



OVERVIEW

Further strengthening our lead in high density demodulation technologies, the new DB-16S has sixteen individually configurable RS-530 SCPC demodulators in a compact and lightweight 1U chassis.

The DB-16S was designed specifically to terminate SCPC return channels from DVB and MCPC uplinks, at a fraction of the capital cost when compared to using single channel demodulators or modems. Its high density platform and compact size also delivers significant operational savings due to a 16 to 1 reduction in energy, earth station rack space and the associated costs.

It is also ideally suited for full mesh, star and hybrid commercial and government networks providing an easy to implement hub-less solution without all the complexities and restrictions of setting up and managing a hub-based network such as TDMA.

KEY FEATURES

- **8PSK & 16QAM** - QPSK modulation is standard. On the new DB-16S MAX, 8PSK and 16QAM are also standard, providing increased efficiency and savings on satellite bandwidth without additional cost making the DB-16S even more exceptionally good value.
- **16K TPC** - Latest generation 16K Turbo Product Code and Viterbi are included as standard, as are data rates up to 2Mbps per channel simultaneously. This means no expensive and disruptive hardware upgrades are necessary.
- **Data Rate** - Faster Data Rates are now standard on the DB-16S MAX, providing data rates of up to 5.8Mbps, depending on configuration used.
- **L-Band & IF Interfaces** - User configurable L-Band and 70/140MHz IF interfaces as standard. This means no L-Band option price premium that is typical on modems and allows for total flexibility by removing the need to return the unit to the manufacturer for costly and time consuming modifications. The DB-16S has two RF inputs so each group of 8 channels can be set with either the same or different RF interfaces. Significant additional savings result by removing the need for external splitters or switch matrices.
- **Redundant PSUs** - Dual power supplies with individual power inlets are fitted as standard for redundancy and enhanced reliability.
- **Compatibility** - The DB-16S is compatible with all major manufacturers' satellite modems, protecting your existing investment at the remote sites and allowing you to relocate any existing earth station modems to new remote sites.

Please visit www.one-tg.com for further information or to contact us for a quotation.

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Demodulator Bank

SUMMARY SPECIFICATIONS



Item

Shared RF down converter (2 off)

RF input frequency range/ step size
RF input level range (L-Band)

RF input level range (IF)

Maximum composite input

Down-converter bandwidth (within which all wanted carriers must lie)

Each of 16 demodulator channels

Acquisition Type
Acquisition range/step size
Acquisition performance at 64 kbps, QPSK, 1/2 rate Viterbi, 32 kHz search range
Modulation modes
FEC type/rate

Specification

50 to 250 MHz or 950 to 2150 MHz in 1 Hz steps
0 To -73 dBm at max data rate
0 To -103 dBm at min data rate
-10 To -73 dBm at max data rate
-10 To -103 dBm at min data rate
10 dBm
80 MHz (80MHz per bank x 2 Banks Total 160 MHz)

Physical and Environmental Specifications

Size 1U, 19 inch rack, 480 x 400 x 44 mm,
(19" x 16" x 1.75") approximately
Weight 4.5 kg
Temperature (operating) 0 to 50°C
Temperature (storage) -25 to +85°C
Humidity (operating) 95% non-condensing
Humidity (storage) 99% non-condensing

Item

Typical BER performance tested at 2048 Kbps

Specification

Demodulation / FEC Type / Rate

QPSK Intelsat Compatible Viterbi 1/2
QPSK Intelsat Compatible Viterbi 3/4
QPSK Intelsat Compatible Viterbi 7/8
QPSK M5 Compatible Full 1/2
QPSK M5 Compatible Short 3/4
QPSK M5 Compatible Legacy 3/4
QPSK M5 Compatible Full 7/8
QPSK M5 Compatible Legacy 7/8

Eb/No for BER 10-5 Eb/No for BER 10-7

4.0 5.0
4.9 5.7
5.9 6.8
2.5 2.8
3.85 4.35
3.1 3.3
4.15 4.3
4.3 4.8

QPSK Comtech Compatible 3/4
QPSK Comtech Compatible 7/8
QPSK Comtech Compatible 0.95
8 PSK Comtech Compatible 3/4
8 PSK Comtech Compatible 7/8
8 PSK Comtech Compatible 0.95
16 QAM Comtech Compatible 3/4
16 QAM Comtech Compatible 7/8
16 QAM Comtech Compatible 0.95

Eb/No for BER 10-5 Eb/No for BER 10-7

3.1 3.4
3.8 3.95
5.1 5.4
5.65 6.0
6.6 6.75
8.5 8.9
6.9 7.3
7.7 7.9
9.7 10.1

Data rate, each port

BPSK, 1/2 rate 4.8 to 1024 kbps
QPSK, 3/4 rate 3.6 to 2048 kbps, subject to configuration options selected
8PSK (Comtech Compatible Turbo Only), 7/8 rate 6.3 to 2048kbps
16QAM (Comtech Compatible Turbo Only), 7/8 rate 9.027 to 2048kbps

QPSK, 1/2 rate 2.4 to 2048 kbps, subject to configuration options selected
QPSK, 7/8 rate 4.2 to 2048 kbps, subject to configuration options selected
8PSK (Comtech Compatible Turbo Only), 0.95 rate 6.8 to 2048kbps
16QAM (Comtech Compatible Turbo Only), 0.95 rate 9.6 to 2048kbps

Faster Data Rates feature

(now available as standard) provides increased data rates in the following configurations:

Comtech compatible TPC 0.95 goes up to 3870Kbps for QPSK, 8PSK & 16QAM.
Comtech compatible TPC 3/4 goes up to 2260Kbps for QPSK, 8PSK & 16QAM.
Comtech compatible TPC 7/8 goes up to 4680Kbps for QPSK and 5830Kbps for 8PSK & 16 QAM

Scrambling

V35: CCITT, IESS308, true and inverted.
Synchronous (Turbo): various according to code, automatically invoked.

Interfaces and Controls

Serial Console Port

RS232 interface
RS232 Data rates (bps)
RS232 Data format
Command protocols
Connector

Full duplex
9600, 19200, 38400, 57600, 115200
No Parity, 8 data bits, 1 stop bit
VT100 Colour Menus (80 Column x 24 Rows), ONE Packet Management Interface
9 pin D type female

RS485 interface
RS485 Data rates (bps)
RS485 Data format
Command protocols
Connector

4 wire, full duplex
9600, 19200, 38400, 57600, 115200
No Parity, 8 data bits, 1 stop bit
ONE Packet Management Interface
Shares RS232 9 pin D type female

LAN Network Management Port

Interface
Connector
Command protocols

10/100BaseT
RJ45
Telnet VT100 Colour Menus (80 Column x 24 Rows), ONE Packet Management Interface & HTTP

Serial Data Ports

(16 serial ports in all, one per demodulator)

Interface electrical specification
Interface physical specification
Data format

RS422/V.11
RJ-45 converted to EIA530, 25 pin D type female via provided cable
DCE Clock, Data & RLSD

RF Input (2 off)

70/ 140 MHz / L band RF option input connector
L band LNB supply via coaxial cable

75 Ohm F type
13 or 18V, 400 mA max

Mains Input (2 off)

Mains Input Connector
Input voltage range
Approximate power dissipation

IEC
90 to 264 VAC 47 to 63 Hz
90 Watts (45 Watts per power supply) Max with both LNB supplies active



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