vizmo

FREEDOM FROM WIRES

DATASHEET

nE2-4950

IEEE 802.11 a/n, MIMO

High-Performance, 2x2 MIMO MiniPCIe Radio Module

Tri Band

4.9 GHz to 5.9 GHz supporting 4.9 GHz, UNII-B1,B2A,B2C and B3 Bands

Industrial grade

-40 deg C to +85 deg C operation temperature

dun & bradstreet

Business Eminence Awards 2020 Singapore

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LAST UPDATED ON JUN-02-24
HW REV# 06.00

TECHNICAL SPECIFICATION

RADIO MODULE – GENERAL INFO	
Chipset	AR 9592-AR1B
EEPROM	EEPROM, SERIAL 32KBIT
Operating frequency (11b/g/n)	4920 MHz to 5825 MHz (Operating Channels)
Data rate-11g (SISO) Data rate-11n (MIMO) Data rate-11n (MIMO)	6Mbps, 9Mbps, 12Mbps, 24Mbps, 36Mbps, 48Mbps,54Mbps MCS0, MCS1, MCS2, MCS3, MCS4, MCS5, MCS6, MCS7 MCS8.MCS9.MCS10,MCS11,MCS12,MCS13,MCS14,MCS15
Channel BW	5 MHz/10 MHz/20 MHz/40 MHz
RoHS Compliance	Compliant
INTERFACE SPECIFICATIONS	
Operating Voltage	3.3V DC
RF Antenna connector	x2 MMCX Female(Jack) connectors
ENVIRONMENTAL SPECIFICATIONS	
Operating Temperature Range	-40 deg C to +85 deg C
PHYSICAL SPECIFICATIONS	
Mechanical Dimension	(L) 58.4 mm x (W) 30 mm x (D) 20.5 mm
Weight	TBD
REGULATORY INFORMATION	
Compliance	TBD
PACKAGING INFORMATION	
No of units	TBD

ORDERING INFORMATION	
nE2-4950	Mini PCIe Radio Module, MIMO, IEEE 802.11 a/n , 4.9/5 GHz 29 dBm

RADIO SPECIFICATION

TX/RX Specification – 4920 MHz to 4990 MHz

Data Rate	TX Power (dBm)	Current 24V (A)	RX Sensitivity (dBm)
54 Mbps	19	0.19	-77
48 Mbps	20	0.20	-80
36 Mbps	22	0.22	-82
24 Mbps	23	0.23	-85
18 Mbps	23	0.23	-87
12Mbps	23	0.23	-89
9 Mbps	23	0.23	-92
6 Mbps	23	0.23	-94
HT20-MCS7	18	0.19	-71
HT20-MCS6	19	0.19	-74
HT20-MCS5	20	0.20	-75
HT20-MCS4	22	0.22	-79
HT20-MCS3	23	0.23	-82
HT20-MCS2	23	0.23	-86
HT20-MCS1	23	0.23	-88
HT20-MCS0	26	0.27	-92
HT40-MCS7	18	0.19	-68
HT40-MCS6	19	0.19	-71
HT40-MCS5	20	0.20	-72
HT40-MCS4	22	0.22	-76
HT40-MCS3	23	0.23	-79
HT40-MCS2	23	0.23	-83
HT40-MCS1	23	0.23	-85
HT40-MCS0	26	0.27	-89

TX/RX Specification – 5180 MHz to 5320 MHz (miniPCIe)

Sensitivity tested in ART Mode, PSR >=95%, Chain0+Chain1
TX Power Setting = Calibrated Power level in dBm
Test Condition for Current consumption:
Current consumption is measured at the input of the SBC with the mini-PCIe radio module connected to it. The current consumption figures are then adjusted so that they only include extra current drawn by the mini-PCIe radio module.

