Hitachi Kokusai Electric Inc.

Test Report

August 28, 2011

Hitachi Kokusai Electric Inc.

Pre-shipment test result

Product Name : SINELINK 24G

Model No :HP5-120100

1. Radiated emission

Frequency	Field Strength Limits (dBuV/m)	Serial No.: CS004 (dBuV/m)	Serial No. CS005 (dBuV/m)	Serial No.: CS006 (dBuV/m)
30-88MHz	40	Less than 40	Less than 40	Less than 40
88-216MHz	43	Less than 40	Less than 40	Less than 40
216-960MHz	46	Less than 46	Less than 46	Less than 46
960-1000MHz	53	Less than 53	Less than 53	Less than 53

Please refer to Appendix 1 and Appendix 2.

2. Field strength of an operational frequency.

Serial No.	CH1: 24.08GHz <128dBuV/m	CH4: 24.14GHz <128dBuV/m	CH8: 24.22GHz <128dBuV/m
CS004	127.5	127.6	127.1
CS005	127.6	127.5	127.3
CS006	127.1	127.4	127.1

The average field strength is reduced by 3 dB from the measurement value of the continuous CW mode.

3. Frequency tolerance

3-1. Variation depending on ambient temperature

Serial No.	-20 degrees <10ppm	+25 degrees <10ppm	+50 degrees <10ppm
CS004	Less than 1.5ppm	Less than 1.0ppm	Less than 1.0ppm
CS005	Less than 1.0ppm	Less than 1.0ppm	Less than 1.0ppm
CS006	Less than 1.0ppm	Less than 1.0ppm	Less than 1.0ppm

3-2. Variation depending on supplied voltage

Serial No.	Supply voltage DC36V <10ppm	Supply voltage DC48V <10ppm	Supply voltage DC57V <10ppm
CS004	Less than 1.0ppm	Less than 1.0ppm	Less than 1.0ppm
CS005	Less than 1.0ppm	Less than 1.0ppm	Less than 1.0ppm
CS006	Less than 1.0ppm	Less than 1.0ppm	Less than 1.0ppm

SINELINK24G meets IEEE802.3af class 0.

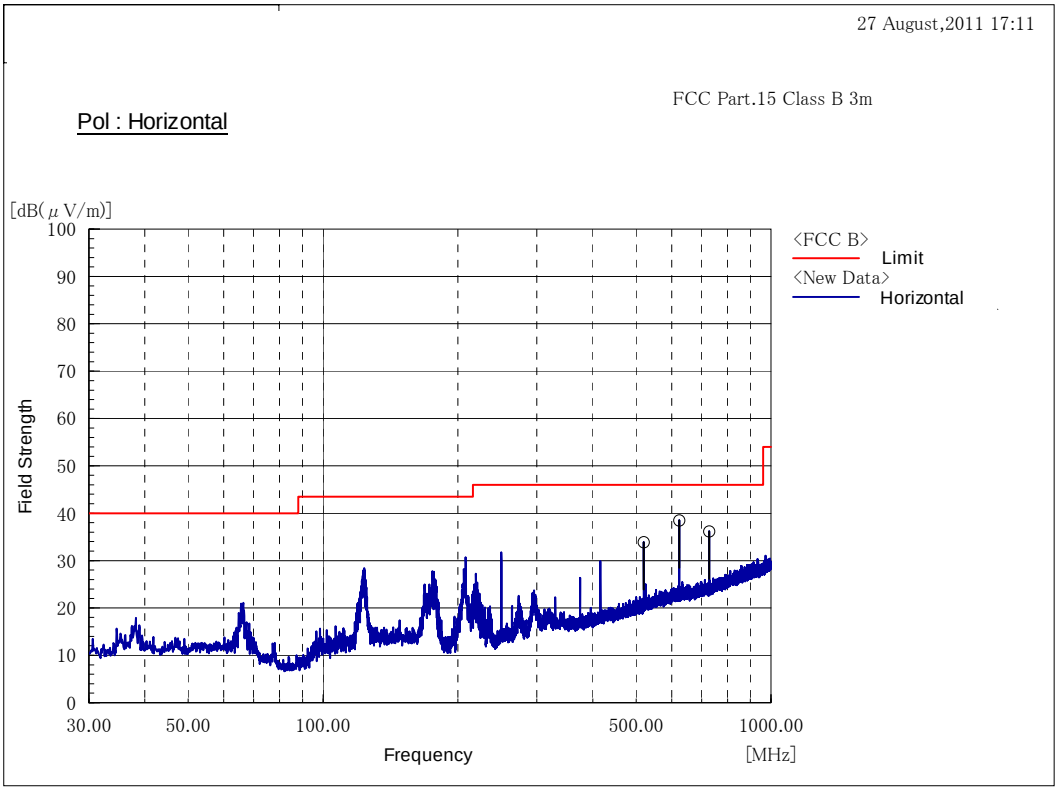
4. Antenna

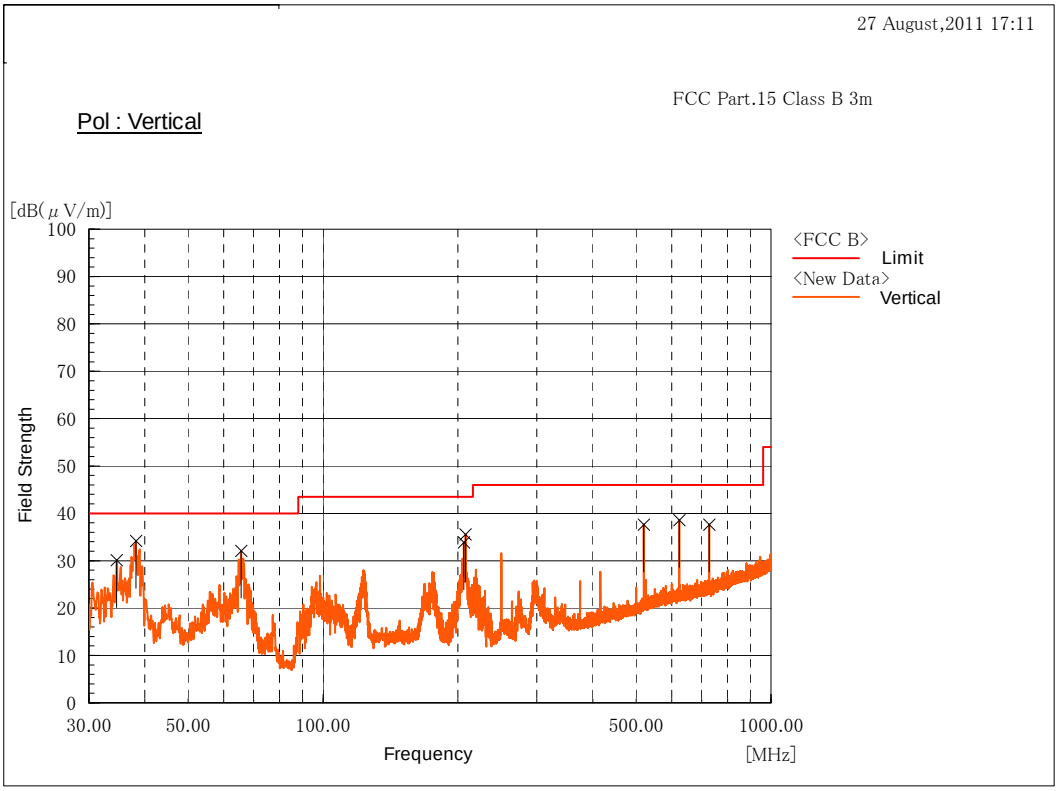
Serial No.	Gain >33dBi	Beam widths <3.5degrees
CS004	34.5	2.6
CS005	34.4	2.6
CS006	34.4	2.6

