AW-XMA06-T

IEEE 802.11 2X2 a/b/g/n/ac/ax WiFi 6/6E Wireless LAN + Bluetooth 5.3 LGA Module(Three Antenna)

Datasheet

Rev. C

DF

For Standard

Feature

WLAN

- Support 2x2 802.11 a/b/g/n/ac/ax
- Dual bands: 2.4 GHz and 5 GHz
  - Support 20/40/80 MHz channel Bandwidths.
- 5GHz PHY data rates up to 1.2 Gbps
- 2.4 GHz PHY data rates up to 458 Mbps
- Uplink and downlink OFDMA and MU-MIMO
- Instantaneous 0-DFS

Bluetooth

- Bluetooth 5.3
- Bluetooth class 2
- Bluetooth class 1
- PCM interface for voice applications
- 2Mbit/s LE
- Long range
- LTE/MWS coexistence
- 2 x wide band speech (WBS) calls
- Security: AES

Revision History

Document NO: R2-2A06-DST-01

Version	Revision Date	DCN NO.	Description	Initials	Approved
A	2024/07/26	DCN032054	● Initial	Chris Lin	N.C Chen
B	2024/09/02	DCN032261	Modify Model name Modify Block Diagram	Chris Lin	N.C Chen
C	2024/09/12	DCN032322	Modify Pin define Modify Operating condition	Chris Lin	N.C Chen

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1. Introduction

1.1 Product Overview

AzureWave Technologies, Inc. introduces the IEEE 802.11a/b/g/n/ac/ax 2x2 dual band WLAN and BT, module – **AW-XMA06-T.** With full-feature Wi-Fi subsystem integrated into a module

The **AW-XMA06-T** is a highly integrated Wi-Fi 6/6E device enabling concurrent dual Wi-Fi (CDW) and Bluetooth 5.3 operation. **AW-XMA06-T** supports four modes:

- Mode 1: CDW 2x2 Wi-Fi 6/6E 5-7 GHz (802.11ax) + 1x1 Wi-Fi 6 2.4 GHz (802.11ax)
- Mode 2: CDW 1x1 Wi-Fi 6/6E 5-7 GHz (802.11ax) + 1x1 Wi-Fi 6 2.4 GHz (802.11ax)
- Mode 3: 2x2 Wi-Fi 6 2.4 GHz (802.11ax)
- Mode 4: 2x2 Wi-Fi 6/6E 5-7 GHz (802.11ax)

The System-on-Chip (SoC) implements advanced features including MU-MIMO, OFDMA, Target Wake Time (TWT), and Bluetooth LE Audio. With integrated 2.4 GHz and 5-7 GHz TX power amplifiers (PA), RX low noise amplifiers (LNA) and Tx/Rx switches (T/R SW) as well as a full Bluetooth radio, the **AW-XMA06-T** simplifies design. External front-end module (FEM) with PA and LNA is also supported.

The **AW-XMA06-T** supports a flexible front-end design with either two or three antennas.

The **AW-XMA06-T** implements advanced real-time Wi-Fi and Bluetooth arbitration hardware in conjunction with software algorithms to optimize coexistence performance.

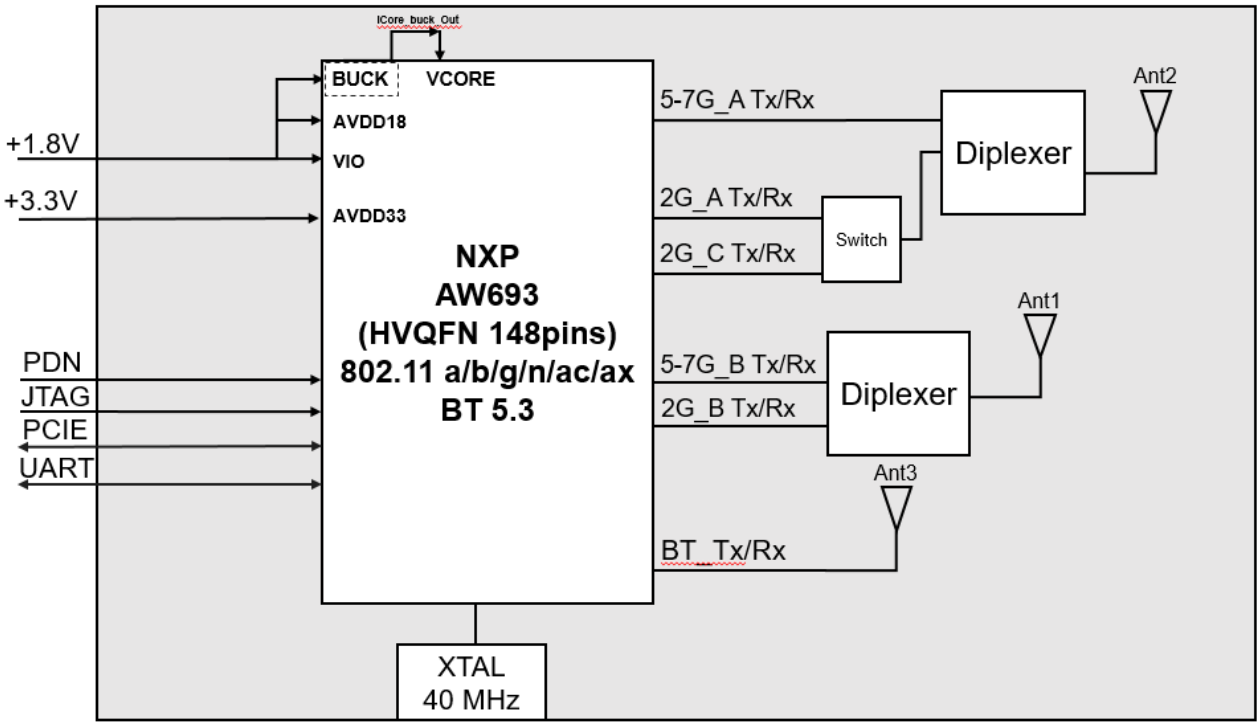
NXP's Edgelock technology is integrated. The embedded Edgelock® secure subsystem (ELS) supports hardware crypto accelerated secure boot, key management, firmware authentication, secure life cycle management, and anti-rollback protection.

