Si47920/21

High-Performance Automotive AM/FM Radio Receiver and HD Radio™ 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)
- On-chip soft-decision RDS/RDBS demodulator/decoder
- AM/FM:
  - Comprehensive AM/FM signal processing firmware
  - Integrated active FM buffer for background/data tuners
  - Analog FM phase diversity with two, three or four tuners (Si47921 Only)
  - Fully integrated AGC for AM and FM inputs
- HD Radio (Si47921 Only):
  - Digital I/Q interface to HD Radio Processor
  - AM/FM HD Radio IBOC blend
  - Fast FM HD Radio band scan
- Audio:
  - HiFi2-EP Audio-DSP with 288 kB for program and data memory
  - Seven analog audio inputs
  - Four analog audio outputs
  - Five digital audio ports (I^2S)
  - Up to 24 synchronous or asynchronous sample rate converters
  - Multi-channel audio reference
  - design
- Frequency synthesizer with fully
- integrated PLL-VCO
- Integrated clock oscillator
- 1.8 V or 3.3 V digital power supply
- 3.3 V analog and 1.8 V digital
- power supplies
- QFN 84-pin, 12x12x0.85 mm
- Pb-free/RoHS compliant
- AEC-Q100 qualified

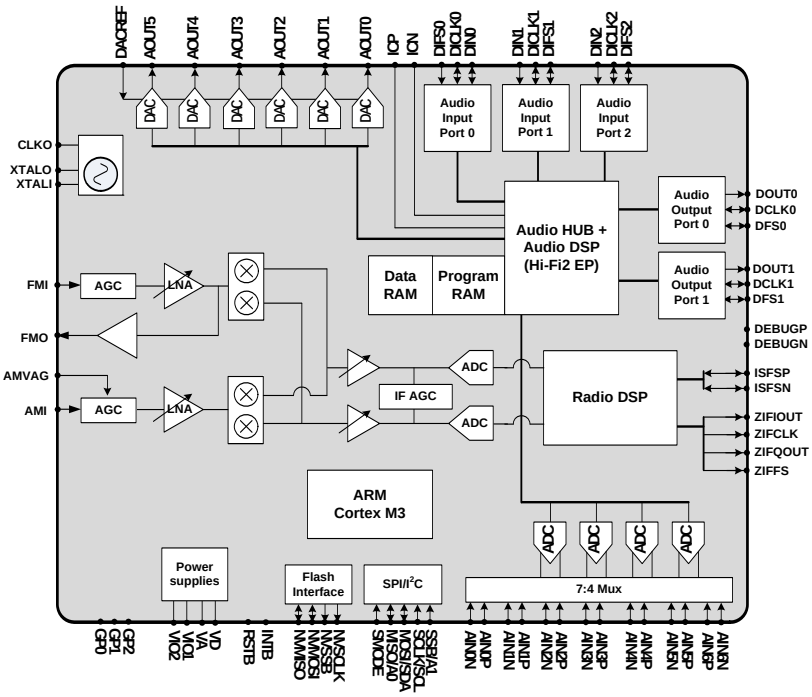
Description

The Si47920/21 integrates AM/FM radio receiver with audio processing. The analog AM/FM receiver sets a new standard for automotive broadcast reception. The integrated audio processing sub-system enables to synchronize, process, aggregate and distribute all digital and analog audio signals in the head-unit.

The Si47920/21 is the most integrated monolithic IC in the industry with the smallest external bill of materials. Si47920/21 based systems can scale from low-cost single tuner AM/FM radio to highest performance systems with multiple tuners and multiple antennas, enabling the radio suppliers to reuse their R&D across multiple product lines, all with a common software API. The Si47920/21 meets rigorous automotive quality standards.

