

Description

The Si4629 single-chip digital receiver is a 100% CMOS digital radio broadcast receiver IC from Skyworks. It provides significant advances in size, power consumption, and performance to enable HD Radio/DAB/DAB+ services reception in automotive infotainment systems and car radios.

The Si4629 data receiver offers a complete and cost-effective platform to support global analog and digital AM, FM, and VHF band III radio standards by integrating multiband RF tuner, demodulator, and channel decoder on a single die. The high level of integration and complete system production test simplifies design-in, increases system quality, and improves reliability and manufacturability.

The Si4629 supports worldwide analog AM and FM radio reception and incorporates a fully integrated decoder for the European Radio Data System (RDS) and the North American Radio Broadcast Data System (RDBS), including all required symbol decoding, block synchronization, error detection, and error correction functions.

Leveraging Skyworks' proven and patented digital low intermediate frequency (Low-IF) receiver architecture, the Si4629 delivers superior RF performance and interference rejection. The solution offers auto-calibrated digital tuning, and proven AM/FM seek functionality based on multiple signal quality and band parameters. The Si4629 offers highly flexible and advanced audio FM stereo-mono blend. In addition, the Si4629 provides an integrated clock oscillator or accepts a reference clock and supports a selectable control interface (SPI or I²C).

Features

- Worldwide FM band support (76–108 MHz)
- Worldwide AM band support (520–1710 kHz)
- LW band support (144–288 kHz)
- DAB/DAB+ Band III support (168–240 MHz)
- Advanced RDS/RDBS decoder
- AM/FM HD Radio™ support
- Integrated HD blend
- Supports WorldDMB Receiver Profiles I, II, III, and IV
- Integrated SRAM supporting time and frequency de-interleaving
- Advanced seek functionality
- Complete on-chip channel decode
- Full range of analog and digital signal quality metrics
- Fully-integrated VCO/PLL/synthesizer
- Fully-integrated advanced AGC and alignment
- SPI, I²C control interfaces
- 7x7 mm 48-pin QFN package
- Pb-free/RoHS compliant
- AEC-Q100 qualified

Applications

- OEM automotive infotainment systems
- Aftermarket car radio systems
- OEM automotive PND docking systems

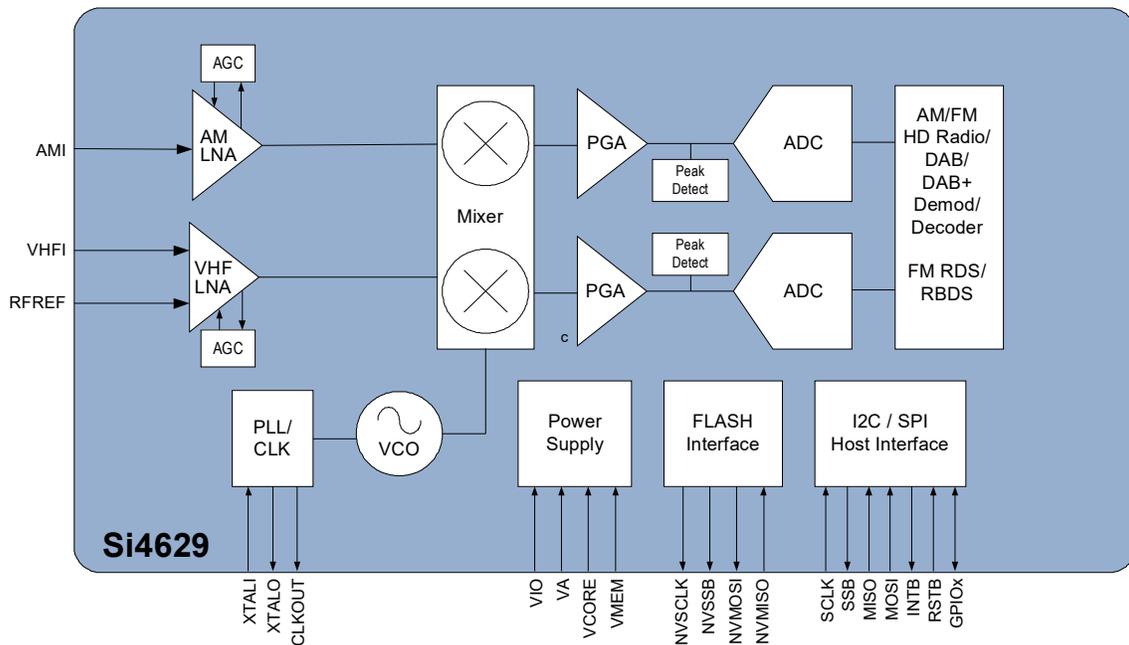
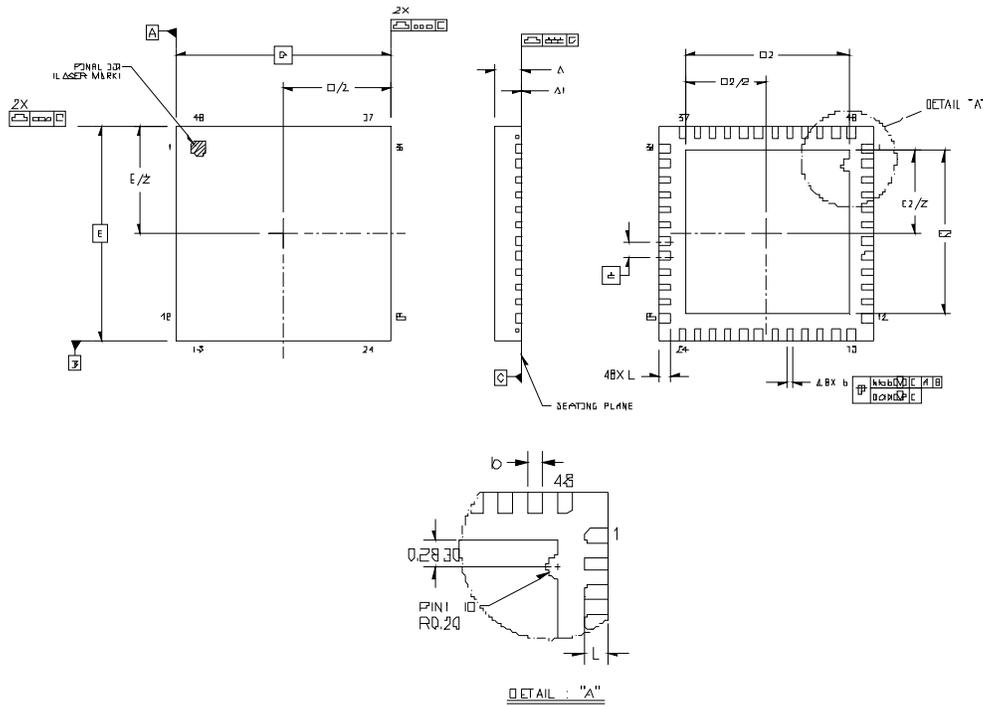


