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DBDM(CDMA&WI-MAX) USB MODEM

User Manual

Model Name: CMU-300

(CDE-680 CDMA module + CME-325 Wimax module)

CMU-300 Interface Technical Specifications

Disclaimers

Life support – This product is not designed for use in life support appliances or systems where malfunction of these products can reasonably be expected to result in personal injury.

C-motech Co., Ltd. customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify C-motech Co., Ltd. for any damages resulting from such application.

Right to make change - C-motech Co., Ltd. reserves the right to make changes, without notice, in the products, including circuits and software, described or contained herein in order to improve design and/or performance.

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Revision History

Level	Date	Description

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1. Product Overview

1.1. Overview

CMU-300 Interface Board physically combines WIMAX and CDMA modules. It is a Dual Band Dual Modem (DBDM) Interface Board which does power supply, USB communications, radiating & receiving of RF signal by antenna.

1.2 General Features

Dual Modem Connection

Two 60Pin Connectors apllied.

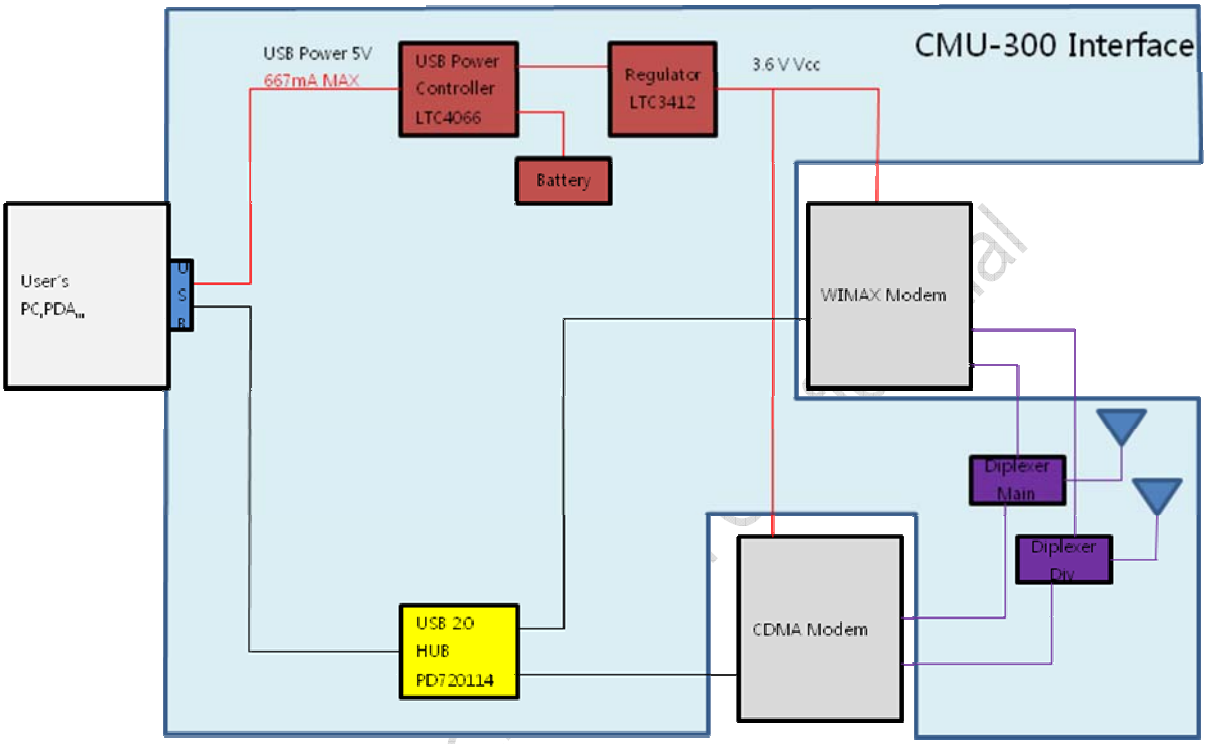
Current Control

Limit the maximum input current to protect user's devices such as a notebook.

