



999.00 EUR

incl. 19% VAT, plus [shipping](#)

- DAB+ FM !
- 78 x 45 mm size !
- Programming API !
- FM with RDS !



Designed in Australia, the DAB+ FM Digital Radio Development Board Pro provides a platform for developing and evaluating DAB+, SlideShow and FM receiver. The board contains a Keystone T2\_L4A\_8650C DAB/FM module and a Microchip PIC18F14K50 microcontroller. The T2\_L4A\_8650C module is an ultra low power DAB/FM receiver module with the following features:

- ETSI EN 300 401 compliant receiver
- DAB/DAB+ sensitivity to -99dBm (typical)
- Decodes multiple audio services up to 256kbps without external RAM
- FM with RDS (\*\* RDS reception only available for station name, station text and genre and is subjected to certain condition of power level and frequency deviation)
- Combined antenna input for FM / Band3
- Support DAB L-Band reception (\*\* Although the Keystone module supports L-Band, the SMA connector has no connection to the L-Band pin, customer will need to solder a separate antenna and other passive components to make it work.)

- Serial control interface
- SlideShow
- RoHS compliant

The Microchip PIC18F14K50 provides a USB to Serial interface for the T2-L4A-8650C module to communicate with the host PC. Despite the sample code provided in this Development Board for communicating with the board is based on serial communication, user can analyse the serial communication and implements a driverless HID protocol by rewriting the firmware on the PIC18F14K50.

### **New SlideShow Feature**

With an upgrade module using the KeyStone T2\_L4A\_8650C, this board now support SlideShow. Slideshow adds visual content (slides) to radio broadcasts on DAB or DAB+. It enhanced the digital radio with visuals using images in JPEG or PNG format.

### **What can you do with it?**

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- Build a PC controlled DAB+ FM Digital Radio
- Build a CAR PC DAB+ FM Digital Radio
- Build a standalone DAB+ FM Digital Radio (requires external microcontroller)

#### **Feature Summary**

- KeyStone T2-L4A-8650C DAB/DAB+/FM radio module
- Microchip PIC18F14K50 USB Flash Microcontroller
- 12 Mhz crystal
- standard ICSP programming port for programming the PIC18F14K50
- EXT port logic signal for controlling external audio chip power and mute
- status LED, RX (orange) and TX (green)
- power LED (red)
- Bootloader push button
- 1.2VDC, 1.8VDC, 3.3VDC LDO
- 3.5mm stereo jack
- SMA antenna connector
- Dimensions : 78mm x 45mm

#### **HARDWARE DESCRIPTIONS**

##### **- Power Supply Circuit**

The board is typically powered by 5VDC from USB. The PIC18F14K50 is drawing power directly from the USB. From the USB's 5VDC, the power is further distributed into 1.2VDC, 1.8VDC and 3.3VDC LDO to the KeyStone T2-L4A-8650C module. The power of these three LDO is controlled by the SHDN pin.

##### **- Microchip PIC18F14K50**

This microcontroller is used to provide a Virtual Serial Port to the KeyStone module. It is flashed with a customised CDC RS-232 Emulation Demo firmware. Other than performing the standard serial emulation, it also control the power, reset and audio shunt of the KeyStone module.

##### **- Reset Circuit**

Reset of the module is performed by RESET pin emulated by DTR of the virtual serial port.

##### **- ICSP**

The ICSP programming port is the standard Microchip's In-Circuit Serial Programming port and is compatible with Microchip's PICKit.

##### **-EXT**

EXT port has two 5V logic signals, ■SHDN and ■SHNT. They are used to control external audio circuitry's power and mute.

- Push Button (SW1)

This button, when pressed during a power-up, will trigger the PIC18F14K50's USB HID bootloader in programming mode.

**Pre-installed Software**

- Microchip's USB bootloader (programming the board using a normal USB cable)
- Microchip's CDC RS-232 emulation firmware

**Packing List**

- 1 unit of DAB+ FM Digital Radio Development Board
- 1 unit of retractable antenna

[More Informations \(also links to Plugins f. FreeIcse, Centrafuse, etc..\)](#)