

WiFi/BT Module U9W43

Operation Description

CONFIDENTIAL

Funai Electric Co., Ltd.

'22/1/24

Modular Specifications

Supported Standards/ Frequency Band

WiFi 2.4GHz (IEEE802.11b/g/n)	2412 to 2462MHz
WiFi 5GHz (IEEE802.11a/n/ac)	5.18 to 5.24GHz, 5.745 to 5.825GHz
Bluetooth (v5.1 BR/EDR/BLE)	2402 to 2480MHz

Supported/not supported Function

TPC Function not supported
USB 2.0
Wake on WLAN
Wake on Bluetooth

Operating Conditions

Operating Temperature: 0 to 60degC
Operating Voltage: DC3.3V +/-5%
Current Consumption: 1200mA max

Regulation

FCC 15.203,205,207,209,247(a)(2)/(b)(3)/(d)/(e),407(a)/(a)(5)/(b)/(b)(6)/(e)/(g)
ISED RS-247 Issue2, RSS-Gen Issue 5 (KDB 99669 D3 2.2)

Note: As for the other FCC rules, such as Part 15 subpart B, which apply to the host products of this module, host products are required to apply for the compliance testing.
(KDB 99669 D3 2.10)

Modular Specifications

WiFi Tx/Rx Data Rate

802.11b :	Up to 11Mbps
802.11a/g :	Up to 54Mbps
802.11n :	Up to 300Mbps
802.11ac :	Up to 867Mbps

WiFi Modulation

802.11b :	DSSS (DBPSK, DQPSK, CCK)
802.11a/g :	OFDM (BPSK, QPSK, 16-QAM, 64-QAM)
802.11n :	OFDM (BPSK, QPSK, 16-QAM, 64-QAM)
802.11ac :	OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM)

Bluetooth Data Rate

BR/BLE :	1Mbps
EDR :	2Mbps/ 3Mbps

Bluetooth Modulation

BR/BLE :	GFSK
EDR :	GFSK/DPSK

Modular Specifications

WiFi 2.4G Tx Power

802.11b :	+18.5dBm+2dB
802.11a/g :	+17.5dBm+2dB
802.11n :	+16.0dBm+2dB
802.11ac :	+14.5dBm+2dB

WiFi 5G Tx Power

802.11a/g :	+14dBm+2dB
802.11n :	+14dBm+2dB
802.11ac :	+14dBm+2dB

Bluetooth Tx Power

BR/BLE :	+8.0dBm+2dB
EDR :	+6.5dBm+2dB

Modular Specifications

<CH plan>

WiFi 2.4GHz

IEEE802.11b/g/n-HT20 : 1-11ch(2412-2462MHz)

IEEE802.11n-HT40 : 3-9ch(2422-2452MHz)

WiFi 5GHz

IEEE802.11a/n-HT20/ac-VHT20: 36-48ch(5180-5240MHz), 149-165ch(5745-5825MHz)

IEEE802.11n-HT40/ac-VHT40: 38-46ch(5190-5230MHz),151-158ch(5755-5795MHz)

IEEE802.11ac-VHT80: 42ch(5210MHz),155ch(5775MHz)

Bluetooth

BR/EDR: 0-78ch(2402-2480MHz)

