

## **S Band Boresight Transmitter Unit: PCM/FM & SOQPSK/TG Data Sheet**

### **Description :**

This S Band Boresight Transmitter Unit is generally used for checkout of complete Telemetry Ground Station (Long Loop Test).



The Unit can receive external PCM streams (Data & Clock), in TTL and RS422 formats, but is also equipped with an internal **Pseudo Random Generator** (PSN 9, 11 and 15) allowing Data Link Bit Error Rate measurement by receiving Bit Synchronizer by transmitting S band (2200 – 2400 MHz) PCM/FM or SOQPSK/TG signal with 80 dB dynamic range. **In option the Unit can be Monitored and Controlled by Ethernet (TCP/IP).**

### **Key Features:**

#### **•Automatic Data Rate Tracking**

When DATA/CLOCK signals are available, the spectrum bandwidth (include deviation) automatically meet the 99% power bandwidth according to IRIG 106.

#### **•Intuitive Monitoring & Control**

Straightforward configuration and control using touch screen, Local mode.  
Remote M&C by Ethernet (TCP/IP) in option. Local/Remote selection in front panel.

#### **•Internal Clock and Data generator**

Fully independent test source with several clock rate and data pattern available.

#### **•Modulations capability**

Digital PCM/FM (ARTM Tier 0) or SOQPSK-TG (ARTM Tier 1) (optional GMSK)

#### **•Modulation signal input interface**

The modulation signal input can be either TTL or RS422

#### **•Modulation sense (FM)**

Positive or Negative, programmable

#### **•Variable output power**

Internal 80dB rotary step attenuator permit output level from +10dBm to -70dBm

## Specifications:

### Transmitter specifications:

Carrier frequency range ( factory setting ).	2200 to 2400 MHz.
RF output power:	10mW (10 dBm ) adjustable to -70dBm by 1dB step
VSWR	< 1.8
Load mismatch (VSWR = ∞):	no degradation.
Carrier frequency tuning step :	0.5 MHz.
Carrier frequency accuracy:	±2.5 ppm over temperature, ±7.5 ppm all clauses, including aging over 5 years.
Modulation:	SOQPSK-TG (Tier I) or FM (Tier 0)
Data rate:	1 to 28 Mbps (SOQPSK) and 1 to 14 Mbps (PCM/FM).
TTL input impedance:	50 Ohms (optional 10 Kohms)
Signal interfaces:	Serial data with separate synchronous clock, TTL or TIA/EIA-422 (RS-422) programmable by touch screen.
Monitoring & Control interface:	Embedded 4.3" touch screen or Ethernet (TCP/IP) in option
Randomizer:	15 stage LFSR per IRIG 106 selectable for bypass or enable.

### Pseudo Random Generator:

This unit can work under three configurations:

- Data source internal / Clock internal : user must set Internal Data generator to desired PRBS sequence (PN9, PN11 or PN15) and set Internal Clock Generator (2 or 8MHz)
- Data source internal / Clock external : user must set Internal Data generator to desired PRBS sequence (PN9, PN11 or PN15) and supply to transmitter a valid clock signal (rate 1 to 28MHz)
- Data source external / Clock external: user must supply clock and data to transmitter a valid clock signal (rate 1 to 28MHz).

### CONNECTORS SPECIFICATIONS

RF connector:	N-type F
TTL Data and Clock input:	BNC female type.
RS422 Data and Clock input:	9 pin SubD F
AC Power supply connector:	CE22 with internal 5A fuse.
Remote M&C:	RJ45

### Power requirements:

240 V AC  
50W  
Fuse protection. (5A slow blown 5x20mm)

### Mechanical:

Drawer 19" 2U enclosure  
Depth: 285mm without connectors and handles.  
Weight: 5kg

### Environmental:

No Operating temperature range:	- 10 to + 60° C.
Operating temperature range:	0 to +50° C.
Humidity :	20 to 80%, non-condensing