



Y3100 Installation Guide and User Manual



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1 Introduction

1.1 Overview

This manual is intended to be a complete technical reference and integration guide for the Y3100 module product.

1.1.1 Product description

The Y3100 module described in this manual are PCI Express Mini Cards support WWAN (UMTS/HSDPA/HSUPA & GSM/GRPS/EDGE) connectivity to SAMSUNG notebooks.

The module is manufactured and installed by SAMSUNG. It includes diversity receiver and equalization. The following table shows photos of the module.

Bottom view

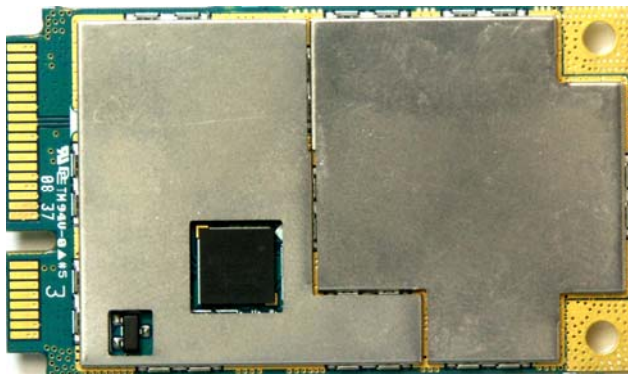


Figure 1. Bottom view of Y3100 module

Top view



Figure 2. Top view of Y3100 module

1.1.2 Key features and specifications

RF subsystem	-2G GPRS / EDGE / 3GPP WCDMA HSDPA/HSUPA
Platform	-Qualcomm L4 Platform
Band	-850/900/1800/1900/2100MHz
Size (mm)	-50.95 x 30 x 4.75 mm
Weight (g)	-9.7g
Modem	-Qualcomm MSM6290
Memory	-MCP 1Gb/512Mb (Nand/SDRAM)
RF	-Qualcomm RTR6285
General Features	<ul style="list-style-type: none"> - 65nm CMOS Lower Power Technology - External I/O 1.8~3.3V Interface and Internal 1.2V operation - Software controlled power management feature - JTAG I/O Boundary Scan
Modem	<ul style="list-style-type: none"> - High data rate (7.2Mbps for Downlink, 2Mbps for Uplink) - Dual antenna Rx diversity
Micro processor	<ul style="list-style-type: none"> - Embedded ARM926 EJ-S - Include 2 Memory Controllers - Direct Memory Access Controller
Interface	<ul style="list-style-type: none"> - High-speed USB functionality - USIM controller - General Purpose I/O pins

2. Mechanical specifications

2.1 Specifications

2.1.1 Mechanical dimensions

Mechanical drawings of the Y3100 module following one.

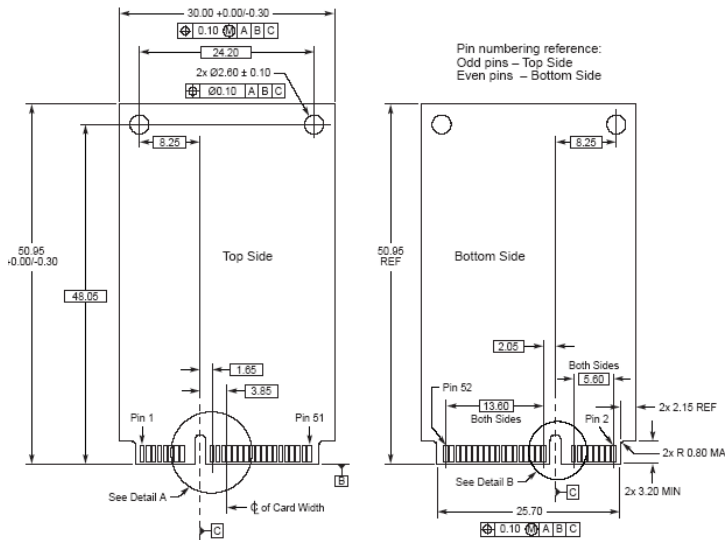


Figure 3. Mechanical dimensions of Y3100 module

2.1.2 Mini PCI Express interface

The card edge connector of the Y3100 module complies with the PCI Express Mini Card specification and mates with a 52 pin Mini PCI Express connector.

