



# XTREMERange2

Carrier-Class 2.4GHz 802.11b/g Radio Module

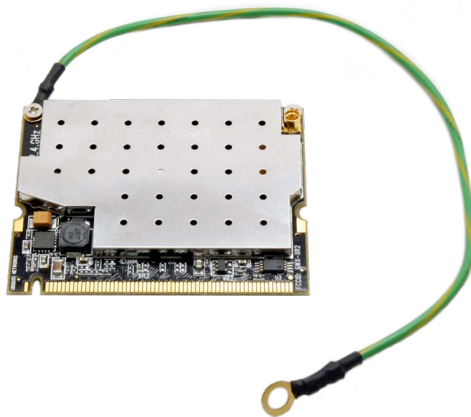


The XtremeRange series of radio modules by Ubiquiti leverages our strong knowledge and experience gained from customer interactions, field performance evaluations, and lab research; and improves upon the original and highly successful SuperRange series of high-performance 802.11 radio cards. The XtremeRange2 is a carrier-class 802.11b/g based 2.4GHz radio module specifically designed for mesh, bridging, and infrastructure applications requiring the high levels of performance and reliability.

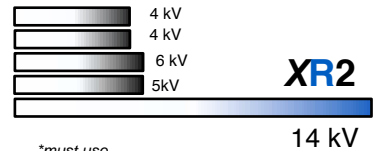
## Designed to Link Farther and Faster

Built to Last Outdoors in Harshest Environments

- | FEATURES                  |
|---------------------------|
| 600mW Output Power        |
| ESD/EMP Protection        |
| Industry-Best Sensitivity |
| Extended Temperature      |
| Enhanced Filtering        |
| 5/10/20/40 MHz Channels   |
| MMCX Ant. Connector       |



### RF ESD/EMP Immunity Threshold vs. Standard Cards



\*must use included grounding cable

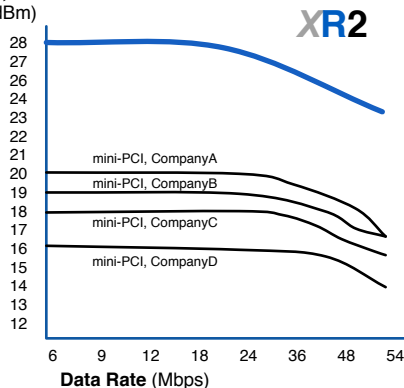
Built for Industrial / Rugged Applications

RF ESD/EMP Earth Ground Cable

Built-in HeatSink for Temperature Performance

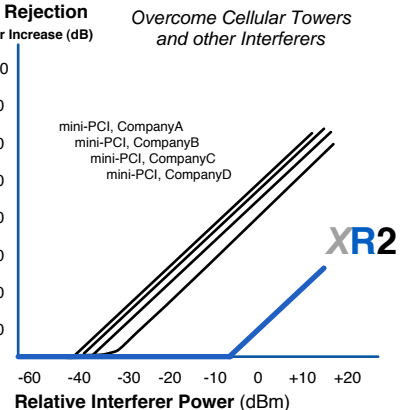


Power, 2.4GHz (dBm)



Mikrotik is a trademark of Mikrotikls SIA, Latvia

1.9GHz Rejection Noise Floor Increase (dB)



