

Module Features

- Bluetooth system v2.1 + EDR Compliant
- Enhanced Data Rate (EDR) compliant with V2.1 of specification for both 2Mbps and 3Mbps modulation modes
- Class 2 Level Output Power Available
- UART Bypass Mode Support
- Scatternet Support
- Support of all Bluetooth packet types(voice and data)
- Support of low power modes: Park, Sniff and Hold
- UART, USB and PCM Interface Available
- Built-in Reference Clock : 26MHz
- High performance Stereo Codec
- 16Mbits Flash Memory
- Enhanced Audibility and Noise Cancellation
- RoHS Compliant

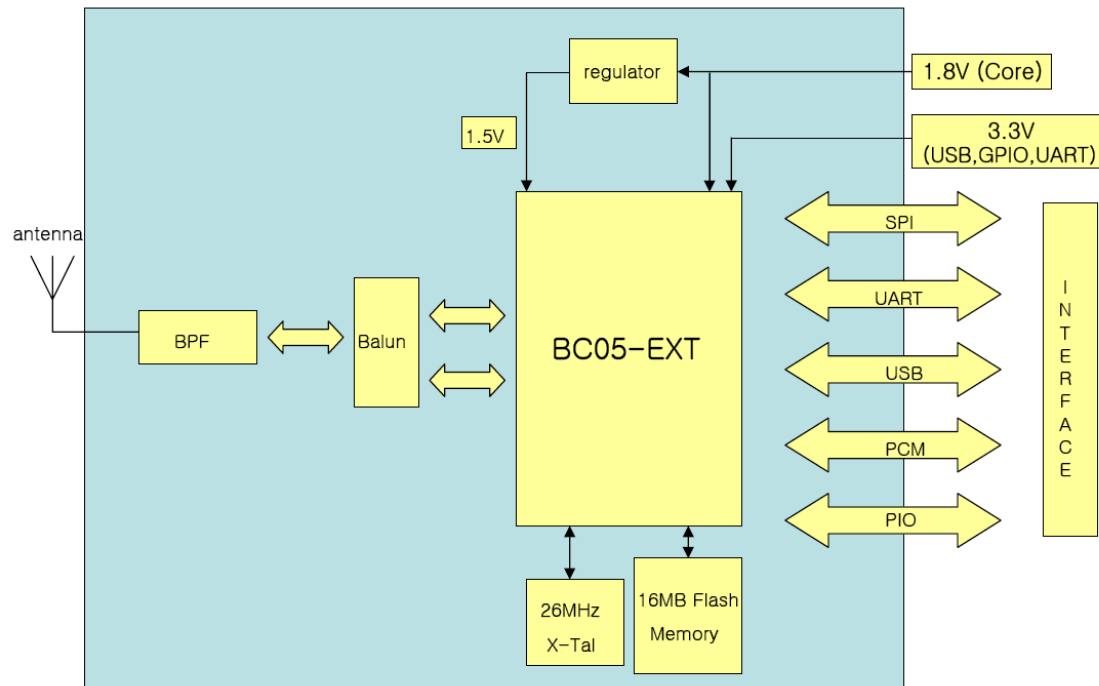
Applications

- High Quality Stereo Wireless Headsets
- Hands-Free Car Kits
- Wireless Speakers
- Analogue and USB Multimedia Dongles
- Bluetooth-Enabled Automotive wireless Gateways.

Features

- Size (12.0 X 20.0 X 2.3 mm)
- Class2 Support
- Surface Mountable
- 1.8V Power Supply for core
- 3.3V Power Supply for USB, UART, GPIO

Overview



Electrical Characteristics

Maximum Ratings			
Parameter	Min	Max	Unit
Operation Temperate	-20	+ 70	°C
Core Supply Voltage	1.7	1.95	V
Other Supply Voltage	3.0	3.6	V
Other Pin Voltage	VSS-0.4	VCC+ 0.4	V
Antenna Gain	0		dBi

