

# 75.0 x 8.5 x 0.15 (mm) 3G / GSM FPCB Antenna (WC75D0)

## Engineering Specification

### 1. Explanation of Product Number

H	2	B	4	K	F	1	F	1	N	0	2	0	0
				(1)	(2)	(3)	(4)	(5)					



Product Code:

(1) Product Applications:

K : 3G / GSM

(2) Dimensions:

F1 : 75.0 x 8.5 x 0.15 (mm)

(3) Material:

F : PI

(4) Working Frequencies:

1N : 824~960 & 1710~2170 MHz

(5) Antenna Series:

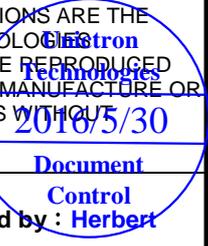
02 : serial number

IPEX I Cable( $\phi$  1.13 mm),L=100 mm



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Prepared by : Xenia

Designed by : Tom

Checked by : Chinling

Approved by : Herbert

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## 2. Features

- \* Stable and reliable in performances
- \* Compact size
- \* RoHS compliance

## 3. Applications

- \* Machine-to-machine wireless communication.
- \* Smart home devices.
- \* GSM/3G position routers & tracking systems.

## 4. Description

Unictron's WC75D0 FPCB antenna is designed for cellular 3G / GSM bands applications, covering frequencies 824~960 MHz & 1710~2170 MHz. Fabricated with proprietary design and processes, WC75D0 shows excellent performance and is fully compatible.

## 5. Electrical Specifications

(Antenna is attached on a 2.0mm-thick ABS + PC material plate)

### 5-1. Electrical Table (824~960 MHz Band)

Characteristics		Specifications	Unit
Outline Dimensions		75.0 x 8.5 x 0.15	mm
Working Frequency		824~960	MHz
VSWR		3 Max. (typical)	
Characteristic Impedance		50	Ω
Polarization		Linear Polarization	
Peak Gain	(@890 MHz)	0.8 (typical)	dBi
Efficiency		46 (typical)	%



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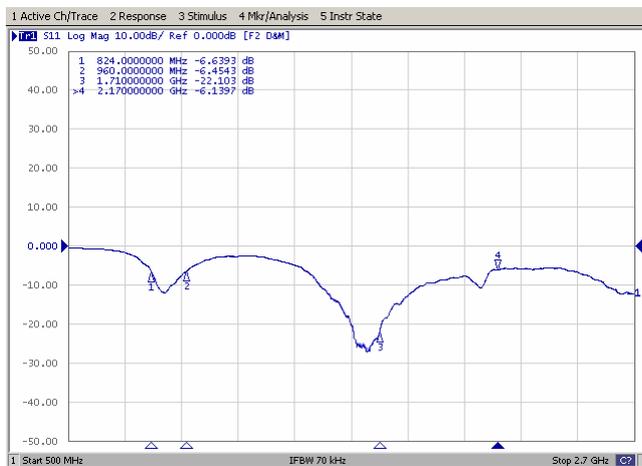
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## 5-2. Electrical Table (1710~2170 MHz Band)

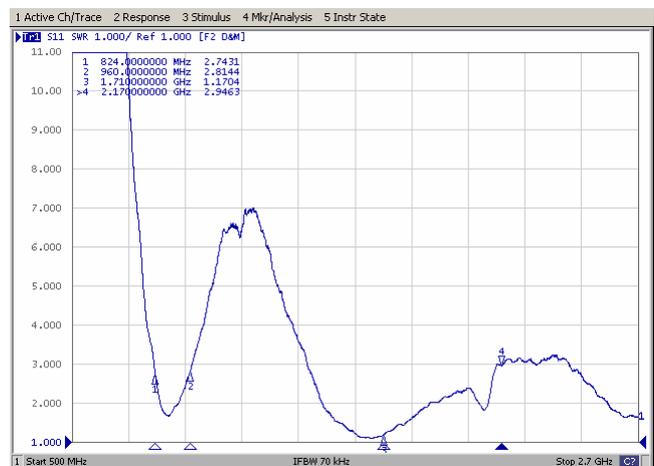
Characteristics		Specifications	Unit
Working Frequency		1710~2170	MHz
VSWR		3 Max. (typical)	
Characteristic Impedance		50	$\Omega$
Polarization		Linear Polarization	
Peak Gain	(@1950 MHz)	2.7 (typical)	dBi
Efficiency		64 (typical)	%