Overcome Cellular Towers and other Interferers

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## TECHNICAL SPECIFICATIONS

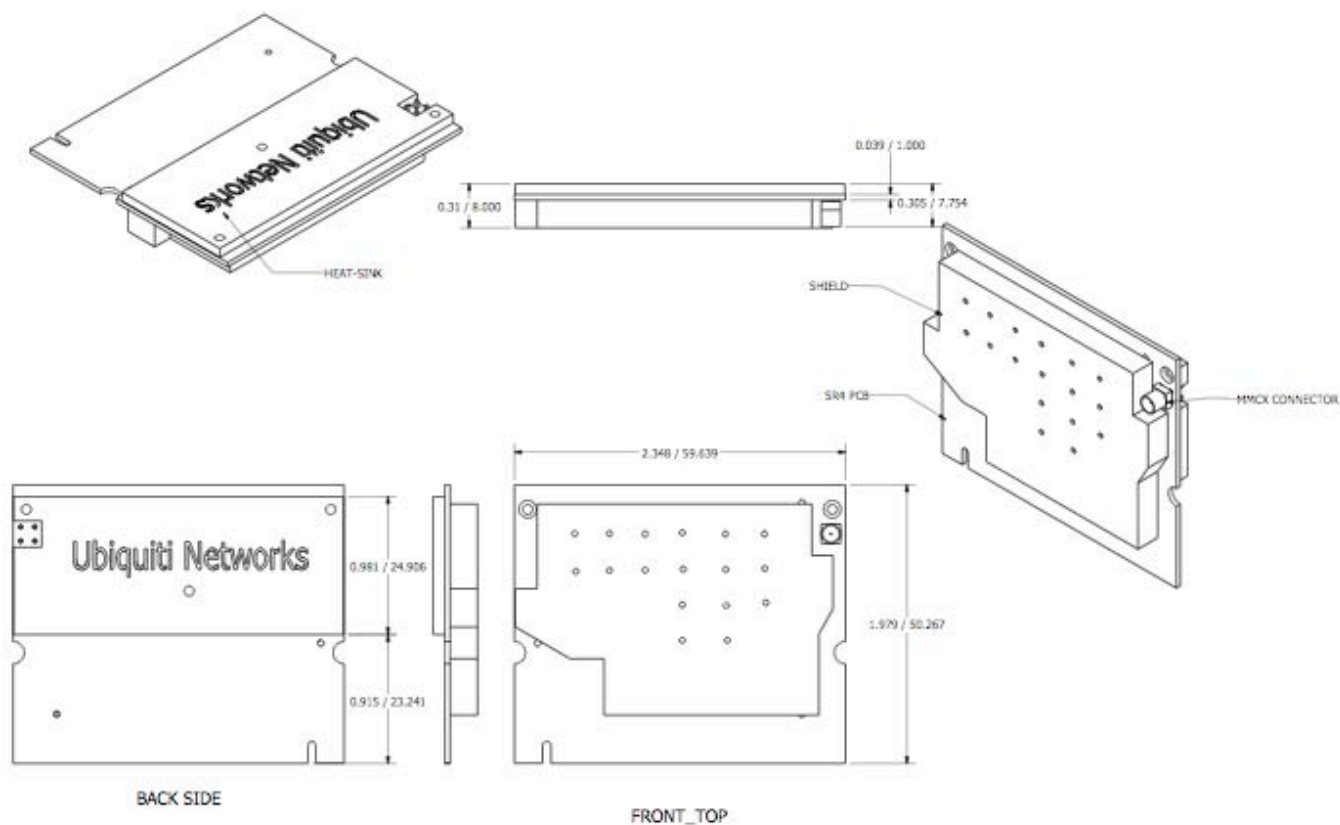
CARD INFORMATION							
Chipset	Atheros, 6th Generation, AR5414						
Radio Operation	IEEE 802.11b/g, 2.4GHz						
Interface	32-bit mini-PCI Type IIIA						
Operation Voltage	3.3VDC						
Antenna Ports	Single MMCX						
Temperature Range	-45C to +90C (extended temp version up to +95C)						
Security	WPA, WPA2, AES-CCM & TKIP Encryption, 802.1x, 64/128/152bit WEP						
Data Rates	6Mbps, 9Mbps, 12Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps						
TX Channel Width Support	5MHz / 10MHz / 20MHz / 40MHz						
RoHS Compliance	YES						
REGULATORY INFORMATION							
Wireless Modular Approvals	FCC Part 15.247, IC RS210						
RADIO OPERATING FREQUENCY 2412-2462 MHz							
TX SPECIFICATIONS			RX SPECIFICATIONS				
	DataRate	TX Power	Tolerance		DataRate	Sensitivity	Tolerance
802.11b	1Mbps	28 dBm	+/-1dB	802.11b	1Mbps	-97 dBm	+/-1dB
	2Mbps	28 dBm	+/-1dB		2Mbps	-96 dBm	+/-1dB
	5.5Mbps	28 dBm	+/-1dB		5.5Mbps	-95 dBm	+/-1dB
	11Mbps	28 dBm	+/-1dB		11Mbps	-92 dBm	+/-1dB
802.11g OFDM	6Mbps	28 dBm	+/-1dB	802.11g OFDM	6Mbps	-94 dBm	+/-1dB
	9Mbps	28 dBm	+/-1dB		9Mbps	-93 dBm	+/-1dB
	12Mbps	28 dBm	+/-1dB		12Mbps	-91 dBm	+/-1dB
	18Mbps	28 dBm	+/-1dB		18Mbps	-90 dBm	+/-1dB
	24Mbps	28 dBm	+/-1dB		24Mbps	-86 dBm	+/-1dB
	36Mbps	26 dBm	+/-1dB		36Mbps	-83 dBm	+/-1dB
	48Mbps	25 dBm	+/-1dB		48Mbps	-77 dBm	+/-1dB
	54Mbps	24 dBm	+/-1dB		54Mbps	-74 dBm	+/-1dB
