

# Momo-U Datasheet

Revision History

Version	Author	Description of Changes	Date
V0.10	Cathy Kuo	Initial release	2012/5/18

---

**TABLE OF CONTENTS**


---

<b>1.</b>	<b>INTRODUCTION.....</b>	<b>4</b>
1.1	PURPOSE.....	4
1.2	SCOPE.....	4
<b>2.</b>	<b>FEATURES.....</b>	<b>5</b>
2.1	GENERAL CHARACTERISTICS .....	5
2.2	RF FUNCTIONALITIES .....	6
<b>3.</b>	<b>HARDWARE DESCRIPTION .....</b>	<b>7</b>
3.1	SYSTEM INTERFACE .....	7
3.2	FUNCTIONAL DIAGRAM .....	7
3.3	PIN ASSIGNMENT AND DESCRIPTION .....	8
<b>4.</b>	<b>SW DESCRIPTION .....</b>	<b>10</b>
4.1	INTRODUCTION .....	10
<b>5.</b>	<b>ANTENNA .....</b>	<b>11</b>
5.1	ANTENNA PHOTOS .....	11
5.2	ANTENNA GAIN(Peak Gain).....	12
	<b>APPENDIX A .....</b>	<b>13</b>
	<b>APPENDIX B.....</b>	<b>14</b>
	<b>APPENDIX C.....</b>	<b>15</b>

## 1. Introduction

### 1.1 Purpose

This document describes all the functions, features, and interfaces of the 3G Data Module – Momo-U.

The Module Momo-U is based upon the Qualcomm MDM6200, RF Magellan and PM8028 ASICs. It offers support for UMTS, HSPA, HSPA+ (partial functions) and GSM/GPRS/EDGE technologies. It is designed to be integrated with a dedicate Terminal Unit.

This module can provide high speed data connection, the data speed of downlink and uplink path is up to 14.4 Mbps and 5.76 Mbps respectively. With the Momo-U module, devices are enhanced in both functionality and usability based on state of the art wireless technology.

### 1.2 Scope

Momo-U module is a high speed modem card with non-standard PCI Express mini card form factor.

## 2. Features

### 2.1 General Characteristics

#### ◆ RF Band / Platform Support

Technology	Bands	Support
WCDMA HSDPA/HSUPA	B1- 2100 MHz	X
	B2- 1900MHz	X
	B5- 850 MHz	X
GSM/GPRS/EDGE	850 MHz	X
	900 MHz	X
	1800 MHz	X
	1900 MHz	X
GPS	1575 MHz	Standalone