Data Rate	TX Power (dBm)	Current 24V (A)	RX Sensitivity (dBm)
54 Mbps	20	0.20	-77
48 Mbps	21	0.21	-80
36 Mbps	23	0.23	-82
24 Mbps	24	0.24	-85
18 Mbps	24	0.24	-87
12Mbps	24	0.24	-89
9 Mbps	24	0.24	-92
6 Mbps	24	0.24	-94
HT20-MCS7	19	0.19	-71
HT20-MCS6	20	0.20	-74
HT20-MCS5	21	0.21	-75
HT20-MCS4	23	0.23	-79
HT20-MCS3	24	0.24	-82
HT20-MCS2	24	0.24	-86
HT20-MCS1	24	0.24	-88
HT20-MCS0	26	0.27	-92
HT40-MCS7	19	0.19	-68
HT40-MCS6	20	0.20	-71
HT40-MCS5	21	0.21	-72
HT40-MCS4	23	0.23	-76
HT40-MCS3	24	0.24	-79
HT40-MCS2	24	0.24	-83
HT40-MCS1	24	0.24	-85
HT40-MCS0	26	0.27	-89

TX/RX Specification – 5500 MHz to 5720 MHz (miniPCIe)

Sensitivity tested in ART Mode, PSR >=95%, Chain0+Chain1
TX Power Setting = Calibrated Power level in dBm
Test Condition for Current consumption:
Current consumption is measured at the input of the SBC with the mini-PCIe radio module connected to it. The current consumption figures are then adjusted so that they only include extra current drawn by the mini-PCIe radio module.

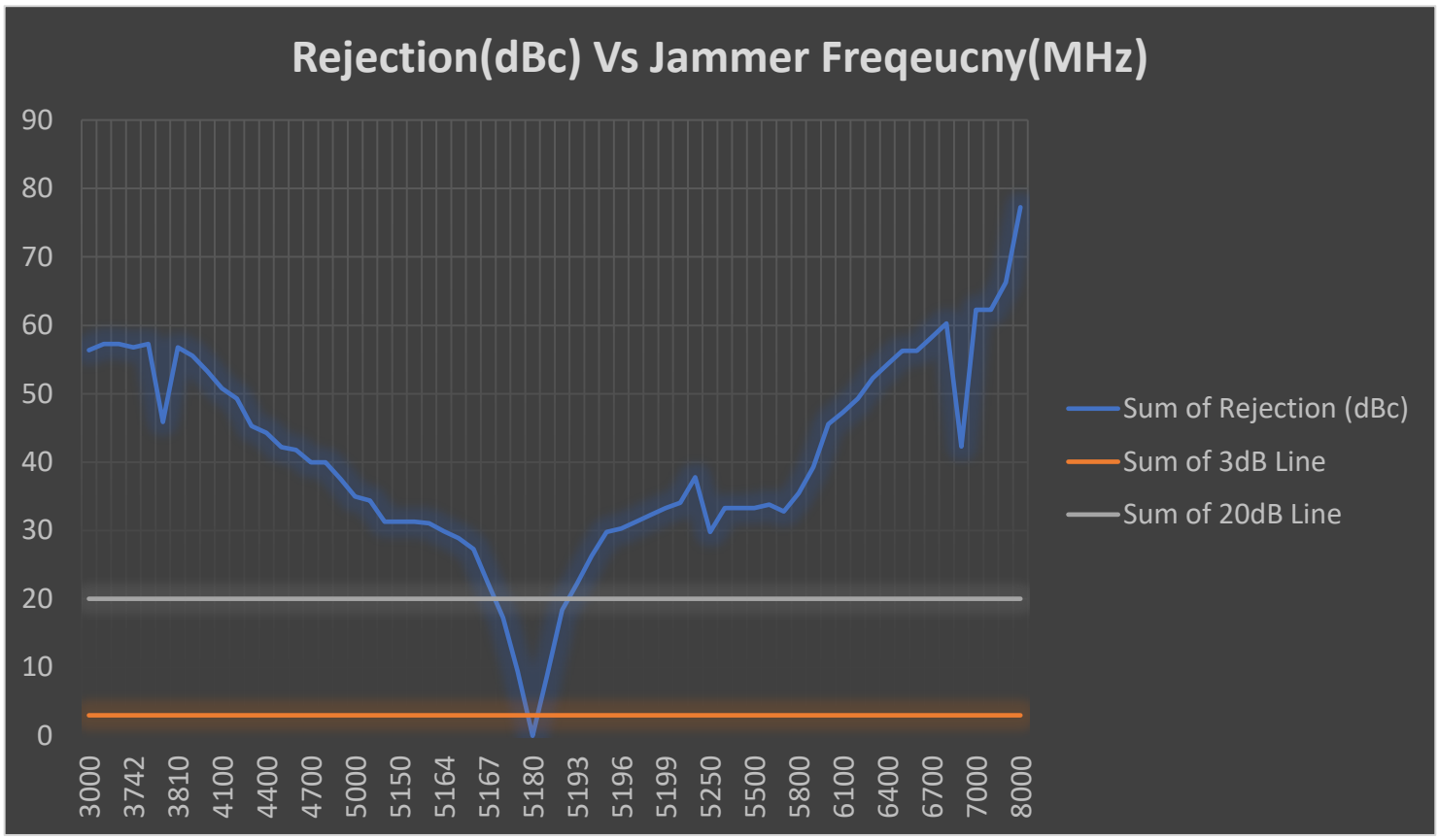
Data Rate	TX Power (dBm)	Current 24V (A)	RX Sensitivity (dBm)
54 Mbps	19	0.19	-77
48 Mbps	20	0.20	-80
36 Mbps	23	0.23	-82
24 Mbps	26	0.27	-85
18 Mbps	26	0.27	-87
12Mbps	26	0.27	-89
9 Mbps	26	0.27	-92
6 Mbps	26	0.27	-94
HT20-MCS7	19	0.19	-71
HT20-MCS6	20	0.20	-74
HT20-MCS5	21	0.21	-75
HT20-MCS4	23	0.23	-79
HT20-MCS3	24	0.24	-82
HT20-MCS2	24	0.24	-86
HT20-MCS1	24	0.24	-88
HT20-MCS0	26	0.27	-92
HT40-MCS7	19	0.19	-68
HT40-MCS6	20	0.20	-71
HT40-MCS5	21	0.21	-72
HT40-MCS4	23	0.23	-76
HT40-MCS3	24	0.24	-79
HT40-MCS2	24	0.24	-83
HT40-MCS1	24	0.24	-85
HT40-MCS0	26	0.27	-89

