Advanced Satellite Modulator

ASM988A

With the ongoing need to increase bitrate efficiency, operators are looking for better modulators that will provide more bits per Hz.

The ASM 988A provides higher bitrate by offering efficient 8PSK modulation as well as 16-QAM and QPSK. The ASM 988A is perfect for the DBS environment, contribution, or SNG. The unit uses an advanced coding in the FEC layer to operated near shannon's theoretical limit of bandwidth efficiency. It accepts a M2P, DVB-SPI and DVB-ASI input transport stream, it also will produce up to a 30 Mband modulated signal.

KEY FEATURES

- Provides 8PSK modulation in the same SNR environment as QPSK
- Supports legacy QPSK mode
- Supports 16-QAM, Advanced QPSK
- Inputs include DVB-ASI, M2P and DVB-SPI with TS input at 1 to 85 Mbps
- Supports DSS QPSK
- Optional L-Band Output
- Monitored parameters for error reporting and detection
- 10 Mhz reference clock input
- -20 dB front panel test output
- Alarm generation with relay output for redundancy switching
- Remote control through Ethernet supports SNMP protocol
- 70 MHz IF output
- Packet stuffing and PCR recalculation for input data rate adjustment on ASI input

SPECIFICATIONS
Advanced Satellite Modulator ASM988A

8PSK MODULATION PARAMETERS

FEC Rate	FEC 2/3	FEC3/4-I	FEC 3/4-II	FEC 5/6	FEC 8/9
Bit Rate in Mbits/s	0.52 to 57.1	0.55 to 62.8	0.5 to 61.2	0.59 to 68.5	0.61 to 71.4
Baud Rate in Mbauds	0.256 to 30	0.256 to 30	0.256 to 30	0.256 to 30	0.256 to 30

Note: FEC 3/4-I represents 2.1/symbols and FEC 3/4-II represents 2.05 bits/symbols

Excess Bandwidth (alpha): 0.1 to 0.5 with 0.01 Resolution
Symbol Rate Step: 1bps
Spectral Inversion: on / off

QPSK MODULATION PARAMETERS
FEC Code Rates: 1/2, 2/3, 3/4, 5/6, 7/8
FEC Modes: As per ETSI EN 300 421 V1.1.2 DVB
Symbol Rate: 256 KSps to 30 MSps
Excess Bandwidth (alpha): 0.1 to 0.5 with 0.01 Resolution
Spectral Inversion: on / off

ADVANCED QPSK MODULATION PARAMETERS
FEC Code Rates: 1/4, 1/2, 3/4
FEC Modes: Turbo Code
Symbol Rate: 256 KSps to 30 MSps
Excess Bandwidth (alpha): 0.1 to 0.5 with 0.01 Resolution

Note: FEC 3/4-I represents 2.1 bits/symbols and FEC 3/4-II represents 2.05 bits/symbols

16-QAM MODULATION PARAMETERS
FEC Rate: 3/4
FEC Mode: Turbo Code
Symbol Rate: 256KSps to 30 MSps
Excess Bandwidth (alpha): 0.1 to 0.5 with 0.01 Resolution

DSS QPSK MODULATION PARAMETERS
FEC Rate: 1/2, 2/3, 6/7 FEC mode
Symbol Rate: 256 KSps to 30 MSps
Excess Bandwidth (alpha): 0.1 to 0.5 with 0.01 resolution

70MHZ IF OUTPUT SPECIFICATIONS
Frequency: 70 MHz, agile within +20 to -20 MHz, 1 Hz steps
Power: 5 to -20 dBm, 0.5dB steps

Note: The Power output will be affected with temperature variations up to 2 dBm

Power Accuracy: 1dB (CW mode and spectral output mode)
In Band Spurious: 50dBc
Out of Band Spurious: 50dBc
Phase Noise: @ 100Hz, -71 dBc
@ 1 kHz, -81 dBc
@ 10 kHz, -91 dBc
@ 100 kHz, -101 dBc
@ 1 MHz, -111 dBc
Impedance: 75 ohms

L-BAND OUTPUT SPECIFICATIONS
Frequency: 950 to 1750 MHz in 1 MHz steps
Spectrum: Normal or inverted
Gain: -20 to +20 dB in 0.5 dB steps
Output Impedance: 50 ohms

MONITORED PARAMETERS
Fault history
Input Sync presence
Output signal presence
Faults: temperature, supply voltages, and fans

TRANSPORT STREAM INPUTS
All TS inputs up to 85 Mbits/s
M2P input, DB25
DVB-SPI input, DB25 with loop through
MPEG bit/byte clock output for modulator master mode operation
Packet stuffing and recalculation of PCR for input data rate adjustment >0% and < 40% of packets stuffing
DVB-ASI sync mode for automatic data rate adjustment

EXTERNAL CLOCK INPUT
10 MHz input TTL on BNC connector
If external clock is present, unit automatically synchronizes to incoming 10 MHz
If clock is absent, unit uses internal reference

GENERAL SPECIFICATIONS
Line power: 100-240 Vac, 50-60 Hz
2 lines x 18 Characters vacuum fluorescent display
Dimensions: 19"W x 21" D x 1.75" H (1U rack mount chassis)
Operating Temperature Specs: 0-50°C without L-Band
0-40°C with L-Band
RS-232, and 10 Base T Ethernet connections for configuration, monitoring, and control
Relay contact outputs for fault monitoring and automated redundancy witch control
SNMP protocol supported