X: band class supported without Rx diversity

#### ◆ Support SIM Interface:

#### ◆ Form Factor

i. Dimension: 30.2mm × 30.0mm × 4.1mm

ii. Weight: 14g

#### ◆ Power

Operation Voltage: 3.4V ~ 4.2V

#### ◆ Hardware Interface

52 Pins non-standard PCI Express Mini Card connector interface

2 RF Antenna Coaxial Connectors

#### ◆ Software Interface

USB driver

## 2.2 RF Functionalities

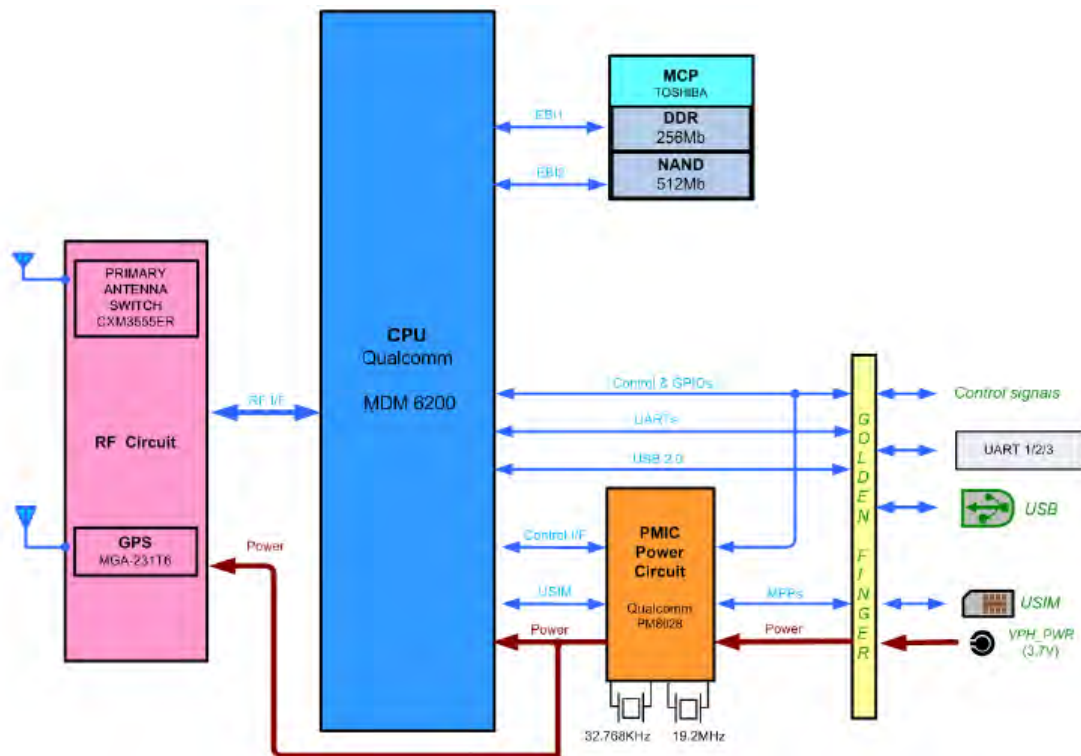
- ◆ RF Power Class supports with following:
  - GSM Power Class 4 for 850/900 bands (GMSK modulation)
  - GSM Power Class 1 for 1800/1900 bands (GMSK modulation)
  - GSM Power Class E2 for 850/900/1800/1900 bands (8-PSK modulation)
  - UMTS Power Class 3 for bands 1/2/5
- ◆ Maximum TX Power
  - The performance of the transmitter meets the 3GPP requirement.
- ◆ Parametric Performance
  - Tests carried out at -20°C, 25°C and 60°C for voltage 3.4V and 4.2V. The performance meets the 3GPP requirement.
- ◆ Parametric Performance
  - The performance of the receiver meets the 3GPP requirement.

### 3. Hardware Description

#### 3.1 System Interface

The I/O connectors of Momo-U module are non-standard PCI Express Mini Card and 2 RF antenna connectors.

#### 3.2 Functional Diagram



### 3.3 Pin Assignment and Description

PIN No	PIN Name	Comment
1	GND	
2	GND	
3	USB1DM	
4	GND	
5	USB1DP	
6	GND	
7	GND	
8	UART_KerMIT_RFR	
9	RESOUT	
10	UART_KERMIT_CTS	
11	GPIO_COM1(GPIO_H2)	
12	UART_KERMIT_TX	
13	GND	
14	UART_KERMIT_RX	
15	PSHOLD	
16	VREG_USIM_2P85	
17	VBUS_CTRL	
18	UART_SYSCON_RX	
19	MODRST	
20	UART_SYSCON_TX	
21	GND	
22	GND	
23	GPIO_COM2(GPIO80)	
24	GND	
25	ONSWA	
26	UART_EXT_TX	
27	GPIO_COM3(GPIO74)	
28	UART_EXT_RX	
29	GND	



30	UART_EXT_CTS	
31	AWR	
32	UART_EXT_RFR	
33	COM_VDD	
34	GND	
35	COM_VDD	
36	CWR	
37	COM_VDD	
38	UART_SYSCON_RFR	
39	COM_VDD	
40	UART_SYSCON_CTS	
41	COM_VDD	
42	NAND_EDL	
43	COM_VDD	
44	GND	
45	COM_VDD	
46	USIM_CLK_CONN	
47	COM_VDD	
48	USIM_DATA_CONN	
49	COM_VDD	
50	USIM_RESET_CONN	
51	COM_VDD	
52	USIM_DET	

## 4. SW Description

### 4.1 Introduction

The SW version of Momo-U is based upon the Qualcomm GOBI 3000 UMTS image (D3200ASTSUGN~~16XX~~), and is implemented with the independent feature for the Terminal Unit that will be embedded with the Momo-U Module.

## 5. Antenna

The antenna that the customer chooses to use should fulfill the following requirements:

Frequency Range	Depending by frequency band(s) provided by the network operator, the customer shall use the most suitable antenna for that/those band(s).
Bandwidth	GPRS/EDGS850:70MHz, GPRS/EDGE900:80MHz GPRS/EDGE1800:170MHz, GPRS/EDGE1900:140MHz WCDMA BC1:250MHz, WCDMA BC2:140MHz WCDMA BC5:70MHz

Every module has to be equipped with a proper antenna with specific characteristics. The antenna has to be installed with care in order to avoid any interference with other electronic devices and has to guarantee a minimum distance from the body 20cm. In case of this requirement cannot be satisfied, the system integrator has to assess the final product against the SAR regulation.

