

Figure 6. 2D Detail of the antenna connector

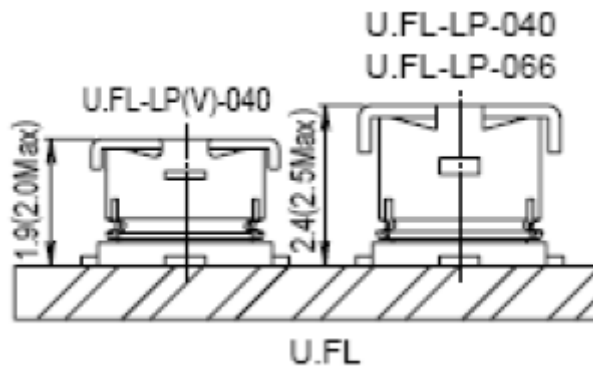


Figure 7. Detail of mated height

2.1.4 Connector location

The GT-Y3400 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 “D” for the Diversity, printed on the PCB.

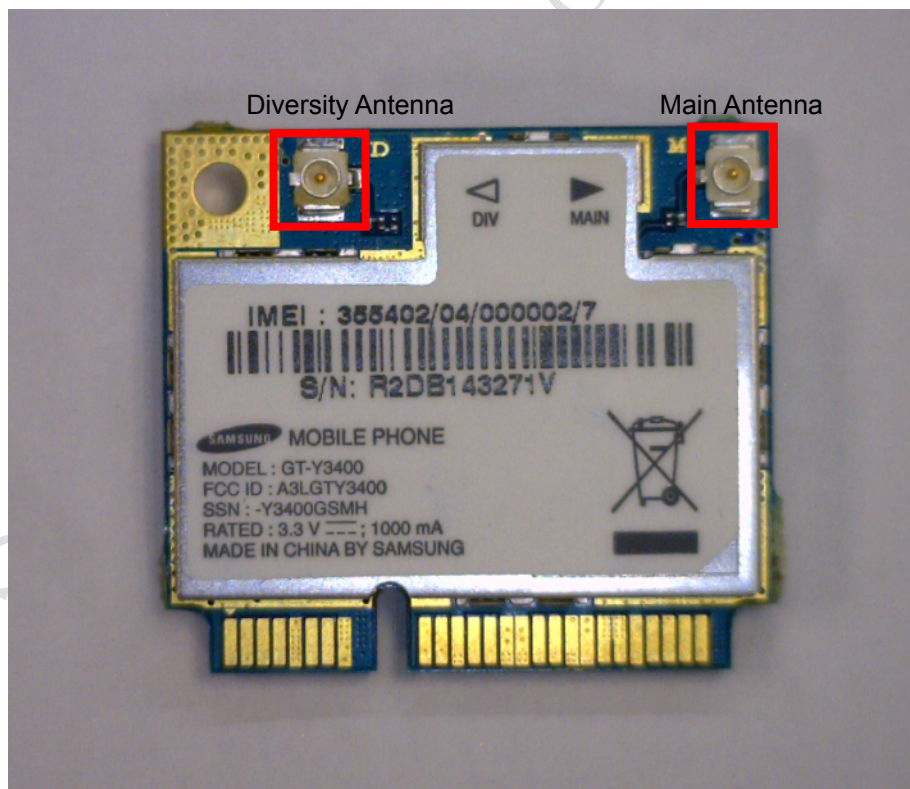


Figure 8. placement of the antenna connectors for the GT-Y3400

2.1.5 Conducted RF measurement

HSUPA / HSPA+ / UMTS

- . Multi-bands variants / 850 / 900 / 1900 / 2100 MHz
- . UMTS Power Class 3 (24 dBm)
- . HSUPA mode: 5.76 Mbps: category 6
- . HSPA+ mode: 21 Mbps: Category 14

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 Multi-slot Class 12 (4 slots Rx, 4 slots Tx)

2.1.6 Installation restrictions and RF Exposure information

The installation of this module is limited to installation by Samsung Electronics IT Company. The antenna gain used with this module must not exceed 1.4dBi in the 850MHz Cellular band and 1dBi in the 1900MHz PCS Band when it is integrated. This device is approved for use with the following antenna (or equivalent):

Four S Tech	Model: CDMA-DUAL WLL ANTENNA
	Type: Dipole Antenna
	Bands: CDMA 800MHz, 1900MHz, WCDMA 2.1GHz

RF Exposure – Critical Installation Requirements:

This device is approved for use as a *mobile* installation meaning that it will only be used in products that are capable of maintaining a minimum separation distance of 20cm from the antenna(s) of this device and the end user.