This specification defines an implementation for small form factor PCI Express cards. The specification uses a qualified sub-set of the same signal protocol, electrical definitions, and configuration definitions as the *PCI Express Base Specification, Revision 1.1*. Where this specification does not explicitly define PCI Express characteristics, the *PCI Express Base Specification* governs.

The primary differences between a PCI Express add-in card (as defined by the *PCI Express Card Electromechanical Specification*) and a PCI Express Mini Card add-in card is a unique card form factor optimized for mobile computing platforms and a card-system interconnection optimized for communication applications. Specifically, PCI Express Mini Card add-in cards are smaller and have smaller connectors than standard PCI Express add-in cards.

Figure 4 shows a 52 pin PCI Express Mini Card connector.

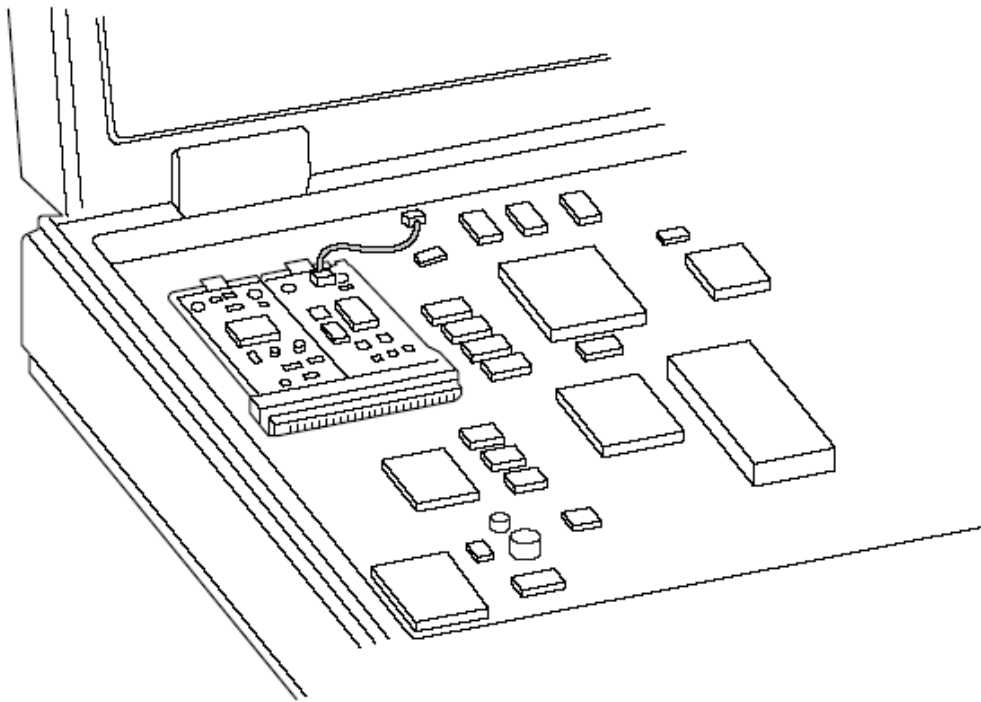


Figure 5. PCI Express Mini Card Add-in Card Installed in a Mobile Platform

2.1.3 Antenna connectors

The SMD connectors used for the antenna connections on the Y3100 module are delivered by Hirose Ltd.