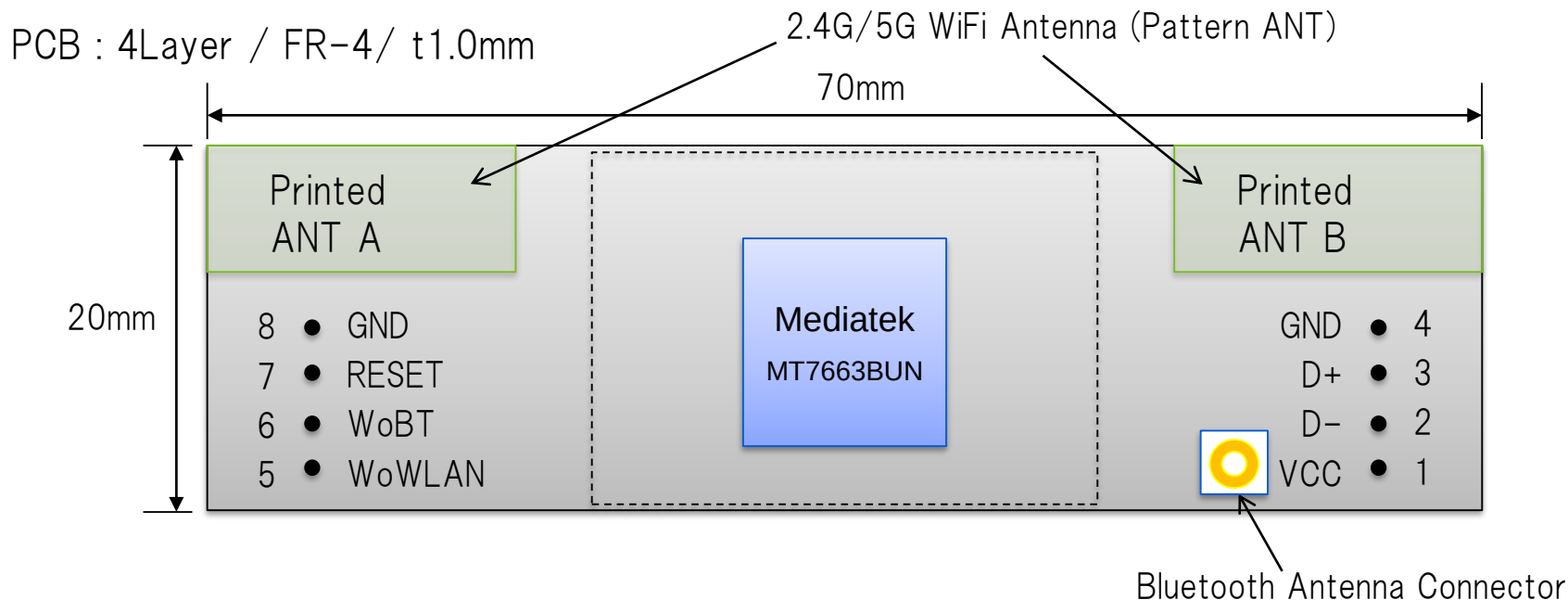
BLE : 0-39ch(2402-2480MHz)

<Other>

Tolerance of Transmission Frequency: +/- 20ppm

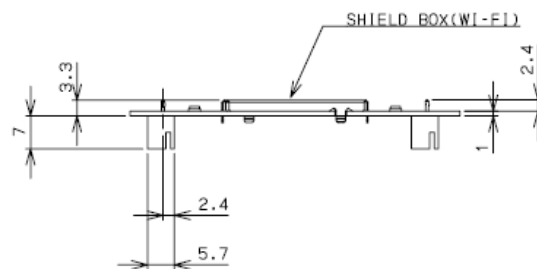
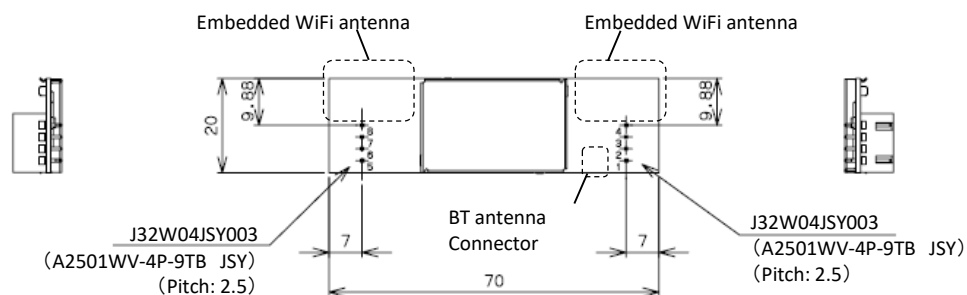
Crystal Oscillator: 40MHz fundamental

Module Size / Pin description



Pin No.	Name	Description
1	VCC	Power Supply (3.3V)
2	D-	USB D-
3	D+	USB D+
4	GND	Ground
5	WoWLAN	Low Active Output to indicate receiving WLAN Magic Packet
6	WoBT	Low Active Output to indicate receiving Bluetooth Magic Packet
7	RESET	Low Active Input to RESET module
8	GND	Ground

Module Outline



Pin No.	Name
1	3.3V
2	D-
3	D+
4	GND
5	WoWLAN
6	WoBT
7	RESET
8	GND

MODEL :

Approved	Checked	Checked	Drawn

Part name			
WI-FI MODULE OUTLINE (外觀図)			
Revision	Tolerance	Material	Drawn
△ / / -	0~25 ±0.1	---	
△ / / -	25~50 ±0.15		
△ / / -	50~100 ±0.2		
△ / / -	100~250 ±0.3	Q'ty	Model No.
△ / / -	250~ ±0.4	---	
△ / / -	±1.0'		



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FUNAI ELECTRIC CO., LTD.



