DD240XR

Digital Video Broadcast Demodulator

HIGHLIGHTS

► 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 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 16QAM 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

DVB PERFORMANCE

The DD240XR High-Speed 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 16QAM 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, 16QAM 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. DVS-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 Radyne RCS11 1:1 Redundancy Switch or the RCS20 M:N Redundancy Switch.

DD240XR Digital Video Broadcast Demodulator

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:	18V +/- 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 and Control

Interface:	Serial RS485 (Remote) and SNMP v1, v2, v3, 10BaseT 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 RS422/449 ECL
Ethernet:	PRO MPEG COP3 & Bridge 100/1000 BaseT
Parallel:	RS422 (M2P, DVB) LVDS (M2P, DVB)

Environmental

Prime Power:	100-240 Vac, 50-60 Hz, 40 Watts 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

Physical

Size:	19" W x 17" D x 1.75" H (48.3 x 43.2 x 4.45 (cm)
Weight:	10 pounds (4 Kg)

Options

48 Vdc Prime Power (contact factory)

Configuration Series DVB-S

Series	Symbol Rate (Msps)	Modulation	MPEG Max Data Rate (Mbps)	Unframed Max Data Rate (Mbps)
100	2 - 10	QPSK	16.127451	16.041667
200	2 - 45	QPSK	72.573529	72.187500
300	2 - 45	QPSK, 8PSK	110.588235	110.000000
350	2 - 45	QPSK, 8PSK, 16QAM	145.147059	144.375000

Configuration Series DVB-S2

Series	Symbol Rate (Msps)	Modulation	MPEG Max Data Rate (Mbps)	Unframed Max Data Rate (Mbps)
100	2 - 10	QPSK	2.0 Mbps	17.8 Mbps
200	2 - 45	QPSK	2.0 Mbps	80 Mbps
300	2 - 45	QPSK, 8PSK	2.0 Mbps	120 Mbps
350	2 - 45	QPSK, 8PSK, 16APSK	2.0 Mbps	160 Mbps