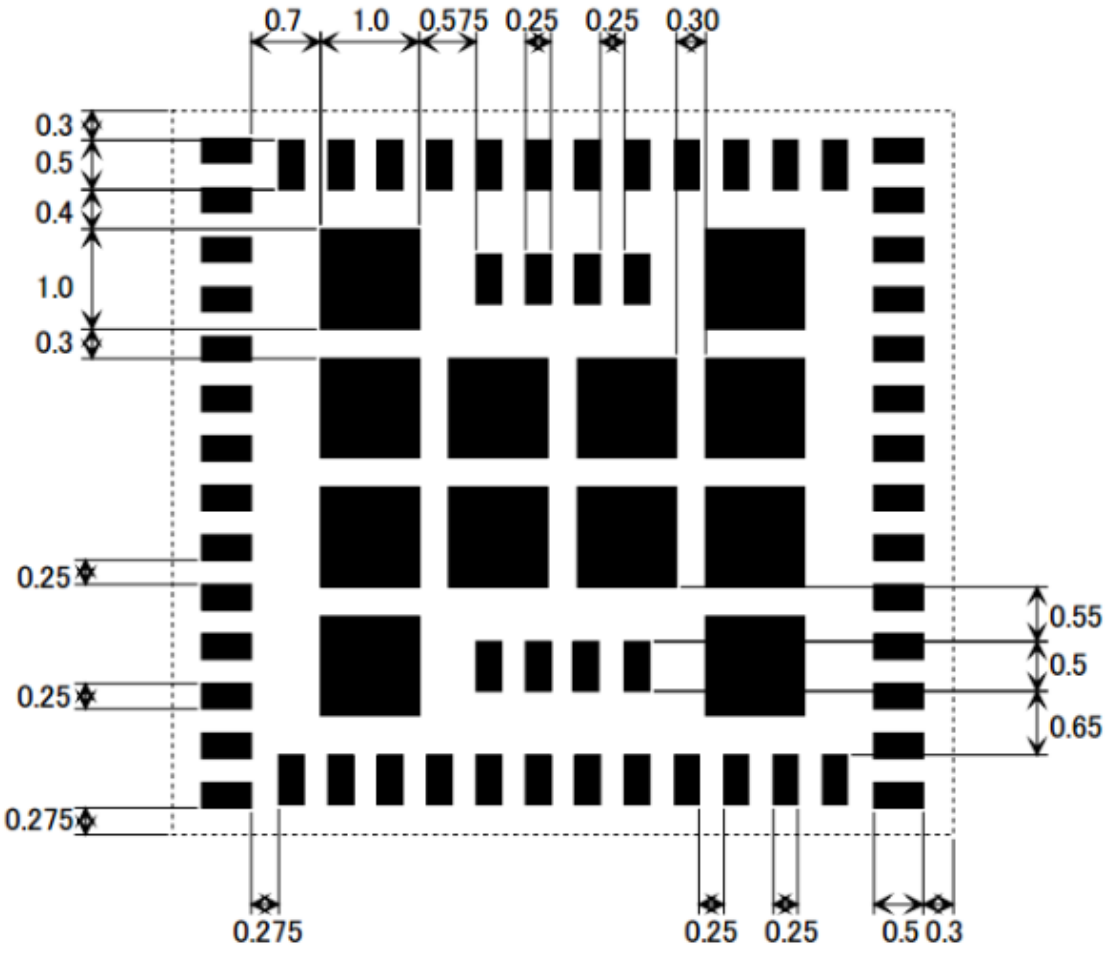
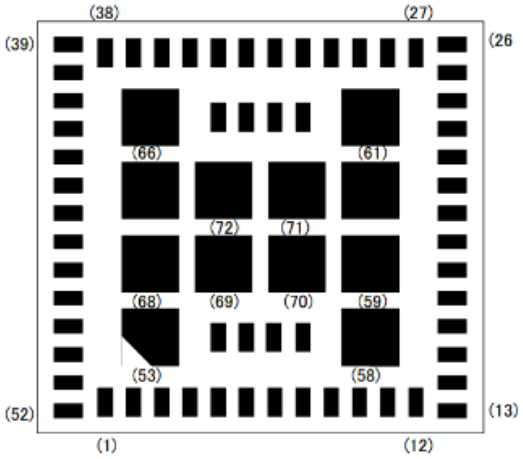
FCC ID: UXU1MW

IC: 7316A-1MW

Land Pattern TOP View



* To avoid the short-circuit between the side shielding and a solder on the module land after the reflow, please locate the module land at 0.2mm away from module outline as above figure.



