

HSDPA mini-PCIe Modem Module

M320 Family

(M320 / M320A / M320B)

User Manual

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1. General

M320 is built according to the PCI express mini card specification and is an integrated solution using the notebook's antenna system. It is designed as an add-in option for integrators of notebook computers and is comprised of several component parts:

HSDPA wireless network adapter which is the wireless enabler and circuitry integrated onto the Mini Card PCB together with its mechanical RF shielding.

RF connector, which provides physical connectivity M320 and the antenna which is integrated into the notebook computer's mechanical housing.

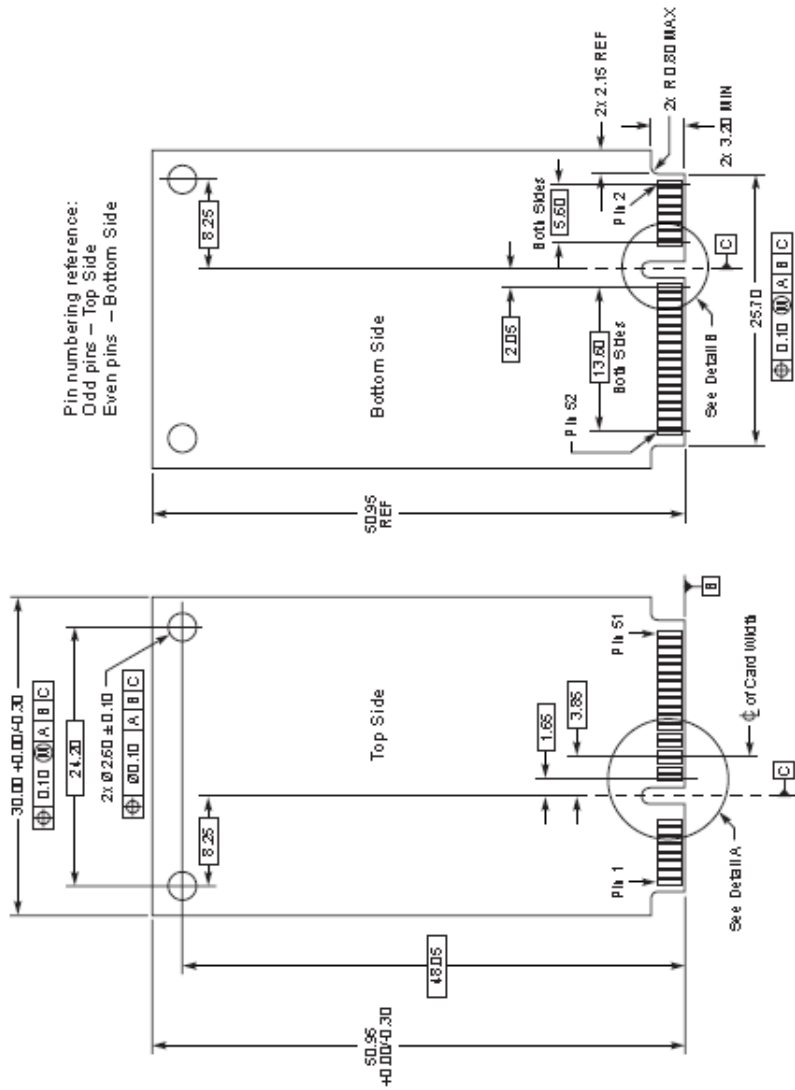
Voltage regulation circuitry, which converts power from the host power supply to the core regulated voltage for the HSDPA wireless components.

System connector, which provides the data, control, power, status and UICC interface between the host and the wireless network adapter.

All components except for the antenna connector are covered by EMC shields. All power and base band communication are located in the edge connector of the board. The fastening holes in the upper corners are connected to ground.

2. Dimensions

The dimension of the board is according to figure below. Note that the figures are stated without tolerance, see the PCI express mini card electro mechanical specification for more details.



Full-Mini Card Top and Bottom

There is one connector located on the board. The RF connector is of type Hirose U.FL. The connector is used for UMTS/GSM transmit/receive. The placement is according to figure above where the board is seen from the primary side.

The edge connector is a straight single 52-pin connector, 26 pins on each side of the board. The connector is specified in the PCI Express Mini Card specification

3. Installing M320 onto the main board of PC

- (1) Insert the mini-PCIe golden finger interface of M320 into the mini-PCIe connector on the Main Board of PC, then Press down to fix the M320 in the module slot.
- (2) Use a screwdriver to fix the M320 onto the Main Board of PC with two screws.
- (3) Insert the connector of antenna cable into the connector of antenna interface on the M320.

4. Safety Notice

Please read the safety notice carefully to ensure the correct and safe use of your wireless device (HSDPA mini-PCIe Modem Module).

