



VERSATILE INTEGRATION OF DIGITAL RADIO AND SMART DEVICE APPLICATIONS

## OVERVIEW

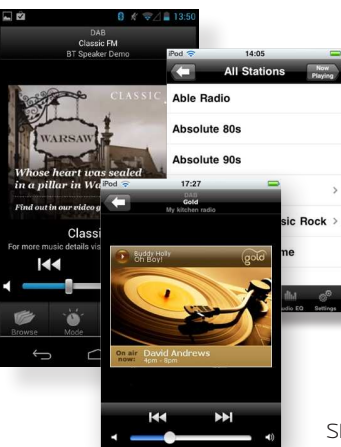
DAB 5.1 is the latest embedded software for Frontier Silicon's digital radio modules. DAB 5.1 incorporates all the extensive features of DAB 5.0 and adds USB to Apple iOS device connectivity for the Verona module.

Alternative connection options include Bluetooth™ connectivity (implementing AVRCP1.4 and A2DP profiles) enabling audio streaming, remote control and the ability to display programme-relevant text and full-colour images on a *Bluetooth* connected smart device display. Audio streaming from any *Bluetooth* A2DP compatible device allows users to play their stored music collection or on-line music service through the audio device.

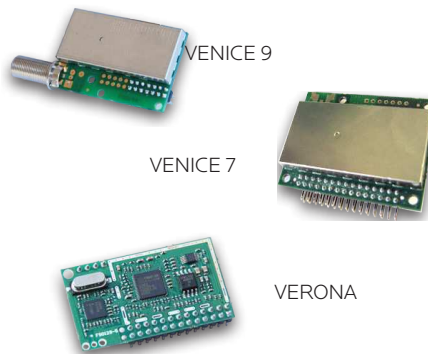
DAB 5.1 gives a complete DAB decode sub-system from RF to digital or analogue audio output and FM radio. In master mode DAB 5.1 supports a variety of interfaces, including: local keypad with rotary encoder, IR remote control and *Bluetooth* connected smart device. Alternatively in slave mode DAB 5.1 can be controlled by a host processor via an asynchronous control channel.

In master mode, DAB 5.1 can be used with three different display types on the audio device itself and enables a smart device, connected wired or wirelessly, to be used for a full colour interface.

DAB 5.1 has been designed for Frontier Silicon's Venice 9, Venice 7 and Verona modules.



SMARTPHONE APP SCREENS



## APPLICATIONS

- DAB/DAB+/DMB-Radio, FM-RDS radio
- *Bluetooth* streaming and control
- USB to Apple iOS device connectivity
- Master software in standalone radio or audio system
- Slave software functioning as a component in sophisticated third-party hi-fi systems

## LISTENING MODES

- **DAB/DAB+/DMB-Radio** digital radio with a wide choice of channels broadcast free-to-air
- **FM with RDS** (Radio Data System)
- Smart Device, audio streaming with *Bluetooth* wireless connection and/or wired iPod/iPhone control/recharge
- **Auxiliary input** for external music sources such as MP3 players

## OTHER KEY FEATURES

- *Bluetooth* support (including AVRCP1.4 and A2DP profiles)
- **RadioVIS**
- **Dynamic Label Plus (DL Plus)** support
- **Software-based audio equalisation**
- **Configurable display support**
- **Clock with auto-update** and dual independent **alarms**
- **Sleep/snooze**
- **DAB and FM presets**
- **Native MMI operation**
- **Frontier Silicon API (FSAPI)** slave mode operation
- **Customisable with Software Development Kit (SDK)**
- **Multiple languages** including English, French, German and Italian

# DAB 5.1

Embedded software for connected DAB/DAB+/DMB-R audio systems

## MODULES AND PLATFORMS

DAB 5.1 runs on three Frontier Silicon modules, which can be supplied either alone, or as part of a complete reference and evaluation platform. OEMs can use the reference platforms as-is, modified, or as the basis of their own custom products. The Wolfsburg platform is for evaluation of the slave-only Venice 9 module.

MODULE	PLATFORMS
Venice 7	Jupiter 7k
Verona	Venus / Venus 2i-BT/ Venus 2i-L
Venice 9	Wolfsburg (evaluation)



WOLFSBURG, JUPITER 7K AND VENUS 2I-BT PLATFORMS

## DISPLAY AND MENUS

DAB 5.1 supports three display types:

- 14-segment Starburst (with icons)
- 2 x 16-character (with or without icons)
- 128 x 32-pixel (with icons)

For all displays, the menu structure is straightforward, consistent between modes and fully flexible. It can be customised to remove modes that are not supported by the manufacturer's hardware.

## SOFTWARE DEVELOPMENT KIT

The DAB 5.1 Software Development Kit can be used by OEMs to configure many aspects of DAB 5.1's functionality, including:

- Device and input support
- DAB service list presentation
- DAB frequency bands
- Clock time format
- Smart Device settings
- Volume curve
- UI strings

## CUSTOMISATION AND UPDATES

Frontier Silicon works closely with customers to brand and customise all software for particular markets and end products.

The software includes a USB update function.

## DOCUMENTATION

Included with DAB 5.1 are the following documents:

- DAB 5.1 FSAPI User Guide
- FSAPI Protocol Reference Guide
- End-User Manual for the reference platforms. These are designed to be easily customisable for manufacturers' own audio systems. It is supplied as a Microsoft Word document with screenshot image files.

## STANDARDS AND CERTIFICATION

DAB 5.1 and the Venus and Jupiter 7 platforms have been designed to operate seamlessly with the rest of the digital audio world. As well as being compliant with the standards shown, suitable end-products based on this platform should be able to obtain certification for various other industry standards including Works with iPhone and Made for iPod; for more information, contact Frontier Silicon.