Pin No.	Description	Pin No.	Description	Pin No.	Description	Pin No.	Description
1	GPIO_6	19	GND	37	I2S_CLK	55	GND
2	GPIO_0	20	SDIO_CLK	38	I2S_WS	56	GND
3	GPIO_3	21	GND	39	GND	57	JTAG_SEL
4	GPIO_5	22	VBAT_LDO	40	BT_DEV_WAKE	58	GND
5	GPIO_1	23	VBAT_SR	41	BT_HOST_WAKE	59	GND
6	GPIO_4	24	SR_PVSS	42	I2S_DI	60	GND
7	GPIO_2	25	VIN_LDO	43	NC	61	GND
8	BT_REG_ON	26	SR_PVSS	44	GND	62	BT_GPIO_4
9	WL_REG_ON	27	SR_PVSS	45	BT_UART_RXD	63	BT_GPIO_3
10	GND	28	SR_VLX	46	BT_UART_TXD	64	BT_GPIO_2
11	VIO	29	GND	47	BT_UART_RTS_N	65	BT_GPIO_5
12	GND	30	LPO_IN	48	BT_UART_CTS_N	66	GND
13	GND	31	GPIO_7	49	GND	67	GND
14	SDIO_DATA0	32	BT_PCM_IN	50	ANT	68	GND
15	SDIO_CMD	33	BT_PCM_SYNC	51	GND	69	GND
16	SDIO_DATA1	34	BT_PCM_OUT	52	GND	70	GND
17	SDIO_DATA2	35	BT_PCM_CLK	53	GND	71	GND
18	SDIO_DATA3	36	I2S_DO	54	NC	72	GND

Supply Voltage

Parameter		Min.	Typ.	Max.	Unit
Operating Temperature*1		-30	25	+85	deg.C
Supply Voltage	VBAT	3.2	3.3	4.8	V
	VIO*2 1.8V/**3.3V**	1.62	-	3.63	V

*1: Surface temperature of the shield case
Functionality is guaranteed but specifications require derating at extreme temperatures
*2: VIO don’t influence the RF characteristic. Tolerance of 1.8V and 3.3V is ±10%.

Antenna

■Please perform the antenna design that followed the specifications of the antenna.
■About the signal line between an antenna and a module
It is a 50-ohm line design.
Fine tuning of return loss etc. can be performed using a matching network.
However, it is required to check "Class1 change" and "Class2 change" which the authorities define then.
The concrete contents of a check are the following three points.
１） It is the same type as the antenna type of antenna specifications.
２） An antenna gain is lower than a gain given in antenna specifications.
３） The emission level is not getting worse.
■50-ohm line(microstrip line length)

