DD240XR Digital Video Broadcast Demodulator

Satellite Modems

Overview

The DD240XR Digital Video Broadcast Demodulator is DVB-S and DVB-S2 compliant. It is an ideal choice for high data rate video and Internet applications, meeting the latest in DVB standards EN300-421, EN301-210 and EN302-307. The unit supports QPSK, 8PSK and 16-QAM applications for DVB-S and QPSK, 8PSK, and 16APSK for DVB-S2 up to 45 Msps. Supporting a variety of data and IF interfaces, the DD240XR is configurable to meet all high-speed satellite applications. With field upgradeable features, the DD240XR can be easily upgraded, adding features like DVB-S2, 8PSK, 16-QAM and 16APSK.

The powerful onboard Monitor and Control (M&C) processor has the unique capability to download upgraded firmware and enhanced features from a field-changeable PCMCIA card. Features can be added to the installed equipment base with extreme ease, allowing enhancements with changes in service while lowering initial installation budgets.

The DD240XR offers a frequency-agile IF input from 950 to 2150 MHz and 50 to 90 or 100 to 180 MHz. DVB-S variable data rates from 2 Mbps to 144 Mbps can be set in 1 bps steps. DVB-S2 variable data rates from 2 Mbps to 160 Mbps.

The Demodulator also offers the choice of remotely interfacing through one of two rear panel connections: Ethernet or RS-485. The front panel offers push-button control of all features and a backlit LCD display. Menus are specifically designed for ease of use and quick operation as well as changes in all demodulator parameters.

For applications requiring system redundancy, the DD240XR may be used with the RCS11 1:1 Redundancy Switch or the RCS20 M:N Redundancy Switch.

Typical Users

- Broadcasters
- Internet Service Providers
- Enterprise

Common Applications

- Broadband Interactive Services
- Broadcast Content Distribution
- Digital Cinema
- Digital Signage
- Direct To Home
- Disaster Recovery & Emergency Communications
- Enterprise
- G.703 Trunking
- High Speed Content Delivery
- IP Trunking
- Satellite News Gathering

Features

- DVB-S and MPEG-2 compliant EN 300-421
- DVB-DSNG compliant EN 301-210
- DVB-S2 compliant EN 302-307
- Feature and software upgrades are readily available through easy-to-install PCMCIA feature cards
- Data rates up to 144 Mbps for DVB-S
- Data rates up to 160 Mbps for DVB-S2
- QPSK, 8PSK and 16-QAM operation in DVB-S
- QPSK, 8PSK and 16APSK operation in DVB-S2
- Reed-Solomon outer coding and LDPC/BCH
- Frequency-agile 50 to 90, 100 to 180 and 950 to 2150 MHz
- User-friendly front panel interface
- Optional redundancy configuration
- Internal doppler buffer

Specifications

IF Interface

L-Band Specification (Standard)	
RX IF	950 to 2150 MHz
IF Step Size	1 Hz
Sweep Range	10 MHz
Input Level	C0+10 log (Symbol Rate), C0: -130 dBm/Hz to 105 dBm/Hz -70 to -45 dBm @ 1 Msps -60 to -35 dBm @ 10 Msps -53 to -28 dBm @ 45 Msps
Composite Power	< -20 dBm total input power
LNB Power	18 V +/- 0.5 V, 350 mA max.
Input Impedance	75 Ohm
Return Loss	7 dB
Input Connector	F Connector
Optional 70/140 MHz Specification (Includes L-Band)	
RX IF	70/140 MHz
IF Step Size	1 Hz
Sweep Range	10 MHz
Input Level	C0 +10 log (symbol rate), C0: -130 dBm/Hz to 105 dBm/Hz -70 to -45 dBm @ 1 Msps -60 to -35 dBm @ 10 Msps -53 to -28 dBm @ 45 Msps
Composite Power	< -20 dBm total input power
Input Impedance	75 Ohm
Return Loss	15 dB
Input Connector	BNC female

Baseband (DVB-S)

Variable data rate	2 to 144 Mbps
Step Size	1 bps
Symbol Rate	2 to 45 Msps
(FEC) Decoding	
Inner Code	QPSK (Vitberbi), 8PSK (PTCM), 16-QAM (PTCM)
Code Rates	QPSK = 1/2, 2/3, 3/4, 5/6, 7/8 8PSK = 2/3, 5/6, 8/9 16-QAM = 3/4, 7/8
Outer Code	Reed Solomon, Per EN 300-421 (204,188, T=8)

Baseband (DVB-S2) EN 302-307

Variable data rate	2 to 160 Mbps
Step Size	1 bps
Symbol Rate	2 to 45 Msps
(FEC) Decoding	
Inner Code	QPSK, 8PSK, 16APSK (LDPC)
Code Rates	QPSK: 1/2, 2/3, 3/4, 3/5, 4/5, 5/6, 8/9, 9/10 8PSK: 2/3, 3/4, 3/5, 5/6, 8/9, 9/10 16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
Outer Code	BCH
Deinterleaving	Convolutional, I=12, Per EN 300-421
Data Descrambling	Per EN 300-421
Terrestrial Framing Modes	204, 188, 187
Internal Clock Source Stability	10 ppm
Internal Doppler Buffer	0 to 64 msec

Monitor & Control

Interface	Serial RS-485 (remote) and SNMP v1, v2, v3, 10Base-T Ethernet	
Parameters Controlled	IF Frequency Data rate Symbol rate Clock polarity Data polarity	Inner code rate Test modes Spectral inversion Spectral shape factor
Parameters Monitored	Input level (+/- 5 dB) Eb/No (+/- 1.0 dB) BER Faults Stored faults	

Optional Interfaces

Serial	G.703, E3, T3, STS-1 DVB ASI HSSI RS-422/449 ECL
Ethernet	PRO MPEG COP3 & bridge 100/1000Base-T
Parallel	RS-422 (M2P, DVB) LVDS (M2P, DVB)

Physical & Environmental

Prime Power	100-240 VAC, 50-60 Hz, 40 W max.
Operating Temperature	0 to 50° C
Humidity	Up to 95%, non-condensing
Storage Temperature	-20 to 70° C
Humidity	Up to 99%, non-condensing
Dimensions (height x width x depth)	1.75" x 19" x 17" (4.45 x 48.3 x 43.2 cm)
Weight	10 lbs (4 kg)

Options

48 VDC prime power (contact factory)

Configuration Series DVB-S

Series	Symbol Rate (Msps)	Modulation	Min. Data Rate (Mbps)	Max. Data Rate (Mbps)
100	2 – 10	QPSK	1.9 Mbps	16.1 Mbps
200	2 – 45	QPSK	1.9 Mbps	72.5 Mbps
300	2 – 45	QPSK, 8PSK	1.9 Mbps	110.5 Mbps
350	2 – 45	QPSK, 8PSK, 16-QAM	1.9 Mbps	145.1 Mbps

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