

Description

BLUESMALL240 is a Class 1 Bluetooth BlueCore3MM chipset from leading Bluetooth chipset supplier Cambridge Silicon Radio.

Bluetooth Spec.v2.0+EDR Compliant

Support for WIFI 802.11 co-existence

Available firmware:

- EikonAT serial port profile (default)
- Stereo Headset
- A2DP

Small footprint: 16*14*2mm

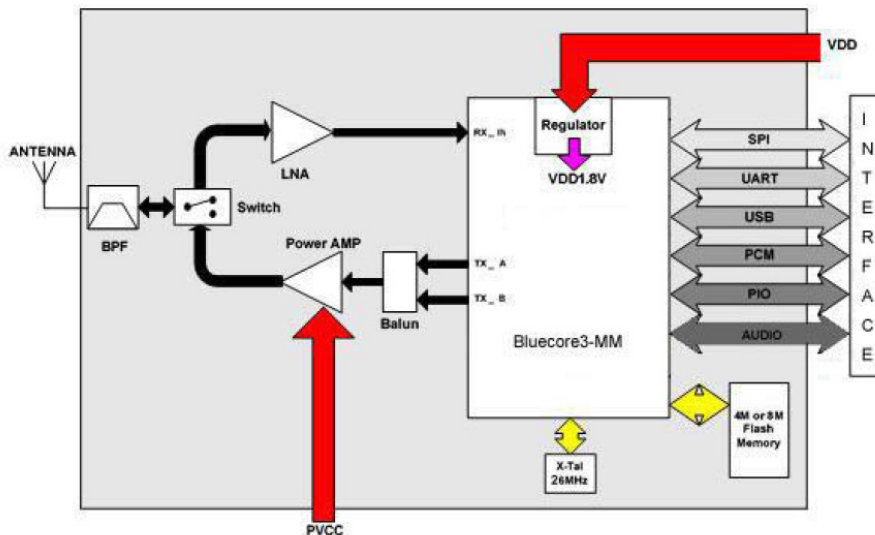


Features

- Bluetooth v2.0+EDR
- BC03MM CSR chipset
- Class 1 (100m range)
- 3.3V power supply
- Size 16X14X2mm
- Eikon direct support for PCB and Antenna design

Specification

- Operating Frequency Band 2.4GHz ~ 2.48GHz unlicensed ISM band
- Bluetooth Specification V2.0+EDR
- Output Power Class 1
- Operating Voltage +3.3V
- Dimensions 16mm (L) x 14 (W) mm x 2mm (H)



Benefits

- Compact and
- Easy to manage and use
- Low power (battery operation)
- Zero Time for development

Applications

- Wireless Serial Port
- Wireless Audio Stereo
- Serial Cable replacement
- Headset for mobile phones

Electrical characteristics

Absolute Maximum Ratings			
Parameter	Min.	Max.	Unit
Storage Temperature	-40	+150	°C
Supply Voltage(VDD 3.3V,	-0.4	3.7	DCV
Supply Voltage(PA)	-0.4	3.7	DCV
Other Pin Voltage	Vss-0.4	VDD+0.4	DCV
Recommended Operating Conditions			
Parameter	Min.	Max.	Unit
Operating Temperature	-20	+75	°C
Supply Voltage(VDD 3.3V,	2.7	3.6	DCV
Supply Voltage(PA)	3.0	3.6	DCV