## 5-3. Return Loss & VSWR

Return Loss



VSWR



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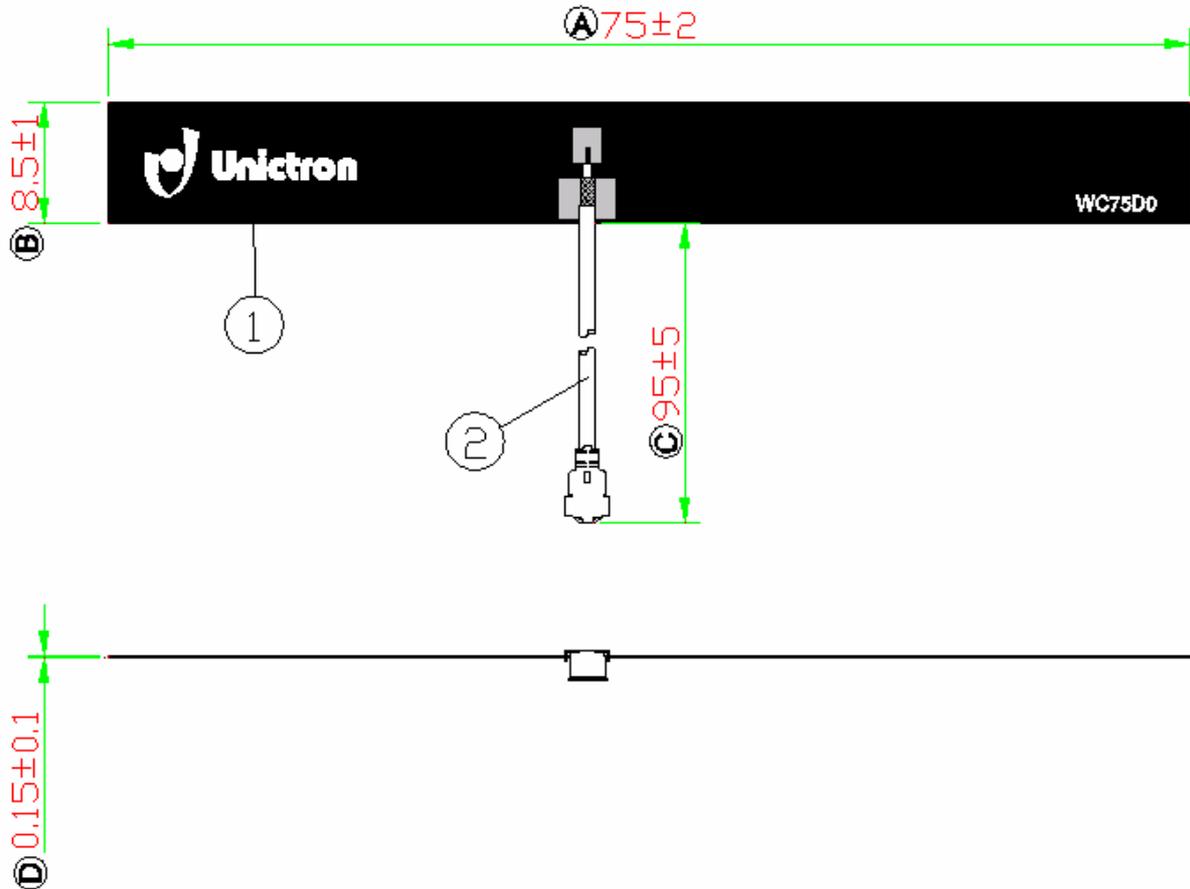
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## 6. Antenna Dimensions (unit: mm)



### NOTE:

1. All materials are RoHS compliant.
2. "A~D" Critical Dimensions.
3. "( )" Reference Dimensions.

Item	Name	Material	Color	Q'ty
1	FPCB	PI	Black	1
2	IPEX Connector(MHF I)_Cable1.13mm	FEP	Gray	1



