

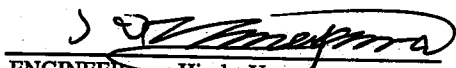
DATA OF 20dB BANDWIDTH (CONDUCTED)

A-PEX INTERNATIONAL CO., LTD.

EMC HEAD OFFICE DIVISION No.1 SEMI ANECHOIC CHAMBER

COMPANY : SONY Corporation
EQUIPMENT : Digital Video Camera Recorder
MODEL : DCR-IP220
S/N : 1320172
FCC ID : AK8DCRIP220
POWER : AC120V/60Hz
MODE : Tx (Hopping off) / Inquiry

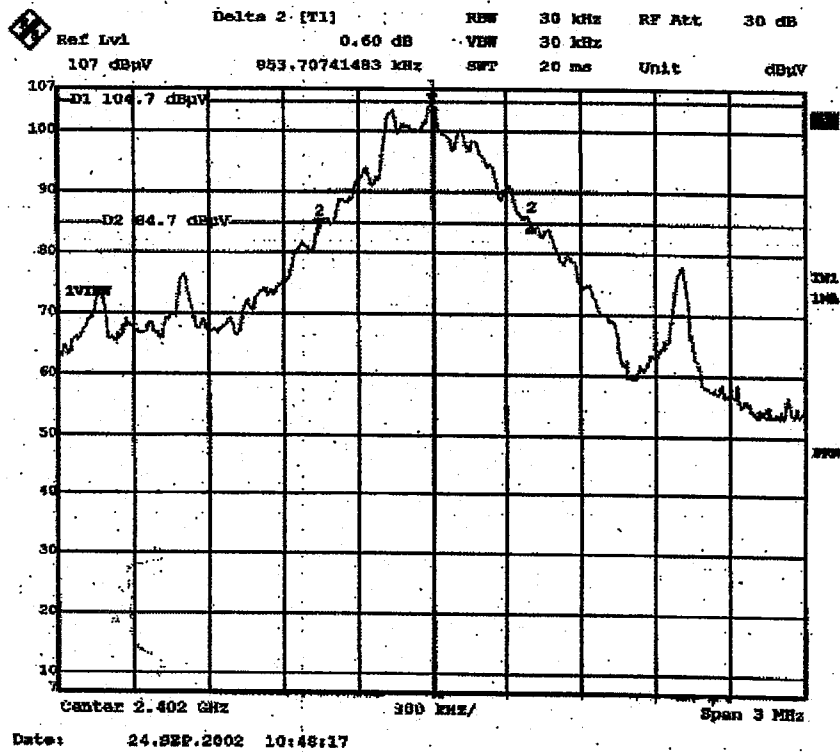
REPORT NO : 23BE0097-HO
REGULATION : Fcc Part15 Subpart C 15.247(a)(1)
TEST DISTANCE : -
DATE : 2002/9/24
TEMPERATURE : 26°C
HUMIDITY : 40%


ENGINEER : Hiroka Umeiyama

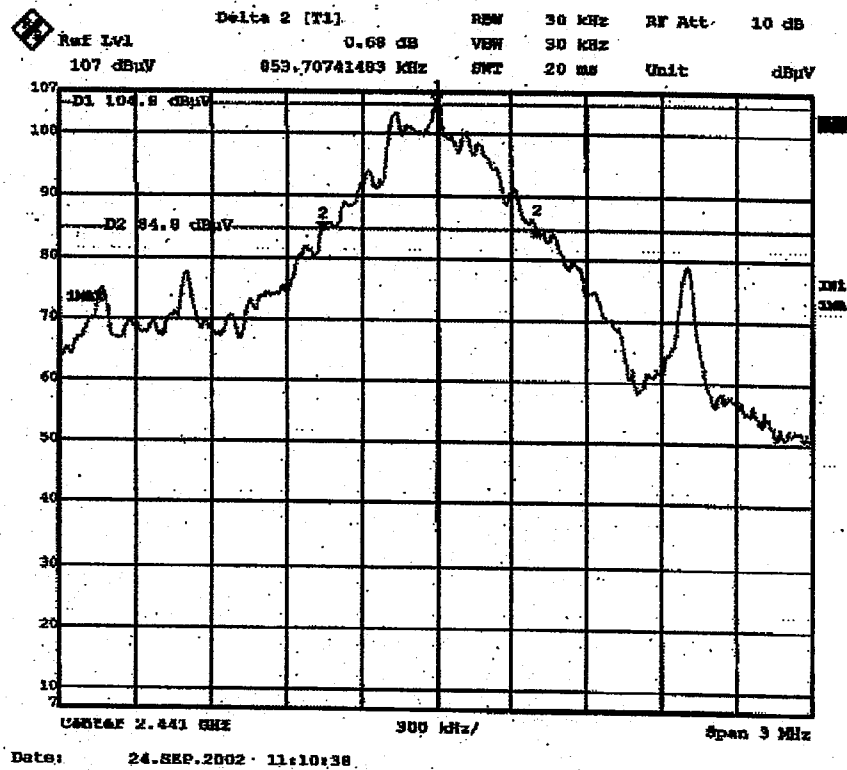
PK DETECT(S/A: span 3MHz, RBW 30kHz, VBW 30kHz, sweep time AUTO)

CH	FREQ	20dB Bandwidth	Limit
	[MHz]	[MHz]	[MHz]
Low	2402.0	0.854	1.0
Mid	2441.0	0.854	1.0
High	2480.0	0.860	1.0
Inquiry	2441.0	0.836	1.0

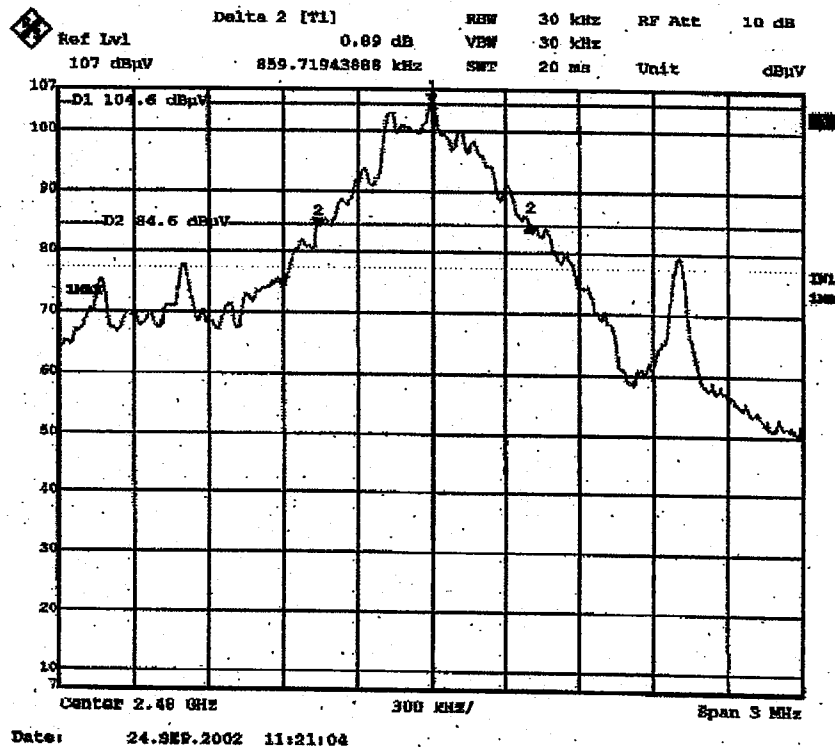
20dB Band Width :Tx(Hopping off)2402MHz



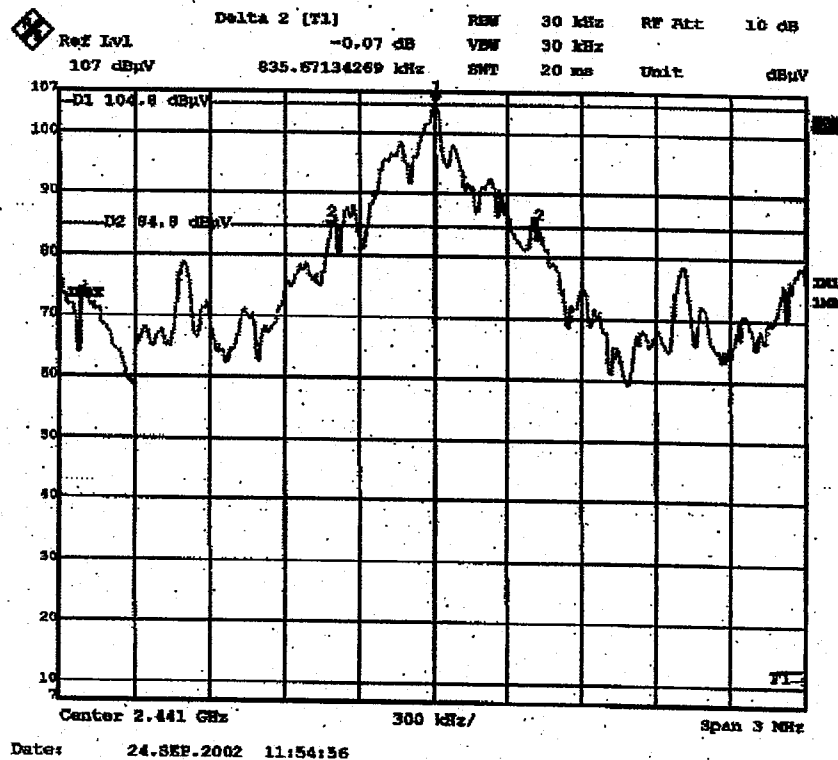
20dB Band Width :Tx(Hopping off)2441MHz



20dB Band Width :Tx(Hopping off)2480MHz



20dB Band Width :Inquiry



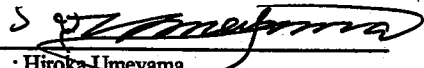
DATA OF PEAK OUTPUT POWER(CONDUCTED)

A-PEX INTERNATIONAL CO., LTD.

EMC HEAD OFFICE DIVISION No.1 SEMI ANECHOIC CHAMBER

COMPANY : SONY Corporation
EQUIPMENT : Digital Video Camera Recorder
MODEL : DCR-IP220
S/N : 1320172
FCC ID : AK8DCRIP220
POWER : AC120V/60Hz
MODE : Tx (Hopping on) / Inquiry

REPORT NO : 23BE0097-HO
REGULATION : Fcc Part15 Subpart C 15.247(b)(1)
TEST DISTANCE : -
DATE : 2002/9/24
TEMPERATURE : 26°C
HUMIDITY : 40%

ENGINEER :  Hiroka Umeyama

CH	FREQ [MHz]	T/R Reading [dBuV]	Cable Loss [dB]	Result [dBuV]	Result [dBm]	Limit (1W) [dBm]
Low	2402.0	105.2	1.7	106.9	-0.11	30.0
Mid	2441.0	105.4	1.8	107.2	0.20	30.0
High	2480.0	105.4	1.8	107.2	0.24	30.0

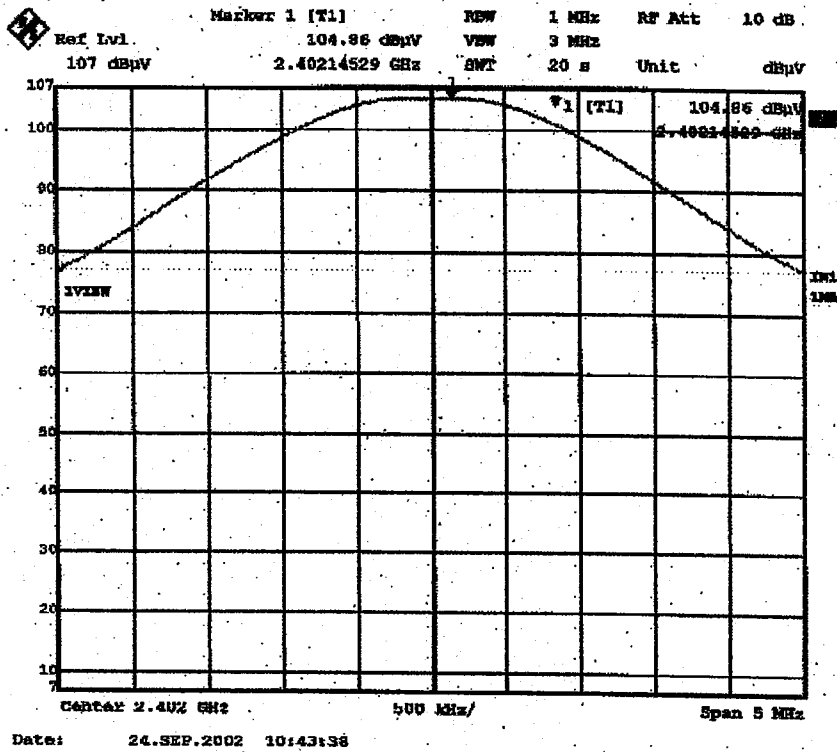
PK DETECT(S/A: span 5MHz, RBW 1MHz, VBW 3MHz, sweep time AUTO)

CH	FREQ [MHz]	S/A Reading [dBuV]	Cable Loss [dB]	Result [dBuV]	Result [dBm]	Limit (125mW) [dBm]
Inquiry	2441.0	104.8	1.8	106.7	-0.35	21.0

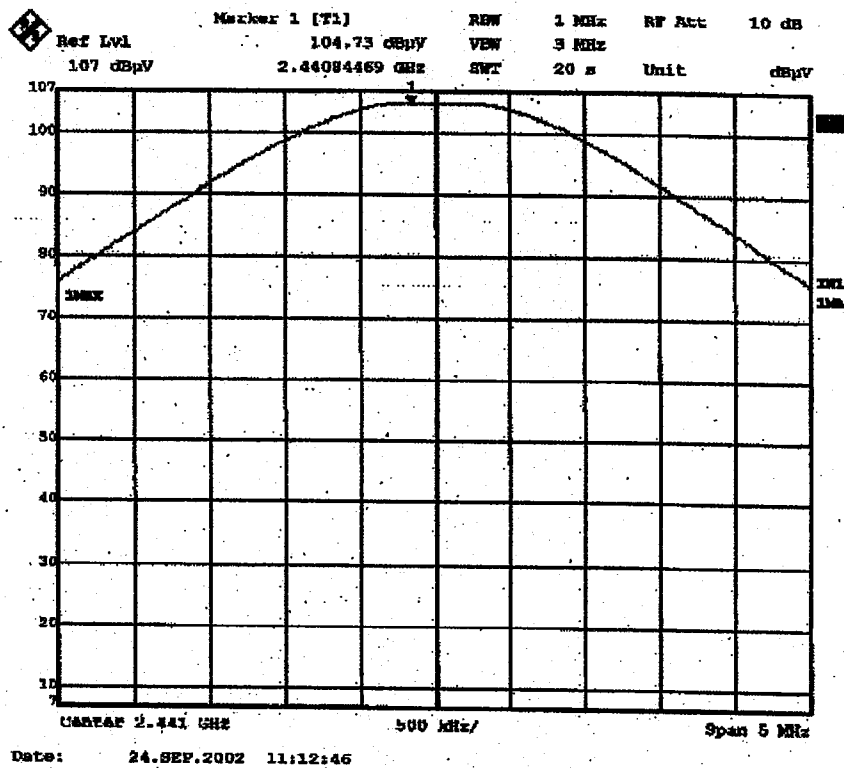
Sample Calculation :

Result = T/R(S/A) Reading + Cable Loss

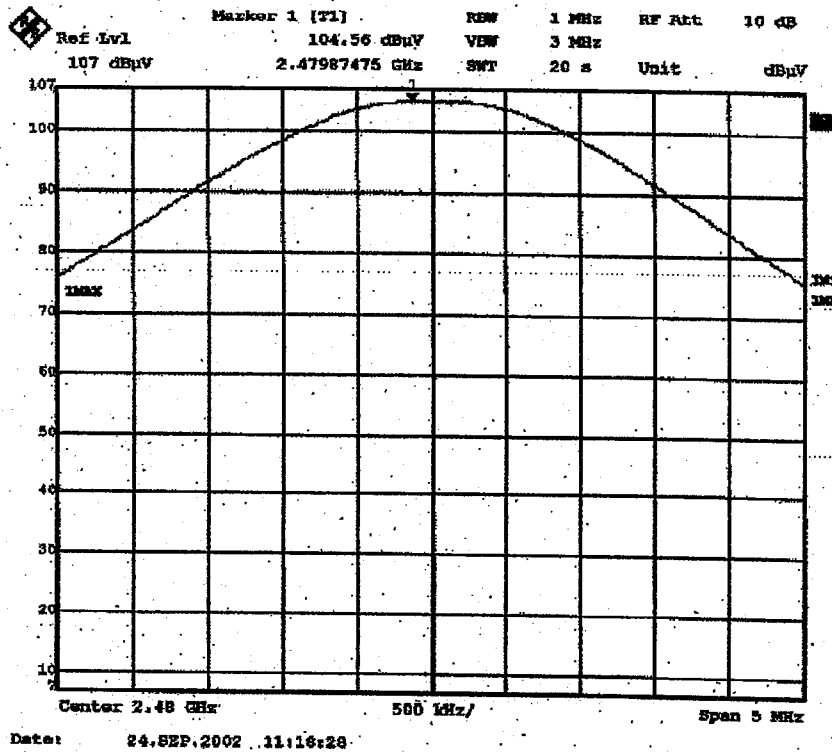
Peak Output Power(Conducted):Tx(2402MHz)



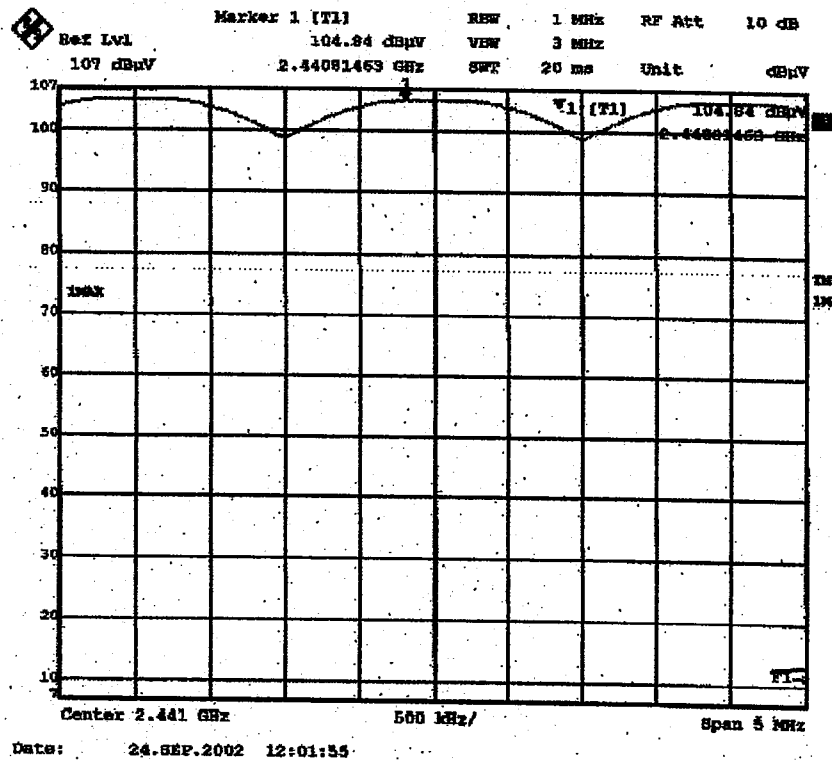
Peak Output Power(Conducted):Tx(2441MHz)



Peak Output Power(Conducted):Tx(2480MHz)



Peak Output Power(Conducted):Inquiry



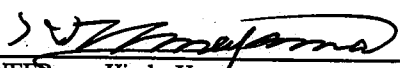
DATA OF BAND EDGE

A-PEX INTERNATIONAL CO., LTD.

