

## Features and Options:

- Provides combinations of a tuneable L-Band, S-Band and C-Band Telemetry Receiver combined with a Bit Synchroniser and a Decommulator.
- Receives and Demodulates PCM/FM and SOQPSK-TG Telemetry Transmissions
- Provides clock and data recovery from a received serial PCM/FM or SOQPSK-TG data stream over a Bit Rate range extending from 500 KBPS to greater than 10 MBPS for PCM/FM and from 4 MBPS to 23 MBPS for SOQPSK-TG
- FM Baseband Analogue Output up to 10 MHz
- Data and Clock Outputs and Inputs for operation with external decryptors
- Receiver Frequency, Bit Rate and Frame Format set up through a USB Port by a host PC and the unit provides data transfer to the host PC through the same USB 2 Port
- Powered from the Host PC through full power USB2 ports
- Processes PCM Codes including RNRZ, NRZ and Bi-Ø codes
- RS422 and LSTTL Data and Clock Decom Inputs
- Buffered RS422 and LSTTL Data and Clock Outputs from Bit Sync
- IRIG B Time Code Reader included
- Stand Alone Bit Synchroniser Operation
- Stand-alone Bit Synchroniser with Decommulator operation
- Stand-alone Decommulator operation
- Frame Lock Indicator
- Supports IRIG 106 Frame Formats
- Frame Format stored in non-volatile memory
- Supplied with single stream GDSmate Telemetry Environment software for Windows providing:
  - Raw Data Archiving to Disk and Replay from stored files
  - Graphical and Tabular Data Displays
  - Common File Format Export Facility



The Apollotek APK8767 series provides a Telemetry Receiver, Bit Synchroniser and PCM Decommulator with optional baseband FM analogue output. This unit is one of the unique range of USB powered products designed for use in Aerospace Telemetry and Flight Test Instrumentation systems and similar applications. L-Band through C-Band Telemetry Frequencies up to 6 GHz can be supported.

The Receiver Frequency, FM or SOQPSK-TG Demodulation, Bit Rate, Loop Bandwidth, Tracking Range and Frame Format characteristics are set up through a USB port connection to a host PC.

Initialisation and Stream Lock status indication is provided on the unit by multicolour LED indicators. Status indication is also read by the USB version of GDSmate software supplied with the unit.

The APK8767-6 uses proprietary Apollotek developed analogue and digital signal processing techniques to extract clock and synchronised data from a perturbed baseband serial PCM data stream and to provide PCM Decommulation with data transfer to a host PC through a high speed serial USB port. The APK8767 unit is also powered through the host PC USB Port.

The APK8767-6 functions as a PCM/FM or SOQPSK-TG Telemetry Receiver with analogue baseband output which is also internally connected to a Bit Synchroniser and Decommulator. The unit can also operate just as a Receiver and Bit Synchroniser, as a combined Bit Synchroniser and Decommulator also just as a Bit Synchroniser and as an external Data and Clock input PCM Decommulator.

## RECEIVER, BIT SYNCHRONISER and DECOMMUTATOR SPECIFICATIONS

Receiver Tuning Ranges:	Optional single or multiple L-Band, S-Band and C-Band Frequencies
Receiver Sensitivity	Nominal -90 dBm at L-Band and S-Band, -75 dBm at C-Band and Bit Rate dependent
Analogue FM Baseband Option	0 to 1V Peak output voltage at up to 10 MHz bandwidth depending on FM Deviation
Analogue FM Deviation Range	User Programmable
Bit Sync Data Rates	100 KBPS to 10 MBPS for NRZ-L Codes and from 2 MBPS to 23 MBPS for SOQPSK-TG as standard
Bit Sync Input PCM Codes	NRZ-L/M/S, RNRZ-L, BIØ-L/M/S
Decommulator Formats	Compatible with IRIG 106 Frame Format definitions
IRIG B Time Code Input	1 Volt rms 1 KHz modulated IRIG-B time code input into 600 Ohms impedance
Standard Input and Output Signal Connectors (BNC Data and Clock Output connector option is also available – specify at the time of ordering)	SMA RF Input. A low gain Stub Antenna is provided with the unit BNC input for IRIG B modulated Time Code Signal 6 pin RS422 data and clock output connector for recovered data and for external data and clock inputs. (mating halves provided) BNC input for stand-alone Bit Synchroniser Operation
PCM Loop Bandwidth	0.1% to >5% of bit rate (user programmable)
PCM Tracking Range	Up to 10% (user programmable)
Output Data	Decommuted IRIG 106 PCM data is transferred to the host PC through the high speed USB port. Data and Bit Clock Outputs
Software	Supplied with single stream USB version of GDSmate to enable the host PC to set up the unit and to provide graphical data displays. Archiving, Replay and Ethernet networking is also supported. A documented .dll is also available on request

### System Interface Specification

Interface Type	High Speed USB 2 or USB 3 Bus (USB 2 connector as standard).
Power Requirements	Within USB Bus external powered Hub limits
Software	Set-Up and controlled using the Apollotek GDSmate Telemetry Environment Software package (see separate data sheet)

### Mechanical Specification

Overall Size	105 mm long by 55 mm wide and 46 mm high
Manufacturing Processes	Surface mount internal PCB technology Enclosure machined from solid aerospace grade aluminium Other packaging options are available

### Operational Environmental Specification

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

### Non-Operating

Storage Temperature	-30 ° Centigrade to +85 ° Centigrade
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Specifications are subject to change without notice