

FC8300

Terrestrial Digital Multimedia Broadcast
RF tuner & Demodulator SoC
(ISDB-T 1-Segment/13-Segment/Tmm Receiver)

Data sheet

Preliminary

Ver.0.3



Confidential

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Revision History

Version	Date	Description
Ver. 0.1	2013. 05.14	Initial release.
Ver. 0.2	2013. 06.04	A3,A4,B5 pin name Updated. 1.2.Block Diagram Serial Interface ID0, ID1 Pin I/O Description Updated. Electrical Performance 'Minimum input Level', 'C/N' Updated.
Ver. 0.3	2013. 06.12	WLCSP 2, BGA Information Updated.

1. Introduction

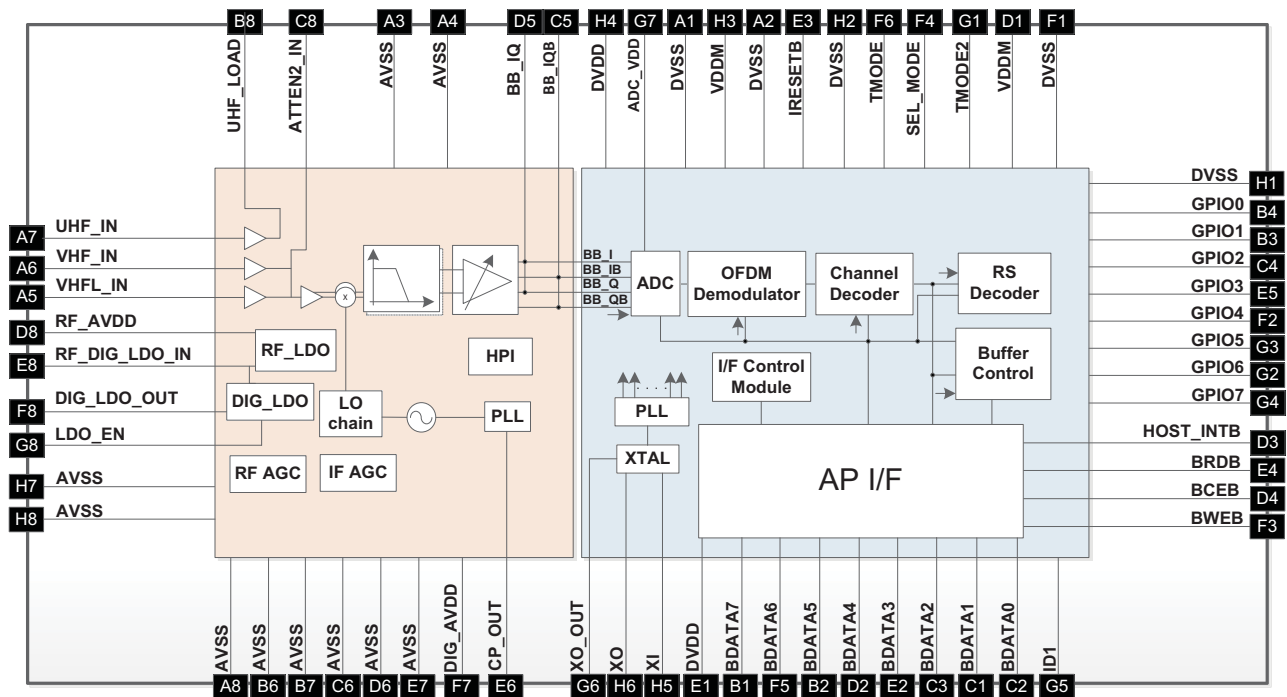
1.1. General Description

FC8300 is a highly integrated RF and Demodulator chip for receiving digital broadcasts such as ISDB-T 1-Seg, 3-Seg, ISDB-Tmm, ISDB-T Full Seg, and ISDB-Tsb.

FC8300 is a single-die implementation of FCI's proprietary RF and demodulator with outstanding in-door and mobility performances. It provides good sensitivity and immunity to interference with low power consumption mostly suitable for mobile phone and many other portable devices.

