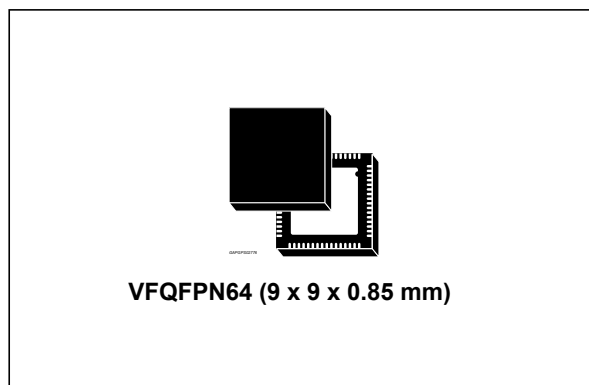


AM/FM/HD-Radio™ radio receiver IC

Data brief



Features

- Fully automotive grade CMOS design
- AM/FM Band
- Low-IF, DSP-based architecture
- Very high dynamic range built-in IF-ADC
- Minimum external component count
- Very small footprint package
- Optional Multipath noise mitigation processing
- Compatible with HD-Radio™
- Digital Audio Output
- Fully RoHS-compliant

Description

The TDA7708 is a single chip fully-CMOS AM/FM single-channel tuner for terrestrial radio receiver applications.

The TDA7708 features multiple front-end low-noise amplifiers (LNAs) to cover AM LW/MW/SW bands, and the entire FM band, with advanced DSP-controlled automatic gain control (AGC) amplifier and mixer stages.

After on-chip IF filtering, the TDA7708 digitizes the signal with a very high dynamic range ADC; it processes the complex phase-quadrature base-band signal allowing applications like multipath noise mitigation, and integrated RDS decoding. The TDA7708 furthermore integrates the HD-Radio™ channel filtering.

Besides providing optimal AM/FM quality reception, the TDA7708 allows to realize a complete HD-Radio™ receiver solution (in combination with the external STA680 HD-Radio™ digital decoder coprocessor), with a low bill of material, high performance and automotive grade quality and reliability.

TDA7708 is pin-to-pin compatible with ST's dual-channel tuner TDA7707, allowing efficient design of scalable terrestrial radio-receiver platforms.

Table 1. Device summary

Order code	Package	Packing
TDA7708	VFQFPN64 (9 x 9 x 0.85 mm)	Tray

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1 Block and typical application diagrams

Figure 1. Block diagram

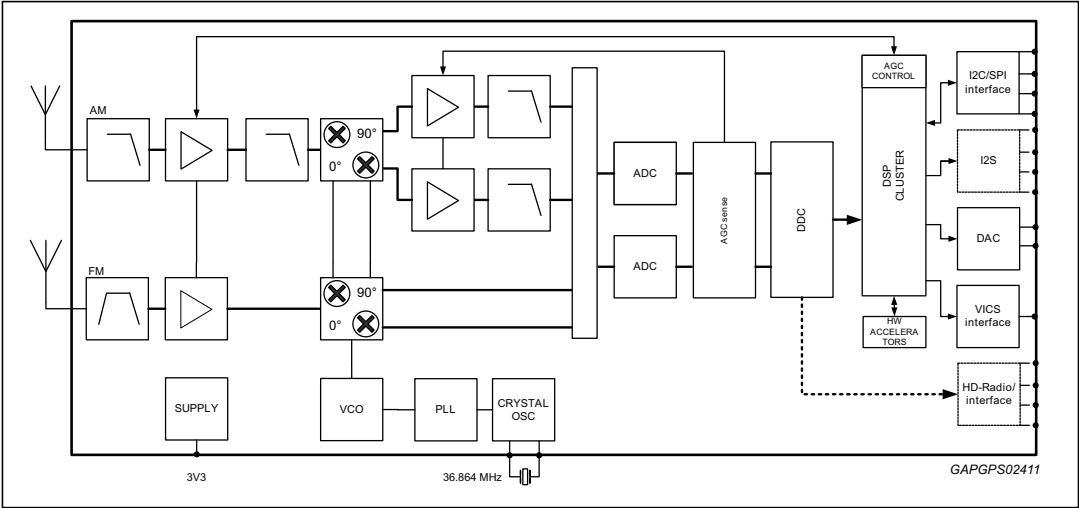


Table 2. Main features list

Features list	
Number of Channels	1
Reception Band	AM/FM
AM/FM Weak-Signal-Processing	√
RDS decoder	√
HD-Radio™ 1.0	Supported ⁽¹⁾
Base Band Interface	I2S
VICS interface	√
Control interface	I2C/SPI
Digital Audio out	√
Stereo audio DAC	√

