



SATSTREAM

21521 NARROWBAND FSK DATA RECEIVER



A narrow bandwidth FSK satellite data receiver for low speed data and voice grade audio and control

FEATURES

- Voice grade audio and serial data capabilities
- Selective addressing: unit, group, region, all
- Narrow bandwidth for reduced satellite costs
- Software setup of frequency and features
- Flexible bandwidth allocation between voice and data
- Need not rely on terrestrial networks for infrastructure
- Optional Emergency Alert System capabilities
- SCPC or FM Subcarrier on video - FSK modulation

APPLICATIONS

- News and weather text distribution
- Low resolution graphics distribution
- Selective distribution of news wires
- Low cost back haul audio circuits
- Emergency notification systems
- Remote control systems
- Remote pager or sign controller
- Highway information systems audio feed

DESCRIPTION

The Satstream 21521 FSK Data Receiver accepts L band signals directly from a C or Ku band high stability LNB. It provides reliable low speed data or voice grade communications with low occupied satellite transponder bandwidth that results in lower satellite bandwidth charges. Data rates supported range from 2400 to 12000 bits per second with bandwidths of 10 to 30 KHz. The receiver is configurable via a serial port, data is stored in non-volatile memory. Frequency is accurately controlled by means of direct digital synthesized local oscillator with precision crystal reference.

The selective addressing feature allows voice and/or data to be directed to specific individual units, units of a common group or region ID, or to all units.

AFC and sophisticated signal recognition algorithms allow use of the receiver with lower cost PLL LNBs with local oscillator frequency errors of up to +/- 100 KHz. Automatic drift compensation is included. The standard 1 RU Rack Mount version is standard, however a smaller footprint desktop version is also available. The receiver includes a universal switchable 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.



SATSTREAM

21521 NARROWBAND FSK DATA RECEIVER

SPECIFICATIONS

Input Frequency Range	50.00 – 90.00 MHz (Transceiver IF)
SCPC Version (Option A)	950 – 1450 MHz (Standard L Band)
SCPC Version (Option B)	950 – 1750 MHz (Extended L Band)
SCPC Version (Option B1)	100 KHz – 8.995 MHz (Video Transponder Subcarrier)
FM Subcarrier Version (Option C)	950 – 1450 MHz (Standard L Band)
FM Subcarrier L Band Tuner (Option L)	
Recommended SCPC LNB	Low phase noise PLL LNB
Subcarrier Version (Option F)	100 KHz – 8.995 MHz
Subcarrier L Band Tuner (Option L)	950 – 1450 MHz
Frequency Resolution—all Inputs	1 KHz or better
Tuning Accuracy (uncorrected)	SCPC: better than 3 parts per million AFC correction for up to 100 KHz LNB offset
Modulation	Shaped FSK for minimized bandwidth on transponder
Forward Error Correction	Proprietary 3:2 bit correction algorithm (or none)
Audio Data Rates (Option V or Z)	Selectable 2400, 3200, 4000, 4800, 7200, 9600 bps
Audio Input (Option V or Z)	Voice grade output, unbalanced low impedance
Control/Supervisory Serial Port	DB9 RS232 Configurable rates 1200-19200 bps
Auxiliary Serial Data Port	DB9 RS232 or RS485 Configurable rates 1200-19200 bps
Relay Contact Closure Port	4 SPST (Form A) isolated relay contacts
Power Requirements	90-260 VAC 48-63 Hz less than 30 VA
Dimensions	Standard 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 21521

A:	SCPC Input Frequency	50.00 – 90.00 MHz
B:	SCPC Input Frequency	950 – 1450 MHz (standard)
B1:	SCPC Input Frequency	950 – 1750 MHz
C:	FM Subcarrier Input Freq.	100 KHz – 8.995 MHz
E:	Ethernet LAN Interface	Supervisory and control port
L:	L Band Tuner for FM Subcarrier	950 – 1450 MHz (standard L band)
N:	Selective Addressing	Data channel selective addressing
P:	Telephone Modem	Supervisory and control port including SMTP
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	Additional compressed voice grade channel input
Z:	EAS Repeater	Provides locally synthesized EAS audio output channel