



SATSTREAM

21401 MPEG SATELLITE UPLINK MODULATOR



FEATURES

- Moderate speed data and/or MPEG CD Quality Audio
- Versions are available for SCPC and FM Subcarrier
- Software configuration via serial port or downlink
- Flexible bandwidth allocation between audio and data
- QPSK modulation with Viterbi error correction
- Alarm output signals for modulator output faults
- Selective addressing to units, groups, regions or all

APPLICATIONS

- High quality audio distribution for networks
- Automated broadcast station control and cueing
- Low to moderate speed data for news feeds
- Corporate data distribution networks
- Selective distribution of news to enable clients
- Background music systems with local insertion
- Downlink of Internet feed to remote locations

DESCRIPTION

The 21401 Modulator features state of the art design for flexibility and reliability. Although it is designed primarily for distribution of broadcast quality audio, it may also serve as a moderate speed data uplink modulator. The user has complete flexibility in allocation of the available bandwidth.

The data channel may be used for global distribution or data packets may be directed to specific receivers selected by group code, region code, or by individual serial number. Each receiver may be enabled to receive 1 or more of up to 8192 streams (such as news wires).

Among many options is status and trouble reporting via a serial data port or a telephone modem using a simple ASCII protocol. In some applications the output failure contact closure output may be used to automatically switch over to a backup modulator or transmitter rack.

The Satstream 21401 is available in a standard L band SCPC version as well as an optional FM subcarrier version.

The 1 RU Rack Mount version is standard, however a smaller footprint desktop version is also available. The modulator includes a switch-mode universal AC power supply.

EMERGENCY ALERT - OPTION Z

SCPC FM FSK is a simple and time proven technology that does not need to rely on complex terrestrial infrastructure making it ideal for mission critical communications that must work faultlessly in time of disaster. The EAS option provides additional features that allow the receiver to act as a repeater for EAS notifications. All segments of the standard EAS broadcast are digitized and packeted at the uplink modulator.

Approximately 5000 bits per second of the data stream are dedicated to the EAS broadcast when it is enabled. At the receiver the incoming EAS packets are interpreted. Precision frequency Alert Tones and FSK data are locally synthesized in the receiver. EAS audio is inserted in the audio output stream in accordance with the timing captured at the uplink modulator. By regenerating all tones and voice messages locally, distortion and possible corruption of the data is minimized. A push to talk output is available to activate dispatch systems automatically. A loss-of-signal alert output is also provided. When not carrying an active EAS message, the available bandwidth may be used to transmit other data—text or graphics.



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SPECIFICATIONS

Output Frequency Range

SCPC Version (Option A)	50.00 – 90.00 MHz
SCPC Version (Option B)	950 – 1450 MHz (Standard L Band)
SCPC Version (Option B1)	950 – 1750 MHz (Extended L Band)
Subcarrier Version (Option F)	100 KHz – 8.995 MHz

Frequency Resolution

SCPC 500 Hz or better Subcarrier 100 Hz

Frequency Accuracy

Within +/- 0.6 ppm (7.5 KHz at Ku band)

Uplink Output Reference10.000 MHz within +/- 1 part per million
Aging of less than 1 ppm per year**Modulation**QPSK with spectral shaping to minimize bandwidth
Pseudorandom scrambling for energy dispersal**Forward Error Correction**Viterbi $\frac{1}{2}$ or $\frac{3}{4}$ K = 7**MPEG Data Rates (Option M)**

Selectable rates from 32000 to 320000 bits per second

Maximum total data rate

375000 bits per second including MPEG, data, and AUX audio

Audio Input (Option M)Two channels balanced 600 ohm, digital level adjust
Accepts 20 Hz – 20 KHz at higher data rates**Audio Dynamic Range (Option M)**

Greater than 85 dB

Control/Supervisory Serial PortDB9 RS232
Configurable rates 1200-19200 bps**Auxiliary Serial Data Port**

DB9 RS232 or RS485 Configurable rates 2400-250000 bps

Relay Contact Closure Port1 General Fault NO contact (Form A)
1 No modulation input for XX seconds NO contact (Form A)**Power Requirements**

90-260 VAC 48-63 Hz less than 30 VA

DimensionsStandard rack mount: 1RU 19" Rack
19" wide x 1.75" high x 7.0" deep (48.26 x 4.45 x 17.8 cm)Option T: Desktop Version
7.6" wide x 1.95" high x 7.0" deep (19.3 x 4.95 x 17.8 cm)

DESCRIPTION OF OPTIONS FOR MODEL 21401

A:	SCPC Output Frequency	50.00 – 90.00 MHz
B:	SCPC Output Frequency	950 – 1450 MHz (standard)
B1:	SCPC Output Frequency	950 – 1750 MHz
C:	FM Subcarrier Output Freq.	100 KHz – 8.995 MHz
E:	Ethernet LAN Interface	Supervisory and control port
M:	MPEG Audio output	Monaural or Stereo analog output
N:	Selective Addressing	Data channel selective addressing
P:	Telephone Modem	Supervisory and control port including SMTP
R:	Remote Programming	Remote or downlink programming control
S:	LCD Status Display	Display and keypad for local manual setup
T:	Desktop Package	Desktop instead of normal rack mount configuration
V:	Voice Grade Audio	Compressed voice grade channel input