9.96"L WDAU/CDAU-2012: 4.97"W x 5.4"H x 11.3"L WDAU/CDAU-2016: 4.97"W x 5.4"H x 13.98"L		4.97"W x 5.4"H x 13.98"L	5.8"W x 4.0"H x 3.0"L
NUMBER OF ACQUISITION I/O CARDS	WDAU/CDAU-2010: Up to 10 I/O WDAU/CDAU-2012: Up to 12 I/O WDAU/CDAU-2016: Up to 16 I/O		Up to 10 I/O cards	3 I/O cards (TCD-2048)
MAX SAMPLE RATE	1.25 MSPS	417 KSPS	Controller: up to 1.66 MSPS Remote: up to 417 KSPS	417 KSPS
OVERHEAD MODULES	<b>WCI-120</b> <b>WCI-120-D</b>	<b>RCI-105</b>	<b>RCI-105-2</b>	<b>RCI-2048</b>
UNIT POSSIBLE CONFIGURATIONS	Concurrent standalone and remote operation or standalone operation only		Concurrent CAIS master and remote operation, remote operation only or master operation only	Remote operation only
IRIG-B TIME READER/GENERATOR	Requires IRG-101B card	Built-in as part of the chassis overhead		N/A
ADDITIONAL NOTES	I/O modules are interchangeable between these three units, but some modules will only operate in a system running 417 KSPS or less			The unit I/O are TCD-2048 only



**CAIS Remote MUX/Recorder Acquisition Unit Selection Guide**

	<b>AIM-2004</b>	<b>AIM-2006</b>	<b>AIM-2005R</b>	<b>HSAVDAU-2004</b>	<b>HSAVDAU-2006</b>
CHASSIS TYPE	Fix Volume System				
SIZE	6.3"W x 6.0"H x 6.6"L	6.3"W x 6.0"H x 8.2"L	6.3"W x 6.0"H x 9.8"L	6.3"W x 6.0"H x 6.6"L	6.3"W x 6.0"H x 8.2"L
NUMBER OF ACQUISITION I/O CARDS	4 I/O	6 I/O	5 I/O	4 I/O	6 I/O
MAX CAIS SAMPLE RATE	417 KSPS (used for data selection from incoming channels of PCM, 1553, IEEE-1394, FC, ARINC-429, FOTR, Ethernet, etc.)				
MAX CH10 RECORD RATE	100 Mbyte/sec	50 Mbyte/sec		100 Mbyte/sec	50 Mbyte/sec
OVERHEAD MODULES	<b>OVH-300A RCI-305</b>	<b>OVH-330A RCI-305</b>		<b>OVH-330H RCI-305</b>	
UNIT POSSIBLE CONFIGURATIONS	Concurrent IRIG-106 CH10 Multiplexer/Recorder and CAIS remote operation, or CH10 Multiplexer/Recorder only			Concurrent IRIG-106 CH10 Multiplexer and CAIS remote operation, or CH10 Multiplier only	
IRIG-B TIME READER GENERATOR	Built-in as part of the chassis overhead				
ADDITIONAL NOTES	All AIM/HSAVDAU I/O cards are interchangeable among all units				



**E-Bus Remote Acquisition Unit Selection Guide**

	<b>MEDAU-2000</b>	<b>EDAU-2010/12/16</b>
CHASSIS TYPE	Stackable system with variable height	Fix Volume System
SIZE	2.5"W x 2.6"D x variable height	EDAU-2010: 4.97"W x 5.4"H x 9.96"L EDAU-2012: 4.97"W x 5.4"H x 11.3"L EDAU-2016: 4.97"W x 5.4"H x 13.98"L
NUMBER OF ACQUISITION I/O MODULES	31 I/O	EDAU-2010: 10 I/O EDAU-2012: 12 I/O EDAU-2016: 16 I/O
MAX SAMPLE RATE	417 KSPS	
OVERHEAD MODULES	<b>MREI-105</b>	<b>REI-105</b>
UNIT POSSIBLE CONFIGURATIONS	Concurrent E-Bus master and remote operations, remote operation only or master operation only	
IRIG-B TIME READER/GENERATOR	Requires MIRG or MGPS module	Built-in as part of the chassis overhead