The **AW-XMA06-T** integrates dedicated CPUs and memories for both the Wi-Fi and Bluetooth subsystems for real time, independent protocol processing.

The interfaces to external host processors include PCIe for Wi-Fi and UART for Bluetooth.

1.2 Block Diagram

A simplified block diagram of the **AW-XMA06-T** module is depicted in the figure below.



AW-XMA06-T Block Diagram

1.3 Specification table

1.3.1 General

Features	Description
Product Description	IEEE 802.11 2X2 a/b/g/n/ac/ax WiFi 6/6E Wireless LAN + Bluetooth 5.3 LGA Module (Three Antenna)
Major Chipset	NXP AW693 HVQFN148 (148pins)
Host Interface	WiFi + BT5.3 ● PCIE + UART
Dimension	23 mm X 23 mm x 3 mm(Max)
Form Factor	LGA module, 112 pins
Antenna	ANT1：Wi-Fi / → TX / RX ANT2：Wi-Fi / → TX / RX ANT3 : BT → TX / RX
Weight	TBD

1.3.2 WLAN

Features	Description
WLAN Standard	IEEE 802.11 a/b/g/n/ac/ax Wi-Fi 6/6E
WLAN VID/PID	NA
WLAN SVID/SPID	NA
Frequency Rage	2.4 GHz ISM Bands 2.412-2.472 GHz 5.15-5.25 GHz (FCC UNII-low band) for US/Canada and Europe 5.25-5.35 GHz (FCC UNII-middle band) for US/Canada and Europe 5.47-5.725 GHz for Europe 5.725-5.825 GHz (FCC UNII-high band) for US/Canada 5.955~7.115 GHz (FCC)
Modulation	DSSS, OFDM, DBPSK, DQPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM, OFDMA

<table>
<tr><td>Number of Channels</td><td>2.4GHz:
■ USA, NORTH AMERICA, Canada and Taiwan - 1 ~ 11
■ China, Australia, Most European Countries - 1 ~ 13
■ Japan, 1 ~ 13

5GHz:
■ USA, Canada, Most European Countries - 36,40,44,48,52,56,60,64,100,104,108,112,116,120,124,128,132,136,140,149,153,157,161,165
■ Japan - 36,40,44,48,52,56,60,64,100,104,108,112,116,120,124,128,132,136,140
■ China - 36,40,44,48,52,56,60,64, 149,153,157,161,165
6GHz:
■ USA, Canada, Most European Countries - 1,2,5,9,13,17,21,25,29,33,37,41,45,49,53,57,61,65,69,73,77,81,85,89,93,97,101,105,109,113,117,121,125,129,133,137,141,145,149,153,157,161,165,169,173,177,181,185,189,193,197,201,205,209,213,,217,221,225,229,233</td></tr>
<tr><td>Output Power
(Board Level Limit)*</td><td>2.4G
<table>
<tr><th></th><th>Min</th><th>Typ</th><th>Max</th><th>Unit</th></tr>
<tr><td>11b (11Mbps)
@EVM<35%</td><td></td><td>TBD</td><td></td><td>dBm</td></tr>
<tr><td>11g (54Mbps)
@EVM≦-27 dB</td><td></td><td>TBD</td><td></td><td>dBm</td></tr>
<tr><td>11n (HT20 MCS7)
@EVM≦-28 dB</td><td></td><td>TBD</td><td></td><td>dBm</td></tr>
<tr><td>11n (HT40 MCS7)
@EVM≦-28 dB</td><td></td><td>TBD</td><td></td><td>dBm</td></tr>
<tr><td>11ax(HE20 MCS11)
@EVM≦-35 dB</td><td></td><td>TBD</td><td></td><td>dBm</td></tr>
<tr><td>11ax(HE40 MCS11)
@EVM≦-35 dB</td><td></td><td>TBD</td><td></td><td>dBm</td></tr>
</table>
5G
<table>
<tr><th></th><th>Min</th><th>Typ</th><th>Max</th><th>Unit</th></tr>
<tr><td>11a (54Mbps)
@EVM≦-27 dB</td><td></td><td>TBD</td><td></td><td>dBm</td></tr>
<tr><td>11n (HT20 MCS7)
@EVM≦-28 dB</td><td></td><td>TBD</td><td></td><td>dBm</td></tr>
<tr><td>11n (HT40 MCS7)
@EVM≦-28 dB</td><td></td><td>TBD</td><td></td><td>dBm</td></tr>
<tr><td>11ac(VHT20 MCS8)
@EVM≦-31 dB</td><td></td><td>TBD</td><td></td><td>dBm</td></tr>
<tr><td>11ac(VHT40 MCS9)</td><td></td><td>TBD</td><td></td><td>dBm</td></tr>
</table></td></tr>
</table>

	@EVM≦-32 dB				
	11ac(VHT80 MCS9) @EVM≦-32 dB		TBD		dBm
	11ax(HE20 MCS11) @EVM≦-35 dB		TBD		dBm
	11ax(HE40 MCS11) @EVM≦-35 dB		TBD		dBm
	11ax(HE80 MCS11) @EVM≦-35 dB		TBD		dBm

6G

	Min	Typ	Max	Unit
11ax(HE20 MCS11) @EVM≦-35 dB		TBD		dBm
11ax(HE40 MCS11) @EVM≦-35 dB		TBD		dBm
11ax(HE80 MCS11) @EVM≦-35 dB		TBD		dBm