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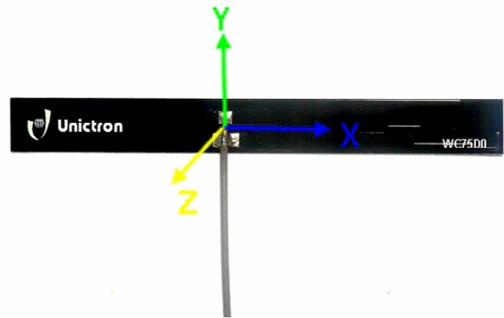
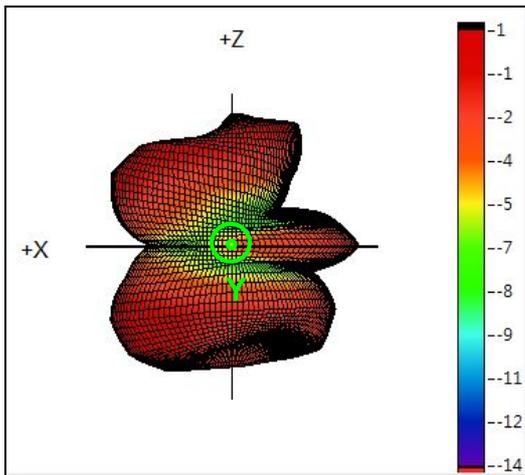
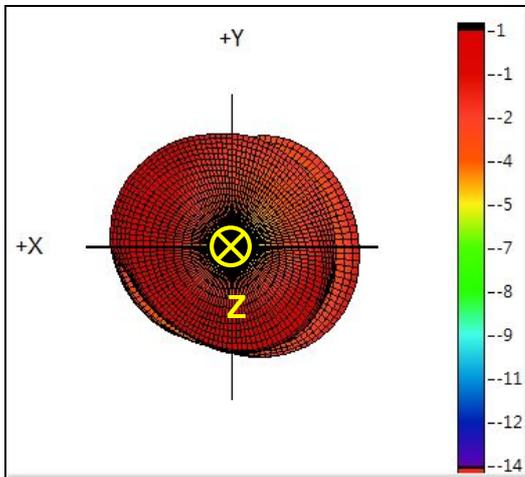
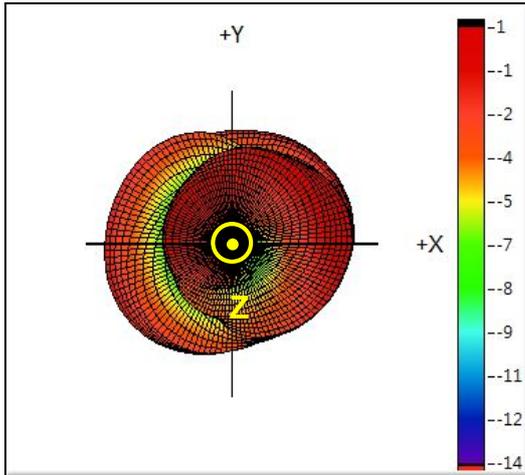
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## 7. Radiation Pattern

