

Features:

- Combines the capabilities of the Apollotek USB powered S-Band or L-Band Telemetry Receiver and the APK8762 Bit Synchroniser in one small USB 2 powered module
- Receiver Tuneable over a 200 MHz Band in 0.5 MHz steps
- Unique Apollotek integrated signal recovery design implementation using Analogue and Digital Signal Processing techniques
- Bit Synchroniser Provides clock and data recovery from perturbed serial PCM data over a Bit Rate range from 10 KBPS to 10 MBPS for NRZ PCM Codes and 5 MBPS for Bi-Ø PCM codes.
- Data Synchronisation Lock Status LED display
- Programmable Bit Rate and Loop Bandwidth
- The APK8769 Receiver and Bit Synchroniser settings are programmed using the Apollotek Windows based Set-Up Software provided with the unit
- Once programmed the unit will store all set up parameters in non-volatile memory which will be loaded when power is applied
- The APK8769 is powered from a full power USB Port connection with a host PC
- The APK8769 is also available with an integrated PCM Decommutator as an option



The Apollotek APK8769 incorporates an S-Band or L-Band Telemetry Receiver with an integral Bit Synchroniser and is one of the Apollotek range of USB products which are designed for PCM Flight Test Instrumentation system checkout and test applications.

The APK8769 Receiver Frequency, PCM Code, Bit Rate and Loop Bandwidth settings are programmed through a USB 2 port connection to a host PC running the Apollotek Set-Up utility software supplied with the unit. The programmed settings are stored in Flash Memory.

The APK8769 uses proprietary Apollotek developed analogue and digital signal processing techniques to digitally process a down-converted IF signal and then extract clock and synchronised data from the received serial PCM data stream.

The IF Bandwidth is automatically computed and set for the programmed PCM Code and Bit Rate.

NRZ-L Data and Clock outputs are provided through individual BNC connectors and 4 pin circular connectors. The Data and Clock Outputs can be connected directly to an Apollotek USB PCM Decommutator or other similar functional devices.

BIT SYNCHRONISER SPECIFICATIONS

Electrical and Performance Specifications

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|------------------------------------|---|
| Receiver Tuning Ranges: | S-Band as standard. L-Band as an option 0.5 MHz Tuning steps as standard |
| Input Signal Threshold | -70 dBm nominal |
| Bit Synchroniser Data Rates | 1500 BPS to 10 Mbps for NRZ-L Codes |
| PCM Codes | NRZ-L/M/S, RNRZ-L ($2^{11,15,17,20,23}$), BIØ-L/M/S |
| Input and Output Signal Connectors | SMA RF Input Connector. BNC TTL and 4 pin RS422 PCM data and clock output connectors |
| Loop Bandwidth Equivalence | 0.01% to >5% of bit rate (user programmable) |
| Bit Rate Tracking Range | >10% (user programmable) |
| Bit Error Rate | Approaches 1 dB of ideal performance curve below 10 MBPS for a given signal strength and signal to noise ratio |
| Output Data | TTL data and clock and RS422 on separate connectors |
| LED Indicators | Power (Green when powered) Bit Sync Lock (Red when out of lock, Green when in-lock) |

System Interface Specification

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|----------------------------|--|
| Programming Interface Type | USB 2 Port. Backwards compatible with USB 1 ports |
| Power Requirements | USB 2 Full Power Port required |
| Software | Set-Up and controlled using Apollotek supplied Set-Up Software package designed to run on a Windows XP Pro PC. GDSmate supplied with Decommulator Option |

Mechanical Specification

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| Overall Size (Excluding Connectors and Antenna) | 105 mm long by 55 mm wide and 30 mm high |
| Manufacturing Processes | Surface mount internal PCB assembly 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 in appropriate packaging

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

All Specifications are subject to change without notice