MULTI-CHANNEL (8CH/16CH) BIT SYNCHRONIZER with DIGITAL I/O

Model 270

Features

- 8 Independent Channels
  - 8 Additional Channels

    16 Total (Optional)
- Bit Rates: 5 bps to 20 Mbps
- Auto Bit-Rate Scan (Option)
- Tracking Range up to 15%
- Accepts NRZ-L/M/S, RNRZ-(F/R), BiØ-L/M/S, DM-M/S codes
- 2 Input Sources per Channel
  - One TTL & One RS-422
- 2 Outputs per Channel
  - One TTL & One RS-422
- Selectable Data/Clock Test Point on Front Panel (BNCs)
- Status Indicators for Sync
- IRIG-106 Derandomizer
- Frame Pattern Detector with Programmable Sync Strategy and APC (Optional)
- Remote Control via.
  - RS-232
  - Ethernet
- 3.5 -inch (2U) High Chassis

General Description

16 Channel Unit

The GDP Model 270 Multi-Channel (8 or 16 Channels) Bit Synchronizer unit with Digital I/O is a compact state-of-the-art high-performance device that is designed to extract usable digital data and provide an output clock from serial digital input stream.. The optimized digital design of this unit affords the highest performance characteristics currently available. Eight additional channels can be added (16 channels total) to the box as an option.

The Model 270 includes eight or sixteen independent channels that each have both TTL and RS-422 inputs and outputs. The unit includes programmable loop bandwidths from 0.05% to 1.6%. When searching for the signal, acquisition is attainable in as little as 40 bits. At the widest LBW the unit will track the signal to 15% of the input rate. Synchronization is maintained in the absence of transitions for a period of at least 128 bits.

Encoded data streams are processed to expose the raw information. IRIG-106 Randomized data is decoded to its native form. Both forward and reverse sequences are accommodated.

To further assure synchronization to the intended data stream, the optional Frame Pattern Detector may be invoked. Up to a 64-bit long pattern is detected. Maintaining synchronization with this pattern at the programmed repetition rate and synchronization strategy produces a lock signal. The unit also includes an APC (Automatic Polarity Correction) mode. In this mode the output polarity of the data will be corrected.

When the input bit rate is expected to be changing, use the optional Auto Bit Rate Scan. Up to 8 bit rates, input codes and Synchronization patterns can be programmed. The bit synchronizer automatically finds the appropriate setting from the list and locks to the input signal. To add accuracy to the lock decision, the Frame Pattern Detector be included in the test. Status for each of the streams along with selected bit rate and deviation are displayed on the front panel.

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SPECIFICATIONS

Signal Inputs	
Inputs	Two Selectable Digital Inputs; (1) RS-422 Input, (1) TTL
Input Impedance	TTL: 50 ohm (std) or 75 ohm (opt) RS-422 (120 ohm/None)
Codes	NRZ-L/M/S, BIΦ-L/M/S, DM-M/S, *MDM-M/S
De-randomizer	IRIG-106 (Forward/ Reverse)
Synchronization	
Bit Rate Range	5 bps to 20 Mbps
Bit Rate Tuning Resolution	$X.XXXE^N$ $(1 \leq N \leq 7)$
Loop Bandwidths	Programmable from 0.05% to 1.6%
Tracking	Up to 15%
Sync Retention	128 bits minimum without transitions, LBW1.
Frame Pattern Detector	Detection of up to 64 bits (Optional) Programmable Synchronization Strategy (S/C/L) with APC
Outputs	
Outputs	Two Outputs; (1) RS-422 Input, (1) TTL
Output Impedance	TTL: 50 ohm (std) or 75 ohm (optional) RS-422 (120 ohm/None)
Codes	NRZ-L/M/S, BIΦ-L/M/S, DM-M/S, *MDM-M/S
Randomizer	IRIG-106 (Forward/Reverse)
Polarity	Output Polarity normal / inverted (Data & Clock).
Front Panel LEDs	LED Lock Indicator for each channel Display
Front Panel Display	Lock Status, Deviation, Bit Rate Lock for each channel
Auto Scan (Optional)	Scan up to 8 Bit Rates/Codes/Sync Patterns for each channel.

Rear Panel
16 Channel Unit

R2230407

Ordering Information

MD270-00	Basic Unit (20 Mbps)	OP270-30	Additional 8 Channels (16 Ch total)
OP270-03	Frame Pattern Detector	OP270-31	Special PCM Codes (eg MDM)
OP270-22	Ethernet Remote Control	OP270-40	Special Rear I/O
OP270-23	RS-485 Remote Control	OP270-90	Auto Scan

Recognizing that no standard product can meet all the needs of all users, GDP stands ready to provide units tailored to unique applications.

The statements in this data sheet are not intended to create any warranty, expressed or implied. Equipment specifications are subject to change without notice.

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