### 7-1. 824~960 MHz Band

#### 7-1-1. 3D Gain Pattern @ 890 MHz (unit: dBi)



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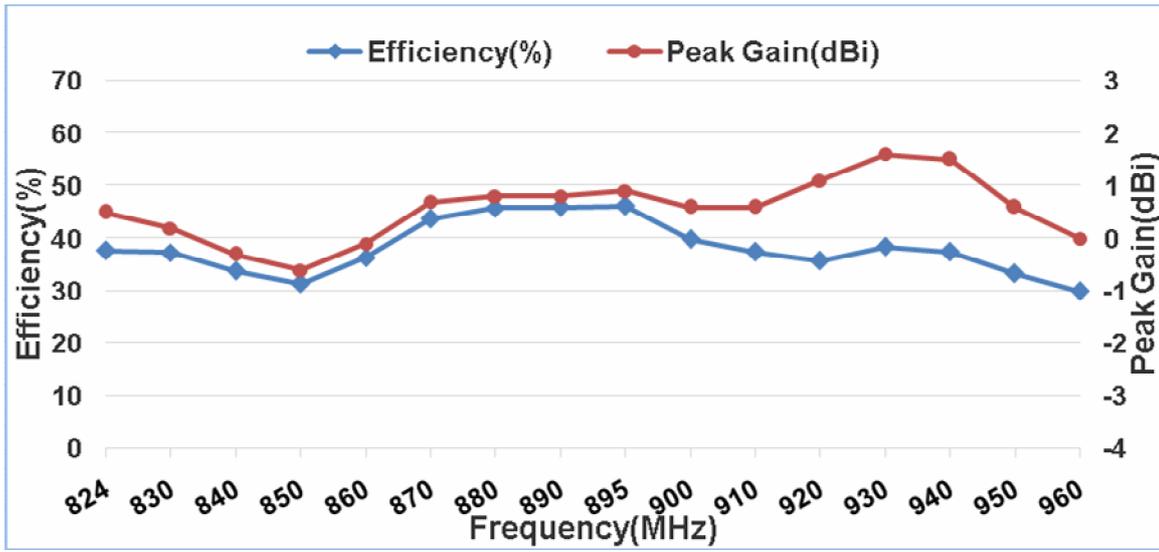
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7-1-2. 3D Efficiency Table

Frequency(MHz)	824	830	840	850	860	870	880	890	895	900	910	920	930	940	950	960
Efficiency(dB)	-4.2	-4.3	-4.7	-5.0	-4.4	-3.6	-3.4	-3.4	-3.4	-4.0	-4.3	-4.5	-4.1	-4.3	-4.8	-5.2
Efficiency(%)	37.7	37.4	33.8	31.4	36.4	43.8	45.9	46.0	46.2	39.9	37.5	35.8	38.5	37.5	33.3	29.9
Peak Gain(dBi)	0.5	0.2	-0.3	-0.6	-0.1	0.7	0.8	0.8	0.9	0.6	0.6	1.1	1.6	1.5	0.6	0.0

7-1-3. 3D Efficiency vs. Frequency



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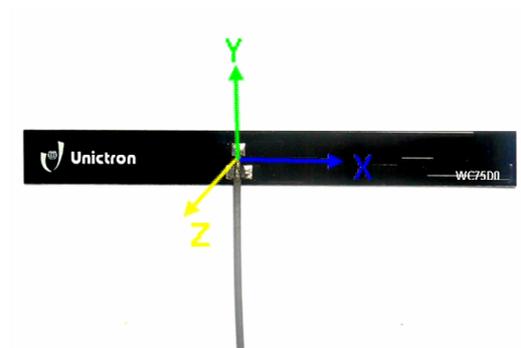
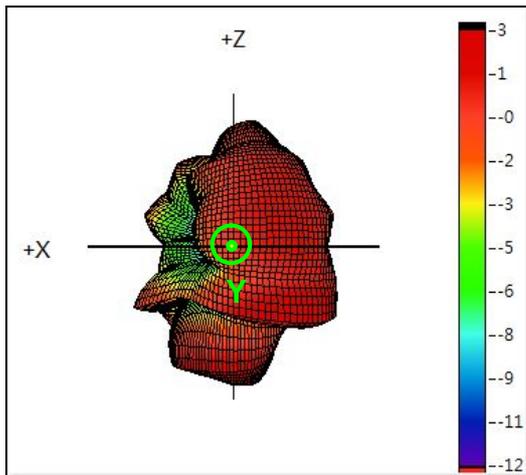
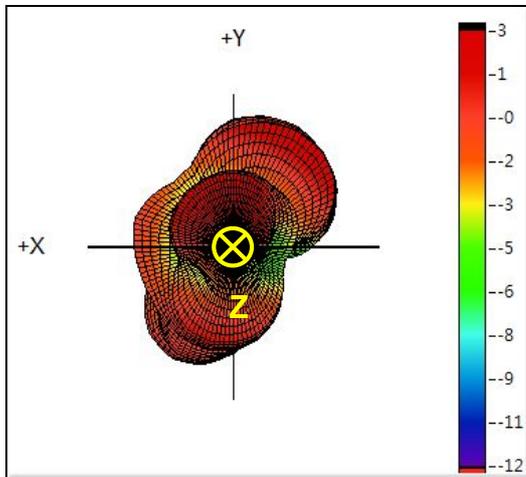
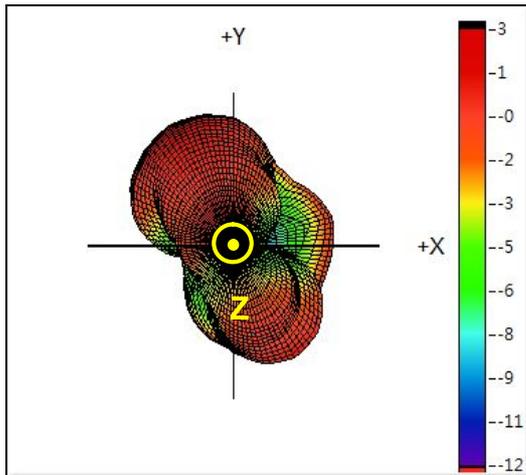
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## 7-2. 1710~2170 MHz Band

