# Features:

- **Combines the capabilities of the Apollotek USB powered Radio Receiver and the APK8762 Bit Synchroniser in one small Stand Alone USB 2 Windows PC programmed and externally powered module**

- **Receiver Tuneable over a 200 MHz Band in 0.5 MHz steps**

- **RF Signal Strength Indicator LED**

- **Commercial digital signal recovery similar to home satellite set top box signal reception using simpler modulation and lower data rates**

- **Bit Synchroniser can be specified to provide clock and data recovery from serial digital data over a Bit Rate range from 1000 BPS to greater than 5 MBPS for industry standard PCM Codes.**

- **Data Signal Lock Status LED display**

- **RF Signal Threshold LED Indicator**

- **The APK8769-HA Receiver and Bit Synchroniser settings are programmed through a USB port 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-HA is powered from an external 10 to 30 Volt DC power supply**

- **The APK8769-HA is also available with an integrated PCM Decommutator as an option**
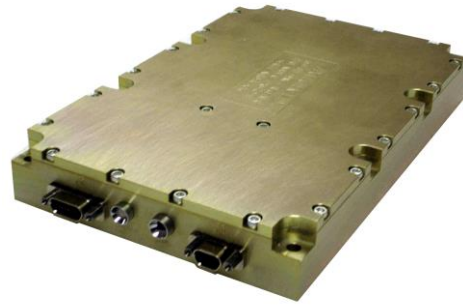
The Apollotek APK8769-HA incorporates a 2.2 to 2.4 GHz or 1.7 to 1.9 GHz Radio Receiver with an integral Bit Synchroniser and is one of the Apollotek range of USB controlled Test Instrumentation products which are designed for Pulse Code Modulation system checkout and evaluation applications.

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

The APK8769-HA 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 standard APK8769-HA is configured to operate from an external 10V to 32V power supply.

NRZ-L Data and Clock outputs are provided through a 15 pin micro-miniature connector. The Data and Clock Outputs can be connected directly to an Apollotek USB PCM Decommutator or other similar functional devices.

This version of the Apollotek miniature Bit Synchroniser is designed to be hard mounted using bolts passing through the box corners.

Other mechanical package options are available.

DEVICE 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	-85 dBm nominal
Bit Synchroniser Data Rates	1000 bps to 5 Mbps for NRZ-L Codes
PCM Codes	Specify: NRZ-L/M/S, RNRZ-L ($2^{11,15,17,20,23}$), BIØ-L/M/S and standard Differential BPSK.
	Other codes optional
Input and Output Signal Connectors	SMA RF Input Connector. 9 pin micro-miniature power connector and 15 pin micro-miniature control/data connector
Loop Bandwidth Equivalence	0.05% to 10% of bit rate (software programmable)
Bit Rate Tracking Range	Up to 10% depending on loop bandwidth setting
Bit Error Rate	Nominally within 2.5 dB of ideal performance curve for a given signal strength and signal to noise ratio
Output Data	NRZ-L RS422 Data and Clock on a 15 way micro-miniature connector
LED Indicators	Power (Green when powered)
	Bit Sync Lock (Red when out of lock, Green when in-lock)

System Interface Specification

Programming Interface Type	USB 2 on micro-miniature connector. Backwards compatible with USB 1 ports. Host Windows PC required
Power Requirements	External +10V to 30V DC Power Supply required
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)	170 mm long by 112 mm wide and approximately 25 mm high, excluding connectors
Manufacturing Processes	Surface mount internal PCB assembly technology
	Alochrom 1200 coated aluminium box providing a rugged mechanical package

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