Please refer to Appendix 3.

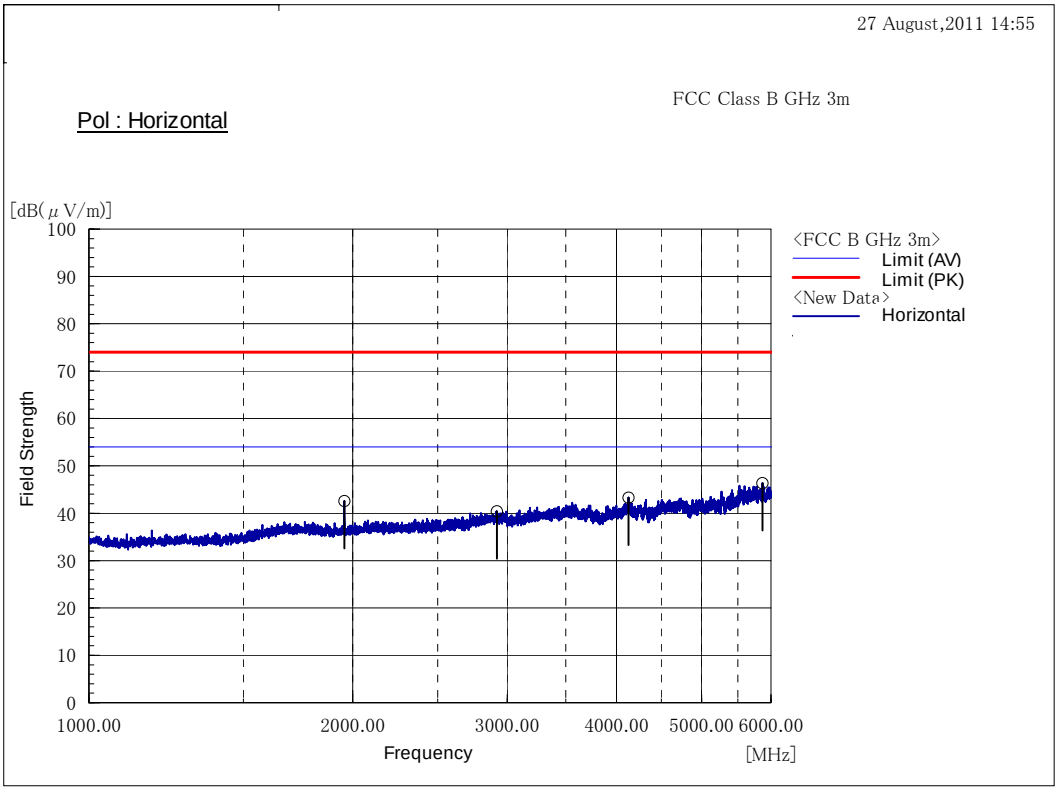
Appendix 1-1

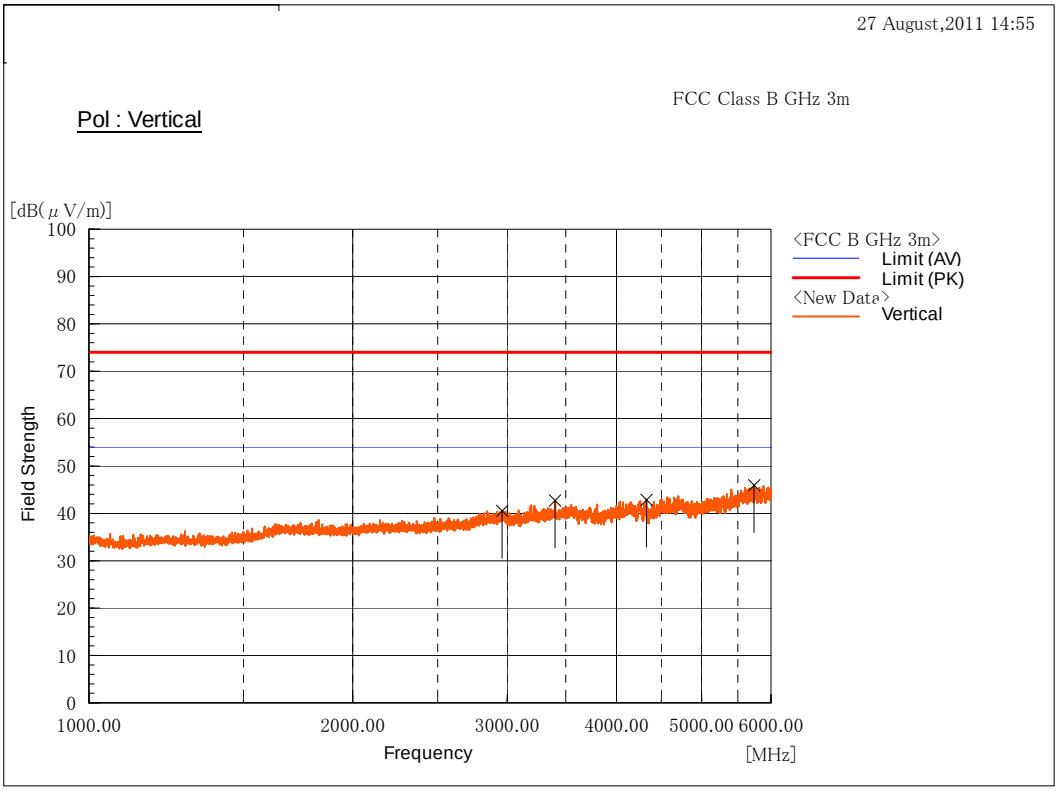
S/N: CS004





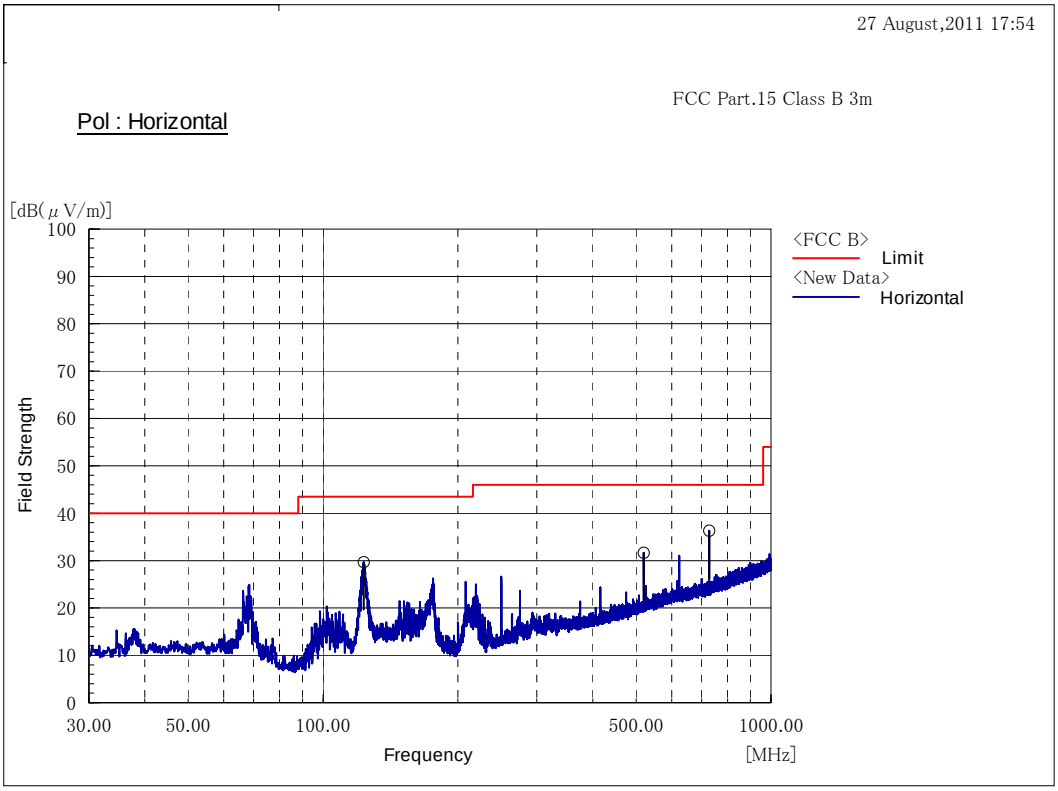
S/N: CS004

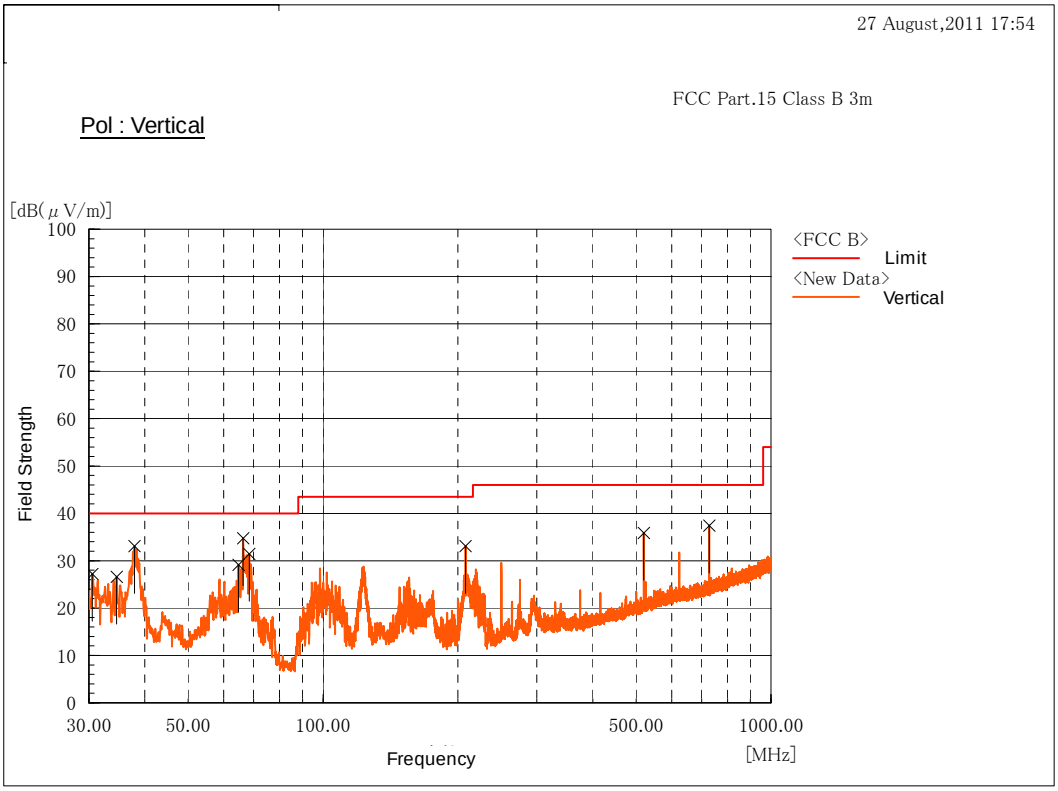

27 August,2011 14:55
FCC Class B GHz 3m
Pol : Horizontal
[dB(μV/m)]
100
90
80
70
60
50
40
30
20
10
0
Field Strength
1000.00
2000.00
3000.00
4000.00
5000.00
6000.00
Frequency
[MHz]
<FCC B GHz 3m>
Limit (AV)
Limit (PK)
<New Data>
Horizontal


