

Product Specification

XW724E

WLAN Half Mini-Card Dual Ant 2T2R

Version : 1.0

Date : Apr.19.2011

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Release History

DATE	REV	Description of Change
2011/01/18	0.1	Initial release
2011/04/19	1.0	Official release

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XW724E

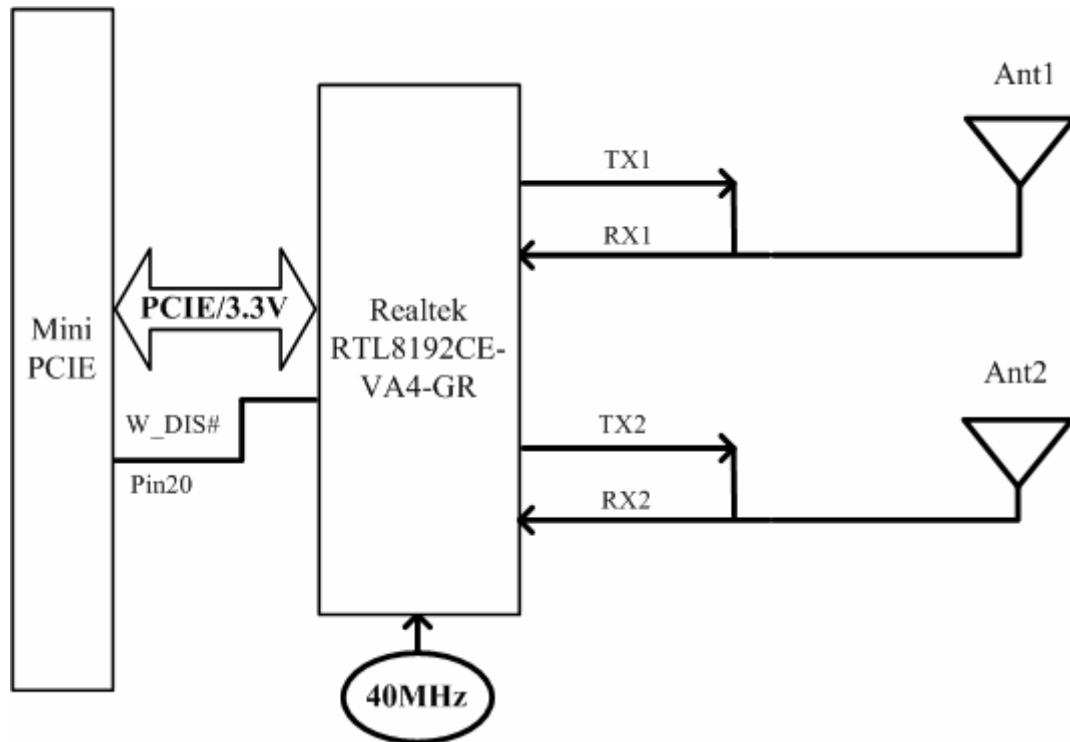
WLAN Half Mini-Card Dual Ant 2T2R



1 WLAN Features

- IEEE 802.11n MIMO OFDM
 - 2 transmit and 2 receive paths (2T2R).
 - 20MHz and 40MHz bandwidth transmission.
 - Short Guard Interval (400ns).
- 2x2 MIMO technology for extended reception robustness and exceptional throughput
- Maximum PHY data rate up to 144.4Mbps using 20MHz bandwidth, 300Mbps using 40MHz bandwidth
- Channel management and co-existence
- Configurable Bluetooth coexistence interface
- Hardware antenna diversity
- Fast receiver Automatic Gain Control (AGC)