Receiver Sensitivity

2.4G

	Min	Typ	Max	Unit
11b (11Mbps)		TBD		dBm
11g (54Mbps)		TBD		dBm
11n (HT20 MCS7)		TBD		dBm
11n (HT40 MCS7)		TBD		dBm
11ax (HE20 MCS11)		TBD		dBm
11ax (HE40 MCS11)		TBD		dBm

5G

	Min	Typ	Max	Unit
11a (54Mbps)		TBD		dBm
11n (HT20 MCS7)		TBD		dBm
11n (HT40 MCS7)		TBD		dBm
11ac(VHT20 MCS8)		TBD		dBm
11ac(VHT40 MCS9)		TBD		dBm
11ac(VHT80 MCS9)		TBD		dBm
11ax(HE20 MCS11)		TBD		dBm
11ax(HE40 MCS11)		TBD		dBm
11ax(HE80 MCS11)		TBD		dBm

6G

	Min	Typ	Max	Unit
11ax(HE20 MCS11)		TBD		dBm
11ax(HE40 MCS11)		TBD		dBm
11ax(HE80 MCS11)		TBD		dBm

Data Rate	WLAN: 802.11b : 1, 2, 5.5, 11Mbps 802.11a/g : 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n : Maximum data rates up to 72 Mbps (20 MHz channel), 150 Mbps (40 MHz channel) 802.11ac: Maximum data rates up to 433 Mbps (80 MHz channel) 802.11ax: Maximum data rates up to 600 Mbps (80 MHz channel)
Security	■ WiFi: WPA3, WPA2, WPA2 and WPA mixed mode, WEP ■ BT: AES ■ 802.15.4 :AES

* If you have any certification questions about output power please contact FAE directly.

1.3.3 Bluetooth

Features	Description
Bluetooth Standard	Full Bluetooth 5.3 features
Frequency Rage	2402MHz~2483MHz
Modulation	Header GFSK Payload 2M: π/4-DQPSK Payload 3M: 8DPSK
Output Power	

	Min	Typ	Max	Unit
BDR		TBD		dBm
EDR		TBD		dBm
Low Energy		TBD		dBm

Receiver Sensitivity	

BT Sensitivity (BER<0.1%)

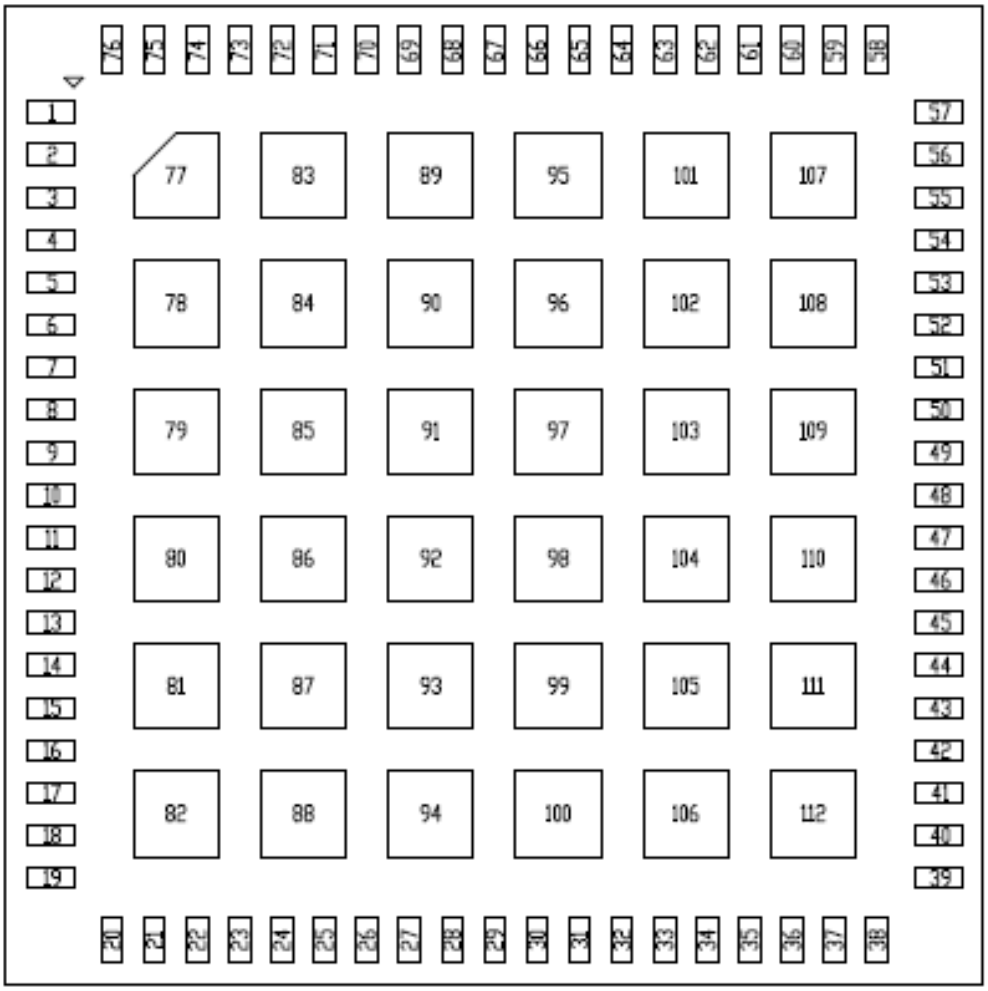
	Min	Typ	Max	Unit
BDR(DH1)		TBD		dBm
EDR(2DH5)		TBD		dBm
EDR(3DH5)		TBD		dBm
Low Energy		TBD		dBm