EMC HEAD OFFICE DIVISON No.1 SEMI ANECHOIC CHAMBER

COMPANY : SONY Corporation
EQUIPMENT : Digital Video Camera Recorder
MODEL : DCR-IP220
S/N : 1320172
FCC ID : AK8DCRIP220
POWER : AC120V/60Hz
MODE : Tx (Hopping on) ,Tx (Hopping off 2402/2480MHz)

REPORT NO : 23BE0097-HO
REGULATION : Fcc Part15 Subpart C 15.247(c)
TEST DISTANCE : -
DATE : 2002/9/24
TEMPERATURE : 26°C
HUMIDITY : 40%


ENGINEER : Hiroka Uneyama

PK DETECT(S/A :Span 20/10MHz, RBW 200/100kHz/1MHz ,VBW 200/100kHz/1MHz, sweep time AUTO)

[Hopping on] Conducted

Frequency [MHz]	Reading [dBuV]	Cable Loss [dB]	E [dBuV]	P [mW]	Difference of level [dB]	Field Strength [dBuV/m]	Limit
2390.0	43.6	1.7	45.3	0.000000676	-	33.8	<54[dBuV/m]
2400.0	58.9	1.7	60.6	-	45.9*	-	>20[dB]
2484.5	58.7	1.8	60.4	0.000021878	-	48.9	<54[dBuV/m]

* Reference : Reading (104.7[dBuV]) + Cable Loss (1.8[dB]) = E (106.5[dBuV]) at 2480MHz.

[Hopping off Tx (2402/2480MHz)] Conducted

Frequency [MHz]	Reading [dBuV]	Cable Loss [dB]	E [dBuV]	P [mW]	Difference of level [dB]	Field Strength [dBuV/m]	Limit
2390.0	42.7	1.7	44.4	0.000000550	-	32.9	<54[dBuV/m]
2400.0	63.5	1.7	65.2	-	41.4*	-	>20[dB]
2484.5	59.6	1.8	61.4	0.000027542	-	49.9	<54[dBuV/m]

* Reference : Reading (104.8[dBuV]) + Cable Loss (1.8[dB]) = E (106.6[dBuV]) at 2480MHz.

Sample Calculation:

Field Strength = $(\sqrt{30 \cdot P \cdot 0.001 \cdot G}) / d$

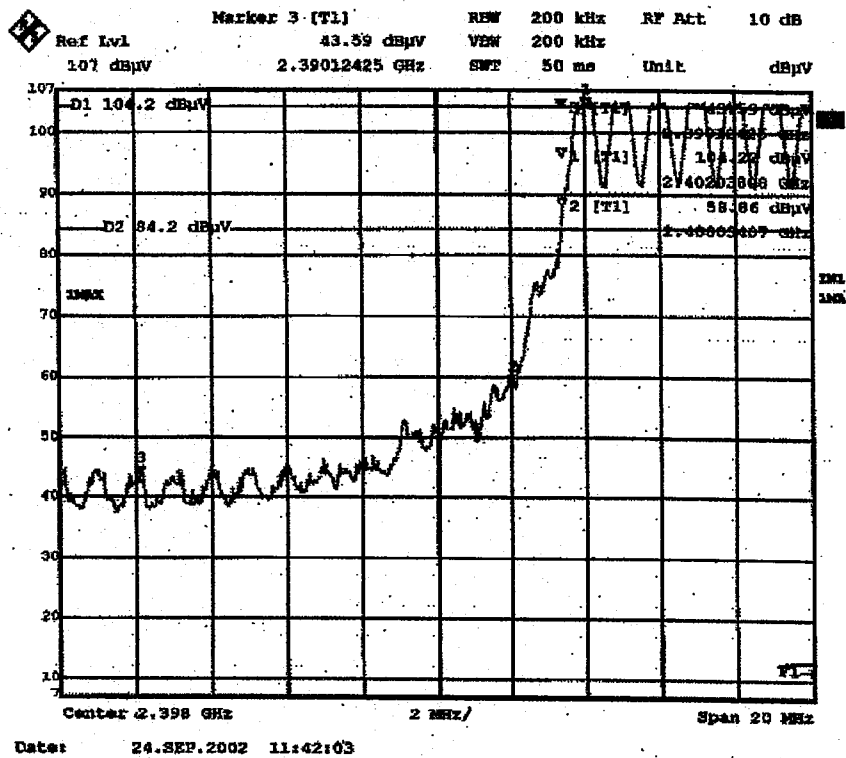
E : Reading + Cable Loss

P : Converted to mW

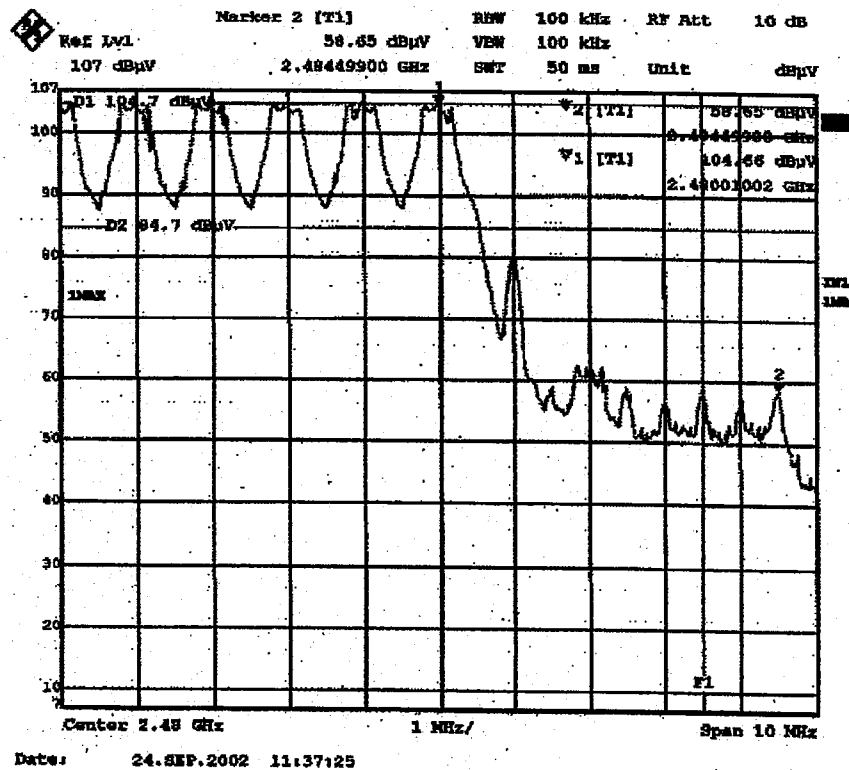
d : Test distance(3.0m)

G : Numeric Antenna Gain (1.06)

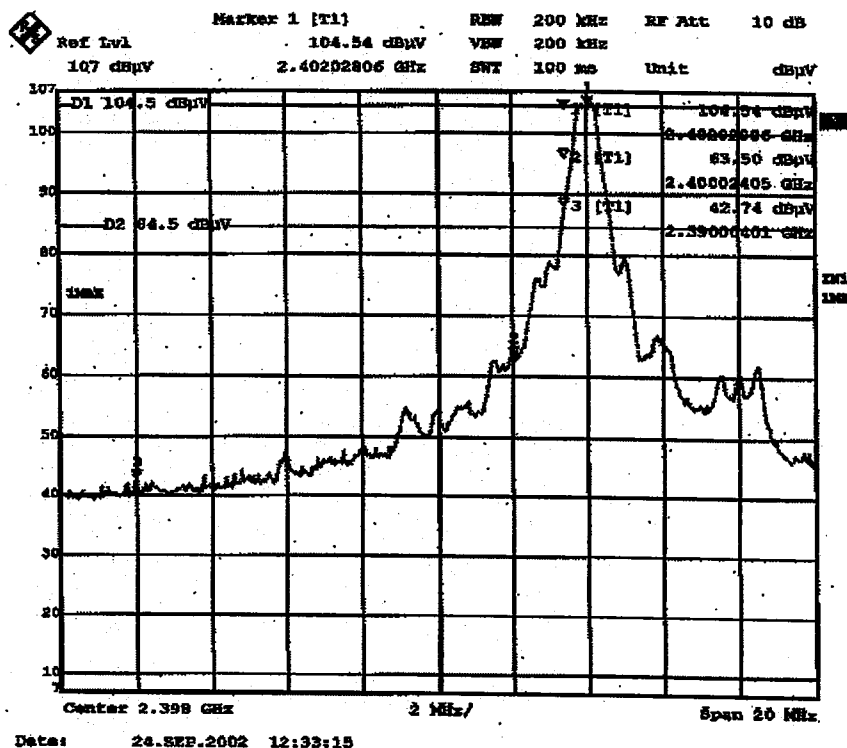
Band Edge :Tx(Hopping on)2402MHz



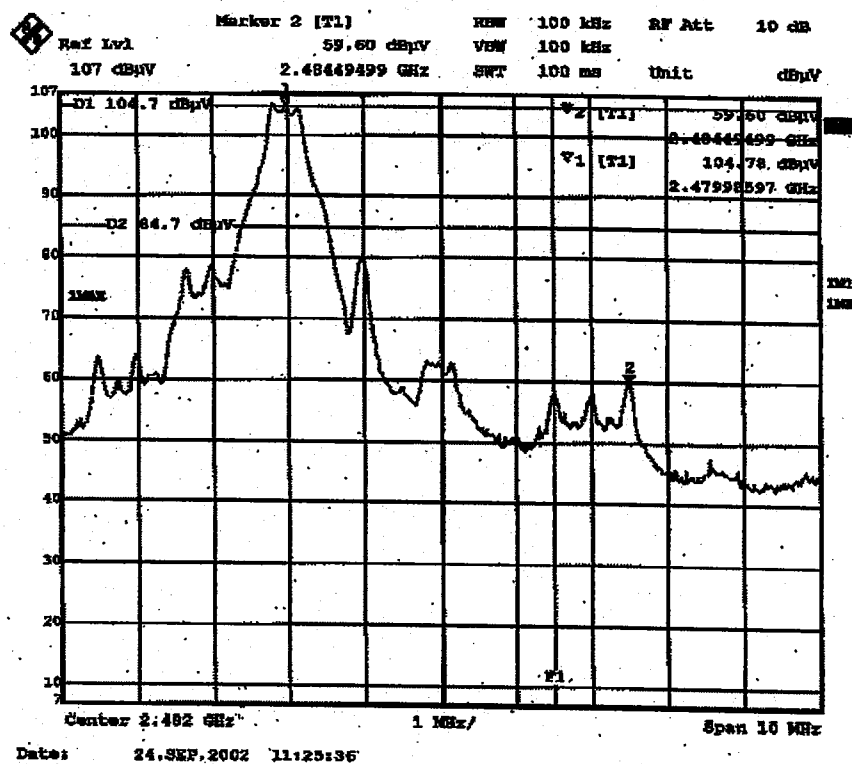
Band Edge :Tx(Hopping on)2480MHz



Band Edge :Tx(Hopping off)2402MHz



Band Edge :Tx(Hopping off)2480MHz



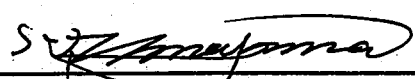
DATA OF SPURIOUS EMISSIONS(30MHz to 1000MHz)

A-PEX INTERNATIONAL CO., LTD.

EMC HEAD OFFICE DIVISON No.1 SEMI ANECHOIC CHAMBER

COMPANY : SONY Corporation
EQUIPMENT : Digital Video Camera Recorder
MODEL : DCR-IP220
S/N : 1320172
FCC ID : AK8DCRIP220
POWER : AC120V/60Hz
MODE : Tx (2402MHz)

REPORT NO : 23BE0097-HO
REGULATION : Fcc Part15 Subpart C 15.247(c)
TEST DISTANCE : 3m
DATE : 2002/9/24
TEMPARATURE : 26°C
HUMIDITY : 40%


ENGINEER : Hiroka Umeyama

No.	FREQ [MHz]	READING		ANT Factor [dB/m]	AMP GAIN [dB]	LOSS [dB]	RESULT		Limit [dBuV/m]	MARGIN	
		HOR [dBuV/m]	VER [dBuV/m]				HOR [dBuV/m]	VER [dBuV/m]		HOR [dB]	VER [dB]
1*	81.00	41.7	38.3	7.0	24.0	7.7	32.4	29.0	69.6	37.2	40.6
2*	101.25	32.6	42.2	10.1	24.0	8.0	26.7	36.3	69.6	42.9	33.3
3	108.00	39.8	41.5	11.2	24.0	8.2	35.2	36.9	43.5	8.3	6.6
4	135.00	30.9	36.6	14.0	24.0	8.4	29.3	35.0	43.5	14.2	8.5
5*	297.00	34.2	32.5	19.7	23.8	9.7	39.8	38.1	69.6	29.8	31.5
6*	337.49	46.0	39.3	15.6	23.8	9.8	47.6	40.9	69.6	22.0	28.7

CALCULATION: READING+ANT.FACTOR+LOSS(CABLE+ATTEN)-AMP.GAIN

RxANTENNA: Biconical Antenna(30-300MHz), Logperriodic Antenna(300-1000MHz)

All other emissions were at least 20dB below the specification limit.

*: The limit values at frequencies excepting restricted bands indicated in 15.205 are values 20dB below the peak output power at each channel.

DATA OF SPURIOUS EMISSIONS(30MHz to 1000MHz)

A-PEX INTERNATIONAL CO., LTD.

EMC HEAD OFFICE DIVISON No.1 SEMI ANECHOIC CHAMBER

COMPANY : SONY Corporation
EQUIPMENT : Digital Video Camera Recorder
MODEL : DCR-IP220
S/N : 1320172
FCC ID : AK8DCRIP220
POWER : AC120V/60Hz
MODE : Tx (2441MHz)

REPORT NO : 23BE0097-HO
REGULATION : Fcc Part15 Subpart C 15.247(c)
TEST DISTANCE : 3m
DATE : 2002/9/24
TEMPARATURE : 26°C
HUMIDITY : 40%


ENGINEER : Hiroka Umeyama

No.	FREQ [MHz]	READING		ANT Factor [dB/m]	AMP GAIN [dB]	LOSS [dB]	RESULT		Limit [dBuV/m]	MARGIN	
		HOR [dBuV/m]	VER [dBuV/m]				HOR [dBuV/m]	VER [dBuV/m]		HOR [dB]	VER [dB]
1*	81.00	42.1	36.7	7.0	24.0	7.7	32.8	27.4	68.5	35.7	41.1
2*	101.25	32.4	42.2	10.1	24.0	8.0	26.5	36.3	68.5	42.0	32.2
3	108.00	40.5	41.6	11.2	24.0	8.2	35.9	37.0	43.5	7.6	6.5
4	135.00	30.9	37.7	14.0	24.0	8.4	29.3	36.1	43.5	14.2	7.4
5*	297.00	37.4	34.2	19.7	23.8	9.7	43.0	39.8	68.5	25.5	28.7
6*	337.49	46.4	40.0	15.6	23.8	9.8	48.0	41.6	68.5	20.5	26.9

CALCULATION: READING+ANT.FACTOR+LOSS(CABLE+ATTEN)-AMP.GAIN

RxANTENNA: Biconical Antena(30-300MHz), Logperriodic Antenna(300-1000MHz)

All other emissions were at least 20dB below the specification limit.

*: The limit values at frequencies excepting restricted bands indicated in 15.205 are values 20dB below the peak output power at each channel.

DATA OF SPURIOUS EMISSIONS(30MHz to 1000MHz)

A-PEX INTERNATIONAL CO., LTD.

EMC HEAD OFFICE DIVISON No.1 SEMI ANECHOIC CHAMBER

COMPANY : SONY Corporation
EQUIPMENT : Digital Video Camera Recorder
MODEL : DCR-IP220
S/N : 1320172
FCC ID : AK8DCRIP220
POWER : AC120V/60Hz
MODE : Tx (2480MHz)

REPORT NO : 23BE0097-HO
REGULATION : Fcc Part15 Subpart C 15.247(c)
TEST DISTANCE : 3m
DATE : 2002/9/24
TEMPARATURE : 26°C
HUMIDITY : 40%


ENGINEER : Hiroka Umeyama

No.	FREQ [MHz]	READING		ANT Factor [dB/m]	AMP GAIN [dB]	LOSS [dB]	RESULT		Limit [dBuV/m]	MARGIN	
		HOR	VER				HOR	VER		HOR	VER
		[dBuV/m]					[dBuV/m]			[dB]	[dB]
1*	81.00	41.2	39.0	7.0	24.0	7.7	31.9	29.7	68.8	36.9	39.1
2*	101.25	32.7	41.9	10.1	24.0	8.0	26.8	36.0	68.8	42.0	32.8
3	108.00	39.8	41.4	11.2	24.0	8.2	35.2	36.8	43.5	8.3	6.7
4	135.00	30.7	37.9	14.0	24.0	8.4	29.1	36.3	43.5	14.4	7.2
5*	297.00	33.4	33.7	19.7	23.8	9.7	39.0	39.3	68.8	29.8	29.5
6*	337.49	46.3	39.4	15.6	23.8	9.8	47.9	41.0	68.8	20.9	27.8

CALCULATION: READING+ANT.FACTOR+LOSS(CABLE+ATTEN)-AMP.GAIN

RxANTENNA: Biconical Antenna(30-300MHz), Logperriodic Antenna(300-1000MHz)

All other emissions were at least 20dB below the specification limit.

*: The limit values at frequencies excepting restricted bands indicated in 15.205 are values 20dB below the peak output power at each channel.

DATA OF SPURIOUS EMISSIONS(1GHz to 26GHz)

A-PEX INTERNATIONAL CO., LTD.

EMC HEAD OFFICE DIVISION No.1 SEMI ANECHOIC CHAMB

COMPANY : SONY Corporation
EQUIPMENT : Digital Video Camera Recorder
MODEL : DCR-IP220
S/N : 1320172
FCC ID : AK8DCRIP220
POWER : AC120V/60Hz
MODE : Tx (2402MHz)

REPORT NO : 23BE0097-HO
REGULATION : Fcc Part15 Subpart C 15.247(c)
TEST DISTANCE : 3 and 1 m
DATE : 2002/9/25
TEMPARATURE : 26°C
HUMIDITY : 44%


ENGINEER : Hiroka Umeyama

PK DETECT

No.	FREQ	T/R READING		ANT	AMP	CABLE	Band-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	PK	HOR	VER
	[MHz]	[dBuV/m]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass												
1	1201.0	45.9	45.9	25.1	37.3	3.3	0.0	37.0	37.0	74.0	37.0	37.0
2	3603.0	43.7	44.1	28.9	36.6	6.5	0.0	42.5	42.9	74.0	31.5	31.1
3	4804.0	46.7	48.1	31.1	36.4	7.3	0.3	49.0	50.4	74.0	25.0	23.6
4	7206.0	43.2	43.8	35.3	36.5	9.4	0.0	51.4	52.0	74.0	22.6	22.0
5	9608.0	44.1	43.9	38.0	37.0	11.1	0.0	56.2	56.0	74.0	17.8	18.0
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass - Dfac)												
6	12010.0	43.8	43.7	38.9	35.9	12.5	0.0	49.8	49.7	74.0	24.2	24.3
7	14412.0	42.9	42.9	40.6	35.8	13.6	0.0	51.8	51.8	74.0	22.2	22.2
8	16814.0	43.2	43.1	39.3	37.2	13.7	0.0	49.5	49.4	74.0	24.5	24.6
9	19216.0	43.2	43.7	40.9	35.8	15.3	0.0	54.1	54.6	74.0	19.9	19.4
10	21618.0	43.8	43.7	40.3	37.0	17.8	0.0	55.4	55.3	74.0	18.6	18.7
11	24020.0	43.7	43.8	39.8	35.5	17.0	0.0	55.5	55.6	74.0	18.5	18.4

AV DETECT

No.	FREQ [MHz]	T/R READING HOR VER [dBuV/m]		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	RESULT HOR VER [dBuV/m]		Limit AV [dBuV/m]	MARGIN HOR VER [dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass												
1	1201.0	33.3	33.4	25.1	37.3	3.3	0.0	24.4	24.5	54.0	29.6	29.5
2	3603.0	30.6	30.6	28.9	36.6	6.5	0.0	29.4	29.4	54.0	24.6	24.6
3	4804.0	33.9	35.5	31.1	36.4	7.3	0.3	36.2	37.8	54.0	17.8	16.2
4	7206.0	30.6	30.6	35.3	36.5	9.4	0.0	38.8	38.8	54.0	15.2	15.2
5	9608.0	31.4	31.2	38.0	37.0	11.1	0.0	43.5	43.3	54.0	10.5	10.7
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass - Dfac)												
6	12010.0	31.1	31.1	38.9	35.9	12.5	0.0	37.1	37.1	54.0	16.9	16.9
7	14412.0	30.3	30.3	40.6	35.8	13.6	0.0	39.2	39.2	54.0	14.8	14.8
8	16814.0	30.5	30.5	39.3	37.2	13.7	0.0	36.8	36.8	54.0	17.2	17.2
9	19216.0	30.4	30.2	40.9	35.8	15.3	0.0	41.3	41.1	54.0	12.7	12.9
10	21618.0	31.3	31.3	40.3	37.0	17.8	0.0	42.9	42.9	54.0	11.1	11.1
11	24020.0	31.4	31.4	39.8	35.5	17.0	0.0	43.2	43.2	54.0	10.8	10.8

Test Distance 1.0m : Distance Factor(Dfac) = $20\log(3/1.0) = 9.5$ dB

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

DATA OF SPURIOUS EMISSIONS(1GHz to 26GHz)

A-PEX INTERNATIONAL CO., LTD.