Table 1. Selected Electrical Specifications

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
AM Input Frequency	F_{rf}		520	—	1710	kHz
FM Input Frequency	F_{rf}		76	—	108	MHz
DAB Input Frequency			168	—	240	MHz
Analog Supply Voltage	V_A	—	1.71	1.8	2.0	V
Interface Supply Voltage	V_{IO}	—	1.62	1.8	3.6	V
Core Digital Supply Voltage	V_{CORE}	—	1.62	1.8	2.0	V

Si4629-A10



Dimension	Min	Nom	Max
A	0.80	0.85	0.90
A1	0.00	0.02	0.05
b	0.18	0.25	0.30
D		7.00 BSC	
D2	5.20	5.30	5.40
e		0.50 BSC	
E		7.00 BSC	
E2	5.20	5.30	5.40
L	0.30	0.40	0.50
aaa		0.15	
bbb		0.10	
ddd		0.05	
eee		0.08	

Notes:

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



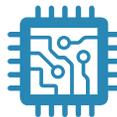
SKYWORKS®

**Connecting Everyone
and Everything,
All the Time**



Portfolio

www.skyworksinc.com



Quality

www.skyworksinc.com/quality



Support & Resources

www.skyworksinc.com/support

Copyright © 2021 Skyworks Solutions, Inc. All Rights Reserved.

Information in this document is provided in connection with Skyworks Solutions, Inc. ("Skyworks") products or services. These materials, including the information contained herein, are provided by Skyworks as a service to its customers and may be used for informational purposes only by the customer. Skyworks assumes no responsibility for errors or omissions in these materials or the information contained herein. Skyworks may change its documentation, products, services, specifications or product descriptions at any time, without notice. Skyworks makes no commitment to update the materials or information and shall have no responsibility whatsoever for conflicts, incompatibilities, or other difficulties arising from any future changes.

No license, whether express, implied, by estoppel or otherwise, is granted to any intellectual property rights by this document. Skyworks assumes no liability for any materials, products or information provided hereunder, including the sale, distribution, reproduction or use of Skyworks products, information or materials, except as may be provided in Skyworks' Terms and Conditions of Sale.

THE MATERIALS, PRODUCTS AND INFORMATION ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHERWISE, INCLUDING FITNESS FOR A PARTICULAR PURPOSE OR USE, MERCHANTABILITY, PERFORMANCE, QUALITY OR NON-INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHT; ALL SUCH WARRANTIES ARE HEREBY EXPRESSLY DISCLAIMED. SKYWORKS DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. SKYWORKS SHALL NOT BE LIABLE FOR ANY DAMAGES, INCLUDING BUT NOT LIMITED TO ANY SPECIAL, INDIRECT, INCIDENTAL, STATUTORY, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS THAT MAY RESULT FROM THE USE OF THE MATERIALS OR INFORMATION, WHETHER OR NOT THE RECIPIENT OF MATERIALS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Skyworks products are not intended for use in medical, lifesaving or life-sustaining applications, or other equipment in which the failure of the Skyworks products could lead to personal injury, death, physical or environmental damage. Skyworks customers using or selling Skyworks products for use in such applications do so at their own risk and agree to fully indemnify Skyworks for any damages resulting from such improper use or sale.

Customers are responsible for their products and applications using Skyworks products, which may deviate from published specifications as a result of design defects, errors, or operation of products outside of published parameters or design specifications. Customers should include design and operating safeguards to minimize these and other risks. Skyworks assumes no liability for applications assistance, customer product design, or damage to any equipment resulting from the use of Skyworks products outside of Skyworks' published specifications or parameters.

Skyworks, the Skyworks symbol, Sky5®, SkyOne®, SkyBlue™, Skyworks Green™, Clockbuilder®, DSPLL®, ISOModem®, ProSLIC®, and SiPHY® are trademarks or registered trademarks of Skyworks Solutions, Inc. or its subsidiaries in the United States and other countries. Third-party brands and names are for identification purposes only and are the property of their respective owners. Additional information, including relevant terms and conditions, posted at www.skyworksinc.com, are incorporated by reference.

Skyworks Solutions, Inc. | Nasdaq: SWKS | sales@skyworksinc.com | www.skyworksinc.com

USA: 781-376-3000 | Asia: 886-2-2735 0399 | Europe: 33 (0)1 43548540 | [in](#) [f](#) [t](#) [v](#)