4.1 Interference

Do **not** use your wireless device if using the device is prohibited or when it causes danger or interference with electric devices.

4.2 Areas with Inflammables and Explosives

To avoid explosions and fires in areas that are stored with inflammable and explosive devices, do **not** use your wireless device and observe the related rules. Areas stored with inflammables and explosives include but are not limited to the following:

- Gas station
- Fuel depot (such as the bunk below the deck of a ship)
- Container/Vehicle for storing or transporting fuels or chemical products
- Area where the air contains chemical substances and particles (such as granule, dust, or metal powder)
- Area indicated with the "Explosives" sign
- Area indicated with the "Power off bi-direction wireless equipment" sign
- Area where you are generally suggested to stop the engine of a vehicle

4.3 Medical Device

Do **not** use your wireless device and follow the rules and regulations set forth by the hospitals and health care facilities.

Some wireless devices may affect the performance of the hearing aids. For any such problems, please consult your service provider.

If you are using an electronic medical device, consult the doctor or device manufacturer to confirm whether the radio wave affects the operation of this device.

4.4 Safety for Children

Do **not** let children to use the wireless device without guidance. Small and sharp components of the wireless device may cause danger to children or cause suffocation if children swallow them.

4.5 Traffic Security

- Observe local related laws and regulations while using the wireless device. To avoid accidents, do **not** use your wireless device while driving.
- RF signals may affect electronic systems of motor vehicles. For more information, consult the vehicle manufacturer.
- In a motor vehicle, do **not** place the wireless device over the air bag or in the air bag deployment area. Otherwise, the wireless device may hurt you owing to the strong force when the air bag inflates.
- Observe the rules and regulations of airline companies. When boarding, **power off** your wireless device. Otherwise, the radio signal of the wireless device may interfere with the plane control signals.

5. Maintenance

It is normal that your wireless device gets hot when you use or charge it. Before you clean or maintain the wireless device, stop all applications and turn off the wireless device.

- Use your wireless device and accessories with care and in clean environment. Keep the wireless device from a fire or a lit cigarette.
- Keep them dry and protect your wireless device and accessories from water and vapor.
- Do **not** drop, throw, bend, or press your wireless device.
- Clean your wireless device with a piece of damp and soft antistatic cloth. Do

not use any chemical agents (such as alcohol and benzene), chemical detergent, or powder to clean it.

- Do **not** leave your wireless device and accessories in a place with a considerably low or high temperature.
- Use only accessories of the wireless device produced or approved by the manufacture. Contact the authorized service center for any abnormality of the wireless device or accessories.
- Do **not** disassemble the wireless device or accessories. Otherwise, the wireless device and accessories are not covered by the warranty.

6. Emergency Call

This wireless device functions by transmitting and receiving radio signals. Therefore, the connection cannot be guaranteed in all conditions. In an emergency, you should **not** rely solely on the wireless device for essential communications.

7. Federal Communications Commission Notice

The 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 device 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 this equipment does not cause harmful interference to radio or TV reception. This can be determined by turning the equipment on and off. The user is encouraged to try to correct the interference by one or more 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 or television technician for help.

NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USERS AUTHORITY TO OPERATE THE EQUIPMENT.

8. OEM Integrator's Notice

The OEM integrator has to be aware **not** to provide information to the end user regarding how to install or remove this device in the user manual of the end product. The user manual which is provided by OEM integrators for end users must include the following information in a prominent location.

To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must **not** be co-located or operating in conjunction with any other antenna or transmitter.

Label for end product must include "Contains FCC ID: WL6M320" or "A RF transmitter inside, FCC ID: WL6M320".

8. M320 family pictures

M320

Front View



Rear View



M320A



SIM holder
FPC &
Connector



M320B



Connector



Note :

1. M320A & M320B have the same rear view with M320
2. M320A is M320 with a connector, a FPC, and a SIM holder
3. M320B is M320 with only a connector for connecting SIM holder.

9. Difference Description

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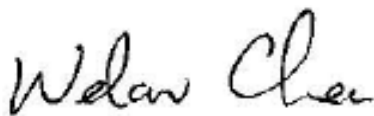
DATE: May 14, 2009

LETTER EXPLAINING PURPOSE OF APPLICATION Difference Description

APPLICANT : Elitegroup Computer Systems Co., LTD.

EQUIPMENT : HSDPA mini-PCle Modem Module

Model Name	Difference
M320	Basic Model
M320A	M320 combines the SIM pin and changes the model number to be M320A with FPC and SIM holder.
M320B	M320 adds a connector and changes the model number.
Notice: The Electric Circuit, PCB Layout, Product Structure, Appearance and Color are nothing different.	



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