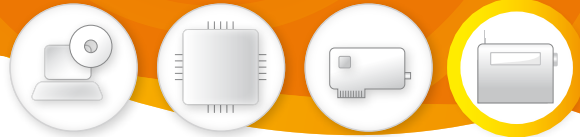


Quantum 4 FS4044

Platform for Wi-Fi radio/DAB/DAB⁺/FM/CD/iPod dock



Applications

- Mini/midi audio system
- iPod dock plus
- HiFi tuner/adaptor
- CD clock radio

Customer deliverables

- Detailed specification
- Schematics
- Gerbers
- Bill-of-materials
- Customised software and user interface
- EMC and ESD compliance report

Overview

The Quantum 4 FS4044 reference platform is a fully-qualified reference design for Wi-Fi radio, music file playback and CD applications requiring a low-cost feature-rich solution.

Based on Frontier Silicon's Venice 6 Wi-Fi/DAB/DAB⁺/FM module together with a fully-featured CD playback subsystem, Quantum 4 provides a highly flexible architecture, enabling customers to use the design either as-is, modified, or as a starting point to speed development of custom OEM products.

Quantum 4 provides a fast-track route for packaging the latest audio technology using the smallest possible bill-of-materials and with the shortest time-to-market. Frontier Silicon can supply (at no cost) the information necessary for customers to build the platform for themselves, or support in the customisation of the platform to meet individual requirements.

The platform is production-ready and needs only industrial design tooling to finish off a complete high-quality audio system.

PCB arrangement

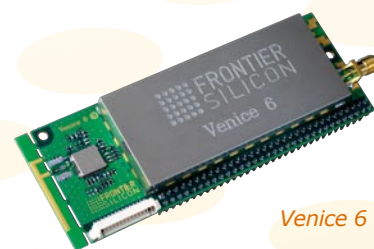
The reference design comprises two PCBs. The main PCB is a low-cost 2-layer board, approximately 100 x 80 mm in size. The second PCB is the User Interface (UI) PCB, which carries the display and keyboard components. The options available for the UI PCB are:

Option	Display	Keyboard
Simple portable/clock radio	1-line, 8 x starburst display (optional icons)	Simple user interface with 8 or 9 tact switches
Standard portable/clock radio	2-line, 16-character, dot matrix display	16 tact switches (optionally, 2 x rotary encoders)

Operating modes

Quantum 4 supports a large and versatile set of operating modes:

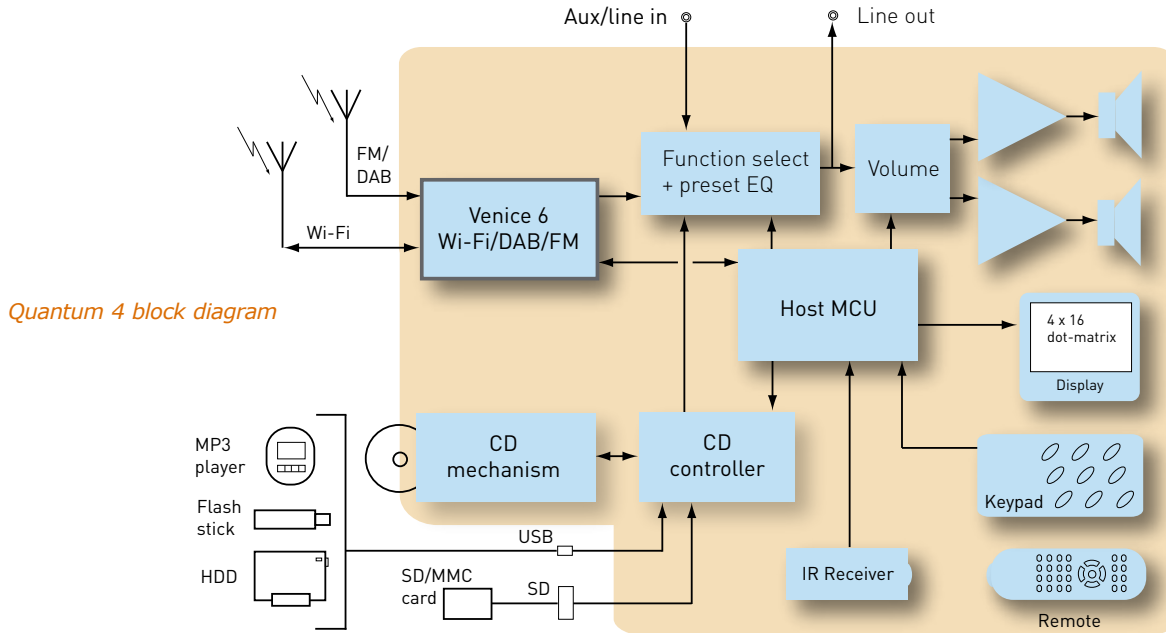
Internet radio	Play audio streamed from the Internet through the Frontier Silicon/vTuner portal, giving access to over 15000 stations and podcasts.
On-demand services	Premium music content from jukebox subscription services such as Rhapsody, Napster and others
Music player	Play audio library from a networked PC or media server over Wi-Fi or wired network
DAB radio	Reception of DAB/DAB ⁺ audio and data stations (Band 3 with optional L-Band)
FM radio	Reception of audio and RDS data from FM broadcast
CD	Standard CDs or CDs containing MP3/WMA/RealAudio files (may also be customized for DVD playback)
iPod	Playback and charging of iPod
USB/SD/MMC	Play audio files from from USB storage device or SD/MMC card
Aux	Play line in signal



Venice 6 module

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Specifications

Additional functions	<ul style="list-style-type: none"> • Digital volume control with optional mute • Clock (auto update) • Alarms (multiple) • Sleep/snooze • Customisable number of presets • Software upgrade through USB or Wi-Fi
User interface inputs	<ul style="list-style-type: none"> • Up to 25 push-button switches • Infrared remote control
Display	<ul style="list-style-type: none"> • Clock plus 2-line or 4-line x 16-character dot matrix LCD with icons • Dimmable backlight (manual or auto)
Antenna	<ul style="list-style-type: none"> • Wi-Fi 802.11 b/g - Internal or external antenna • DAB/FM Band 2/3, L-Band - Single combined antenna

Audio output	<ul style="list-style-type: none"> • 2 x 1 W amplifier (others may be used) • Headphones • Line out • S/PDIF output (optional)
Input connectivity	<ul style="list-style-type: none"> • USB 2.0 • SD/MMC card • Aux/line in
Network security	WEP, TKIP, WPA, WPA2
IP applications	DHCP, DNS
Streaming protocols	HTTP, RTP, CIFS, RDT
Audio decoders	MP3, WMA, RealAudio
Power supply	12V 1200 mA DC (including iPod charging current)

www.frontier-silicon.com

Specifications are subject to change without notice.
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