

Wi-Fi Module U9W44

User Manual

CONFIDENTIAL

Funai Electric Co., Ltd.

'23/12/18

Modular Specifications

Supported Standards/ Frequency Band

Wi-Fi 2.4GHz (IEEE802.11b/g/n)	2412 to 2462MHz
Wi-Fi 5GHz (IEEE802.11a/n/ac)	5.18 to 5.24GHz, 5.745 to 5.825GHz

Supported/not supported Function

TPC Function not supported
USB 2.0
Wake on WLAN

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

Wi-Fi Data Rate

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

Wi-Fi 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/LE :	1Mbps
EDR :	2Mbps/ 3Mbps

Bluetooth Modulation

BR/LE :	GFSK
EDR :	GFSK/DPSK

Modular Specifications

Wi-Fi 2.4G Tx Power

802.11b :	+16.5dBm (1-2Mbps)
	+19.5dBm (5.5-11Mbps)
802.11g :	+19.5dBm
802.11n :	+18.5dBm

Wi-Fi 5G Tx Power

802.11a :	+15.5dBm
802.11n :	+15.5dBm
802.11ac	+15.5dBm

Bluetooth Tx Power

BR/BLE :	+9.5dBm
EDR :	+9.5dBm

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), 151-159ch(5755-5795MHz)