Scale
1:1

Part No. & Drawing No. <Page No.>
1 of 1

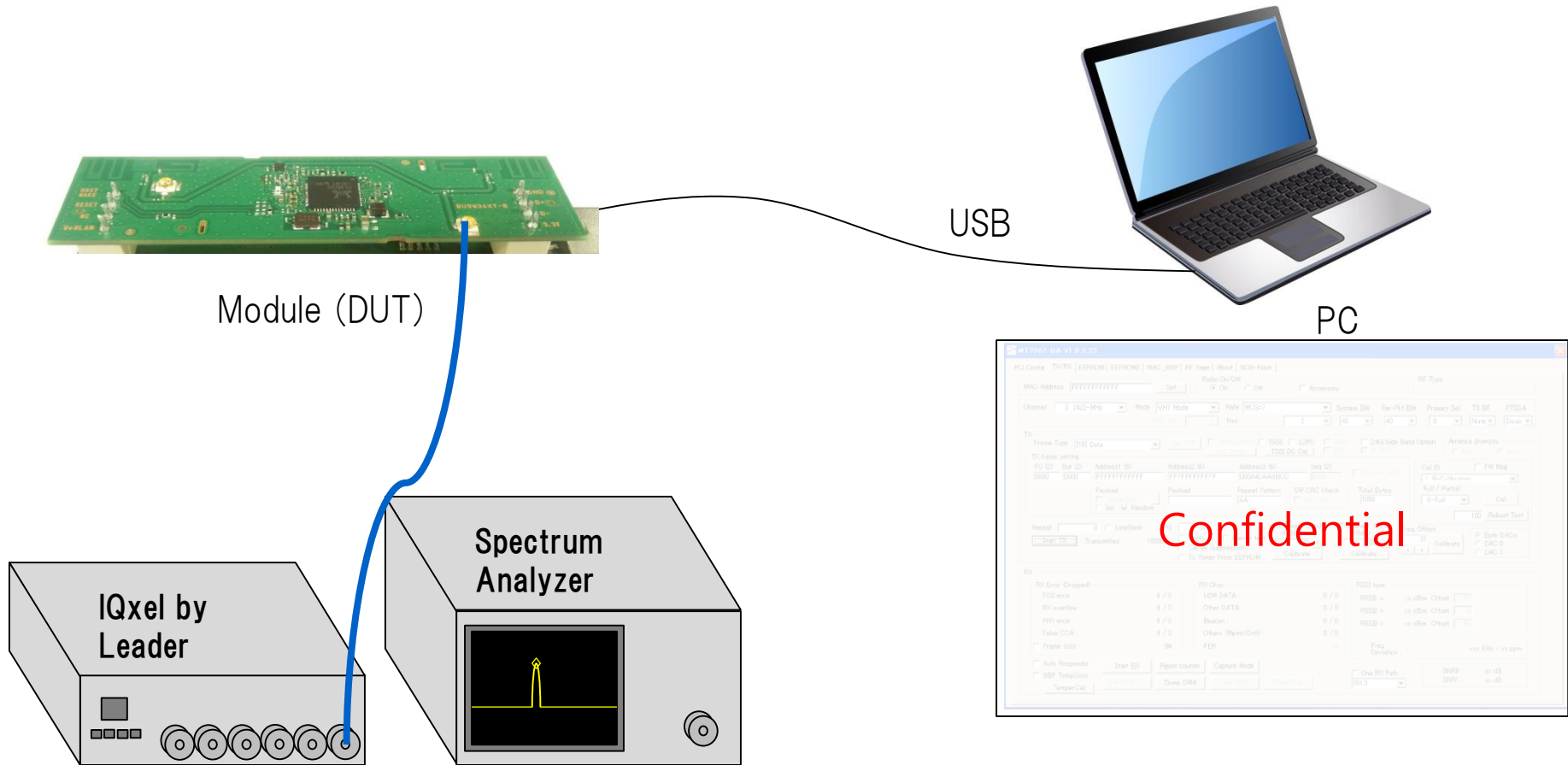
MA305-B

Size:A3

図形寸法は記入寸法と異なることがあるから図形を参照しないです。

DO NOT MEASURE FROM THIS DRAWING.