USB 2.0 High-speed

USB 2.0 High Speed 4 Port hub controller applied to ensure WIMAX and CDMA Data throughput.

1.3 Functional block Diagram



2. Specifications

2.1. Mechanical Specifications

Dimensions (W X H X D)	33 x 93 x 12.5 (mm)
Weight	Approx. 43.8g
Form Factor	USB Series “A” Type plug
Antenna Type	Internal type for Primary & RX diversity
RF Switch connector for Primary	No support
RF Switch connector for RX diversity	No support
Visual indicator LEDs	Red-Single color & RED GREEN Dual color
Housing Material	PC
Battery Pack	Lithium Polymer Battery / 50mA
Headset Jack	No support
Power button	No support
Car-kit connector interface	No support

LED function descriptions

LED Functions	LED Color		
	Dual color (CDMA)		Single (WIMAX)
	RED	GREEN	RED
POWER ON	ON	ON	-
ACQUISITION- Fail	ON	-	-
IDLE (RSSI > -90dBm)	-	Flash (500ms)	ON
IDLE (RSSI < -95dBm)	Flash (500ms)	-	ON
DATA CALL		ON	Flash

2.2. Environment Specifications

Operating conditions	-20°C ~ +55° , 85%(at 50(C), relative humidity (non-condensing)
Storage Temperature	-40°C ~ +70°C
Humidity	95%, non-condensing
Vibration Stability	5Hz to 500Hz, 3.1G
Drop	76cm drop, 6 face, 3 cycle

2.3. Hardware Specifications

Interface Type	High-speed USB 2.0 Compliant
Common Air Interface	Dual-Modem (CDMA+WIMAX)
Mobile Receiver Diversity	Support
Battery and Charger	3.8V / 50mA
Display type	N/A
Voice capability	N/A
DC input operating voltage	+5VDC from USB Host port
Maximum current @ +5VDC	Under 700mA

2.4. Miscellaneous

Driver	Windows ® 2000/XP,Vista
Accessories	Quick Installation guide, USB extension cable Carrying pouch
Certification and Approval	FCC(part 15,22 & 24 & 27, SAR), CDG

3. Regulatory and Safety Information

3.1. Regulatory Notices

SAR compliance has been established in the laptop computer(s) with horizontal slot configurations only, and can be used in laptop computers with substantially similar physical dimensions, construction, and electrical and RF characteristics.

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3.2. Operating Conditions

1) This device may not cause harmful Interference,and this device must accept any interference received, Including interference that may cause undesirable operations.

2) The manufacturer recommands that this device is used at 90 degree angle between USB connector and USB dongle(EUT) just like right indication

3.3. Warnings and Cautions

1) Modifying or changing this device without express authorization can nullify compliance with RF exposure guidelines.

2) This device has been tested and found to comply with the limits pursuant to part 15,22, 24 and 27 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful Interference when appropriately installed.
This device generates, uses and can radiate radio frequency and, if not installed and used according to the instructions provided, it may cause harmful interference to radio communication.
However,there is no guarantee that interference will not occur in any particular Installation.

3) If this USB device does cause harmful interference with radio or television signals (determine this by turning the USB device off and on),attempt to correct the interference by trying one or more of the following;

- Reorient or relocate the antenna.
- Increase the separation between the USB device and receiver.
- Connect the USB device into an outlet different from that to which the Receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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4) This USB device does not exceed the class B limits for radio noise emissions from Digital apparatus as set out in the interference causing equipment standard entitled "Digital Apparatus",ICES-003 of the Department of communications.

5) If you have purchased this product under a United States Government contract, it Shall be subject restrictions as set forth in subparagraph (C)(1)(ii) of defense Federal Acquisitions Regulations(DFARs) Section 252.227-7013 for Department of Defense contracts,and as set forth in Federal Acquisitions Regulations(FARs) Section 52.227-19 for civilian agency contracts or any successor regulations. If further government regulations apply,it is your responsibility to ensure compliance with such regulations.

6) The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modificaiotns could void the user's authority to operate the equipment.