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

Bluetooth

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

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

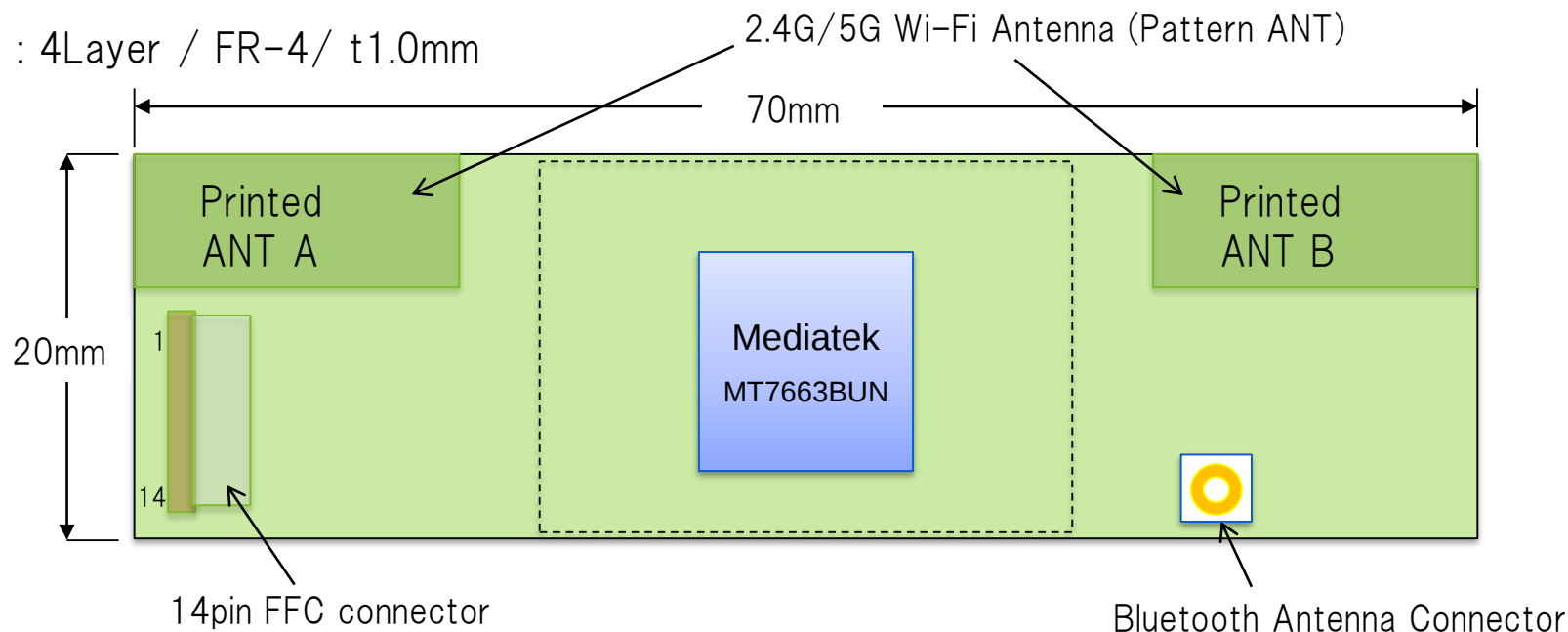
<Other>

Tolerance of Transmission Frequency: +/- 20ppm

Crystal Oscillator: 40MHz fundamental

Module Size / Pin description

PCB : 4Layer / FR-4/ t1.0mm

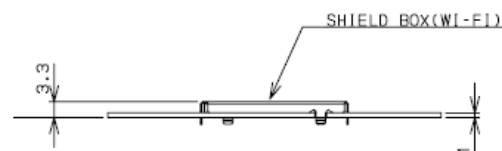


Pin No.	Name	Description
1-3	GND	Ground
4	D+	USB D+
5	D-	USB D-
6-8	VCC	Power Supply (3.3V)
9	WoWLAN	Low Active Output to indicate receiving WLAN Magic Packet
10	RESET	Low Active Input to reset module
11	WoBT	Low Active Output to indicate receiving Bluetooth Magic Packet
12-14	GND	Ground



FFC Connector

Pin No.	Name
1-3	GND
4	D+
5	D-
6-8	3.3V
9	WoWLAN
10	RESET
11	WoBT
12-14	GND



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		
		公差		---	

船井電機株式会社

FUJIN ELECTRIC CO., LTD.