1. With external coprocessor.

Figure 2. Typical AM/FM application with optional STA680 HD-Radio™ decoder

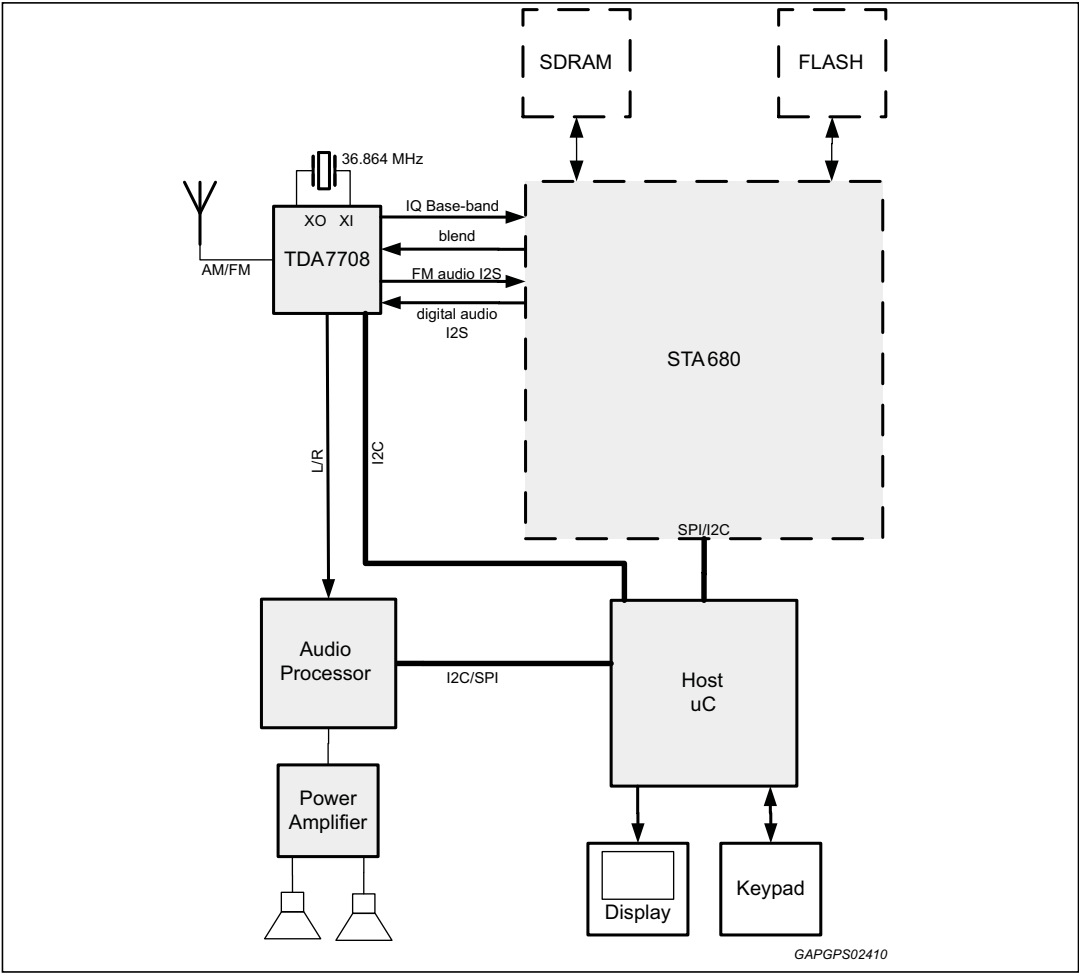


Table 3. Absolute maximum ratings

Symbol	Parameter	Min	Typ	Max	Units
V_s	Supply voltage	3.15	3.3	3.45	V
P_{tot}	Power dissipation	-	0.75 ⁽¹⁾	-	W
T_{amb}	Ambient temperature range	-40 to +85			°C