**Miniature CAIS Remote Acquisition Unit Selection Guide**

	<b>MWDAU-2000</b>	<b>MWDAU-2000-HS</b>	<b>MCDAU-2000</b>	<b>PMCDAU-2000</b>	<b>SCDAU-2000</b>
CHASSIS TYPE	Stackable System with Variable Height			Fix Volume System	
SIZE	2.4"W x 2.6"D x variable height			<b>PMCDAU-2016:</b> 3.42"W x 3.17"H x 10.81"L	4"W x 3.75"D x 0.8"H
NUMBER OF I/O MODULES	Up to 31 I/O modules			Up to 16 I/O Modules	1 I/O module
MAX SAMPLE RATE	417 KSPS	1.25 MSPS	417 KSPS		
OVERHEAD MODULES	<b>MWCI-105</b> <b>MCIF-105</b>	<b>MWCI-120</b> <b>MCIF-105</b>	<b>MRCI-105</b> <b>MCIF-105</b>	<b>PMRCI-105</b> <b>PMCIF-105</b>	N/A, built in the <b>SCDAU-2000</b> unit
UNIT POSSIBLE CONFIGURATIONS	Concurrent standalone and remote operation or standalone operation only		Concurrent CAIS master and remote operation, remote operation only or master operation only		remote operation only
IRIG-B TIME READER GENERATOR	Requires MIRG or MGPS modules			Requires PMIRG or PMGPS module	
ADDITIONAL NOTES	I/O modules are interchangeable between these three units, but some modules will only operate in a system running 417 KSPS or less			Pluggable I/O modules are interchangeable between these two units	



**Miniature PCM Standalone Acquisition Unit Selection Guide**

	MWDAU-2000 HS	MWDAU-2000	MCDAU-2000	MEDAU-2000
CHASSIS TYPE	Stackable system with variable height			
SIZE	2.5"W x 2.6"D x variable height			
NUMBER OF ACQUISITION I/O MODULES	Up to 31 I/O modules		Up to 14 Master I/O modules + Up to 31 I/O modules	
BIT RATE MAX	20 Mbps (1.25 MSPS)	5 Mbps (417 KSPS)		
OVERHEAD MODULES	<b>MWCI-120</b>	<b>MWCI-105</b>	<b>MMCI-105</b> <b>MRCI-105</b> <b>MFDR-105</b> <b>MCIF-105</b>	<b>MMEI-105</b> <b>MREI-105</b> <b>MFDR-105</b>
COMMUNICATION BUS	N/A		CAIS Bus	E Bus
NUMBER OF BUILT-IN COMMUNICATION BUSES	N/A		1	
UNIT POSSIBLE CONFIGURATIONS	Concurrent standalone and remote operation, or standalone operation only		Concurrent CAIS master Controller and remote operation, remote operation only or master operation only	
IRIG-B TIME READER/GENERATOR	Requires MIRG or MGPS module			
ADDITIONAL NOTES	I/O modules are interchangeable between these units, but some modules will only operate at a system running 417KSPS or less			



**PCM Controllers Selection Guide**

	MEDAU-2000	MCAU-2000	EDAU-2010/12/16	CDAU-2010/12/16	CDAU-2020	AIC-2004
MINIATURE UNIT	Yes		No			
CHASSIS TYPE	Stackable System w/ Variable height		Fix Volume System			
SIZE	2.5"W x 2.6"D x variable height		<b>CDAU/EDAU-2010:</b> 4.97"W x 5.4"H x 9.96"L <b>CDAU/EDAU-2012:</b> 4.97"W x 5.4"H x 11.3"L <b>CDAU/EDAU-2016:</b> 4.97"W x 5.4"H x 13.98"L <b>CDAU-2020:</b> 4.97"W x 5.4"H x 13.98"L			6"W x 4.25"H x 4.65"L
NUMBER OF I/O CARDS	Up to 14 Controller I/O modules Up to 31 Acquisition I/O modules		<b>CDAU/EDAU-2010:</b> Up to 10 I/O Cards <b>CDAU/EDAU-2012:</b> Up to 12 I/O Cards <b>CDAU/EDAU-2016:</b> Up to 16 I/O Cards			Up to 3 Controller I/O Cards
BIT RATE MAX	5 Mbps				20 Mbps	
CONTROLLER CARDS	<b>MMEI-105</b> <b>MFDR-105</b>	<b>MMCI-105</b> <b>MFDR-105</b>	<b>MEI-105</b>	<b>MCI-105</b>	<b>OVH-400</b> <b>HSC-400</b> <b>RCI-404</b>	<b>OVH-200</b> <b>HSC-200</b> <b>RCI-204</b>
COMMUNICATION BUS	E-Bus	CAIS-Bus	E-Bus	CAIS-Bus		
NUMBER OF BUILT-IN COMMUNICATION BUSES	1				4	
ADDITIONAL BUSES	2 x E-Bus per card <b>MREX-205</b> 2 x CAIS-Bus per card <b>MRCX-205</b>		2 x E-Bus per card <b>REX-205</b> 2 x CAIS-Bus per card <b>RCX-205</b>		4 x CAIS-Bus per card, maximum of 2 cards <b>RCI-404</b>	4 x CAIS-Bus per card, maximum of 2 cards <b>RCI-204</b>
IRIG-B TIME READER/GENERATOR	Requires MIRG or MGPS module		Built-in as part of the chassis overhead			