27 August,2011 14:55
FCC Class B GHz 3m
Pol : Vertical
[dB(μV/m)]
100
90
80
70
60
50
40
30
20
10
0
Field Strength
1000.00
2000.00
3000.00
4000.00
5000.00
6000.00
Frequency
[MHz]
<FCC B GHz 3m>
Limit (AV)
Limit (PK)
<New Data>
Vertical

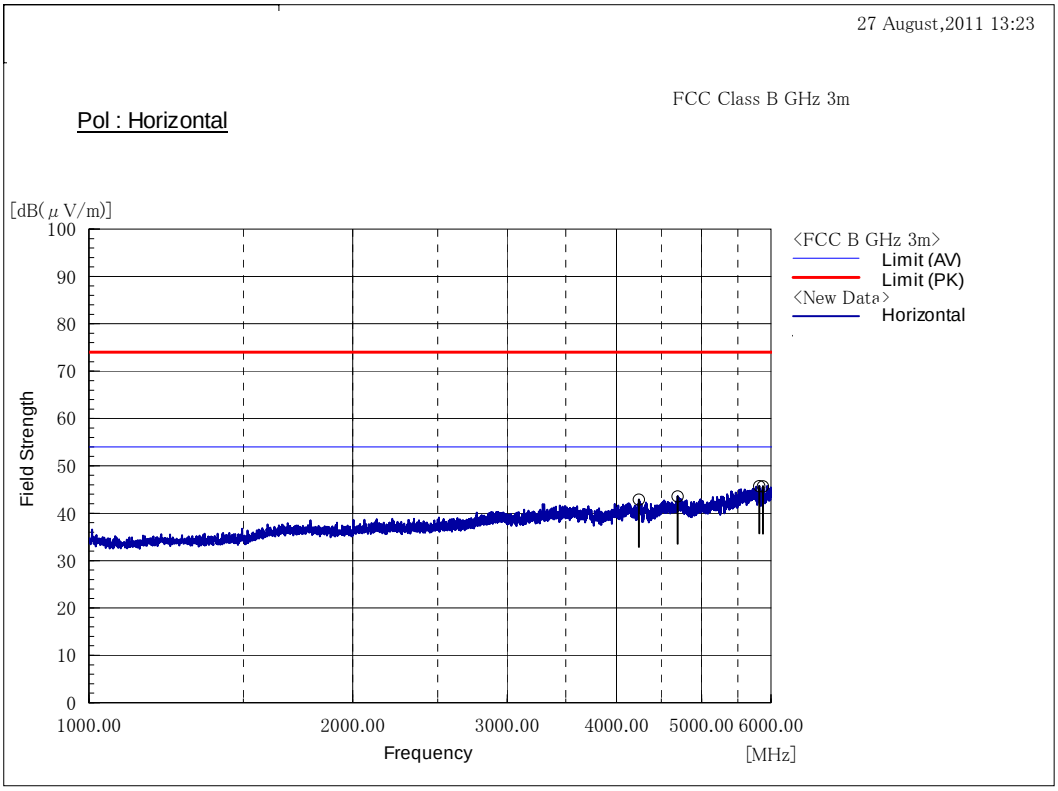
Appendix 1-2

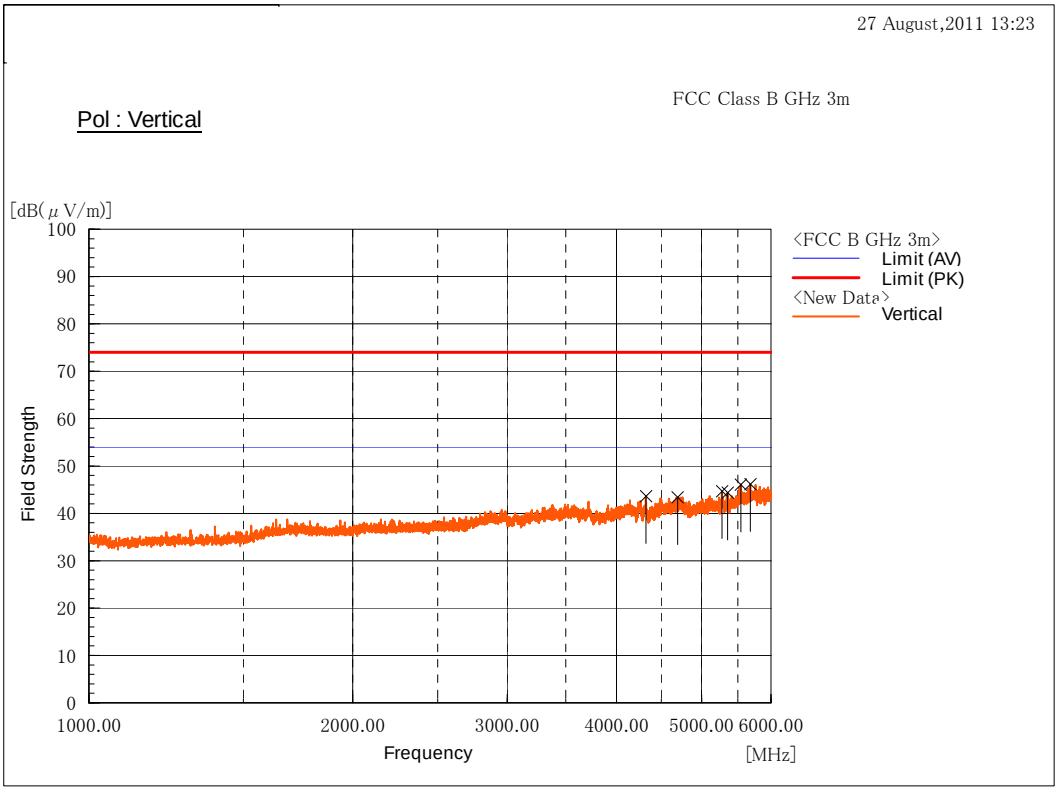
S/N: CS005





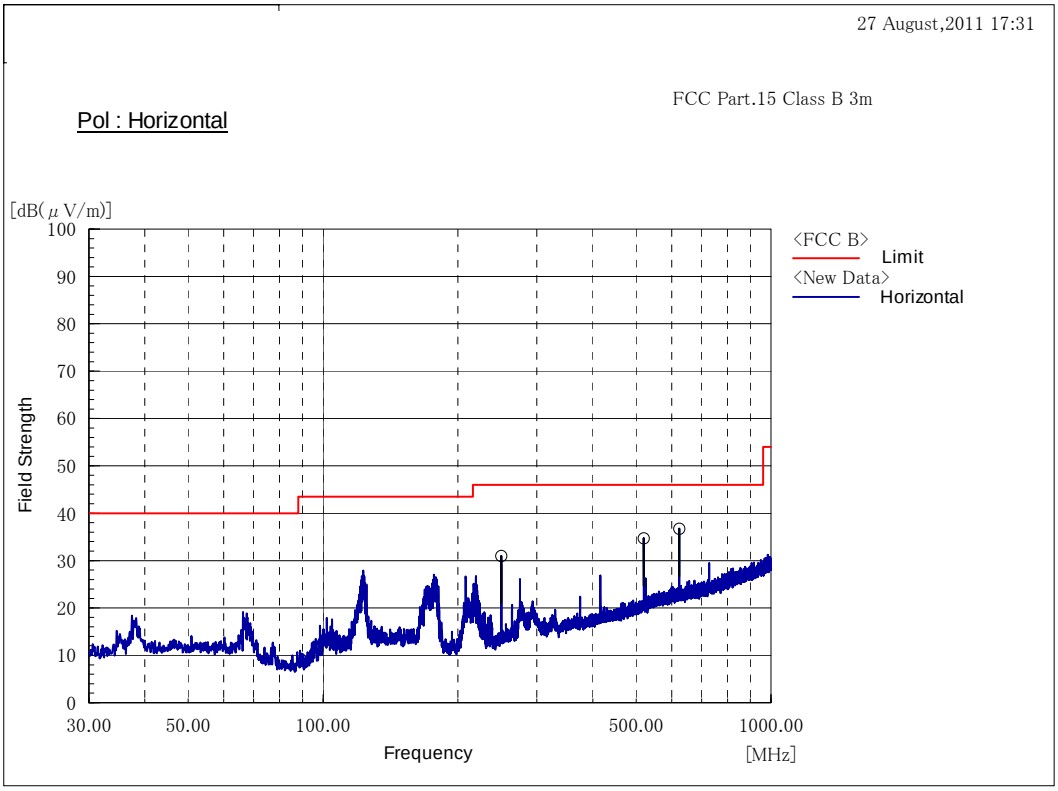
S/N: CS005

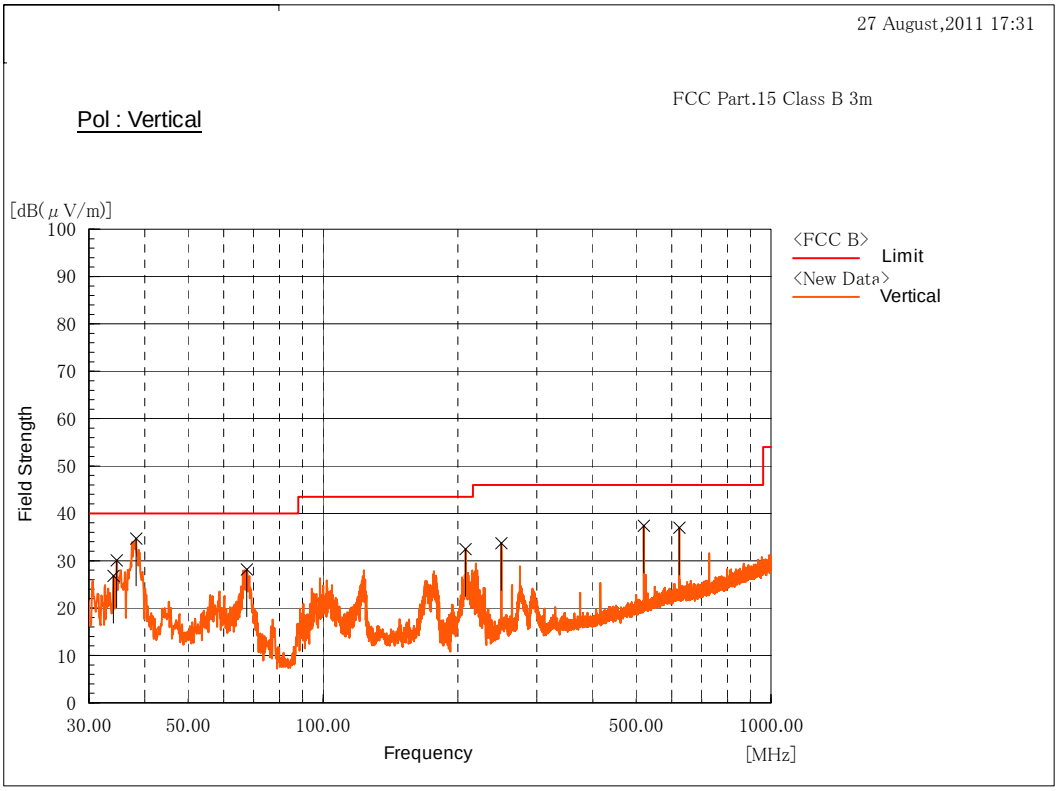

27 August,2011 13:23
FCC Class B GHz 3m
Pol : Horizontal
[dB(μV/m)]
100
90
80
70
60
50
40
30
20
10
0
Field Strength
1000.00
2000.00
3000.00
4000.00
5000.00
6000.00
Frequency
[MHz]
<FCC B GHz 3m>
Limit (AV)
Limit (PK)
<New Data>
Horizontal


27 August,2011 13:23
FCC Class B GHz 3m
Pol : Vertical
[dB(μV/m)]
100
90
80
70
60
50
40
30
20
10
0
Field Strength
1000.00
2000.00
3000.00
4000.00
5000.00
6000.00
Frequency
[MHz]
<FCC B GHz 3m>
Limit (AV)
Limit (PK)
<New Data>
Vertical