RF specification

Transmitter Performance					
Parameter	Condition	Min	Typ	Max	Unit
Output Power	Normal/extreme test	-6	0	5	dBm
Power Density	Normal/extreme test	-	-	20	dBm
Power Control	Normal/extreme test				
Frequency Range	Normal/extreme test	2402	-	2480	MHz
20dB Bandwidth	Normal/extreme test	-	850	1000	KHz
Adjacent channel power	$\pm 2\text{MHz}$	-	-	-20	dBm
	$\pm 3\text{MHz}$	-	-	-40	dBm
	$\pm 4\text{MHz}$	-	-	-40	dBm
Modulation Characteristics	$\Delta F_{1\text{avg}}$	140	-	175	KHz
	$\Delta F_{2\text{max}}$	115	-	-	KHz
	$\Delta F_{2\text{avg}}/\Delta F_{1\text{avg}}$	-	-	80	%
Initial Carrier Frequency Tolerance		-75	-	75	KHz
Carrier Frequency Drift	One slot Packet(DH1)	-25	-	25	KHz
	Three slot Packet(DH3)	-40	-	40	KHz
	Five slot Packet(DH5)	-40	-	40	KHz
Transceiver Performance					
Parameter	Condition	Min	Typ	Max	Unit
Out-of Band spurious Emissions	30MHz-1GHz	-	-	-36	dBm
	1GHz-12.75GHz	-	-	-30	dBm
	1.8GHz-5.3GHz	-	-	-47	dBm
	5.1GHz-5.3GHz	-	-	-47	dBm
Receiver Performance					
Parameter	Condition	Min	Typ	Max	Unit
Sensitivity level	Single slot packets	-70	-83	-	dBm
Sensitivity level	Multi slot packets	-70	-	-	dBm
C/I performance	C/I co-channel	-	9	11	dB
	C/I _{1MHz} (adjacent channel)		-2	0	dB
	C/I _{2MHz} (2nd Adjacent channel)		-34	-30	dB
	C/I _{$\geq 3\text{MHz}$} (3 rd adjacent channel)		-43	-40	dB
Blocking performance	30MHz-2000MHz	-10	-	-	dBm
	2000MHz-2400MHz	-27	-	-	dBm

	2500MHz-3000MHz	-27	-	-	dBm
	3000MHz-12.75MHz	-10	-	-	dBm
Intermodulation Performance	N=5	-39	-	-	dBm
Maximum Input Level		-20	-5	-	dBm

Pin Description

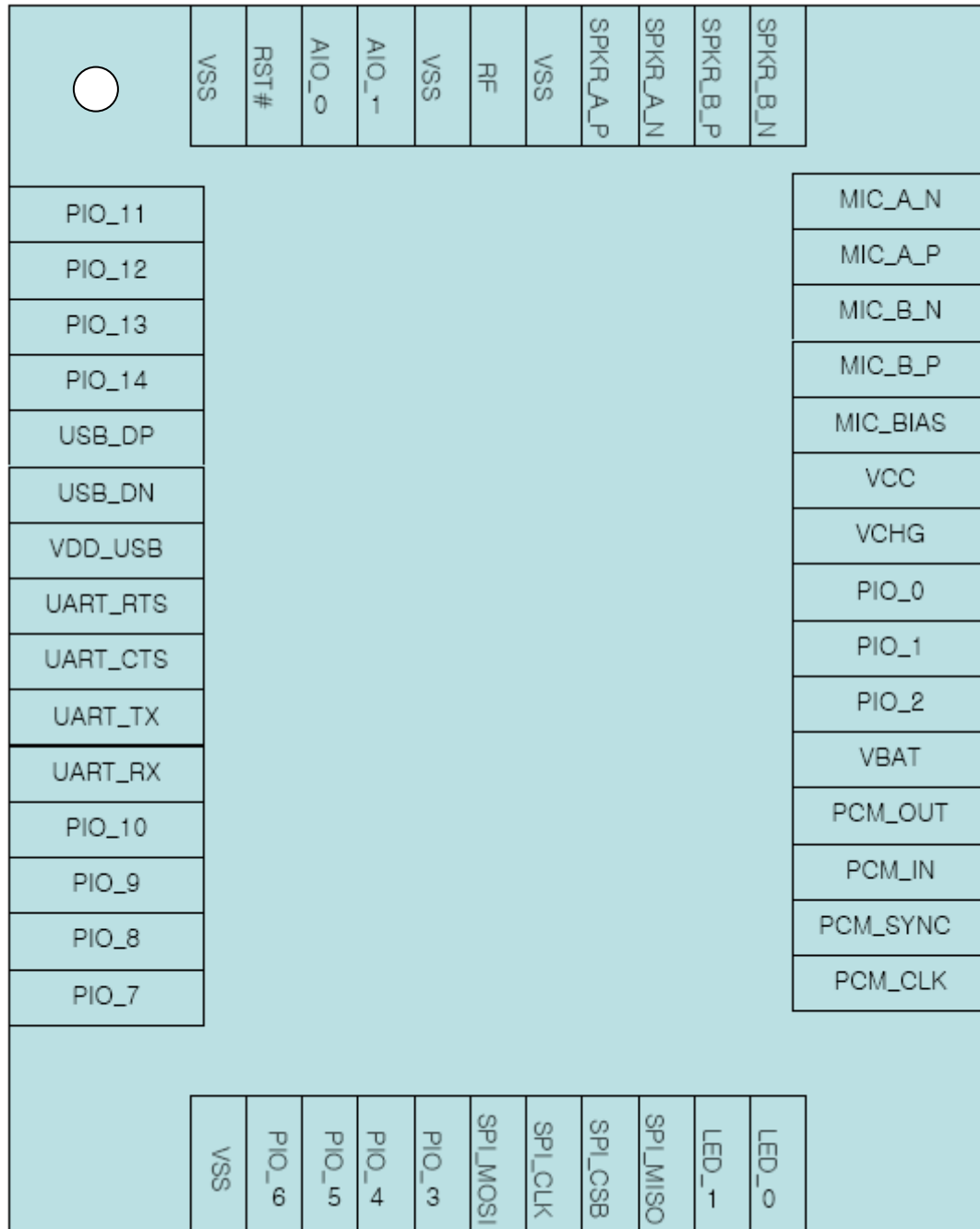
PIO No.	Pin Name	Description	Pad Type
1	PIO_11	Programmable input/output line	Bi-directional
2	PIO_12	Programmable input/output line	Bi-directional
3	PIO_13	Programmable input/output line	Bi-directional
4	PIO_14	Programmable input/output line	Bi-directional
5	USB_DP	USB Data Plus with selectable internal 1.5K Ω Pull-up resistor	Bi-directional
6	USB_DN	USB Data minus	Bi-directional
7	VDD_USB	POWER FOR USB(3.3V)	Power
8	UART_RTS	UART request to send to active low	Bi-directional
9	UART_CTS	UART request to clear to active low	CMOS Input
10	UART_TX	UART Data Output	Bi-directional
11	UART_RX	UART Data Input	CMOS input
12	PIO_10	Programmable input/output line	Bi-directional
13	PIO_9	Programmable input/output line	CMOS Output
14	PIO_8	Programmable input/output line	CMOS Input
15	PIO_7	Programmable input/output line	Bi-directional
16	VSS	Common Ground	Ground
17	PIO_6	Programmable input/output line	Bi-directional
18	PIO_5	Programmable input/output line	Bi-directional
19	PIO_4	Programmable input/output line	Bi-directional
20	PIO_3	Programmable input/output line	Bi-directional
21	SPI_MOSI	SPI data input	CMOS input
22	SPI_CLK	SPI clock	Input
23	SPI_CSB	Chip select for SPI, active low	Input
24	SPI_MISO	SPI data output	CMOS output