**PCM-Based Mid-Range Solid State Recorder Selection Guide**

	SMS-4000	SMS-5000	SMS-4001-9	SMS-4002-1
APPLICATION	Standalone Unit			
MEDIA TYPE	RMM-4XXX-IS	RMM-5XXX-IS	RMM-4009	RMM-4034
SCALABILITY	N/A			
RECORD RATE	Up to 20 Mbps Serial or 5 Mbytes/sec Parallel			
CAPACITY	Up to 128 Gbyte	Up to 128 Gbyte	9 Gbyte	34 Gbyte
FILE SYSTEM	Stanag-4575			
IRIG TIME SUPPORT	Yes			
CH10 MUX-3000 COMPATIBILITY	Yes			
DATA INTERFACE	TTL/RS-422 Data & Clock or RS-422 Parallel Data/Strobe			
CONTROL/STATUS	RS-232/422 and/or Discrete (4 Control & 4 Status)			
DATA DOWNLOAD	USB-2.0			
SIZE	2.5"W x 2.6 "D x 5.34"H	2.5"W x 2.6 "D x 5.74"H	2.5"W x 2.6 "D x 5.34"H	2.5"W x 2.6 "D x 5.74"H



**PCM-Based PCMCIA Recorder Selection Guide (MMSM-XXXX)**

	<b>MMSM-100(L)-ST</b>	<b>MMSM-100(L)-SA</b>	<b>MMSM-100(C)-ST</b>	<b>MMSM-100(C)-SA</b>	<b>MMSM-100-ST</b>	<b>MMSM-100-SA</b>
APPLICATION	Stackable to: <b>MCD AU-2000</b> <b>MED AU-2000</b> <b>MWD AU-2000</b> <b>MARM-2000</b>	Standalone	Stackable to: <b>MCD AU-2000</b> <b>MED AU-2000</b> <b>MWD AU-2000</b> <b>MARM-2000</b>	Standalone	Stackable to: <b>MCD AU-2000</b> <b>MED AU-2000</b> <b>MWD AU-2000</b> <b>MARM-2000</b>	Standalone
MEDIA TYPE	PCMCIA Card					
SCALABILITY	Up to 2 Cards					
RECORD RATE	Up to 10 Mbps				Up to 5 Mbps	
CAPACITY	Up to 32 Gbyte (Up to 16 Gbyte per PCMCIA Card)				Up to 4 Gbyte (Up to 2Gbyte per PCMCIA Card)	
FILE SYSTEM	Fat-16 or Stanag-4575				Fat-16	
IRIG TIME SUPPORT	No, (Elapse time only)		Yes		No, (Elapse time only)	
CH10 MUX-3000 COMPATIBILITY	N/A		Yes		N/A	
DATA INTERFACE	TTL/RS-422 Data & Clock					
CONTROL/STATUS	RS-232/422 and/or Discrete (4 Control & 4 Status)					
SIZE	2.5"W x 2.6"D x 5.34"H	2.5"W x 2.6"D x 5.74"H	2.5"W x 2.6"D x 5.34"H	2.5"W x 2.6"D x 5.74"H	2.5"W x 2.6"D x 5.34"H	2.5"W x 2.6"D x 5.74"H



