GDP SPACE SYSTEMS

ACROAMATICS
TELEMETRY SYSTEMS

Telemetry Best Source Selector / PCM Data Switch
Model 2602P

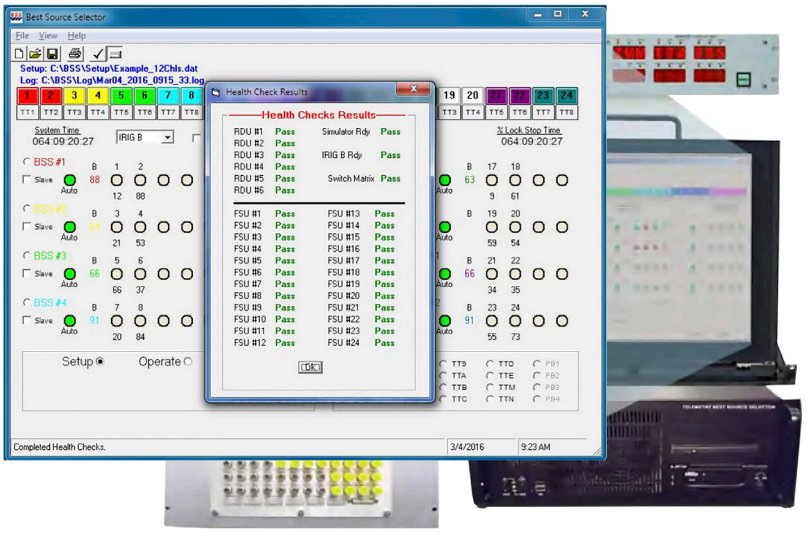
Features:

- Low Latency Automated Telemetry Best Source Selection and Output Source Switching
- No manipulation, recombining or reformatting of data in the process
- Modular Two Piece Chassis for optimum I/O Panel Location
- Up to 24 Source In by 12 Output Hardware Configurations
- Compatible 8x4 and 16x8 Stream Versions
- Program Configurable BSS Channel Groupings
- Operator Assignable Selection of Best Source Group Frame, Rate, and Sync Strategy
- Daisy-Chain and Slaved BSS Groupings Supported
- Input/Output Rates to 35 Mbps
- IRIG Time Correlated BSS Switch Log / Event Recording
- Automated Self-Test and BSS Group Definition Validation via Integrated PCM Format Simulator
- 5 ms Interval Input Verify and Lock Status Reporting / Logging

RELATED PRODUCTS

MD1612AP Multi-function Decom
MD1611AP/474DM PCM Bit Sync
MD1615AP PDSP EU Processor
MD2900AP Telemetry Data Processor

General Description



The Model 2602P Best Source Selector (BSS) is an ideal solution to the task of real-time automated selection and output switching of best quality stream data from multiple range telemetry link sources. The MD2602P accommodates a wide range of rate and virtually all IRIG format compliant PCM frame definitions.

The Model 2602P accepts multiple user defined grouped sources of bit synced PCM data, evaluates input source data quality, then selects and outputs the best source from each group to real-time processing, communications and recording equipment. Source selection criteria and stream selection activity are both displayed and stored in system log files for later analysis.

Acroamatics hardware embedded real-time TM processing techniques assure the MD2602P delivers accurate low latency best source selection without undo operation and set-up complexity. The 2602P can be ordered with from 8 to 24 source input sources, with source streams grouped via the operator set-up menu. Groups of up to four sources to one or more outputs are supported. Standard cascaded master/slave switch mode accommodates larger input groupings or switching of encrypted signals.

Automated BSS PCM stream simulation is provided to support convenient set-up confirmation and validation. Optional advanced Acroamatics PCM processing cards (bit syncs, decoms, PDSP) can be added to expand base BSS functionality to add full telemetry processing and data recording capabilities.

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Hardware Overview

The Model 2602P is a modular unit composed of a purpose-designed 4u rackmount chassis and separately housed shallow depth telemetry switching panel. A 19 inch (1u) rackmount dual slide operator LCD Monitor/Keyboard/Pointer is provided.

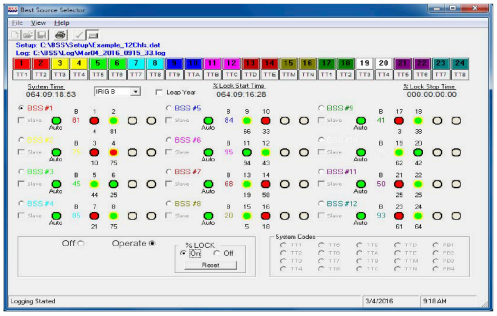
MD2602 units are typically ordered in hardware configurations of 8x4, 16x8 or 24x12 (e.g. 16x8 system is configured with 16 input and 8 output channels) which may be set up by the operator via system GUI control software to accommodate independent best source groupings, as required. Greater numbers of PCM data / clk source input and output channels may be accommodated on special order. Please contact the factory for more information.

