

## WML- 69 User Manual

The purpose of this manual is to explain correct way how to integrate module WML-68 to the end product. It includes procedures that shall assist you to avoid unforeseen problems.

This manual presents information that shows how module and OEM product, where module integrated, complies with regulations in certain regions. Any modifications, not expressly approved by the manufacturer could void the authority to operate in these regions.

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### 1. General

This Bluetooth radio module has to be installed and used in accordance with the technical description/installation instructions provided by the manufacturer.

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.

## 2. DESCRIPTION.

### 2.1 Model Number

WML-C69

### 2.2 Hardware: Version 1

This document describes the reference design for application as follows.

### 2.3 FEATURES

- Bluetooth Ver4.0 Low Energy Single Mode
- Host Interface : UART
- Frequency: 2402-2480MHz (World Wide)
- RF Channel band: 2MHz  
RF Channel number: 40ch
- Data Rate: 1Mbps
- Output Power: 0dBm Sensitivity: -84dBm
- Supply Voltage: 1.8V-3.6V
- Current Consumption  
Tx: 17mA, Rx: 15mA, Sleep: 0.6uA
- Operating temperature: -30 to +85 degree C
- Module size: 19.9mm x 10.8mm x 2.2mm

### 2.4 APPLICATIONS

Healthcare products, digital cameras, PC peripherals, PDA.

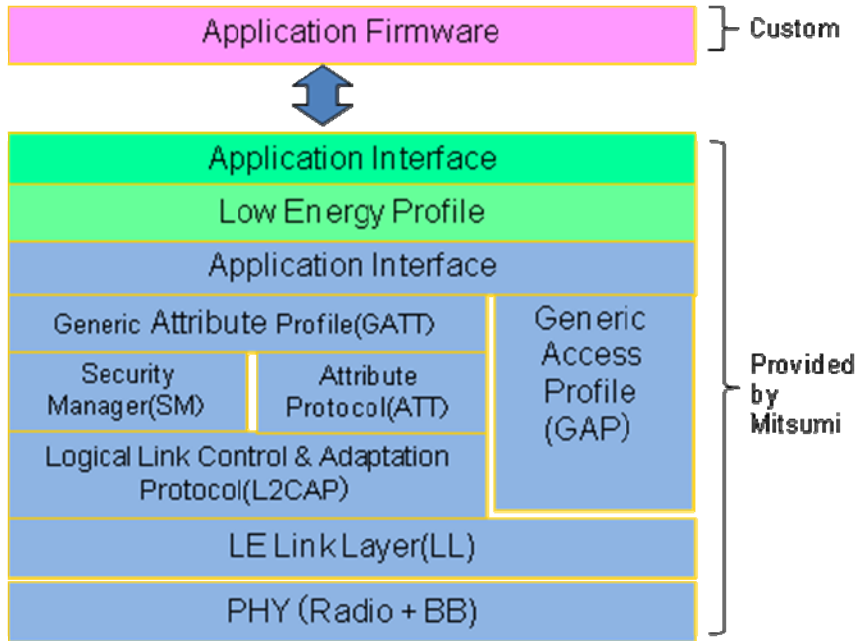
### 2.5 ARCHITECTONICS

WML-C69 has Bluetooth chip and Crystal inside.

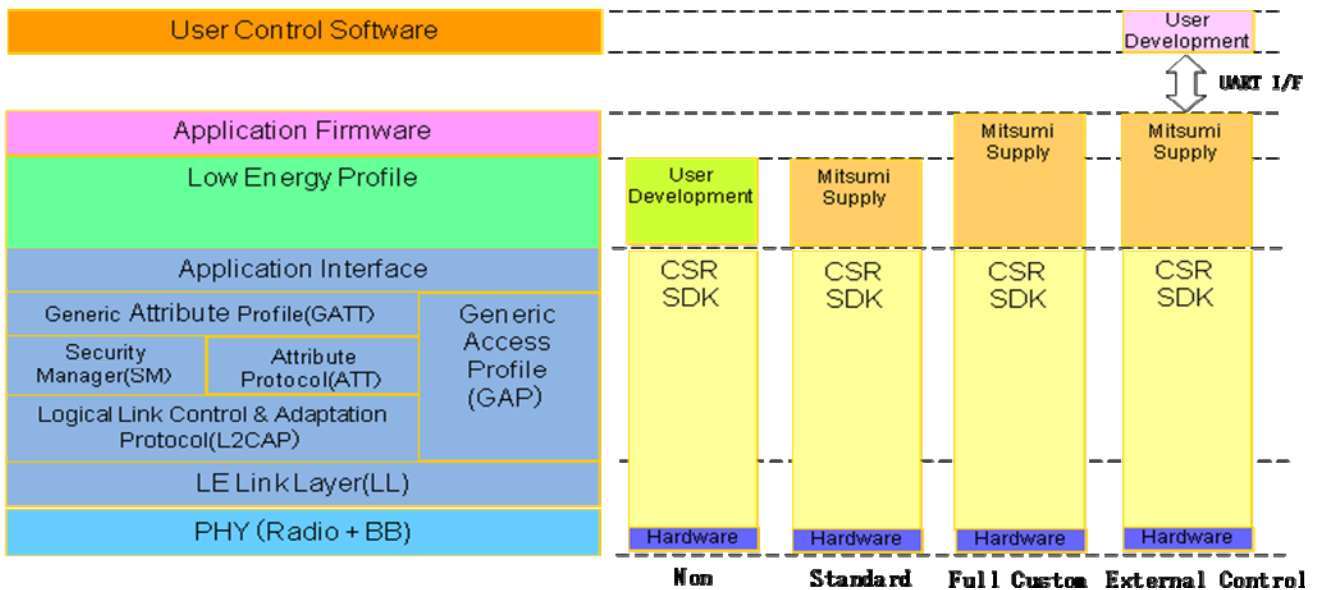
UART interface is used for customer's application.

