BU-5 Bluetooth® Adapter Unit

The **BU-5** is the **Bluetooth®** unit for the Transceiver.

Please refer to the transceiver's manual for installation and operation of the **BU-5**.

Overview

BU-5 it is a Bluetooth dual-mode module series. It supports a Bluetooth Low Energy and compliant system for audio and data communication.
BU-5 integrates an ultra-low-power DSP and application processor with embedded flash memory, a high-performance stereo codec, a power management subsystem, I2S, LED drivers and ADC I/O.
Both cores use external flash to execute code, making it easy for user to differentiate products from new features without delaying the development.
By default, **BU-5** module is equipped with powerful and easy-to-use Feasycom firmware. It's easy to use and completely encapsulated. Firmware enables users to access Bluetooth functionality with simple ASCII commands delivered to the module over serial interface - it's just like a Bluetooth modem.
Therefore, **BU-5** provides an ideal solution for developers who want to integrate Bluetooth wireless technology into their design.

Features

- Qualified to Bluetooth® v5.3specification
- 120 MHz Qualcomm® Kalimba™audio DSP
- 32/80 MHz Developer Processor for applications
- High-performance 24-bit audio interface
- Active Noise Cancellation: Hybrid, Feedforward, andFeedback modes, using Digital or Analog Mics,enabled using license keys available fromQualcomm®
- Analog Audio:➢aptX, aptX HD Audio
- Serial interfaces: UART, Bit Serializer (I²C/SPI),USB2.0
- Integrated Li-ion batterycharger(Max 200mA)
- Low power modes to extend battery life

Bluetooth subsystem

- Qualified to Bluetooth v5.3specification including 2Mbps Bluetooth Low Energy and Bluetooth LowEnergy Isochronous Channels
- Qualcomm® Bluetooth High Speed Link
- Single ended antenna connection with on-chip balunand Tx/Rx switch
- Bluetooth, Bluetooth Low Energy, and mixedtopologies supported
- Class 1 supportApplications
- TrueWireless™ stereo earbuds
- USB to Bluetooth dongle
- Bluetooth Speaker
- HD Audio Transmitter/Receiver

Categories	Features	Implementation
Wireless Specification	Chip	QCC3056
	Bluetooth Version	V5.3
	Frequency	2.402 - 2.480 GHz
	Transmit Power	3.849dBm
	Receive Sensitivity (Basic Rate, VBAT=3.7V)	2402GHz: -95.5 dBm (Typ) 2441GHz: -96 dBm (Typ) 2480GHz: -96 dBm (Typ)
Supply Voltage	Supply	VDD_IO: 1.7 ~ 3.3V; VBAT_IN: 2.8V~ 4.3V
Power Consumption （Load=10KΩ,VBAT_IN=3.3V）		Play：<5mA ---*Average
		Pairing： <5mA ---*Average
		OFF： <100uA ---*Average
Physical	Dimensions	12.4mm(W) X 12.4mm(L) X 1.8mm(H)
Environmental	Operating	-40°C to +85°C
	Storage	-40°C to +85°C
Miscellaneous	Lead Free	Lead-free and RoHS compliant
	Warranty	One Year
Humidity		10% ~ 90% non-condensing
MSL grade:		MSL 3
ESD grade:		Human Body Model: Class 2 2KV
		Charged Device Model: Class III 500 V

Safety Precautions (Be Sure to Read)

Be sure to read the safety precautions of Operating Manual of the compatible radio to use this product safely.

Packing box can be recycled.

04 Plastic bag can be recycled.

LDPE

The equipment may be damaged by static electricity.
Touch a metal place to discharge any static electric-ity from your body.

EU Declaration of Conformity

We, Yaesu Musen Co. Ltd of Tokyo, Japan, hereby declare that this radio equipment BU-5 is in full compliance with EU Radio Equipment Directive 2014/53/EU. The full text of the Declaration of Conformity for this product is available to view at http://www.yaesu.com/jp/red

ATTENTION – Condition of use

This transceiver operates on frequencies that are regulated. Use of the Transmitter in the EU countries shown in the accompanying table is not permitted without authorization. Users should consult their local spectrum management authority for licensing conditions applicable to this equipment.

AT	BE	BG	CY	CZ	DE	DK	ES
EE	FI	FR	EL	HR	HU	IE	IT
LT	LU	LV	MT	NL	PL	PT	RO
SK	SI	SE	CH	IS	LI	NO	–

Disposal of Electronic and Electrical Equipment

Products with the symbol (crossed-out wheeled bin) cannot be disposed as household waste.
Electronic and Electrical Equipment should be recycled at a facility capable of handling these items and their waste by-products.
Please contact a local equipment supplier representative or service center for information about the waste collection system in your country.

