

Bluetooth® 4.2 Stereo Audio Module

Features

- Qualified for Bluetooth v4.2 specifications
- Worldwide regulatory certifications are planned
- Supports HFP 1.6, HSP 1.2, A2DP 1.3, SPP 1.2, AVRCP 1.6
- Supports Bluetooth (BR/EDR/BLE) specifications (FW dependent)
- Stand-alone module with onboard antenna and Bluetooth stack
- Supports high resolution 24-bit, 96 kHz audio data format
- Supports to connect two hosts with HFP or A2DP profiles simultaneously
- Transparent UART mode for seamless serial data over UART interface
- Easy to configure with Windows GUI or directly by MCU
- Supports firmware field upgrade
- Supports 2-Microphone (BM62) and 1-Microphone (BM64)
- Compact surface mount module:
 - BM62: 29 mm x 15 mm x 2.5 mm
 - BM64: 32 mm x 15 mm x 2.5 mm
- Castellated surface mount pads for easy and reliable host PCB mounting
- RoHS compliant
- Ideal for portable battery operated devices
- Internal battery regulator circuitry

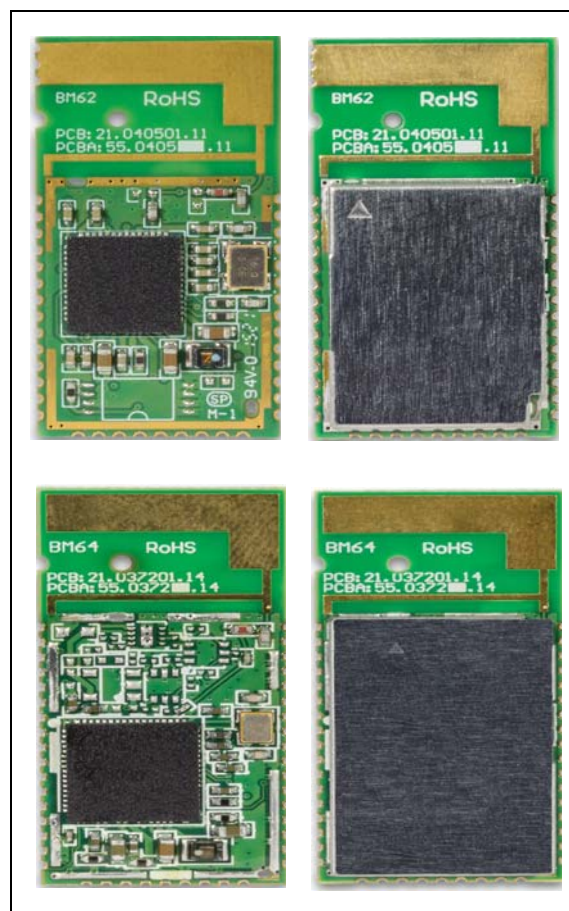
RF/Analog

- Frequency spectrum: 2.402 GHz to 2.480 GHz
- Receive sensitivity: -90 dBm (2 Mbps EDR)
- Class 2 output power (+2 dBm typical) for BM62, BM64 and Class 1 output power (+15 dBm typical) for BM64

DSP Audio Processing

- Supports 64 kb/s A-Law, μ -Law PCM format, or Continuous Variable Slope Delta (CVSD) modulation for SCO channel operation
- Support 8 kHz or 16 kHz noise suppression
- Support 8 kHz or 16 kHz echo cancellation
- SBC and optional AAC decoding
- Packet loss concealment (PLC)
- Support Serial Copy Management System (SCMS-T) content protection

FIGURE 1: BM62 AND BM64 MODULES



BM62/64

Audio Codec

- SBC and optional AAC decoding
- 20-bit digital-to-analog (DAC) with 96 dB SNR
- 16-bit analog-to-digital (ADC) with 90 dB SNR
- Up to 24-bit or 96 kHz on I²S digital audio

