

GSM/GPRS DATA MODULE

CM-G100 Useramnuual/Datasheet

Contents

DOCUMENT HISTORY	3
1. OVERVIEW	4
1.1 ABOUT THE PRODUCT	4
1.2 ABOUT SAFETY	5
1.3 ABOUT OPERATION	5
2. TECHNICAL SPECIFICATIONS.....	6
2.1 GENERAL SPECIFICATIONS	6
2.2 RECEIVE SPECIFICATIONS	6
2.3 TRANSMIT SPECIFICATIONS	7
2.4 COMPLIANCE WITH STANANDARDS.....	8
2.5 CONNECTIVITY	8
3. PIN ASSIGNMENT	8
4. OUTLINE & DIMENSION	9
4.1 CM-G100 OUTLINE	9
4.2 DISASSEMBLY VIEW	错误! 未定义书签。
4.3 RF CONNECTOR	10

Document History

Version	Date	Author	Comments
Draft	2009/06/08	Fan Cros	New Issue.

1. Overview

Thank you very much for choosing this product. Please carefully read this Operation Manual before use CM-G100. Please keep the Operation Manual well after reading.

1.1 About the Product

- It is GSM-SIM card and it is an independent miniature module of GSM's wireless communication part.
- The operation method is different from the corresponding products. So please refer to the Operation Manual of every product.
- 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.
- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- Some electronic devices are susceptible to electromagnetic interference sent by this equipment if inadequately shielded. Please use this equipment at least 20cm or as far as you can from TV set, radio and other automated office equipment so as to avoid interference.
- This device is a radio transmitter and receiver. It is designed and manufactured not to exceed limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission (FCC) 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 or health.
- The maximum antenna gain which is allowed for use with the device for mobile or fixed operating conditions should not exceed 5dBi.
- This device is to be used only for fixed and mobile applications. If the final product after integration is intended for portable use, a new application and FCC is required. The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.
- 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.

- When the module is installed into a host device, the FCC ID label must be visible through a window on the final device or it must be visible when an access panel, door or cover is easily removed. If not, a second label must be placed on the outside of the final device that contains the following text: "Contains FCC ID: UPMJGW200001"

1.2 About Safety

- Do not disassemble or reconstruct or repair the card.
- Do not drop or strongly impact the card.
- Do not bend or press it.
- Do not wet it or touch it with wet hand.
- Do not touch the terminal part or score it.
- Do not conserve it in a direct sun light or a high temperature place.
- Do not conserve it in a damp or dirty place.
- Please conserve it in a place where children can not touch to avoid them putting the card in their mouths accidentally.
- Please teach the content of this operation manual to your children when they use. And, please make sure that they comply with the indication when using.

1.3 About Operation

- Please insert the card in proper strength.
- The product will be a little heating-up when using. It's not an abnormal phenomenon.
- If a malfunction appears because of inserting the card into an uncorresponding product, our company won't be in charge of it.
- Please notice the static.
- Please clean with dry soft cloth when the card is dirty.
- Lost or Damage and so on will get a reimbursable service.
- There may be a modification of specification or function without a notification.
- Please conserve your information which inputted into the card in another memory. If the information disappears unfortunately, our company won't be in charge of it.

2. Technical Specifications

2.1 General Specifications

items	Descriptions	
Access Mode	Global System for Mobile communication(GSM) , General Packet Radio Service(GPRS)	
Protocol	3GPP TS 51.010-1 (GSM/GPRS)	
Date Rate(Max.)	GPRS multi slot class 12 : 48Kbps (up link), 48Kbps (down link)	
Transmit/Receive Frequency Interval	GSM/GPRS 900	45MHz
	GSM/GPRS1800	95MHz
	GSM/GPRS 1900	80MHz
Max Output Power	GSM/GPRS 900	33dBm (Power class : 4)
	GSM/GPRS 1800	30dBm (Power class : 1)
	GSM/GPRS 1900	30dBm (Power class : 1)
Operation Voltage	3.4V~4.2V	
Current Consumption (Typical)	Idle	3mA
	Voice Communication	170mA
	Data Communication	200mA
Frequency Stability	±0.1ppm (at carrier frequency)	
Size	(W) 25.6 mm ± 0.10 mm	
	(D) 42.0 mm ± 0.20 mm	
	(H) 4.0 mm ± 0.15mm	
Weight	Approximately below 10g	
Operation Temperature	0°C ~ +50°C	
Storage Temperature	-10°C ~ + 60°C	