Following figure shows Software Stack for WML-C69 and customer's application as example.

## 2.6 SOFTWARE LAYERS



## 2.7 SOFTWARE SUPPORT

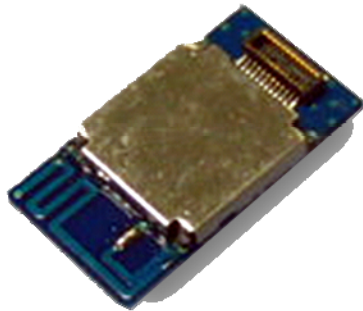


- Non : Mitsumi provides HW only (Software developed by customer)
- Standard : SIG- compliant Profiles (such as Proximity)
- Full Custom : SIG-compliant Profiles + User specification
- External Control : Standard, Full Custom + additional external I/F (external microprocessor)

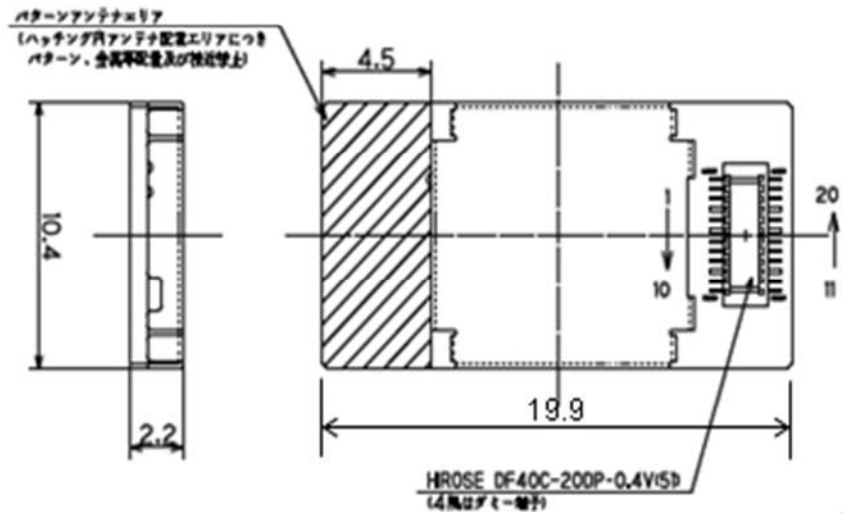
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## 2.8 DIMENSIONS



19.9 x 10.8 x 2.2mm



CONNECTOR:HIROSE:DF40C-20DP-0.4V(51)

No.	TERMINALS	No.	TERMINALS
1	GND	20	GND
2	PIO[10]	19	WAKE
3	PIO[9]	18	PIO[11]
4	SPI_MISO/PIO[8]	17	PIO[4]
5	SPI_MOSI/PIO[7]	16	SPI_SEL
6	SPI_CSB/PIO[6]	15	AIO[2]
7	SPI_CLK/PIO[5]	14	AIO[1]
8	UART_RX	13	AIO[0]
9	UART_TX	12	VDD
10	GND	11	GND

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### 3. European Community Declaration of Conformity with Regard to the R&TTE Directive 1999/5/EC

Hereby, MITSUMI declares that The Mitsumi module WML-C69 complies with the following directive and standards:

Directive **1999/5/EG** (R&TTE Directive):

**EN 300 328 V1.8.1 (2012-04)**, Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive

We hereby declare that the human exposure of the Mitsumi module WML-C69 is below the SAR limits specified in the EU recommendation 1999/519/EC (the applicable limits are specified in table 1 with 2W/kg).

The technical documentation as required by the Conformity Assessment procedure is kept at the following address :

2-11-2, TSURUMAKI, TAMA-SHI, TOKYO, 206-8567 JAPAN.

MITSUMI ELECTRIC CO.,LTD.

ENGINEERING DEPARTMENT

RF MODULE BUSINESS DIVISION

TEL: +81-42-310-5691

FAX: +81-42-310-5582

#### Labelling

CE conformity marking for product.



OEM product / application, where this radio module is integrated/ installed in , has to be labelled in accordance to R&TTE directive, Article 12. An auxiliary label is included in the packaging to the radio module, which can be used for that purpose and has to be permanently affixed to the OEM product/ application, otherwise OEM product must be approved separately.

Regulatory information on the OEM device should contain labelling that:

***Approved in accordance to R&TTE directive transmitter module marked by CE, manufactured by MITSUMI incorporated to OEM product.***

### 4. FCC Regulatory Information

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The Federal Communication Commission Radio Frequency Interference Statement includes the following paragraph:

This equipment has been tested and found to comply with the limits 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 radiates radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication.

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.

FCC RF Radiation Exposure Statement:

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Not Authorized modification could void authority to use this equipment.

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## Labelling.

MITSUMI module WML-C69 labelled as below.

## FCC ID : POO-WC69

FCC Regulatory information. OEM devise should contain labelling that:

Approved in accordance to FCC rules transmitter module marked by FCC-ID:POO-WML-C69 label, manufactured by MITSUMI incorporated to OEM product. When its not possible, in user manual should be included such information.

For example :

***“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.” This device contains  
FCC-ID:POO-WC69***

This label will be placed on the final product, clearly visible to all persons exposed to the transmitter. The specific location on the final product will be consistent with each same final product, but will vary in location across various final products, and in any case will always be clearly visible to all persons exposed to the transmitter. The physical size of the label and font size of the lettering will be dependent on the size of the final product, but in any case will always be clearly visible to all persons exposed to the transmitter.