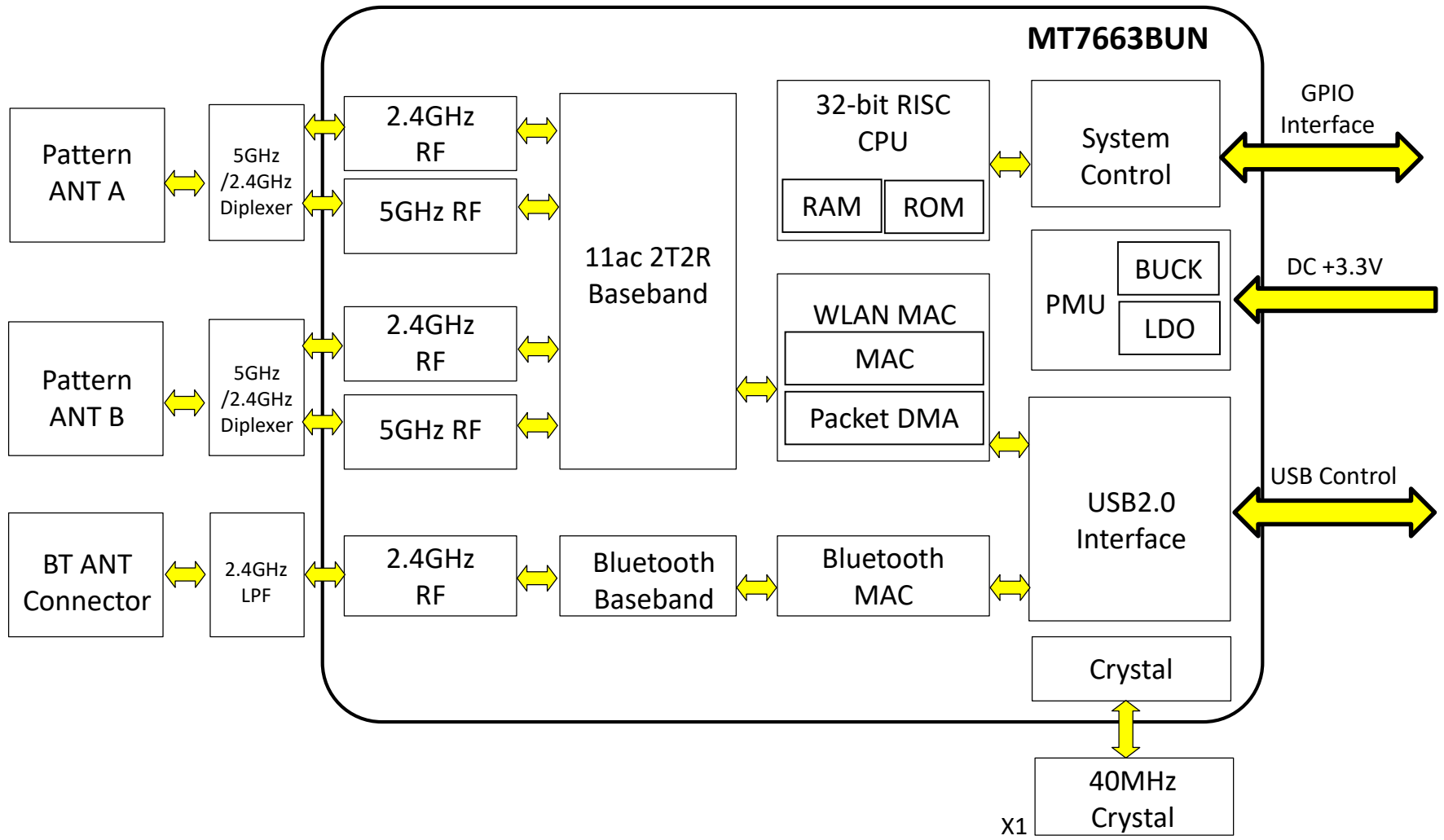
Method to control Module for measurement



control using MP Tool provided from Realtek

The module can be entered to the test mode by using Mediatek QA tool, and can be tested In different operational conditions.
(KDB 996369 D03 2.9)

