

AW-XM458MA-PUR

**IEEE 802.11 2x2 Wi-Fi 6 SU and MU-MIMO
CDW Wireless LAN + Bluetooth 5.1
Combo M.2 2230 Module**

Datasheet

Rev. C

DF

For Standard

Features

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

WLAN Dual-Radios

- ◆ Dual, independent direct-conversion WLAN radios (with dual-MACs and dual-Basebands) supports true and simultaneous LAN network operation at two different frequency band

Bluetooth

- ◆ Bluetooth 5
- ◆ 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: R2-2458MA-DST-01

| Version | Revision Date | DCN NO. | Description | Initials | Approved |
|---------|---------------|-----------|--|------------|----------|
| A | 2020/07/21 | DCN019506 | <ul style="list-style-type: none"> ● Draft version | Renton Tao | N.C Chen |
| B | 2020/03/18 | DCN021908 | <ul style="list-style-type: none"> ● Correct pin definition table ● Modify table format | Renton Tao | N.C Chen |
| C | 2021/06/07 | DCN022198 | <ul style="list-style-type: none"> ● Update operating temperature ● Add the information of RF connector receptacle | Roger Liu | N.C Chen |
| | | | | | |
| | | | | | |

Table of Contents

| | |
|--|-----------|
| Revision History..... | 3 |
| Table of Contents..... | 4 |
| 1. Introduction | 5 |
| 1.1 Product Overview | 5 |
| 1.2 Block Diagram..... | 6 |
| 1.3 Specifications Table | 7 |
| 1.3.1 General | 7 |
| 1.3.2 WLAN | 7 |
| 1.3.3 Bluetooth..... | 9 |
| 1.3.4 Operating Conditions..... | 10 |
| 2.1 Pin Table..... | 11 |
| 3. Electrical Characteristics | 13 |
| 3.1 Absolute Maximum Ratings | 15 |
| 3.2 Recommended Operating Conditions | 15 |
| 3.3 Digital IO Pin DC Characteristics..... | 15 |
| 3.3.1 1.8V Operation (VIO)..... | 15 |
| 3.3.2 3.3V Operation (VIO)..... | 15 |
| 3.4 Host Interface..... | 15 |
| 3.4.1 PCI Express Interface | 15 |
| 3.4.2.High-Speed UART Interface..... | 17 |
| 3.5 Timing Sequence | 18 |
| 3.6 Power Consumption*..... | 19 |
| 3.6.1 WLAN | 19 |
| 3.6.2 Bluetooth..... | 19 |
| 4. Mechanical Information | 20 |
| 4.1 Mechanical Drawing | 20 |
| 5. Packing Information..... | 21 |

1. Introduction

1.1 Product Overview

AzureWave Technologies, Inc. introduces the IEEE 802.11a/b/g/n/ac/ax Concurrent Dual Wi-Fi (CDW) and BT, combo module – **AW-XM458MA-PUR**. With High Efficiency Wireless (HEW) and backward compatible with 802.11ac technologies integrated into a module, AW-XM458MA-PUR provides the best and most convenient SMT process. The module is targeted to mobile devices including, Tablet PC, Portable Media Players (PMPs), Portable Navigation Devices (PNDs), Personal Digital Assistants (PDAs), Tracking Devices, Gaming Devices which need convenient SMT process, low power consumption.

By using AW-XM458MA-PUR, the customers can easily integrate the Wi-Fi, BT, by a combo module with the benefits of **high design flexibility, high success rate on SMT process, short development cycle, and quick time-to-market.**

Compliance with the IEEE 802.11a/b/g/n/ac/ax standard, the AW-XM458MA-PUR uses **DSSS, OFDM, DBPSK, DQPSK, CCK** and **QAM** baseband modulation technologies. A high level of integration and full implementation of the power management functions specified in the IEEE 802.11 standard minimize the system power requirements by using AW-XM458MA-PUR.