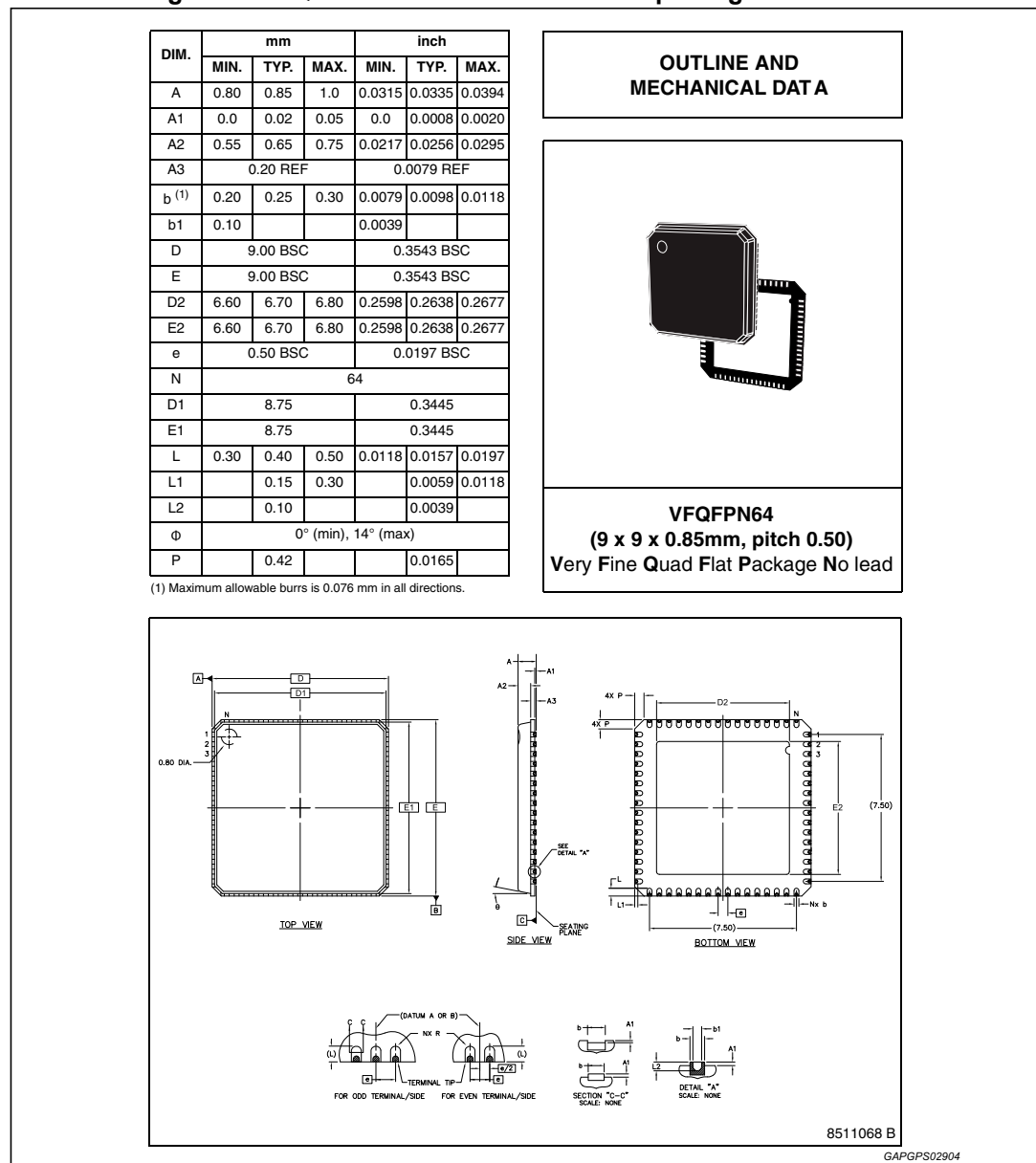
1. Typical use-case.

2 Package information

In order to meet environmental requirements, ST (also) offers these devices in ECOPACK[®] packages. ECOPACK[®] packages, are lead-free. The category of second Level Interconnect is marked on the package and on the inner box label, in compliance with JEDEC Standard JESD97. The maximum ratings related to soldering conditions are also marked on the inner box label.

ECOPACK[®] is an ST trademark. ECOPACK[®] specifications are available at: www.st.com.

Figure 3. VFQFPN64 mechanical data and package dimensions



Package is compliant to IPC/JEDEC J-STD-020D June 2007 standard "Moisture/Reflow Sensitivity Classification for Nonhermetic Solid State Surface Mount Devices", MSL Level 3.

3 Revision history

Table 4. Document revision history

Date	Revision	Changes
16-Dec-2014	1	Initial release.

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