WiFi/BT Module U9W43 Block Diagram

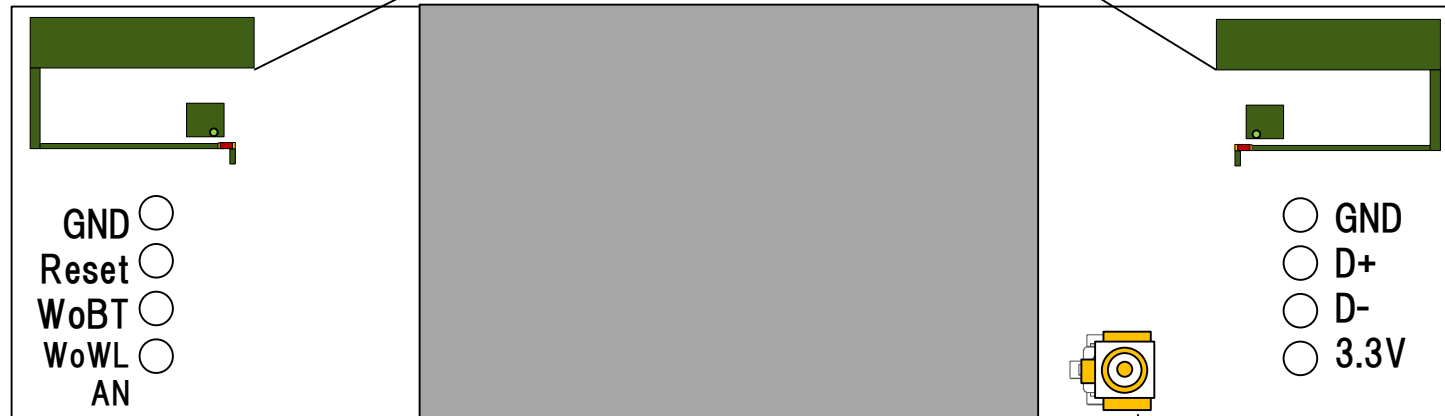


ANT Specifications

2.4G/5G WiFi Antenna (Pattern ANT)

Print ANT A
2.412~2.472, 5.180~5.320,
5.500~5.700GHz

Print ANT B
2.412~2.472, 5.180~5.320,
5.500~5.700GHz



Connector for External
Bluetooth Antenna
2.402~2.480GHz

- WiFi Antenna A, B : $\lambda/4$ monopole antenna
- Bluetooth Antenna : External PCB Antenna

Antenna Specifications

The antenna used for this product are monopole antenna that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is as following.

(KDB996369 D03 2.7)

WiFi 2.4GHz Antenna

Antenna Type :	PCB Antennas (Antenna A/B)
Antenna Gain:	-1.04dBi max (Antenna A)
	-2.61dBi max (Antenna B)

WiFi U-NII-1 Band (5.15-5.25GHz) Antenna

Antenna Type :	PCB Antennas (Antenna A/B)
Antenna Gain:	1.42dBi max (Antenna A)
	1.25dBi max (Antenna B)

WiFi U-NII-3 Band (5.725-5.85GHz) Antenna

Antenna Type :	PCB Antennas (Antenna A/B)
Antenna Gain:	0.98dBi max (Antenna A)
	-0.28dBi max (Antenna B)

External Bluetooth Antenna

Antenna Type :	PCB Antenna (Vender Mgear)
Antenna Gain:	-0.42dBi max

The module has been certified for integration into products only by the host integrators under the following condition.

- This module must be located such that a minimum separation distance of at least 20cm is maintained between the radiator (antenna of this module) and all persons at all times.

(KDB996369 D03 2.6)

End Product Labeling

The module is labeled with its own FCC ID and IC Certification Number. If the FCC ID and IC Certification Number are not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. In that case, the final end product must be labeled in a visible area with the following.