ADJUSTABLE CHANNEL SIZE SUPPORT (Increase Channel Capacity or Increase Throughput)							
5MHz		10MHz		20MHz		40MHz (Turbo)	
CURRENT CONSUMPTION INFORMATION							
TX CURRENT CONSUMPTION			RX CURRENT CONSUMPTION				
	DataRate	Current	Tolerance		DataRate	Sensitivity	Tolerance
802.11b	1Mbps	1.30 A	+/-100mA	802.11b	1Mbps	300 mA	+/-100mA
	2Mbps	1.30 A	+/-100mA		2Mbps	300 mA	+/-100mA
	5.5Mbps	1.30 A	+/-100mA		5.5Mbps	300 mA	+/-100mA
	11Mbps	1.30 A	+/-100mA		11Mbps	300 mA	+/-100mA
802.11g OFDM	6Mbps	1.30 A	+/-100mA	802.11g OFDM	6Mbps	300 mA	+/-100mA
	9Mbps	1.30 A	+/-100mA		9Mbps	300 mA	+/-100mA
	12Mbps	1.30 A	+/-100mA		12Mbps	300 mA	+/-100mA
	18Mbps	1.30 A	+/-100mA		18Mbps	300 mA	+/-100mA
	24Mbps	1.30 A	+/-100mA		24Mbps	300 mA	+/-100mA
	36Mbps	1.10 A	+/-100mA		36Mbps	300 mA	+/-100mA
	48Mbps	1.00 A	+/-100mA		48Mbps	300 mA	+/-100mA
	54Mbps	0.90 A	+/-100mA		54Mbps	300 mA	+/-100mA
ESD/EMP CABLE SPECIFICATIONS							
Cable Dimensions	8 in length, 0.55mm diameter (26AWG)						
Terminal Material / Dimensions	Copper / 4.3mm diameter						
Attachment Procedure	Ground end to enclosure point tied to Earth Ground						
RANGE PERFORMANCE							
Indoor (Antenna Dependent):	Up to 200meters						
Outdoor (Antenna Dependent):	Over 50km						
DRIVER INFORMATION							
Operating System Support	Linux MADWIFI, WindowsXP, Windows2000						
Advanced Mobility / QuickHandoff	WindowsXP/2000 Utility with Enhanced Mobility Driver from Ubiquiti						
Cisco Support	CCX 4.0 Supported Driver/Utility also available from Ubiquiti						
For help with MADWIFI or other Special Driver Support, Please e-mail support@ubnt.com							