Projection

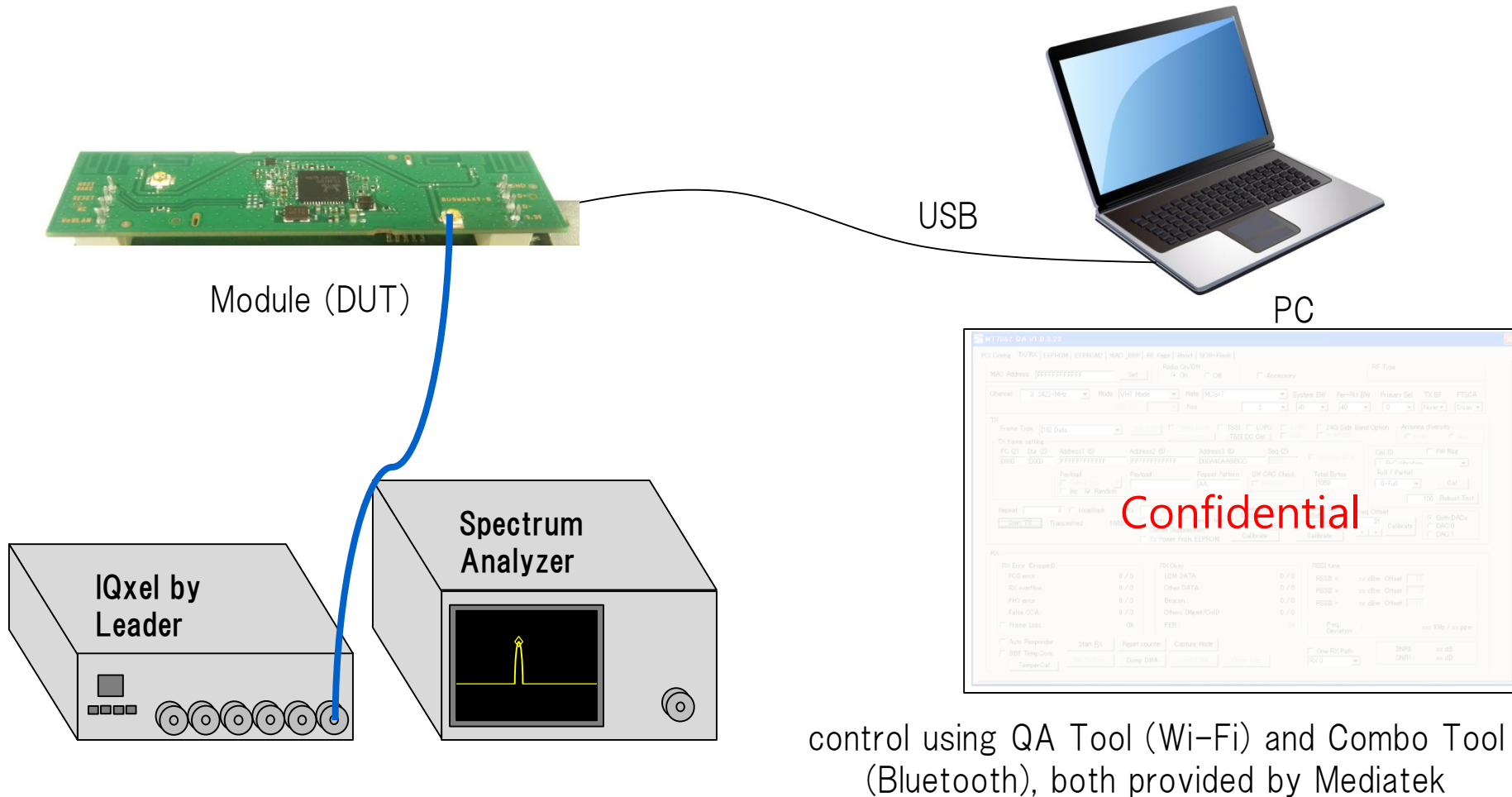
Scale

1 : 1

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

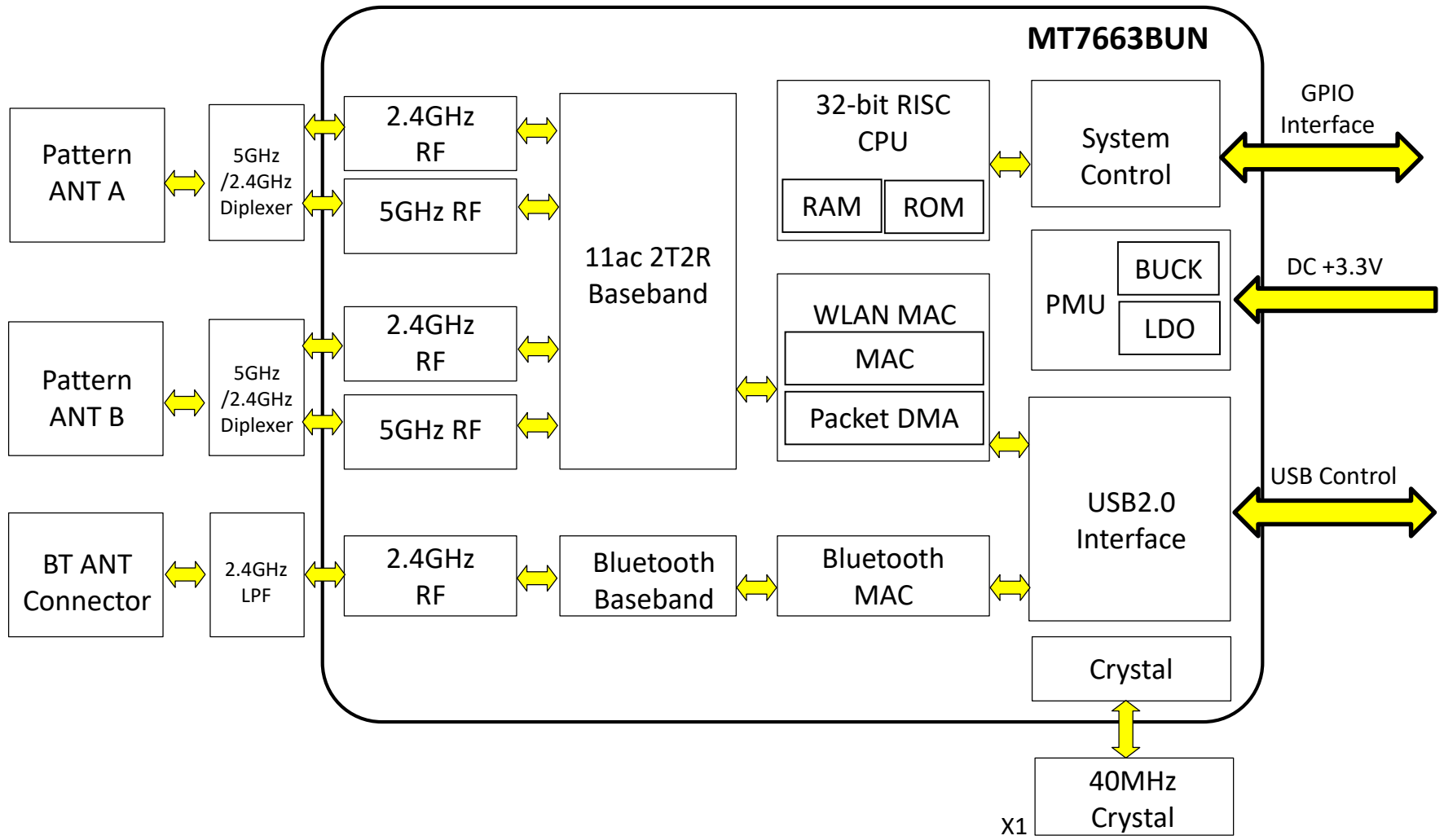
1 of 1

Method to control Module for measurement



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

Wi-Fi/BT Module U9W44 Block Diagram

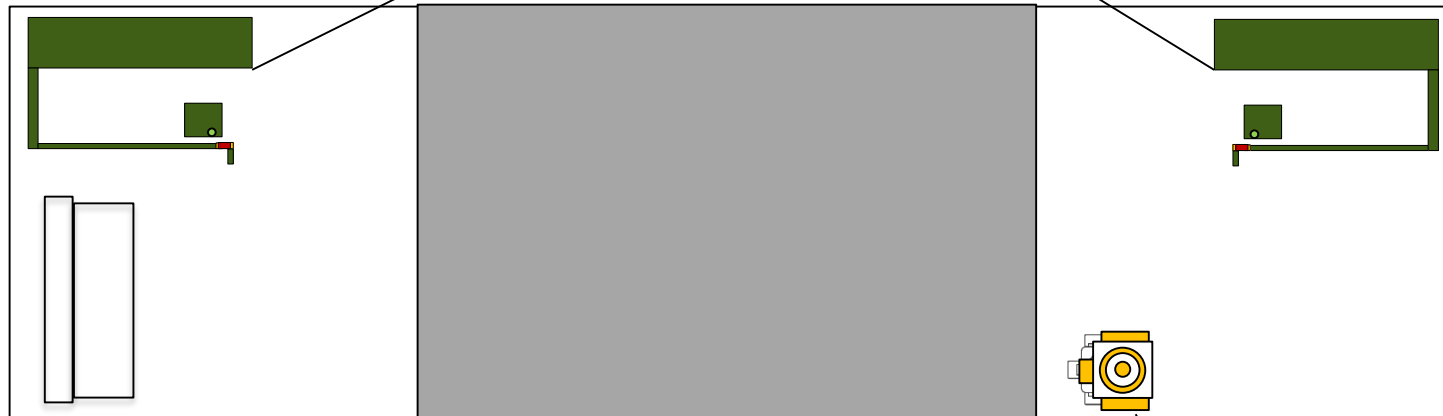


ANT Specifications

2.4G/5G Wi-Fi Antenna (Pattern ANT)

Print ANT A
2.412~2.462, 5.180~5.240,
5.745~5.825GHz

Print ANT B
2.412~2.462, 5.180~5.240,
5.745~5.825GHz



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

Connector for External
Bluetooth Antenna
2.402~2.480GHz

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)

Bluetooth (2.402-2.480GHz) Antenna

Antenna Type :	External PCB Antenna
	Vender: M-gear (Wha Yu Group), Part No.: C1914-510**-A
Antenna Gain:	-0.42dBi max

Wi-Fi 2.4GHz Antenna

Antenna Type :	Embedded Pattern Antennas (Antenna A/B)
Antenna Gain:	-3.77dBi max (Antenna A)
	-1.15dBi max (Antenna B)

Wi-Fi U-NII-1 Band (5.15-5.25GHz) Antenna

Antenna Type :	Embedded Pattern Antennas (Antenna A/B)
Antenna Gain:	1.91dBi max (Antenna A)
	-2.55dBi max (Antenna B)

Wi-Fi U-NII-3 Band (5.725-5.85GHz) Antenna

Antenna Type :	PCB Antennas (Antenna A/B)
Antenna Gain:	3.12dBi max (Antenna A)
	0.38dBi max (Antenna B)

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: 2AU3BU9W44

Contains IC: 25625-U9W44”

(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.