Peripherals

- Built-in lithium ion and lithium polymer battery charger (upto 350 mA)
- Integrated 3V and 1.8V configurable switching regulator and low-dropout (LDO)
- Built-in ADC for battery monitoring and voltage sense
- Built-in ADC for charger thermal protection
- Built-in under voltage protection (UVP)
- An aux-in port for external audio input
- Two LED drivers
- Multiple I/O pins for control and status

HCI Interface

- High-speed HCI-UART interface (supports up to 921,600 bps)

MAC/Baseband Processor

- Supports Bluetooth Low Energy (BLE) (FW dependent)
 - Generic Access Service
 - Device Information Service
 - Proprietary Service for data communication
 - Apple Notification Center Service (ANCS)

Operating Condition

- Operating voltage: 3.2V to 4.2V
- Operating temperature: -20°C to +70°C

Compliance

- Bluetooth SIG QDID: XXXXXX
- Certified for the United States (FCC) and Canada (IC), European Economic Area (CE), Korea (KCC), Taiwan (NCC) and Japan (JRF)

Applications

- Soundbar and Wireless Subwoofer
- Bluetooth speaker
- Multi speaker

Description

The BM62/64 Bluetooth Stereo Audio module is a fully qualified Bluetooth version 4.2 (BDR/EDR/BLE) module for designers to add Bluetooth wireless audio and voice applications to their products. The BM62/64 is a Bluetooth Special Interest Group (SIG) certified module that provides a complete wireless solution with Bluetooth stack, integrated antenna, and worldwide radio certifications in a compact surface mount package.

The BM62/64 module has several SKUs. The BM62 module is a Class 2 device, whereas BM64 is available in both Class 2 and Class 1 versions.

The BM62/64 module has an integrated lithium-ion and lithium-polymer battery charger and a digital audio interface. It supports HSP, HFP, SPP, A2DP, and AVRCP profiles and both AAC and SBC codecs are supported.

[Table 1](#) provides ordering information for the BM62 and BM64 Bluetooth 4.2 Stereo Audio modules.

TABLE 1: ORDERING INFORMATION

Device	IC	Description	Shield	Ordering No.
BM62	IS2062GM	Bluetooth 4.2 Stereo Audio Module, Class2 with RF shield	Yes	BM62SPKS1MC2
BM62	IS2062GM	Bluetooth 4.2 Stereo Audio Module, Class2 without RF shield	No	BM62SPKA1MC2
BM64	IS2064GM	Bluetooth 4.2 Stereo Audio Module, Class2 with RF shield	Yes	BM64SPKS1MC2
BM64	IS2064GM	Bluetooth 4.2 Stereo Audio Module, Class2 without RF shield	No	BM64SPKA1MC2
BM64	IS2064GM	Bluetooth 4.2 Stereo Audio Module, Class1 with RF shield	Yes	BM64SPKS1MC1
BM64	IS2064GM	Bluetooth 4.2 Stereo Audio Module, Class1 without RF shield	No	BM64SPKA1MC1

The examples of typical application connections using the BM62 and BM64 modules are shown in [Figure 2](#) through [Figure 4](#).

[Figure 5](#) and [Figure 6](#) illustrate the PCB dimensions of the BM62 and BM64 modules.

