

# Functional Description

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## MITSUMI

### Bluetooth Module “ WML-C07##”

#### Hardware:Version 1

*Ultra-small and thin size achieved through use of high density mounting technology.*

#### 1. APPLICATIONS

Notebook PCs, mobile phones, digital cameras, PC peripherals, PDA.

#### 2. DESCRIPTIONS

Wireless communication module conforming to Bluetooth Ver.1.1.

#### 3. FEATURES

- 1 ) Ultra-small and thin size achieved through use of high density mounting technology.
- 2 ) High sensitivity.
- 3 ) UART, USB and PCMIF interfaces enable wide range of applications.
- 4 ) Conforms to FCC, CE and other countries' EMI standards.
- 5 ) Supports Bluetooth Class1.

Note) The BLUETOOTH trademarks are owned by Telefonaktiebolaget L M, Ericsson, Sweden.

#### 4. SPECIFICATIONS

Item	Specifications
Frequency	2402 to 2480MHz
Modulation	FHSS / GFSK
Channel intervals	1 M H z
Number of channels	7 9 C H
Power supply voltage	3.3V(typ.) ,3.2 to 3.4V
Transmission rate	7 2 1 k b p s
Receive sensitivity	-85dBm typ.
Output level (Class1)	20dBm max.

TM

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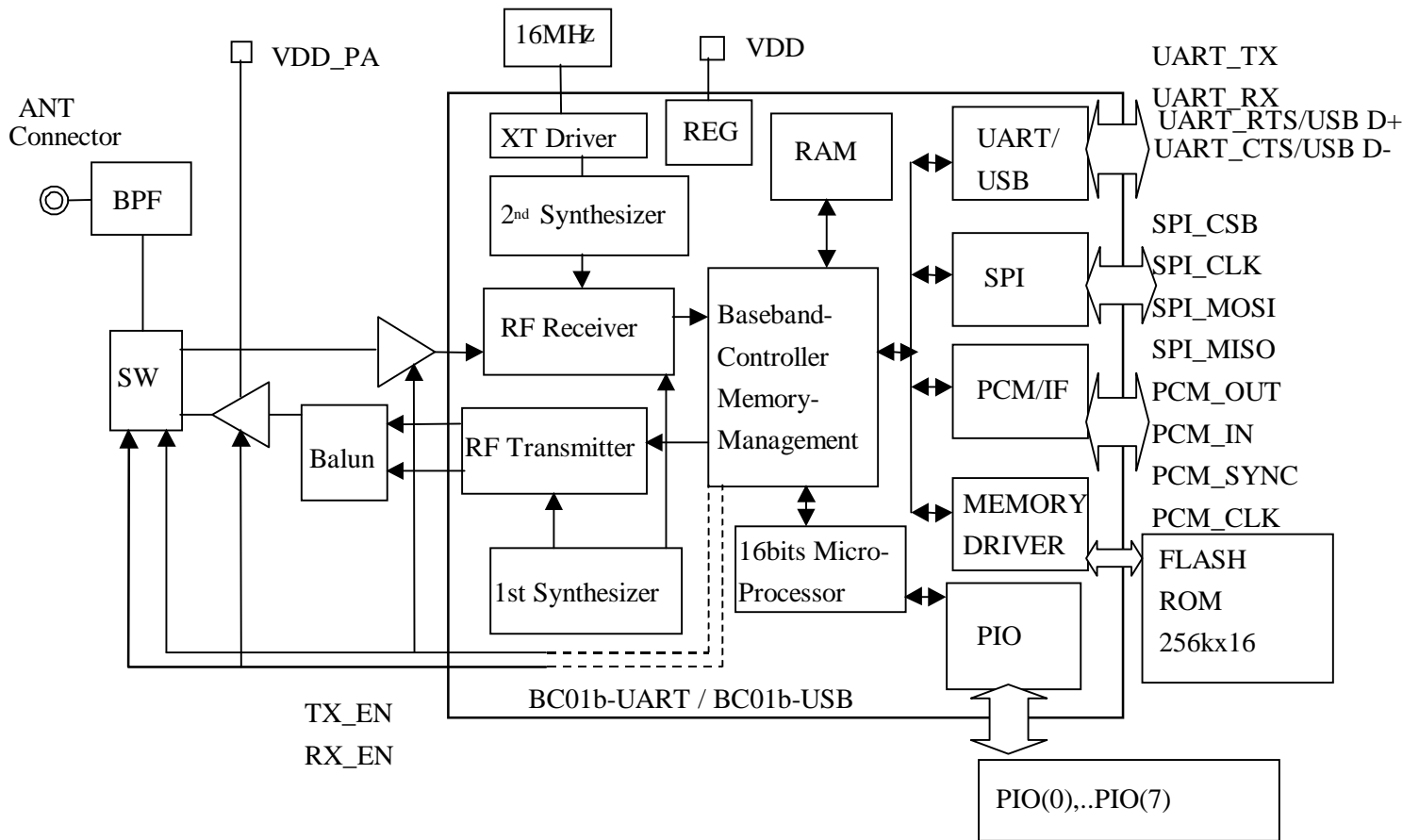
## 5. TERMINAL DESCRIPTION

No.	Symbol	I/O	Description
1	GND		Ground
2	UART_RX**	I	UART Data Input
3	SPI_MISO	O	Synchronous Serial Interface data output (N.C.*)
4	SPI_CLK**	I	Synchronous Serial Interface clock (N.C.*)
5	SPI_MOS**I	I	Synchronous Serial Interface data input (N.C.*)
6	PIO 4/USB_ON	I/O	Programmable I/O line
7	SPI_CSB**	I	Chip select for Synchronous Serial Interface (N.C.*)
8	PCM_CLK	I/O	Synchronous PCM data clock
9	PIO 5/USB_DETACH	I/O	Programmable I/O line
10	PIO 6	I/O	Programmable I/O line
11	VDD_PA		Supply for Internal Power Amp (3.3V+/-0.1V).
12	VDD		Supply for VDD (3.3V+/-0.1V)
13	UART_CTS/USB_D-	I	UART Clear To Send
14	UART_RTS/USB_D+	O	UART Ready To Send
15	UART_TX	O	UART Data Output
16	PIO 3/USB_WAKE_UP	I/O	Programmable I/O line
17	PIO 2/USB_PULL_UP	I/O	Programmable I/O line
18	PIO 7	I/O	Programmable I/O line
19	PCM_SYNC	I/O	Synchronous data strobe
20	PCM_IN	I	Synchronous PCM data input
21	PCM_OUT	O	Synchronous PCM data output
22	RESET_IN	I	Reset pin (N.C.*)
	ANT	I/O	RF input/output

\* N.C.=OPEN

\*\*5V tolerant input terminal.

## 6. BLOCK DIAGRAM



## 7. PCM IF

PCM\_OUT, PCM\_IN, PCM\_CLK, PCM\_SYNC carry one of bi-directional channel of voice data using 13bits PCM at 8ks/s.

PCM\_SYNC operates at a fixed clock frequency of 8kHz.

PCM\_CLK operates at a fixed clock frequency of 256kHz.

Bits 1 to 13 of the PCM\_OUT data carry the current output sample value.

Bits 14 to 16 carry a three bit signal level value.

Reference PCM audio device is MC145483.

## 8. OVERALL APPEARANCE