TX/RX Specification – 5745 MHz to 5825 MHz (miniPCIe)

Sensitivity tested in ART Mode, PSR >=95%, Chain0+Chain1
TX Power Setting = Calibrated Power level in dBm
Test Condition for Current consumption:
Current consumption is measured at the input of the SBC with the mini-PCIe radio module connected to it. The current consumption figures are then adjusted so that they only include extra current drawn by the mini-PCIe radio module.

Data Rate	TX Power (dBm)	Current 24V (A)	RX Sensitivity (dBm)
54 Mbps	19	0.19	-74
48 Mbps	20	0.20	-77
36 Mbps	23	0.23	-79
24 Mbps	26	0.27	-82
18 Mbps	26	0.27	-84
12Mbps	26	0.27	-86
9 Mbps	26	0.27	-89
6 Mbps	26	0.27	-91
HT20-MCS7	18	0.19	-68
HT20-MCS6	19	0.19	-71
HT20-MCS5	20	0.20	-72
HT20-MCS4	23	0.23	-76
HT20-MCS3	24	0.24	-79
HT20-MCS2	24	0.24	-83
HT20-MCS1	24	0.24	-85
HT20-MCS0	26	0.27	-89
HT40-MCS7	18	0.19	-65
HT40-MCS6	19	0.19	-68
HT40-MCS5	20	0.20	-69
HT40-MCS4	23	0.23	-73
HT40-MCS3	24	0.24	-76
HT40-MCS2	24	0.24	-81
HT40-MCS1	24	0.24	-82
HT40-MCS0	26	0.27	-86