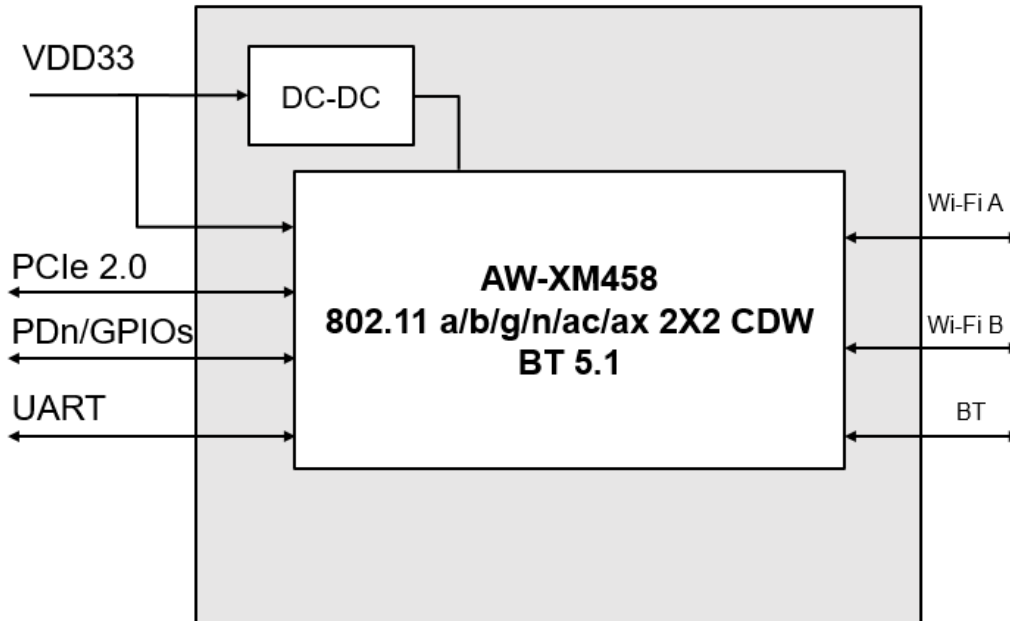
The AW-XM458MA-PUR supports standard interface **PCIe for WLAN** interface connection. High-Speed **UART for BT** interface connection. AW-XM458MA-PUR is suitable for multiple mobile processors for different applications. With the combo functions and the good performance, the AW-XM458MA-PUR is the best solution for the consumer electronics and the tablet PC.

| Scenario | 2.4GHz Band | | | 5GHz Band | | |
|----------|-------------|------------|-------|------------|---------------------------|----------------|
| | Mode | Technology | BW | Mode | Technology | BW |
| 1 | 2x2 | 802.11n | 40MHz | 2x2 | 802.11ax | 80MHz |
| 2 | 2x2 | 802.11n | 40MHz | 1x1 1Rx | 802.11ax Zero Wait DFS | 80MHz 80MHz |
| 3 | 2x2 | 802.11ax | 40MHz | 2x2 | 802.11ac | 40MHz |

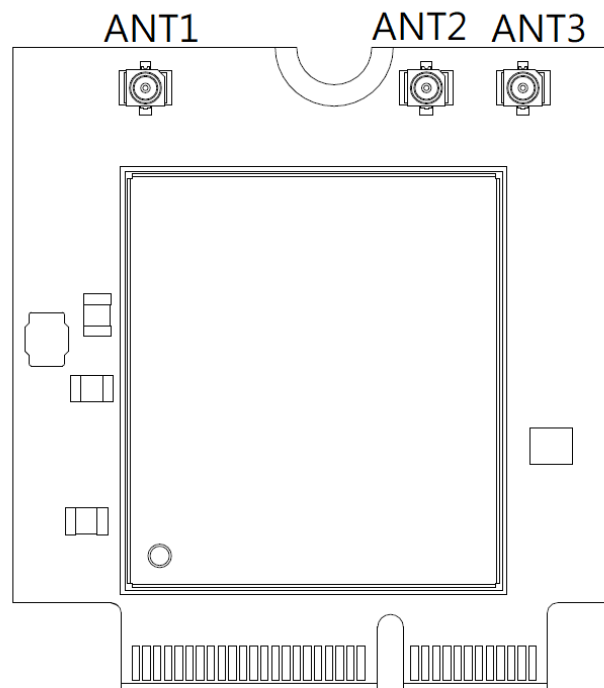
Concurrent 2.4GHz and 5GHz modes supported table

1.2 Block Diagram

A simplified block diagram of the AW-XM458MA-PUR module is depicted in the figure below.