25	LED_1	LED driver	Open drain
26	LED_0	LED driver	Open drain
27	PCM_CLK	Synchronous data clock	Bi-directional
28	PCM_SYNC	Synchronous data sync	Bi-directional
29	PCM_IN	Synchronous data input	CMOS Input
30	PCM_OUT	Synchronous data output	CMOS output
31	VBAT	Battery Power	Power
32	PIO_2	Programmable input/output line	Bi-directional
33	PIO_1	Programmable input/output line	Bi-directional
34	PIO_0	Programmable input/output line	Bi-directional
35	VCHG	Charging Power	Power
36	VCC	Core Power(1.8V)	Power
37	MIC_BIAS	Microphone bias	Power
38	MIC_B_P	Microphone input positive, right	Analogue
39	MIC_B_N	Microphone input negative, right	Analogue
40	MIC_A_P	Microphone input positive, left	Analogue
41	MIC_A_N	Microphone input negative, left	Analogue
42	SPKR_B_N	Speaker output negative, right	Analogue
43	SPKR_B_P	Speaker output positive, right	Analogue
44	SPKR_A_N	Speaker output negative, left	Analogue
45	SPKR_A_P	Speaker output positive, left	Analogue
46	VSS	Common Ground	Ground
47	RF	RF connection to Antenna	Bi-directional
48	VSS	Common Ground	Ground
49	AIO_1	Analogue programmable in/out line	Bi-directional
50	AIO_0	Analogue programmable in/out line	Bi-directional
51	RST#	Reset if low. Input debounced so must be low for >5ms to cause a reset	CMOS Input
52	VSS	Common Ground	Ground

* If you want to use the MIC_BIAS of module, connect VBAT(31) to 3.3V.
(MIC_BIAS Voltage range : 1.7 ~ 3.3V)

* VCHG(35) pin can't be used.

Pin Map (TOP View)



Dimension

