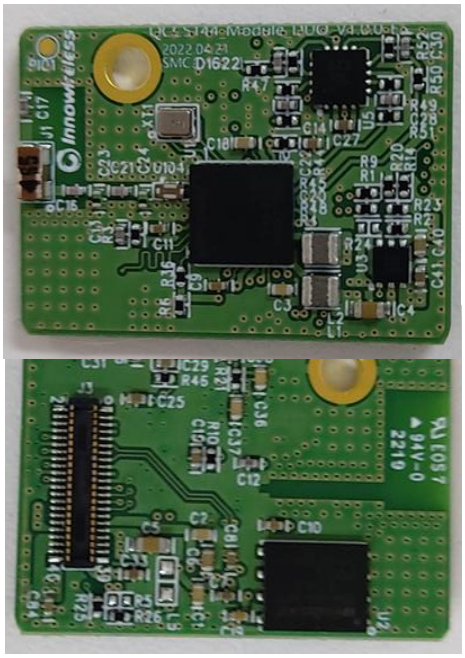
QCC5144BM

Manual

Innowireless

Key Specifications

- Bluetooth v5.2
- High-performance 24-bit stereo audio interface
- Digital and analog microphone interfaces
- Small form factor (18mm x 25mm x 3.94mm)
- FCC and CE certified

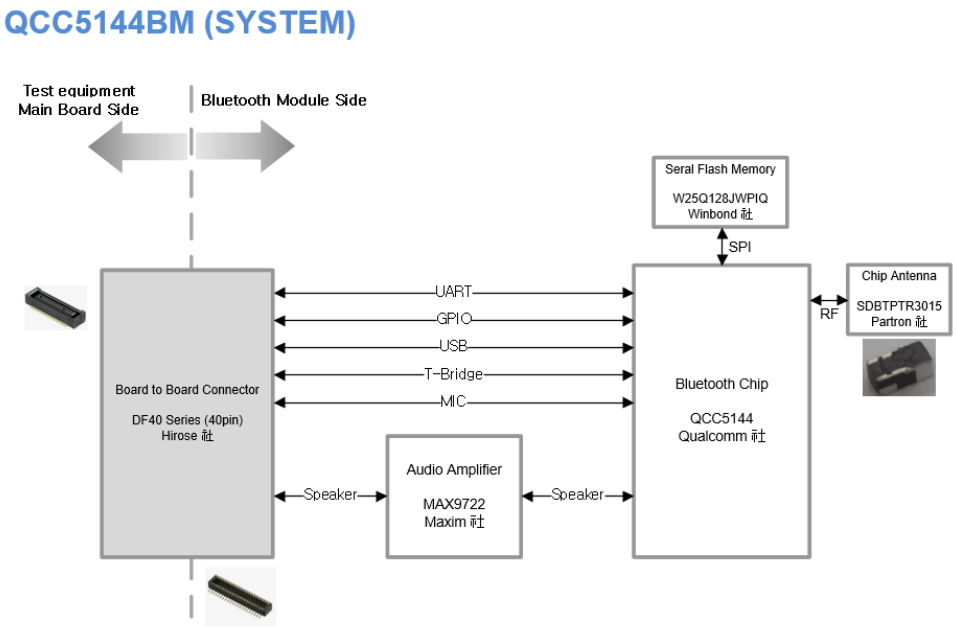


Applications

- Innowireless call quality test equipment

Description

- QCC5144BM is a module built into the Innowireless call quality test equipment, and communicate with smartphone using Bluetooth.



General Specifications

Specifications	Description
Bluetooth Standard	Bluetooth v5.2
Interfaces	UART, AIO, GPIO, USB, SPK, MIC, SPI(Debug)
Size	18mm x 25mm x 3.94mm

RF Specifications

Specifications	Description
Frequency Band	2.4GHz ISM Band (2.402 – 2.480 GHz Utilized)
Modulation	GFSK, π/4 DQPSK, 8DPSK
Maximum Data Rate	3Mbps

Audio Specifications

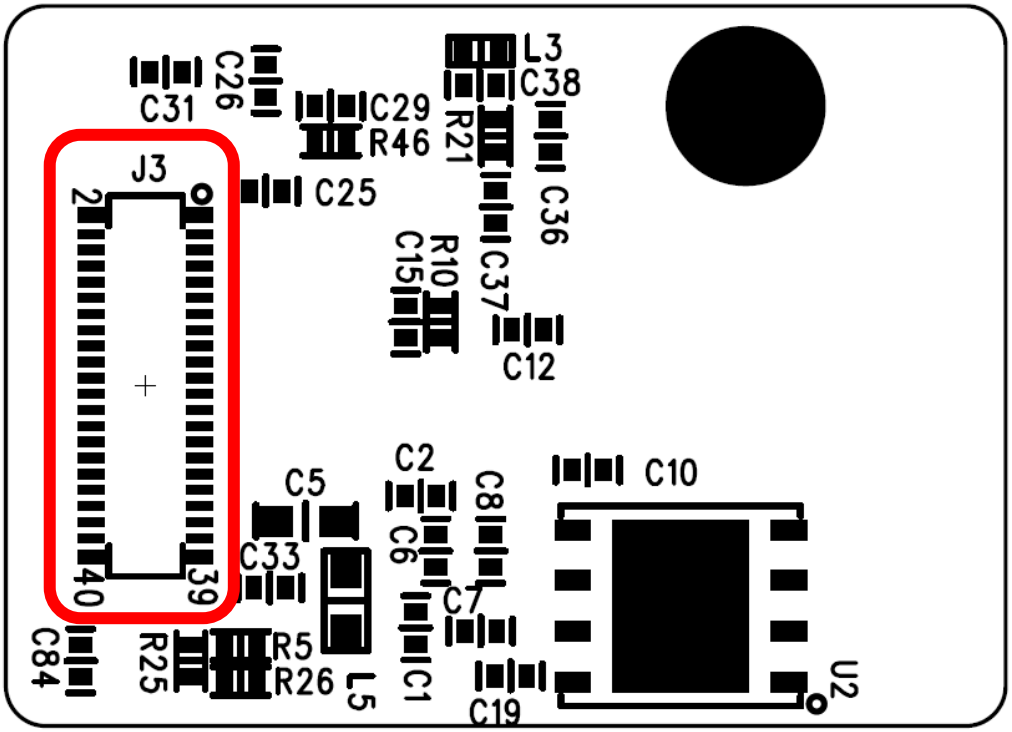
Specifications	Description
DAC resolution	24 bits
DAC Output Sample Rate	8kHz to 384kHz
DAC SNR	99.6dBA