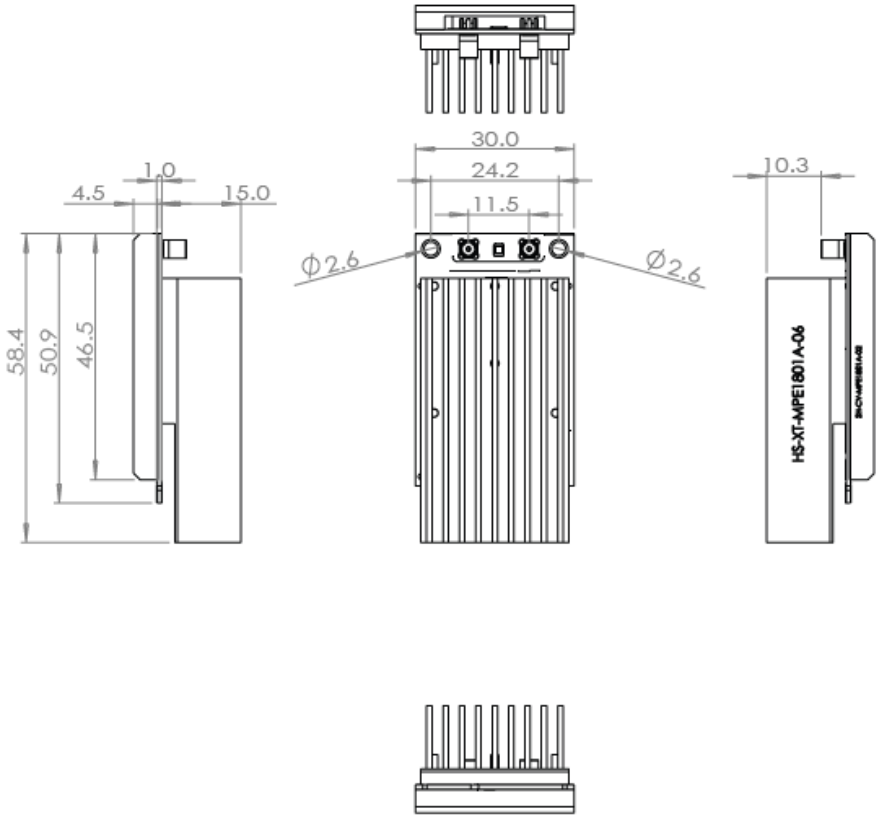
Interference Desensitization

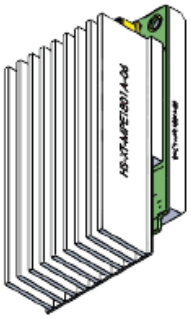


MINIPCIE (GOLD FINGER) PIN-OUT

Pin#	Description
1	WAKE_L
2	3.3V
3	RESERVED (Connected to GPIO12)
5	RESERVED (NC)
6	1.5V (NC)
7	CLKREQ_L, connected to GND through a pull-down resistor of 0 Ohms.
8	UIM_PWR (NC)
10	UIM_DATA (NC)
11	REFCLK-
12	UIM-CLK (NC)
13	REFCLK+
14	UIM-RESET (NC)
16	UIM_VPP (NC)
17	UIM_C8 (NC)
19	UIM_C4 (NC)
20	W_DISABLE_L (Pulled up to 3.3V and connected to GPIO7 of AR9592)
22	RESET
23	PERN0
24	3.3VAUX (NC)
25	PERP0
28	1.5V (NC)
30	SMB_CLK (NC)
31	PETN0
32	SMB_DATA(NC)
33	PETP0
36	USB_D- (NC)
37	RESERVED (NC)
38	USB_D+ (NC)
39	3.3V
41	3.3V
42	LED_WWAN_L (NC)
44	LED_WLAN_L (Connected to GPIO10)
45	NC
46	LED_WPAN_L (NC)
47	NC
48	1.5V (NC)
49	NC
51	NC
52	3.3V
4,9,15,18,21,26,27,29,34,35,40,43,50	GND

MECHANICAL DIMENSIONS





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