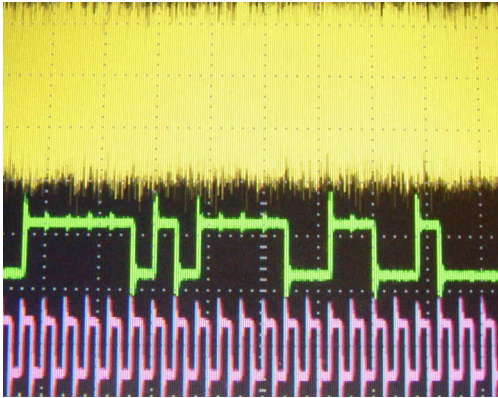## Features:

- **Provides clock and data recovery from a received serial PCM data stream over a Bit Rate range extending from 1500 BPS to greater than 10 MBPS**

- **Processes PCM Codes including RNRZ, NRZ and Bi-Ø codes**

- **Unique Apollotek signal recovery Analogue and Digital design implementation**

- **Programmable Bit Rate**

- **Programmable loop bandwidth**

- **Programmable Tracking Range**

- **The Bit Synchroniser is set up and monitored through the USB port using the Apollotek GDSmate Telemetry Environment Software Package**

- **Bit Synchroniser Lock and Status LED displays**

- **Standard Telemetry input and output interfaces and special electrical and optical interfaces are available**

- **Compatible with the Apollotek USB Decommutator series**

The Apollotek APK8762 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 supplied in an aerospace grade aluminium housing machined from solid which is rugged enough to be installed in an aircraft.

The APK8762 USB Bit Synchroniser uses proprietary Apollotek developed analogue and digital signal processing techniques to extract clock and synchronised data from a perturbed baseband serial PCM data stream.

The APK8762 takes power from the host PC USB Port and provides NRZ-L data and clock outputs at TTL through individual BNC connectors and at RS422 levels through a 4 pin circular connector.

The Data and Clock Outputs can be connected directly to an Apollotek USB PCM Decommutator or other similar functional devices.

Bit Synchroniser set-up and status monitoring is provided through the USB port under control of the Apollotek GDSmate Telemetry Environment Software package.

When used in conjunction with a portable PC and GDSmate, the Apollotek USB instrumentation product range can be configured as a mobile Groundstation. Apollotek PC based Telemetry Groundstations can also be scaled in performance to include multiple networked Servers and Clients.

BIT SYNCHRONISER SPECIFICATIONS

Electrical and Performance Specification

Data Rates	1500 bps to 10 Mbps for NRZ-L Codes
Input PCM Codes	NRZ-L/M/S, BIØ-L/M/S
	RNRZ-L ($2^{11,15,17,20,23}$)
Input Signal Amplitude	0.4 V to 6 V (± 3 V peak-to-peak, +3 V DC Maximum)
Input and Output Signal Connectors	BNC connectors for signal input and clock and data outputs. 4 pin RS422 data and clock output connector (mating half provided)
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	LVTTL data and clock and RS422 data and clock outputs on separate connectors

System Interface Specification

Interface Type	USB 2 Port. Backwards compatible with USB 1 ports
Power Requirements	Within Full Power USB Bus Port limits
Software	Set-Up and controlled using a set-up utility provided with the APK8762 Bit Synchroniser or by 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 in appropriate packaging

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

Specifications are subject to change without notice