Modular Receiver

MRD 2600

The MRD 2600 receiver shares the professional-grade front-end collection from Sencore's newest decoder designs, but removes the baseband video and audio components. This makes it a cost-effective solution for single-transponder, multi-service descrambling or single channel digital turnaround applications.

With available satellite, terrestrial (8VSB, QAM-B, DVB-T/T2/C/C2/ISDB-T), ASI, and IP input modules, in conjunction with dual-CAM DVB-CI and BISS descrambling, the MRD 2600 is ideally suited for transport stream input/output. The product is a perfect to feed internal IP distribution or front transcode infrastructure which is missing critical RF interfaces, especially where density is not a key requirement.

The MRD 2600 provides a wide range of control options, including full configuration and status through the front panel and a clean, easy-to-use web GUI. It also features a full SNMP interface, including configurable traps on alarms for easy integration into an control system, and as with all Sencore products, Sencore's professional support team is just a phone call away in the unlikely event that questions should arise.

KEY FEATURES

- Built-in ASI I/O for maximum value and flexibility
- Available IP and RF satellite I/O modules:
  - √ 8VSB/QAM-B receiver designed for A74
  - √ DVB-T/T2/C/C2/ISDB-T receiver
  - √ TurboPSK Interface with full mode support
  - √ IP Interface with redundant receive paths
  - √ Dual, mirrored TS over IP transmission
- Flexible descrambling support
  - √ Two DVB-CI Interfaces supporting up to 100Mbps
  - √ Flexible per-PID/service configuration
  - √ Built-in BISS Mode 1/E/2/CA and multi-key
  - √ Up to 12 Independent BISS keys supported
- Easy-to-use web interface
- Full control, status, and alarm monitoring via SNMP

APPLICATIONS

- **Multi-Service DVB-CI Decryption**
  Downlink a DVB-S/S2/S2X transponder, descramble with up to two professional DVB-CI CAMs, and output an IP MPTS to downstream transcoders or decoders.
- **8VSB Reception and Turnaround**
  Receive local stations and output for backhaul as ASI and IP. 8VSB input interface designed for strenuous A74 reception conditions.
- **Satellite Reception and BISS Descrambling**
  Simple solution for BISS-1/E/2/CA and Multi-BISS descrambling. Transmit transport steam in the clear via ASI or IP for additional processing.

SPECIFICATIONS
Modular Receiver MRD 2600

BASE UNIT FEATURES — MRD 26000

ASI Input:	1x 75Ω BNC
ASI Output:	1x 75Ω BNC
Supported Bitrate:	250 Kbps to 200 Mbps

BISS-1 Descrambling License — MRD 26921

Supported Modes:	Mode 0, Mode 1 with Session Word Mode E with SW and Injected ID
Multi-BISS Support:	Up to 12 Separate Keys

BISS-2/CA Descrambling License — MRD 26922

Supported Modes:	Mode 0, Mode 1 with Session Word Mode E with SW and Injected ID Mode CA with Injected Private Key Mode CA with Buried Private Key
Multi-BISS Support:	Up to 12 Separate Keys

DVB-CI Multi-Service — MRD 26991

With DVB-CI Module:	Enables Multi-service Descrambling

PID/Service Filtering License — MRD 26928

Filtering:	5 Independent TS (MPTS or SPTS) created; output via IP or ASI
Table Regeneration (DVB Mode):	PAT regeneration
Table Pass-through (DVB Mode):	PMT, CAT, NIT pass-through Table
Regeneration (DVB Mode):	PAT, SDT
Table Pass-through (DVB Mode):	PMT, CAT, NIT, EIT, RST, TDT, TOT

DVB-CI DESCRAMBLING MODULE — MRD 421

Physical Interface:	Adds two DVB-CI CAM Slots
Without Multi-Service License:	Descrambles Decoded Service Only
With Multi-Service License:	Number of Services limited by CAM

IP INPUT/OUTPUT MODULE — MRD 127

Physical Interface:	2x RJ45, 10/100/1000 Auto-Negotiate
Input Format:	UDP or RTP Constant Bitrate or Null-Stripped RTP Header Extensions Supported SMPTE 2022/CoP3 FEC Supported
Output Format:	UDP
MPE De-encapsulation:	Up to 2 PIDs Up to 60Mbps per MPE PID
IP Encapsulation:	1 to 7 TS Packets per IP Packet
Addressing:	Unicast or Multicast
IGMP compatibility:	Version 1, 2 & 3
Per TS Bitrate:	250 Kbps to 200 Mbps