**Cautious: Any change of antenna that installs to the host would be considered to be re-evaluated, and re-tested ensuring the continued compliance with regards to FCC. The antenna as listed below is intended to simulate, and facilitate the test of compliance with regards to FCC.**

### 5.1 Antenna Photos

Front site



Back site

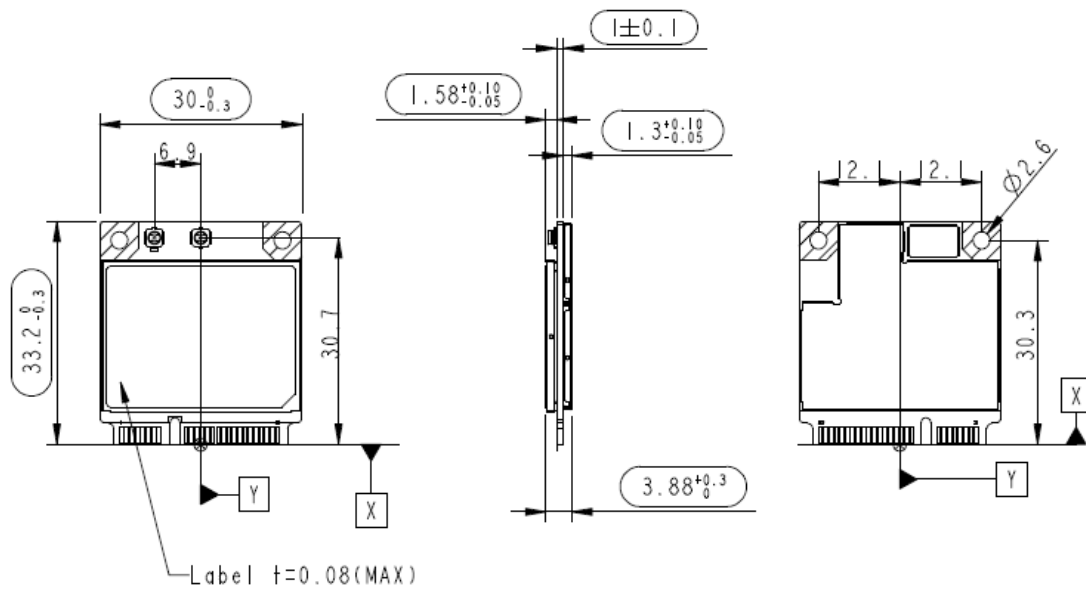


**5.2 Antenna Gain(Peak Gain)**

Frequency	836 MHz	897MHz	1747MHz	1880MHz	1950MHz
Antenna Gain	-9.51	-11	-4.63	-5.55	-4.81

## Appendix A

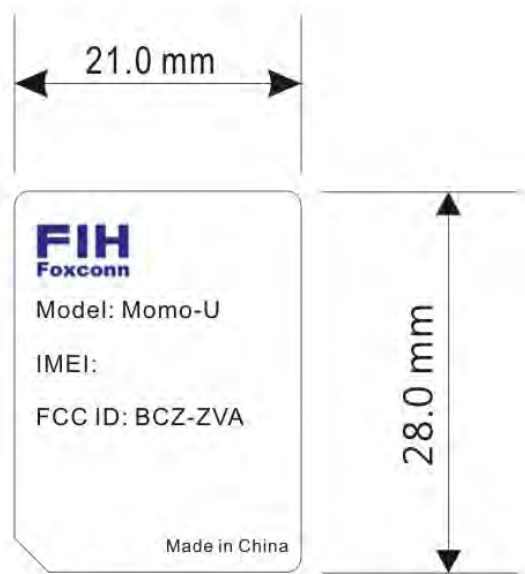
### Physical Package



## Appendix B

### Labeling

i.



ii.



## Appendix C

### Federal Communications Commission (FCC) Statement

You are cautioned that changes or modifications not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment.

#### 15.105(b) for Class B Device (usual)

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 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/TV technician for help.

**15.19(a)(3) licensed project**

All other devices shall bear the following statement in a conspicuous location in the device:

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.

**End Product Labeling:**

The final end product must be labeled in a visible area with the following: "Contains FCC ID: BCZ-ZVA".

**Manual Information That Must be Included:**

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 user's manual for OEM Integrators must include the following information in a prominent location.

**FCC RF 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 transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.