Korenix

JetWave 1402 LTE Module

User Manuel

JW1402-LTE-X

Introduction:

The product equips with next generation 4G LTE module which supports up to 100M DL and 50M UL. It is designed to provide excellent performance with low power consumption and enhance the advantages of robust system and cost effective.

SPEC

LTE Standard
3GPP Release 9 Long Term Evolution (LTE), 2x2 DL-MIMO LTE category 3: max. 100 Mbps DL, 50 Mbps UL Backward compatible with
UMTS/HSPA+

LTE-U Band
LTE: 700/700/850/AWS(1700/2100)/1900 MHz, FDD-Band (13,17,5,4,2)
UMTS/HSPA+: 850/AWS(1700/2100)/1900 MHz, FDD-Band (5,4,2)

Operating Temp./ Humidity -40 ~ 75℃ / 5% ~ 95%

Storage Temperature -40 ~ 85 ℃

Federal Communication Commission Interference Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

● Reorient or relocate the receiving antenna.
● Increase the separation between the equipment and receiver.
● Connect the equipment into an outlet on a circuit different from that
  to which the receiver is connected.
● Consult the dealer or an experienced radio/TV technician for help.

FCC Caution:
➢ Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
➢ This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This device is intended only for OEM integrators under the following conditions:
1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and the maximum antenna gain allowed for use with this device is 4 dBi for B25/B41.
2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed
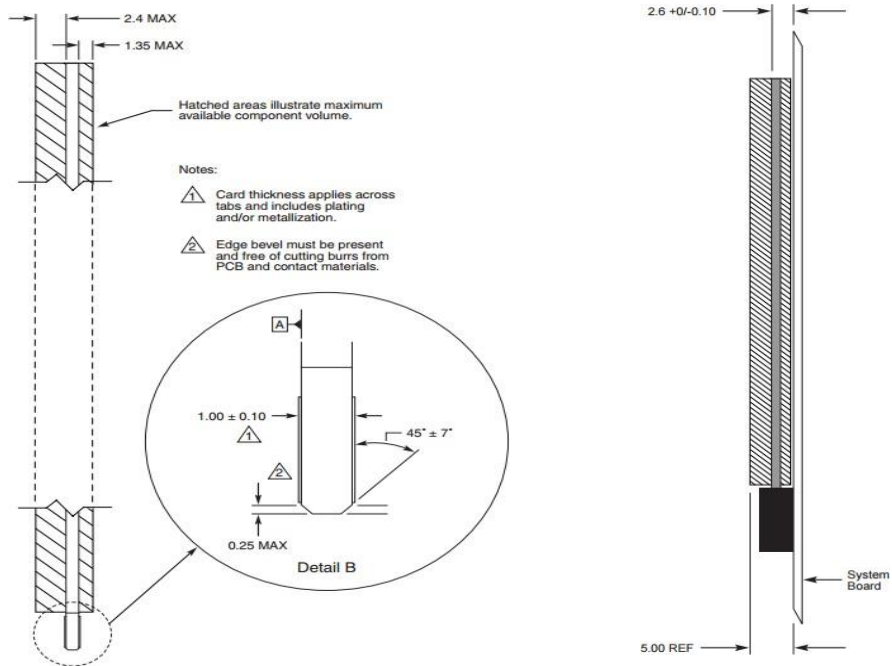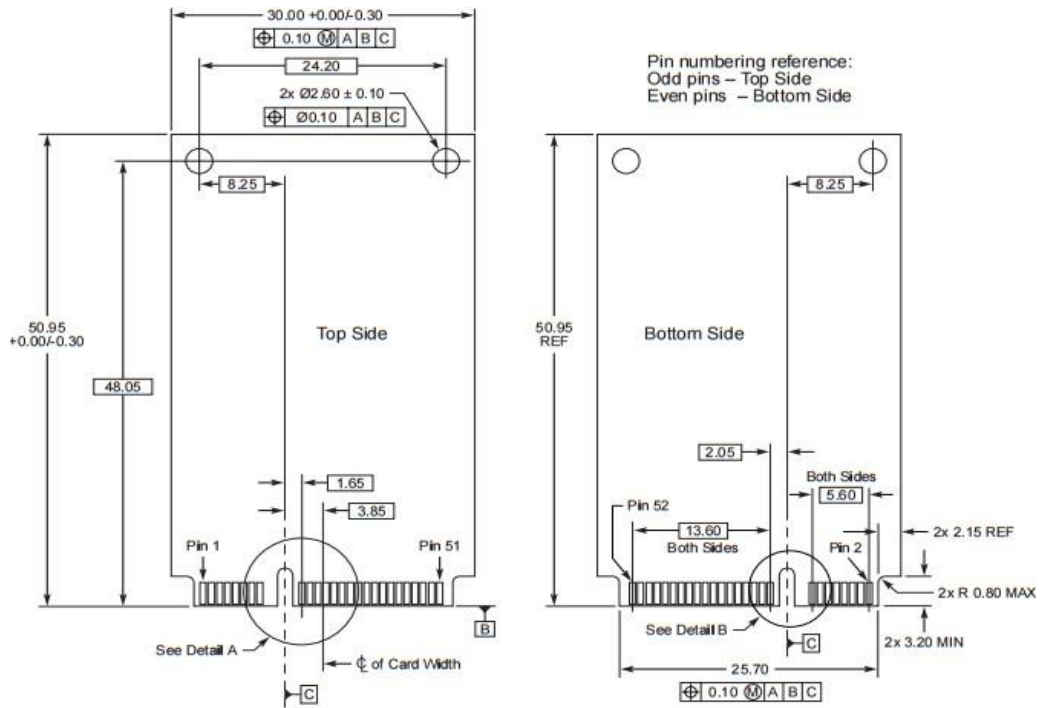
IMPORTANT NOTE: In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End Product Labeling
This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains FCC ID:SSA-JW1402". The grantee's FCC ID can be used only when all FCC compliance requirements are met.