3.4. Safety Precautions

1) Data transmission and reception cannot be guaranteed because of the nature of Wireless communications.Data can be delayed, corrupted or lost during transmission. Even though it is quite rare that significant data delay or loss occurs if the USB device is used in a normal manner,this USB device should not be used in cases that data transmission or another party,including but not limited to personal injury,death or loss of personal property. Franklin bears no responsibility for damages or losses of any kind resulting from delays,or for failure of the USB device to transmit or receive such data.

2) Do not use this USB device in areas where blasting is in progress,where explosive Atmospheres may be present,near medical equipment,life support equipment which

may be susceptible to any form of radio interference.Turn of this USB device in these areas,since it can transmit signals that ciuld interfere with this equipment.

3) Do not use this USB device in any aircraft whether the aircraft is on the ground or in flight.Make sure to turn off this USB device in aircraft.
If used in aircraft,it can transmit signals that could interfere with various aircraft systems.

4) Do not use this USB device while driving a car,since it can distract driver's driving.
In some area,using the communication device while driving a car illegal.

SPECIFIC ABSORPTION RATES (SAR)

Maximum: SAR 1.030 W/kg CDMA835 Body
SAR 1.160 W/kg PCS1900 Body, SAR 0.424 W/kg Wimax Body

THIS MODEL MEETS THE GOVERNMANET'S REQUIREMENTS FOR EXPOSURE TO RADIO WAVES.

Your wireless usb modem is a radio transmitter and receiver. It is designed and manufactured not to exceed the emission limits for exposure to radiofrequency (RF) energy set by the Federal Communications Commission of the U.S. Government. These limits are part of comprehensive guidelines and establish permitted levels of RF energy for the general population. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons, regardless of age and health. The exposure standard for wireless modem employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6 W/kg. *

Tests for SAR are conducted with the modem transmitting at its highest certified power level in all tested frequency bands. Although the SAR is determined at the highest certified power level, the actual SAR level of the modem while operating can be well below the maximum value. This is because the modem is designed to operate at multiple power levels so as to use only the power required to reach the network. In general, the closer you are to a wireless base station antenna, the lower the power output. Before a modem model is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the limit established by the government adopted requirement for safe exposure. The tests are performed in positions and locations (e.g., at the ear and worn on the body) as required by the FCC for each model. The highest SAR value for this model modem when tested for use at the when worn on the body, as described in this user guide, is 1.160 W/Kg. (Body-worn measurements differ among modem models, depending upon available accessories and FCC requirements). While there may be differences between the SAR levels of various modems and at various positions, they all meet the government requirement for safe exposure. The FCC has granted an Equipment Authorization for this model modem with all reported SAR levels evaluated as in compliance

with the FCC RF exposure guidelines. SAR information on this model modem is on file with the FCC and can be found under the Display Grant section of http://www.fcc.gov/oet/fccid after searching on **FCC ID: TARCMU-300.**

SAFETY INFORMATION FOR RF EXPOSURE

Body worn operation

SAR compliance has been established in the laptop computer(s) with Horizontal slot configurations, and can be used in laptop computers with substantially similar physical dimensions, construction, and electrical and RF characteristics.

Safety Information

SAFETY INFORMATION FOR FIXED WIRELESS TERMINALS POTENTIALLY EXPLOSIVE ATMOSPHERES

Turn your wireless modem OFF when in any area with a potentially explosive atmosphere and obey all signs and instructions. Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death.

INTERFERENCE TO MEDICAL DIVICES

Certain electronic equipment may be shielded against RF signal from you wireless modem. Turn your wireless modem OFF in health c are facilities when any regulations posted in these areas instruct you to do so. RF signals may affect improperly installed or inadequately shielded electronic system in motor vehicles.

EXPOSURE TO RF ENERGY

Use only the supplied or an approved replacement antenna. Do not touch the antenna unnecessarily when the wireless modem is in use. Do not move the antenna close to, or couching any exposed part of the body when making a conect.

FCC Compliance Information

This device complies with Part 15 of 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.