### 7-2-1.3D Gain Pattern @ 1950 MHz (unit: dBi)



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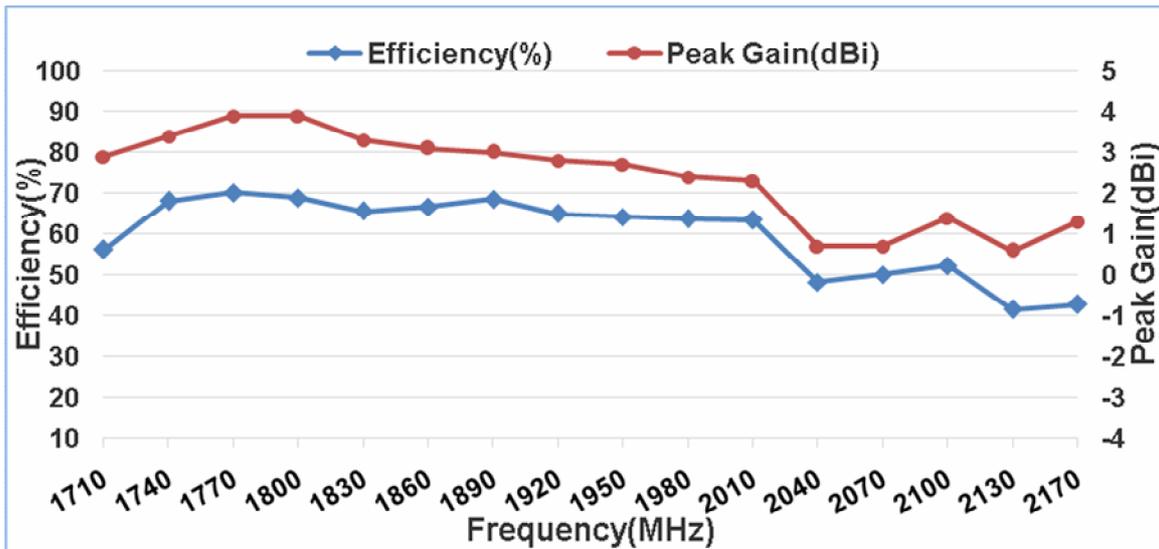
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7-2-2. 3D Efficiency Table

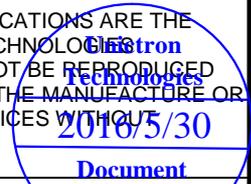
Frequency(MHz)	1710	1740	1770	1800	1830	1860	1890	1920	1950	1980	2010	2040	2070	2100	2130	2170
Efficiency(dB)	-2.5	-1.7	-1.5	-1.6	-1.8	-1.8	-1.6	-1.9	-1.9	-2.0	-2.0	-3.2	-3.0	-2.8	-3.8	-3.7
Efficiency(%)	56.2	68.1	70.2	68.9	65.6	66.7	68.6	65.0	64.3	63.7	63.5	48.3	50.2	52.4	41.5	42.9
Peak Gain(dBi)	2.9	3.4	3.9	3.9	3.3	3.1	3.0	2.8	2.7	2.4	2.3	0.7	0.7	1.4	0.6	1.3

7-2-3. 3D Efficiency vs. Frequency



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