1.3.4 Operating Condition

Features	Description
Operating Conditions	
Voltage	3.3V +-5%
Operating Temperature	-40 ºC to +105 ºC
Operating Humidity	Less than 85% R.H.
Storage Temperature	-40 ºC to +105 ºC
Storage Humidity	Less than 60% R.H.
ESD Protection	
Human Body Model	TBD
Changed Device Model	TBD

2. Pin Definition

2.1 Pin Map



PIN DEFINED (TOP VIEW)

AW-XMA06-T Pin Map (top view)

2.2 Pin Table

Pin No	Definition	Basic Description	Voltage	Type
1	LTE_COEX_Rx	Coexistence UART receive serial data(Input)	VDDIO	I
2	PCM_IN	PCM data input	VDDIO	I/O
3	PCM_OUT	PCM Data output	VDDIO	I/O
4	PCM_CLK	PCM Clock	VDDIO	I/O
5	PCM_SYNC	PCM sync signal	VDDIO	I/O
6	GND	Ground	---	---
7	PCIE_RST_L	PCIe host indication to reset the device (active low)	VDDIO	I
8	PCIE_WAKE_L	PCIe wake signal (active low)	VDDIO	I/O
9	PCIE_CLKREQ_L	PCIe clock request (active low)	VDDIO	I/O
10	NC	Floating Pin, No connect to anything.	---	---
11	GND	Ground	---	---
12	PCIE_RX_P	PCI Express Receive Data—Negative	1V8	I
13	PCIE_RX_N	PCI Express Receive Data—Positive	1V8	I
14	GND	Ground	---	---
15	PCIE_TX_P	PCI Express Transmit Data—Positive	1V8	O
16	PCIE_TX_N	PCI Express Transmit Data—Negative	1V8	O
17	GND	Ground	---	---
18	PCIE_CLK_N	PCI Express Differential Clock Input—Negative	1V8	I
19	PCIE_CLK_P	PCI Express Differential Clock Input—Positive	1V8	I
20	NC	Floating Pin, No connect to anything.	---	---
21	NC	Floating Pin, No connect to anything.	---	---
22	NC	Floating Pin, No connect to anything.	---	---
23	GND	Ground	---	---
24	NC	Floating Pin, No connect to anything.	---	---
25	NC	Floating Pin, No connect to anything.	---	---
26	GND	Ground	---	---
27	NC	Floating Pin, No connect to anything.	---	---
28	NC	Floating Pin, No connect to anything.	---	---
29	GND	Ground	---	---
30	JTAG_TDO	JTAG_TDO/GPIO30	VDDIO	I/O
31	JTAG_TDI	JTAG_TDI/GPIO29	VDDIO	I/O
32	JTAG_TCK	JTAG_TCK/GPIO27	VDDIO	I/O
33	NC	Floating Pin, No connect to anything.	---	---
34	JTAG_TMS	JTAG_TMS/GPIO28	VDDIO	I/O
35	NC	Floating Pin, No connect to anything.	VDDIO	I
36	GND	Ground	---	---
37	ANT3	RF pin out with BT	---	I/O
38	GND	Ground	---	---
39	NC	Floating Pin, No connect to anything.	---	---
40	NC	Floating Pin, No connect to anything.	---	---
41	NC	Floating Pin, No connect to anything.	---	---

42	NC	Floating Pin, No connect to anything.	---	---
43	GND	Ground	---	---
44	GND	Ground	---	---
45	ANT1	RF pin out with wlan & BT	---	I/O
46	GND	Ground	---	---
47	GND	Ground	---	---
48	NC	Floating Pin, No connect to anything.	---	---
49	NC	Floating Pin, No connect to anything.	---	---
50	NC	Floating Pin, No connect to anything.	---	---
51	NC	Floating Pin, No connect to anything.	---	---
52	GND	Ground	---	---
53	GND	Ground	---	---
54	ANT2	RF pin out with wlan	---	I/O
55	GND	Ground	---	
56	GND	Ground	---	
57	NC	Floating Pin, No connect to anything.	---	
58	NC	Floating Pin, No connect to anything.	---	
59	NC	Floating Pin, No connect to anything.	---	
60	NC	Floating Pin, No connect to anything.	---	
61	NC	Floating Pin, No connect to anything.	---	
62	NC	Floating Pin, No connect to anything.	---	
63	NC	Floating Pin, No connect to anything.	---	
64	NC	Floating Pin, No connect to anything.	---	
65	NC	Floating Pin, No connect to anything.	---	
66	NC	Floating Pin, No connect to anything.	---	
67	GND	Ground	---	
68	PDn	Full Power-down (input) (active low) 0 = full power-down mode 1 = normal mode *Pull high is 3.3V with 51K resister	3.3V	I
69	BT_RESET	BT Reset function	VDDIO	I
70	GND	Ground	---	---
71	1.8V	1.8V power voltage source input	1.8V	P/VDDIO
72	UART_RTS	UART Mode: UART_RTSn (active low)	VDDIO	O
73	UART_CTS	UART Mode: UART_CTSn (active low)	VDDIO	I
74	UART_TXD	UART SIN pin	VDDIO	I
75	UART_RXD	UART SOUT.pin	VDDIO	O
76	LTE_COEX_TX	Coexistence UART transmit serial data(Output)	VDDIO	I
77	NC	Floating Pin, No connect to anything.	---	---
78	GND	Ground	---	---
79	NC	Floating Pin, No connect to anything.	---	---
80	GND	Ground	---	---
81	GND	Ground	---	---
82	GND	Ground	---	---