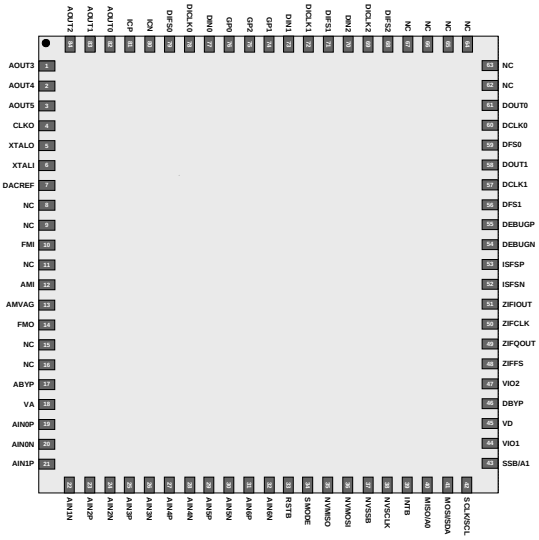
Applications

- Automotive OEM infotainment systems
- Aftermarket car radio systems

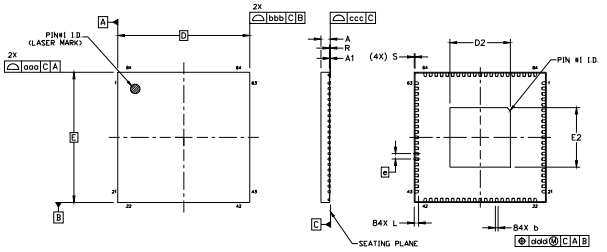


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Pin Assignments



Package Information

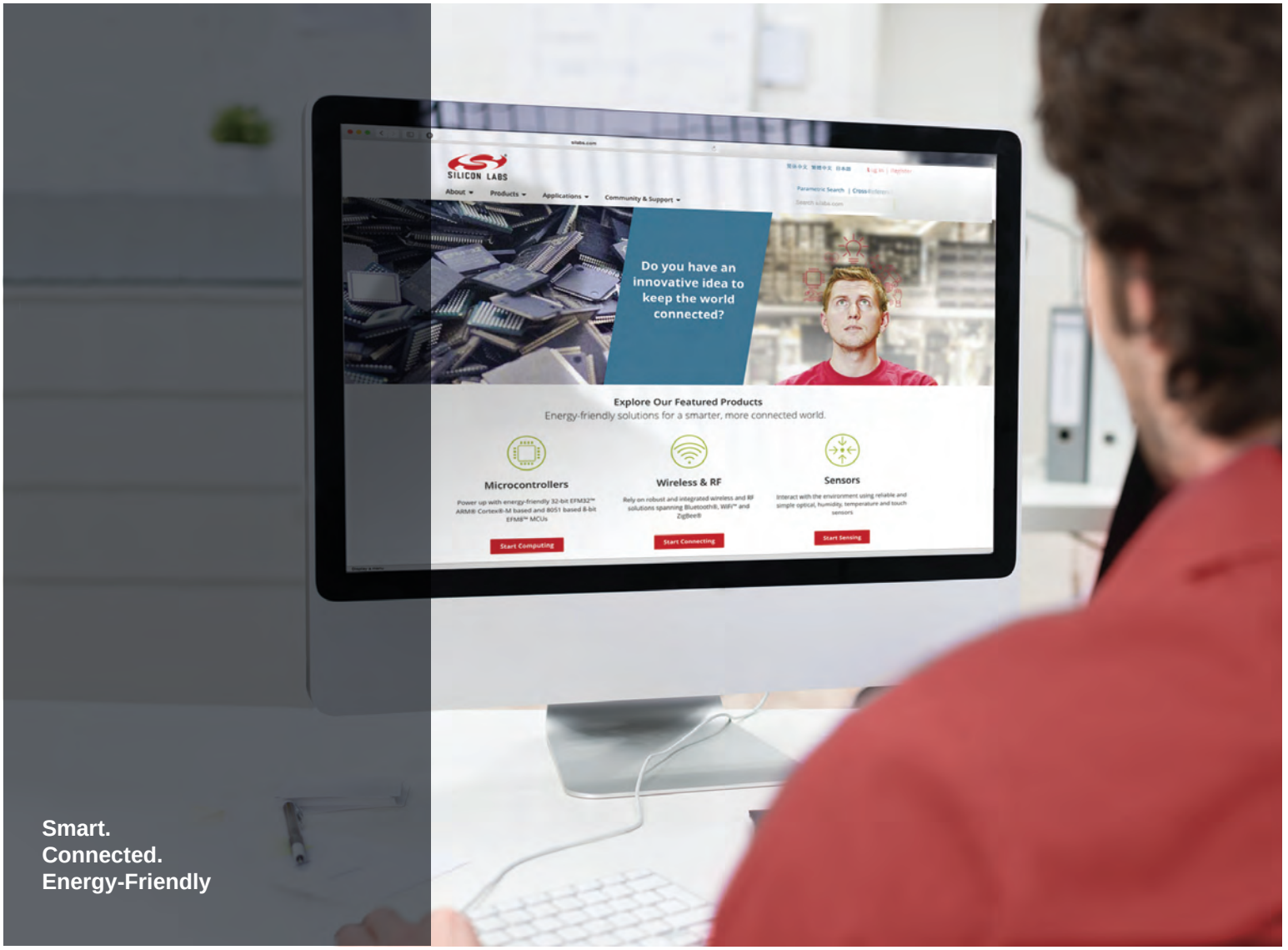


Dimensions	Min	Nom	Max
A	0.80	0.85	0.90
A1	0.00	0.03	0.05
b	0.20	0.25	0.30
D		12.00 BSC.	
D2	5.40	5.50	5.60
e		0.50 BSC.	
E		12.00 BSC.	
E2	5.40	5.50	5.60
L	0.35	0.40	0.45
R	0.075	—	—
S	—	—	0.075
aaa	—	—	0.10
bbb	—	—	0.10
ccc	—	—	0.08
ddd	—	—	0.10

Notes:

1. All dimensions shown are in millimeters (mm) unless otherwise noted.
2. Dimensioning and Tolerancing per ANSI Y14.5M-1994.
3. This drawing conforms to JEDEC outline MO-220, Variation VJJD-2
4. Recommended card reflow profile is per the JEDEC/IPC J-STD-020 specification for Small Body Components.

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