2 Block Diagram



3 General Specifications

Modle Name					
XW724E					
WLAN					
Product Specification					
WLAN Standard	IEEE 802.11b/g/n, 2T2R				
Host interface	PCIE				
Major Chipset	Realtek RTL8192CE-VA4				
DID	8178	PCIE Device ID			
VID	10EC	PCIE Vender ID.			
SDID	8178	PCIE Subsystem ID.			
SVID	10EC	PCIE Subsystem Vender ID.			
Dimensions					
		Minimum	Typical	Maximum	Unit
	Length	29.7		30	mm
	Width	26.5		2	mm
	Height		3.25		mm
	Weight		TBD		g
Antenna Connector	Dual antenna. Con1 is for T/RX and con2 is for RX diversity.				
Operating Condition					
		Minimum	Typical	Maximum	Unit
Voltage	DC	3.0	3.3	3.6	V
Temperature		0		70	°C
Storage temperature		0		70	°C
Humidity Non-Operating		5		80	%
Electrical Specification					
Frequency Range	2400 – 2483.5MHz				
Modulation	BPSK, QPSK, 16QAM, 64QAM, DBPSK, DQPSK, and CCK				
Output power					
		Minimum	Typical	Maximum	Unit
802.11b Mode	11MHz	14.5	16	17.5	dBm
802.11g Mode	54MHz	12.5	14	15.5	dBm
802.11n Mode	HT20-MCS7	11.5	13	14.5	dBm
802.11n Mode	HT40-MCS7	11.5	13	14.5	dBm

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Receiver Sensitivity					
		Minimum	Typical	Maximum	Unit
802.11b Mode	11Mbps			-83	dBm
802.11g Mode	54Mbps			-70	dBm
802.11n Mode	HT20 MCS7			-67	dBm
802.11n Mode	HT40 MCS7			-64	dBm
Data Rate					
		Minimum	Typical	Maximum	Unit
802.11b CCK Mode		11, 5.5, 2, 1			Mbps
802.11g OFDM Mode		54, 48, 36, 24, 18, 12, 9, 6			Mbps
802.11n HT20 Mode	800ns GI	65, 58.5, 52, 39, 26, 19.5, 13, 6.5			Mbps
802.11n HT20 Mode	400ns GI	72.2, 65, 57.8, 43.3, 28.9, 21.7, 14.4, 7.2			Mbps
802.11n HT40 Mode	800ns GI	135, 121.5, 108, 81, 54, 40.5, 27, 13.5			Mbps
802.11n HT40 Mode	400ns GI	150, 135, 120, 90, 60, 45, 30, 15			Mbps
Security					
WEP, TKIP, and AES hardware encryption					

Absolute Maximum Rating			
■	Maximum I/O supply voltage	+3.6	V
■	Maximum WLAN RF input level (reference to 50Ohm)	0	dBm

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4 Power Consumption

Power Consumption for Continue TX/RX

Test condition

OS : Windows 7 Home edition

Processor : Intel(R) Core(TM) i3 CPU M370 @ 2.40GHz

Channel 6 : 2437MHz

Standard : IEEE802.11b,g,n

RF output connects with IQ view

TX uses continuous mode

Input voltage for whole circuit : 3.3V

Test tool

QA Tools V028

Test result:

Continue TX/RX

Mode	Standard	Current (mA)		Power (mWatt)	
		No. 1	No. 2	No. 1	No. 2
	Plug in	60	59	198	194.7
	QA Enable	209	209	689.7	689.7
TX	1M	358	361	1181.4	1191.3
	11M	357	360	1178.1	1188
	6M	363	364	1197.9	1201.2
	54M	341	342	1125.3	1128.6
	HT20-MCS0	354	355	1168.2	1171.5
	HT20-MCS7	328	329	1082.4	1085.7
	HT40-MCS0	331	332	1092.3	1095.6
RX	HT40-MCS7	331	332	1092.3	1095.6
	1M	212	209	699.6	689.7
	11M	212	209	699.6	689.7
	6M	212	209	699.6	689.7
	54M	212	209	699.6	689.7
	HT20-MCS0	212	209	699.6	689.7
	HT20-MCS7	212	209	699.6	689.7
	HT40-MCS0	223	220	735.9	726
	HT40-MCS7	223	220	735.9	726