83	NC	Floating Pin, No connect to anything.	---	---
84	GND	Ground	---	---
85	NC	Floating Pin, No connect to anything.	---	---
86	NC	Floating Pin, No connect to anything.	---	---
87	GND	Ground	---	---
88	GND	Ground	---	---
89	NC	Floating Pin, No connect to anything.	---	---
90	GND	Ground	---	---
91	GND	Ground	---	---
92	GND	Ground	---	---
93	GND	Ground	---	---
94	GND	Ground	---	---
95	GND	Ground	---	---
96	GND	Ground	---	---
97	GND	Ground	---	---
98	GND	Ground	---	---
99	GND	Ground	---	---
100	GND	Ground	---	---
101	3.3V	3.3V power voltage source input	3.3V	P
102	NC	Floating Pin, No connect to anything.	---	---
103	GND	Ground	---	---
104	GND	Ground	---	---
105	NC	Floating Pin, No connect to anything.	---	---
106	NC	Floating Pin, No connect to anything.	---	---
107	GND	Ground	---	---
108	GND	Ground	---	---
109	GND	Ground	---	---
110	GND	Ground	---	---
111	GND	Ground	---	---
112	GND	Ground	---	---

3. Electrical Characteristics

3.1 Absolute Maximum Ratings

Symbol	Parameter	Minimum	Typical	Maximum	Unit
VBAT	DC supply for the 3.3V input	-	3.3	3.96	V
VDDIO	I/O power supply	-	1.8	2.16	V

3.2 Recommended Operating Conditions

Symbol	Parameter	Minimum	Typical	Maximum	Unit
VBAT	DC supply for the 3.3V input	3.14	3.3	3.46	V
VDDIO	1.8V digital I/O power supply	1.71	1.8	1.98	V

3.3 Digital IO Pin DC Characteristics

3.3.1 1.8V Operation (VDDIO)

Symbol	Parameter	Minimum	Typical	Maximum	Unit
V_{IH}	Input high voltage	0.7*VIO	-	VIO+0.4	V
V_{IL}	Input low voltage	-0.4	-	0.3*VIO	
V_{OH}	Output high voltage	VIO-0.4	-	-	
V_{OL}	Output low voltage	-	-	0.4	
V_{HYS}	Input Hysteresis	100			mV

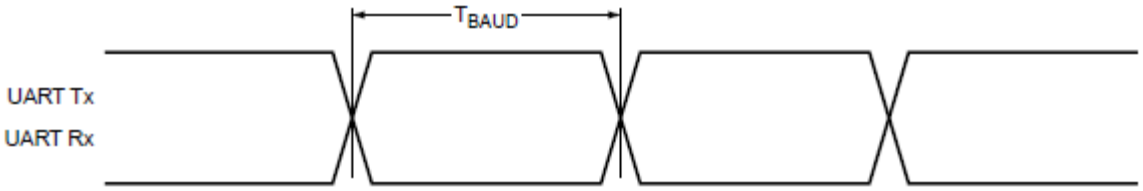
3.3.2 3.3V Operation (VDDIO)

Symbol	Parameter	Minimum	Typical	Maximum	Unit
V_{IH}	Input high voltage	0.7*VIO	-	VIO+0.4	V
V_{IL}	Input low voltage	-0.4	-	0.3*VIO	
V_{OH}	Output High Voltage	VIO-0.4	-	-	
V_{OL}	Output Low Voltage	-	-	0.4	
V_{HYS}	Input Hysteresis	100			mV

3.4 Host Interface

3.4.1.High-Speed UART Interface

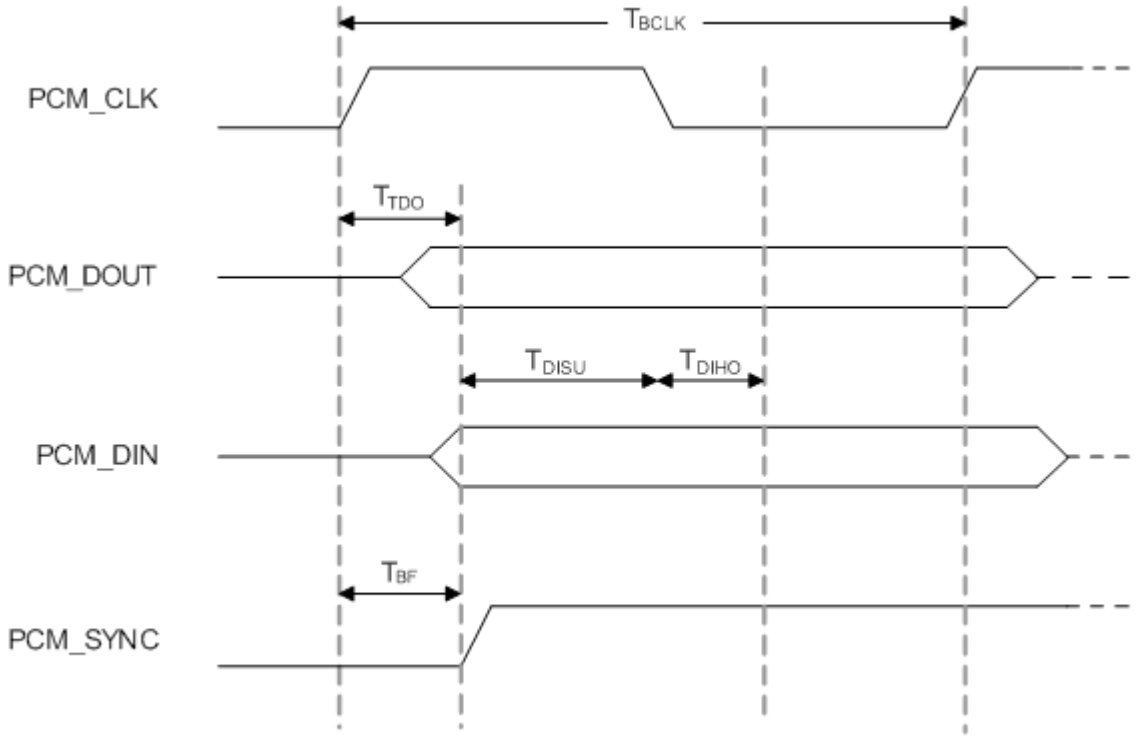
The **AW-XMA06-T** supports a high-speed Universal Asynchronous Receiver/Transmitter (UART) interface, compliant to the industry standard 16550 specification. High-speed baud rates are supported to provide the physical transport between the device and the host for exchanging Bluetooth data.