FIGURE 2: APPLICATION USING BM62 MODULE

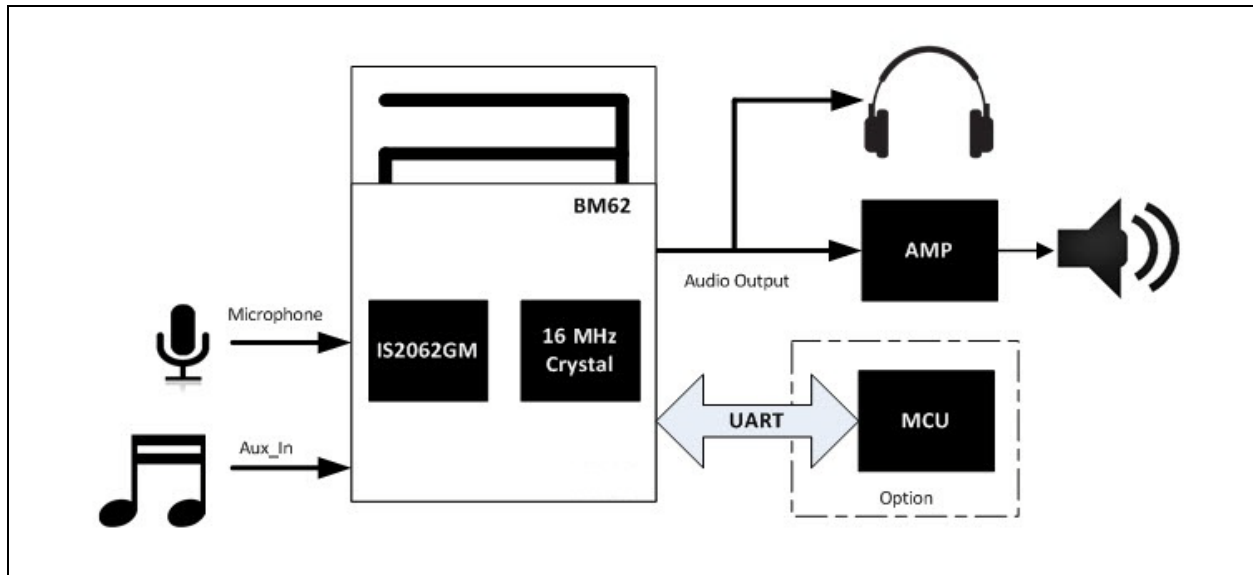
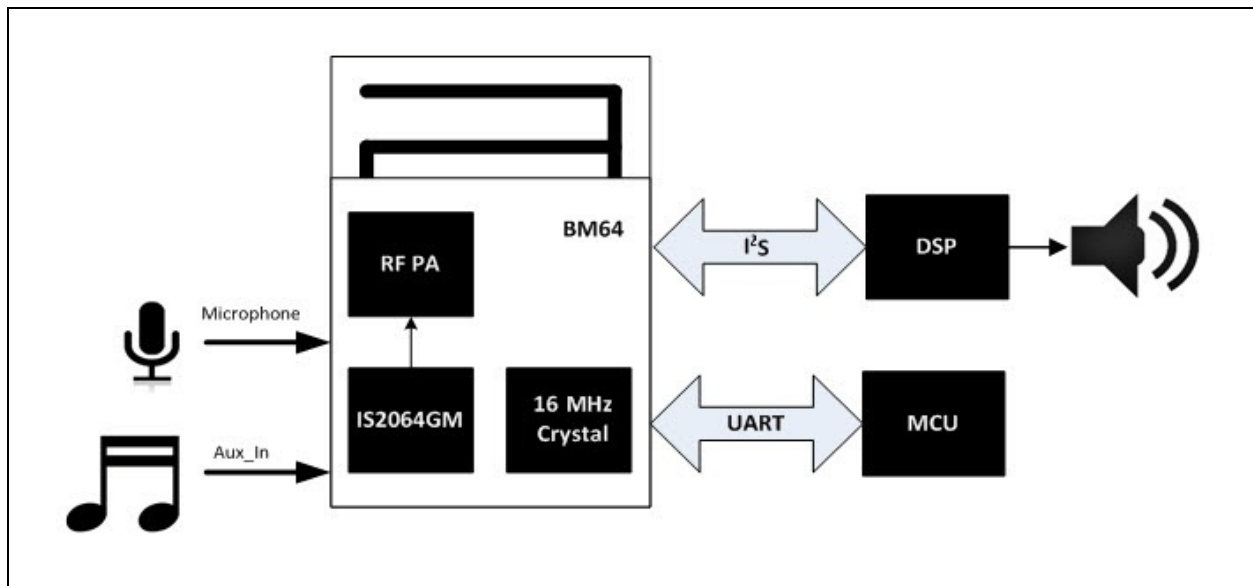


