

4.5 Out-of-band radiated emissions ( for emissions in 4.4 above that are less than 20 dB below a carrier), FCC 15.247(c):

For out-of-band emissions that are close to or that exceed the 20 dB attenuation requirement described in the specification, radiated measurements were performed at a 3 m separation distance to determine whether these emissions complied with the 20 dB attenuation requirement.

- Not required. All out-of-band conducted emissions are more than 20 dB below a carrier
- See attached data sheet

## 4.6 Transmitter Radiated Emissions in Restricted Bands,

Radiated emission measurements were performed from 30 MHz to 25000 MHz. Spectrum analyzer resolution bandwidth is 100 kHz or greater for frequencies from 30 MHz to 1000 MHz, and 1 MHz for frequencies above 1000 MHz.

The EUT was positioned on a non-conductive turntable, 0.8m above the ground plane on an open test site. The radiated emission was measured at 3 m distance. To maximize emissions, the system was rotated through 360°, the antenna height was varied from 1m to 4 m, and the antenna polarization was changed. Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included. All measurements were performed with peak and average detectors unless otherwise specified.

The data on the following pages (data sheets ## 1 to 6) list the significant emission frequencies, the limit and the margin of compliance.

In addition, the field strength in the restricted bands: 2483.5 MHz to 2500 MHz and 2310 MHz to 2390 MHz was calculated as follows:

$$E_f = E_0 - \text{delta}$$

where  $E_0$  is the field strength at the fundamental frequency (high or low channels);  
“delta” is the difference in conducted emissions between the level at the fundamental frequency and the highest level in the restricted band.

The results are presented in the Table 6.

Table 6

Base					
Frequency, MHz	Field Strength, $E_0$ dB(uV/m) *	delta, dB	Field Strength, $E_f$ dB(uV/m)	Limit (average), dB(uV/m)	Margin, dB
2407.5	104.7	54.6 **	50.1	54.0	-3.9
2473.5	110.5	57.8 ***	52.7	54.0	-1.3
Handset					
2407.5	106.2	57.3 ****	48.9	54.0	-5.1
2473.5	107.3	56.2 *****	51.1	54.0	-2.9

\* see data sheets on the next pages

\*\* from Plots: a.4a.3 and a.4a.5

\*\*\* from Plots: a.4c.4 and a.4c.5

\*\*\*\* from Plots: b.4a.3 and b.4a.5

\*\*\*\*\* from Plots: b.4c.3 and b.4c.5



**Radiated Emissions Test Data** 1

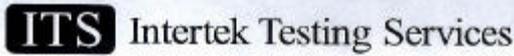
Company:	Sony Corp.	Model #:	SPP-A2480, Base	Standard	FCC § 15.247 (R.B.)
EUT:	Cordless phone	S/N #:	N/A	Limits	11
Project #:	J20027358	Test Date:	Oct. 05, 2000	Test Distance	3 meters
Test Mode:	Tx. @ 2.407,5MHz (low ch. #5)	Engineer:	Arkadi Kaplan	Duty Relaxation	0 dB

	Antenna Used			Pre-Amp Used			Cable Used			Transducer Used
Number:	14	21	8	8	12	13	21	0	0	0
Model:	EMCO 3115	EMCO 3100-9	EMCO 3115	CDI_P1000	ACQ100	ACO400	Gm_MPL	None	None	None

Frequency	Reading	Detector	Ant. Amp.		Ant. Pol.	Ant. Factor	Pre-Amp	Insert. Loss	D. C. F.	Net	Limit @3m	Margin
MHz	dB(μV)	F/A/G	#	#	H/V	dB(1/m)	dB	dB	dB	dB(μV/m)	dB(μV/m)	dB
2407.50	79.6	Peak	8	-	V	29.1	0.0	2.3	0.0	111.0	-	-
2407.50	73.3	Ave.	8	-	V	29.1	0.0	2.3	0.0	104.7	-	-
4816.00	52.0	Peak	8	8	V	34.0	28.1	3.2	0.0	61.1	74.0	-12.9
4816.00	40.4	Ave.	8	8	V	34.0	28.1	3.2	0.0	49.5	54.0	-4.5
12037.5	44.8 *	Peak	8	12	V	41.6	32.4	5.9	-9.5	50.4	74.0	-23.6
12037.5	35.5 *	Ave.	8	12	V	41.6	32.4	5.9	-9.5	41.1	54.0	-12.9
19260.5	40.0 *	Peak	21	13	V	40.2	23.3	7.7	-9.5	55.1	74.0	-18.9
19260.5	30.0 *	Ave.	21	13	V	40.2	23.3	7.7	-9.5	45.1	54.0	-8.9

- Notes:**
- a) D.C.F.: Distance Correction Factor
  - b) Insert. Loss (dB) = Cable A + Cable B + Cable C .
  - c) Net (dB) = Reading + Antenna Factor - Pre-amp + Insert. Loss. - Transducer Loss - Duty Relaxation (transmitter only).
  - d) Negative signs (-) in Margin column signify levels below the limits.
  - e) All other emissions not reported are below the equipment noise floor which is at least 20 dB below the limits.
  - f) Measurements above 10 GHz. were performed at a 1 meter distance.
  - g) \* indicates a noise floor