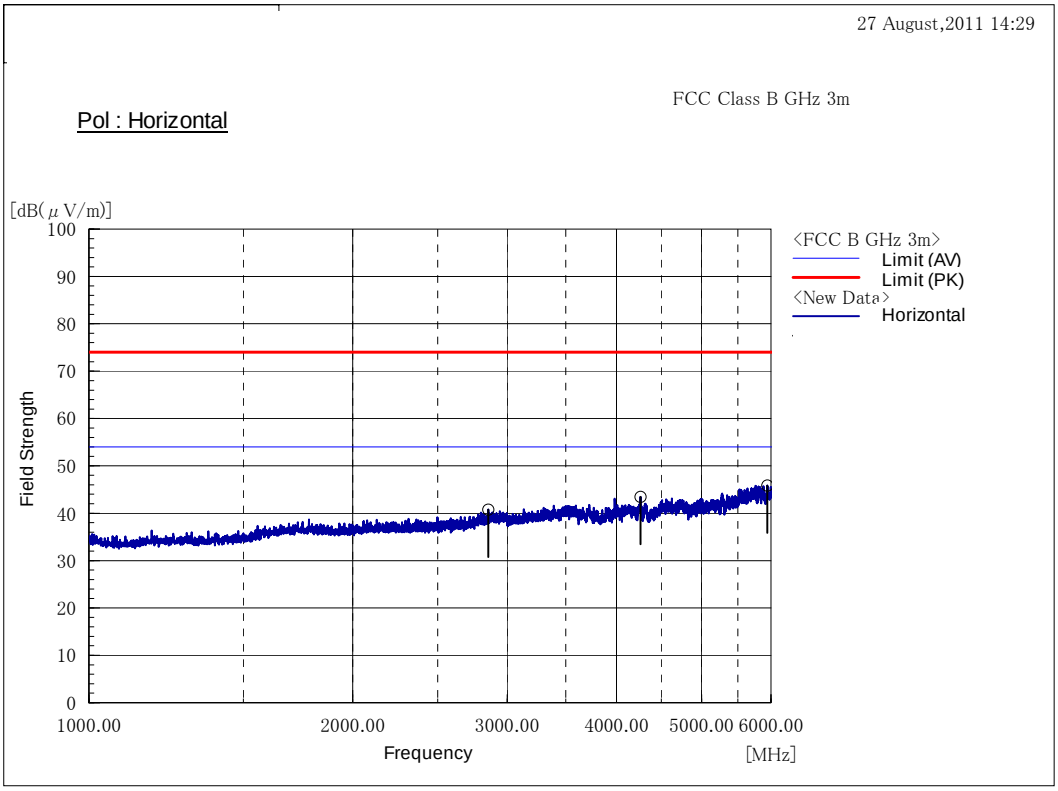
Appendix 1-3

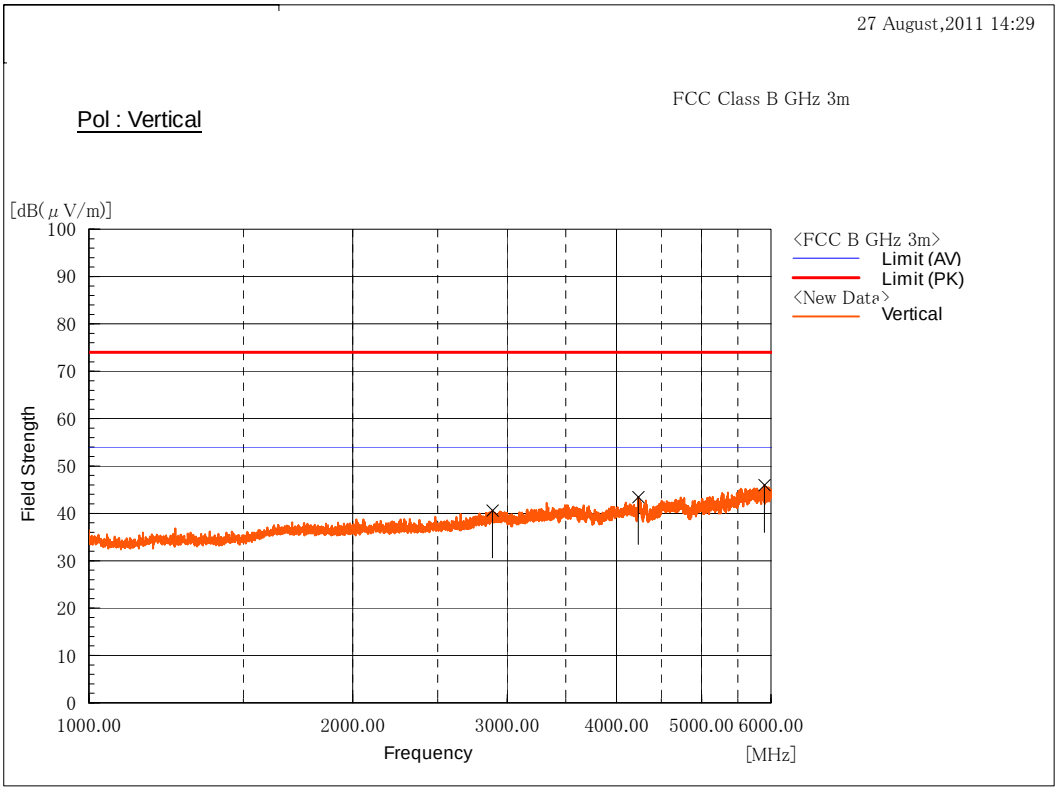
S/N: CS006





S/N: CS006


27 August,2011 14:29
FCC Class B GHz 3m
Pol : Horizontal
[dB(μV/m)]
100
90
80
70
60
50
40
30
20
10
0
Field Strength
1000.00
2000.00
3000.00
4000.00
5000.00
6000.00
Frequency
[MHz]
<FCC B GHz 3m>
Limit (AV)
Limit (PK)
<New Data>
Horizontal


27 August,2011 14:29
FCC Class B GHz 3m
Pol : Vertical
[dB(μV/m)]
100
90
80
70
60
50
40
30
20
10
0
Field Strength
1000.00
2000.00
3000.00
4000.00
5000.00
6000.00
Frequency
[MHz]
<FCC B GHz 3m>
Limit (AV)
Limit (PK)
<New Data>
Vertical

Appendix 2

We couldn't detect radiated emission (1-50GHz) by a measuring antenna despite making the measuring antenna close to EUT.
For your reference, the followings are the values of unwanted waves which were measured directly at the antenna terminal.

S/N: CS004

	CH1: 24.08GHz	CH4: 24.14GHz	CH8: 24.22GHz
Fundamental wave	+0.75dBm	+0.83dBm	+0.38dBm
Unwanted emission wave	46.67GHz/-57dBm	47.15GHz/-58dBm	46.69GHz/-60dBm

Measured by using continuous CW mode.

S/N: CS005

	CH1: 24.08GHz	CH4: 24.14GHz	CH8: 24.22GHz
Fundamental wave	+0.99dBm	+0.86dBm	+0.72dBm
Unwanted emission wave	46.54GHz/-58dBm	47.55GHz/-57dBm	48.85GHz/-60dBm

Measured by using continuous CW mode.