Antenna type: stamped metal antenna

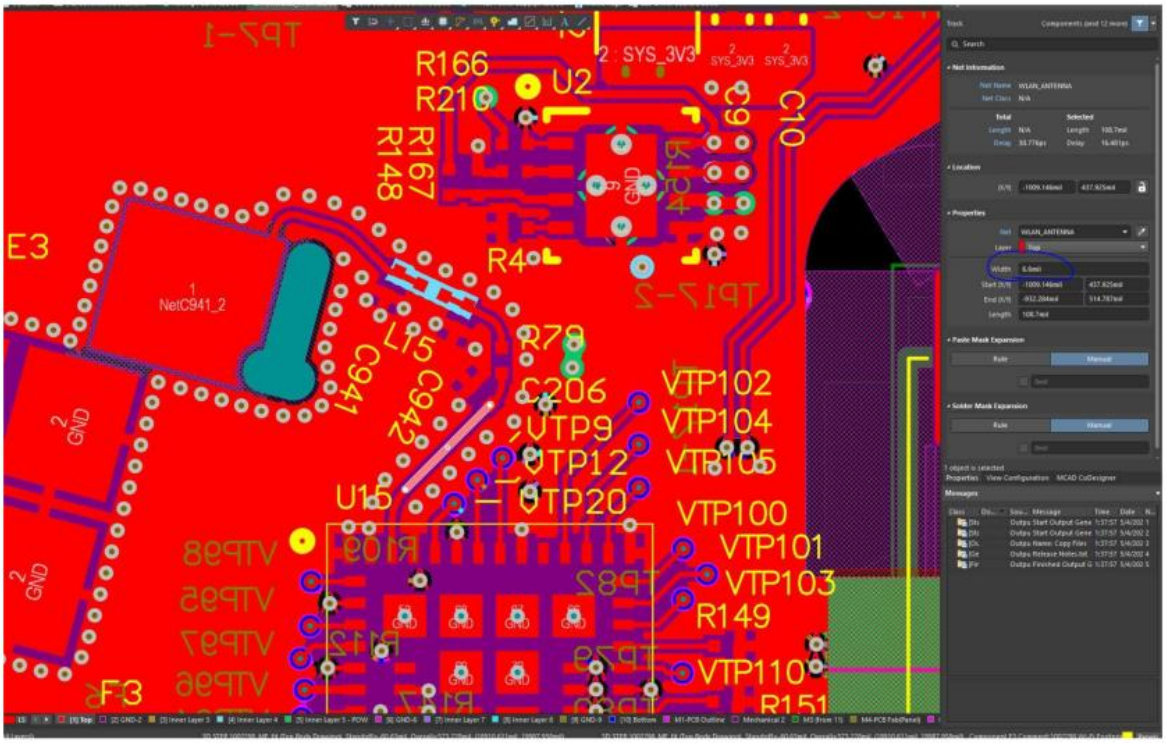
50-ohm feed line length: 0mm

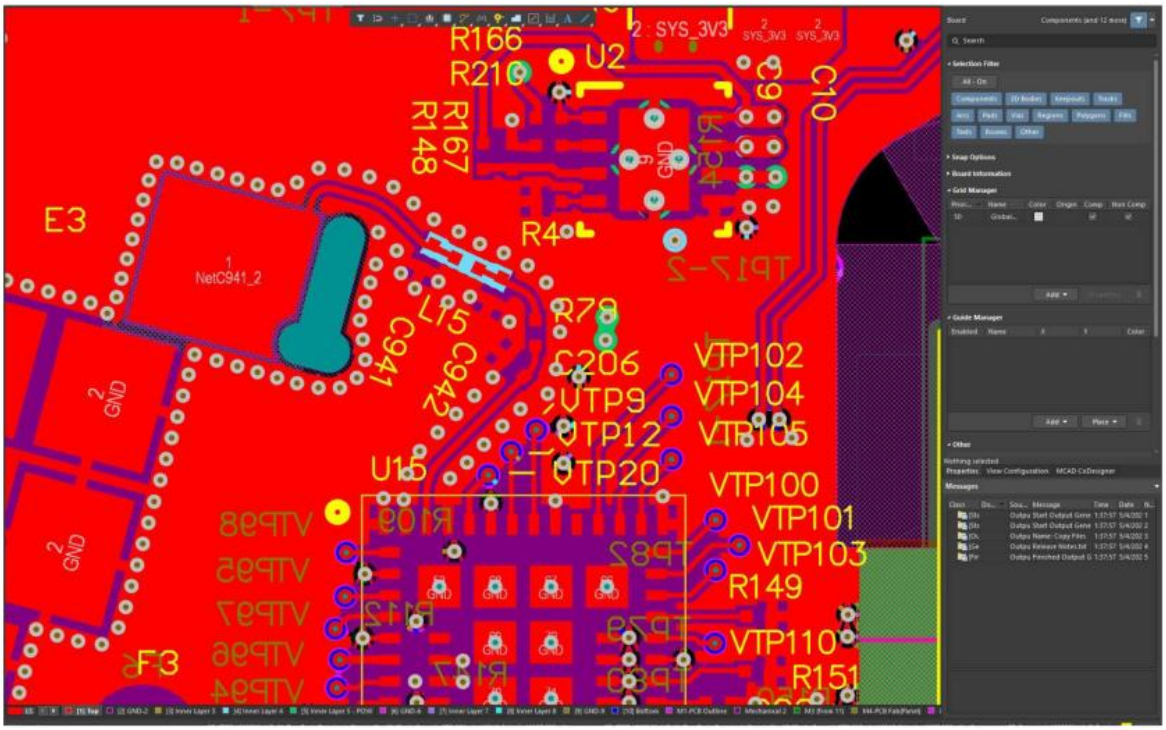
Trace: approx. 0.8mm wide. Total trace length approximately 15 mm

Antenna pads are 1.15 x 1.15 mm square

CAD showing PCB trace from the Murata 1MW module to the antenna

Trace width = 6.6mil





KYOCERA AVX

DATASHEET
Part No. 1002298
Product: Wi-Fi Dual Band or V2X Stamped Metal Embedded Antenna

Part No. 1002298

Wi-Fi / BT Dual Band or V2X Stamped Metal Embedded Antenna

2.4 / 5 GHz or 5.850-5.925 GHz

Supports: Wi-Fi applications, Agriculture, Automotive, Bluetooth, Zigbee, WLAN, Smart Home, Healthcare, Digital Signage

*V2X tuning offered in Appendix 1

Stamped Metal Wi-Fi / BT / V2X Embedded Antenna

2.4 GHz; 5 GHz

KYOCERA AVX Stamped Metal antennas deliver on the key needs of device designers for higher functionality and performance in smaller/thinner designs. These innovative antennas provide compelling advantages for WLAN/V2X enabled devices, media players, routers, and other wireless devices.