**Radiated Emissions Test Data** 3

Company:	Sony Corp.	Model #:	SPP-A2480, Base	Standard	FCC § 15.247 (R.B.)
EUT:	Cordless phone	S/N #:	N/A	Limits	11
Project #:	J20027358	Test Date:	Oct. 05, 2000	Test Distance	3 meters
Test Mode:	Tx @ 2474.2MHz (high ch. #27)	Engineer:	Arkadi Kaplan	Duty Relaxation	0 dB

Number:	Antenna Used			Pre-Amp Used			Cable Used			Transducer Used
	8	21	14	8	12	13	21	0	0	0
Model:	EMCO 3115	EMCO 3160-0	EMCO 3115	CDI_P1000	ACO160	ACO400	Gm_M+L	None	None	None

Frequency	Reading	Detector	Ant	Amp.	Ant. Pol.	Ant. Factor	Pre-Amp	Insert. Loss	D. C. F.	Net	Limit @3m	Margin
MHz	dB(µV)	F/A/Q	#	#	H/V	dB(1m)	dB	dB	dB	dB(µV/m)	dB(µV/m)	dB
2474.20	82.9	Peak	8	-	V	29.1	0.0	2.3	0.0	114.3	-	-
2474.20	79.1	Ave.	8	-	V	29.1	0.0	2.3	0.0	110.5	-	-
4948.40	49.7	Peak	8	8	V	34.0	28.1	3.2	0.0	58.8	74.0	-15.2
4948.40	36.6	Ave.	8	8	V	34.0	28.1	3.2	0.0	45.7	54.0	-8.3
7422.60	48.7	Peak	8	8	V	37.0	28.0	4.3	0.0	62.0	74.0	-12.0
7422.60	35.3	Ave.	8	8	V	37.0	28.0	4.3	0.0	48.6	54.0	-5.4
12371.0	46.0 *	Peak	14	12	V	42.3	32.4	5.9	-9.5	52.3	74.0	-21.7
12371.0	36.0 *	Ave.	14	12	V	42.3	32.4	5.9	-9.5	42.3	54.0	-11.7
19793.6	40.0 *	Peak	21	13	V	40.2	23.3	7.7	-9.5	55.1	74.0	-18.9
19793.6	30.0 *	Ave.	21	13	V	40.2	23.3	7.7	-9.5	45.1	54.0	-8.9
22267.8	40.0 *	Peak	21	13	V	40.3	23.3	8.5	-9.5	56.0	74.0	-18.0
22267.8	30.0 *	Ave.	21	13	V	40.3	23.3	8.5	-9.5	46.0	54.0	-8.0

**Notes:**

- a) D.C.F.: Distance Correction Factor
- b) Insert. Loss (dB) = Cable A + Cable B + Cable C
- c) Net (dB) = Reading + Antenna Factor - Pre-amp + Insert. Loss. - Transducer Loss - Duty Relaxation (transmitter only).
- d) Negative signs (-) in Margin column signify levels below the limits.
- e) All other emissions not reported are below the equipment noise floor which is at least 20 dB below the limits.
- f) Measurements above 10 GHz. were performed at a 1 meter distance.
- g) \* indicates a noise floor

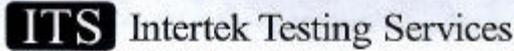


Radiated Emissions Test Data			
Company:	Sony Corporation	Model #:	SPP-A2480, Handset
EUT:	Cordless phone	S/N #:	
Project #:	J20027358	Test Date:	October 4, 2000
Test Mode:	Transmitting at 2,473.5 MHz (hi channel)	Engineer:	Bruce G.
Standard:	FCC § 15.247 (R.B.)	Limits:	11
Test Distance:	3 meters	Duty Relaxation:	0 dB

Number:	Antenna Used			Pre-Amp Used			Cable Used			Transducer Used
	2	21	14	4/8	13	12	21	0	0	0
Model:	EMCO 3143	EMCO 3160-9	EMCO 3115	CDL_P100 0	ACO/400	ACO/150	Gre_M-L	None	None	None