EMC HEAD OFFICE DIVISON No.1 SEMI ANECHOIC CHAMBER

COMPANY : SONY Corporation
EQUIPMENT : Digital Video Camera Recorder
MODEL : DCR-IP220
S/N : 1320172
FCC ID : AK8DCRIP220
POWER : AC120V/60Hz
MODE : Tx (2441MHz)

REPORT NO : 23BE0097-HO
REGULATION : Fcc Part15 Subpart C 15.247(c)
TEST DISTANCE : 3 and 1 m
DATE : 2002/9/25
TEMPERATURE : 26°C
HUMIDITY : 44%

ENGINEER : Hiroka Umeyama

PK DETECT

PK DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass												
1	1220.9	47.3	46.5	25.1	37.3	3.4	0.0	38.5	37.7	74.0	35.5	36.3
2	3661.5	43.7	43.5	29.0	36.6	6.5	0.0	42.6	42.4	74.0	31.4	31.6
3	4882.0	46.8	47.1	31.3	36.4	7.3	0.4	49.4	49.7	74.0	24.6	24.3
4	7323.0	43.3	43.5	35.5	36.6	9.4	0.0	51.6	51.8	74.0	22.4	22.2
5	9764.0	43.4	43.4	38.2	37.0	11.2	0.0	55.8	55.8	74.0	18.2	18.2
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass - Dfac)												
6	12205.0	43.5	43.9	38.8	36.0	12.5	0.0	49.3	49.7	74.0	24.7	24.3
7	14646.0	43.5	43.4	40.6	36.1	13.8	0.0	52.3	52.2	74.0	21.7	21.8
8	17087.0	42.5	43.0	39.6	35.8	13.8	0.0	50.6	51.1	74.0	23.4	22.9
9	19528.0	42.7	43.2	40.4	36.1	15.7	0.0	53.2	53.7	74.0	20.8	20.3
10	21969.0	44.9	45.0	40.5	36.7	18.7	0.0	57.9	58.0	74.0	16.1	16.0
11	24410.0	44.5	44.7	40.2	36.4	17.7	0.0	56.5	56.7	74.0	17.5	17.3

AV DETECT

AV DETECT

No.	FREQ	T/R READING		ANT	AMP	CABLE	Band-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV/m]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass:												
1	1220.9	35.6	35.9	25.1	37.3	3.4	0.0	26.8	27.1	54.0	27.2	26.9
2	3661.5	30.6	30.6	29.0	36.6	6.5	0.0	29.5	29.5	54.0	24.5	24.5
3	4882.0	34.7	34.3	31.3	36.4	7.3	0.4	37.3	36.9	54.0	16.7	17.1
4	7323.0	30.6	30.7	35.5	36.6	9.4	0.0	38.9	39.0	54.0	15.1	15.0
5	9764.0	30.8	30.8	38.2	37.0	11.2	0.0	43.2	43.2	54.0	10.8	10.8
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass - Dfac)												
6	12205.0	30.7	30.7	38.8	36.0	12.5	0.0	36.5	36.5	54.0	17.5	17.5
7	14646.0	30.6	30.6	40.6	36.1	13.8	0.0	39.4	39.4	54.0	14.6	14.6
8	17087.0	29.9	29.9	39.6	35.8	13.8	0.0	38.0	38.0	54.0	16.0	16.0
9	19528.0	30.1	30.3	40.4	36.1	15.7	0.0	40.6	40.8	54.0	13.4	13.2
10	21969.0	32.6	32.5	40.5	36.7	18.7	0.0	45.6	45.5	54.0	8.4	8.5
11	24410.0	31.6	31.6	40.2	36.4	17.7	0.0	43.6	43.6	54.0	10.4	10.4

Test Distance 1.0m : Distance Factor(Dfac) = $20\log(3/1.0) = 9.5$ dB

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

DATA OF SPURIOUS EMISSIONS(1GHz to 26GHz)

A-PEX INTERNATIONAL CO., LTD.

EMC HEAD OFFICE DIVISON No.1 SEMI ANECHOIC CHAMBER

COMPANY : SONY Corporation
EQUIPMENT : Digital Video Camera Recorder
MODEL : DCR-IP220
S/N : 1320172
FCC ID : AK8DCRIP220
POWER : AC120V/60Hz
MODE : Tx (2480MHz)

REPORT NO : 23BE0097-HO
REGULATION : Fcc Part15 Subpart C 15.247(c)
TEST DISTANCE : 3 and 1 m
DATE : 2002/9/25
TEMPERATURE : 26°C
HUMIDITY : 44%

ENGINEER : Hiroka Umeyama

PK DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]					[dBuV/m]	[dBuV/m]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass												
1	1239.5	47.2	46.9	25.1	37.3	3.7	0.0	38.8	38.5	74.0	35.2	35.5
2	3720.0	43.2	43.4	29.1	36.5	6.5	0.0	42.3	42.5	74.0	31.7	31.5
3	4960.0	46.2	47.2	31.4	36.4	7.4	0.5	49.1	50.1	74.0	24.9	23.9
4	7440.0	44.2	44.1	35.6	36.7	9.4	0.0	52.5	52.4	74.0	21.5	21.6
5	9920.0	44.2	43.7	38.1	37.1	11.2	0.0	56.4	55.9	74.0	17.6	18.1
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass - Dfac)												
6	12400.0	43.9	43.7	38.8	36.0	12.6	0.0	49.8	49.6	74.0	24.2	24.4
7	14880.0	43.4	43.4	40.5	36.4	14.0	0.0	52.0	52.0	74.0	22.0	22.0
8	17360.0	42.7	42.8	40.4	36.6	14.1	0.0	51.1	51.2	74.0	22.9	22.8
9	19840.0	43.1	42.9	40.7	36.3	16.0	0.0	54.0	53.8	74.0	20.0	20.2
10	22320.0	45.7	45.4	40.7	36.7	18.1	0.0	58.3	58.0	74.0	15.7	16.0
11	24800.0	44.3	44.8	40.2	36.4	17.7	0.0	56.3	56.8	74.0	17.7	17.2

AV DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]					[dBuV/m]	[dBuV/m]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass												
1	1239.5	33.9	34.9	25.1	37.3	3.7	0.0	25.5	26.5	54.0	28.5	27.5
2	3720.0	30.5	30.5	29.1	36.5	6.5	0.0	29.6	29.6	54.0	24.4	24.4
3	4960.0	33.9	34.5	31.4	36.4	7.4	0.5	36.8	37.4	54.0	17.2	16.6
4	7440.0	30.9	30.9	35.6	36.7	9.4	0.0	39.2	39.2	54.0	14.8	14.8
5	9920.0	31.3	31.3	38.1	37.1	11.2	0.0	43.5	43.5	54.0	10.5	10.5
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass - Dfac)												
6	12400.0	31.3	31.6	38.8	36.0	12.6	0.0	37.2	37.5	54.0	16.8	16.5
7	14880.0	30.7	30.6	40.5	36.4	14.0	0.0	39.3	39.2	54.0	14.7	14.8
8	17360.0	30.1	30.1	40.4	36.6	14.1	0.0	38.5	38.5	54.0	15.5	15.5
9	19840.0	30.3	30.3	40.7	36.3	16.0	0.0	41.2	41.2	54.0	12.8	12.8
10	22320.0	32.6	32.6	40.7	36.7	18.1	0.0	45.2	45.2	54.0	8.8	8.8
11	24800.0	31.9	31.8	40.2	36.4	17.7	0.0	43.9	43.8	54.0	10.1	10.2

Test Distance 1.0m : Distance Factor(Dfac) = $20\log(3/1.0) = 9.5$ dB

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

DATA OF RADIATED EMISSION TEST

A-PEX INTERNATIONAL EMC HEAD OFFICE DIVISION No.1 SEMI ANECHOIC CHAMBER
Date : 2002/09/24 14:39:26

Applicant : SONY Corporation
Kind of EUT : Digital Video Camera Recor
Model No. : DCR-IP220
Serial No. : 1320172

Report No. : 23BE0097-H0
Power : AC 120V / 60Hz
Temp°C/Humi% : 26 / 40
Operator : HIROKA UMEYAMA

S. UmeYama

Mode / Remarks : Tx (2402MHz)

LIMIT : FCC15C §15.247(c) 3m
MARGIN : 6 dB

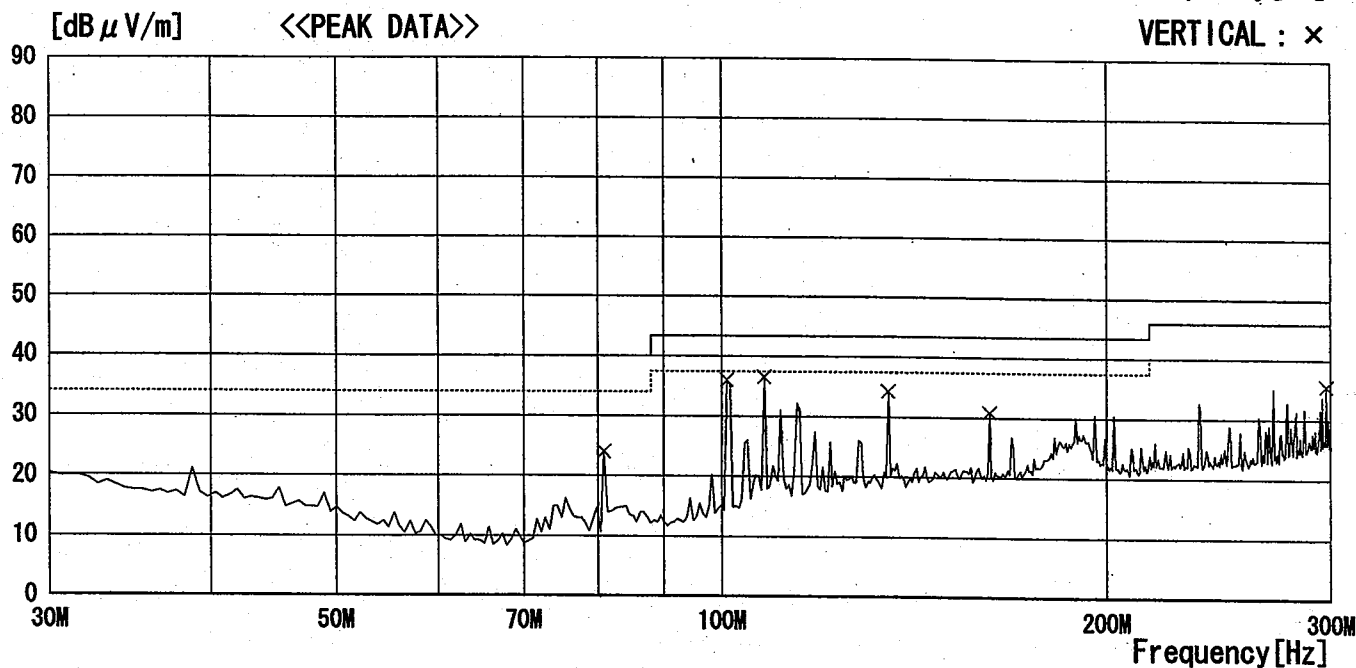
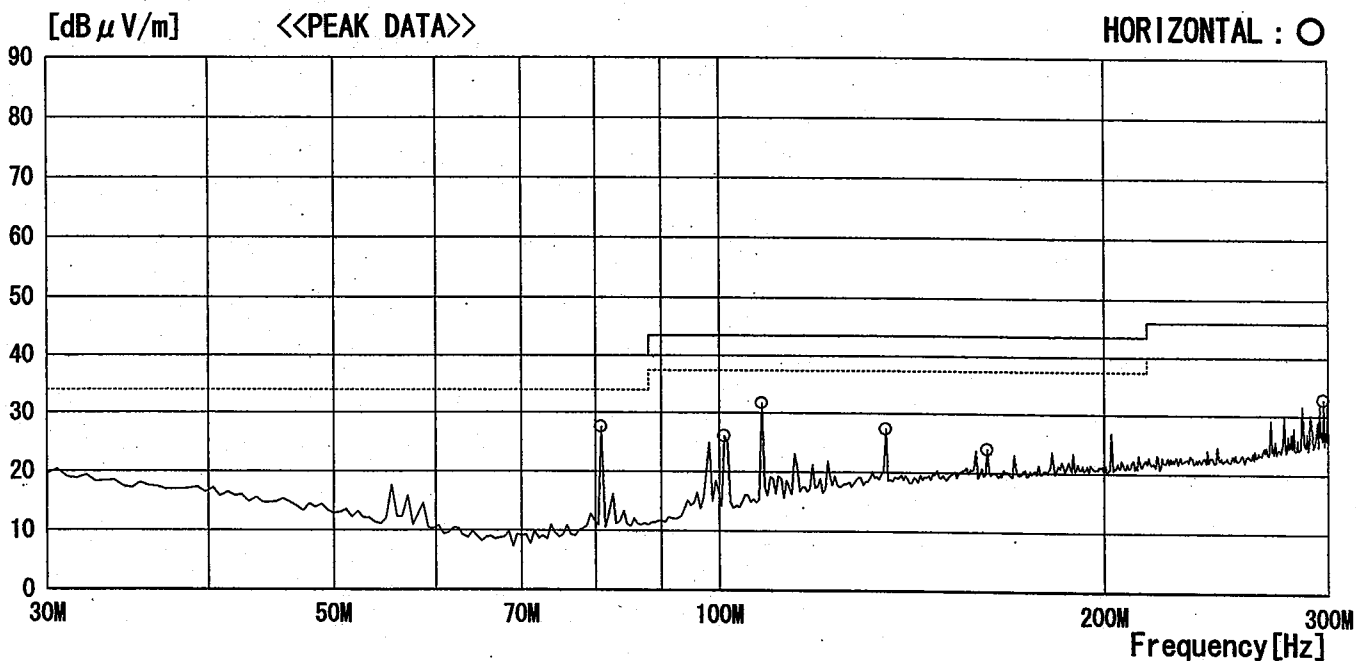


CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN

Page:

DATA OF RADIATED EMISSION TEST

A-PEX INTERNATIONAL EMC HEAD OFFICE DIVISION No.1 SEMI ANECHOIC CHAMBER
Date : 2002/09/24 15:36:03

Applicant : SONY Corporation
Kind of EUT : Digital Video Camera Recor
Model No. : DCR-IP220
Serial No. : 1320172

Report No. : 23BE0097-H0
Power : AC 120V / 60Hz
Temp°C/Humi% : 26 / 40
Operator : HIROKA UMEYAMA

[Signature]

Mode / Remarks : Tx (2402MHz)

LIMIT : FCC15C § 15.247(c) 3m
MARGIN : 6 dB

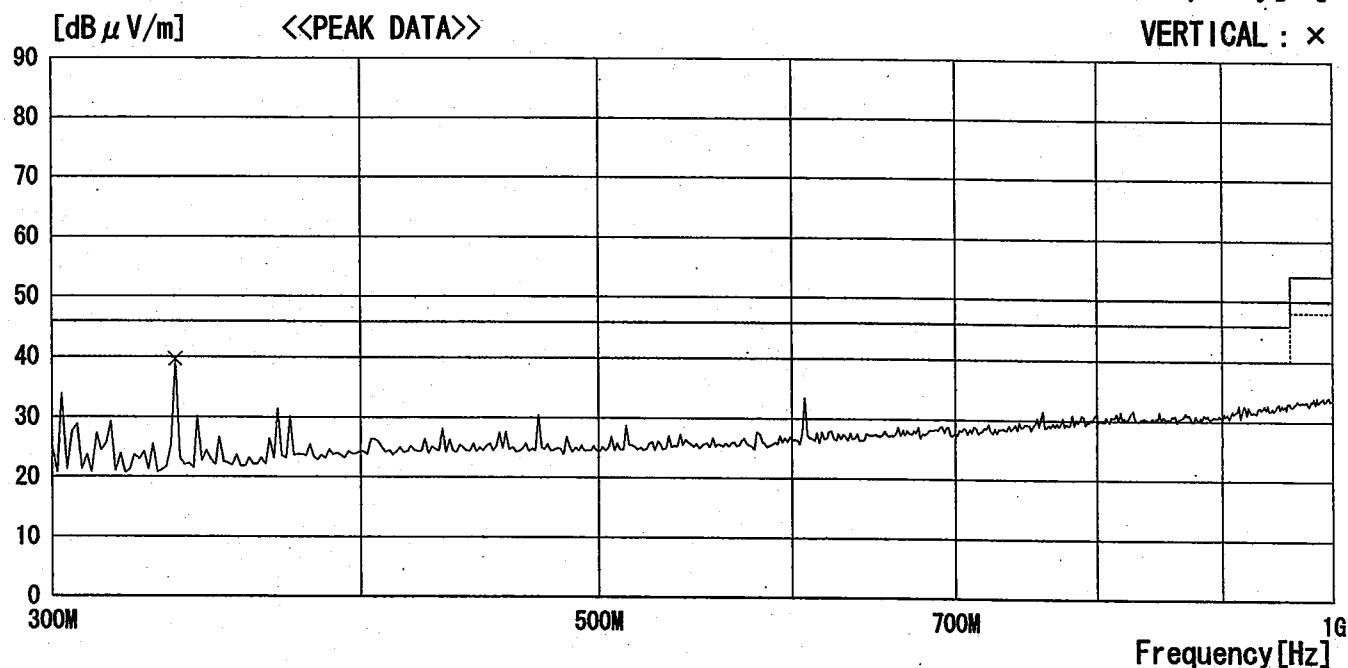
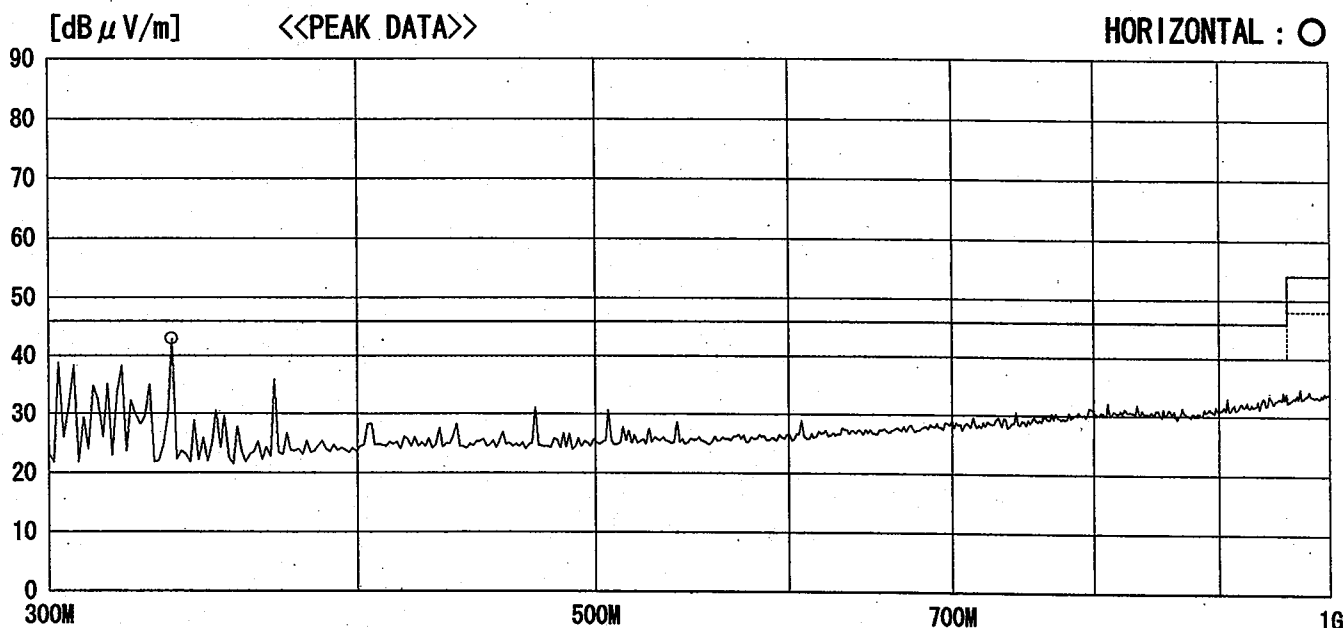


CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - AMP. GAIN

Page:

DATA OF RADIATED EMISSION TEST

A-PEX INTERNATIONAL EMC HEAD OFFICE DIVISION No.1 SEMI ANECHOIC CHAMBER
Date : 2002/09/24 16:17:07

Applicant : SONY Corporation
Kind of EUT : Digital Video Camera Recorder
Model No. : DCR-IP220
Serial No. : 1320172

Report No. : 23BE0097-H0
Power : AC 120V / 60Hz
Temp°C/Humi% : 26 / 40
Operator : HIROKA UMEYAMA

Mode / Remarks : Tx(2441MHz)

LIMIT : FCC15C § 15.247(g) 3m
MARGIN : 6 dB

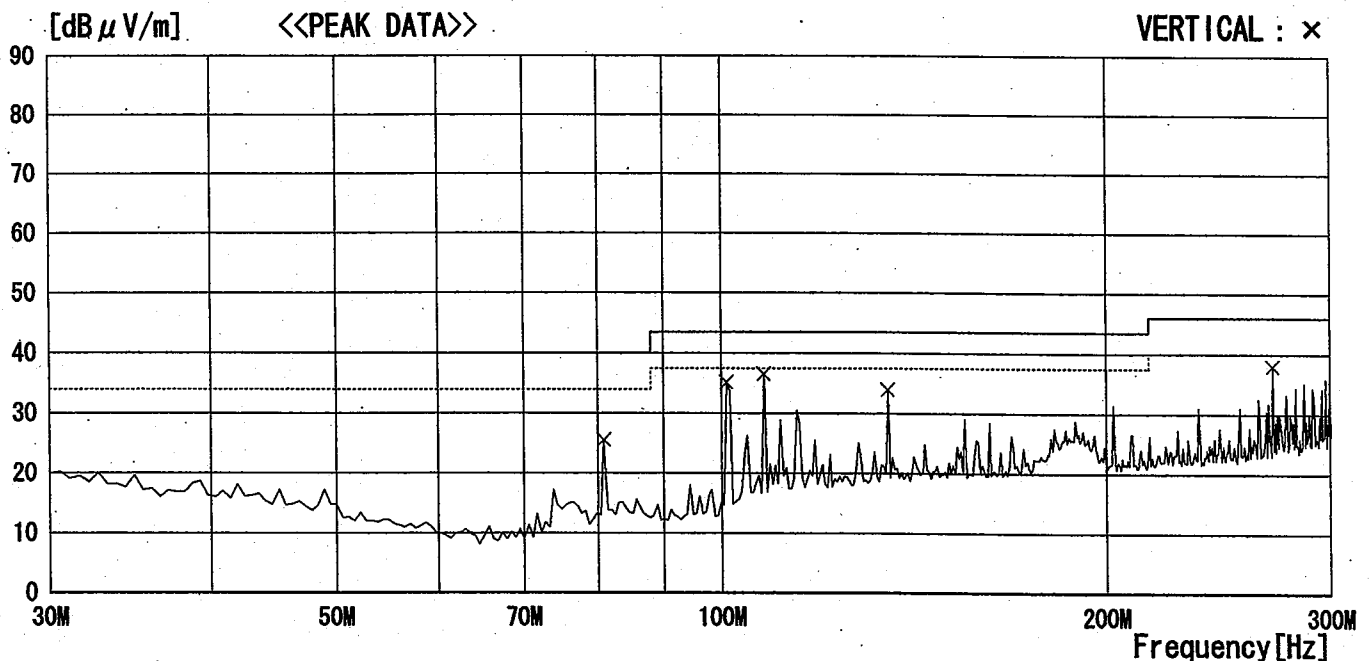
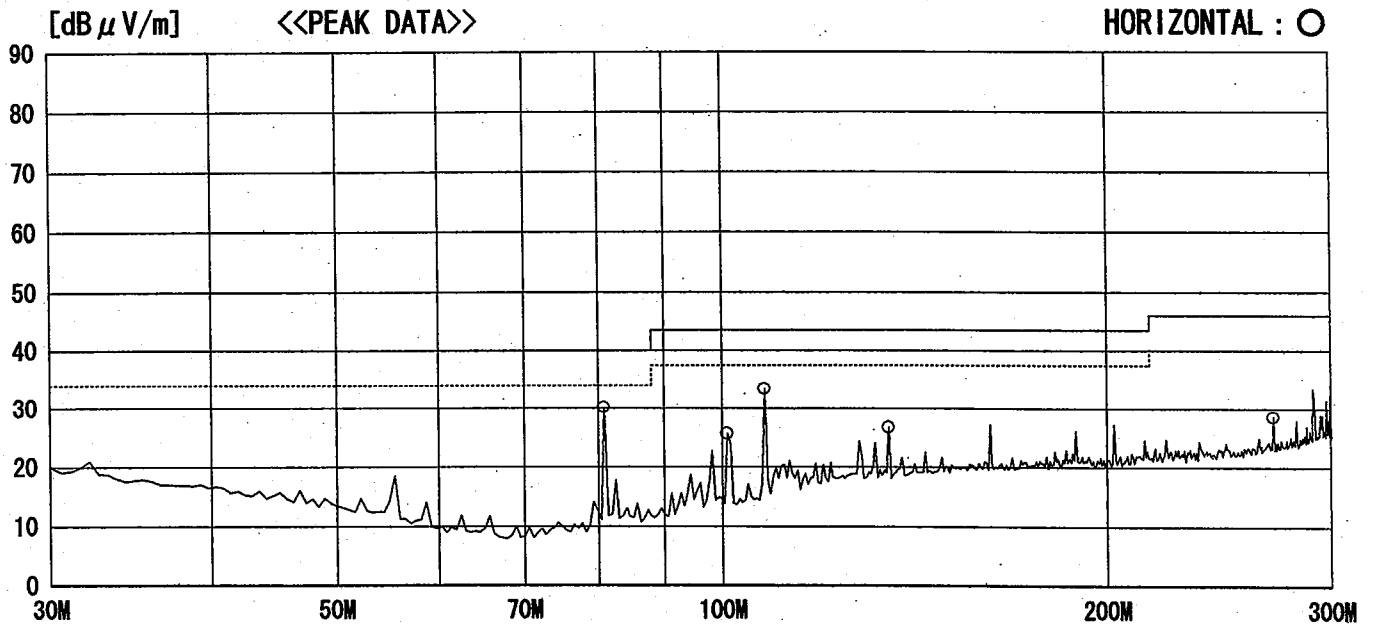


CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN

Page:

DATA OF RADIATED EMISSION TEST

A-PEX INTERNATIONAL EMC HEAD OFFICE DIVISION No.1 SEMI ANECHOIC CHAMBER
Date : 2002/09/24 15:47:04

Applicant : SONY Corporation
Kind of EUT : Digital Video Camera Recorder
Model No. : DCR-IP220
Serial No. : 1320172

Report No. : 23BE0097-H0
Power : AC 120V / 60Hz
Temp°C/Humi% : 26 / 40
Operator : HIROKA UMEYAMA

Mode / Remarks : Tx(2441MHz)

LIMIT : FCC15C § 15.247(c) 3m
MARGIN : 6 dB

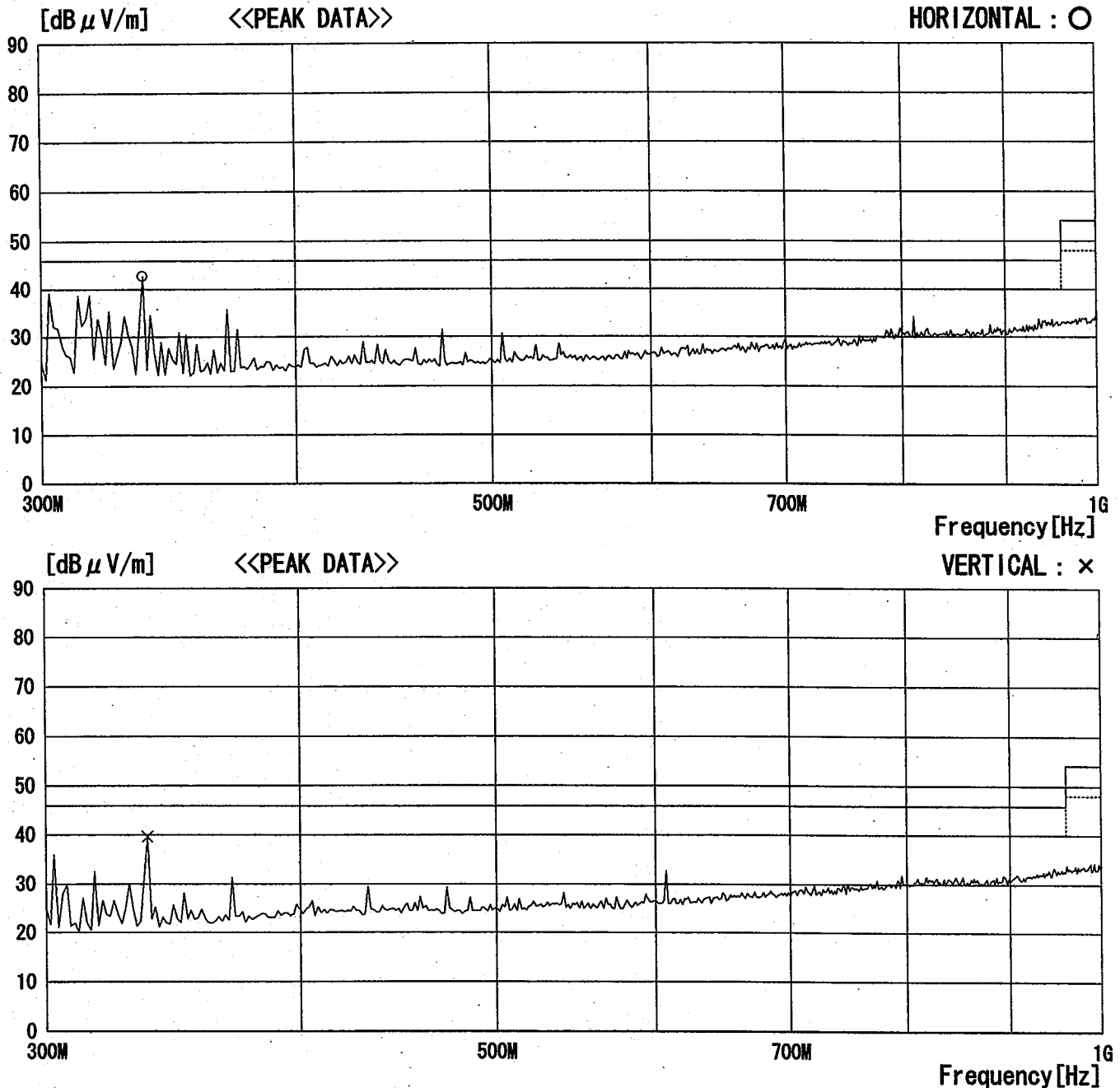


CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN

Page:

DATA OF RADIATED EMISSION TEST

A-PEX INTERNATIONAL EMC HEAD OFFICE DIVISION No.1 SEMI ANECHOIC CHAMBER
Date : 2002/09/24 16:54:34

Applicant : SONY Corporation
Kind of EUT : Digital Video Camera Recorder
Model No. : DCR-IP220
Serial No. : 1320172

Report No. : 23BE0097-H0
Power : AC 120V / 60Hz
Temp°C/Humi% : 26 / 40
Operator : HIROKA UMEYAMA

Mode / Remarks : Tx(2480MHz)

LIMIT : FCC15C §15.247(c) 3m
MARGIN : 6 dB

[Signature]

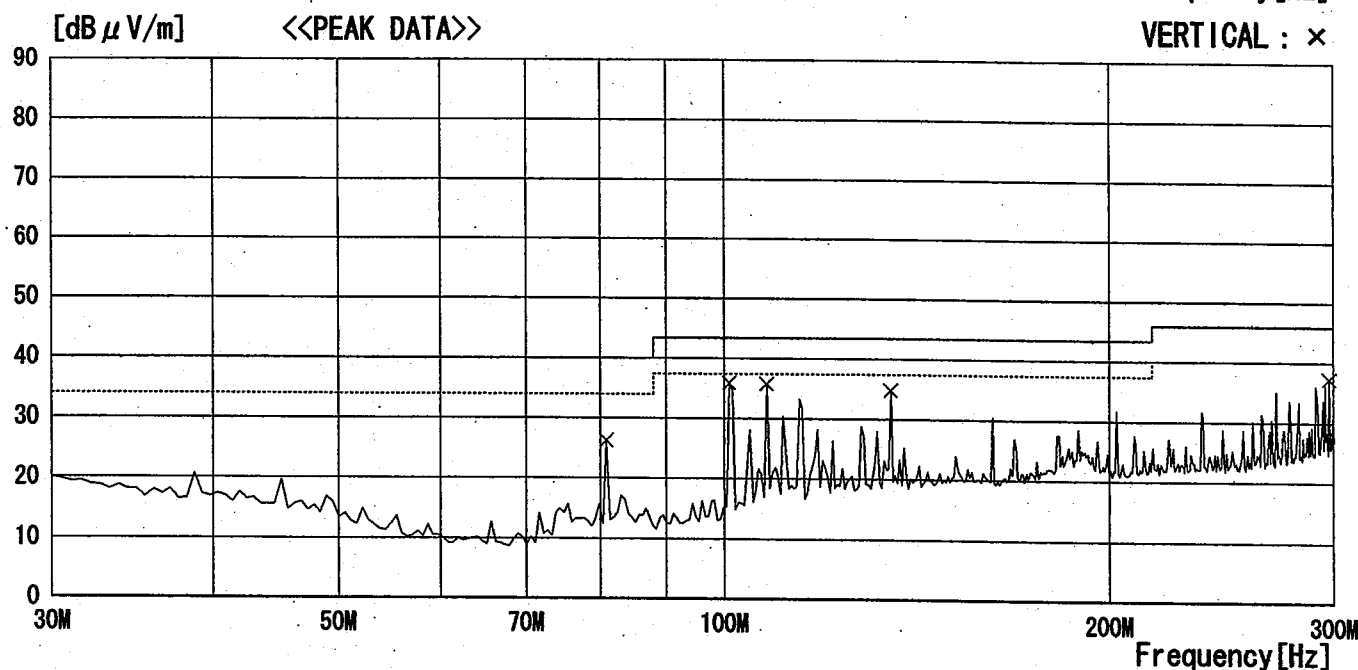
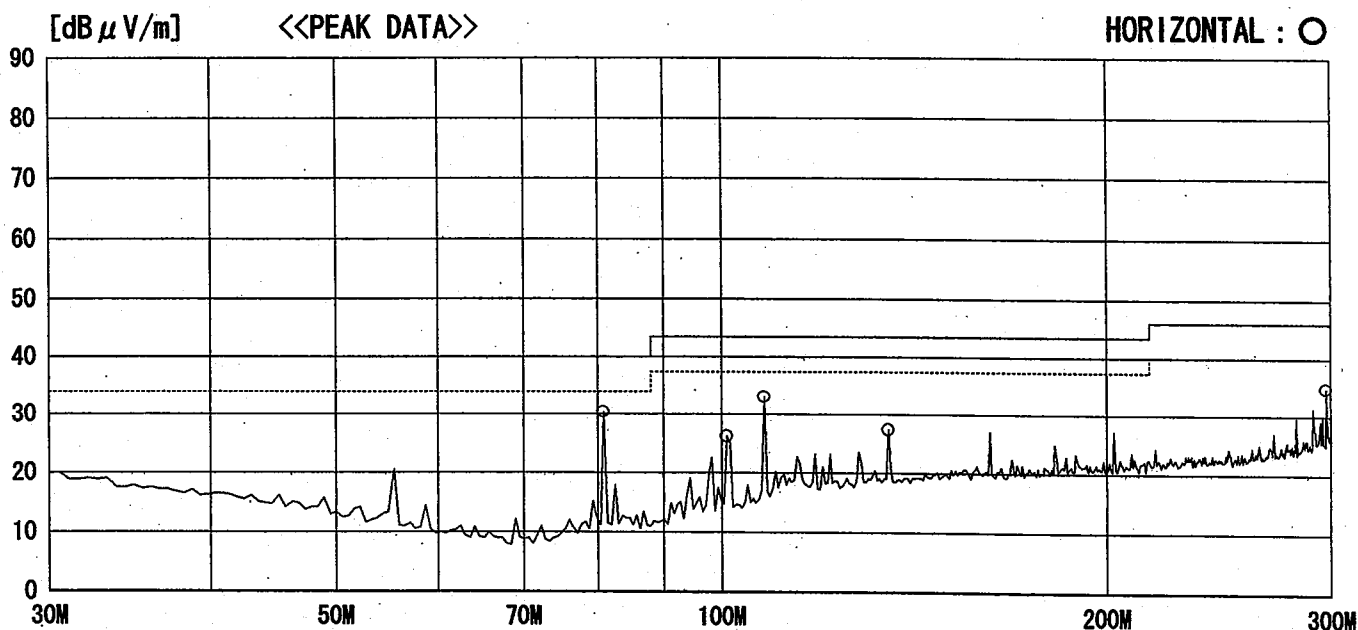


CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - AMP. GAIN

Page:

DATA OF RADIATED EMISSION TEST

A-PEX INTERNATIONAL EMC HEAD OFFICE DIVISION No.1 SEMI ANECHOIC CHAMBER
Date : 2002/09/24 17:17:58

Applicant : SONY Corporation
Kind of EUT : Digital Video Camera Recorder
Model No. : DCR-IP220
Serial No. : 1320172

Report No. : 23BE0097-H0
Power : AC 120V / 60Hz
Temp°C/Hum% : 26 / 40
Operator : HIROKA UMEYAMA

[Signature]

Mode / Remarks : Tx(2480MHz)

