

YBTEXV9378

2x2 5GHz 802.11n/ac **MODULE** **DATASHEET**

Ordering Information

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Feature:



- YBTEXV9378 Supports low-power USB3.0 interfaces (TBD)^①.
- Provides a highly integrated WLAN system-on-chip (SoC) for 2x2 5 GHz 802.11n/ac WLAN applications.
- Supports 20 MHz, 40 MHz and 80 MHz at 5 GHz.
- Supports 2x2 MIMO.
- Operates on one 3.3-volt power supply and one 5.0-volt power supply.
- 48 MHz reference clock.
- Available in a standard Mini-PCIe package.
- Uses an external FEM to support high output power and rapid sensitivity.

Remark:

- ① Verified in USB2.0 interface.

Pin Description:

Pin#	Pin Name	I/O	Description
1	WAKE_L	Input	Active low
2	3.3V	Power	3.3V Power Supply/1A ^②
3	RESERVED	NC	Chip Power-down or RESET, Active low
4	GND	GND	GND
5	RESERVED	NC	
6	1.5V	NC	
7	CLKREQ_L	I/O	PCIe clock request, active low
8	UIM_PWR	DATA	USB_RD-

9	GND	GND	GND
10	UIM_DATA	DATA	USB_RD+
11	REFCLK-	I/O	PCIe reference clock in negative
12	UIM_CLK	NC	
13	REFCLK+	I/O	PCIe reference clock in positive
14	UIM_RESET	NC	
15	GND	GND	GND
16	UIM_VPP	NC	
17	UIM_C8	NC	
18	GND	GND	GND
19	UIM_C4	NC	
20	W_DISABLE_L	I/O	GPIO16
21	GND	GND	GND
22	PERST_L	I/O	PCIe reset. Active low
23	PERN0	DATA	PCIe data bus.
24	3.3VAUX	Power	3.3V Power Supply/1A [®]
25	PERP0	DATA	PCIe data bus R-
26	GND	GND	GND
27	GND	GND	GND
28	1.5V	NC	
29	GND	GND	GND
30	SMB_CLK	DATA	USB_TD-
31	PETN0	DATA	PCIe data bus T-
32	SMB_DATA	DATA	USB_TD+
33	PETP0	DATA	PCIe data bus T+
34	GND	GND	GND
35	GND	GND	GND
36	USB_D-	DATA	USB_D-
37	RESERVED	NC	
38	USB_D+	DATA	USB_D+
39	RESERVED	NC	
40	GND	GND	GND
41	RESERVED	NC	

42	LED_WWAN_L	NC	
43	GND	GND	GND
44	LED_WLAN_L	NC	GPIO20
45	RESERVED	Power	5V Power Supply/1A ^③
46	LED_WPAN_L	NC	
47	RESERVED	Power	5V Power Supply/1A ^③
48	1.5V	NC	
49	RESERVED	Power	5V Power Supply/1A ^③
50	GND	GND	GND
51	RESERVED	Power	5V Power Supply/1A ^③
52	3.3V	Power	3.3V Power Supply/1A ^②

Remark:

- ② 3.3V/1A Power Supply in Pin2 、 Pin24、 Pin52
- ③ 5V/1A Power supply in Pin45 、 Pin 47、 Pin 49、 Pin 51。
- ③

Electrical Characteristics:

RF Output Power vs Data rate list as below:

Table 1 5G-802.11a Output Power

802.11a Data rate(Mbps)	Power(dBm)
6	24
9	24
12	24
18	24
24	24
36	23
48	22
54	21

Table 2 5G-802.11n Output Power

802.11n Data rate(Mbps)	Power(dBm)
MCS0	24
MCS1	24
MCS2	24
MCS3	24
MCS4	23
MCS5	22
MCS6	21
MCS7	20

Table 3 5G-802.11ac Output Power

802.11ac Data rate(Mbps)	Power(dBm)
MCS0	24
MCS1	24
MCS2	24
MCS3	24
MCS4	23
MCS5	23
MCS6	22
MCS7	21
MCS8	20
MCS9	20

EVM vs Data rate list as below:

Table 4 802.11a Tx EVM vs Data rate

802.11a Data rate(Mbps)	EVM(dB)
6	-5
9	-8
12	-10
18	-13
24	-16
36	-19
48	-22
54	-25

Table 5 802.11n Tx EVM vs Data rate

802.11n Data rate(MCS)	EVM(dB)
0/8	-5
1/9	-10
2/10	-13
3/11	-16
4/12	-19
5/13	-22
6/14	-25
7/15	-27

Table 6 802.11ac Tx EVM vs Data rate

802.11ac Data rate(MCS)	EVM(dB)
0/10	-5
1/11	-10
2/12	-13

3/13	-16
4/14	-19
5/15	-22
6/16	-25
7/17	-27
8/18	-30
9/19	-32

Sensitivity vs Data rate list as below:

Table 7 5G 802.11a Sensitivity vs Data rate

Data rate	Sensitivity
802.11a/g Data rate(Mbps)	Sensitivity(dBm)FER<10% (PSDU = 1000Bytes)
6	-91
9	-90
12	-87
18	-85
24	-82
36	-78
48	-73
54	-72

Table 4 5G 802.11n Sensitivity vs Data rate

Data rate			Sensitivity
802.11n	HT20	Data	Sensitivity(dBm)FER<10% (PSDU = 1024Bytes)
rate(MCS)			
0			-85
1			-82
2			-80
3			-77
4			-73
5			-69
6			-68
7			-67
802.11n	HT40	Data	Sensitivity(dBm)FER<10% (PSDU = 1024Bytes)
rate(MCS)			
0			-82
1			-79
2			-77
3			-74
4			-70

5	-66
6	-65
7	-64

Table 8 5G 802.11ac Sensitivity vs Data rate

Data rate			Sensitivity
802.11ac	HT20	Data	Sensitivity(dBm)FER<10% (PSDU=1024Bytes)
rate(MCS)			
0			-85
1			-82
2			-80
3			-77
4			-73
5			-69
6			-68
7			-67
8			-62
9			-60
802.11ac	HT40	Data	Sensitivity(dBm)FER<10% (PSDU=1024Bytes)
rate(MCS)			
0			-82
1			-79
2			-77
3			-74
4			-70
5			-66
6			-65
7			-64
8			-59
9			-57
802.11ac	HT80	Data	Sensitivity(dBm)FER<10% (PSDU=1024Bytes)
rate(MCS)			
0			-79
1			-76
2			-74
3			-71
4			-67
5			-63
6			-62
7			-61
8			-56

9	-54
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Mechanical Information:

