



### OVERVIEW

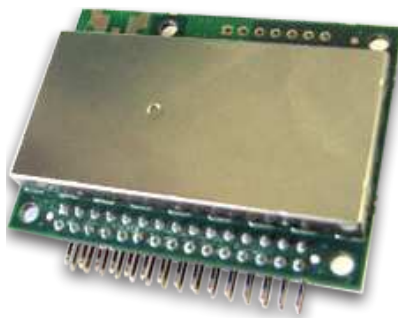
AUTODAB 2.0 is embedded software for Frontier Silicon's automotive single tuner digital radio modules operating in slave mode. It runs as a component in an automotive audio system to provide DAB/DAB+ audio and data to the manufacturer's host processor. AUTODAB 2.0 offers a complete DAB decode subsystem from RF to digital or analogue audio output, all controlled through an asynchronous control channel.

AUTODAB 2.0 is based on Frontier Silicon's AUTODAB 1.0 Software Development Kit (SDK), with enhanced and additional features. AUTODAB 2.0 dramatically improves scan and tune times through the use of innovative pre-emptive scanning. Automotive-specific features include DAB announcements, service linking support and audio concealment/soft muting.

Profile 1 internal memory build - Implements full WorldDMB Profile 1 functionality; targeted to fit in systems without external SDRAM and with an 8 Mbit flash device.

### MODULE OR MICROPROCESSOR

AUTODAB 2.0 can be provided either on Frontier Silicon's full-featured Venice 7A digital radio module for optimum time-to-market, or on the Kino 3 baseband microprocessor for chip-down integration onto a manufacturer's own PCB. Our Venice 9 module can be used for reference design development as required.



VENICE 7A MODULE

### APPLICATIONS

- In-vehicle aftermarket digital radios/infotainment systems
- In-vehicle digital radio adapters

### NEW FEATURES

- Autonomous DAB->DAB service following behaviour with DAB->FM service linking recommendations
- Simplified service selection mechanism with direct support for DAB seek
- Improved response times for faster operation
- New configuration options for audio concealment and soft muting
- DL plus support

### FEATURES

- DAB reception as defined in EN 300 401
- DAB transmission modes I to IV
- DAB+ reception as defined in TS 102 563
- DMB-R reception as defined in TS 102 428 and TS 102 427
- Single audio sub-channel decode of any bit rate from 8kbps to 192kbps, including LSF
- Seamless dynamic sub-channel reconfigurations
- DLS decode
- Dynamic Range Control (DRC) support
- Support for announcement switching
- Fast Information Channel (FIC) decode for service linking information
- Service linking enhancements for automotive operation
- AUTODRIVE 2.0 DriveTest / Evaluation PC Application support

# AUTODAB 2.0

Slave mode software for automotive digital radio modules

## FSAPI COMMAND PROTOCOL

The FSAPI command protocol is used for all communication between the host processor and AUTODAB 2.0. It includes the following characteristics and features:

- Uses efficient industry-standard communications protocols
- An easy environment to develop and debug applications
- Automatic synchronisation between host and slave
- Uses a common set of actions for all messages
- Allows complex control and monitoring through a small set of simple commands
- Support for UART, SSI and SCB
- Host Controlled switching

## GOODWOOD AND BROOKLANDS EVALUATION PLATFORMS

Developers can evaluate AUTODAB 2.0 with the Goodwood 2 platform. This hardware platform incorporates a Kino-based host controller which facilitates USB PC control of Venice 7A or stand-alone operation via a basic HMI.

A version of Goodwood 2 called Brooklands 2 is also available, with ruggedised metal casing for real vehicle deployment.

The master functionality of Goodwood 2 and Brooklands 2 can be controlled either via the platforms' own push-button HMI and LCD display, or via the AUTODRIVE 2.0 Windows application.

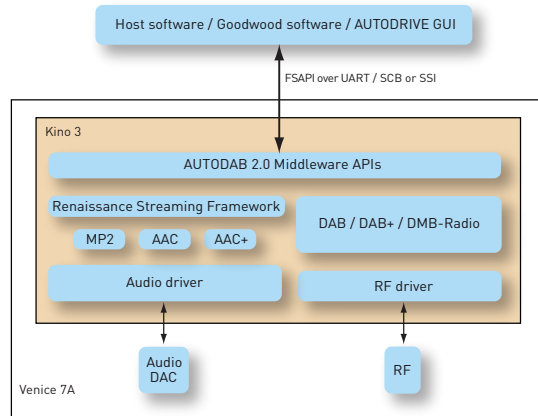


GOODWOOD (TOP) AND BROOKLANDS 2 (BOTTOM): EVALUATION PLATFORMS FOR AUTODAB 2.0



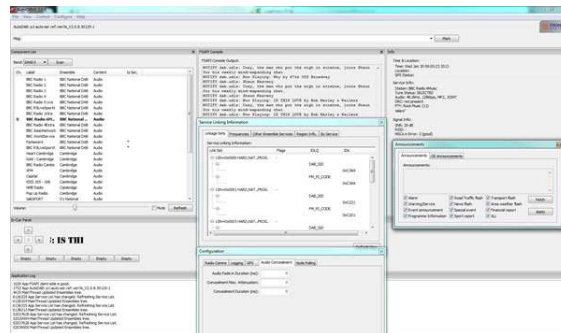
## SOFTWARE ARCHITECTURE

An architectural overview of the AUTODAB 2.0 environment is shown below.



AUTODAB 2.0 ENVIRONMENT OVERVIEW

## AUTODRIVE 2.0 FOR WINDOWS



AUTODRIVE 2.0 USER INTERFACE

AUTODRIVE 2.0 is a Windows application that allows developers to control an AUTODAB 2.0-based slave module from a desktop PC.

## STANDARDS AND CERTIFICATION

AUTODAB 2.0 and Venice 7A have been designed to exceed the WorldDMB Profile 1 specification for basic digital radio, interoperable throughout Europe and beyond, and also operate seamlessly with the rest of the digital audio world.

## DOCUMENTATION

The following documentation is available for the AUTODAB 2.0 development environment:

- AUTODAB 2.0 Product Specification
- FSAPI Protocol Reference Guide
- AUTODAB 2.0 FSAPI User Guide
- AUTODRIVE 2.0 User Guide
- Brooklands 2.0 User Guide