AW-XM458MA-PUR Block Diagram



1.3 Specifications Table

1.3.1 General

| Features | Description |
|----------------------------|---|
| Product Description | IEEE 802.11 2X2 WiFi 6 MIMO Wireless LAN + Bluetooth 5.1 Combo LGA Module |
| Major Chipset | NXP 88W9098 (DR-QFN 148pin) |
| Host Interface | WiFi + BT ● PCIe2.0 + UART |
| Dimension | 28 mm X 30 mm x 3.95 mm(Max) (Tolerance remarked in mechanical drawing) |
| Form factor | Alternative sized M.2 2230 Key E |
| Antenna | 2T2R for WiFi, standalone antenna for BT IPEX MHF4 connector Receptacle (20449) ANT1(Main) : WiFi_A → TX/RX ANT2(Aux) : WiFi_B → TX/RX ANT3(BT): BT |
| Weight | TBD |

1.3.2 WLAN

| Features | Description |
|---------------------------|---|
| WLAN Standard | IEEE 802.11 a/b/g/n/ac/ax 2T2R |
| Frequency Range | 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 |
| Modulation | DSSS, OFDM, DBPSK, DQPSK, CCK, 16-QAM, 64-QAM, 256QAM, 1024QAM, OFDMA |
| Number of Channels | 2.4GHz: <ul style="list-style-type: none"> ■ USA, NORTH AMERICA, Canada and Taiwan - 1 ~ 11 ■ China, Australia, Most European Countries - 1 ~ 13 ■ Japan, 1 ~ 13 5GHz: <ul style="list-style-type: none"> ■ 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 | | | | |
| Output Power | 2.4G | | | | |
| | | Min | Typ | Max | Unit |
| | 11b (11Mbps) @EVM<35% | 16 | 18 | 20 | dBm |
| | 11g (54Mbps) @EVM \leq -27 dB | 15.5 | 17 | 18.5 | dBm |
| | 11n (HT20 MCS7) @EVM \leq -28 dB | 14.5 | 16 | 17.5 | dBm |
| | 11n (HT40 MCS7) @EVM \leq -28 dB | 14.5 | 16 | 17.5 | dBm |
| | 11ax (HE20 MCS11) @EVM \leq -35 dB | 12.5 | 14 | 15.5 | dBm |
| | 11ax (HE40 MCS11) @EVM \leq -35 dB | 12.5 | 14 | 15.5 | dBm |
| | 5G | | | | |
| | | Min | Typ | Max | Unit |
| | 11a (54Mbps) @EVM \leq -27 dB | 14 | 16 | 18 | dBm |
| | 11n (HT20 MCS7) @EVM \leq -28 dB | 14 | 16 | 18 | dBm |
| | 11n (HT40 MCS7) @EVM \leq -28 dB | 14 | 16 | 18 | dBm |
| | 11ac(VHT20 MCS8) @EVM \leq -31 dB | 13 | 15 | 17 | dBm |
| | 11ac(VHT40 MCS9) @EVM \leq -32 dB | 13 | 15 | 17 | dBm |
| | 11ac(VHT80 MCS9) @EVM \leq -32 dB | 13 | 15 | 17 | dBm |
| | 11ax(HE20 MCS11) @EVM \leq -35 dB | 10 | 12 | 14 | dBm |
| | 11ax(HE40 MCS11) @EVM \leq -35 dB | 10 | 12 | 14 | dBm |
| | 11ax(HE80 MCS11) @EVM \leq -35 dB | 10 | 12 | 14 | dBm |

