

Features:

- Provides clock and data recovery from perturbed serial PCM data over a Bit Rate range from 10000 BPS to greater than 20 MBPS
- Includes a PCM Decommulator 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
- Rugged Construction
- Powered from Host PC USB Port or external DC supply
- 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



Standard USB Powered Package



Airborne Package

The Apollotek APK8763 Bit Synchroniser series are 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 Decommulator combines the functions of the APK8762 USB Bit Synchroniser unit and the APK8760 USB Decommulator 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 Decommuration 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.

BIT SYNCHRONISER and DECOMMUTATOR SPECIFICATIONS**Electrical and Performance Specification**

| | |
|------------------------------------|--|
| Data Rates | 10000 BPS to >20 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 Amplitude Modulated IRIG B Time Code 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 Decommulator |
| 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). Decommuted IRIG 106 PCM data transferred to host PC through USB 2 port |
| IRIG B Time Code Input | Nominal 1 Volt rms amplitude modulated time code input into 600 Ohms input Impedance |

System Interface Specification

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|---|--|
| Set-Up and Data Transfer 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 for Windows Telemetry Environment Software package (see separate data sheet) |

Mechanical Specification

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

Operational Environmental Specification

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|-------------|--------------------------------------|
| Temperature | -10 ° Centigrade to +70 ° Centigrade |
| Humidity | 0 to 90% non-condensing |

Non-operating

| | |
|-------------|--------------------------------------|
| Temperature | -25 ° Centigrade to +90 ° Centigrade |
|-------------|--------------------------------------|