Electric Specifications

Specifications	Description
Supply Voltage	Typ. 5V
Max Current	Max. 140mA
Typical Current Idle	2mA
Operating Temperature	-40℃ to 85℃

Module Interface (Connector)

Specifications	Description
Module Connector	DF40C-40DP-0.4V(51) (Hirose社)
Module Contact Connector	DF40B-(**)-40DS-0.4V(51) / DF40HB-(**)-40DS-0.4V(51) / DF40C-(**)-40DS-0.4V(51) / DF40HC-(**)-40DS-0.4V(51) (Hirose社)



PIN Description

No	Pin Name	Pin Type	Pin Description
1	GND	GND	Common Ground
2	/RESET	Reset Input	Reset if low for more than 120us
3	AIO(1)/LED(1)	Bi-directional	Analog programmable input/output line
4	GND	GND	Common Ground
5	AIO(0)/LED(0)	Bi-directional	Analog programmable input/output line
6	GND	GND	Common Ground
7	GND	GND	Common Ground
8	BT_PWR_ON	Boot Input	Start Power up if high for more than 20ms
9	USB-	Bi-directional	USB data negative
10	GND	GND	Common Ground
11	GND	GND	Common Ground
12	BT_AUDIO_IN	Analog input	Microphone input
13	USB+	Bi-directional	USB data positive
14	GND	GND	Common Ground
15	GND	GND	Common Ground
16	AUDIO_OUT_R	Audio output	Speaker output, Right
17	EX_3V3_EN	Digital Input	For use 3.3V LDO in module

18	GND	GND	Common Ground
19	GND	GND	Common Ground
20	AUDIO_OUT_L	Audio output	Speaker output, Left
21	SYS_CTRL_TRB	Debug	For debug
22	GND	GND	Common Ground
23	TBR_RX_CLK	Debug	For debug
24	/BT_RTS	Bi-directional	UART request to send ,active low
25	TBR_TX_D0	Debug	For debug
26	/BT_CTS	Bi-directional	UART Clear to Send
27	TBR_RX_D0	Debug	For debug
28	BT_RXD	Bi-directional	UART RX Data
29	GND	GND	Common Ground
30	BT_TXD	Bi-directional	UART TX Data
31	3V3_LDO	Supply	Bypass regulator decoupling.
32	PIO3	Bi-directional	Programmable input/output line
33	1V8_SMPS_4	Supply	1.8V SMPS from BT Chip
34	+3.3V	Supply	3.3V from LDO IC in module
35	+5V	Supply	Positive Supply input
36	+5V	Supply	Positive Supply input
37	+5V	Supply	Positive Supply input
38	+5V	Supply	Positive Supply input
39	+5V	Supply	Positive Supply input
40	+5V	Supply	Positive Supply input

Regulatory Certifications

QCC5144BM is delivered with FCC and CE certifications. This allows to integrate the module in an end product without the need to obtain subsequent and separate approvals from these regulatory agencies.

FCC Statement (FCC ID: 2AAM2-QCC5144BM)

FCC Part 15C 15.247 is applied to the modular transmitter.
Federal Communication Commission Interference Statement
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
This equipment should be installed and operated with minimum distance 20cm betweenthe radiator & your body.

This module is intended for OEM integrator. The OEM integrator is still responsible for the FCC compliance requirement of the end product, which integrates this module.

USERS MANUAL OF THE END PRODUCT:

In the users manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the FCC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied. The devices must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product. The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment. If the device is small or for such use that it is not practicable to place the statement on the product, then additional FCC part 15.19 statement is required to be available in the users manual: This device complies with Part 15 of FCC rules.

Operation is subject to the following two conditions:

(1) this device may not cause harmful interference and
(2) this device must accept any interference received, including interference that may cause undesired operation.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following " Contains FCC ID: 2AAM2-QCC5144BM". If the device is small or for such use that it is not practicable to place the statement on the product, then the following FCC part 15.19 statement has to also be available on the label: This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference and
(2) this device must accept any interference received, including interference that may cause undesired operation.