When installed in a final configuration the antenna must be installed such that a minimum separation of 20 cm (8 inches) between the wireless device and the body of the user (this does not include extremities) must be maintained during use and while the wireless device is on and transmitting. This distance must be ensured for all operating modes and conditions.

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

Installations in which the device is collocated with other transmitters or the minimum separation distance between the body and antenna(s) can not be maintained require a separate FCC authorization. Such installations may require additional testing for RF Exposure (i.e. SAR) and a Class II Permissive Change filing for FCC approval. Please contact Samsung Electronics, Ltd. regarding such installations.

Labeling:

The host equipment into which the module is installed must be clearly labeled with the FCC identifier of the module. This label must be permanently installed and can not be placed on a removable cover or part such as a battery cover. The label must be similar to the following:

Contains FCC ID: A3LGTY3400

Warning:

Any changes or modification to said product not expressly approved by Intel could void the user's authority to operate this device.

2.2 Antenna_Spec

2.2-1 Frequency Band

Service Band	CDMA 800	CDMA 1900	WCDMA 2.1G
Tx (MHz)	824 ~ 849	1850 ~ 1910	1920 ~ 1980
Rx (MHz)	869 ~ 894	1930 ~ 1990	2110 ~ 2170

2.2-2 Impedance

2.2.1 Normal Value

50Ω ± Normal

2.2.1 Measuring Method

The impedance over the frequency bands shall be as close as possible to 50Ω after matching. Both free space and talk position are considered.

2.3 VSWR

The impedance matching should be optimized in the more critical talk position.

2.3.1 Maximum values in free space

SERVICE	CDMA 800		CDMA 1900		WCDMA 2.1G	
	TX	Rx	TX	RX	Tx	Rx
VSWR	2.7	2.0	2.9	3.4	2.7	1.9

2.3.2 Measuring Method

A 50Ω coaxial cable is connected(soldered) to the 50Ω point, at the duplex-filter on the main PCB. The connection of the coaxial cable shall be done to introduce a minimum of mismatch. As much as possible the coaxial cable arrangement shall prevent influences from induced currents on the cable. In the other end, the coaxial cable is connected to a network analyzer. The measurement is performed at room temperature. The handset, including the PCB, must not in any significant way differ from the mass production, i.e. the antenna feeding network has to be equivalent to the feeding network in mass production. The specification shall be met in the entire frequency band.

2.4 Gain(dBi)

2.4.1 Measuring Method

The connection is done according to 2.3.2.

Radiation patterns are measured at 3 different Plane

The antenna measured according to the figure 1 below.

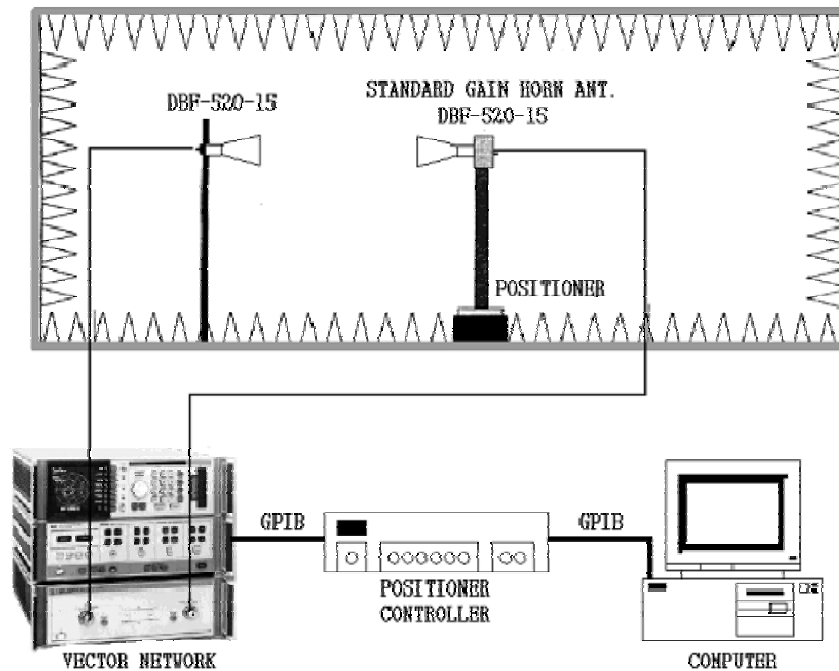


figure 1

2-4-2. Radiation Pattern Measure

Radiation Pattern Measure according to figure2(a), figure2(b),
Scale and Range set up 5dB ,30dB(each).

