



MEQ1000

Multiplexing Hybrid QAM Modulator

The R.L. Drake model MEQ1000 is a commercial grade hybrid QAM modulator. The MEQ1000 features plug in input modules that include an ATSC/QAM tuner, an ASI input, an IP input, and analog NTSC inputs; thus the description 'hybrid' is used to describe it. A multiplexer is built in to combine the transport streams and input the filtered and groomed transport stream to the QAM modulator.



The MEQ1000 has two input module slots and the outputs interface to the MEQ1000 multiplexer, internally, where they are MPEG program filtered, multiplexed, and groomed. Programs, among the total group from input module A and input module B, may be selected or not selected by the operator to be sent to the QAM modulator. Each input must contain no more than 20 programs and a maximum of 20 programs per input may be selected. Also, the total bitrate of the selected programs must not exceed that of the output QAM channel capacity. Some common applications include: drop/add, cherry picking programs from ASI or IP MPTS inputs, digital channel processing, or local origination additions.

The MEQ1000 contains a high performance QAM modulator that can operate in most ITU-A or ITU-B modes up through 1024 QAM. The very low noise, high output, upconverter provides coverage from 54 MHz to 1002 MHz while maintaining exceptionally low phase noise and broadband noise. Output level can be selected at a value between + 45 and + 61 dBmV. The MEQ1000 operates in a fixed output clock mode and processes null packets when required to maintain the set fixed clock rate. PCR correction is included.

Specifications

MEQ1000	QAM Modulator
Modulation Modes:	16QAM, 32QAM, 64QAM, 128QAM, 256QAM, 512QAM or 1024QAM
Symbol Rate:	1 Ms/s to 7 Ms/s
FEC:	ITUA (DVB) or ITUB (DigiCipher)
I/Q Phase Error:	Less than 1 degree
Carrier Suppression:	45 dB
Channel Amplitude Error:	Less than 1 dB
MER:	Greater than 38 dB with blind equalizer
MEQ1000 Upconverter RF Output	
Output Frequency Range:	54 MHz to 1002 MHz
Channel Plan:	Std. CATV, HRC, IRC, or Broadcast
Frequency Stability:	± 5 ppm
Maximum Output Level:	+ 61 dBmV minimum, adjustable downward
Minimum Output Level:	+ 45 dBmV
Output Level Accuracy:	± 1 dB
Output Impedance:	75 Ohms with return loss better than 14 dB (within output filter passband)
Spurious Outputs:	-60 dBc from 40 MHz to 1000 MHz
Broadband Noise:	Less than -12 dBmV (6 MHz BW @ ±12 MHz)
Phase Noise:	-101 dBc @ 10 kHz offset
MEQ1000 RS232 Control	
Data Link:	2400, 4800, 9600, or 19,200 baud interface via serial cable
RS232 Input:	DB-9 connector for connection to modem or PC
RS232 Output:	DB-9 connector for connection to additional transcoders
MEQ1000 ASI OUTPUT	
The ASI output provides a copy of the transport stream that is input to the QAM modulator.	
GENERAL	
Power:	90 - 132 VAC/ 60 Hz, 35 W maximum
Weight:	9.5 pounds
Size:	19" W x 1.75" H x 14.5" D
Operating Temperature:	0 degrees C to + 50 degrees C