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.

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 Msp
- -60 to -35 dBm @ 10 Msp
- -53 to -28 dBm @ 45 Msp

Composite Power: < 20 dBm total input power

Input Impedance: 75 Ohm

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 Msp
- -60 to -35 dBm @ 10 Msp
- -53 to -28 dBm @ 45 Msp

Composite Power: < 20 dBm total input power

Input Impedance: 75 Ohm

Input Connector: BNC female

**Baseband (DVB-S)**
- Variable data rate: 2 to 144 Mbps
- Step Size: 1 bps
- Symbol Rate: 2 to 45 Msp

(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
- 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 Msp

(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, 3/5, 5/6, 8/9, 9/10
- 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
- Inner code rate
- Test modes
- Spectral modes
- Spectral inversion factor

**Optional Interfaces**
- Serial: 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
- Operating Humidity: 95% maximum, non-condensing
- Storage Temperature: -40 to 85°C
- Storage Humidity: Up to 99%, non-condensing
- Dimensions: 1.75 x 19 x 17" (height x width x depth)
- Weight: 10 lbs (4 kg)

**Options**
- 48 VDC prime power (contact factory)

**Configuration Series DVB-S**

<table>
<thead>
<tr>
<th>Series</th>
<th>Symbol Rate (Mbps)</th>
<th>Modulation</th>
<th>Min. Data Rate (Mbps)</th>
<th>Max. Data Rate (Mbps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>2 – 10</td>
<td>QPSK</td>
<td>1.9 Mbps</td>
<td>16.1 Mbps</td>
</tr>
<tr>
<td>200</td>
<td>2 – 45</td>
<td>QPSK</td>
<td>1.9 Mbps</td>
<td>72.5 Mbps</td>
</tr>
<tr>
<td>300</td>
<td>2 – 45</td>
<td>QPSK, 8PSK</td>
<td>1.9 Mbps</td>
<td>110.5 Mbps</td>
</tr>
<tr>
<td>350</td>
<td>2 – 45</td>
<td>QPSK, 8PSK, 16-QAM</td>
<td>1.9 Mbps</td>
<td>145.1 Mbps</td>
</tr>
</tbody>
</table>

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