Step Tracking Receiver (STR)

Beacon tracking receiver for satcom antenna tracking



The new generation STR tracking receiver is an essential element in the pursuit of both commercial and military satellites. These satellites can be either geostationary (GEO) or in low earth orbit (LEO) or medium earth orbit (MEO). This tracking receiver uses the step-by-step technique, searching for the maximum received beacon signal to maintain the axis of the antenna beam in the direction of the satellite, despite the movement of the satellite or station. An anti-sideband function prevents the receiver from locking to the sidebands of the signal to be tracked.

FEATURES

- Delivers DC output voltage proportional to received signal strength
- Accepts PM or BPSK input modulated carrier and includes an anti-sideband system
- Performance advantage remote control/monitoring is achieved via RS232 and ethernet

ISO9001/EN9100/AS9100/JISQ9100

EUROPEAN CONFORMITY
EN 62368-1
EN 301489-1 V2 . 2 . 0

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RF Input

Impedance	50 Ω
VSWR	≤ 2.0
Noise factor	13 dB typ.
Input frequency	cf. models
Dynamic range	-100 to -30 dBm

AGC output

Voltage dynamic	0.5 V/dB (0 to 10 V max)
Signal dynamic	20 dB
Connector type	BNC (F)
Impedance	1 kΩ

Monitoring & Control

Ethernet	TCP/IP
Serial	RS232
Alarm signal	One dry loop
Lock information	One dry loop

External frequency ref.

Frequency	5 MHz or 10 MHz
Connector	BNC (F)
Expected value	0 dBm ±3 dB
VSWR	< 1.5 – 50 Ω

Power supply

Voltage	110 V / 250 V
Frequency	48 to 63 Hz
Consumption	20 VA max

Mechanical characteristics

Drawer	19" × 1 U × 310 mm
Weight	< 4.5 kg
Consumption	20 VA max

Coherent mode

Acquisition Threshold	C/N0: ≥ 35 dBc/Hz
Acquisition Time	<1 s (PM)
Search Range	±25 kHz/±50 kHz /±100 kHz/ ±150 kHz with anti-sideband rejection facility

Environmental conditions

Operating	+5 °C to +50 °C (non-condensing, 95% humidity at 70 °C)
Non-operating	-20 °C to +71 °C (non-condensing, 95% humidity at 40 °C)
Vibrations	±1 mm from 5 to 16 Hz / 1 g from 16 to 55 Hz
Shocks	half sine

Non-coherent mode

Tracking on power in a configured bandwidth
10kHz, 50kHz, 150kHz, 500kHz, 1.5MHz, 5MHz
(any kind of signal or noise)

Models

STR-L	950 – 2,150 MHz
STR-X	7.25 – 7.75 GHz
STR-Ku	10.7 – 12.75 GHz

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