



# OM20

## Rugged Antenna Mount Modem



### HIGHLIGHTS

- ▶ Rugged Weatherproof Construction
- ▶ Easy Installation and Configuration
- ▶ Web Browser Capabilities
- ▶ 2.4 Kbps to 20 Mbps, 1 bps Steps
- ▶ BPSK/QPSK/OQPSK/8PSK/16QAM Operation
- ▶ FEC - Viterbi, Reed-Solomon, Sequential, Trellis, Turbo Product Code
- ▶ Fully Compliant with IESS 308/309/310/314/315
- ▶ Optional DVB to EN301-210 and EN300-421
- ▶ Standard RS422 Serial Interface
- ▶ Optional Data Interfaces include Ethernet, G703 and ASI
- ▶ Optional FSK M&C Channel For Smart BUC
- ▶ Built-in High-Stability Reference Oscillator and DC Voltage
- ▶ Independent Rx/Tx Control

### OVERVIEW

The OM-20 is designed for GSM, VSAT and quick deploy applications. Performance that meets or exceeds industry standards, features that provide ease of integration and operation and the ability to withstand extreme environments, the OM20 can take it!

The transmit output port will drive up to 10 Watt C-band or a 8 Watt Ku-band block converter. The OM20 has been designed and built for outdoor use in extreme environments. The OM20 serves as a stand-alone outdoor modem that can be integrated with a

block up-converter and LNB for a complete outdoor system solution. The OM20 supports all the requirements needed to monitor, control and operate remote sites. Outdoor equipment such as the OM can eliminate the expense of sheltering site equipment. With the ability to support IBS, IDR and DVB standards, the OM20 covers virtually all your satellite needs.

### ENHANCED MONITOR AND CONTROL

The accessibility of the OM20 is exceptional. Remote control via RS-485 Serial port (RLLP) or 10 BaseT SNMP Ethernet will control all of the modem features. Using the Ethernet port and a web browser such as Windows Explorer, the modem is able to present its entire monitor and control functions on any PC or external terminal for easy setup and configuration. The web browser enables the user to interact more effectively with the OM, both locally and remotely.

The following can be monitored via the remote terminal or PC:

- Alarm Descriptions
- Transmitter Power Output Level
- Receive Input Level
- Modem Signal Level
- Bit Error Rate
- Modem Configuration

### APPLICATIONS

Applications for the OM20 include:

- SCPC/MCPC
- Emergency Link Restoration
- Video Conferencing
- Broadcast
- Rural Telephony
- Point-of-Sales