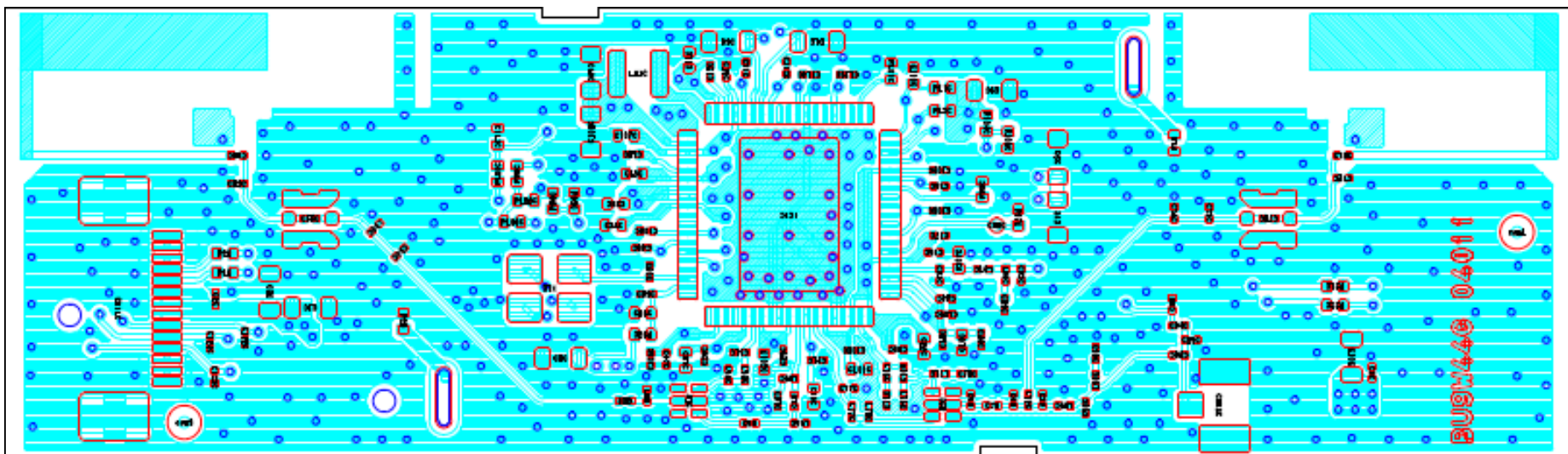
U9W44 (suffix)
Serial No. :T*****
IC : 25625-U9W44
FCC ID : 2AU3BU9W44



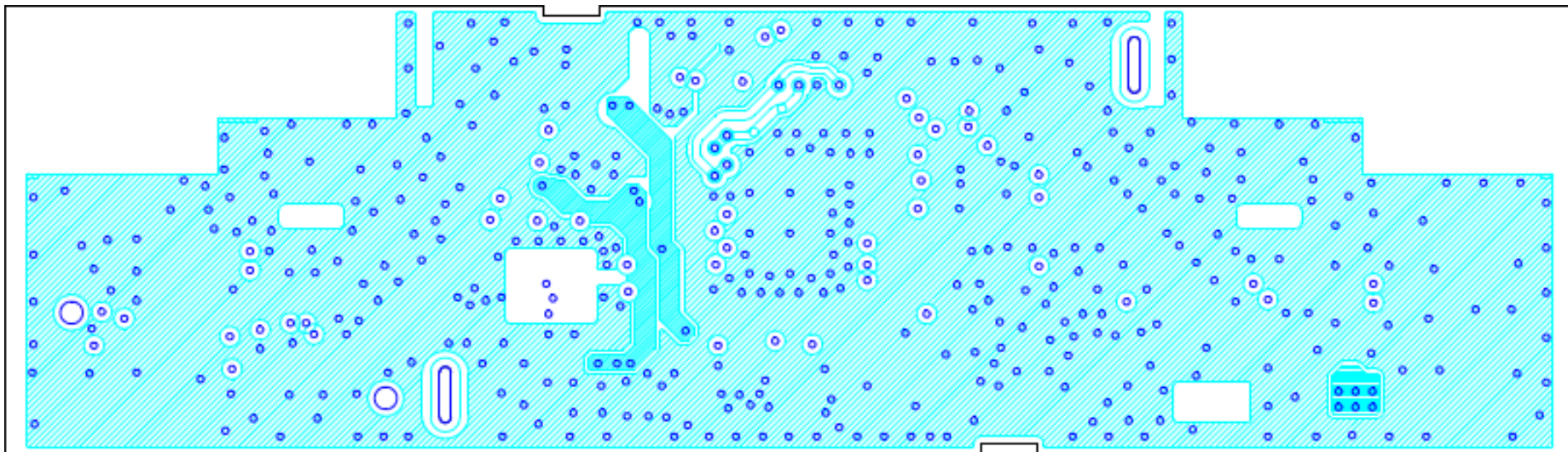
15mm

25mm

PCB Layout (Top View)

