USB PCM Simulator and RF Transmitter Features:

- **USB Interface to a host PC for set up and DC power**
- **Nominal 10 mW wideband RF Transmitter output frequency modulated with a Simulated dynamic serial PCM or SOQPSK Bitstream**
- **Rechargeable Battery Pack Option for autonomous operation when programmed. Recharges through USB port**
- **Transmitted Frequency covers L-Band, S-Band and C-Band from 4.3 GHz to 6 GHz**
- **Programmable transmitter centre frequency**
- **Optional User programmable attenuation in 1 dB steps down from nominal 10 mW**
- **PCM/FM Modulation and SOQPSK Modulation**
- **PCM Simulation in excess of 20 MBPS**
- **BERT Pattern Generator Mode**
- **Very Long Frame Capability with low frequency Dynamics**
- **Complex Sub-Frame Capability**
- **Super-Commutation**
- **Sub-Commutation**
- **Embedded Stream Generation**
- **Generates Programmable Dynamic Parameters including:**
- **Sine, Cosine, Square, Ramp and Triangular waveforms**
- **Programmable parameter frequency**
- **Fixed Word Value**
- **Common Word Value**
- **External User generated PCM data files can be stored and repetitively transmitted**
- **TTL and RS422 Data and Clock Outputs**

The Apollotek Model APK8768-CB combines the unique features of the Apollotek APK8764 USB powered PCM Simulator with a wideband low power RF Transmitter, an optional programmable RF Attenuator and an optional rechargeable battery pack. The APK8768-CB PCM and SOQPSK-TG Simulator unit is set up and powered through a USB Port connection to a host PC and it provides a high performance user programmable PCM Simulator with a programmable low power transmitter centre frequency to provide a portable radio telemetry link and groundstation instrumentation test capability.

As well as being capable of operating at high data rates, the APK8768-CB is also designed to simulate low frequency dynamic parameter simulation within large and complex frame formats.

The APK8768-CB provides buffered outputs of PCM Data and Clock at TTL levels through BNC connectors. The modulated RF transmission is through an SMA connector and the supplied stub antenna. PCM/FM or optional SOQPSK Modulation can be user selected during set-up. The TTL Clock Output BNC port can also be programmed to provide a Bit Clock, Frame Clock or Sub-Frame Clock. The APK8768-CB also includes an optional rechargeable Battery Pack and an on/off switch. The Battery charges through the USB port and will power the unit for typically more than 30 minutes when operating autonomously.

Set-Up Software Control

- **Select the Bit Rate for PCM**
- **Select the RF Transmitter Frequency**
- **Select PCM/FM or optional SOQPSK Modulation**
- **Select Attenuation Setting**
- **Build the Data Frame**
- **Variable Bits per Word supported**
- **Assign Variables to Words**
- **Assign Embedded Data Stream Words**
- **Select the Variable Frequency**
- **Select the Variable Amplitude**
- **Select the Channel Interval**
- **Select the Channel DC Offset**
- **Update the Simulator**
- **Output Simulated Data**
- **Colour Coded Format Status identification in Frame Map**
- **Direct access to simulated parameters through the GDSmate compatible Frame Map display**
- **The Simulator can also be loaded with Frame Format files generated by the ApolloDas 8600 Modular PCM Encoder Set-Up Software**
- **BERT mode generates standard IRIG pseudorandom sequence**

System Interface Specifications

Typical PCM Frame Set Up Form
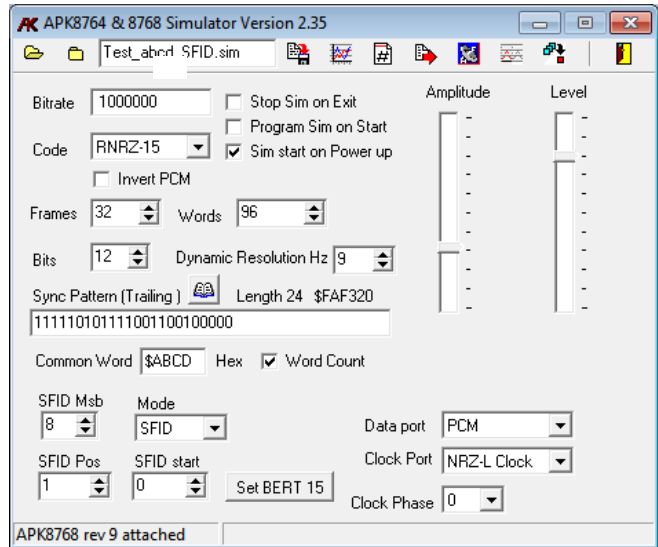
Typical PCM Parameter Frame Map Display
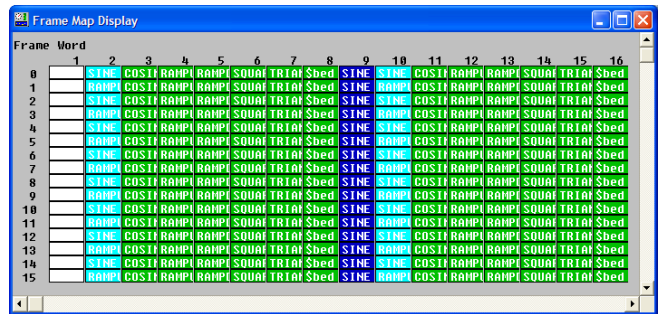
Interface Type:	USB 2 with USB 1 compatibility
Programmable Functions:	PCM Frame Format and Bit Rate, Transmitter Centre Frequency, Attenuation, Modulation Type, Individual simulated parameter amplitude, Individual parameter offsets. Individual parameter frequency, PCM Frame Format characteristics. Clock Output type. Parameter Setup selected through Frame Map Display.

Mechanical Specification

Standard Module dimensions:	Length: 115 mm Width: 70 mm (including connectors) Height: approximately 85 mm depending on options, excluding antenna
Construction:	Multi-layer printed circuit boards mounted inside Aerospace grade aluminium housing sections precision machined from solid Aluminium.

All specifications are subject to change without notice