Symbol	Parameter	Condition	Min	Typ	Max	Units
T_{BAUD}	Baud rate	26MHz or 40MHz input clock	250	-	-	ns

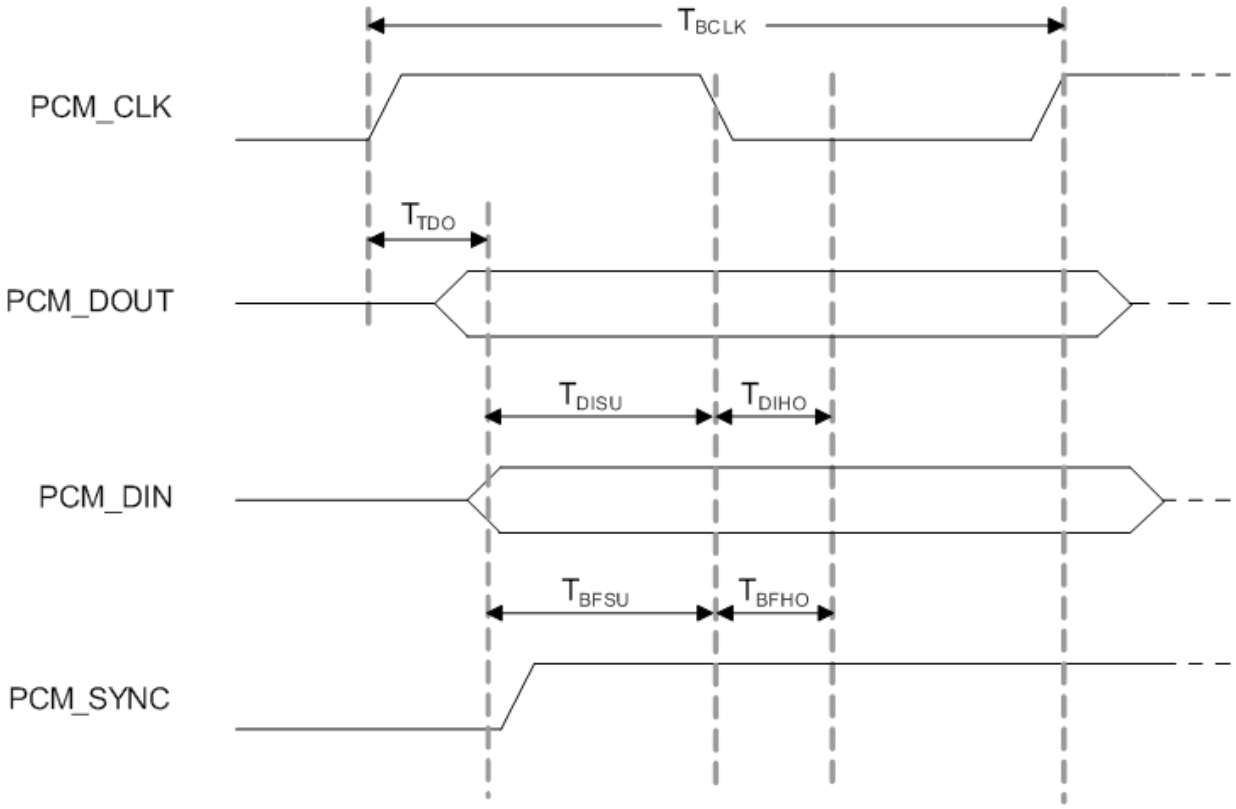
3.4.2 PCM Interface

3.4.2.1 PCM Timing Specification – Master Mode



Symbol	Parameter	Condition	Min	Typ	Max	Units
F_{BCLK}	--	--	--	2/2.048	--	MHz
Duty $Cycle_{BCLK}$	--	--	0.4	0.5	0.6	--
$T_{BCLK\ rise/fall}$	--	--	--	3	--	ns
T_{DO}	--	--	--	--	15	ns
T_{DISU}	--	--	20	--	--	ns
T_{DIHO}	--	--	15	--	--	ns
T_{BF}	--	--	--	--	15	ns

3.4.2.2 PCM Timing Specification – Slave Mode



Symbol	Parameter	Condition	Min	Typ	Max	Units
F_{BCLK}	--	--	--	2/2.048	--	MHz
Duty $Cycle_{BCLK}$	--	--	0.4	0.5	0.6	--
$T_{BCLK\ rise/fall}$	--	--	--	3	--	ns
T_{DO}	--	--	--	--	30	ns
T_{DISU}	--	--	15	--	--	ns
T_{DIHO}	--	--	10	--	--	ns
T_{BFSU}	--	--	15	--	--	ns
T_{BFHO}			10		--	ns

