

Pillow Speaker interface for healthcare infotainment applications



The IMX101 facilitates the control of in-room audio-visual (A/V) and information-technology (IT) equipment by a pillow speaker in a hospital environment, maintaining health-care-grade electrical isolation between the patient and the equipment.

When attached to a USB host, the IMX101 presents itself as a composite USB peripheral. Primary functions enumerate as standard system input devices (keyboard, mouse & consumer-control) that are recognized and handled transparently by most operating systems. Secondary functions (TV-control & device-flash-update) enumerate as generic human-interface devices (HIDs) that utilize standard API calls without the need for custom drivers.

The IMX101 accepts variable line-level stereo audio, mixes left and right to form a monaural channel, amplifies it with fixed gain to speaker-level audio and supplies it electrically isolated to the pillow speaker.

Similarly, the IMX101 supplies electrically isolated phantom power to the pillow speaker for its control functions, and an isolated detector passes the remote-control pulse-trains to the embedded microcontroller for transcoding into USB events.

The small size of the IMX101, along with its utilization of USB-supplied power, makes it easy to install, while its LED indicators provide assurance of normal operation and insight into abnormal conditions.

Front panel:

- A.** USB mini-B jack (power, communications)
 - Power consumption: 5V @ 250mA
- B.** 3.5mm stereo jack (audio in, L+R summed)
- C.** 8-pin mini-DIN jack (optional TV control)
- D.** Red/green LED (device status)
- E.** Blue LED (audio level)

Rear panel:

- F.** ¼" (6.35mm) stereo jack (pillow speaker)
 - Isolated power, audio & control
 - ETL-listed to conform to UL-1069
 - 1W-rms into 8Ω with 2x300mV-rms input

Weight: 0.30 lbs (0.14 kg)