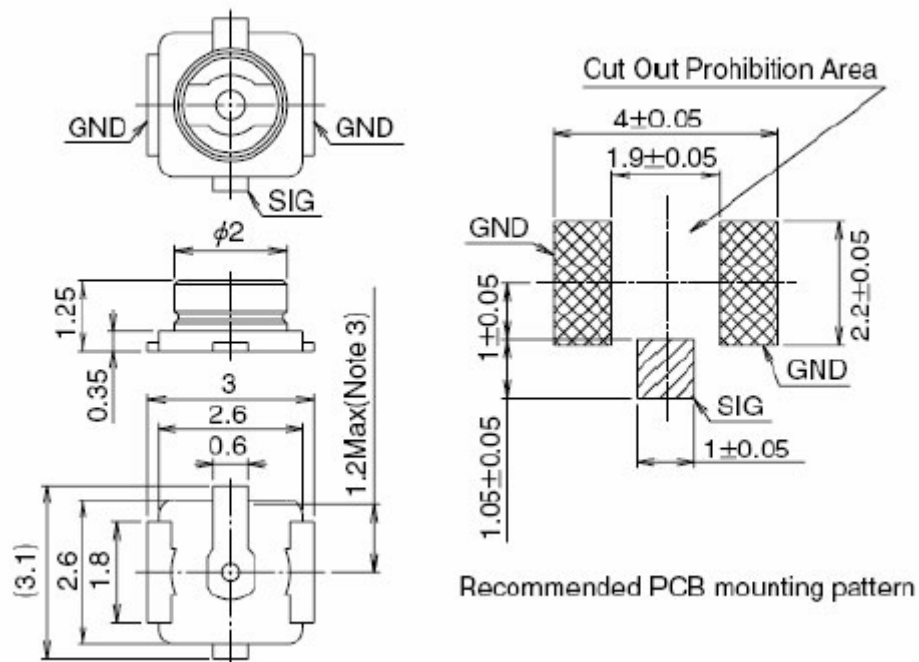


Figure 6. 2D Detail of the antenna connector

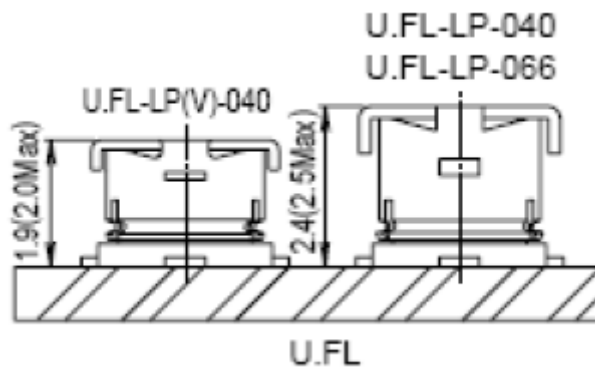


Figure 7. Detail of mated height

2.1.4 Connector location

The Y3100 module supports receiver diversity. Both require a secondary antenna connection. The antenna connectors can be identified by the letters “M” for the main antenna and “A” for the auxiliary, printed on the PCB.



Figure 8. placement of the antenna connectors for Y3100

2.1.5 Conducted RF measurement

HSUPA / HSDPA / UMTS

. Multi-bands variants

900 / 1900 / 2100 MHz

. Power Class 3 (22.5 dBm)

. HSUPA mode: 2 Mbps: category 5

. HSDPA mode: 7.2Mbps: Category 8

EDGE / GPRS

850 / 900 / 1800 / 1900 MHz

. GSM Power Class 4 (32dBm) for 850 / 900 bands

. GSM Power Class 1 (28.5dBm) for 1800 / 1900 bands

. EDGE class E2 (26.5 dBm in 850 / 900 bands, 25.8 dBm in 1800 / 1900 bands)

. GPRS / EDGE Multislot Class 12 (4 slots Rx, 4 slots Tx)

2.1.6 RFx information

Main antenna gain would not exceed specified value following table.

Antenna Gain		(824 – 960Mhz)	(1.71 – 2.17Ghz)
Main	GSM dBi	2.1	5
	WCDMA dBi	-	5

Table 1. Maximum Permissible Antenna gain

The RF field strength of the wireless device or devices that may be embedded in your notebook are well below all international RF exposure limits as known at this time. Because the wireless devices (which may be embedded into your notebook) emit less energy than is allowed in radio frequency safety standards and recommendations, manufacturer believes these devices are safe for use. Regardless of the power levels, care should be taken to minimize human contact during normal operation.

In order to comply with FCC RF Exposure requirements, the antennas used with this device must be installed such that a minimum separation distance of 20cm is maintained between the antennas and all persons during normal operation.

This transmitter must not be collocated or operate in conjunction with any other antenna or transmitter.

The Part 15 radio device operates on a non-interference basis with other devices operating at this frequency. Any changes or modification to said product not expressly approved by Intel could void the user's authority to operate this device.

For more information, refer the attached document, please.