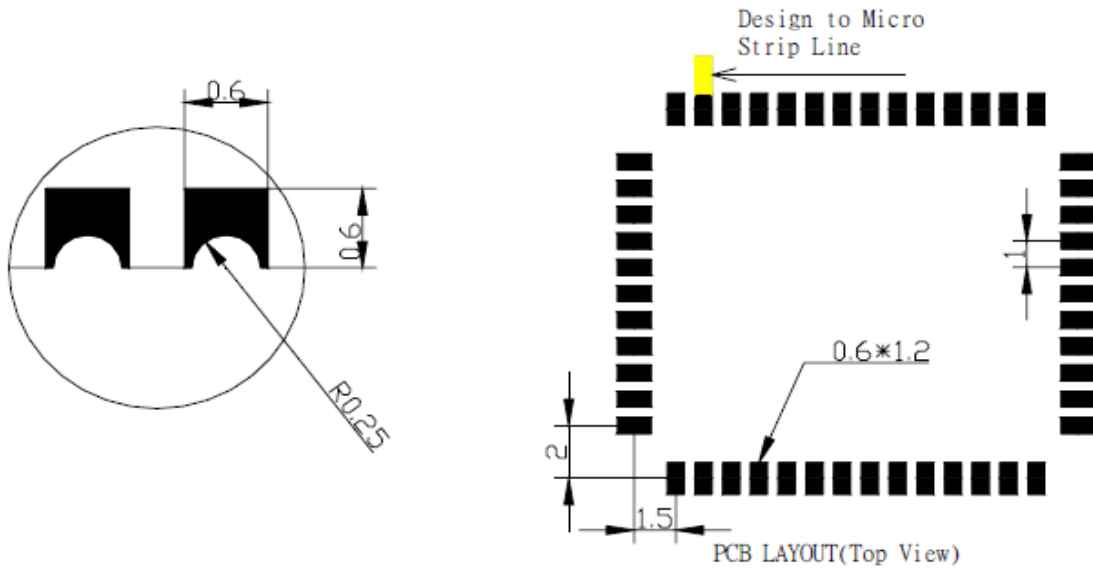
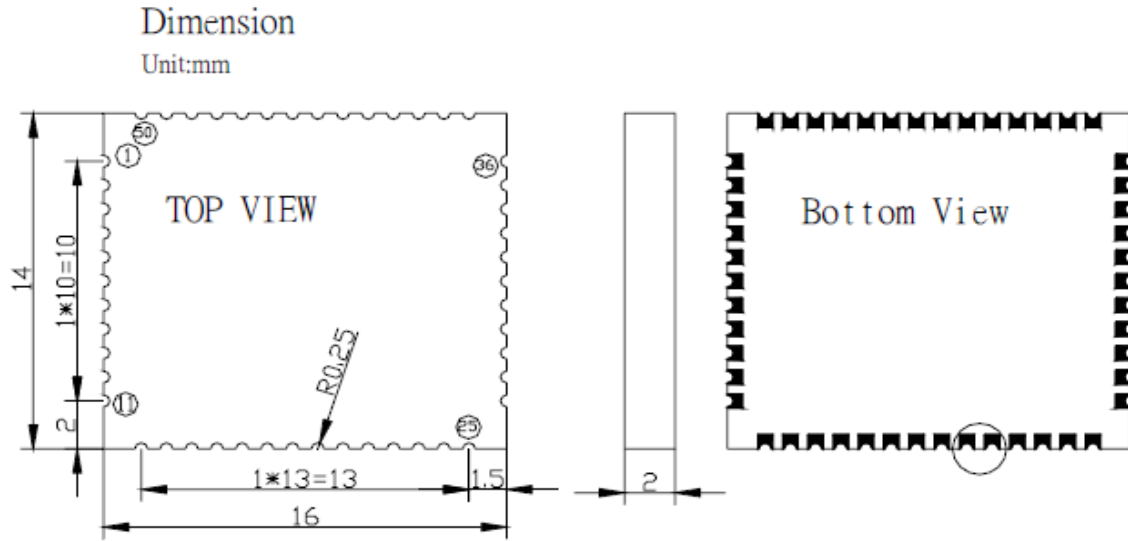
Radio characteristics

Transmitter Performance						
Parameter	Min.	Type	Max.	Bluetooth Spec.	Unit	
RF transmit power	-	17	-	0 to +20	dBm	
RF power control range	-	20	-	≥ 16		
RF power range control resolution	-	0.5	-			
20dB bandwidth for modulated carrier	-	720	-	≤ 1000	KHz	
Initial carrier frequency tolerance	-	2.0	-	± 75	KHz	
Carrier frequency drift	Drift Rate	-	8.0	-	± 20	KHz/50uS
	DH1	-	8.0	-	± 24	KHz
	DH3	-	9.0	-	± 40	KHz
	DH5	-	10	-	± 40	KHz
Adjacent characteristic	+/- 2 MHz	-	-40	-	≤ -20	dBm
	+/- 3 MHz	-	-47	-	≤ -40	dBm
	+/- 4MHz	-	-50	-	≤ -40	dBm
Modulation characteristic	ΔF_{1avg}	-	166	-	$140 \leq \Delta F_{1avg} \leq 175$	KHz
	ΔF_{2avg}	-	157	-	115	KHz
	$\Delta F_{1avg}/\Delta F_{1avg}$	-	0.97	-	≥ 0.8	
Receiver Performance						
Parameter	Frequency (GHz)	Min.	Type	Max.	Bluetooth Spec.	Unit
Sensitivity at 0.1% BER for all packet types	2402	-	-88	-	≤ -70	dBm
	2441	-	-88	-		dBm
	2480	-	-88	-		dBm
Maximum receive signal at 0.1% BER		-	-10	-	≥ -20	dBm
C/I performance Adjacent channel sensitivity	C/I co-channel	-	9	-	≤ 11	dB
	F=F ₀ +1MHz	-	-3	-	≤ 0	dB
	F=F ₀ -1MHz	-	-7	-	≤ 0	dB
	F=F ₀ +2MHz	-	-41	-	≤ -30	dB
	F=F ₀ -2MHz	-	-42	-	≤ -20	dB
	F=F ₀ +3MHz	-	-43	-	≤ -40	dB
	F=F ₀ -5MHz	-	-42	-	≤ -40	dB
	F=F _{image}	-	-22	-	≤ -9	dB
Max. level of intermodulation interferers		-	-27	-	≥ -39	dBm
Spurious output level		-	-142	-		dBm/Hz

