

### Description

The Si4732-A10 digital CMOS AM/FM/SW/LW/RDS radio receiver IC integrates the complete broadcast tuner and receiver function from antenna input to digital audio output. The device leverages the Silicon Labs broadcast proven digital low-IF architecture, enabling a cost-effective digital audio platform for consumer electronic applications with high TDMA noise immunity, superior radio performance, and high fidelity audio power amplification. Offering unmatched integration and PCB space savings, the Si4732-A10 requires only a few external components and less than 15 mm<sup>2</sup> of board area, excluding the antenna inputs. The Si4732-A10 AM/FM/SW/LW/RDS radio provides the space savings and low power consumption necessary for portable devices while delivering the high performance and design simplicity desired for all AM/FM/SW/LW/RDS solutions.

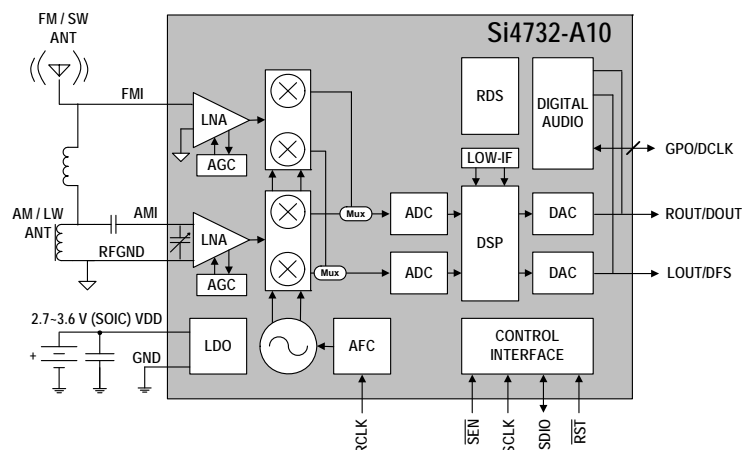
Leveraging Silicon Laboratories' proven and patented Si4700/01 FM tuner's digital low intermediate frequency (low-IF) receiver architecture, the Si4732-A10 delivers superior RF performance and interference rejection in the AM, FM, SW, and LW bands. The high level of integration and complete system production test simplifies design-in, increases system quality, and improves reliability and manufacturability.

### Features

- Worldwide FM band support (64–108 MHz)
- Worldwide AM band support (520–1710 kHz)
- SW band support (2.3–26.1 MHz)
- LW band support (153–279 kHz)
- Excellent real-world performance with integrated AM/FM/SW/LW/RDS
- Integrated VCO
- Advanced AM/FM seek tuning
- Automatic frequency control (AFC)
- Automatic gain control (AGC)
- Digital FM stereo decoder
- Programmable de-emphasis
- Advanced Audio Processing
- Seven selectable AM channel filters
- AM/FM/SW/LW digital tuning
- EN55020 compliant
- No manual alignment necessary
- Programmable reference clock
- Adjustable soft mute control
- RDS/RBDS processor
- Digital audio out
- 2-wire and 3-wire control interface
- Integrated LDO regulator
- Wide range of ferrite loop sticks and air loop antennas supported
- SOIC package
  - RoHS compliant

### Applications

- Table and portable radios
- Mini/micro systems
- CD/DVD and Blu-ray players
- Stereo boom boxes
- Modules for consumer electronics
- Clock radios
- Mini HiFi and docking stations
- Entertainment systems



### Ordering Guide

Part Number*	Description	Package Type	Operating Temperature/Voltage
Si4732-A10-GS	AM/FM/SW/LW/RDS Broadcast Radio Receiver	16L SOIC Pb-free	-20 to 85 °C 2.7 to 3.6 V

**\*Note:** Add an "(R)" at the end of the device part number to denote tape and reel option. The devices will typically operate at 25 °C with degraded specifications for V<sub>DD</sub> voltage ramped down to 2.0 V.