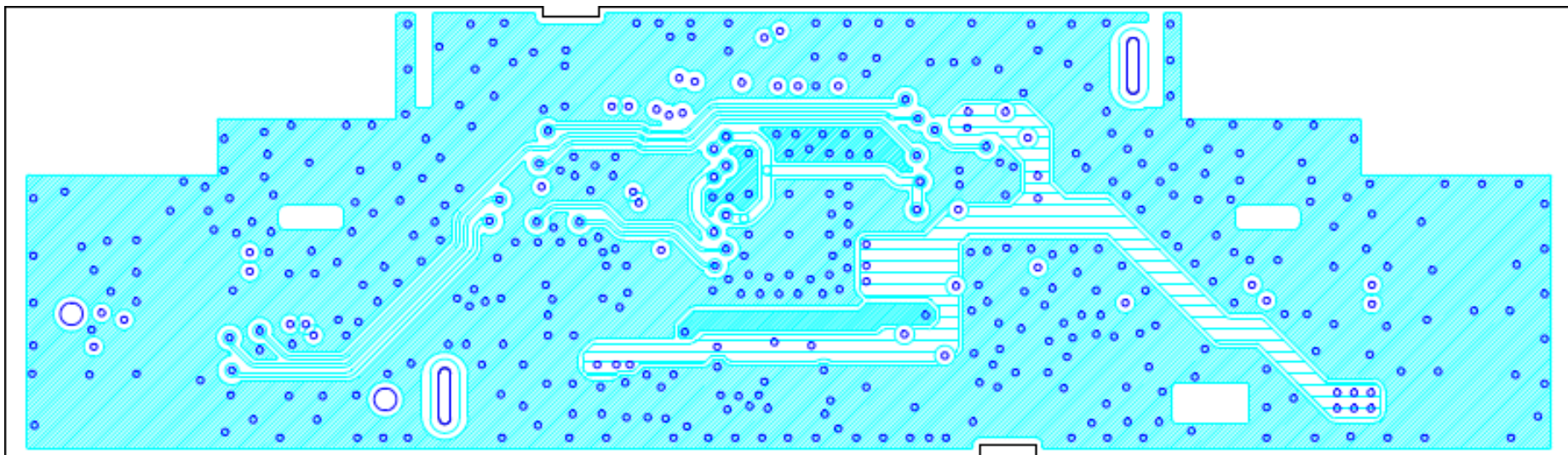


Layer 1

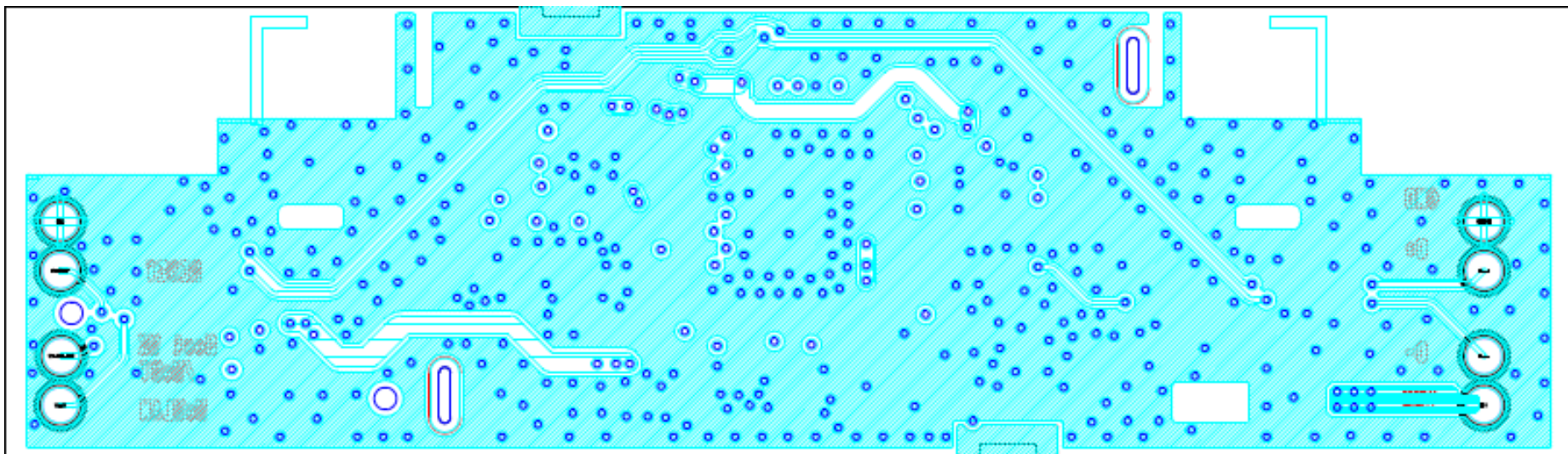


Layer 2

PCB Layout (Top View)



Layer 3



Layer 4