

## 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<sup>2</sup>S)
  - 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

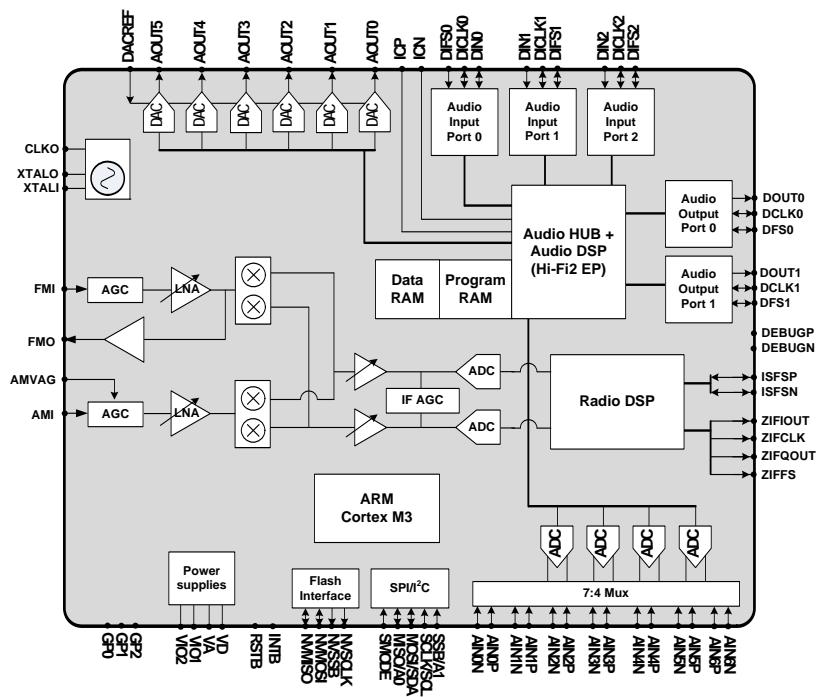
## Description

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



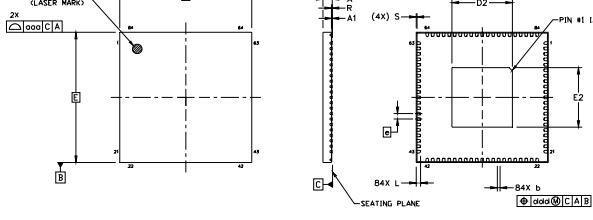
# Si47920/21

## High-Performance Automotive AM/FM Radio Receiver and HD Radio™ Tuner with Audio System

### Pin Assignments

AOUT3	1	NC
AOUT4	2	NC
AOUT5	3	DOUT0
CLK0	4	DCLK0
XTAL0	5	DOUT1
XTAL1	6	DCLK1
DACREF	7	DFS1
NC	8	DEBUGP
NC	9	DEBUGN
FMI	10	IFSP
NC	11	IFSN
AMI	12	ZIFOUT
AMVAG	13	ZIFCLK
FMO	14	ZIFQOUT
NC	15	ZIFFS
NC	16	VIO2
ABYP	17	DBYP
VA	18	VD
AINP	19	VIO1
AINN	20	SSB/A1
AINP	21	
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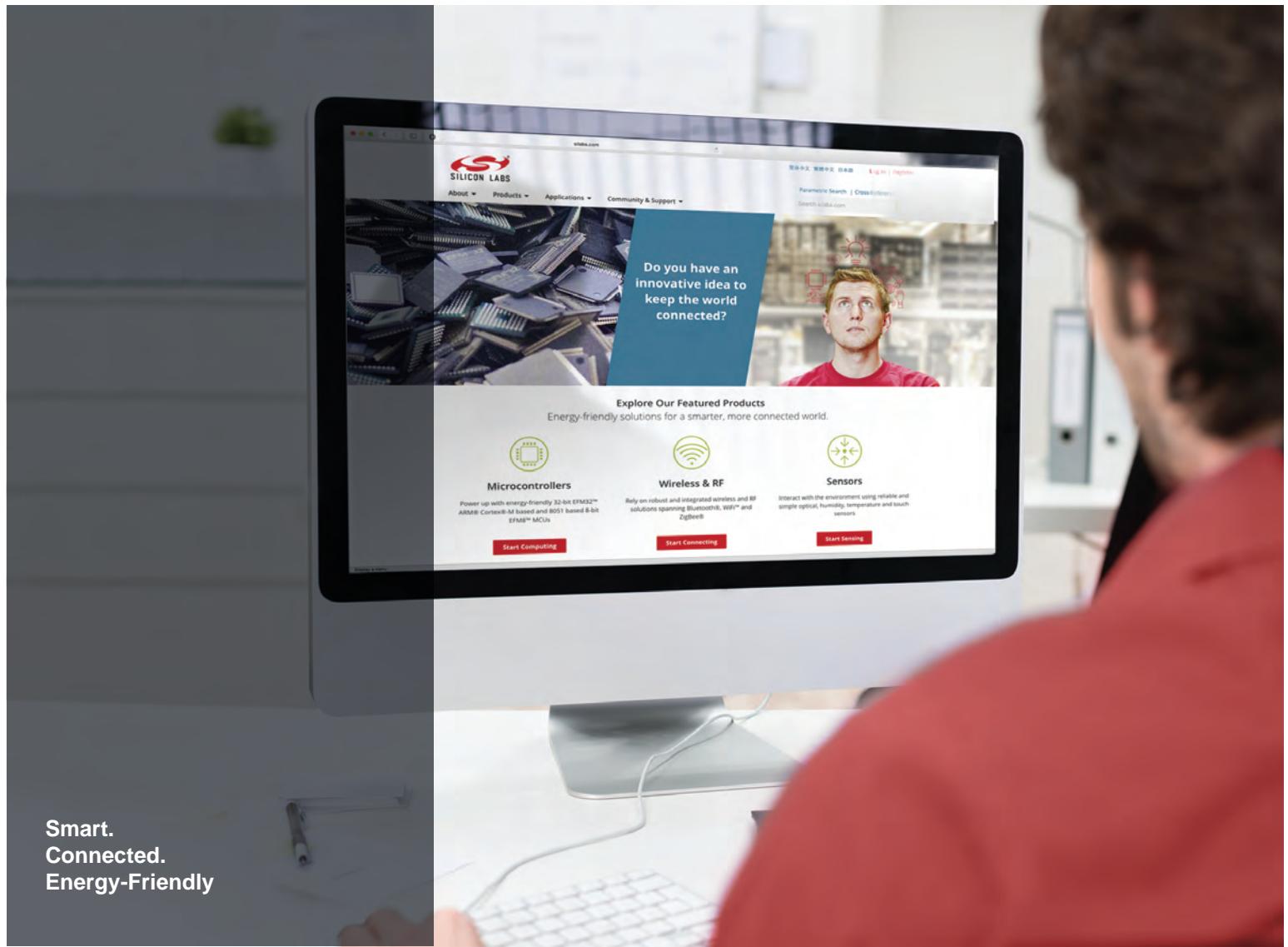
### Package Information



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:

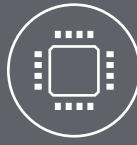
1. All dimensions shown are in millimeters (mm) unless otherwise noted.
2. Dimensioning and Tolerancing per ANSI Y14.5M-1994.
3. This drawing conforms to JEDEC outline MO-220, Variation VJJD-2
4. Recommended card reflow profile is per the JEDEC/IPC J-STD-020 specification for Small Body Components.



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**Silicon Laboratories Inc.**  
400 West Cesar Chavez  
Austin, TX 78701  
USA

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