LIMIT : FCC15C §15.247(c) 3m
MARGIN : 6 dB

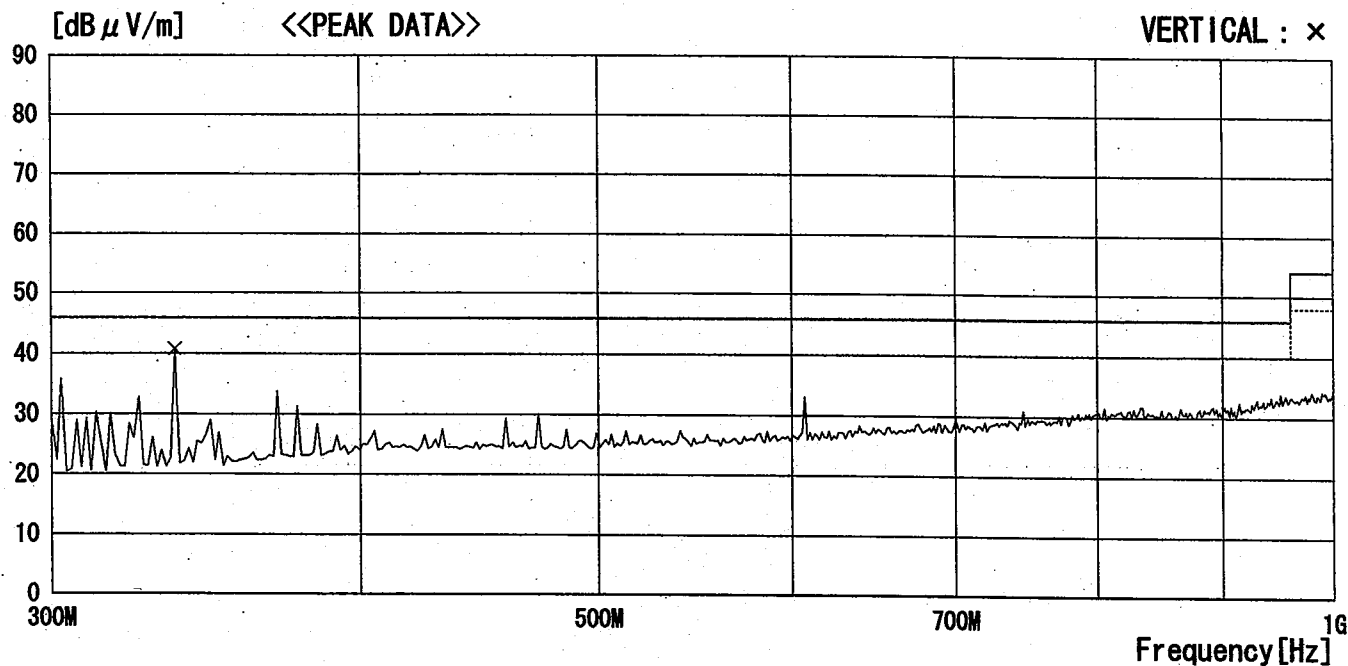
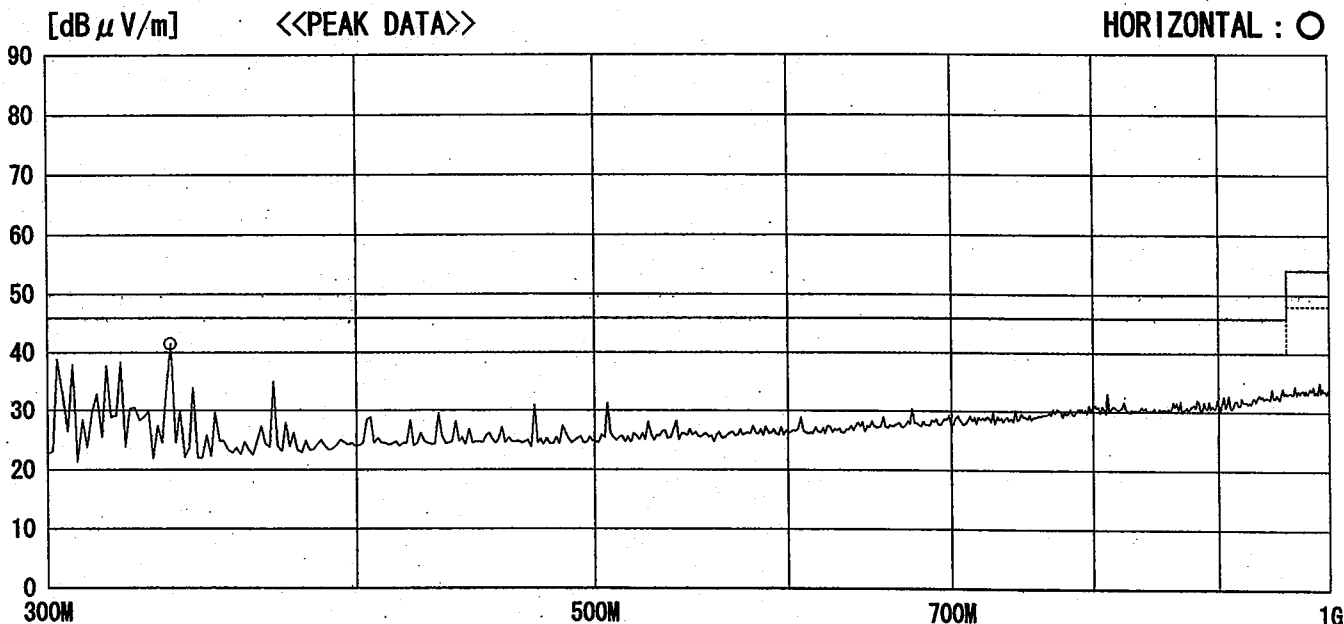
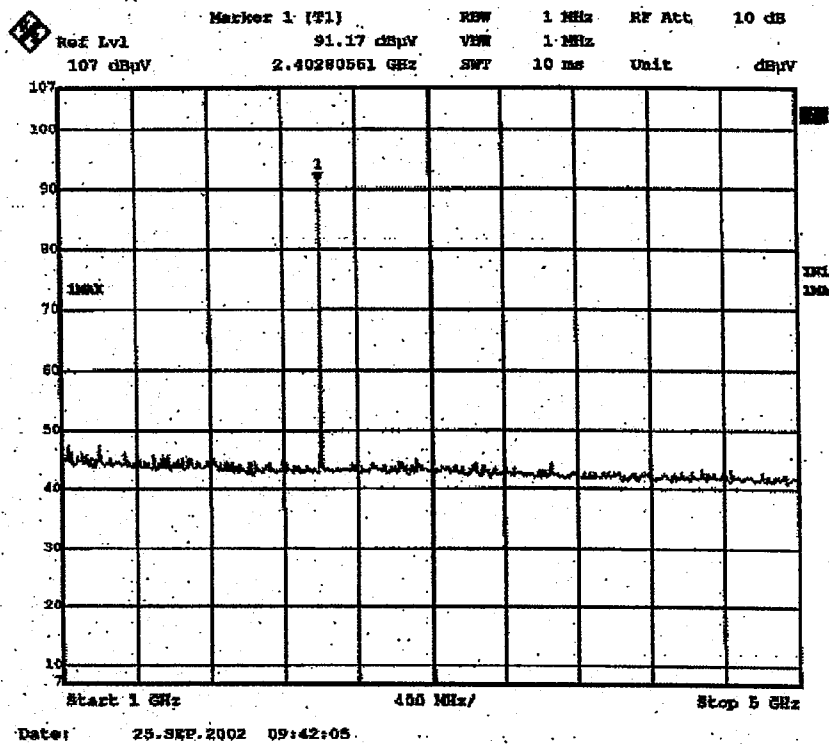


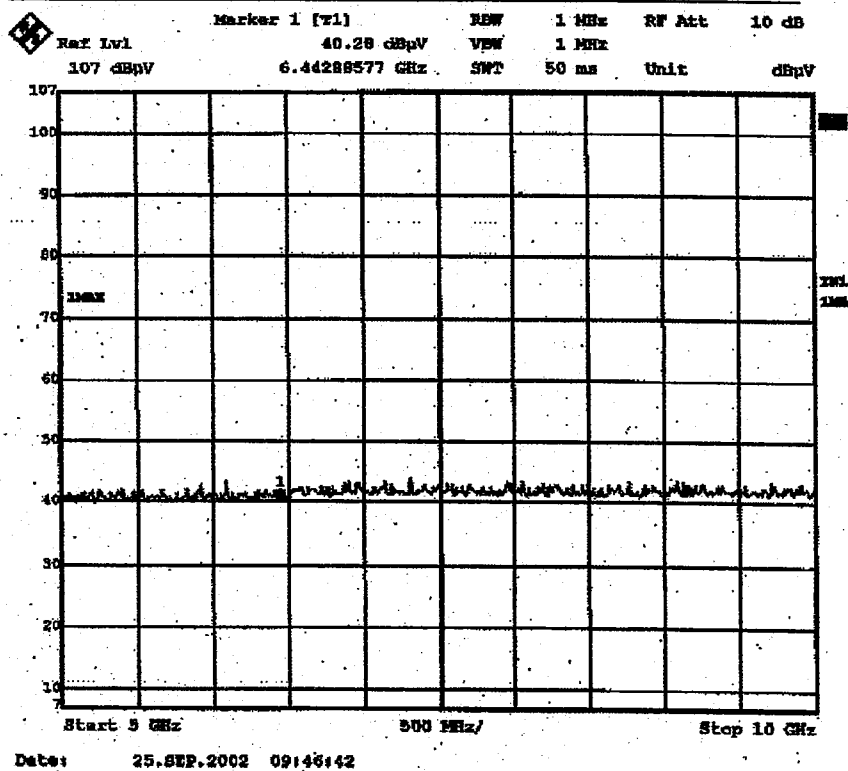
CHART: WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN

Page:

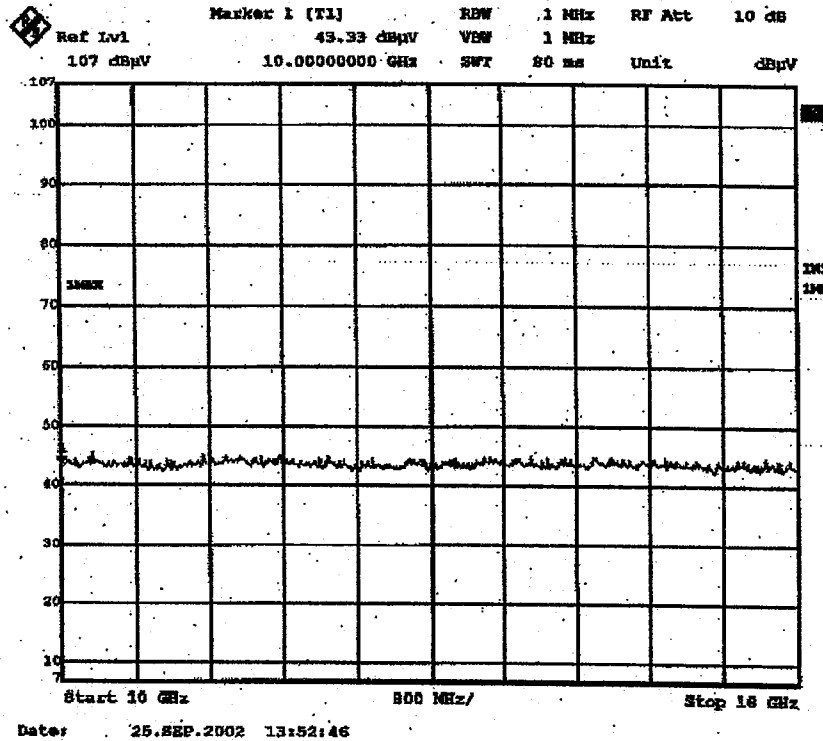
Spurious Emission(Radiated) :Tx(2402MHz) HOR 3m



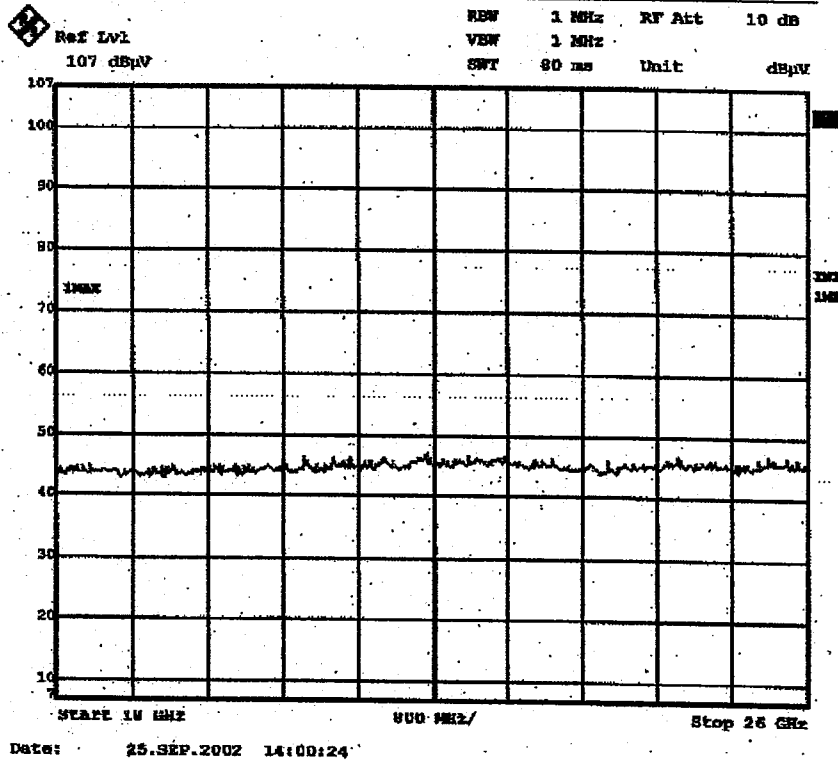
Spurious Emission(Radiated) :Tx(2402MHz) HOR 3m



Spurious Emission(Radiated) :Tx(2402MHz) HOR 1m

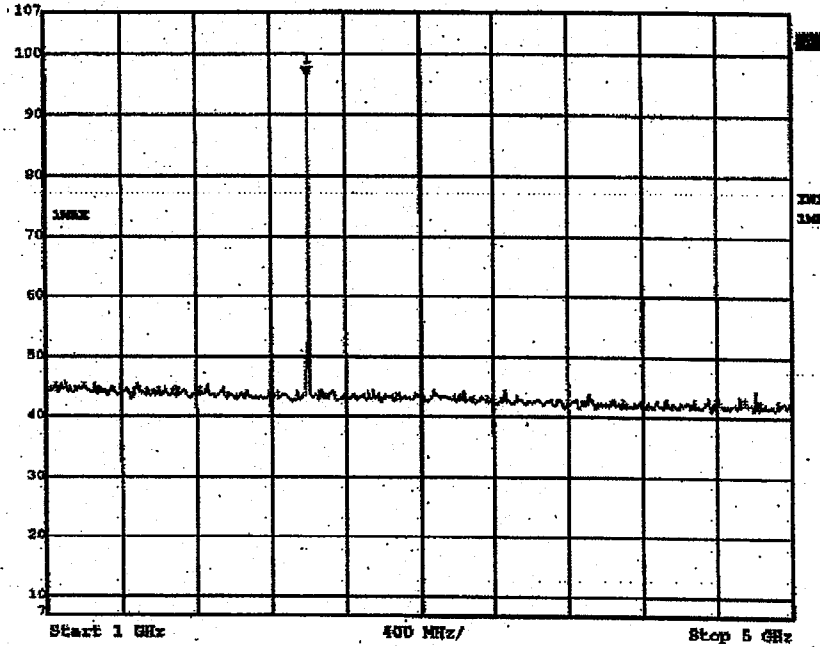


Spurious Emission(Radiated) :Tx(2402MHz) HOR 1m



Spurious Emission(Radiated) :Tx(2402MHz) VER 3m

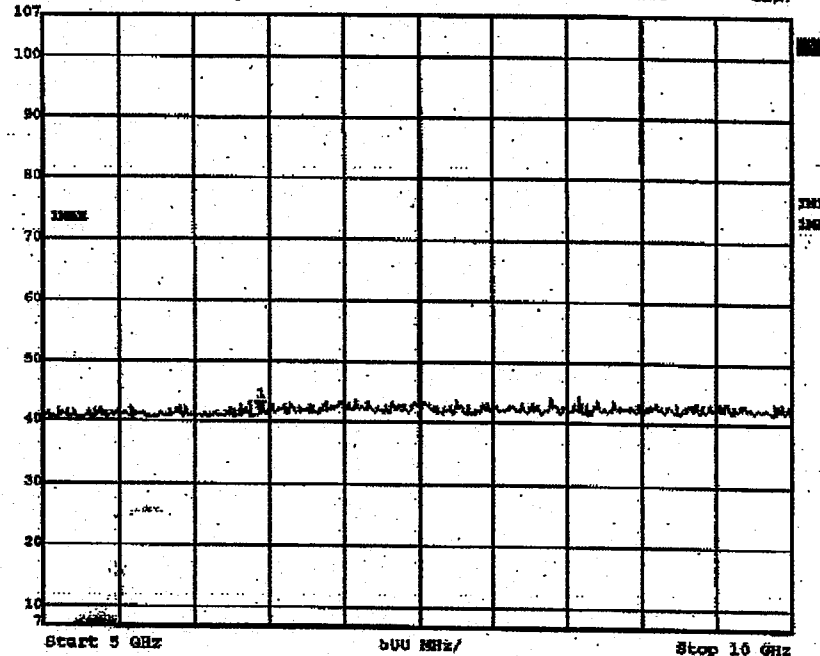
Ref Lvl 107 dBμV
 Marker 1 [T1] 96.29 dBμV
 RBW 1 MHz
 VSW 1 MHz
 SMT 10 ms
 Unit dBμV
 RF Att 10 dB



Date: 25.SEP.2002 09:40:24

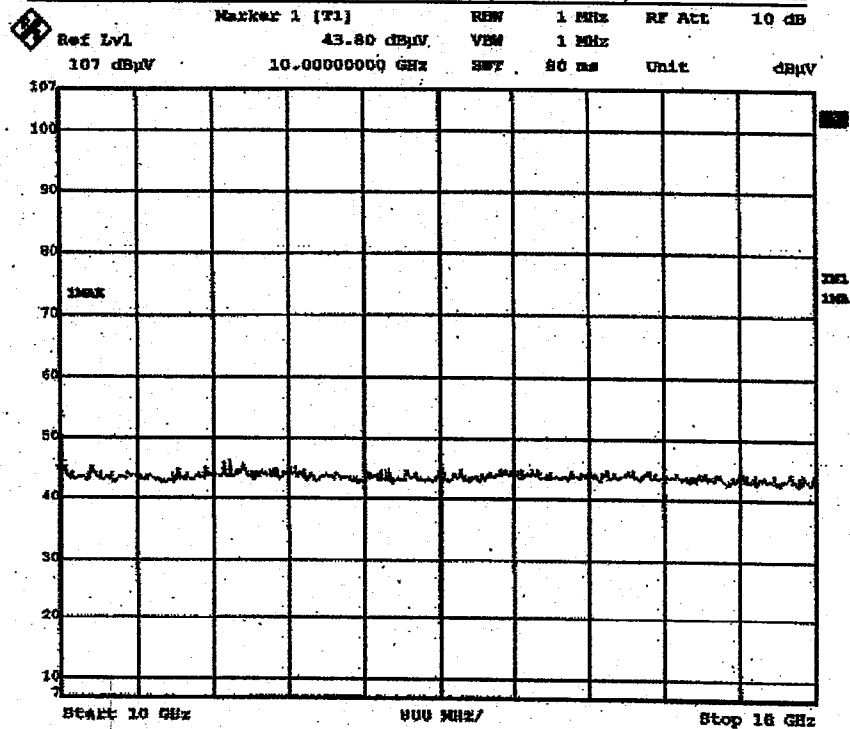
Spurious Emission(Radiated) :Tx(2402MHz) VER 3m

Ref Lvl 107 dBμV
 Marker 1 [T1] 41.70 dBμV
 RBW 1 MHz
 VSW 1 MHz
 SMT 50 ms
 Unit dBμV
 RF Att 10 dB



