



### CPU/System-On-a-Chip: Generalplus GPL162003A

- 16-bit microprocessor, 96 MHz max system clock
- 128K-word internal ROM / 30K-word internal SRAM
- Variable speed playback with constant pitch
- Programmable 7-band equalizer
- 16-bit stereo DAC headphone amplifier / 16-bit ADC recording
- more at <http://www.generalplus.com/products/lcdcontroller/gpl162003a.asp>

### Storage

- firmware: 8Mbit NOR flash non-volatile memory
- content: 256MB microSD card with FAT32 file structure (upgradeable)

### Power

- Two size-D carbon-zinc (R20) batteries; future conversion: rechargeable AAs
- DC power input jack
- USB bus power from computer or USB hub
- <1mA sleep mode when device left waiting for an operation for two minutes
- Battery low voltage monitored by microprocessor
- ON/OFF slide switch to completely cut power

### Audio Input/Output

- Generalplus DVR1800 voice codec (32kbps) for playback and recording
- 28mm-diameter, 8-ohm, low-profile speaker: 82dB SPL, 0.2W
- Standard 1/8" (3.5mm) stereo headphone jack
- Built-in omnidirectional electret condenser microphone
- SNR  $\geq$  55dB, sensitivity  $\geq$  -46dB, 100Hz – 10kHz frequency response
- Standard 1/8" (3.5mm) stereo jack for allowing external microphone

### Visual Output

- red/green bi-color LED for providing status feedback to user (redundant with audio feedback)

### User Input

- Ten Buttons: play/pause, left, right, up, down, home, hyperlink, record, volume up, volume down

### Data Input/Output

- USB mini-B male plug for device-to-device copy
- USB mini-B receptacle for device-to-device copy and kiosk/computer interface