# OM20 Rugged Antenna Mount Modem

## OM20 BER PERFORMANCE GUARANTEED (TYPICAL) AT BERs SHOWN

Modulation/FEC	Code Rate	1 x 10 <sup>-5</sup>	1 x 10 <sup>-6</sup>	1 x 10 <sup>-7</sup>	1 x 10 <sup>-8</sup>	Data Rate Range
BPSK VIT	1/2	5.5 (5.1)	6.1 (5.7)	6.7 (6.2)	7.4 (6.8)	2.4 Kbps - 5.0 Mbps
QPSK VIT	1/2	5.5 (5.1)	6.1 (5.7)	6.7 (6.2)	7.4 (6.8)	4.8 Kbps - 10.0 Mbps
QPSK VIT	3/4	6.8 (6.3)	7.6 (7.0)	8.3 (7.7)	8.9 (8.4)	7.2 Kbps - 15.0 Mbps
QPSK VIT	7/8	7.9 (7.2)	8.6 (7.9)	9.3 (8.6)	10.2 (9.4)	8.4 Kbps - 17.5 Mbps
QPSK VIT R-S	1/2	3.8 (3.4)	4.1 (3.6)	4.2 (3.8)	4.4 (4.0)	4.8 Kbps - 8.88 Mbps
QPSK VIT R-S	3/4	5.4 (4.7)	5.6 (4.9)	5.8 (5.1)	6.0 (5.3)	7.2 Kbps - 13.33 Mbps
QPSK VIT R-S	7/8	6.5 (6.0)	6.7 (6.4)	6.9 (6.7)	7.2 (7.1)	7.8 Kbps - 15.55 Mbps
QPSK SEQ	1/2	5.6 (5.1)	5.9 (5.4)	6.3 (5.8)	6.7 (6.2)	4.8 Kbps - 2.048 Mbps
QPSK SEQ	3/4	6.1 (5.6)	6.5 (6.1)	7.0 (6.5)	7.4 (6.9)	7.2 Kbps - 2.048 Mbps
QPSK SEQ	7/8	6.9 (6.4)	7.4 (6.9)	7.9 (7.4)	8.4 (7.9)	8.4 Kbps - 2.048 Mbps
QPSK TPC	1/2	2.7 (2.4)	2.9 (2.6)	3.1 (2.8)	3.3 (3.0)	4.8 Kbps - 9.54 Mbps
QPSK TPC	3/4	3.6 (3.2)	3.8 (3.4)	4.1 (3.7)	4.4 (4.0)	7.2 Kbps - 15.0 Mbps
QPSK TPC	7/8	4.2 (3.9)	4.3 (4.0)	4.4 (4.1)	4.5 (4.2)	8.4 Kbps - 17.5 Mbps
8PSK TRE	2/3	7.8 (6.4)	8.7 (7.2)	9.5 (8.1)	10.2 (8.9)	9.6 Kbps - 20.0 Mbps
8PSK TRE R-S	2/3	5.8 (5.4)	6.2 (5.6)	6.5 (5.8)	6.7 (6.1)	8.9 Kbps - 18.3 Mbps
8PSK TPC	3/4	6.0 (5.6)	6.2 (5.8)	6.4 (6.0)	6.8 (6.3)	10.8 Kbps - 20.0 Mbps
8PSK TPC	7/8	6.9 (6.5)	7.0 (6.6)	7.1 (6.7)	7.2 (6.8)	12.6 Kbps - 20.0 Mbps
16QAM VIT	3/4	10.7 (9.9)	11.5 (10.7)	12.4 (11.6)	13.3 (12.5)	14.4 Kbps - 20.0 Mbps
16QAM VIT	7/8	11.9 (11.1)	12.7 (11.9)	13.5 (12.7)	14.3 (13.5)	16.8 Kbps - 20.0 Mbps
16QAM VIT R-S	3/4	8.9 (8.3)	9.1 (8.6)	9.3 (8.8)	9.5 (9.1)	13.3 Kbps - 20.0 Mbps
16QAM VIT R-S	7/8	10.3 (9.9)	10.5 (10.2)	10.8 (10.4)	11.0 (10.7)	15.5 Kbps - 20.0 Mbps
16QAM TPC	3/4	7.0 (6.7)	7.4 (7.1)	7.8 (7.5)	8.2 (7.9)	14.4 Kbps - 20.0 Mbps
16QAM TPC	7/8	8.0 (7.6)	8.1 (7.7)	8.2 (7.8)	8.3 (7.9)	16.84 Kbps - 20.0 Mbps

### Modulator

Modulation:	BPSK, QPSK, and OQPSK (8PSK, 16QAM Optional)
L-Band Tuning Range:	950 to 2050 MHz in 1 Hz Steps
Impedance:	50 Ohm
Connector:	Female Type SMA, (N-Type Optional)
Return Loss:	10 dB Minimum
Output Power:	-20 to -45 dBm
Output Accuracy:	±1.0 dB Over Frequency and Temperature
Output Spectrum:	Meets IESS 308/309/310 Power Spectral Mask
Spurious:	-55 dBc In-Band -45 dBc Out-of-Band
Harmonics:	-45 dBc
On/Off Power Ratio:	>60 dB
Scrambler:	CCITT V.35 or IBS (Others Optional)
FEC:	Viterbi, K=7 at 1/2, 3/4 and 7/8 Trellis 2/3 Turbo Product Code (Optional) Per IESS 315 BPSK 21/44 Custom (N,K) Reed-Solomon QPSK/OQPSK 1/2, 3/4, 7/8 8PSK/16QAM 3/4, 7/8 Legacy Turbo Rates: 0.495, 0.793
Outer Encoder Options:	Reed-Solomon INTELSAT (DVB Optional)
Data Clock Source:	Internal, Rx Recovered
Internal Stability:	5 x 10-8
BUC DC Voltage:	BUC 24 V @ 4 A Maximum BUC 48 V @ 3A Maximum (Optional)
BUC Reference:	10 MHz, 0 dBm ± 3 dB
BUC FSK:	710/590 KHz Nominal (Optional)