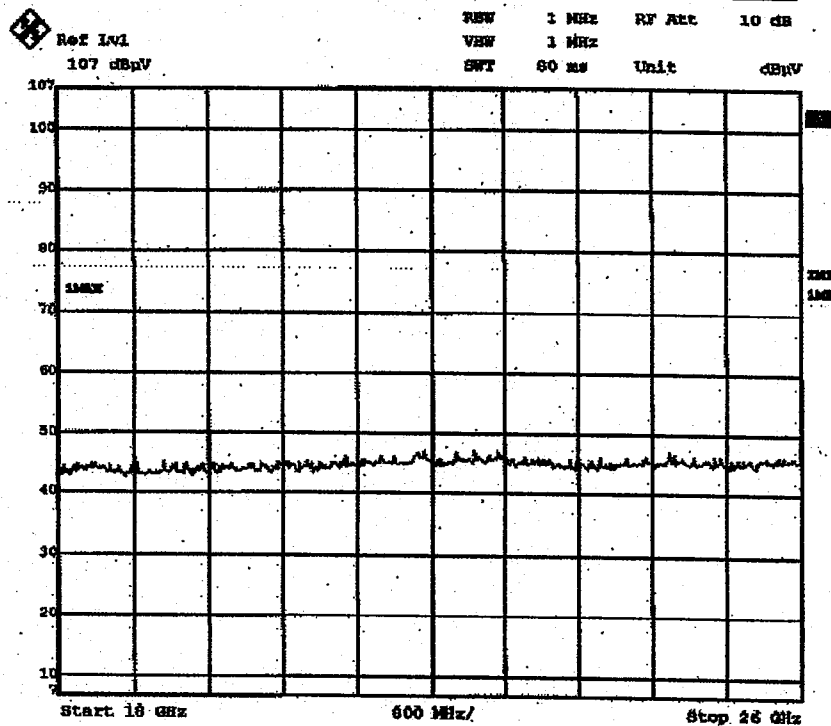
Date: 25.SEP.2002 09:45:46

Spurious Emission(Radiated) :Tx(2402MHz) VER 1m



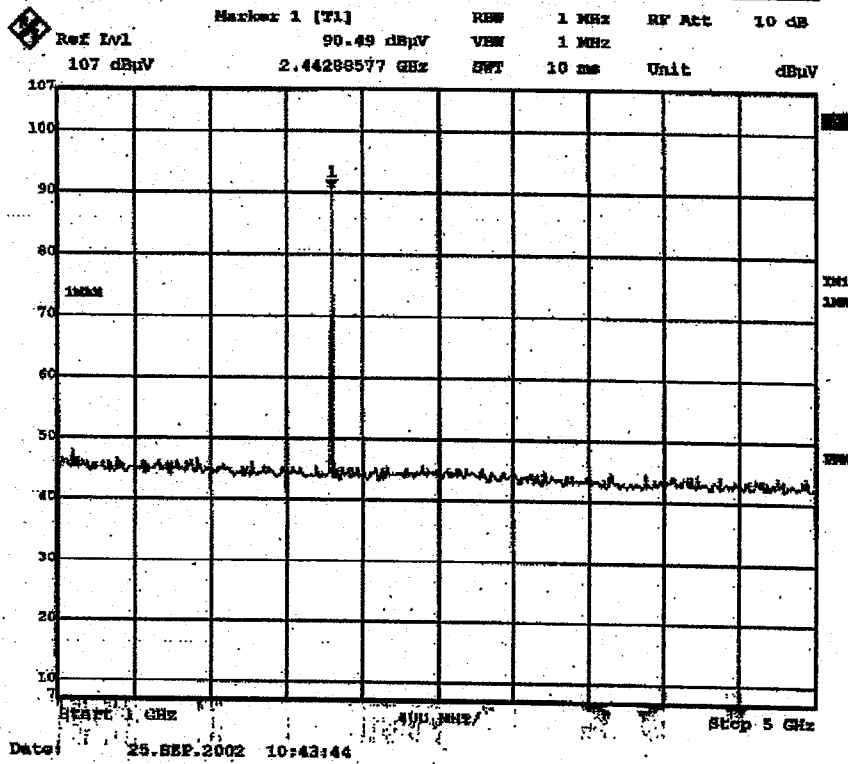
Date: 25.SEP.2002 13:51:24

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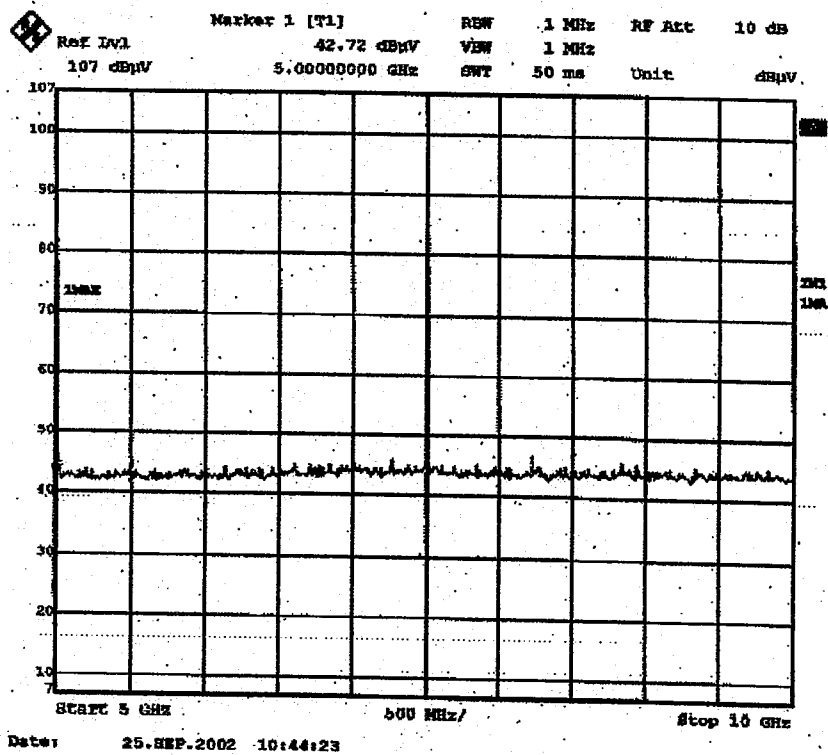


Date: 25.SEP.2002 14:05:06

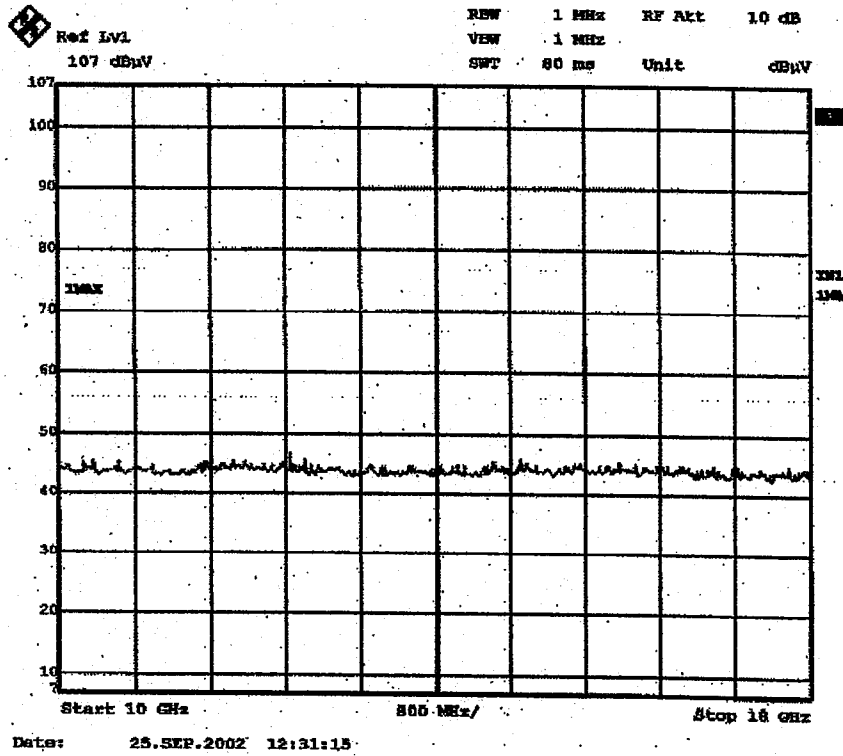
Spurious Emission(Radiated) :Tx(2441MHz) HOR 3m



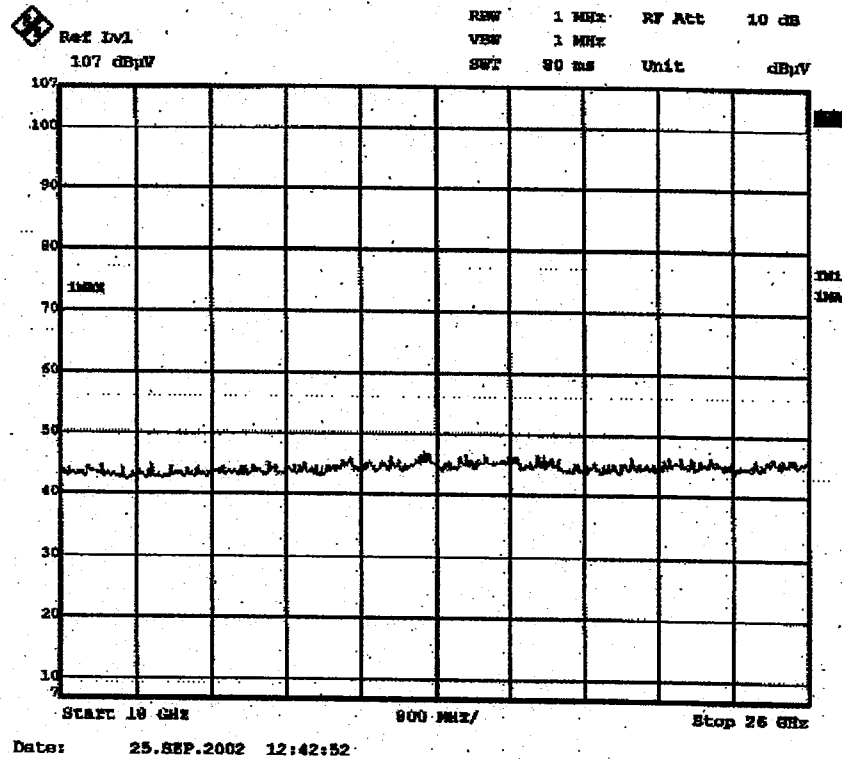
Spurious Emission(Radiated) :Tx(2441MHz) HOR 3m



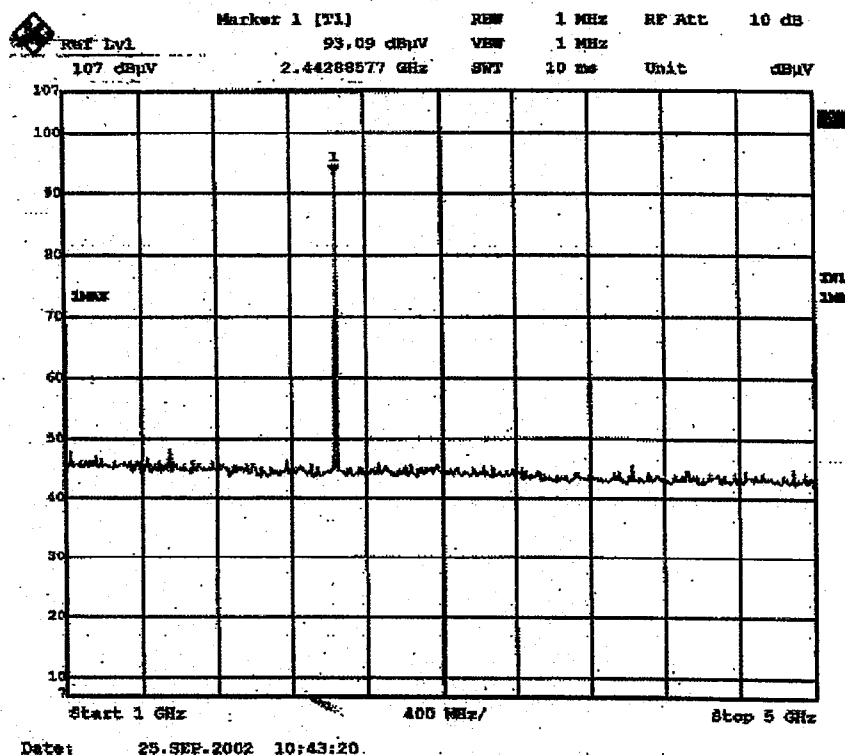
Spurious Emission(Radiated) :Tx(2441MHz) HOR 1m



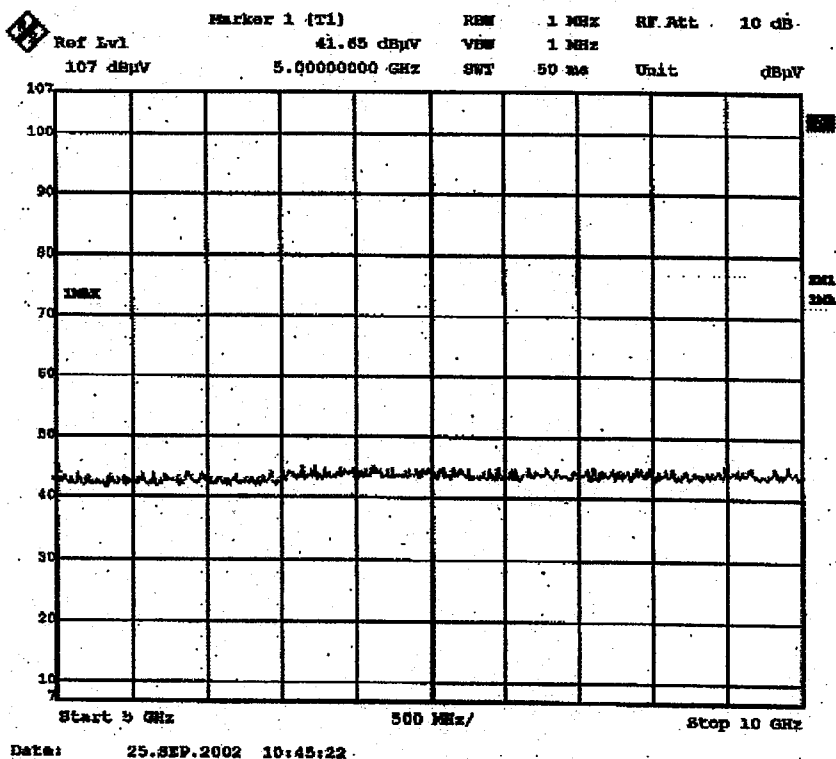
Spurious Emission(Radiated) :Tx(2441MHz) HOR 1m



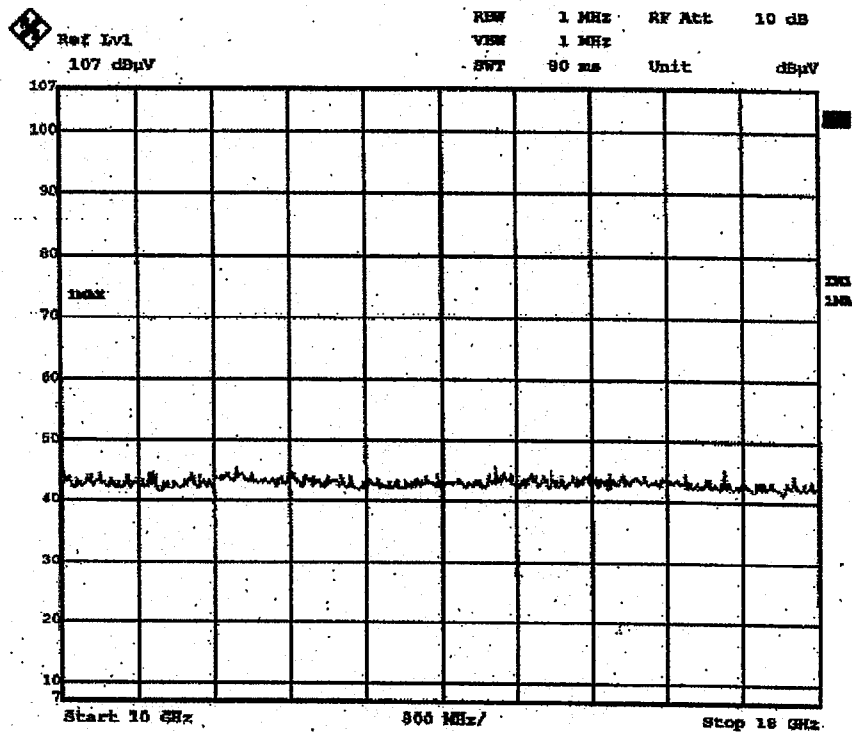
Spurious Emission(Radiated) :Tx(2441MHz) VER 3m



Spurious Emission(Radiated) :Tx(2441MHz) VER 3m

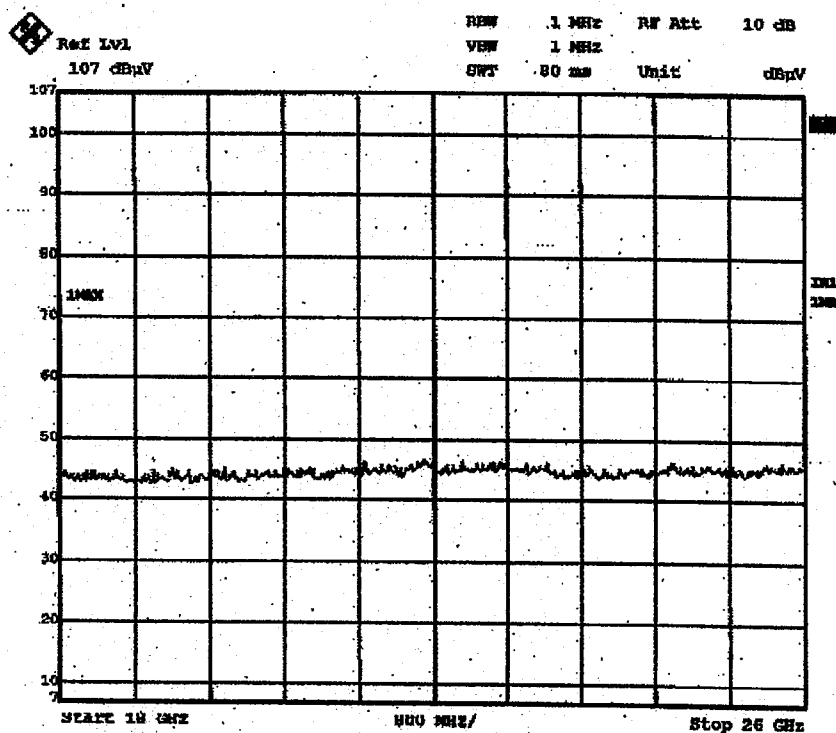


Spurious Emission(Radiated) :Tx(2441MHz) VER 1m



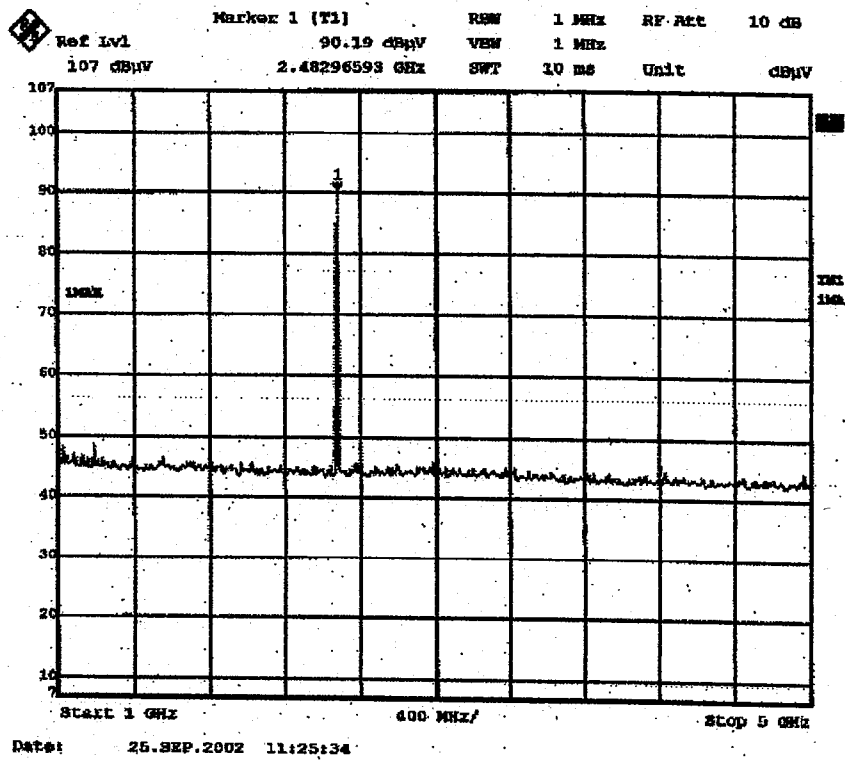
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Spurious Emission(Radiated) :Tx(2441MHz) VER 1m