| | | | | | |
|-----------------------------|--|-----|-----|-----|------|
| Receiver Sensitivity | 2.4G | | | | |
| | | Min | Typ | Max | Unit |
| | 11b (11Mbps) | - | -88 | -85 | dBm |
| | 11g (54Mbps) | - | -75 | -72 | dBm |
| | 11n (HT20 MCS7) | - | -72 | -69 | dBm |
| | 11n (HT40 MCS7) | - | -70 | -66 | dBm |
| | 11ax(HE20 MCS11) | - | -62 | -58 | dBm |
| | 11ax(HE40 MCS11) | - | -59 | -53 | dBm |
| | 5G | | | | |
| | | Min | Typ | Max | Unit |
| | 11a (54Mbps) | - | -72 | -68 | dBm |
| | 11n (HT20 MCS7) | - | -70 | -66 | dBm |
| | 11n (HT40 MCS7) | - | -68 | -64 | dBm |
| | 11ac(VHT20 MCS8) | - | -65 | -61 | dBm |
| | 11ac(VHT40 MCS9) | - | -62 | -58 | dBm |
| 11ac(VHT80 MCS9) | - | -59 | -55 | dBm | |
| 11ax(HE20 MCS11) | - | -60 | -56 | dBm | |
| 11ax(HE40 MCS11) | - | -57 | -53 | dBm | |
| 11ax(HE80 MCS11) | - | -55 | -51 | dBm | |
| Data Rate | <ul style="list-style-type: none"> ■ 802.11b: 1, 2, 5.5, 11Mbps ■ 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54Mbps ■ 802.11n: up to 150Mbps-single ■ 802.11n: up to 300Mbps-2x2 MIMO ■ 802.11ac: up to 192.6Mbps (20MHz channel) ■ 802.11ac: up to 400Mbps (40MHz channel) ■ 802.11ac: up to 866.7Mbps (80MHz channel) ■ 802.11ax: 2.4GHz up to 458Mbps, 5GHz up to 1.2Gbps | | | | |
| Security | WiFi: WPA/WPA2/WPA3 | | | | |

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

1.3.3 Bluetooth

| Features | Description |
|---------------------------|--|
| Bluetooth Standard | Bluetooth 5.1 |
| Bluetooth VID/PID | N/A |
| Frequency Range | 2402MHz~2483MHz |
| Modulation | Header GFSK Payload 2M: $\pi/4$ -DQPSK Payload 3M: 8DPSK |

| | | | | | |
|-----------------------------|-------------------|-----|-----|-----|------|
| Output Power | | Min | Typ | Max | Unit |
| | BDR | 0 | 2 | 4 | dBm |
| | EDR | -2 | 0 | 2 | dBm |
| | Low Energy (2MHz) | 0 | 2 | 4 | dBm |
| Receiver Sensitivity | | Min | Typ | Max | Unit |
| | BDR | | -90 | | dBm |
| | EDR | | -87 | | dBm |
| | Low Energy (2MHz) | | -88 | | dBm |

1.3.4 Operating Conditions

| Features | Description |
|------------------------------|--------------------|
| Operating Conditions | |
| Voltage | 3.3V+/-5% |
| Operating Temperature | -40°C~ 85°C |
| Operating Humidity | less than 85% R.H. |
| Storage Temperature | -40°C~ 85°C |
| Storage Humidity | less than 60% R.H. |
| ESD Protection | |
| Human Body Model | TBD |
| Changed Device Model | TBD |

2.1 Pin Table

| Pin No. | Definition | Basic Description | Voltage | Type |
|---------|------------|-------------------------------------|---------|----------|
| 1 | GND | Ground. | | GND |
| 2 | VDD33 | 3.3V power supply | 3.3V | VCC |
| 3 | NC | NC | | Floating |
| 4 | VDD33 | 3.3V power supply | 3.3V | VCC |
| 5 | NC | NC | | Floating |
| 6 | NC | NC | | Floating |
| 7 | GND | Ground. | | GND |
| 8 | PCM_CLK | PCM_CLK, GPIO Mode : GPIO[6]. | 1.8V | I/O |
| 15 | NC | NC | | Floating |
| 10 | PCM_SYNC | PCM_SYNC, GPIO Mode : GPIO[7]. | 1.8V | I/O |
| 15 | NC | NC | | Floating |
| 12 | PCM_OUT | PCM_OUT, GPIO Mode : GPIO[5]. | 1.8V | I/O |
| 15 | NC | NC | | Floating |
| 14 | PCM_DIN | PCM_DIN, GPIO Mode : GPIO[4]. | 1.8V | I/O |
| 15 | NC | NC | | Floating |
| 16 | NC | NC | | Floating |
| 17 | NC | NC | | Floating |
| 18 | GND | Ground. | | GND |
| 19 | NC | NC | | Floating |
| 20 | UART WAKE# | BT WAKE HOST, GPIO Mode : GPIO[16]. | 3.3V | I |
| 21 | NC | NC | | Floating |
| 22 | UART_TX | UART SOUT pin | 1.8V | Output |
| 23 | NC | NC | | Floating |
| 32 | UART_RX | UART SIN.pin | 1.8V | Input |
| 33 | GND | Ground. | | GND |
| 34 | UART_RTSn | UART Mode: UART_RTSn (active low) | 1.8V | Output |
| 35 | PERp0 | PCIe Differential receive. | 1.8V | Input |
| 36 | UART_CTSn | UART Mode: UART_CTSn (active low) | 1.8V | Input |
| 37 | PERn0 | PCIe Differential receive. | 1.8V | Input |
| 38 | JTAG_TDO | JTAG_TDO, GPIO Mode :GPIO[31] | 1.8V | O |
| 39 | GND | Ground. | | GND |
| 40 | WLAN WAKE | DEV WLAN WAKE, GPIO Mode :GPIO[12] | 1.8V | O |
| 41 | PETp0 | PCIe Differential transmit. | 1.8V | Output |
| 42 | BT WAKE | DEV BT WAKE, GPIO Mode :GPIO[1] | 1.8V | O |
| 43 | PETn0 | PCIe Differential transmit. | 1.8V | Output |
| 44 | JTAG_TDI | JTAG_TDI, GPIO Mode :GPIO[30] | 1.8V | I |
| 45 | GND | Ground. | | GND |
| 46 | JTAG_TCK | JTAG_TCK, GPIO Mode :GPIO[28] | 1.8V | I/O |
| 47 | REFCLKP | PCIe Differential reference clock. | 1.8V | Input |