Manual Information To the End User
The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.

Top Side

30.00 +0.00/-0.30

⊕ 0.10 Ⓜ A B C

24.20

2x Ø2.60 ± 0.10

⊕ Ø0.10 A B C

8.25

50.95 +0.00/-0.30

48.05

1.65

3.85

Pin 1

Pin 51

See Detail A

₵ of Card Width

B

C

Pin numbering reference:
Odd pins – Top Side
Even pins – Bottom Side

Bottom Side

8.25

50.95 REF

2.05

Both Sides

5.60

Pin 52

13.60

Both Sides

Pin 2

2x 2.15 REF

2x R 0.80 MAX

2x 3.20 MIN

See Detail B

C

25.70

⊕ 0.10 Ⓜ A B C

2.4 MAX

1.35 MAX

Hatched areas illustrate maximum available component volume.

Notes:

⚠1 Card thickness applies across tabs and includes plating and/or metallization.

⚠2 Edge bevel must be present and free of cutting burrs from PCB and contact materials.

A

1.00 ± 0.10

⚠1

45° ± 7°

⚠2

0.25 MAX

Detail B

2.6 +0/-0.10

System Board

5.00 REF

Safety Precautions

To keep you safe and install the hardware properly, please refer to the safety precautions in the front pages of this manual. **The Safety Precautions described in the front pages include General Notification, Environment & Housing Notification and Installation Notification.**

Additional Notification for the product:

- The module is standard full size mPCIe type module. Please check the pin definition before using the module and design the main board.
- The power input voltage is +3.3 VDC±5% power input.
- Please use 50 Ω RF 1.13Ø cable and U.FL connectors for the Antenna connectors.
- Please use M2 screw.
- Do not touch the module by hand with anti-static protection. The anti-static measures in the factory/lab is Must to prevent damage from the human body and environmental static electricity.

Note that Field Electricity Static, EMD (Lightning) DAMAGE IS NOT COVERED UNDER WARRANTY

Installation

Put the module to the mPCIe socket and lock the module by M2 screw. The module will generate high heat within any kind of mechanical box, it is MUST to have heat dispersing design for the module, for example, airflow or high efficiency aluminum heat sink.

Reference photo:
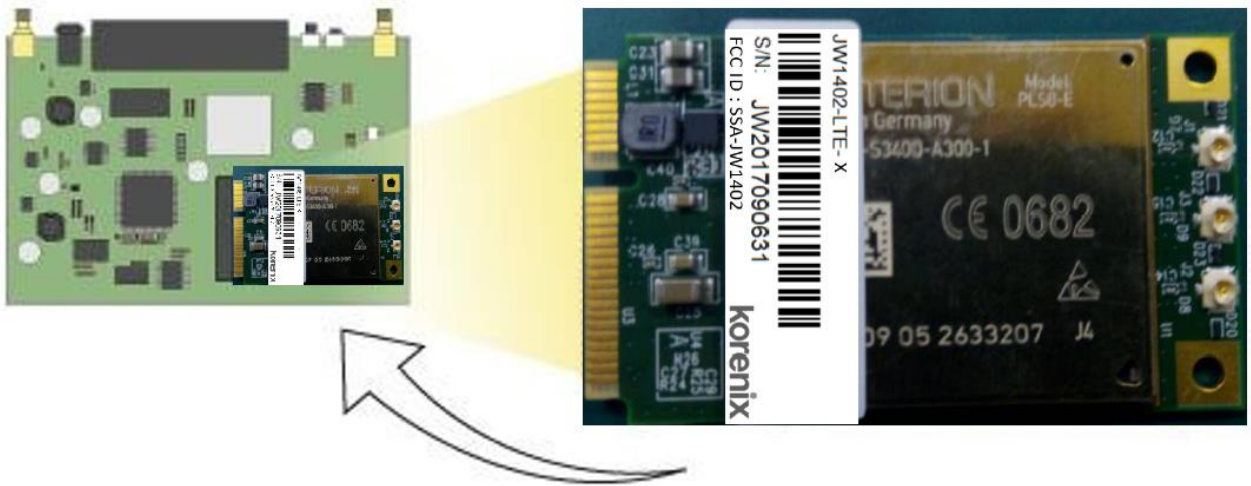
1.1 Ground

To ensure the module will not be damaged by noise or any electrical shock, your product must make exact design for grounding.

Note: Well Ground is MUST for your product, it can avoid our module to be damaged in the field. Normally, connect the Ethernet cable, Antenna, extended antenna cable and Ground before power on your system. Grounding is important and MUST in field.

Pinout

The pinout definition of the PCIe bus.

Pin #	Name	Pin #	Name
1	WAKE#	2	3.3Vaux
3	NC	4	GND
5	NC	6	NC
7	CLKREQ#	8	UIM_PWR
9	GND	10	UIM_DATA
11	REFCLK-	12	UIM_CLK
13	REFCLK+	14	UIM_RESET
15	GND	16	UIM_VPP
17	NC	18	GND
19	NC	20	W_DISABLE
21	GND	22	PERST#
23	NC	24	3.3Vaux
25	NC	26	GND
27	GND	28	NC
29	GND	30	NC
31	NC	32	NC
33	NC	34	GND
35	GND	36	NC
37	GND	38	NC
39	3.3Vaux	40	GND
41	3.3Vaux	42	LED_WWAN
43	GND	44	NC
45	NC	46	NC
47	NC	48	NC

49	NC	50	GND
51	NC	52	3.3Vaux