# MINI-PCI INTERFACE PINOUT

#	InUse	Pin Name	Description	#	InUse	Pin Name	Description
1	X	TIP	1 Conductor, local loop wire pair	63	YES	3.3V	3.3 V Supply voltage
2	X	RING	1 Conductor, local loop wire pair	64	YES	FRAME#	Indicates Bulk Transfer
3	X	8PMJ-3	Pin 3 of optional 8-pin modular jack	65	YES	CLKRUN#	Stops clock on certain mobile PCI
4	X	8PMJ-1	Pin 1 of optional 8-pin modular jack	66	YES	TRDY#	Target Ready
5	X	8PMJ-6	Pin 6 of optional 8-pin modular jack	67	YES	SERR#	Catastrophic system error
6	X	8PMJ-2	Pin 2 of optional 8-pin modular jack	68	YES	STOP#	Target wishes to end transfer
7	X	8PMJ-7	Pin 7 of optional 8-pin modular jack	69	YES	GROUND	Ground
8	X	8PMJ-4	Pin 4 of optional 8-pin modular jack	70	YES	3.3V	3.3 V Supply voltage
9	X	8PMJ-8	Pin 8 of optional 8-pin modular jack	71	YES	PERR#	Indicates Parity Error
10	X	8PMJ-5	Pin 5 of optional 8-pin modular jack	72	YES	DEVSEL#	PCI Device Select
11	X	LED1_GRP	Interface for external LEDs	73	YES	C/BE[1]#	Byte Enable
12	X	LED2_YELP	Interface for external LEDs	74	YES	GROUND	Ground
13	X	LED1_GRNN	RF Silent input	75	YES	AD[14]	Multiplexed Address/Data Bus
14	X	LED2_YELN	Interface for external LEDs	76	YES	AD[15]	Multiplexed Address/Data Bus
15	YES	CHSGND	Chassis Ground	77	YES	GROUND	Ground
16	X	RESERVED	-	78	YES	AD[13]	Multiplexed Address/Data Bus
17	X	INTB#	Interrupt Request B	79	YES	AD[12]	Multiplexed Address/Data Bus
18	X	5V	5 V Supply voltage	80	YES	AD[11]	Multiplexed Address/Data Bus
19	YES	3.3V	3.3 V Supply voltage	81	YES	AD[10]	Multiplexed Address/Data Bus
20	YES	INTA#	Interrupt Request A	82	YES	GROUND	Ground
21	X	RESERVED	-	83	YES	GROUND	Ground
22	X	RESERVED	-	84	YES	AD[09]	Multiplexed Address/Data Bus
23	YES	GROUND	Ground	85	YES	AD[08]	Multiplexed Address/Data Bus
24	YES	3.3VAUX	3.3 V supply-uninterrupted	86	YES	C/BE[0]#	Byte Enable
25	YES	CLK	PCI Clock	87	YES	AD[07]	Multiplexed Address/Data Bus
26	YES	RST#	PCI Reset	88	YES	3.3V	3.3 V Supply voltage
27	YES	GROUND	Ground	89	YES	3.3V	3.3 V Supply
28	YES	3.3V	3.3 V Supply voltage	90	YES	AD[06]	Multiplexed Address/Data Bus
29	YES	REQ#	PCI Bus Request	91	YES	AD[05]	Multiplexed Address/Data Bus
30	YES	GNT#	PCI Bus Grant	92	YES	AD[04]	Multiplexed Address/Data Bus
31	YES	3.3V	3.3 V Supply voltage	93	X	RESERVED	-
32	YES	GROUND	Ground	94	YES	AD[02]	Multiplexed Address/Data Bus
33	YES	AD[31]	Multiplexed Address/Data Bus	95	YES	AD[03]	Multiplexed Address/Data Bus
34	X	PME#	Power Management Event	96	YES	AD[00]	Multiplexed Address/Data Bus
35	YES	AD[29]	Multiplexed Address/Data Bus	97	X	5V	5 V Supply voltage
36	X	RESERVED	-	98	X	RESERVED_WIP5	-
37	YES	GROUND	Ground	99	YES	AD[01]	Multiplexed Address/Data Bus
38	YES	AD[30]	Multiplexed Address/Data Bus	100	X	RESERVED_WIP5	-
39	YES	AD[27]	Multiplexed Address/Data Bus	101	YES	GROUND	Ground
40	YES	3.3V	3.3 V Supply voltage	102	YES	GROUND	Ground
41	YES	AD[25]	Multiplexed Address/Data Bus	103	X	AC_SYNC	AC97 Sync
42	YES	AD[28]	Multiplexed Address/Data Bus	104	X	M66EN	Enables 66 MHz PCI bus
43	YES	RESERVED	-	105	X	AC_SDATA_IN	AC97 Data Input
44	YES	AD[26]	Multiplexed	106	X	AC_SDATA_OUT	AC97 Data Output
45	YES	C/BE[3]#	Byte Enable	107	X	AC_BIT_CLK	AC97 Bit Clock
46	YES	AD[24]	Multiplexed Address/Data Bus	108	X	AC_CODEC_ID0#	Identifier for AC97 CODEC
47	YES	AD[23]	Multiplexed Address/Data Bus	109	X	AC_CODEC_ID1#	Identifier for AC97 CODEC
48	YES	IDSEL	Initialization Device Select	110	X	AC_RESET#	AC97 Reset
49	YES	GROUND	Ground	111	X	MOD_AUDIO_MON	Modem Audio Monitor
50	YES	GROUND	Ground	112	X	RESERVED	-
51	YES	AD[21]	Multiplexed Address/Data Bus	113	YES	AUDIO_GND	Analog Ground for line-level audio
52	YES	AD[22]	Multiplexed Address/Data Bus	114	X	GROUND	Ground
53	YES	AD[19]	Multiplexed Address/Data Bus	115	X	SYS_AUDIO_OUT	Telephone Audio Out
54	YES	AD[20]	Multiplexed Address/Data Bus	116	X	SYS_AUDIO_IN	Telephone Audio In
55	YES	GROUND	Ground	117	X	SYS_AUDIO_OUTG	Analog Ground for telephone audio
56	YES	PAR	Parity Bit	118	X	SYS_AUDIO_IN_G	Analog Ground for telephone audio
57	YES	AD[17]	Multiplexed Address/Data Bus	119	X	AUDIO_GND	Analog Ground for line-level audio
58	YES	AD[18]	Multiplexed Address/Data Bus	120	YES	AUDIO_GND	Analog Ground for line-level audio
59	YES	C/BE[2]#	Byte Enable	121	X	RESERVED	-
60	YES	AD[16]	Multiplexed Address/Data Bus	122	X	MPCLACT#	MiniPCI Function Active
61	YES	IRDY#	Initiator Ready	123	X	VCC5VA	5V Analog
62	YES	Ground	Ground	124	X	3.3VAUX	3.3 V supply-uninterrupted

# XTREMERange2

## MECHANICAL DIMENSIONS



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