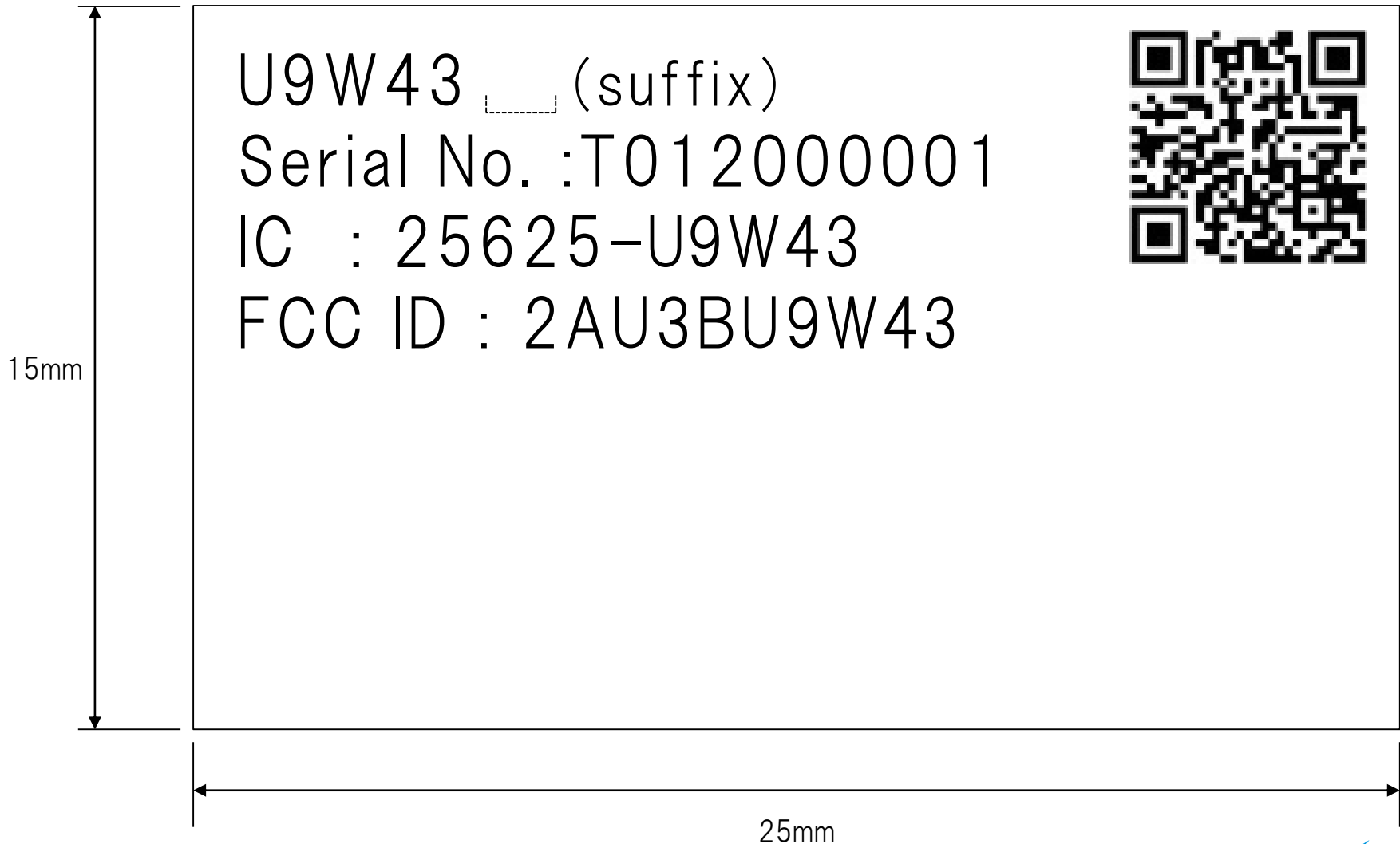
“Contains FCC ID: 2AU3BU9W43

Contains IC: 25625-U9W43”

