

**WWAN module adapter  
Model number: WW23A  
User Manual**

**GENERAL**

This device is the WWAN module adapter, WCDMA/LTE with Carrier Aggregation (CA)

**Integration to the end product**

1. Insert WW23A module into M.2 card connector.
2. Secure the end of product using the screw.
3. Insert Antenna unit into Antenna connectors of WW23A module.

**Technical Specification**

- |                            |   |
|----------------------------|---|
| a) Dimensions (H x W x D): | Approx. 2.3mm x 30mm x 42mm   |
| b) Weight:                 | Approx. 6.5g  |
| c) LTE Standard:           | FDD: B2, B4, B5, B7, B12, B13, B14, B25, B26,<br>B29(RX only), B66, B71<br>TDD: B41, B42(Canada only), B42(Canada only), B48, |
| d) WCDMA Standard:         | B2, B4, B5  |
| e) Operating Temperature:  | -30 to +70 degree Celsius   |
| f) Connector interface:    | M.2 3042-S3-B   |
| g) Host interface:         | USB interface etc.,   |

## Regulatory Information

### RF Exposure Compliance information

The WW23A module will have been granted modular approval for mobile applications. Integrators may use the WW23A module in their final products without additional FCC / ISED (Innovation, Science and Economic Development Canada) certification if they meet the following conditions. Otherwise, additional FCC / ISED approvals must be obtained.

1. At least 20 cm separation distance between the antenna and the user’s body must be maintained at all times.
2. To comply with FCC / ISED regulations limiting both maximum RF output power and human exposure to RF radiation, the maximum antenna gain including cable loss in a mobile-only exposure condition must not exceed the limits stipulated in Table 1.

Table 1 Antenna Gain and Collocated Radio Transmitter Specifications

	Operating mode	TX Freq Range (MHz)		Max Conducted Power (dBm)	Antenna Gain Limit (dBi)		EIRP Limits (dBm)
					Standalone	Collocated	
WW23A Embedded Module	WCDMA Band 2, LTE B2	1850	1910	24	9.00	7.30	33.0
	WCDMA Band 4, LTE B4	1710	1755	24	6.00	6.00	30.0
	WCDMA Band 5, LTE B5	824	849	24	7.00	4.90	31.0
	LTE B7	2500	2570	24	9.00	8.20	33.0
	LTE B12	699	716	24	6.60	4.50	30.6
	LTE B13	777	787	24	6.90	4.80	30.9
	LTE B14	788	798	24	6.90	4.80	30.9
	LTE B25	1850	1915	24	9.00	7.30	33.0
	LTE B26	814	849	24	7.00	4.90	31.0
	LTE B41	2496	2690	24	9.00	8.20	33.0
	(Canada only) LTE B43	3600	3800	23	0.00	0.00	23.0
	LTE B48a	3550	3700	23	0.00	0.00	23.0
	LTE B66	1710	1780	24	6.00	6.00	30.0
	LTE B71	663	698	24	6.40	4.30	30.4
Collocated Transmitters	WLAN 2.4 GHz	2400	2500				30
	WLAN 5 GHz	5150	5850				30
	WLAN 6 GHz	5955	7115				30
	Bluetooth	2400	2500				16

a. Important: Airborne operations in LTE Band 48 are prohibited.

3. The WW23A module may transmit simultaneously with other collocated radio transmitters within a host device, provided the following conditions are met:
  - Each collocated radio transmitter has been certified by FCC / ISED for mobile application.
  - At least 20 cm separation distance between the antennas of the collocated

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transmitters and the user's body must be maintained at all times.

- The radiated power of a collocated transmitter must not exceed the EIRP limit stipulated in Table 1.

A label must be affixed to the outside of the end product into which the WW23A module is incorporated, with a statement similar to the following:

- This device contains FCC ID: ACJ9TGWW23A, IC: 216H-CFWW23A .

### **Instructions to OEM Integrators**

A user manual with the end product must clearly indicate the operating requirements and conditions that must be observed to ensure compliance with current FCC/ISED RF exposure guidelines.

The end product with an embedded WW23A module may also need to pass the FCC Part 15 unintentional emission testing requirements and be properly authorized per FCC Part 15.

If this module is intended for use in a portable device, integrators are responsible for separate evaluation and/or approval to satisfy FCC/ISED RF Exposure requirements.

If other radio devices are to be integrated with this module, an additional evaluation and ISED submission may be required. Integrators are responsible for such additional evaluation and ISED submission.