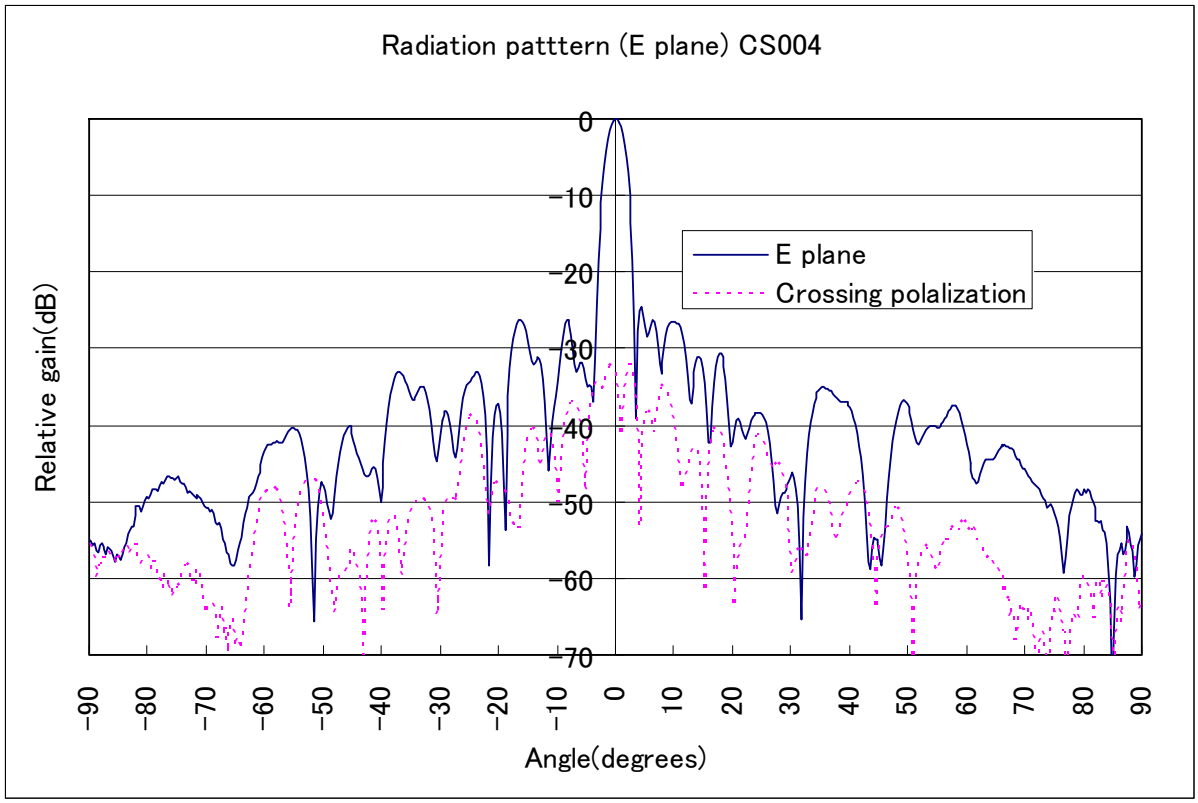
S/N: CS006

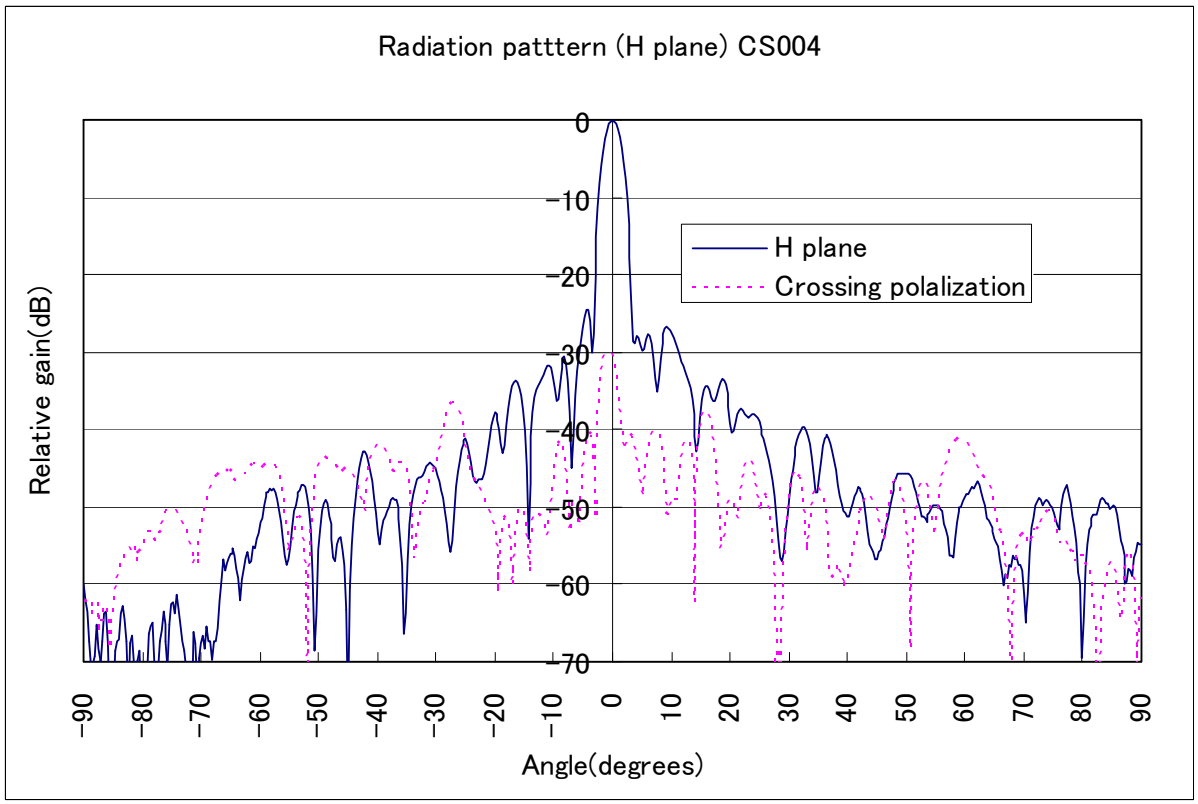
	CH1: 24.08GHz	CH4: 24.14GHz	CH8: 24.22GHz
Fundamental wave	+0.50dBm	+0.82dBm	+0.49dBm
Unwanted emission wave	48.79GHz/-59dBm	47.44GHz/-60dBm	47.11GHz/-61dBm

Measured by using continuous CW mode.