| | | | | |
|----|-------------|---|------|----------|
| 48 | JTAG_TMS | JTAG_TMS, GPIO Mode :GPIO[29] | 1.8V | I/O |
| 49 | REFCLKN | PCIe Differential reference clock. | 1.8V | Input |
| 50 | NC | NC | | Floating |
| 51 | GND | Ground. | | GND |
| 52 | PERST0 | PCI Express Reset Signal: active low. | 3.3V | Input |
| 53 | CLKREQ0 | Reference clock request | 3.3V | Output |
| 54 | NC | NC | | Floating |
| 55 | PEWAKE# | Open Drain active Low signal. This signal is used to request that the system return from a sleep/suspended state to service a function initiated wake event. | 3.3V | OUT |
| 55 | NC | NC | | Floating |
| 56 | W_DISABLE1# | Pull power down for WLAN/BT | 3.3V | IN |
| 57 | GND | Ground. | | GND |
| 58 | NC | NC | | Floating |
| 59 | NC | NC | | Floating |
| 60 | NC | NC | | Floating |
| 61 | NC | NC | | Floating |
| 62 | NC | NC | | Floating |
| 63 | GND | Ground. | | GND |
| 64 | NC | NC | | Floating |
| 65 | NC | NC | | Floating |
| 66 | NC | NC | | Floating |
| 67 | NC | NC | | Floating |
| 68 | NC | NC | | Floating |
| 69 | GND | Ground. | | GND |
| 70 | NC | NC | | Floating |
| 71 | NC | NC | | Floating |
| 72 | VDD33 | 3.3V power supply | 3.3V | VCC |
| 73 | NC | NC | | Floating |
| 74 | VDD33 | 3.3V power supply | 3.3V | VCC |
| 75 | GND | Ground. | | GND |
| 76 | GND | Ground. | | GND |

3. Electrical Characteristics

3.1 Absolute Maximum Ratings

| Symbol | Parameter | Minimum | Typical | Maximum | Unit |
|--------|------------------------------|---------|---------|---------|------|
| 3V3 | DC supply for the 3.3V input | - | 3.3 | 3.63 | V |

3.2 Recommended Operating Conditions

| Symbol | Parameter | Minimum | Typical | Maximum | Unit |
|--------|------------------------------|---------|---------|---------|------|
| 3.3V | DC supply for the 3.3V input | 3.14 | 3.3 | 3.46 | V |

3.3 Digital IO Pin DC Characteristics

3.3.1 1.8V Operation (VIO)

| 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 1.8V Operation (VIO_SD)