3.4.3 PCI Express Interface

3.4.3.1 Differential Tx Output Electricals

Symbol	Parameter	Min	Typ	Max	Units
UI	Unit interval Each UI is 400 ps ±300 PPM. UI does not account for SSC dictated variations.	399.98	400	400.12	ps
V_{Tx_DIFFpp}	Differential peak-to-peak output voltage $V_{Tx\_DIFFpp} = 2*\|V_{TX-D+} - V_{TX-D-}\|$	0.800	--	1.2	V
$V_{Tx\_DE\_RATIO}$	De-emphasized differential output voltage (ratio)	-3.0	-3.5	-4.0	db
T_{Rx_EYE}	Minimum Tx eye width	0.75	--	--	UI
$T_{Rx\_EYE\_MEDIAN\_MAX\_JIT}$	Maximum time between jitter median and maximum deviation from median	--	--	0.125	UI
T_{Tx_RISE}, T_{Tx_FALL}	D+/D- Tx output rise/fall time	0.125	--	--	UI
$V_{Tx\_CM\_DC\_ACTIVE\_IDLE\_DELTA}$	Absolute delta of DC common mode voltage during L0 and electrical idle	0-	-	100	mV
$V_{Tx\_CM\_DC\_LINE\_DELTA}$	Absolute delta of DC common mode voltage between D+ and D-	0-	-	25	mV
$V_{Tx\_IDLE\_DIFFp}$	Electrical idle differential peak output voltage	0	--	20	mV
$V_{Tx\_RCV\_DETECT}$	Voltage change allowed during receiver detection	--	--	600	mV
$V_{Tx\_DC\_CM}$	Tx DC common mode voltage	--	--	3.6	V
I_{Tx_SHORT}	Tx short circuit current limit	--	--	90	mA
$T_{Tx\_IDLE\_MIN}$	Minimum time spent in electrical idle	50	--	--	UI
$T_{Tx\_IDLE\_SET\_TO\_IDLE}$	Maximum time to transition to a valid electrical idle after sending an electrical idle ordered set	--	--	20	UI
$T_{Tx\_IDLE\_TO\_DIFF\_DATA}$	Maximum time to transition to valid Tx specifications after leaving an electrical idle condition	--	--	20	UI
RL_{Tx_DIFF}	Differential return loss	10	--	--	dB
RL_{Tx_CM}	Common mode return loss	6	--	--	dB
C_{Tx}	AC coupling capacitor	75	--	200	nF
$T_{Crosstalk}$	Crosstalk random timeout	0	--	1	ms

3.4.3.2 Differential Rx Iutput Electricals

Symbol	Parameter	Min	Typ	Max	Units
UI	Unit interval Each UI is 400 ps ±300 ppm. UI does not account for SSC dictated variations.	399.98	400	400.12	ps
V_{Rx_DIFFpp}	Differential peak-to-peak voltage $V_{Rx\_DIFFpp} = 2*\|V_{RX-D+} - V_{RX-D-}\|$	0.175	--	1.2	V
T_{Rx_EYE}	Minimum receiver eye width	0.4	--	--	UI
$T_{Rx\_EYE\_MEDIAN\_MAX\_JIT}$	Maximum time between jitter median and maximum deviation from median	--	--	0.3	UI
$V_{Rx\_CM\_ACp}$	AC peak common mode input voltage	--	--	150	mV
RL_{Rx_DIFF}	Differential return loss	10	--	--	dB
RL_{Rx_CM}	Common mode return loss	6	--	--	dB
$Z_{Rx\_DIFF\_DC}$	DC differential input impedance	80	100	120	Ω
Z_{Rx_DC}	DC input impedance	40	50	60	Ω
$Z_{Rx\_HIGH\_IMP\_DC\_POS}$	Powered down DC input impedance positive	50	--	--	k
$Z_{Rx\_HIGH\_IMP\_DC\_NEG}$	Powered down DC input impedance negative	1	--	--	kΩ
$V_{Rx\_IDLE\_DET\_DIFFpp}$	Electrical idle detect threshold	65	--	175	mV
$T_{Rx\_IDLE\_DET\_DIFF\_ENTERTIME}$	Unexpected electrical idle enter detect threshold integration time	--	--	10	ms
L_{Rx_SKEW}	Total skew	---	-2	0	ns

3.5 Power Consumption*

3.5.1 WLAN

No.	Item			JP1_PIN2 VBAT_3.3V (mA)		
				Max.		Avg.
1	Pdn *(1)(2)			TBD		TBD
2	Deepsleep*(2)(3)			TBD		TBD
3	Power Save 2.4GHz (DTIM-1)*(2)(3)(4)			TBD		TBD
4	Power Save 5GHz (DTIM-1)*(2)(3)(4)			TBD		TBD
Band (GHz)	Mode	BW (MHz)	RF Power (dBm)	Transmit (mA)		
				Max.	Avg.	Duty Cycle Avg. (%)
2.4	11b@1Mbps	20	17	TBD	TBD	TBD
	11g@54Mbps	20	16	TBD	TBD	TBD
	11n@MCS0	40	14	TBD	TBD	TBD
	11n@MCS7	40	14	TBD	TBD	TBD
	11ax@MCS0 NSS1	40	12	TBD	TBD	TBD
	11ax@MCS11 NSS1	40	12	TBD	TBD	TBD
5	11a@6Mbps	20	16	TBD	TBD	TBD
	11n@MCS0	40	16	TBD	TBD	TBD
	11n@MCS7	40	16	TBD	TBD	TBD
	11ac@MSC0 NSS1	80	14	TBD	TBD	TBD
	11ac@MSC9 NSS1	80	14	TBD	TBD	TBD
	11ax@MSC0 NSS1	80	11	TBD	TBD	TBD
	11ax@MSC11 NSS1	80	11	TBD	TBD	TBD
Band (GHz)	Mode	BW(MHz)		Receive (mA)		
				Max.		Avg.
2.4	11b@11Mbps	20		TBD		TBD
	11n@MCS7	40		TBD		TBD
	11ax@MCS11 NSS1	40		TBD		TBD
5	11a@54Mbps	20		TBD		TBD
	11n@MCS7	40		TBD		TBD
	11ac@MCS9 NSS1	80		TBD		TBD
	11ax@MCS11 NSS1	80		TBD		TBD

