8763 USB Series

Bit Synchroniser and Decommutator

Features:

- Provides clock and data recovery from perturbed serial PCM data over a Bit Rate range from 1500 BPS to greater than 10 MBPS
- Includes a PCM Decommutator which transfers data to a host PC through a USB 2 Port
- Processes all PCM Codes including RNRZ, NRZ and Bi-Ø codes
- RS422 Data and Clock Inputs
- RS422 Data and Clock Outputs
- IRIG B Time Code Reader
- Wide operating temperature range
- Rugged Construction
- Powered from Host PC
- Lock and Status Indicators
- Supports IRIG 106 Frame Formats
- Frame Format stored in non-volatile memory
- Supports SFID & FCC
- Supplied with single stream GDSmate software providing:
  - Raw Data Archiving to Disk
  - Graphical Data Displays
  - Tabular Data Displays
  - Engineering Unit Conversions
  - Post Processing File Outputs

The Apollotek APK8763 Bit Synchroniser is part of the ApolloDas range of USB products which are designed for PCM Flight Test Instrumentation system checkout and test applications. The Unit is incorporated into an aerospace grade aluminium housing machined from solid which is rugged enough to be installed in an aircraft.

The APK8763 USB Bit Synchroniser and Decommutator combines the functions of the APK8762 USB Bit Synchroniser unit and the APK8760 USB Decommutator into a single unit.

The APK8763 uses proprietary Apollotek developed analogue and digital signal processing techniques to extract clock and synchronised data from a perturbed baseband serial PCM data stream and to provide PCM Decommutation with data transfer to a host PC through a high speed serial USB port. The APK8763 unit also takes power from the host PC USB Port.

Bit Synchroniser initialisation and stream lock status monitoring is provided on the unit through LED displays and also through the USB port under control of the Apollotek GDSmate Telemetry Environment Software package.

RS422 Data and Clock Outputs are provided for connection to external decryption or other similar functional devices. The decrypted data can then be fed back to the unit through a second RS422 port.

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APOLLOTEK

8763 USB Series
Bit Synchroniser and Decommutator

BIT SYNCHRONISER and DECOMMUTATOR SPECIFICATIONS

Electrical and Performance Specification

Data Rates	1500 BPS to 10 MBPS for NRZ-L Codes as standard
Input PCM Codes	NRZ-L/M/S, RNRZ-L
	BIØ-L/M/S
Input Signal Amplitude	0.4 V to 6 V (± 3 V peak-to-peak, +3V DC Maximum)
Input and Output Signal Connectors	BNC inputs for PCM and IRIG B
	4 pin RS422 data and clock input connector for decoded data and clock inputs (mating half provided). Can also be used as a stand alone USB Decommutator
Loop Bandwidth Equivalence	0. 01% to >5% of bit rate (user programmable)
Tracking Range	>10% (user programmable)
Bit Error Rate	Approaches 1 dB of ideal performance curve below 10 MBPS
Output Data	RS422 data and clock (can be used for external decoding). Decoded NRZ-L data can also be connected back into the unit through the RS422 input connector (mating half provided).
	Decommutated IRIG 106 PCM data transferred to host PC through USB 2 port
IRIG B Time Code Input	1 Volt rms modulated time code input into 600 Ohms input Impedance

System Interface Specification

Interface Type	USB 2 Bus. Backwards compatible with USB 1 ports
Power Requirements	Within USB Bus Port limits
Software	Set-Up and controlled using the Apollotek GDSmate Telemetry Environment Software package (see separate data sheet

Mechanical Specification

Overall Size	105 mm long by 55 mm wide and 21 mm high
Manufacturing Processes	Surface mount internal PCB technology
	Enclosure machined from solid aerospace grade aluminium to provide very rugged packaging

Operational Environmental Specification

Temperature	-10 ^{O} Centigrade to +70 ^{O} Centigrade
Humidity	0 to 90% non-condensing

Non-operating

Temperature	-25 ^{O} Centigrade to +90 ^{O} Centigrade

Specifications are subject to change without notice

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