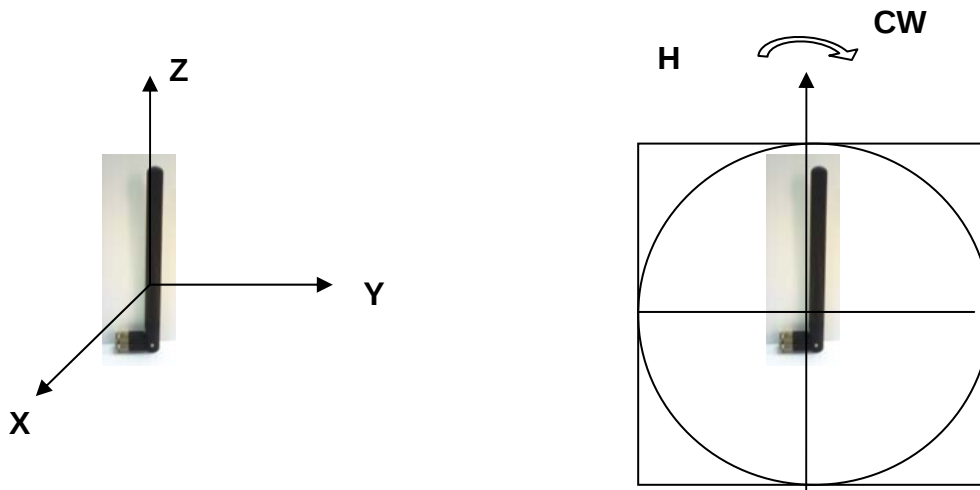


Figure 2 (a)

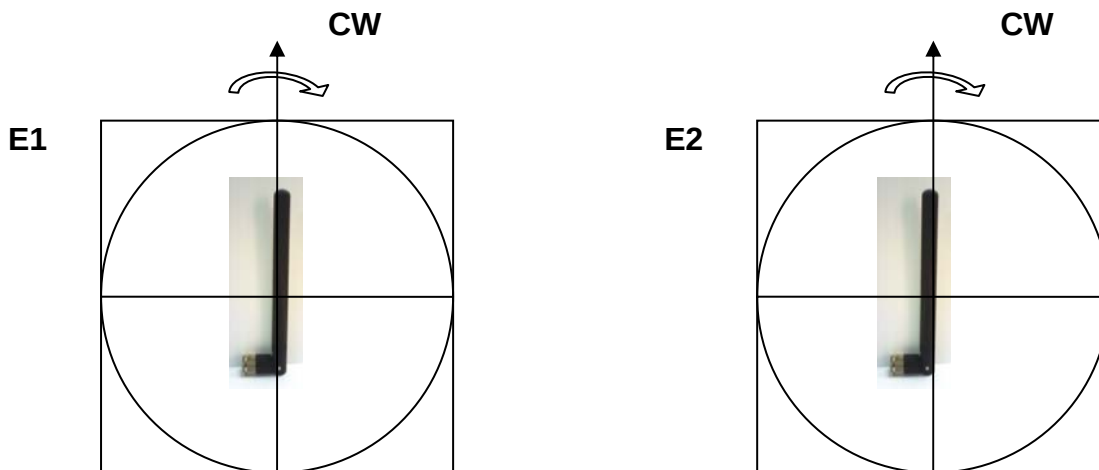


Figure 2 (b)

2-4-3 Typical values in maximum direction

Freq.	Peak Gain [dBi]				Avg. Gain [dBi]			
	3DVHsum	H	E1	E2	3DVHsum	H	E1	E2
	5.0	-1.8	0.7	-1.3	0.3	-4.3	-3.0	-4.1
	4.8	-3.0	1.4	-1.5	0.8	-5.1	-2.4	-3.6
	4.7	-3.4	1.8	-1.5	1.1	-5.5	-2.0	-3.1
	4.5	-3.6	1.8	1.2	1.0	-6.2	-2.0	-3.0
	4.7	0.9	-1.4	1.0	-1.3	-3.0	-7.6	-3.8
	4.0	0.6	-2.0	0.3	-2.1	-3.8	-8.5	-5.0
	4.3	0.8	-1.8	0.6	-1.9	-3.5	-8.3	-4.8
	4.4	0.8	-1.6	0.7	-1.8	-3.5	-8.2	-4.8
	3.3	-0.8	-2.5	-0.4	-2.8	-4.9	-9.2	-5.9
	2.9	-1.2	-2.9	-0.6	-3.2	-5.3	-9.5	-6.3
	2.7	-0.7	-3.0	0.1	-2.9	-5.3	-9.7	-4.7
	3.3	0.9	-2.8	0.3	-1.8	-3.4	-8.0	-3.4

- Antenna Matching Value