Applicant: Yaesu Musen Co., Ltd.
Omori Bell port D building 3F, 6-26-3 Minamioi, Shinagawa-ku, Tokyo, 140-0013, Japan

Manufacturer: Yaesu Musen Co., Ltd.
Omori Bell port D building 3F, 6-26-3 Minamioi, Shinagawa-ku, Tokyo, 140-0013, Japan

Factory: Yaesu Musen Co., Ltd.
43 Utsuroda, Morijuku, Sukagawa-shi, Fukushima, 962-0001, JAPAN

This **Bluetooth®** radio module has to be installed and used in accordance with the technical description/ installation instructions provided by the manufacture.
This **Bluetooth®** radio module is intended to be placed on the market in all States, where the **Bluetooth®** technology and the used frequency band is released.
For detail information concerning type approval of this module (e.g. where this module is already pre-approved) please contact the manufacturer.
The system may only be implemented in the configuration that was authorized.
Note that any changes or modifications to this equipment not expressly approved by the manufacturer could void the user's authority to operate this equipment.

FCC Warning

Integration instructions for host product manufacturers according to KDB 996369 D03 OEM Manual v01

2.2 List of applicable FCC rules

FCC Part 15.247

2.3 Specific operational use conditions

This transmitter/module and its antenna(s) must not be co-located or operating in conjunction with any transmitter. This information also extends to the host manufacturer's instruction manual.

2.4 Limited module procedures

Not applicable

2.5 Trace antenna designs

It is "not applicable" as trace antenna which is not used on the module.

2.6 RF exposure considerations

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment can be used in portable exposure conditions.

The host product manufacturer would provide the above information to end users in their end-product manuals.

2.7 Antennas

Inverted-L antenna; -2.1dBi; 2402 MHz～2480 MHz

2.8 Label and compliance information

The end product must carry a physical label or shall use e-labeling followed KDB784748D01 and KDB 784748 stating "Contains Transmitter Module FCC ID: K660D940X10".

2.9 Information on test modes and additional testing requirements

For more information on testing, please contact the manufacturer.

2.10 Additional testing, Part 15 Subpart B disclaimer

The modular transmitter is only FCC authorized for the specific rule parts (FCC Part 15.247) listed on the grant, and that the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed when contains digital circuity.

FCC Statements

(OEM) Integrator has to assure compliance of the entire end-product incl. the integrated RF Module. For 15 B (§15.107 and if applicable §15.109) compliance, the host manufacturer is required to show compliance with 15 while the module is installed and operating.

Furthermore the module should be transmitting and the evaluation should confirm that the module's intentional emissions (15C) are compliant (fundamental / out-of-band). Finally the integrator has to apply the appropriate equipment authorization (e.g. Verification) for the new host device per definition in §15.101.

Integrator is reminded to assure that these installation instructions will not be made available to the end-user of the final host device.

The final host device, into which this RF Module is integrated has to be labeled with an auxiliary label stating the FCC ID of the RF Module, such as "Contains FCC ID: K660D940X10".

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.

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.

The Integrator will be responsible to satisfy SAR/ RF Exposure requirements, when the module integrated into the host device.

Module statement

The single-modular transmitter is a self-contained, physically delineated, component for which compliance can be demonstrated independent of the host operating conditions, and which complies with all eight requirements of § 15.212(a)(1) as summarized below.

1) The radio elements have the radio frequency circuitry shielded.
2) The module has buffered modulation/data inputs to ensure that the device will comply with Part 15 requirements with any type of input signal.
3) The module contains power supply regulation on the module.
4) The module contains a permanently attached antenna.
5) The module demonstrates compliance in a stand-alone configuration.
6) The module is labeled with its permanently affixed FCC ID label.
7) The module complies with all specific rules applicable to the transmitter, including all the conditions provided in the integration instructions by the grantee.
8) The module complies with RF exposure requirements.

NOTE: 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 or more 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

IC Statements

The final host device, into which this RF Module is integrated" has to be labeled with an auxiliary label stating the IC of the RF Module, such as" Contains transmitter module IC: 511B-0D940X10".
Le périphérique hôte final, dans lequel ce module RF est intégré, doit être étiqueté avec une étiquette auxiliaire indiquant le CI du module RF, telle que "Contient le module émetteur IC: 511B-0D940X10".

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:
(1) This device may not cause interference.
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

(1) L' appareil ne doit pas produire de brouillage;
(2) L' appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d' en compromettre le fonctionnement.

Radio Frequency Exposure Statement for IC:
This equipment complies with IC exposure limits set forth for an uncontrolled environment. This equipment can be used in portable exposure conditions.

Déclaration d'exposition aux radiofréquences pour IC:
Cet équipement est conforme aux limites d'exposition IC établies pour un environnement non contrôlé. Cet équipement peut être utilisé dans des conditions d'exposition portables.