

# Digital TV Dual Channel Demodulator

## Multi-Standard DVB/ISDB



### Overview

The SC1502AF-02C and SC1502AF-02D\* is a demodulator LSI that supports the various broadcasting of DVB and ISDB shown as follows:

- Terrestrial digital broadcasting: DVB-T(2ch), DVB-T2/T2-Lite(1ch), ISDB-T(2ch)
- Satellite digital broadcasting: DVB-S2X(1ch), DVB-S2(2ch), DVB-S(2ch), ISDB-S(2ch), ISDB-S3\*(2ch)

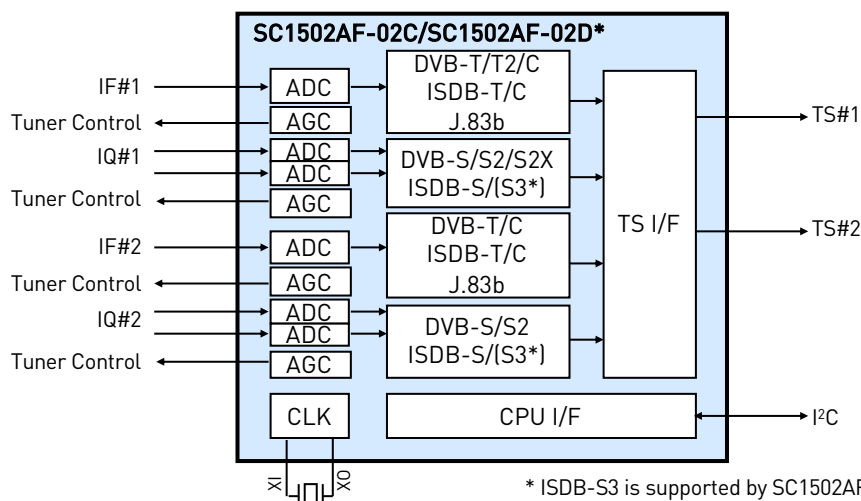
- Cable digital broadcasting: DVB-C2(2ch), ISDB-C(2ch), J.83 Annex B(2ch), J.183\*(2ch)

The output format is TS serial and TLV for ISDB-S3\*.

### Features

- Multi-Standard DVB/ISDB demodulator for Satellite, Terrestrial and Cable
- Dual channel demodulator (DVB-T2 and DVB-S2X are single channel only)
- Very small package size (7mm x 7mm)
- High Connectivity with various tuners.

### Block Diagram



\* ISDB-S3 is supported by SC1502AF-02D

## Specifications

Function		Specifications
Package		QFN 60-pin Size: 7 mm x 7 mm, Lead pitch: 0.4 mm
Supply Voltage		For external: 3.3V, For Internal: 0.93V
Input		Terrestrial: Low-IF, BS/CS: IQ
Output		TS Serial, TLV for ISDB-S3[supported by SC1502AF-02D]
CPU interface		I <sup>2</sup> C bus
DVB-T2 (1ch)	Bandwidth	5MHz, 6MHz, 7MHz, 8MHz, 1/7MHz
	FFT size	1K, 2K, 4K, 8K, 16K, 32K (included extended mode)
	Guard interval length	1/32, 1/16, 1/8, 1/4, 1/128, 19/128, 19/256
	Carrier modulation scheme	QPSK, 16QAM, 64QAM, 256QAM
	Convolutional-coding rate	1/2, 3/5, 2/3, 3/4, 4/5, 5/6(T2-Base), 1/2, 3/5, 2/3, 4/3, 1/3, 2/5(T2-Lite)
DVB-T (2ch)	Bandwidth	6MHz, 7MHz, 8MHz
	FFT size	2K, 8K
	Guard interval length	1/32, 1/16, 1/8, 1/4
	Carrier modulation scheme	QPSK, 16QAM, 64QAM
	Convolutional-coding rate	1/2, 2/3, 3/4, 5/6, 7/8
DVB-C (2ch)	Symbol rate	0.7 to 7 Mbaud
	Roll-off rate	0.15
	Carrier modulation scheme	16QAM, 32QAM, 64QAM, 128QAM, 256QAM
DVB-S2X (1ch)	Symbol rate	32APSK-L, 32APSK: 1 to 40 Mbaud 16APSK-L, 16APSK, 8APSK-L, 8PSK, QPSK: 1 to 45 Mbaud
	Modulation scheme	32APSK-L, 32APSK, 16APSK-L, 16APSK, 8APSK-L, 8PSK, QPSK
	Code rate	32APSK-L: 2/3 32APSK: 32/45, 11/15, 7/9 16APSK-L: 1/2, 8/15, 5/9, 3/5, 2/3 16APSK: 26/45, 3/5, 28/45, 23/36, 25/36, 13/18, 7/9, 77/90 8APSK-L: 5/9, 26/45 8PSK: 23/36, 25/36, 13/18 QPSK: 13/45, 9/20, 11/20
DVB-S2 (2ch)	Symbol rate	32APSK: 1 to 40 Mbaud 16APSK, 8PSK, QPSK: 1 to 45 Mbaud
	Modulation scheme	32APSK, 16APSK, 8PSK, QPSK
	Code rate	32APSK: 3/4, 4/5, 5/6, 8/9, 9/10 16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10 QPSK: 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
DVB-S (2ch)	Symbol rate	1 to 45 Mbaud
	Modulation scheme	QPSK
	Convolutional-coding rate	1/2, 2/3, 3/4, 5/6, 7/8

Please contact us when the specification of ISDB-T/C/S3/S or J.83 Annex B or J.183 is needed.

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