### Pin Assignments

LOUT/DFS	1 ●	16	ROUT/DOUT
GPO3/DCLK	2	15	GND
GPO2/INTB	3	14	VDD
GPO1	4	13	RCLK
NC	5	12	SDIO
FMI	6	11	SCLK
RFGND	7	10	SENB
AMI	8	9	RST

### 16L SOIC Package Information

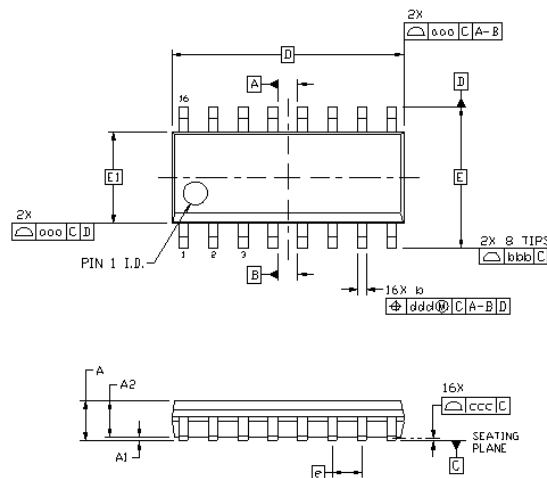


Table 1. Package Dimensions

Dimension	Min	Max	Dimension	Min	Max
A	—	1.75	L	0.40	1.27
A1	0.10	0.25	L2	0.25 BSC	
A2	1.25	—	h	0.25	0.50
b	0.31	0.51	θ	0°	8°
c	0.17	0.25	aaa	0.10	
D	9.90 BSC		bbb	0.20	
E	6.00 BSC		ccc	0.10	
E1	3.90 BSC		ddd	0.25	
e	1.27 BSC				

**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 the JEDEC Solid State Outline MS-012, Variation AC.
4. Recommended card reflow profile is per the JEDEC/IPC J-STD-020 specification for Small Body Components.



Smart.  
Connected.  
Energy-Friendly



**Products**  
[www.silabs.com/products](http://www.silabs.com/products)



**Quality**  
[www.silabs.com/quality](http://www.silabs.com/quality)



**Support and Community**  
[community.silabs.com](http://community.silabs.com)

#### Disclaimer

Silicon Laboratories intends to provide customers with the latest, accurate, and in-depth documentation of all peripherals and modules available for system and software implementers using or intending to use the Silicon Laboratories products. Characterization data, available modules and peripherals, memory sizes and memory addresses refer to each specific device, and "Typical" parameters provided can and do vary in different applications. Application examples described herein are for illustrative purposes only. Silicon Laboratories reserves the right to make changes without further notice and limitation to product information, specifications, and descriptions herein, and does not give warranties as to the accuracy or completeness of the included information. Silicon Laboratories shall have no liability for the consequences of use of the information supplied herein. This document does not imply or express copyright licenses granted hereunder to design or fabricate any integrated circuits. The products must not be used within any Life Support System without the specific written consent of Silicon Laboratories. A "Life Support System" is any product or system intended to support or sustain life and/or health, which, if it fails, can be reasonably expected to result in significant personal injury or death. Silicon Laboratories products are generally not intended for military applications. Silicon Laboratories products shall under no circumstances be used in weapons of mass destruction including (but not limited to) nuclear, biological or chemical weapons, or missiles capable of delivering such weapons.

#### Trademark Information

Silicon Laboratories Inc., Silicon Laboratories, Silicon Labs, SiLabs and the Silicon Labs logo, CMEMS®, EFM, EFM32, EFR, Energy Micro, Energy Micro logo and combinations thereof, "the world's most energy friendly microcontrollers", Ember®, EZLink®, EZMac®, EZRadio®, EZRadioPRO®, DSPLL®, ISOmodem®, Precision32®, ProSLIC®, SiPHY®, USBXpress® and others are trademarks or registered trademarks of Silicon Laboratories Inc. ARM, CORTEX, Cortex-M3 and THUMB are trademarks or registered trademarks of ARM Holdings. Keil is a registered trademark of ARM Limited. All other products or brand names mentioned herein are trademarks of their respective holders.



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

<http://www.silabs.com>