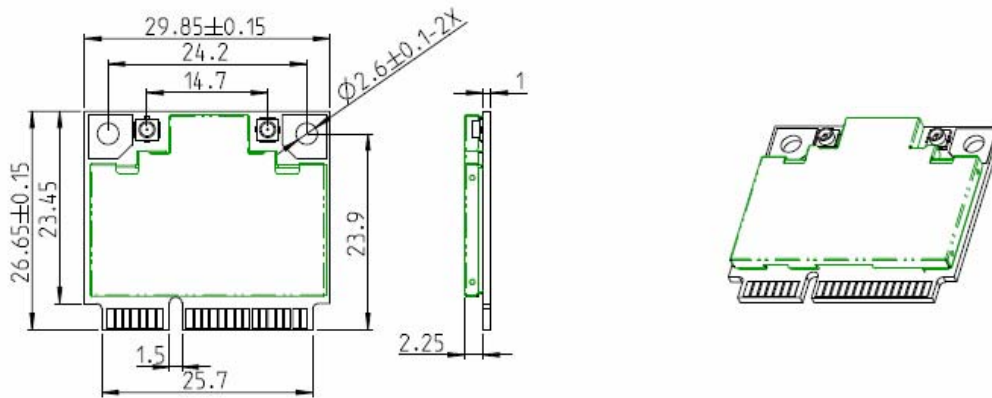
Power Consumption for Frame Mode**Test tool**

IXChariot v6.7

Test result:**Frame Mode (Up-Link & Down-Link Throughput)**

Mode	Standard	Current (mA)		Power (mWatt)	
		No. 1	No. 2	No. 1	No. 2
TX (Uplink)	54M	211	215	696.3	709.5
	HT20-MCS7 (65Mbps)	290	300	957	990
	HT40-MCS7 (135Mbps)	280	286	924	943.8
RX (Downlink)	54M	206	210	679.8	693
	HT20-MCS7 (65Mbps)	233	240	768.9	792
	HT40-MCS7 (135Mbps)	250	256	825	844.8
Idle	Associated with AP (20M)	85	90	280.5	297
	Associated with AP (40M)	90	97	297	320.1
Idle	Unassociated with AP (20M)	60	61	198	201.3
	Unassociated with AP (40M)	60	61	198	201.3
Radio Off	Hotkey turn off WiFi Radio (Adapter)	7	7	23.1	23.1
	Battery (L1)	7	7	23.1	23.1
Driver Disable	Disable DUT on device Management	7	7	23.1	23.1
OS	Windows 7 Home edition				
Driver Version	1005.15.0223.2011				

5 Mechanical Dimensions



Unit:mm

6 Connector Pin-out Definitions

Pin	Definition	Type	Description
1	WAKE#	I/O	Request the system return from a sleep state. Low active
2	3.3V	P	3.3V power supply.
3	COEX1	I/O	WL_ACT
4	GND	P	Ground.
5	COEX2	I/O	BT_PRI
6	NC		No connect.
7	CLK_REQ#	I/O	Request clock from host
8	NC		No connect.
9	GND	P	Ground.
10	NC		No connect.
11	REFCLK-	I	REFCLK-
12	NC		No connect.
13	REFCLK+	I	REFCLK+
14	NC		No connect.
15	GND	P	Ground.
16	NC		No connect.
17	NC		No connect.
18	GND	P	Ground.
19	NC		No connect.
20	W_DIS#	I	Low disable WLAN. High enable WLAN
21	GND	P	Ground.
22	PERST	O	Reset signal from PCIe slot
23	PERn0	I/O	PCIe RX-
24	NC		No connect.
25	PERp0	I/O	PCIe RX+
26	GND	P	Ground.
27	GND	P	Ground.
28	+1.5V	P	1.5VIN is for option, it uses a 0 ohm to connect with 1.5V power
29	GND	P	Ground.
30	NC		No connect.

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Pin	Definition	Type	Description
31	PETn0	I/O	PCIe TX-
32	NC		No connect.
33	PETp0	I/O	PCIe TX+
34	GND	P	Ground.
35	GND	P	Ground.
36	HSDM	I/O	USB2.0 differential signal DM
37	GND	P	Ground.
38	HSDP	I/O	USB2.0 differential signal DP
39	NC		No connect.
40	NC		No connect.
41	NC		No connect.
42	NC		No connect.
43	GND	P	Ground.
44	LED_WLAN#	O	Driving LED when wireless is active. High active. High enable LED.
45	NC		No connect.
46	NC		No connect.
47	NC		No connect.
48	+1.5V	P	1.5VIN is for option, it uses a 0 ohm to connect with 1.5V power
49	NC		No connect.
50	GND	P	Ground.
51	NC		No connect.
52	3.3V	P	3.3V power supply.

P : Power/Ground; I : Input; O : Output.

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