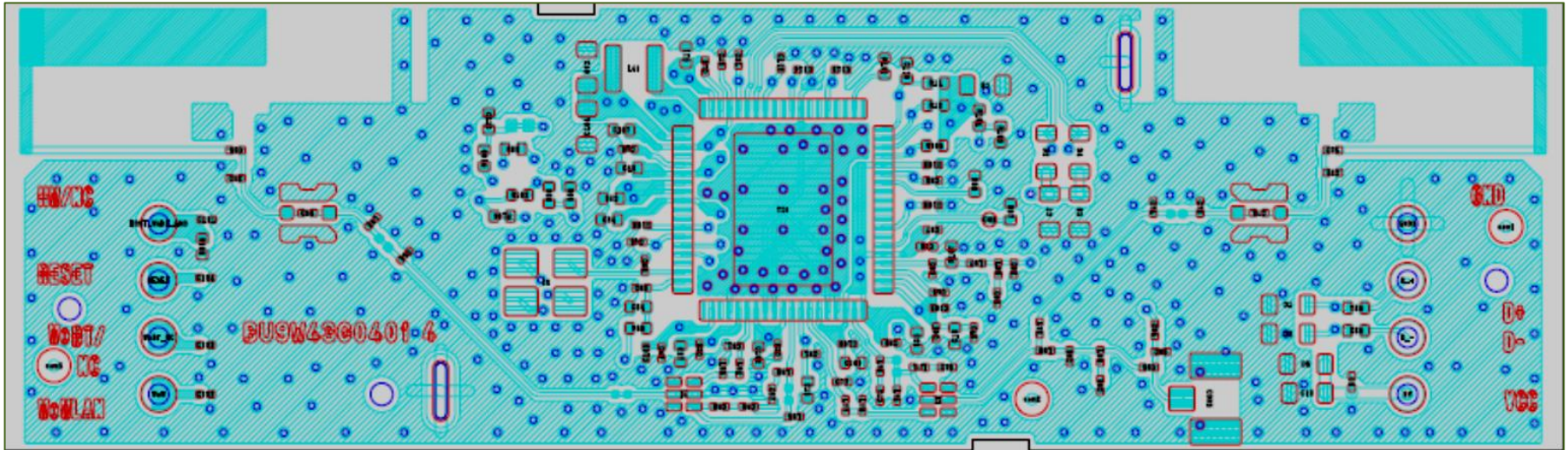
(KDB996369 D03 2.8)

Module Label

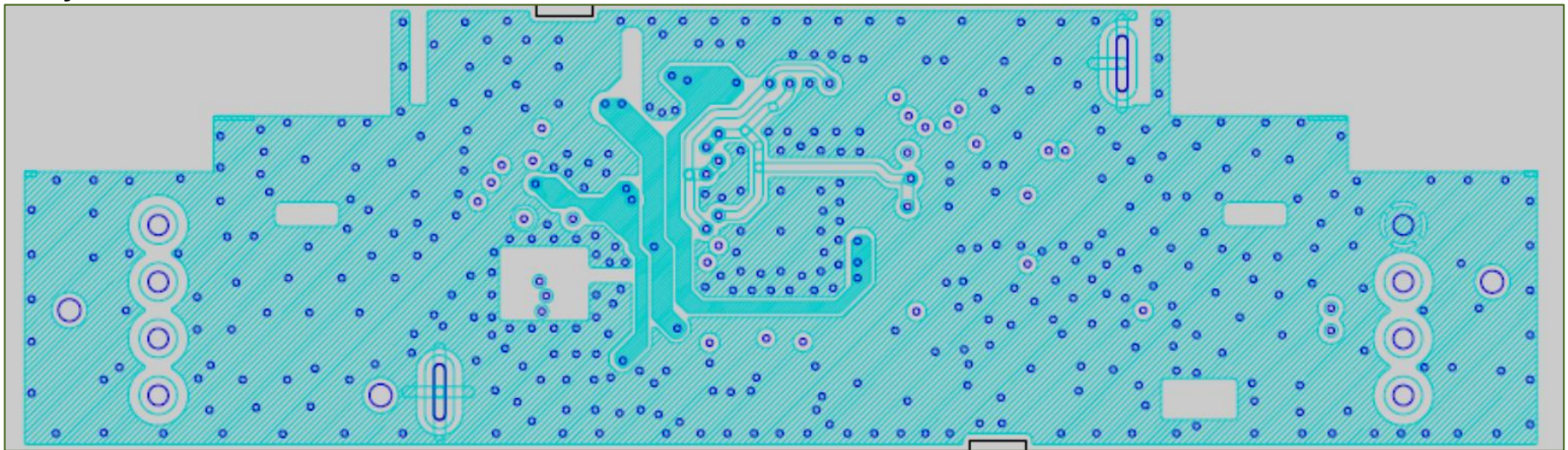
The module label should be located at the position described in P.7., and should not be peeled off easily.