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

3.4 Host Interface

3.4.1 PCI Express Interface

3.4.1.1 Differential Tx Output Electricals

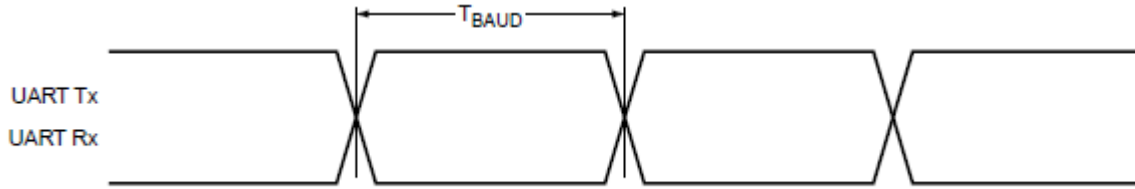
| Symbol | Parameter | Min | Typ | Max | Units |
|--|---|--------|------|--------|-------|
| UI | Unit interval Each UI is 400 ps \pm 300 PPM. UI does not account for SSC dictated variations. | 399.98 | 400 | 400.12 | ps |
| V _{Tx_DIFFpp} | Differential peak-to-peak output voltage $V_{Tx_DIFFpp} = 2 * 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 |

3.4.1.2 Differential Rx Input Electricals

| Symbol | Parameter | Min | Typ | Max | Units |
|--------------------------------------|---|--------|-----|--------|------------|
| UI | Unit interval Each UI is 400 ps \pm 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 | -- | -- | k Ω |
| $V_{RX_IDLE_DET_DIFFpp}$ | 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 |

3.4.2.High-Speed UART Interface

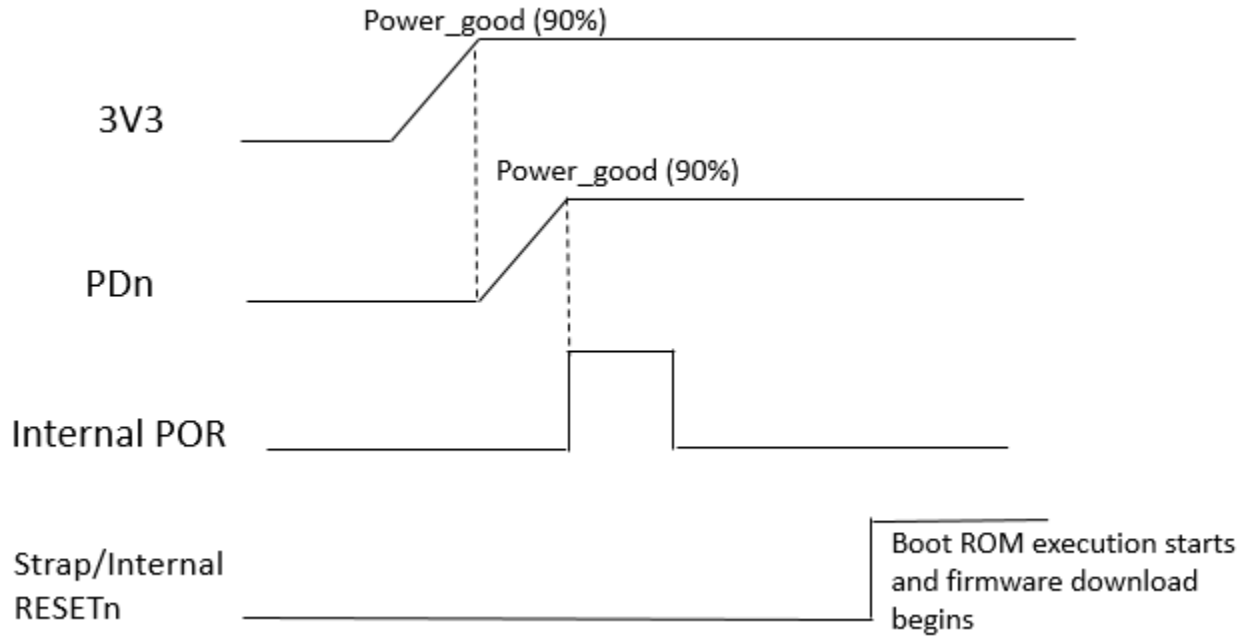
The AW-XM458MA-PUR supports a high-speed Universal Asynchronous Receiver/Transmitter (UART) interface, compliant to the industry standard 16550 specification. High-speed baud rates are supported to provide the physical transport between the device and the host for exchanging Bluetooth data.



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

3.5 Timing Sequence

AW-XM458MA-PUR power up timing sequence.



