

# SATSTREAM 21521

## NARROW BAND 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 controlled setup of frequency and features
- Flexible bandwidth allocation between voice and data
- No dependence on terrestrial networks or infrastructure
- Optional Emergency Alert System capabilities
- SCPC or FM Subcarrier on video - FSK modulation

### 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 code 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, a smaller footprint desktop version is also available. The receiver includes a universal switchmode AC power supply.

### APPLICATIONS

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

### EMERGENCY ALERT- OPTION Z

SCPC 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 features that allow the receiver to act as a repeater for EAS. All segments of the standard EAS broadcast are digitized and packetized 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 data 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 EAS, the available unused bandwidth may be used to transmit data, text or graphics or other voice announcements.

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# SATSTREAM 21521 SPECIFICATIONS

<b>Input Frequency Range</b>	
SCPC Version (Option A)	50.00 – 90.00 MHz (transceiver IF)
SCPC Version (Option B)	950 – 1450 MHz (standard L band)
SCPC Version (Option B1)	950 – 1750 MHz (extended L band)
FM Subcarrier Version (Option C)	100 KHz - 8.995 MHz (Video transponder subcarrier)
FM Subcarrier L Band Tuner (Option L)	950 - 1450 MHz (standard L band)
<b>Recommended SCPC LNB</b>	Low phase noise PLL LNB is recommended
<b>Subcarrier Version (Option F)</b>	100 KHz – 8.995 MHz
<b>Subcarrier L Band tuner (Opt L)</b>	950 – 1450 MHz
<b>Frequency resolution – all inputs</b>	1 KHz or better
<b>Tuning accuracy (uncorrected)</b>	SCPC: better than 3 parts per million AFC correction for up to 100 KHz LNB offset
<b>Modulation</b>	Shaped FSK for minimized bandwidth on transponder
<b>Forward Error Correction</b>	Proprietary 3:2 bit correction algorithm (or none)
<b>Audio Data Rates (Option V or Z)</b>	Selectable 2400, 3200, 4000, 4800, 7200, 9600 bps
<b>Audio Output (Option V or Z)</b>	Voice grade output, unbalanced low impedance (600 ohm)
<b>Control/Supervisory Serial Port</b>	DB9 RS232 Configurable rates 1200-19200 bps
<b>Auxiliary Serial Data Port</b>	DB9 RS232 or RS485 Configurable rates 1200-19200 bps
<b>Relay Contact Closure Port</b>	4 SPST (Form A) isolated relay contacts
<b>Power requirements</b>	90-260 VAC 48-63 Hz less than 30 VA
<b>Dimensions</b>	Standard rack mount: 1RU 19" Rack 19" wide x 1.75" high by 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)

<b>DESCRIPTION OF OPTIONS FOR MODEL 21521</b>	
A:	SCPC Input Frequency 50.00 – 90.00 MHz (transceiver IF)
B:	SCPC input Frequency 950 – 1450 MHz (standard L band)
B1:	SCPC input Frequency 950 – 1750 MHz (extended L band)
C:	FM Subcarrier Input Freq 100 KHz – 8.995 MHz (video transponder subcarrier)
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 An additional compressed voice grade channel
Z:	EAS Repeater Provides locally synthesized EAS audio output channel