PCB Layout (top view)

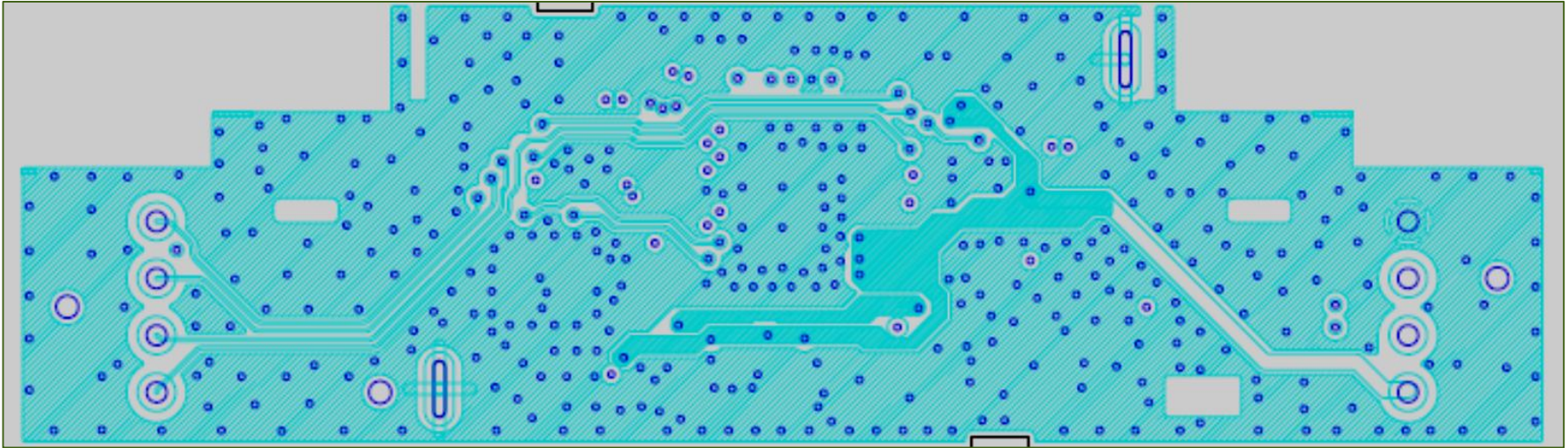


Layer 1

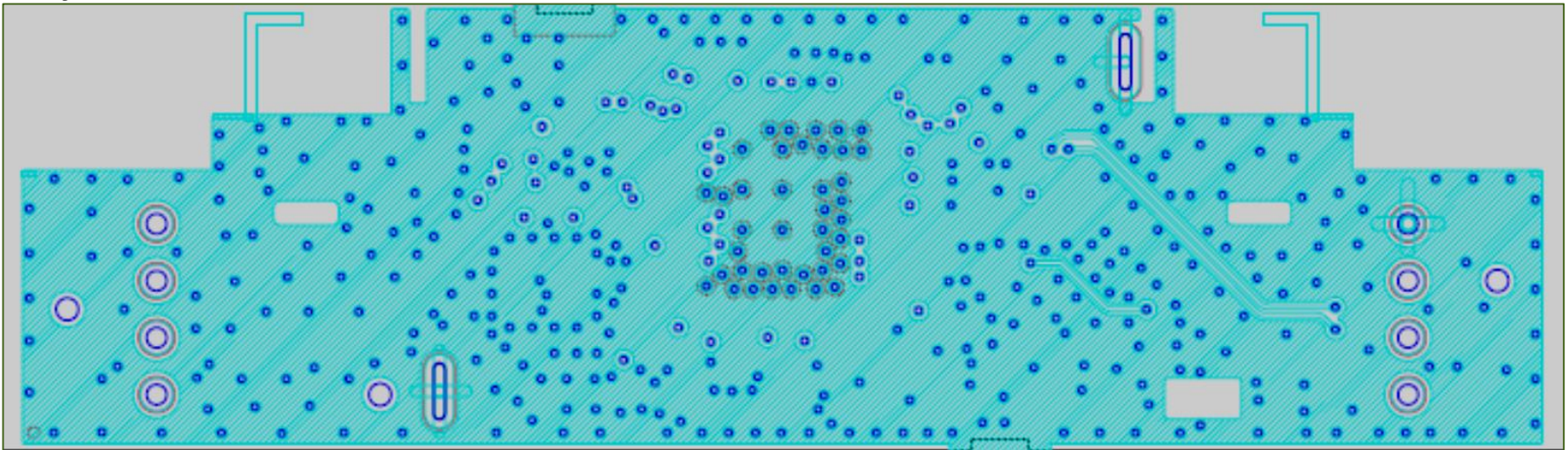


Layer 2

PCB Layout



Layer 3



Layer 4