FIGURE 3: APPLICATION USING BM64 MODULE



BM62/64

FIGURE 4: SOUNDBAR AND SUBWOOFER APPLICATION USING BM64 MODULE

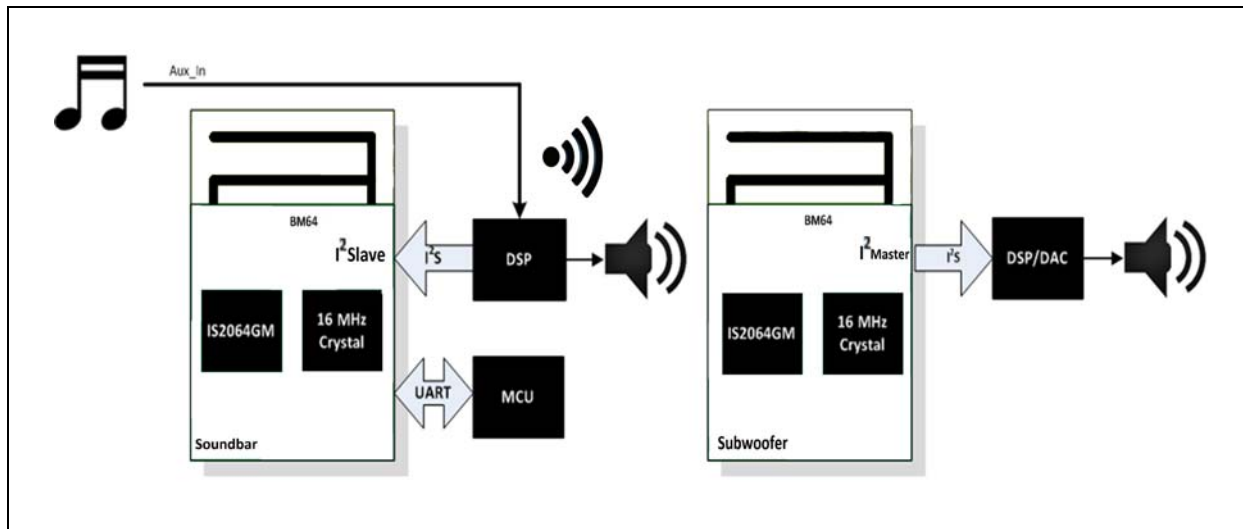
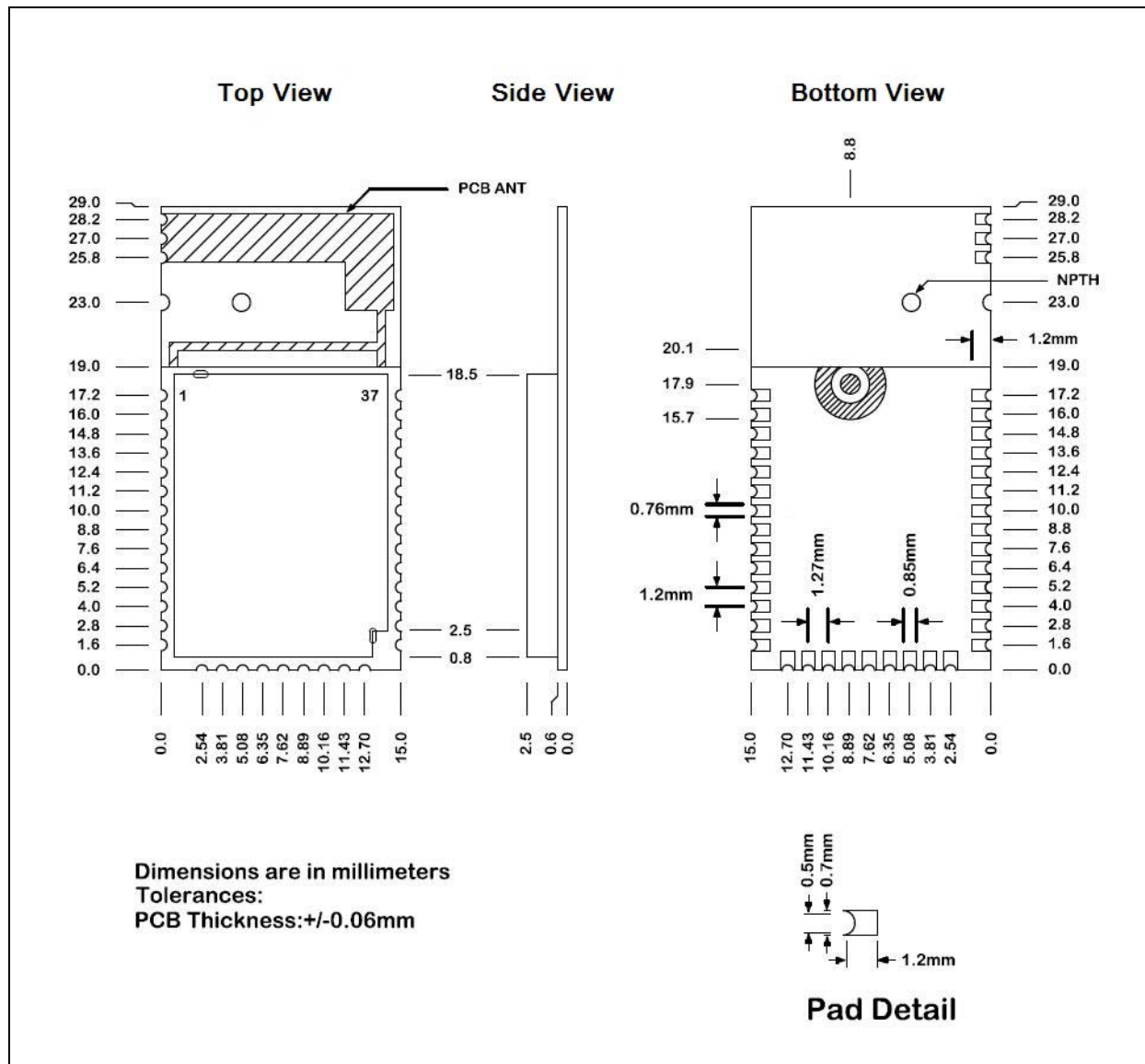


FIGURE 5: BM62 PCB DIMENSION



Top View

Side View

Bottom View

PCB ANT

NPTH

shield mounting hole

0.8

4.45

5.55

14.2

32.0

26.0

22.0

20.9

19.7

18.5

17.3

16.1

14.9

13.7

12.5

11.3

10.1

8.9

7.7

6.5

5.3

4.1

2.9

1.7

0.0

0.8

21.7

25.45

26.55

14.2

0.8

2.5

0.6

0.0

11.5

11.4

10.2

8.2

5.55

4.45

4.3

32.0

26.0

23.1

20.9

18.7

14.0

10.0

6.2

5.3

15.0

12.3

11.1

9.9

8.7

7.5

6.3

5.1

3.9

2.7

0.0

0.8

21.7

25.45

26.55

14.2

0.8

2.5

0.6

0.0

0.7mm

1.2mm

0.76mm

shield mounting hole

45

47

46

44

0.5mm

0.7mm

1.0mm

0.76mm

Pad Detail

Dimensions are in millimeters

Tolerances:

PCB Thickness: +/- 0.06mm

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