**PCM-Based PCMCIA Recorder (SSR-XXXX) Selection Guide**

	SSR-100	SSR-100(L)
APPLICATION	Playable to: <b>CDAU-2010/12/16</b> controller or <b>EDAU-2010/12/16</b> controller	
MEDIA TYPE	PCMCIA Card	
SCALABILITY	Up to 2 Cards	
RECORD RATE	up to 5 Mbps	
CAPACITY	Up to 4 Gbyte (Up to 2 Gbyte per PCMCIA Card)	Up to 32 Gbyte (Up to 16 Gbyte per PCMCIA Card)
FILE SYSTEM	Fat-16	Fat-16 or Stanag-4575
IRIG TIME SUPPORT	Yes	
CH10 MUX-3000 COMPATIBILITY	N/A	
DATA INTERFACE	CDAU/EDAU Bus	
CONTROL/STATUS	RS-232/422 and/or Discrete (4 Control & 4 Status)	
SIZE	Occupies 2 I/O slots in the host chassis	



**PCM Standalone Acquisition Unit Selection Guide**

	WDAU-2010/12/16	EDAU-2010/12/16	CDAU-2010/12/16	CDAU-2020
CHASSIS TYPE	Fix Volume System			
SIZE	<b>WDAU/EDAU/CDAU-2010:</b> 4.97"W x 5.4"H x 9.6"L <b>WDAU/EDAU/CDAU-2012:</b> 4.97"W x 5.4"H x 11.3"L <b>WDAU/EDAU/CDAU-2016:</b> 4.97"W x 5.4"H x 13.98"L			<b>WDAU/EDAU/CDAU-2016:</b> 4.97"W x 5.4"H x 13.98"L
NUMBER OF I/O CARDS	<b>WDAU/EDAU/CDAU-2010:</b> up to 10 I/O cards <b>WDAU/EDAU/CDAU-2012:</b> up to 12 I/O cards <b>WDAU/EDAU/CDAU-2016:</b> up to 16 I/O cards			
BIT RATE MAX	20 Mbps (1.25 MSPS)	5 Mbps (417 KSPS)		20 Mbps
CONTROLLER CARDS	<b>WCI-120</b>	<b>MEI-105</b> <b>REI-105</b>	<b>MCI-105</b> <b>RCI-105</b>	<b>OVH-400</b> <b>RCI-404</b> <b>HSC-400</b> <b>RCI-105-2</b>
COMMUNICATION BUS	N/A	E-Bus	CAIS Bus	
NUMBER OF BUILT-IN COMMUNICATION BUSES	N/A	1		4
UNIT POSSIBLE CONFIGURATIONS	Concurrent standalone and remote operation, or standalone operation only	Concurrent CAIS master and remote operation, remote operation only, or master operation only		
IRIG-B TIME READER/GENERATOR	Requires <b>IRG-101B</b> Card	Built-in as part of the chassis overhead		
ADDITIONAL NOTES	I/O modules are interchangeable between these units, but some modules will only operate at a system running 417 KSPS or less			



**Small Standalone Acquisition Encoder Unit Selection Guide**

	PCM-3214-HS	PCM-3214-HS-2	PCM-3214-HS-8	PCM-2234-HS-1	PCM-1632	RSE-232
CHASSIS TYPE	Fix Volume					
SIZE	4.5"L x 3.8"W x 0.75"H				3.5"L x 3.1"W x 1.5"H	3.2"L x 2.2"W x 1"H
BIT RATE MAX	20 Mbps (1.66 MSPS)					250 Kbps
ANALOG CHANNELS	3 Accel Channels, 3 RTD Channels, 26 General Purpose Channels			22 General Purpose Channels	32 General Purpose Channels	N/A
BI-LEVEL CHANNELS	12 Bi-Level Channel			32 Bi-Levels Channels	16 Opto-Isolated Bi-Level Input Channels	12 Bi-Levels Input Channels
SERIAL CHANNEL	10 MHz SDLC Channel 10 MHz Async Channel	2 x 10 MHz SDLC Channels	2 x 10 MHz SDLC Channels	2 Asynchronous Input Channels	N/A	2 RS-232/422 with a programmable baud rate up to 115kbaud/channel
PROGRAMMING PORT	RS-232/422					
BITS PER WORD	8, 9, 10, 11 or 12 bits per word					
PCM OUTPUT	Single ended and RS-422 Clock & Data					
FILTERED PCM OUTPUT	Auto configurable 6 poles Bessel filter based on selected PCM rate. Programmable Peak to Peak and offset output.					N/A
VIBRATION	10g, 50 to 2000Hz in each major axis 24 grms random from 20 Hz to 2000Hz in each major axis					6g, 20 to 2000Hz
ACCELERATION	110g in each major axis					100g in each major axis
SHOCK	275g half sine pulse, 1 ms					100g peak, half sine for 11 ms per major axis
OPERATION TEMPERATURE	-45°C to +85°C					-20°C to +70°C
ADDITIONAL BUSES	28 VDC +/- 4 VDC					