Appendix 3-1

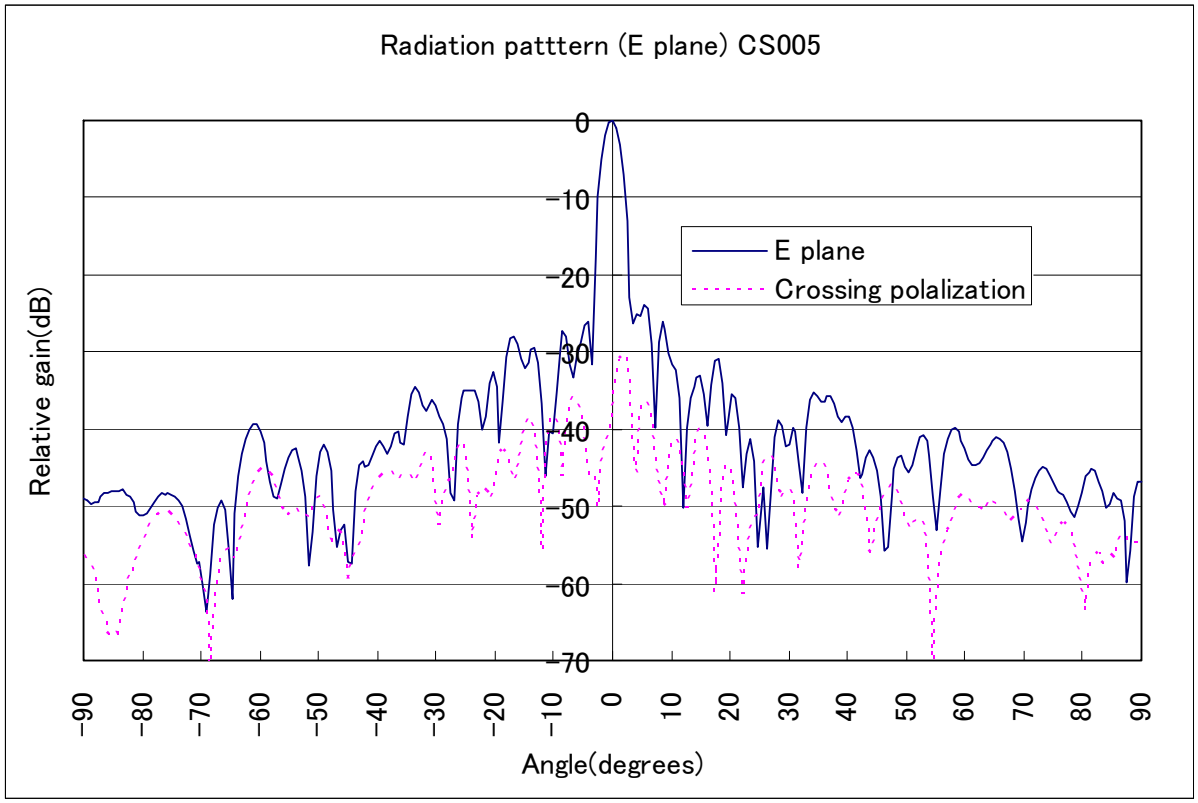
S/N: CS004

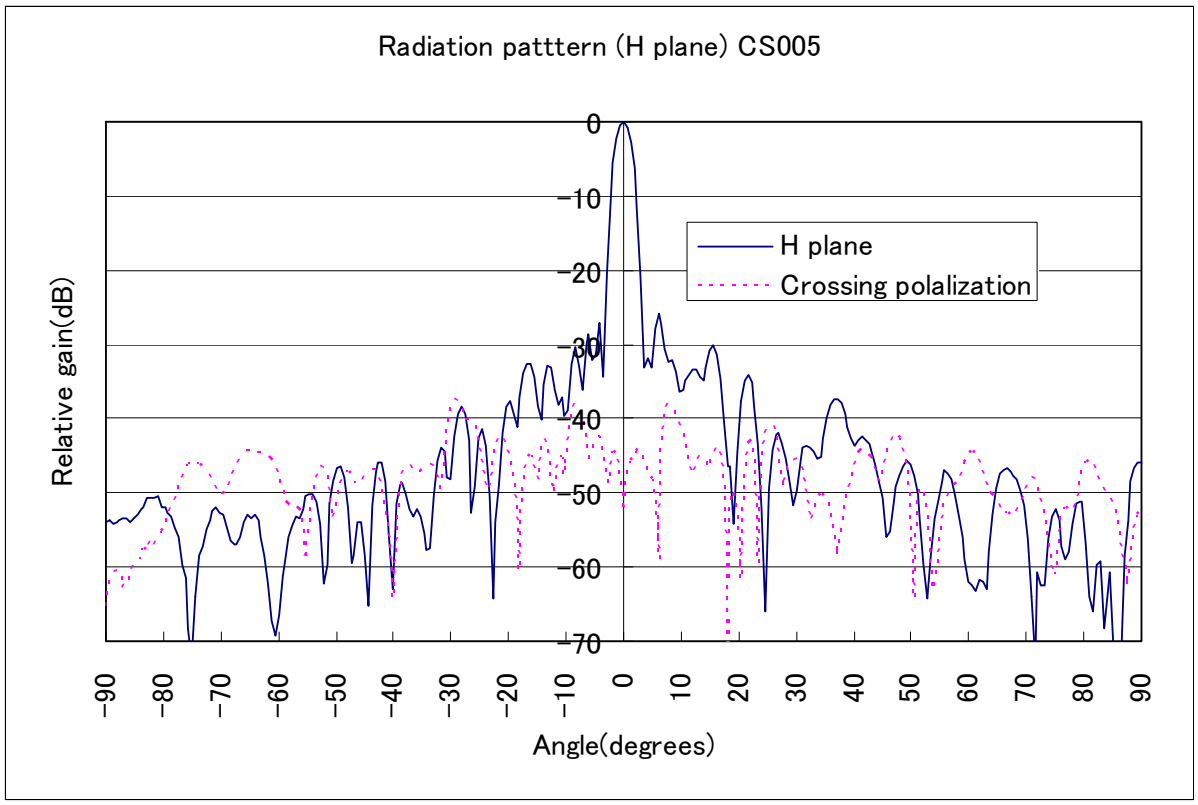




Appendix 3-2

S/N: CS005





Appendix 3-3

S/N: CS006