

VERONA MODULE -
48 X 28 MM

APPLICATIONS

- Entry level digital radio
- Portable (kitchen) radio
- Clock radio

OVERVIEW

The Verona FS2052 module is the latest in a new generation of digital audio products to use the new DAB/DAB+/DMB-Radio optimised Kino 3 baseband chip. Ideal for WorldDMB Profile 1 receivers, providing superior signal reception at low-power and at a price point suitable for entry level products.

Verona is designed for worldwide applications to enable production of high-performance dual-band DAB/DAB+/DMB-Radio/FM receivers at low-cost. Verona operates in master mode removing the need for any additional host processor and includes an optional USB device interface for firmware updates.

The module provides all interfaces necessary for a fully functional radio, needing only power supply, display, keypad, audio amplifier and speakers to complete a product.

BENEFITS

- WorldDMB Profile 1 compliant delivering true economy of scale
- Software-upgradable from DAB to DAB+ and DMB-Radio
- Optional USB interface for field software updates
- The most cost-effective DAB/DAB+/DMB-Radio/FM solution available
- Best in class sensitivity ensuring good radio reception even in poor signal areas
- Requires no external RAM (which keeps the BOM cost low)

KINO 3 BASEBAND PROCESSOR

The **Kino 3** FS1235 IC is an advanced programmable DAB/DAB+/DMB-Radio baseband receiver, incorporating a number of mixed signal system components as well as advanced peripherals previously only available as discrete additional components, providing significant space and power savings.

BUILD OPTION

PRODUCT CODE	DESCRIPTION
FS2052B	Band III/Software FM with RDS

Further options are described in the Verona datasheet.



VERONA CAN DRIVE A STANDARD
(2 X 16 CHR) DISPLAY



KINO 3 ADVANCED
BASEBAND CHIP

KEY FEATURES

- WorldDMB Profile 1 compliant
- Ultra low-power DAB/DAB+/DMB-Radio/FM reception
- DAB (MPEG1) and DAB+/DMB-Radio (AAC+) decoding
- DAB/DAB+/DMB-Radio sensitivity to -97 dBm (typical)
- FM sensitivity to -106 dBm (typical)
- Decodes multiple audio services up to 384 kbps
- Temperature range:
 - operation: -10 to +70°C
 - storage: -40 to +85°C
- Memory:
 - Integrated RAM on Kino 3 baseband IC for DAB/DAB+/DMB-Radio
 - 4 Mbit flash
- On-board stereo DAC
- Optional full-speed USB 2.0 (12 Mbit/s) for software updates
- Combined antenna input for FM and Band III
- RoHS compliant
- Battery detection
- Display backlight control
- Multi-language support

VERONA FS2052

Low-power, low-cost DAB/DAB+/DMB-Radio/FM tuner module

DESCRIPTION

Verona provides a complete low-cost, low-power WorldDMB Profile 1 (DAB/DAB+/DMB-Radio) digital broadcast and FM tuner in a compact module.

The main components of the Verona module are shown in the diagram opposite. These are the RF front-end, Kino 3 baseband processor, flash and audio DAC.

Software

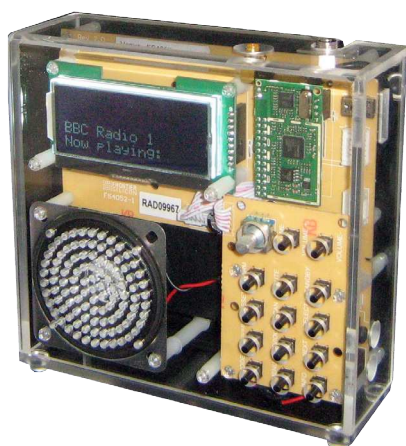
Software is configured to customer requirements and pre-installed in the module's flash memory.

Full suite of customisable application software which includes:

- Software FM-RDS
- Clock with multiple alarms/timers
- Presets
- Battery detect
- Support for 1 rotary encoder and 2-line display
- Optional USB field upgrade available

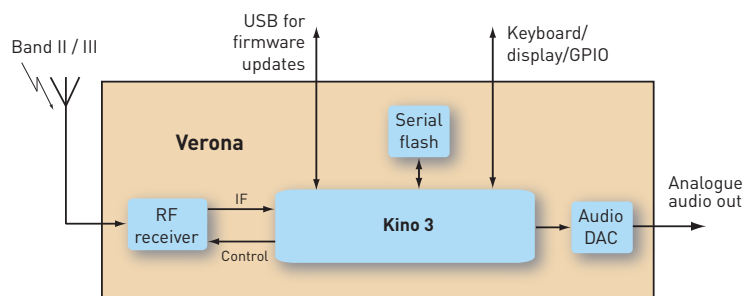
DEVELOPMENT PLATFORM

For evaluation and development, the Venus production-ready platform for digital radio enables manufacturers to quickly develop differentiated end-products.



VERONA MOUNTED ON THE VENUS REFERENCE PLATFORM

VERONA IN A TYPICAL EXAMPLE APPLICATION



VERONA BLOCK DIAGRAM

STANDARDS AND CERTIFICATION

Verona and Venus have been designed to exceed the WorldDMB Profile 1 specification for basic digital radio, interoperable throughout Europe and beyond. As well as working with the standards shown, suitable end-products based on this platform should be able to obtain certification for various other industry standards. For more information, contact Frontier Silicon.

SPECIFICATION

Supply voltages		3.3 V (baseband I/O and RF) 1.2 V (baseband core)
Power consumption		227 mW (DAB) 245 mW (DAB+) 317 mW (FM-RDS)
DAB/DAB ⁺ /DMB-Radio	Sensitivity	-97 dB (typ)
	ACR	40 dB (typ)
	FOS	55 dB (typ)
FM	Sensitivity (@ 40 dB SNR)	-106 dB (typ)
	Stereo separation	42 dB (typ)