No.	Item			JP4_PIN2 VIO_3.3V (uA)	
				Max.	Avg.
1	Pdn *(1)(2)			TBD	TBD
2	Deepsleep*(2)(3)			TBD	TBD
3	Power Save 2.4GHz (DTIM-1)*(2)(3)(4)			TBD	TBD
4	Power Save 5GHz (DTIM-1)*(2)(3)(4)			TBD	TBD
Band (GHz)	Mode	BW (MHz)	RF Power (dBm)	Transmit (uA)	
				Max.	Avg.
2.4	11b@1Mbps	20	17	TBD	TBD
	11ax@MCS11 NSS1	40	12	TBD	TBD
5	11a@6Mbps	20	16	TBD	TBD
	11ax@MSC11 NSS1	80	11	TBD	TBD
Band (GHz)	Mode	BW(MHz)		Receive (uA)	
				Max.	Avg.
2.4	11b@11Mbps	20		TBD	TBD
5	11ax@MCS11 NSS1	80		TBD	TBD

No.	Item			JP4_PIN2 VIO_1.8V (uA)	
				Max.	Avg.
1	Pdn *(1)(2)			TBD	TBD
2	Deepsleep*(2)(3)			TBD	TBD
3	Power Save 2.4GHz (DTIM-1)*(2)(3)(4)(5)			TBD	TBD
4	Power Save 5GHz (DTIM-1)*(2)(3)(4)(5)			TBD	TBD
Band (GHz)	Mode	BW (MHz)	RF Power (dBm)	Transmit (uA)	
				Max.	Avg.
2.4	11b@1Mbps	20	17	TBD	TBD
	11ax@MCS11 NSS1	40	12	TBD	TBD
5	11a@6Mbps	20	16	TBD	TBD
	11ax@MSC11 NSS1	80	11	TBD	TBD
Band (GHz)	Mode	BW(MHz)		Receive (uA)	
				Max.	Avg.
2.4	11b@11Mbps	20		TBD	TBD
5	11ax@MCS11 NSS1	80		TBD	TBD

3.5.2 Bluetooth

No.	Mode	Packet Type	RF Power (dBm)	JP1_PIN2 VBAT_3.3V (mA)	
				Max.	Avg.
1	Deepsleep*(1)	N/A		TBD	TBD
2	Transmit*(2)	DH5	2	TBD	TBD
3	Receive*(2)	DH5	N/A	TBD	TBD

No.	Mode	Packet Type	RF Power (dBm)	JP4_PIN2 VIO_3.3V (uA)	
				Max.	Avg.
1	Deepsleep*(1)	N/A		TBD	TBD
2	Transmit*(2)	DH5	2	TBD	TBD
3	Receive*(2)	DH5	N/A	TBD	TBD

No.	Mode	Packet Type	RF Power (dBm)	JP4_PIN2 VIO_1.8V (uA)	
				Max.	Avg.
1	Deepsleep*(1)	N/A		TBD	TBD
2	Transmit*(2)	DH5	2	TBD	TBD
3	Receive*(2)	DH5	N/A	TBD	TBD

3.5.3 802.15.4

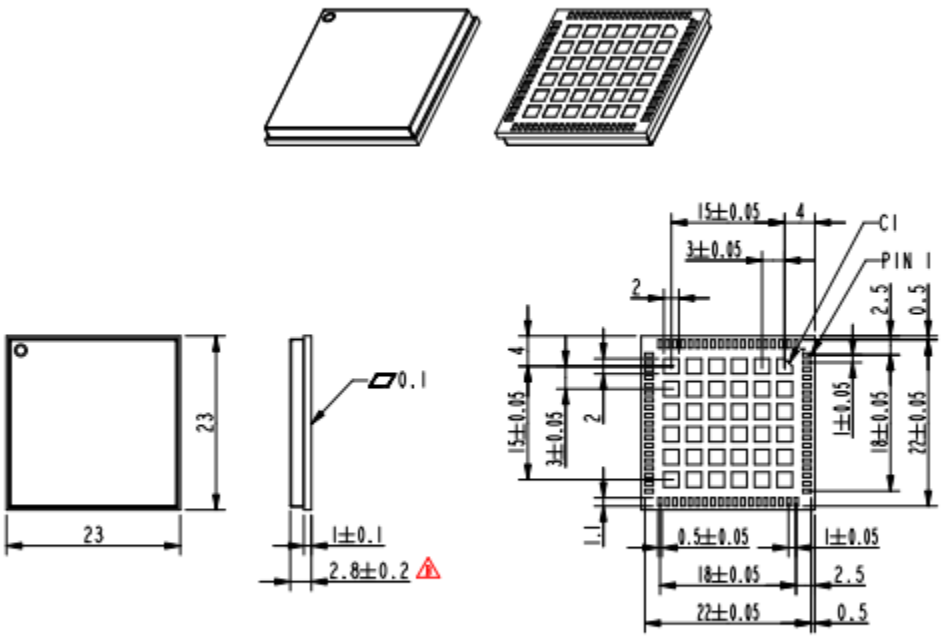
No.	Mode	Modulation Type	RF Power (dBm)	JP1_PIN2 VBAT_3.3V (mA)	
				Max.	Avg.
1	Deepsleep*(1)(2)	N/A		TBD	TBD
2	Transmit*(3)(4)	O-QPSK	4	TBD	TBD
3	Receive*(3)(5)	O-QPSK	N/A	TBD	TBD

No.	Mode	Packet Type	RF Power (dBm)	JP4_PIN2 VIO_3.3V (uA)	
				Max.	Avg.
1	Deepsleep*(1)(2)	N/A		TBD	TBD
2	Transmit*(3)(4)	O-QPSK	4	TBD	TBD
3	Receive*(3)(5)	O-QPSK	N/A	TBD	TBD

No.	Mode	Packet Type	RF Power (dBm)	JP4_PIN2 VIO_1.8V (uA)	
				Max.	Avg.
1	Deepsleep*(1)(2)	N/A		TBD	TBD
2	Transmit*(3)(4)	O-QPSK	4	TBD	TBD
3	Receive*(3)(5)	O-QPSK	N/A	TBD	TBD

4. Mechanical Information

4.1 Mechanical Drawing



5. Packing Information

TBD