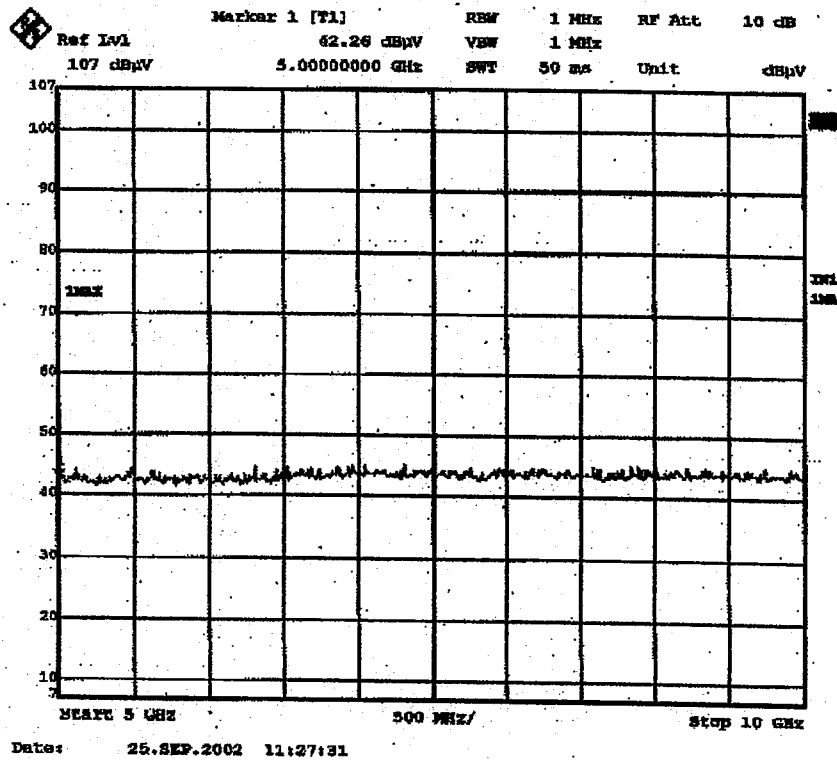


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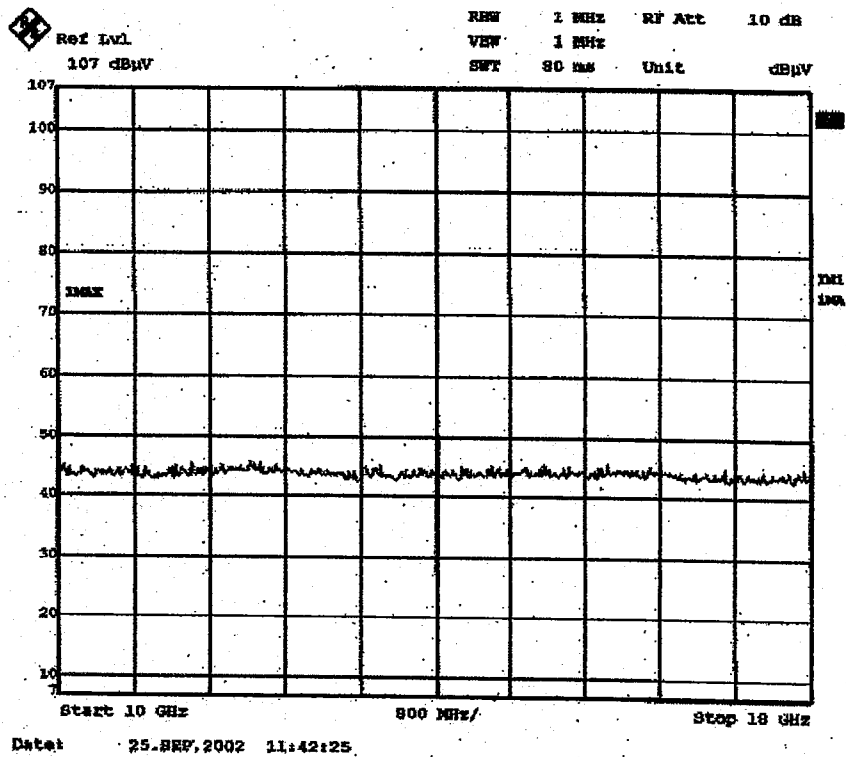
Spurious Emission(Radiated) :Tx(2480MHz) HOR 3m



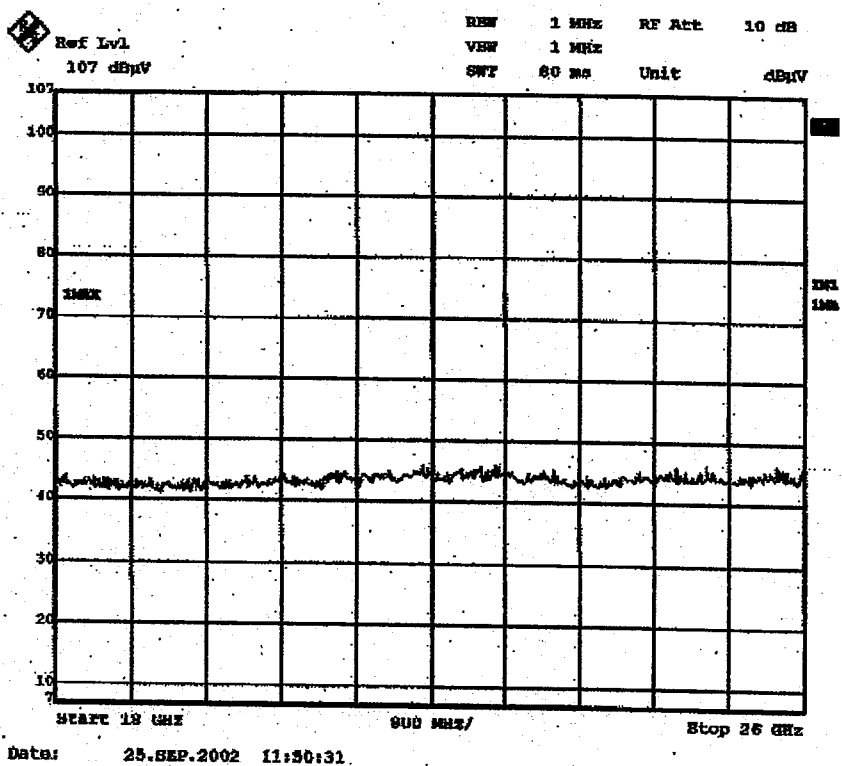
Spurious Emission(Radiated) :Tx(2480MHz) HOR 3m



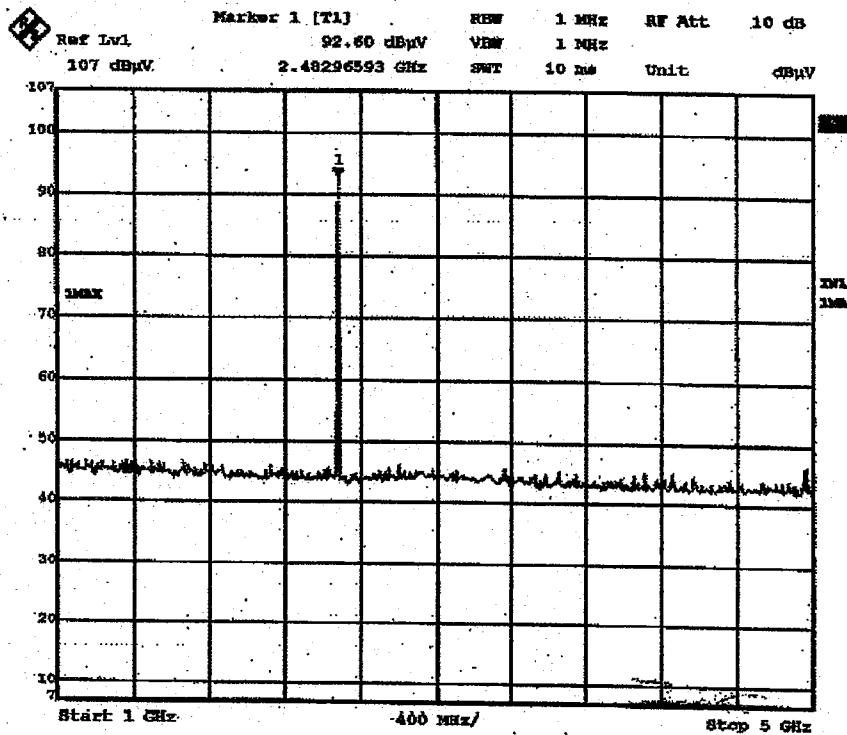
Spurious Emission(Radiated) :Tx(2480MHz) HOR 1m



Spurious Emission(Radiated) :Tx(2480MHz) HOR 1m

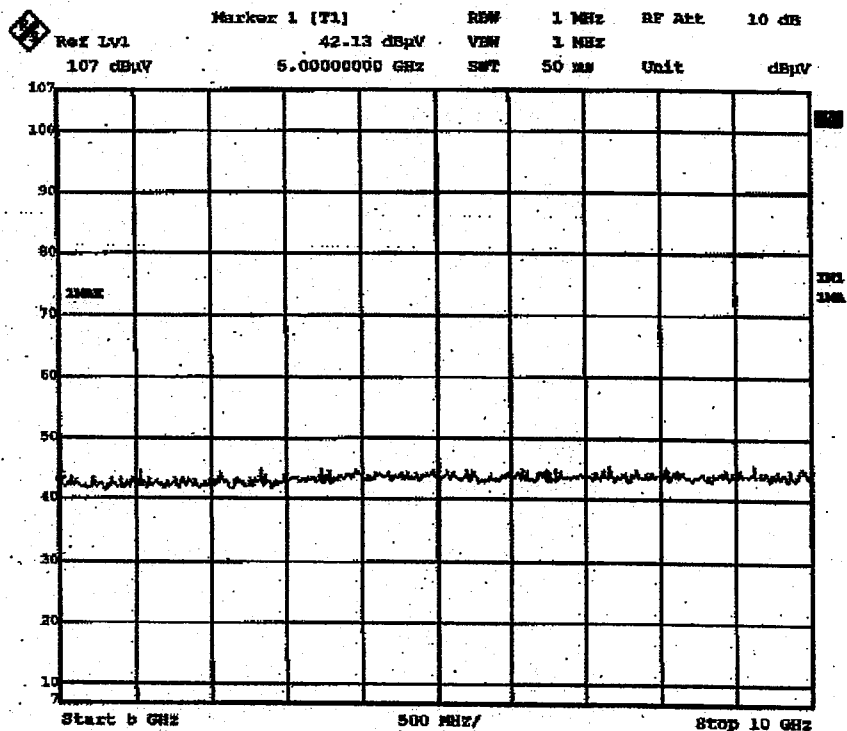


Spurious Emission(Radiated) :Tx(2480MHz) VER 3m



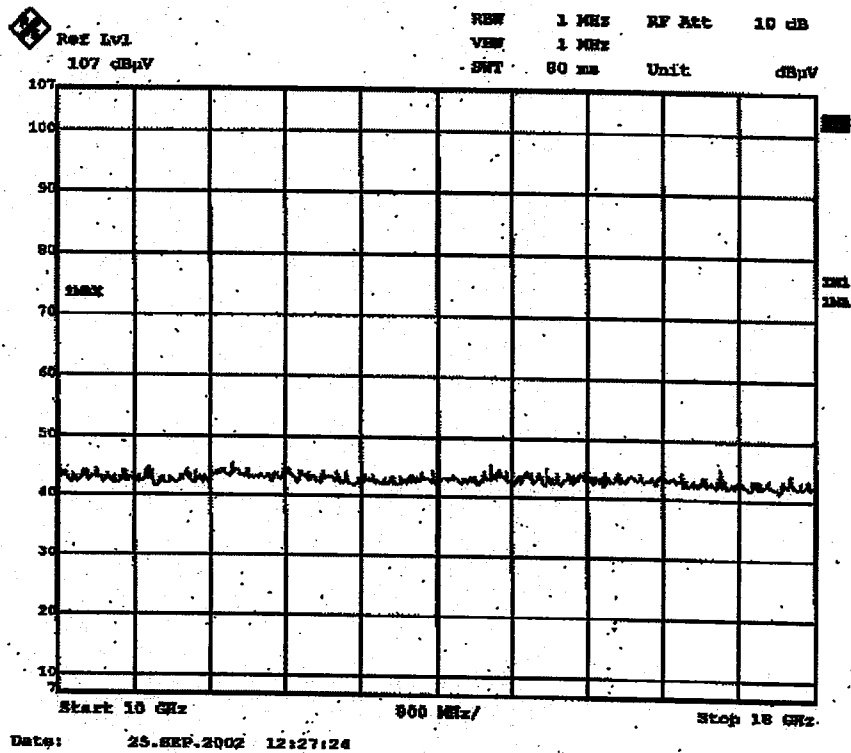
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Spurious Emission(Radiated) :Tx(2480MHz) VER 3m

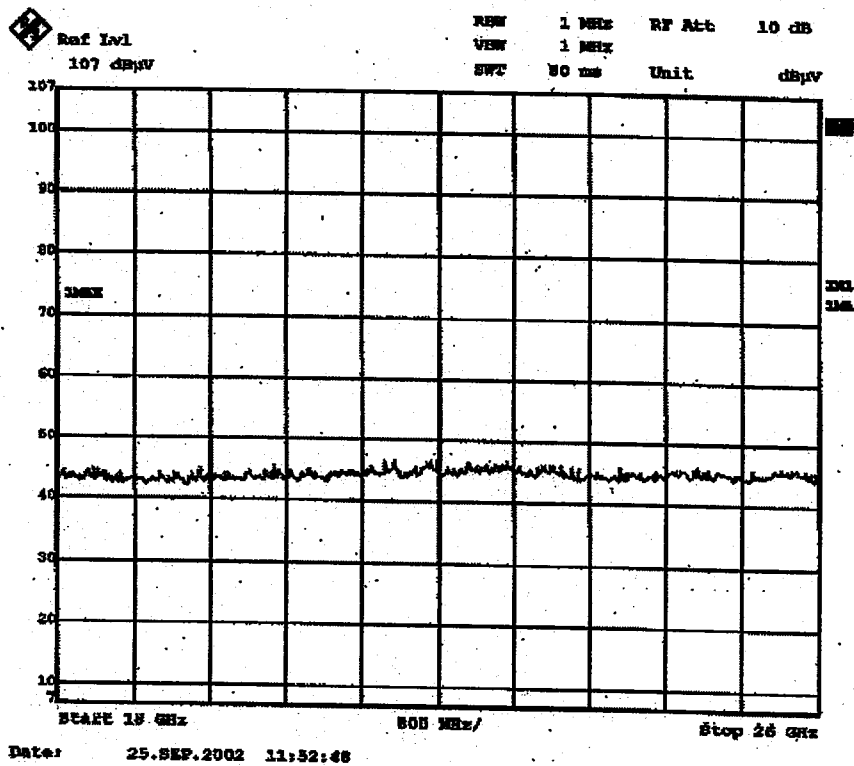


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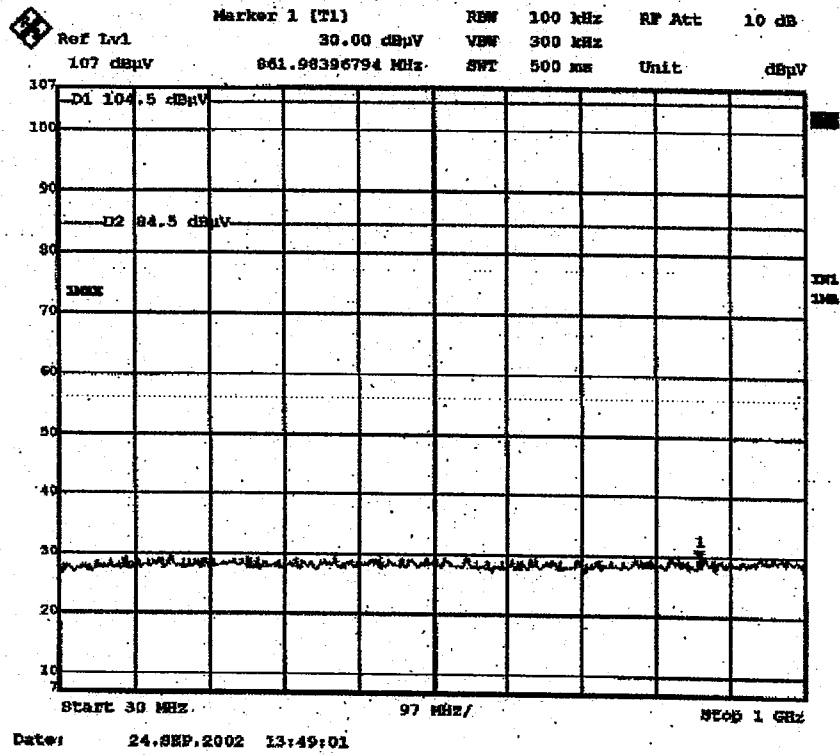
Spurious Emission(Radiated) :Tx(2480MHz) VER 1m



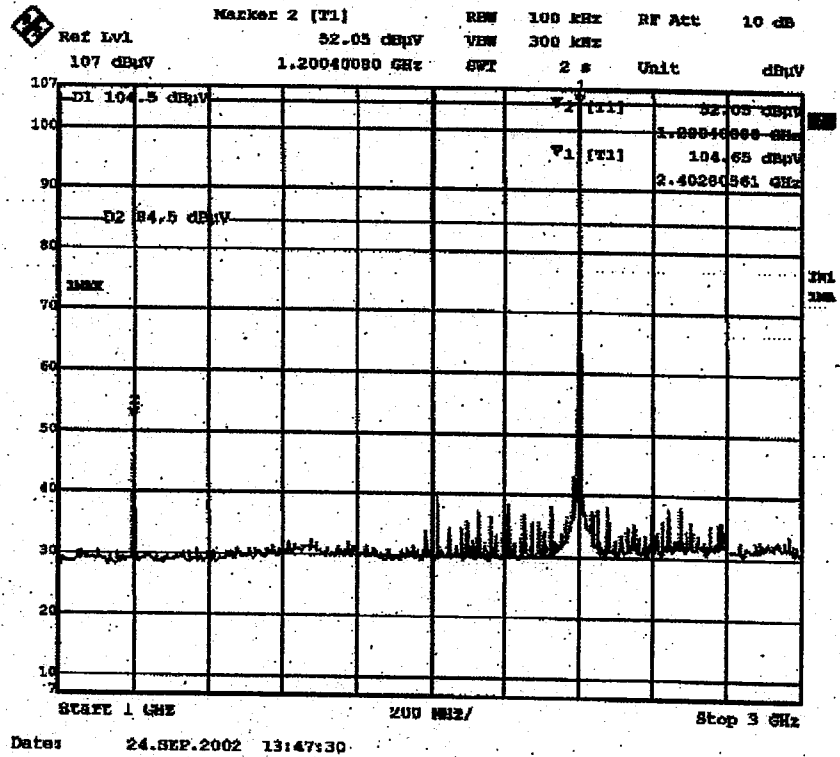
Spurious Emission(Radiated) :Tx(2480MHz) VER 1m



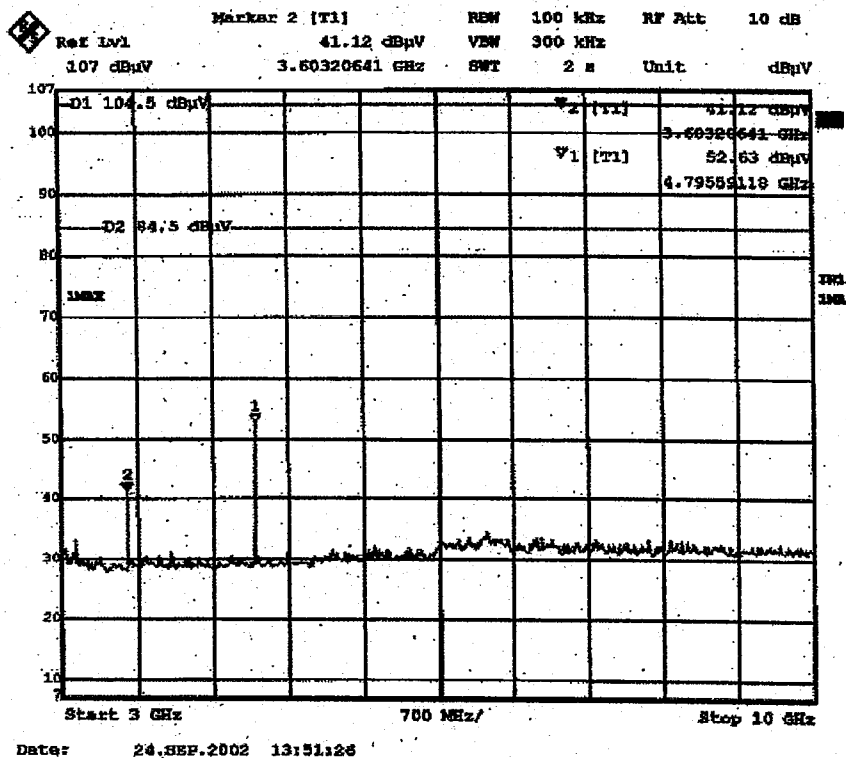
Spurious Emission(Conducted) :Tx(2402MHz)



