

Features:

- Combines the capabilities of the Apollotek USB powered S-Band or L-Band Telemetry Receiver and the APK8762-I Bit Synchroniser in one small USB 2 and Stand Alone DC powered module
- Receiver Tuneable over a 200 MHz Band in 0.5 MHz steps
- RF Signal Strength Indicator LED
- 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 10000 BPS to greater than 10 MBPS for NRZ Codes and 5 MBPS for Bi-Ø codes.
- Bit Synchroniser Lock Status LED display
- Programmable Bit Rate and Loop Bandwidth
- The APK8769-I 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-I can be powered from a full power USB Port and also in stand alone mode from an external 5 Volt DC power supply. A 28 V DC Power Supply Option is also available
- The APK8769-I is also available with an integrated PCM Decommulator as an option



The Apollotek APK8769-I incorporates an S-Band or L-Band Telemetry Receiver with an integral Bit Synchroniser based on the APK8762 design and is one of the Apollotek range of USB products which are designed to support PCM Flight Test Instrumentation system checkout and test applications.

The APK8769-I 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. Programmed settings are stored in Flash Memory which enables the APK8769-I to be operated in a stand alone mode from an external 5 Volt DC supply.

The APK8769-I 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.

The APK8769-I is also configured to operate from an external 5V power from an external supply.

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 Decommulator or other similar functional devices.

BIT SYNCHRONISER SPECIFICATIONS

Electrical and Performance Specifications

Receiver Tuning Ranges:	S-Band as standard. L-Band as an option 0.5 MHz Tuning steps as standard
Input Signal Threshold	-75 dBm nominal
Bit Synchroniser Data Rates	10000 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 Other codes optional
Input and Output Signal Connectors	SMA RF Input Connector. BNC TTL and 4 pin RS422 PCM data and clock output connectors
Loop Bandwidth Equivalence	0.03% to 10% of bit rate (software programmable)
Bit Rate Tracking Range	Up to 10% of Bit Rate. Loop bandwidth dependent
Bit Error Rate	Nominally within 1 dB of ideal performance curve 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) Received Signal Strength (Green when above threshold) These LED Indicators are duplicated on both sides of the unit to aid visual observation of the Unit Status

System Interface Specification

Programming Interface Type	USB 2 Port. Backwards compatible with USB 1 ports
Power Requirements	USB 2 Full Power Port or an External +5V Power Supply required. Optionally +28 V DC Power Supply
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

Overall Size	147 mm long (including flanges) by 66 mm wide and approximately 50 mm high
Manufacturing Processes	Surface mount internal PCB assembly technology Flanged Base black anodised aluminium box providing a rugged mechanical package

Operational Environmental Specification

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

Non-operating in appropriate packaging

Temperature	-25 ° Centigrade to +90 ° Centigrade
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Specifications are subject to change without notice