Functionality

The MD2602P Telemetry Best Source Selector provides continuous, real-time testing of PCM input source frame synchronization and lock status and signal quality (single or multiple grouped input source streams) of telemetry data. Automated BSS input switching utilizes operator-entered set-up parameters to determine which of up to four sources (per group) with identical formats is the best source, then switches that source to the output connector specified for that BSS output grouping. Due to the low latency hardware based PCM frame processing and signal switching characteristics of the MD2602 system, multiple input source groups can be daisy-chained to handle missions with greater than four source inputs. Multiple BSS output groupings may be “slaved” to a single BSS group to mimic switch performance of the master group, which is useful in managing encrypted signal routing using decrypted stream BSS switch decisions. Mission setup is performed using an intuitive graphical user interface via the system’s provided drawer mounted retractable, dual slide rackmount monitor/keyboard.

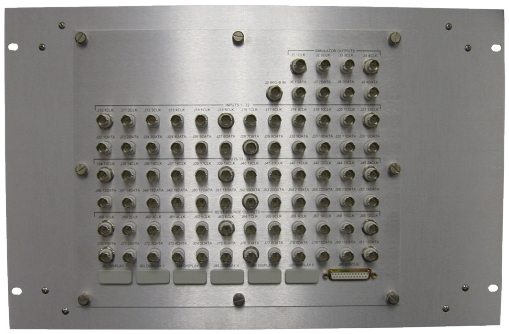
A point-and-click interface assigns one to four individual sources of a given telemetry stream to a best source output. Each source is also assigned a priority within its channel. Operators are given the option to manually select any valid (frame locked) input source as the default source within its BSS input group during automated operations, or to manually select default input during operations. After assigning multiple sources to an output channel, the desired bit rate, frame sync pattern, and minor frame length for the input group are assigned via operator GUI. An automatic test mode is provided to automatically route simulated test data signals to verify the switching strategy of the source group. Mission group and system setups are saved locally and recalled for re-use. In Automatic BSS operations mode, the highest priority source within the source group that is determined to have valid data is switched to the best source output connector for that channel group. When selected source data quality causes a loss of lock, the BSS immediately looks for a higher priority source within the source group to switch to. If none is found, the BSS then looks for a lower priority locked source in the channel to output. Should no other source within the channel be locked, no switching occurs. In Force mode, source data will be switched regardless of changes in lock status. Input source and channel status are continuously updated and graphically displayed. Displayed information current sync lock status and cumulative (since start of mission) lock status percentage for each source, and current best source within each source group.

Technical Specifications



Signal Data & 0° Clk Inputs	8, 16 or 24 each, 75 Ohm, TTL single ended, BNC Female
Signal Data & 0° Clk Outputs	4, 8 or 12 each, 75 Ohm, TTL single ended, BNC Female
Data Rate	1 bps to 35 Mbps, NRZ-L
IRIG B Time Reader/Gen Input	(1 KHz Modulated) 0.5 V p-p to 20 V p-p, 10K Ohm BNC Female
PCM Code/Clock Input PCM	All with fixed-length minor frames
Formats Supported Minor	All with fixed-length minor frames
Frame Length	16 bits to 65,536 bits
Data Polarity Simulator Data	Normal, inverted and automatic detection
Clock Outputs External	4 ea. RS-422 outputs, 9600 baud at 10 Hz update rate min., on individual 9 pin fem D connectors
Display Outputs Discrete	6 ea. RS-422 outputs, 9600 baud at 10 Hz update rate min., on individual 9 pin fem D connectors
Status Output PCM Formats	Frame Sync Units lock status (24) out to back panel 25 pin female D connector All with fixed-length minor frames
Supported Ports	Industry Standard Ethernet, COM Ports and Parallel Printer
Minor Frame Length Data	16 bits to 65,536 bits
Polarity	Normal, inverted and automatic detection
Optional TM Processing	MD1611P, 1612AP, 474DM, 1615P, 1622P with ATSS Telemetry System Software add turn-key integrated processing capabilities to the MD2602P.

Physical



Power	90-132V or 180-264V auto select, 50-60Hz, 4A max (>2A, type)
Dimensions (BSS Chassis)	4u 7” (31.12cm) H x 19.0” (48.26cm) W x 22.5” (57.15cm) D
Dimensions (Switch Panel)	7u 12.25” (31.12cm) H x 19.0” (48.26cm) W x 3.5” (8.90cm) D
Temperature	Operating: 0° to +40° C, Non-Operating: -40° to +86° C
Relative Humidity	Up to 90% non-condensing
Shock	Operating 6G, Non-operating 50G
Vibration	Operating 0.5G, 5 to 2000 Hz, Non-operating 1.2G, 5 to 500 Hz
Optional Signal I/O with	88 chassis rear panel mount BNC Connectors, with all I/O connections supported for up to eight channels. In 9-16 Optional TM Processing Modules channel configurations, customer defined I/O assignment (to a max or 88 BNCs) is required.

Specifications subject to change without notice.

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