

### Features:

- Combines the technology of the Apollotek USB powered S-Band or L-Band PCM/FM and SOQPSK modulation Telemetry Receiver with the APK8762 series Bit Synchroniser in one small Stand Alone USB 2 programmed and externally 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 and greater than 20 MBPS for SOQPSK modulated transmissions
- 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 standard APK8769-I is powered from an external 5 Volt DC power supply. Other DC supply options available
- The APK8769-I is also available with an optional integrated PCM Decommutator with Windows Parameter Display Software



The Apollotek APK8769-I 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-I Receiver Frequency, PCM/FM or SOQPSK Modulation, PCM/FM 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 on CD with the unit. Programmed settings are stored in Flash Memory which will then automatically program the unit when power is applied. 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.

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. An integrated USB Receiver, Bit Synchroniser and Decommutator Unit is also available as the model APK8767-I.

The standard APK8769-I is configured to operate from an external 5V power from an external supply. Other DC Power Supply options including +28 V DC are available.

## RECEIVER and 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	Better than -80 dBm nominal
Bit Synchroniser Data Rates	10000 bps to >10 Mbps for NRZ-L Codes
PCM Codes	NRZ-L/M/S, RNRZ-L (2 <sup>11,15,17,20,23</sup> ), BIØ-L/M/S SOQPSK standard code is RNRZ-L 2 <sup>15</sup>
Input and Output Signal Connectors	SMA RF Input Connector. BNC TTL and 4 pin RS422 PCM data and clock output connectors
Loop Bandwidth Equivalence	0.05% to >10% of bit rate (software programmable)
Bit Rate Tracking Range	Up to 10% and depending on loop bandwidth setting
Bit Error Rate	Nominally within 1 dB of ideal performance curve when operating with an adequate 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)

### System Interface Specification

Programming Interface Type	USB 2 Port. Backwards compatible with USB 1 ports
Power Requirements	External +5V Power Supply required for standard unit Autoranging 110 / 230 Vac option (increases height of unit)
Software	Set-Up and controlled using Apollotek supplied Set-Up Software package designed to run on a Windows PC

### Mechanical Specification

Overall Size (Excluding connectors and Antenna)	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 painted 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