2.2 Receive Specifications

items	Descriptions		
Frequency Range	GSM/GPRS 900	925 ~ 960MHz	
	GSM/GPRS1800	1805 ~ 1880MHz	
	GSM/GPRS 1900	1930 ~ 1990MHz	
Minimum Input level for Reference Performance	GSM/GPRS 900/1800/1900	Type of Channel	Propagation condition : Static, BLER : 10% under
		PDTCH/CS-1 (dBm)	-104
		PDTCH/CS-2(dBm)	-104
		PDTCH/CS-3(dBm)	-104
		PDTCH/CS 4(dBm)	-101

2.3 Transmit Specifications

items	Descriptions						
Frequency Range	GSM/GPRS 900		880 ~ 915MHz				
	GSM/GPRS1800		1710 ~ 1785MHz				
	GSM/GPRS 1900		1850 ~ 1910MHz				
Frequency Error	±0.1ppm (at carrier frequency)						
Phase Error	Peak phase error		20 Degree				
	RMS phase error		5 Degree				
Transmit Output Power	GSM/GPRS 900	Power Level	Output Power (dBm)			Tolerance (dBm)	
		5	33			±2	
		6	31			±3	
	GSM/GPRS 1800/1900	7	29			±3	
		0	30			±2	
1	28			±3			
ORFS@Spectrum due to modulation	GSM/GPRS 900	Frequency offset (KHz)	0 ~ ±100	±200	±250	±400	±600~<±1800
		Relative (dB)	+0.5	-30	-33	-60	-60
		Absolute (dBm)	-36				
	GSM/GPRS 1800/1900	Frequency offset (KHz)	0 ~ ±100	±200	±250	±400	±600~<±1800
		Relative (dB)	+0.5	-30	-33	-60	-60
		Absolute (dBm)	-36				
ORFS@Spectrum due to switching transient	GSM/GPRS 900	Power (dBm)	Frequency offset (KHz)				
			±400	±600	±1200	±1800	
		33	-19	-21	-21	-24	
		31	-21	-23	-23	-26	
		29	-23	-25	-25	-28	
		27	-23	-26	-27	-30	
		25	-23	-26	-29	-32	
		23	-23	-26	-31	-34	
	≤21	-23	-26	-32	-36		
	GSM/GPRS 1800/1900	Power (dBm)	Frequency offset (KHz)				
			±400	±600	±1200	±1800	
		30	-22	-24	-24	-27	
		28	-23	-25	-26	-29	
		26	-23	-26	-28	-31	
24		-23	-26	-30	-33		
22		-23	-26	-31	-35		
≤20	-23	-26	-32	-36			

