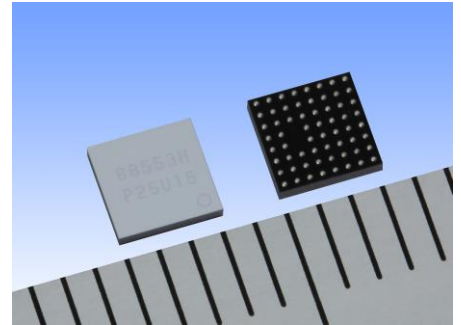# DTV Front-end LSI for Smartphone/ Mobile MN88553

■ Overview

"MN88553" is a system LSI supporting world-wide terrestrial broadcast systems (ISDB-T, ISDB-Tsb, ISDB-Tmm, and DVB-T).

With the monolithically integrated low-power RF tuner, high-performance OFDM demodulator, and error correction, this product outputs transport stream (TS) data.

■ Features

- Designed for low noise and optimized for mobile use, this system LSI is resistant to mobile and multi-path environments, and have the best performance* in the industry.
- With the integrated RF tuner, it achieves the industry's lowest power consumption* and minimizes total BOM count. This small-sized product contribute to improving the competitiveness of products for smartphones, tablets, and accessory devices.
- Supports the broadcast systems in many countries of the world, and have a built-in demodulator with an extensive proven track record in the market.
- I^2C/ SPI etc. bus-compliant CPU interface.
- Supports for AC emergency alert.

Based on our survey in January 2016
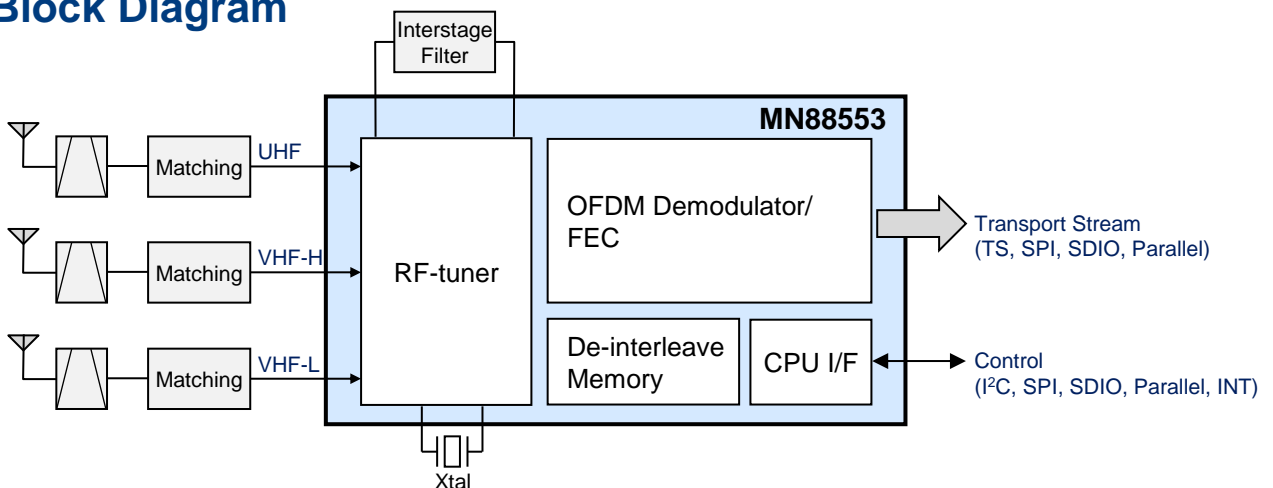
■ Applications

Smartphone/ Tablet

Portable TV/ Wi-Fi Tuner

■ Specifications

Function		Specifications	
TV Standards	**ISDB-T ISDB-Tsb ISDB-Tmm**	Bandwidth	6, 7, 8 MHz ** Include connected segment.*
		FFT size	2K (Mode1), 4K (Mode2), 8K (Mode3)
		Guard interval length	1/32, 1/16, 1/8, 1/4
		Carrier modulation scheme	QPSK, 16QAM, 64QAM, DQPSK
		Convolutional-coding rate	1/2, 2/3, 3/4, 5/6, 7/8
	DVB-T	Bandwidth	6, 7, 8 MHz
		FFT size	2K, 4K, 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
RF frequency		UHF (470MHz~860MHz) / VHF-H (207.5MHz~222MHz) / VHF-L (95MHz~108MHz) ** Example in Japan* CATV (90MHz~770MHz)	
Function	**CPU Interface**	I^{2}C bus based CPU interface, SPI, SDIO, Parallel	
	TS Interface	TS serial/ parallel, SPI (Up to 50Mbps), SDIO, Parallel	
	Diversity	Available using 2 chips	
	Monitoring	RSSI, C/N, BER, PER, TMCC, AC etc.	
Process		CMOS	
Package		0.4mm pitch WLCSP 62pin	
Supply Voltage		IO: 1.5V-3.6V Logic: 1.1V (Typ.) Analog: 1.5V (Typ.) ** It can be single voltage operation with on-chip regulator.*	

■ Block Diagram