Greater Flexibility

KYOCERA AVX first-in-class technology enables you to develop concept designs that are more advanced and that deliver superior performance in reception critical applications. The 1002298 can also achieve V2X performance with proper tuning shown on Appendix 1.

Electrical Specifications

Typical performance on 75 x 75 mm PCB

Frequency (GHz)	2.400 – 2.485	5.150 – 5.825	5.850– 5.925
Peak Gain	3.6 dBi	5.1 dBi	Refer to Appendix 1
Average Efficiency	78%	70%	
VSWR Match	2.0:1 max		
Feed Point Impedance	50 ohms unbalanced		
Polarization	Linear		
Power Handling	0.5 Watt CW		

Mechanical Specifications & Ordering Part Number

Ordering Part #	1002298
Dimensions (mm)	16.1 x 17.95 x 10.55
Mounting Type	SMT (P&P)
Weight (grams)	0.85
Packaging	Tape & Reel, 150 pcs/Reel
Demo Board	1003666-02

KEY BENEFITS

Stay-in-Tune

KYOCERA AVX antenna technology provides superior RF field containment, resulting in less interaction with surrounding components.

Quicker Time-to-Market

By optimizing antenna size, performance and emissions, customer and regulatory specifications are more easily met.

Reliability

Products are the latest RoHS version compliant.

APPLICATIONS

- Embedded design
- Cellular, Headsets, Tablets
- Gateway, Access Point
- Handheld
- Telematics
- Tracking
- Healthcare
- M2M, Industrial devices
- Smart Grid
- V2X
- OBD-II

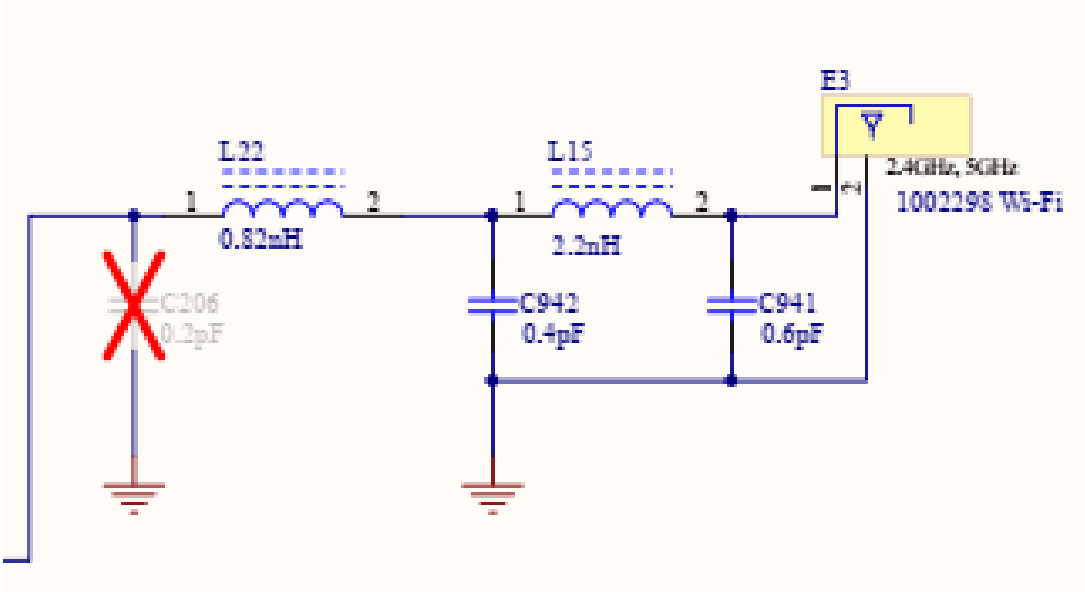
Appendix 1

Appendix 1 gives instructions on how to achieve V2X performances through impedance matching network.

(5.850 – 5.925 GHz)

Frequency (GHz)	5.850– 5.925
Peak Gain	3.8 dBi
Average Efficiency	64%
VSWR Match	2.0:1 max
Feed Point Impedance	50 ohms unbalanced
Polarization	Linear
Power Handling	0.5 Watt CW

*Data shown above has Appendix 1 matching applied on 75 x 75 mm pcb.



Reference trace