**PC-Based CAIS Controller Selection Guide**

	CPM-2000	CPM-2000SA	CPM-2000P	PCIC-104	PRCI-104
CARD TYPE	PC ISA Card	Standalone Unit	PC PCI Card	PC-104+	
SIZE	Half a PC Slot	4.6"W x 5.0"L x 1"H	Half a PC Slot	PC-104 Form Factor	
BIT RATE MAX	5 Mbps (417 KSPS)				
CAIS FUNCTION	CAIS Controller			CAIS Controller and Host data acquisition	CAIS Remote and Host data acquisition
CAIS BUSES	1 Standard CAIS bus + RS-422 CAIS bus for programming third party system				1 CAIS bus
HOST PLATFORM INTERFACE	Power and external RS-232	External RS-232	Power and external RS-232	Power, PCI Bus and external RS-232>	Power and PCI Bus
ACQUISITION DATA SOURCE	CAIS Bus				
APPLICATIONS	Ground support and lab use			Embedded PC-104 for airborne applications	
ADDITIONAL I/O	Format select and CAL select input				4 GPI signals 4 GPO signals
OUTPUT PCM	Single Ended and Differential Clock and Data				N/A
IRIG-B TIME READER GENERATOR	N/A				IRIG-B Time code reader/generator. Provides time to CAIS bus and to the Host via the PCI Bus
ADDITIONAL NOTES	Low cost lab and flight line tool for debugging installation problems and data simulations			Converts and PC-104 system into a CAIS acquisition controller. Acquires data via the host PCI for insertion into PCM with data acquired from remote CAIS units.	Converts and PC-104 system into a CAIS data acquisition remote unit



**MUX/DEMUX Data Link Unit Selection Guide**

	<b>MARM-2000</b>	<b>RMOR-2000D-1</b>	<b>RMOR-2000D-2</b>
SYSTEM TYPE	Miniature Asynchronous Real Time Multiplexer. An airborne multiplexer for interleaving real time asynchronous input channels for transmission	Rack Mount Output Reproducer. A ground base real time output regenerator of asynchronous interleaved channels	Two RMOR-2000D-1 in a single chassis
CHASSIS TYPE	Stackable system with variable height		
SIZE	2.5"W x 2.6"D x variable height	19"W x 14.11"D x 5.21"H	
NUMBER OF I/O CARDS	Up to 31 I/O modules	8 I/O slots	8 I/O slots per unit
BIT RATE MAX	20 Mbps output	20 Mbps input	
CONTROLLER CARDS	<b>MARM-120</b> with optional IRIG-B Time Module <b>MIRG-120</b>	<b>DMX-100</b> and optional Bit Sync card <b>BSN-200-2</b>	
I/O CARDS	<i>Input Modules:</i>	<i>Output Cards:</i>	
	<b>MPCI-102</b> : 2 Ch PCM up to 10Mbps/Ch	<b>SOC-102</b> : PCM output card	
	<b>MCVC-101</b> : 1 Ch H.261 Video	<b>DVC-101D</b> : 1 Ch H.261 Video output card	
	<b>MCVC-101M</b> : 1 Ch MPEG-2 Video/Audio	<b>DVC-201M</b> : 1 Ch MPEG-2 Video/Audio output card	
	<b>MCVC-101J</b> : 1 Ch JPEG-2000 Video	<b>DVC-101J</b> : 1 Ch JPEG-2000 Video output card	
	<b>MCVC-401M</b> : 1 Ch MPEG-4 Video/Audio	<b>DVC-401M</b> : 1 Ch MPEG-4 Video/Audio output card	
	<b>MBIM-232M</b> : 2 Ch RS-232/422	<b>BIM-232R</b> : 2 Ch RS-232/422 output card	
<b>MAUD-104M</b> : 4 Channel Audio/Analog	<b>AUD-104M</b> : 4 Channel Audio/Analog output card		
PROGRAMMING PORT	RS-232/422 using TTC ISS (Interleaver Setup Software)		
SYSTEM POWER	28 VDC +/- 4 VDC	110 VAC or 220 VAC	