1.2. Block Diagram

WLCSP Block Diagram



1.3. Feature

Item	Content
Supported Broadcast System	1/13 segment reception of ISDB-T(B31) 1/13 segment reception of ISDB-Tmm(B46) 1/3 segment reception of Tsb(B29) Supported Channel Bandwidth 6,7 and 8[MHz]
Reception frequency	VHF-L 90~108MHz VHF-H 170~240MHz UHF 470~806MHz
Features	Built-in Inter Carrier Interference Canceller (ICIC). Built-in continues controllable FFT window position control circuit. Built-in co - channel interference suppressing circuit for Analog TV. Built-in Status monitor: C/N, error rate, constellation. Embedded MULTI-2 Descrambler for B-CAS(ARIB-B25) Supports Diversity Functions(Up to 4 diversity) Supports AC carrier Demodulation for Emergency Broadcasting Supports 8 GPIO ports(*1) Interrupt signal output High-speed channel switching and High-speed channel search available.
Ext Input Clock	Supported External Crystal/Osc Clock(MHz) : 16.0 ~ 38.4MHz Recommended Clock(MHz) : 19.2, 24.0, 26.0, 32.0
Interface	Control Path : SPI, I2C, EBI2-LCD Data Path : SPI, TSIF(Serial/Parallel), EBI2-LCD
Power supply	Recommended Supply Voltage : Core : 1.1V / I/O : 1.8V, 2.5V, 3.3V / RF & LDO : 1.5V ~ 1.8V
Size	62-balls WLCSP 1 : 3.4mm × 3.3mm × 0.63(max) 62-balls WLCSP 2 : 3.4mm × 3.3mm × 0.38(max) 62-balls BGA : 5.0mm × 5.0mm × 0.90(max)

(*1) FC8300 has 8pins which can be used for GPIO function in a particular case
The available number of GPIO interface depends on system construction

1.4. Supported Transmission Parameters

Item	Parameter	Content					
ISDB-T (B31)	Segment	1			13		
	Band width[MHz]	6/7/8			6/7/8		
	Transmission mode	Mode1	Mode2	Mode3	Mode1	Mode2	Mode3
	Guard interval	1/4, 1/8, 1/16, 1/32			1/4, 1/8, 1/16, 1/32		
	Modulation method	QPSK, 16QAM			QPSK, 16QAM,64QAM		
	Code rate	1/2, 2/3, 3/4, 5/6, 7/8			1/2, 2/3, 3/4, 5/6, 7/8		
	Time interleave	4,8,16	2,4,8	1,2,4	4,8,16	2,4,8	1,2,4
ISDB-Tmm (B46)	Segment	1			13		
	Band width[MHz]	6/7/8			6/7/8		
	Transmission mode	Mode1	Mode2	Mode3	Mode1	Mode2	Mode3
	Guard interval	1/4, 1/8, 1/16, 1/32			1/4, 1/8, 1/16, 1/32		
	Modulation method	QPSK, 16QAM			QPSK, 16QAM,64QAM		
	Code rate	1/2, 2/3, 3/4, 5/6, 7/8			1/2, 2/3, 3/4, 5/6, 7/8		
	Time interleave	4,8,16	2,4,8	1,2,4	4,8,16	2,4,8	1,2,4
ISDB-Tsb (B29)	Segment	1			3		
	Band width[MHz]	6/7/8			6/7/8		
	Transmission mode	Mode1	Mode2	Mode3	Mode1	Mode2	Mode3
	Guard interval	1/4, 1/8, 1/16, 1/32			1/4, 1/8, 1/16, 1/32		
	Modulation method	QPSK, 16QAM,64QAM			QPSK, 16QAM,64QAM		
	Code rate	1/2, 2/3, 3/4, 5/6, 7/8			1/2, 2/3, 3/4, 5/6, 7/8		
	Time interleave	4,8,16	2,4,8	1,2,4	4,8,16	2,4,8	1,2,4