Si47911/12

High-Performance Automotive AM/FM Radio Receiver and HD Radio™/DAB/DAB+/DMB/DRM Tuner with Audio System

Features

- Worldwide FM band support (64–108 MHz)
- Worldwide AM band support (520–1710 kHz)
- LW band support (144–288 kHz)
- SW band support (2.3–30 MHz)
- DAB/DAB+/DMB support (170–240 MHz, 1452–1492 MHz) (Si47912 only)
- NOAA Weather Band support
- On-chip soft-decision RDS/RDBS demodulator/decoder
- AM/FM:
  - Comprehensive AM/FM signal processing firmware
  - Integrated active AM/FM buffers for background/data tuners
  - Analog FM phase diversity with two, three or four tuners
  - Fully integrated AGC for AM and FM inputs
- HD Radio:
  - Digital I/Q interface to HD Radio Processor
  - HD Radio MRC with two, three, or four tuners
  - AM/FM HD Radio IBOC blend
  - Fast FM HD Radio band scan
- AEQ-Q100 qualified'
- DAB/DAB+/DMB (Si47912 only):
  - Digital I/Q interface to DAB/DAB+/DMB processor
  - DAB/DAB+/DMB MRC with two, three, or four tuners
  - Integrated active Band III/L-band buffers for background/data tuners
  - Fast DAB/DAB+/DMB band scan
  - Fully integrated AGC for Band III and L-Band inputs
- Audio:
  - HiFi2-EP Audio-DSP with 288 kB for program and data memory
  - Seven analog audio inputs
  - Six analog audio outputs
  - Seven digital audio ports (I^2S) with TDM support
  - Up to 24 synchronous or asynchronous sample rate converters
- Frequency synthesizer with fully integrated PLL-VCO
- Integrated clock oscillator
- 1.8 V or 3.3 V digital IO power supplies
- 3.3 V analog power supply and 1.8 V digital power supply
- QFN 84-pin, 12x12x0.85 mm
- Pb-free/RoHS compliant

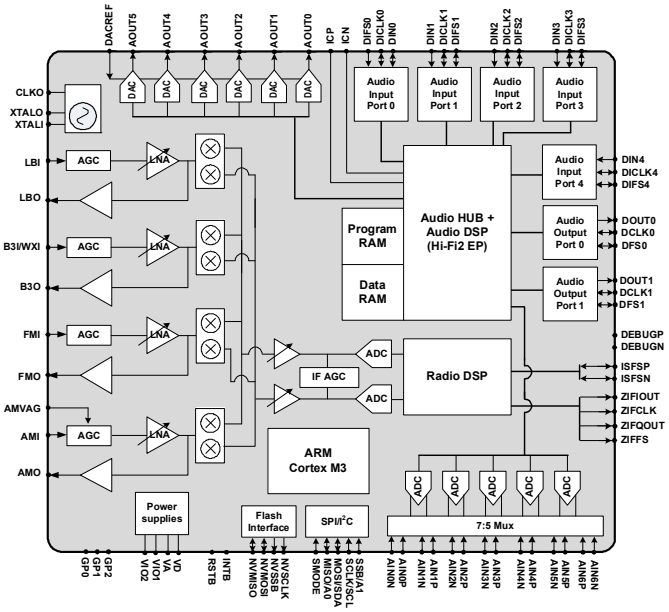
Description

The Si47911/12 integrates global radio receiver with audio processing. The analog AM/FM receiver sets a new standard for automotive broadcast reception. The integrated audio processing sub-system provides a complete solution to synchronize, process, aggregate and distribute digital and analog audio signals in the head-unit.

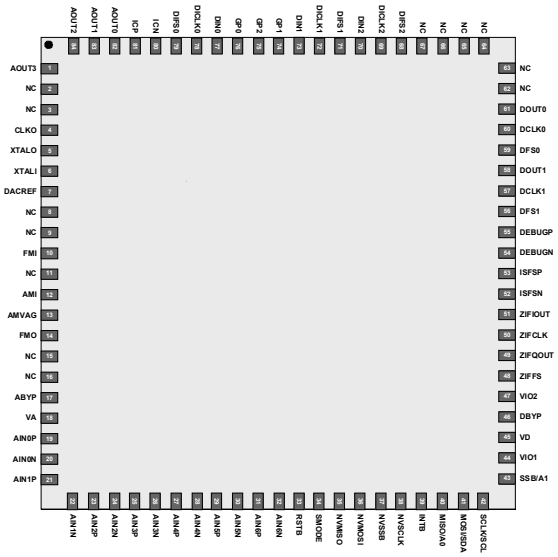
The Si47911/12 is the most integrated monolithic IC in the industry with the smallest external bill of materials. Si47911/12 based systems can scale from low-cost single tuner AM/FM radio to the highest performance systems with multiple tuners and multiple antennas, enabling radio suppliers to reuse R&D across multiple product lines, all with a common software API. The Si47911/12 meets rigorous automotive quality standards.

Applications

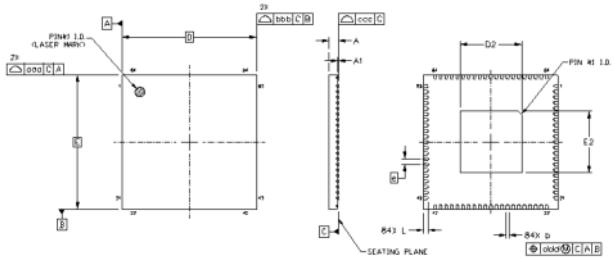
- Automotive OEM infotainment systems
- Aftermarket car radio systems



Pin Assignments



Package Information



Dimensions	Min	Nom	Max
A	0.80	0.85	0.90
A1	0.00	0.03	0.05
b	0.20	0.25	0.30
D		12.00 BSC.	
D2	5.40	5.50	5.60
e		0.50 BSC.	
E		12.00 BSC.	
E2	5.40	5.50	5.60
L	0.35	0.40	0.45
aaa	—	—	0.10
bbb	—	—	0.10
ccc	—	—	0.08
ddd	—	—	0.10

Notes:

1. All dimensions shown are in millimeters (mm) unless otherwise noted.
2. Dimensioning and Tolerancing per ANSI Y14.5M-1994.
3. Recommended card reflow profile is per the JEDEC/IPC J-STD-020 specification for Small Body Components.