MPEG/IP FEC Output License — MRD 26925

Additional Output Formats:	RTP and Header Extensions SMPTE 2022/CoP3 FEC Supported

8VSB/QAM-B INPUT MODULE — MRD 101

Physical Interface:	1x 75Ω F-Type
Frequency Range:	50-1000 MHz
Sensitivity:	-34 to +40 dBmV (A74 Compliant)
8VSB Standard:	ATSC A/53E
8VSB Channel Plans:	Broadcast
QAM Standard:	ITU Annex B/SCTE DVS-031
QAM Channel Plans:	FCC, IRC, HRC
QAM Constellations:	QAM64, QAM256

DVB-S/S2 INPUT MODULE — MRD 116

Physical Interface:	4x 75Ω F-Type
Frequency Range:	950-2150 MHz
Symbol Rates:	1-45 MSps
DVB-S Modulation Modes:	QPSK (All FEC Rates)
DVB-S2 Modulation Modes:	QPSK/8PSK (All FEC Rates) 16/32APSK (with License)
LNB Power:	Off/13/14/18/19VDC @ 450mA
Control Tone Support:	22 kHz On/Off
Supported Roll-off Factors:	0.35, 0.25, 0.20, 0.15, 0.10, 0.05

DVB-S2 Advanced Feature License — MRD 26916

Additional Modulation Modes:	16/32/64APSK (All FEC Rates) VCM Demodulation Support Multistream Support (Single ISI)

DVB-S/S2/S2X INPUT MODULE — MRD 116A

Physical Interface:	4x 75Ω F-Type
Frequency Range:	950-2150 MHz
Symbol Rates:	1-72 MSps with 8PSK/QPSK 1-60 Msps with 16APSK and higher
DVB-S Modulation Modes:	QPSK (All FEC Rates)
DVB-S2/S2X Modulation Modes:	QPSK/8PSK (All FEC Rates) 16/32/64APSK (with License)
LNB Power:	Off/13/14/18/19VDC @ 450mA
Control Tone Support:	22 kHz On/Off
Supported Roll-off Factors:	0.35, 0.25, 0.20, 0.15, 0.10, 0.05

DVB-S2/S2X Advanced Feature License — MRD 26916

Additional Modulation Modes:	16/32/64APSK (All FEC Rates) VCM Demodulation Support Multistream Support (Single ISI)

BROADCOM TURBOPSK INPUT MODULE — MRD 111

Physical Interface:	1x 75Ω F-Type
Frequency Range:	950-2150 MHz
Symbol Rates:	1-30 MSps
DVB-S Modulation Modes:	QPSK (All FEC Rates)
TurboPSK Modulation Modes:	QPSK /8PSK (All FEC Rates)

DVB-T/T2/C/C2/ISDB-T INPUT MODULE — MRD 115

Physical Interface:	1x 75Ω F-Type
Frequency Range:	42-1002 MHz
Bandwidth:	1.7MHz, 5 MHz, 6MHz, 7MHz, 8MHz
Constellations:	
DVB-T:	QPSK, QAM16, QAM64 (All FEC Rates)
DVB-T2:	QPSK, QAM16, QAM64, QAM256 (All FEC Rates)
DVB-C:	QAM16, QAM32, QAM64, QAM128, QAM256 (All FEC Rates)
DVB-C2:	QAM16, QAM64, QAM256, QAM1024, QAM4096 (All FEC Rates)
ISDB-T:	QPSK, QAM16, QAM64 (All FEC Rates)

SPECIFICATIONS
Modular Receiver MRD 2600

MANAGEMENT

Connector:	RJ-45 10/100 - Auto Negotiating
Protocols:	HTTP and SNMP
User Interfaces:	Full control via web GUI
	Full control via front panel
Automation Interfaces:	Full status and control via SNMP
	Configurable SNMP traps
	Web services API available
	Syslog message logging
Firmware Updates:	Via Web GUI
Authentication:	Local Login, TACACS+

DIMENSIONS/POWER

Height:	1 RU, 1.72" (44 mm)
Width:	1 RU, 17.2" (437 mm)
Depth:	14.6" (370 mm)
Power:	100-240 VAC 50/60 Hz
Supply Options:	Single AC Power Supply (Standard)
	Dual AC Power Supply

ENVIRONMENTAL CONDITIONS

Operating Temp:	0° to 45°C
Storage Temp:	-40°C to 65°C
Relative Operating Humidity:	<95% (non-condensing)

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