



Your Broadcasting Partner

DDM 310 Digital Modem



DDM 310 Rev. 2K7

GENERAL DESCRIPTION

The DDM310 is a high speed, highly reconfigurable modem. Configuration concerns the functionality (modulator only, demodulator only, modem), the data-interfaces installed (ASI, DS3, STM-1, E3, E1...), the data rate (up to 310 Mbit/s), the modulation schemes, FEC codes and spectrum filter shaping factor.

An advanced 24 taps adaptive equaliser is responsible for the DDM310 robustness to dispersive multipath fading; notch of up to 50 dB can be tolerated in QPSK mode. The DDM310 is the ideal equipment to be coupled with digital radio links for communications in difficult situations. Modulations scheme available are QPSK, 16QAM, 32QAM, 64QAM, 128QAM and 256QAM; for each modulations scheme it's possible to set the Baud rate, the Reed Solomon coding, the PTCM/convolutional coding, the roll-off factor of the shaping filters and other parameters.

The configurations installed in the modems will be tailor made.

This ensures the best performance, efficient use of bandwidth, nevertheless these configurations can be modified at a later stage.

It's important to underline that the modulator and the demodulator sections can be set with different configurations to implement bidirectional link with different rate between forward and return path.

FEATURES

- DVB-ASI, E3, E1, DS3, STS-1, STM-1 data interfaces
- Data rate over 200 Mbit/s depending on configuration
- FEC Coding
 - Inner Convolutional interleaved, Trellis or block convolutional (rates from 1/2 to 13/14) depending on configuration
 - Outer Reed-Solomon $k=6$ to 255, $t=0$ to 16
- QPSK, 16QAM, 32QAM, 64QAM, 128QAM and 256QAM
- 24-tap Adaptive Equalizer
- 70 MHz/140 MHz IF Output
- Bandwidth 3 to 56 MHz depending on configuration
- Filter roll-off factor 0.15 to 0.30 depending on configuration
- Asymmetric configuration for modulator and demodulator part
- Up to 6 configurations stored in memory for each section
- RS232, RS485 and SNMP remote control interfaces

SPECIFICATION

General:

- Data interface:** DVB-ASI
 E1 (2 Mbit/s)
 E3 (34.368 Mbit/s)
 DS3 (44.736 Mbit/s)
 STS-1 (51.84 Mbit/s)
 STM-1 (155.52 Mbit/s)
- Input Baud Rate:** Up to 24 Mbauds (depending on data interface used)
- Net Data Rate:** Up to 160 Mbit/s (depending on data interface used)
- Modulation:** QPSK
 16QAM
 32QAM
 64QAM
 128QAM
 256QAM
- Bandwidth:** Up to 56 MHz (depending on data rate at input)
- Protection:** Reed-Solomon coding with K = 6 to 255, t = 0 to 16
 Concatenated convolutional, trellis or block convolutional inner code with variable rates: 1/2 to 13/14
 Programmable Internal Interleaver

Modulator:

- IF Output:** 70 MHz / 140 MHz
- IF Return Loss:** 20 dB
- IF Output Power:** -23 to 1 dBm in 1 dB steps
- IF Output Connectors:** 2 x BNC Female 75 Ohm

Demodulator:

- IF Input:** 70 MHz / 140 MHz
- IF Input Power:** -15 to 5 dBm
- IF Input Connector:** BNC Female 75 Ohm
- Equalizers:** 24-tap T/2 spaced Feed Forward Filter (FFF)
 3-tap Decision Feedback Filter (DFF)
- Carrier Acquisition:** ± 10% of channel baud rate

Control:

- Front Panel (LCD Display 20x2, Keypad)
 RS-232
 RS-485
 SNMP
 Web Interface

Electrical:

- Input Voltage:** AC: 230V/50Hz or 115V/60Hz
 DC: 22V to 65V
- Power consumption:** 25 W

Physical:

- Cabinet Rack:** Width: 482 mm (19")
 Height: 44 mm (1U)
 Depth: 480 mm

Environmental:

- Operating Temperature Range:** -10 to 65°C
- Relative Humidity:** 0 to 95%, non condensing

Compliance:

- CE mark

ORDERING INFO

DDM 310 WW/XX/YY/ZZ

Field	Option	Tag	Description
WW	Equipment Type	M	Modulator only
		D	Demodulator only
		MD	Modem
XX	Data Interface Type	ASI	Variable rate DVB-ASI
		E1	2Mbit/s E1
		E3	34Mbit/s E3
		DS3	45Mbit/s DS3
		STS1	51Mbit/s STS-1
		STM1	155Mbit/s STM-1
YY	IF Input/Output	70	70MHz
		140	140MHz
ZZ	Remote Control Type	RS	RS232 & RS485
		SNMP	RS232 & RS485 & SNMP

APPLICATIONS