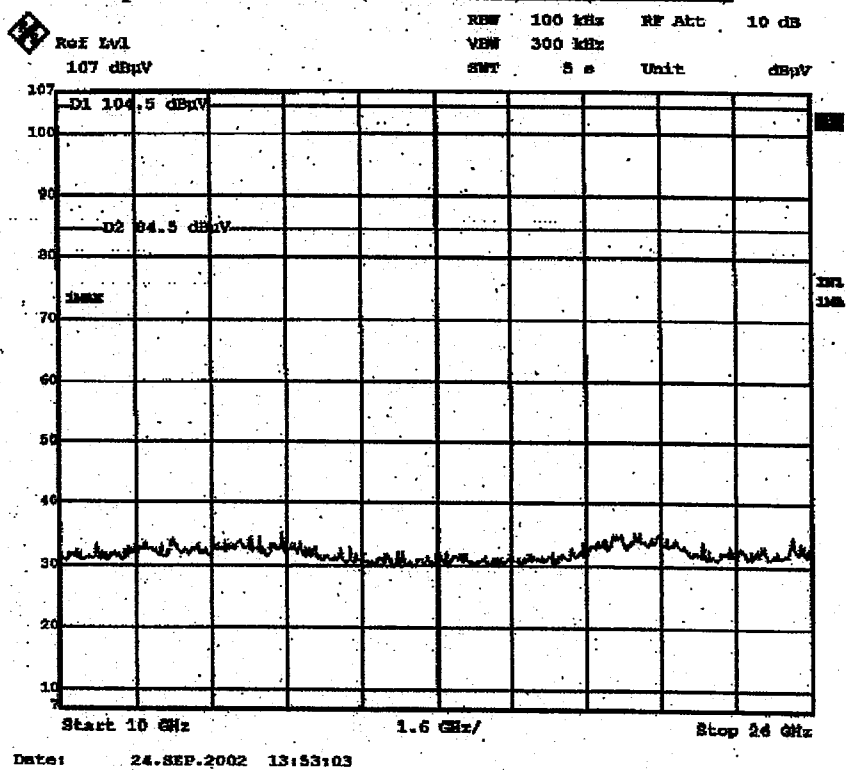
Spurious Emission(Conducted) :Tx(2402MHz)



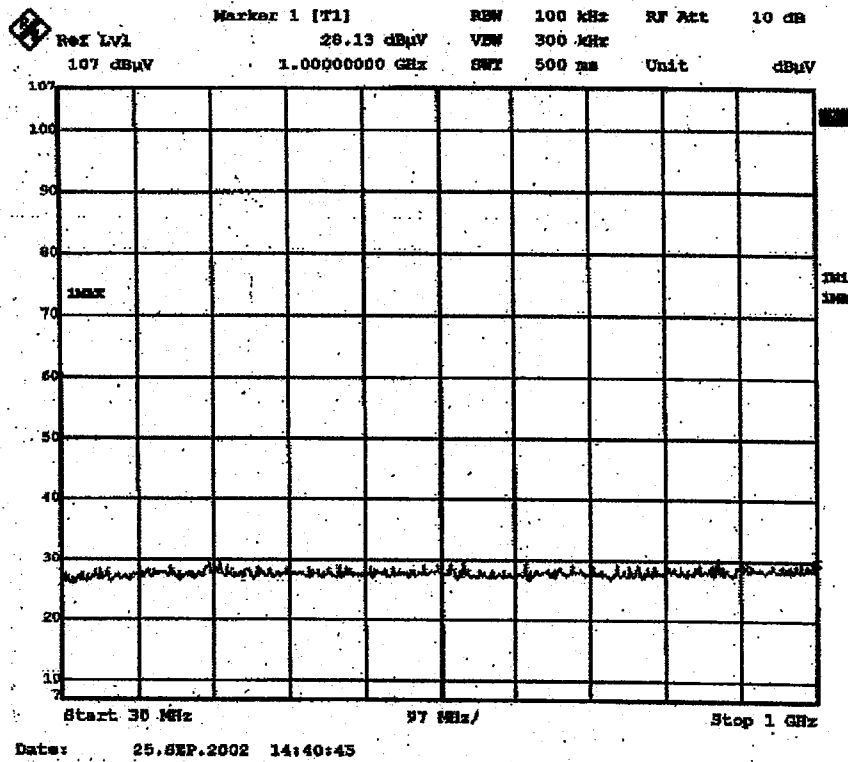
Spurious Emission(Conducted) :Tx(2402MHz)



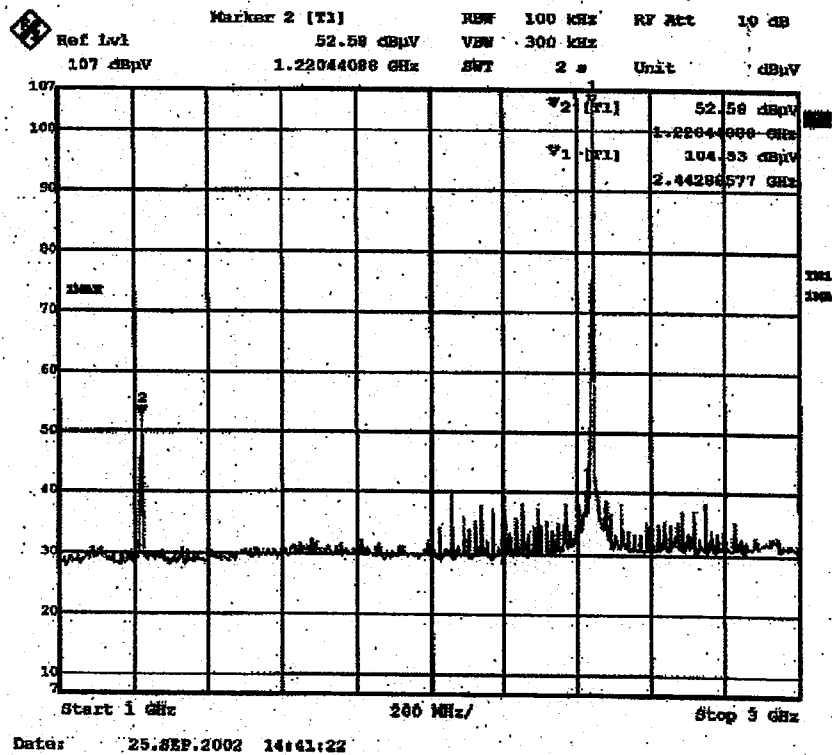
Spurious Emission(Conducted) :Tx(2402MHz)



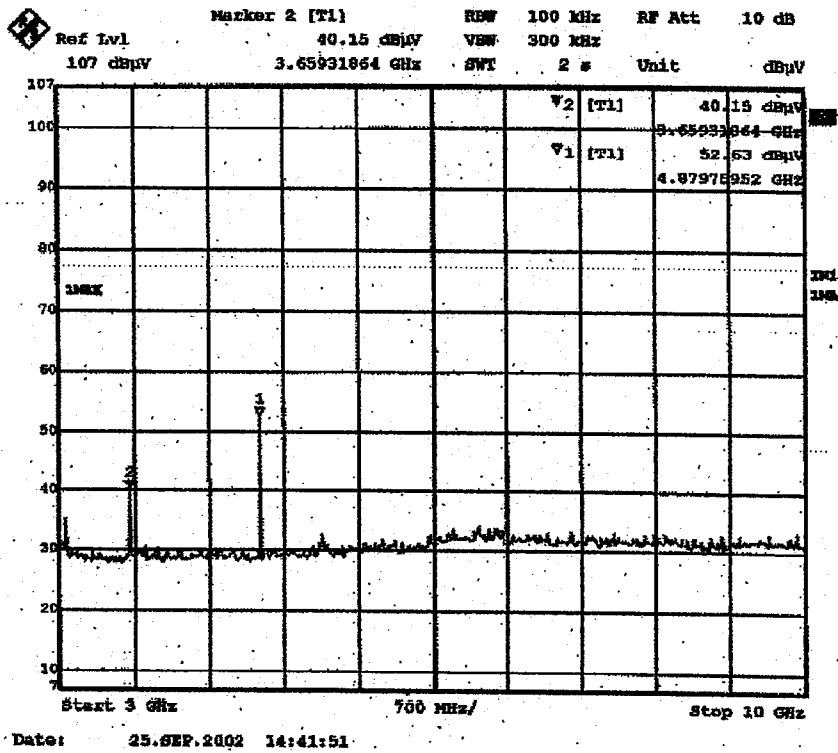
Spurious Emission(Conducted) :Tx(2441MHz)



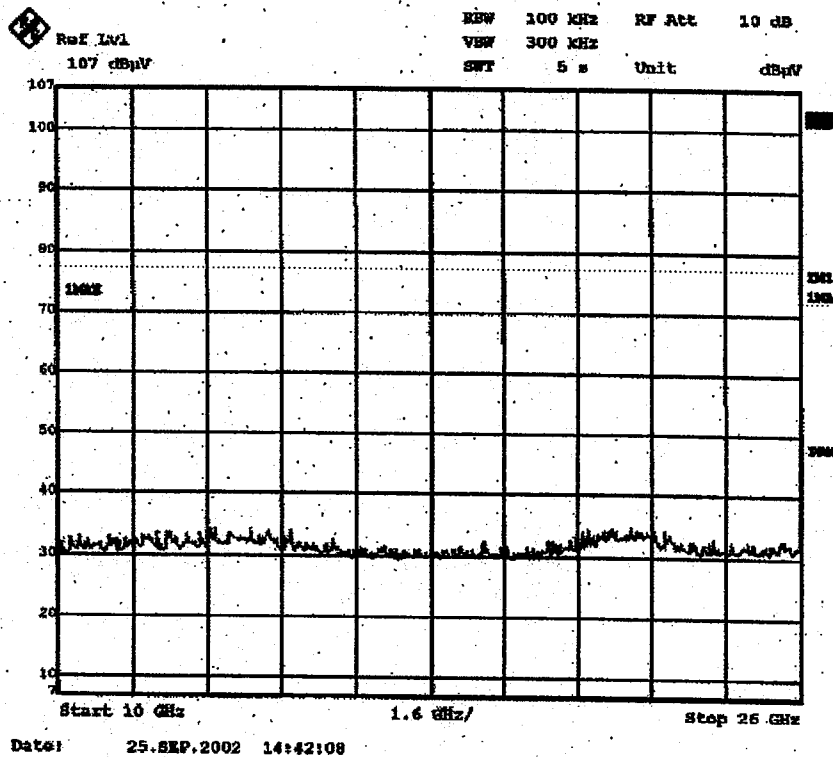
Spurious Emission(Conducted) :Tx(2441MHz)



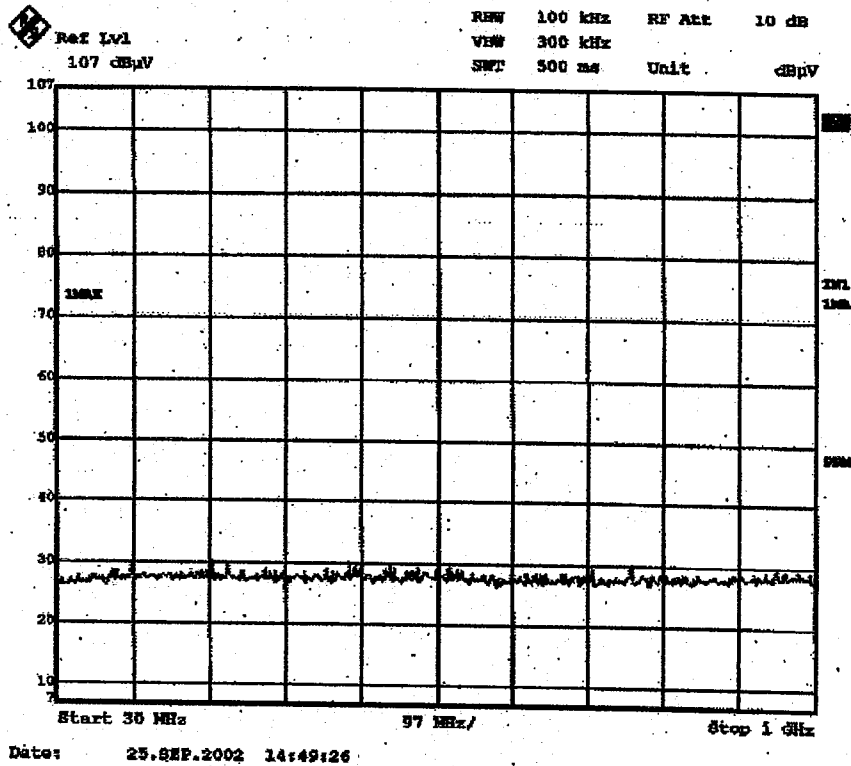
Spurious Emission(Conducted) :Tx(2441MHz)



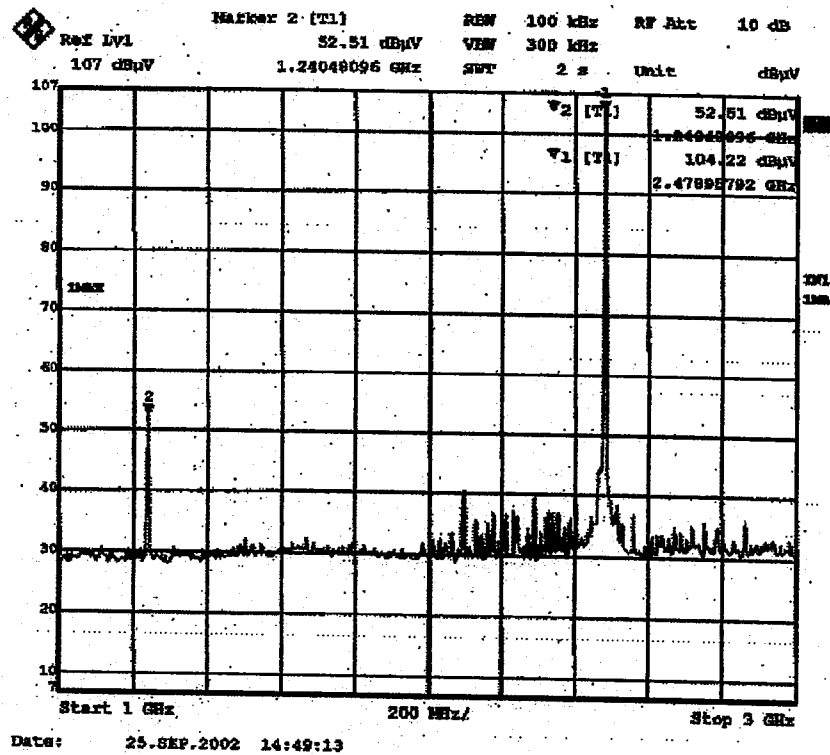
Spurious Emission(Conducted) :Tx(2441MHz)



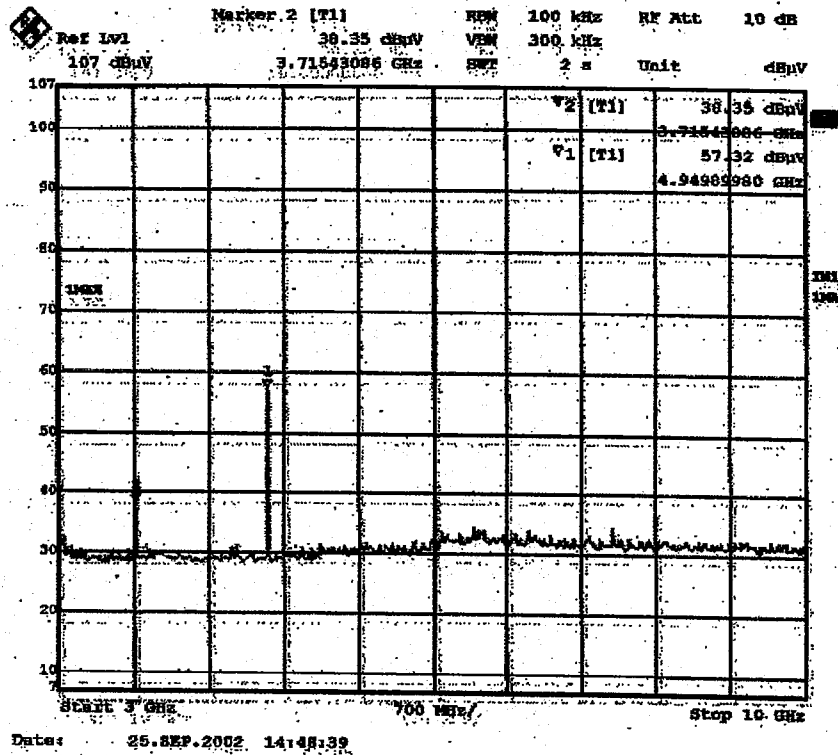
Spurious Emission(Conducted) :Tx(2480MHz)



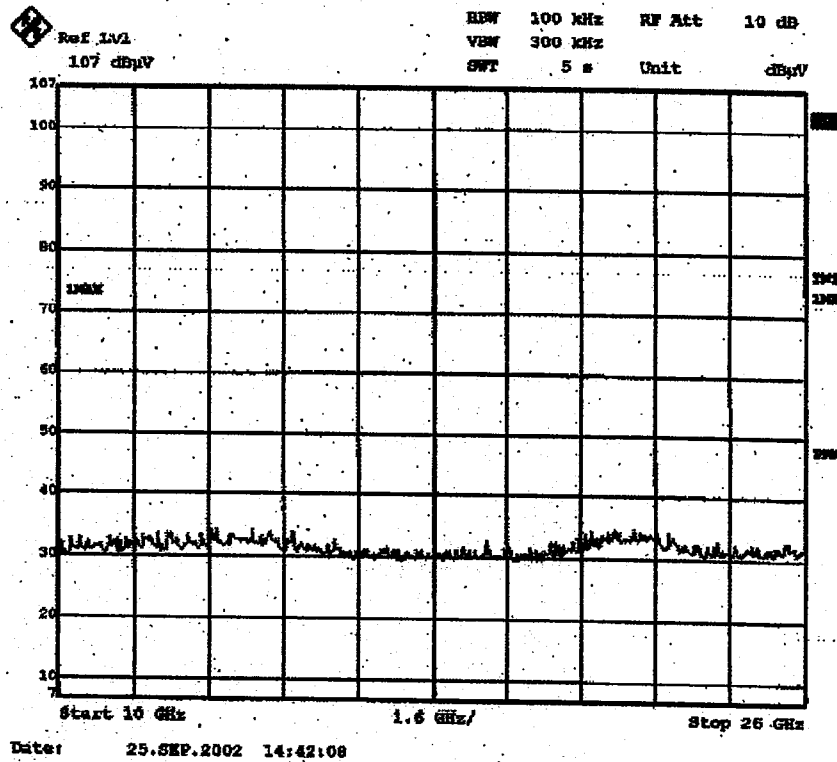
Spurious Emission(Conducted) :Tx(2480MHz)



Spurious Emission(Conducted) :Tx(2480MHz)



Spurious Emission(Conducted) :Tx(2480MHz)



Test Report No :23BE0097-HO

APPENDIX 3

Test Instruments

EMI test equipment

MAEC-01	Anechoic Chamber	TDK	Semi Anechoic Chamber 10m	RE	2001/12/29 * 12
MAT-06	Attenuator(6dB)	Weinschel Corp	2	RE	2001/12/27 * 12
MBA-01	Biconical Antenna	Schwarzbeck	BBA9106	RE	2001/12/01 * 12
MCC-01	Coaxial Cable	Suhner/storm/Agilent/TS J	MCC-01-01(421-014-10m) MCC-01-02(421-014-16m) MCC-01-03(421-014-7.5m) MCC-01-04(SF M86PE-15cm) MCC-01-05(876 5C,RF SWITCHER SW1-A) MCC-01-06(SF M141-15cm) MCC-01-07(SF M141-15cm) MCC-01-08(876 5C,RF SWITCHER SW2-A) MCC-01-09(876 5C,RF SWITCHER SW3-A) MCC-01-10(421-010-1m)	RE	2001/12/27 * 12
MLA-01	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2001/12/01 * 12
MPA-02	Pre Amplifier	Agilent	87405A	RE	2001/12/27 * 12
MTR-01	Test Receiver	Rohde & Schwarz	ES140	RE	2001/11/13 * 12
MBF-01	SHF Bandpass Filter	M-City	5GHz BPF	RE	2002/04/30 * 12
MHA-05	Horn Antenna	Schwarzbeck	BBHA9120D	RE	2002/01/13 * 12
MPA-01	Pre Amplifier	Agilent	8449B	RE	2002/02/09 * 12
MCC-05	Microwave Cable	Storm	421-011	RE	2002/01/14 * 12
MCC-06	Microwave Cable	Storm	421-011	RE	2002/01/14 * 12
MCC-11	Microwave coaxial cable	Suhner	SUCOFLEX 104	RE	2002/03/27 * 12
MHA-01	Horn Antenna	EMCO	3160-09	RE	2002/01/13 * 12

All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

Test Item:

RE: Radiated emission,