2.4 Compliance with Standards

- 3GPP TS 51.010-1 (GSM/GPRS)
- GPRS/EGPRS Multislot Class 12, Phase 2+

2.5 Connectivity

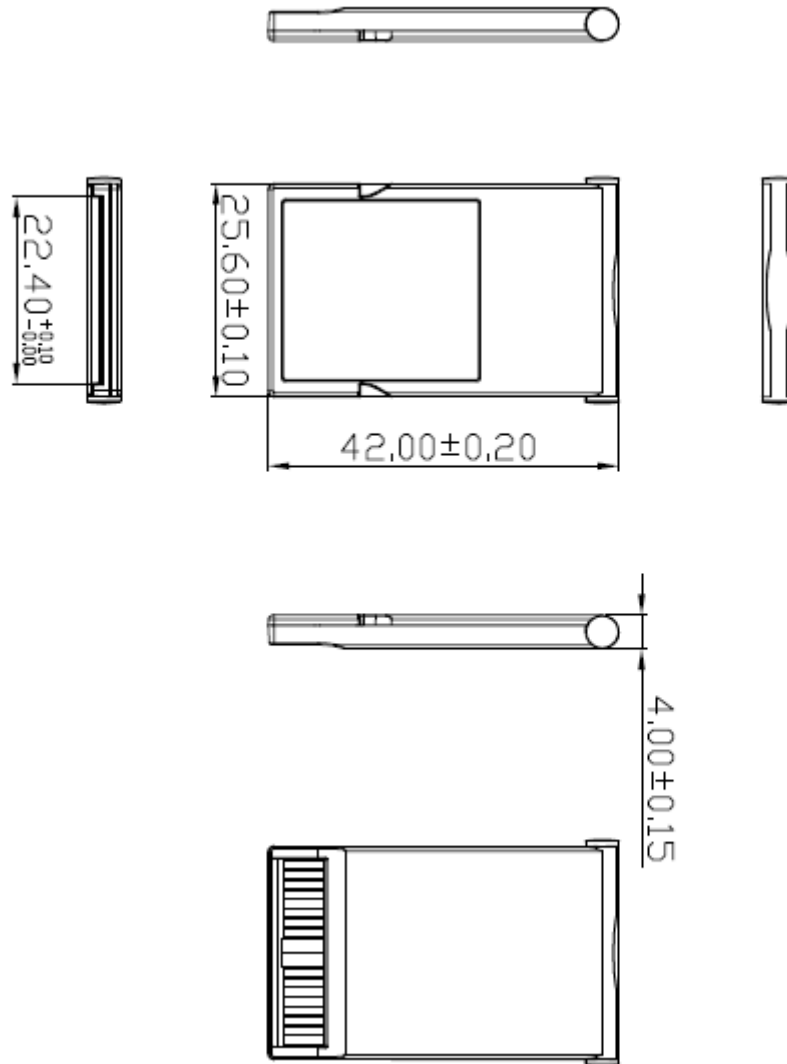
- UART in dedicated socket

3. PIN Assignment

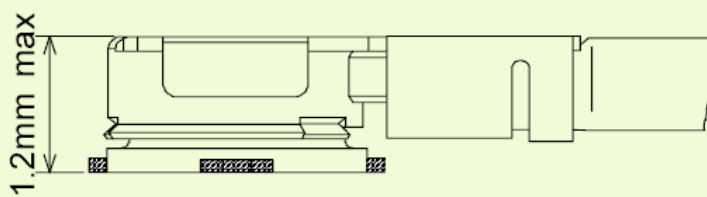
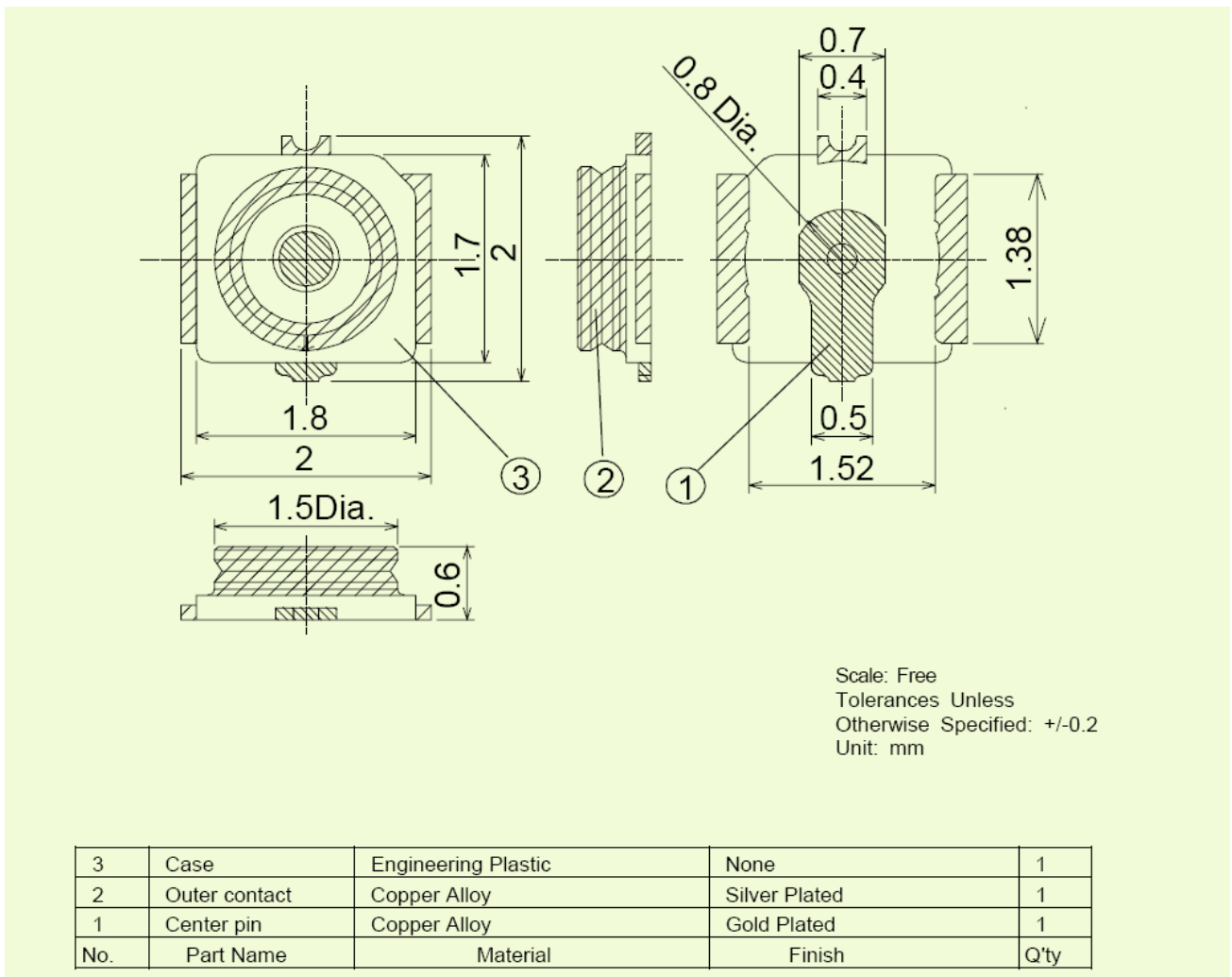
Plug number	Name of signal	Direction	Content
1	TXD	J→C	UART sends serial data
2	RXD	J←C	UART receives serial data
3	RTS*	J→C	UART send data ready (L: ON, H: OFF)
4	CTS*	J←C	UART ready (L: ON, H: OFF)
5	DTR*/INTM	J→C	UART receive data ready (L: ON, H: OFF) or host unit wake up G-SIM (L: OFF, H: ON)
6	DCD*/INTH	J←C	UART data carrier detect (L: ON, H: OFF) or G-SIM wake up host unit (L: OFF, H: ON)
7	POWER ON	J→C	G-SIM power control (L: OFF, H: ON)
8	INS*	J←C	G-SIM detection signal (L: plugged in, H: not plugged in)
9	Vcc	Vcc	Power
10	GND	GND	Grounding
11	REC+	J←C	Signal of receiving unit, analogue differential input.
12	REC-	J←C	Signal of receiving unit, analogue differential input.
13	SIMVCC	J←C	Supply power for external SIM
14	MIC+	J→C	Signal of microphone, analogue differential input.
15	MIC-	J→C	Signal of microphone, analogue differential input.
16	SIMRST	J←C	SIM reset
17	SIMDATA	J□C	SIM data
18	SIMCLK	J←C	SIM clock

4. Outline & Dimension

4.1 CM-G100 Outline



4.2 RF Connector



Unit: mm

FIGURE9. Completion of engagement