



Telemetry test ranges provide effective means of receiving data from multiple on board sensors for post flight analysis. The flight data collection without loss of information is very crucial in telemetry. To overcome the platform limitations, redundancy is employed in transmitter and receiver side.

In legacy systems operator observes quality of sync indicators from multi channel telemetry receivers and selects one among them manually. Under dynamically varying channel or platform conditions it is difficult to log the data with manual switchovers. Data loss is unavoidable under transitions. The best source selector (BSS) integrated with bit synchronizers can overcome this limitation.

The UTS's Multi-channel Bit synchronizer with integrated BSS is state of the art telemetry equipment realized with modern Software Defined Radio (SDR) principles. The product offers reliable data reception, without loss of data even under transition conditions among the channels with dedicated buffers (optional feature). The product has built in PCM deframer for frame synchronization and extracting the selected channel data(optional). The BSS algorithm selection and several other options are provided for user through front panel controls.

Key Features

- ❖ State of the art DSP algorithms for BSS
- ❖ All digital bit synchronization algorithm
- ❖ Touch screen GUI interface
- ❖ Configurable loop bandwidth
- ❖ Selectable line codes and PCM frame sync options
- ❖ Separate Outputs for bit sync and BSS.
- ❖ Can be used as multi channel bit synchronizer
- ❖ Remote control (optional feature)
 - RS-232
 - LAN
- ❖ Rack mount Chassis (19" W rack mount)

Model No. : UTS-TM-BSSX-RY-Z

X- number of channels 4 / 8 / 12 / 16

Y- Number of BSS outputs 2/4

Z-Based on other optional features

Parameter	Value
Number of Inputs	4 / 8 /12/16 (Depending on model)
Number of Outputs	1/2/4 (Depending on model)
Input voltage	Voltage level : 500mV to 10 V (Peak to peak) DC offset : $\pm 10V$ AC offset : 100% of input amplitude Impedance : 75 ohm (Optionally other voltage ranges and impedances can be supported).
Output voltage	Data and clock with TTL, 3.3V / 5 V and RS 422
Clock	0,90,180 and 270 degrees
Bit rate	Range : 100bps to 40 Mbps (other options available) Resolution : 0.1% of Bit rate
Loop filter	Bandwidth : 0.1% - 1.6%
Sync acquisition and retention	Acquisition : 50 bits Retention : 256 bits
Line codes	NRZ-L/M/S, Bi Φ -L/M/S, DM-M/S, MDM-M/S, RZ,RNRZ-L .Direct or invert bits can be selected
Randomization & De-randomization	Forward and Reverse as per IRIG-106 (optional in selected models)
ECC decoding (optional)	Viterbi Decoder Constraint length 7 and rate 1/2
BER performance	Within 1 dB
Best Source selection (BSS) algorithm	Data alignment : Time domain correlation Selection criteria : Programmable among (a) Signal quality (b) Number of Frame Synch bits match (c) Priority basis (other algorithms options are available in selected models)
Indicators	Signal present, search, check and lock indicators and frame lock indicator
PCM Frame synchronization	Programmable PCM decommutator Upto 4096 length bits
User interface	(a) Touch screen display (b) Remote Ethernet based GUI (optional) Configurable parameters: Input channel priorities, BSS algorithm Bit rate and bit sync settings and line codes settings Loop BW, De-randomizer, path alignment time
Power Supply	230V +/- 10V, 45-55 Hz, single phase 12/24 Volts DC (optional), Dual power supply(optional)