### Demodulator

Demodulation:	BPSK, QPSK, and OQPSK (8PSK, 16QAM Optional)
L-Band Tuning Range:	950 to 2050 MHz in 1 Hz Steps
Impedance:	50 Ohm
Connector:	Type N Female
Return Loss:	10 dB Minimum
Spectrum:	Intelsat IESS 308/309/310 Compliant
Input Level:	10 x log (Symbol Rate) - 100, ±12dBm
Total Input Power:	-10 dBm or +40 dBc (the Lesser) @ 64 Kbps, Symbol Rate Dependent
FEC:	Viterbi, K=7 at 1/2, 3/4 and 7/8 Rate, Rate Sequential 1/2, 3/4, 7/8 (Optional) Trellis 2/3 Turbo Product Code (Optional) Per IESS 315 BPSK 21/44 Custom (N,K) Reed-Solomon  QPSK/OQPSK 1/2, 3/4, 7/8 8PSK/16QAM 3/4, 7/8 Legacy Turbo Rates: 0.495, 0.793
Decoder Options:	Reed-Solomon INTELSAT (DVB Optional)
Descrambler:	CCITT V.35 or IBS (Others Optional)
Acquisition Range:	Programmable ±1 kHz to ± 255 kHz
Sweep Delay Value:	100 msec to 6000 sec. in 100 msec Steps
LNB Reference:	10 MHz, 0 dBm ± 3 dB
LNB DC Voltage:	13, 15, 18, 20 VDC (750 mA Maximum), Programmable

### Plesiochronous Buffer

Size:	0 ms to 64 msec
Centering:	Automatic on Underflow or Overflow
Centering Modes:	IBS: Integral Number of Frames IDR: Integral Number of Multi Frames
Clock:	Transmit, External, Rx Recovered or SCT (Internal)

### Monitor and Control

Remote RS-485/Terminal RS-232/Ethernet 10 Base-T/Web Browser  
FSK TERRASAT/CODAN Smart BUCs  
DMD20/DMD50/DMD2050 Protocol Compatible

### Terrestrial Interfaces

Ethernet Port 10/100 Base-T, DVB ASI, G.703 (optional)

### OM20 Drop and Insert (Optional)

Terrestrial Data:	1.544 Mbps or 2.048 Mbps, G.732/733
Line Coding:	AMI or B8ZS for T1 and HDB3 for E1
Framing:	D4, ESF and PCM30 (PCM 30C) or PCM31 (PCM 31C) for E1
Time Slot Selection:	n x 64 Contiguous or Arbitrary Blocks for Drop or Insert
Time Slots:	TS1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 16, 20, 24, 30, 31
Data Rates:	64, 128, 192, 256, 320, 384, 512, 640, 768, 960, 1024, 1280, 1536, 1920 Kbps
EFFICIENT D&I Closed Network:	Satellite Overhead 0.4%
Time Slot:	1-31 Any Combination

### IBS/Synchronous Interface (Standard)

RS-422:	All Rates, Differential, Clock/Data, DCE
ITU V.35:	All Rates, Differential, Clock/Data, DCE
RS-232:	(DCE up to 200 Kbps)

### Environmental Characteristics

Prime Power:	100 to 240 VAC, 50 to 60 Hz, 250 Watts Maximum 50 watts for modem, 200 watts max for 24V BUC/LNB
Operating Temperature:	-40 to +50°C
Non-Operating Temperature:	-40 to +70°C
Rain Resistance:	< 20 Inches/Hour
Wind Resistance:	< 150 mph
Altitude:	To 10,000 Feet (3,048 m) AMSL

### Physical

Size:	10"W x 14.5"L x 4.5"H (37.33 cm X 24.76 cm X 11.43 cm)
Weight:	15 pounds (6.8 kg)



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