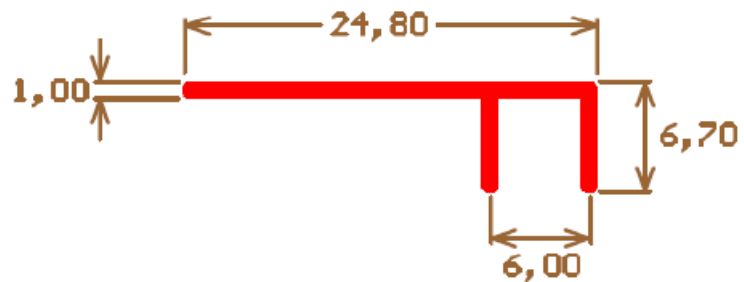
Pinout

PIN	NAME	TYPE	FUNCTION
1	GND	GND	Ground
2	PIO(0)	Bi-directional	Programmable Input / Output Line
3	AUDIO_IN_LP	Analogue	Microphone & Audio Signal input positive(Left channel)
4	AUDIO_IN_LN	Analogue	Microphone & Audio Signal input negative(Left channel)
5	AUDIO_IN_RP	Analogue	Microphone & Audio Signal input positive(Right channel)
6	AUDIO_IN_RN	Analogue	Microphone & Audio Signal inputnegative(Right channel)
7	AUDIO_OUT_RN	Analogue	Speaker & Audio Signal output negative(Right channel)
8	AUDIO_OUT_RP	Analogue	Speaker & Audio Signal output positive(Right channel)
9	AUDIO_OUT_LN	Analogue	Speaker & Audio Signal output negative(Left channel)
10	AUDIO_OUT_LP	Analogue	Speaker & Audio Signal output positive(Left channel)
11	GND	GND	Ground
12	GND	GND	Ground
13	+V_PA	Power	Power supply for PA (recommend 3.3V)
14	+1V8	Power	Leave open or wire with VDD_IN when 1.8V operate,
15	VDD_IN	Power	Power Input (normal 3.3V or 1.8V)
16	NC		Reserved
17	AIO0	Bi-directional	ADC/DAC Input/Output Line
18	AIO1	Bi-directional	ADC/DAC Input/Output Line , Battery Monitor Input
19	AIO3	Bi-directional	ADC/DAC Input/Output Line
20	PCM_SYNC/WS	Bi-directional	Synchronous Data Sync / I2S ws (typically SCK=64*WS)
21	PCM_IN/SD_IN	CMOS Input	Synchronous Data Input / I2S serial data in
22	PCM_OUT/SD_OUT	CMOS Output	Synchronous Data Output / I2S serial data out
23	PCM_CLK/SCK	Bi-directional	Synchronous Data Clock / I2S serial data clock
24	UART_CTS	CMOS Input	UART Clear To Send (Active Low)
25	UART_RTS	CMOS Output	UART Request To Send (Active Low)
26	UART_RX	CMOS Input	UART Data Input
27	UART_TX	CMOS Output	UART Data Output
28	PIO(4)	Bi-directional	Programmable Input / Output Line
29	PIO(5)	Bi-directional	Programmable Input/Output line
30	PIO(6)	Bi-directional	Programmable Input/Output line
31	PIO(7)	Bi-directional	Programmable Input/Output line
32	USB_DP	Bi-directional	USB Data Plus
33	USB_DN	Bi-directional	USB Data Minus
34	SPI_MOSI	CMOS Input	Serial Peripheral Interface Data Input
35	SPI_CSB	CMOS Input	Chip Select For Synchronous Serial Interface active low
36	GND	GND	Ground
37	GND	GND	Ground
38	SPI_CLK	CMOS Input	Serial Peripheral Interface Clock
39	SPI_MISO	CMOS Output	Serial Peripheral Interface Data Output
40	RESET	CMOS Input	Reset if high. must be high for >5ms to cause a reset
41	PIO(8)	Bi-directional	Programmable Input/Output Line
42	PIO(9)	Bi-directional	Programmable Input/Output Line
43	PIO(10)	Bi-directional	Programmable Input/Output Line
44	PIO(11)	Bi-directional	Programmable Input/Output Line
45	PIO(3)	Bi-directional	Programmable Input/Output Line
46	PIO(2)	Bi-directional	Programmable Input / Output Line
47	PIO(1)	Bi-directional	Programmable Input/Output Line
48	GND	GND	Ground
49	RF_IO	Analogue	50 ohm Antenna connection
50	GND	GND	Ground

Mechanical drawing



Suggested 'F' antenna (dimensions in mm)



Ordering informations

Buy online the product on our website www.eikonsite.it or contact your local reseller.

Default firmware on BLUESMALL240 is eikonAT Serial port profile. We can upload other firmware but the MOQ is 500pcs.

For smaller quantities you can download firmware to the module using SPI connection and our Starter KIT BLUEMORE110 (LPT->Spi). You'll receive firmware and all the info by email.

Eikon srl

Via Borgognina 5
61030 Lucrezia di Cartoceto (PU) Italy
Vat IT02036680417

Tel +39 0721 877365 Fax +39 0721 897679
Web www.eikonsite.it Email info@eikonsite.it

Local reseller