3.6 Power Consumption*

3.6.1 WLAN

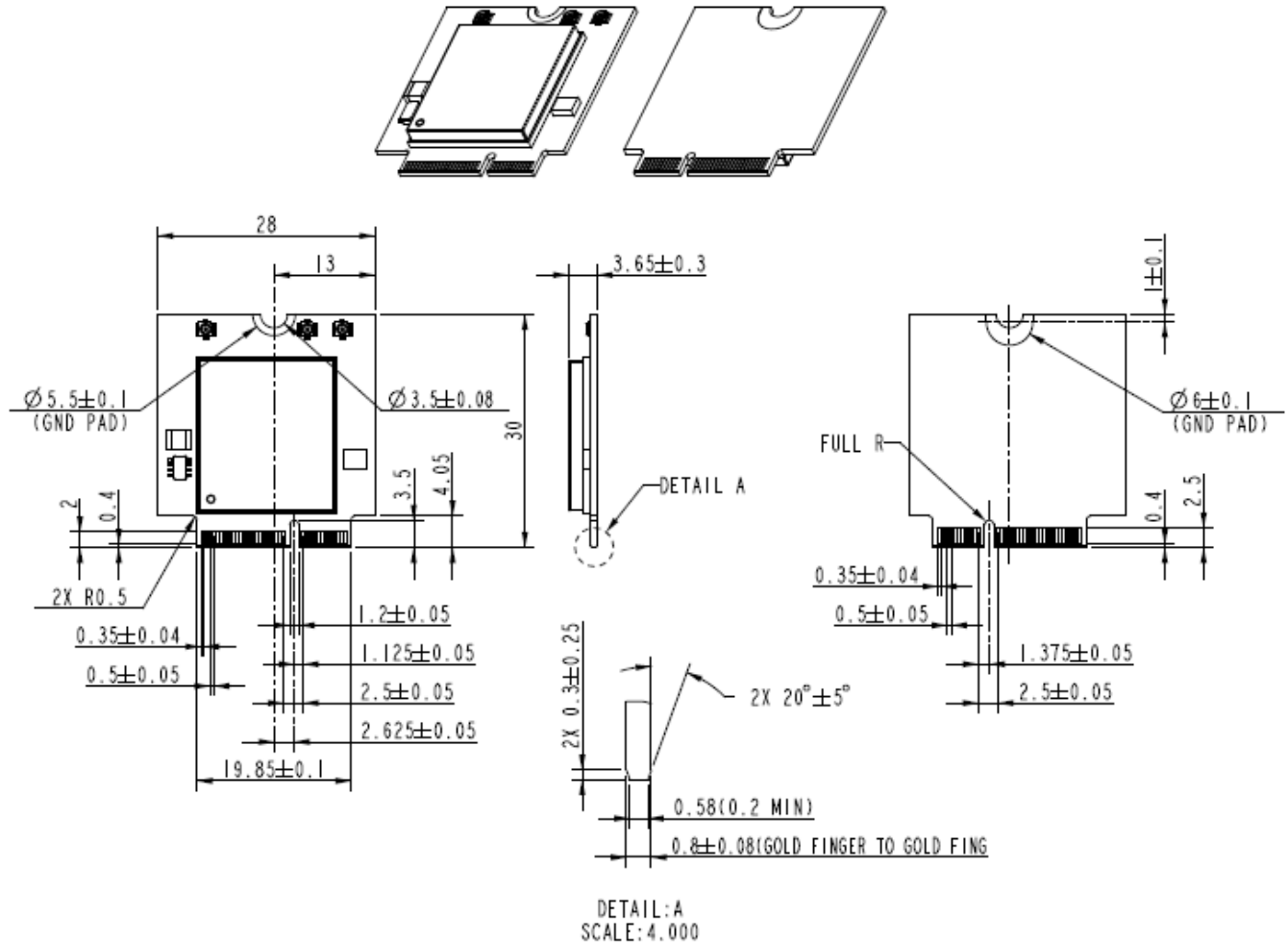
TBD

3.6.2 Bluetooth

TBD

4. Mechanical Information

4.1 Mechanical Drawing



TOLERANCES UNLESS OTHERWISE SPECIFIED: $\pm 0.15\text{mm}$

(Draft drawing)

5. Packing Information

TBD