Frequency	Reading	Detector	Ant. #	Amp. #	Ant. Pol.	Ant. Factor	Pre-Amp	Insert. Loss	D. C. F.	Net	Limit @3m	Margin
MHz	dB(µV)	P/A/Q	#	#	H/V	dB(1/m)	dB	dB	dB	dB(µV/m)	dB(µV/m)	dB
2473.50	82.8	Peak	14	-	V	30.1	0.0	2.3	0.0	115.2	-	-
2473.50	74.9	Ave.	14	-	V	30.1	0.0	2.3	0.0	107.3	-	-
4947.00	58.5	Peak	14	8	V	33.9	28.1	3.2	0.0	67.5	74.0	-6.5
4947.00	40.3	Ave.	14	8	V	33.9	28.1	3.2	0.0	49.3	54.0	-4.7
7420.50	52.3	Peak	14	8	V	38.0	28.0	4.3	0.0	66.6	74.0	-7.4
7420.50	38.8	Ave.	14	8	V	38.0	28.0	4.3	0.0	53.1	54.0	-0.9
12367.50	42.0*	Peak	14	12	V	42.3	32.4	5.9	-9.5	48.3	74.0	-25.7
12367.50	32.0*	Ave.	14	12	V	42.3	32.4	5.9	-9.5	38.3	54.0	-15.7
19788.00	40.0*	Peak	21	13	V	40.3	23.3	7.7	-9.5	55.2	74.0	-18.8
19788.00	30.0*	Ave.	21	13	V	40.3	23.3	7.7	-9.5	45.2	54.0	-8.8
22261.50	40.0*	Peak	21	13	V	40.3	23.3	7.9	-9.5	55.4	74.0	-18.6
22261.50	30.0*	Ave.	21	13	V	40.3	23.3	7.9	-9.5	45.4	54.0	-8.6

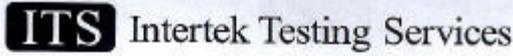
- Notes:**
- a) D.C.F.: Distance Correction Factor
  - b) Insert. Loss (dB) = Cable A + Cable B + Cable C.
  - c) Net (dB) = Reading + Antenna Factor - Pre-amp + Insert. Loss. - Transducer Loss - Duty Relaxation (transmitter only).
  - d) Negative signs (-) in Margin column signify levels below the limits.
  - e) All other emissions not reported are below the equipment noise floor which is at least 20 dB below the limits.
  - f) Measurements above 10 GHz. were performed at a 1 meter distance.
  - g) \* indicates a noise floor



Radiated Emissions Test Data										5
Company: Sony Corporation				Model #: SPP-A2480, Handset			Standard_		FCC § 15.247 (R.B.)	
EUT: Cordless phone				S/N #:			Limits		11	
Project #: J20027358				Test Date: October 4, 2000			Test Distance		3 meters	
Test Mode: Transmitting at 2,440.5 MHz (mid channel)				Engineer: Bruce G.			Duty Relaxation		0 dB	
Antenna Used			Pre-Amp Used				Cable Used			Transducer Used
Number:	8	21	14	8	13	12	21	0	0	0
Model:	EMCO 3115	EMCO 3100-9	EMCO 3115	CDI P100 0	ACC/400	ACC/180	Gen_M+L	None	None	None

Frequency	Reading	Detector	Ant. #	Amp. #	Ant. Pol.	Ant. Factor	Pre-Amp	Insert. Loss	D. C. F.	Net	Limit @3m	Margin
MHz	dB(µV)	P/A/Q	#	#	H/V	dB(1/m)	dB	dB	dB	dB(µV/m)	dB(µV/m)	dB
2440.50	84.3	Peak	8	-	V	29.1	0.0	2.3	0.0	115.7	-	-
2440.50	76.4	Ave.	8	-	V	29.1	0.0	2.3	0.0	107.8	-	-
4881.00	52.7	Peak	8	8	V	34.0	28.1	3.2	0.0	61.8	74.0	-12.2
4881.00	38.8	Ave.	8	8	V	34.0	28.1	3.2	0.0	47.9	54.0	-6.1
4881.00	53.5	Peak	8	8	H	33.9	28.1	3.2	0.0	62.5	74.0	-11.5
4881.00	37.9	Ave.	8	8	H	33.9	28.1	3.2	0.0	46.9	54.0	-7.1
7319.90	46.3	Peak	8	8	H	36.8	28.0	4.3	0.0	59.4	74.0	-14.6
7319.90	33.2	Ave.	8	8	H	36.8	28.0	4.3	0.0	46.3	54.0	-7.7
7319.90	46.0	Peak	8	8	V	37.0	28.0	4.3	0.0	59.3	74.0	-14.7
7319.90	33.6	Ave.	8	8	V	37.0	28.0	4.3	0.0	46.9	54.0	-7.1
12202.0	52.7 *	Peak	14	12	V	42.3	32.4	5.9	-9.5	59.0	74.0	-15.0
12202.0	37.0 *	Ave.	14	12	V	42.3	32.4	5.9	-9.5	43.3	54.0	-10.7
19523.2	40.0 *	Peak	21	13	V	40.2	23.3	7.7	-9.5	55.1	74.0	-18.9
19523.2	30.0 *	Ave.	21	13	V	40.2	23.3	7.7	-9.5	45.1	54.0	-8.9

- Notes:**
- a) D.C.F.: Distance Correction Factor
  - b) Insert. Loss (dB) = Cable A + Cable B + Cable C
  - c) Net (dB) = Reading + Antenna Factor - Pre-amp + Insert. Loss. - Transducer Loss - Duty Relaxation (transmitter only).
  - d) Negative signs (-) in Margin column signify levels below the limits.
  - e) All other emissions not reported are below the equipment noise floor which is at least 20 dB below the limits.
  - f) Measurements above 10 GHz. were performed at a 1 meter distance.
  - g) \* indicates a noise floor



Radiated Emissions Test Data			
Company: Sony Corporation	Model #: SPP-A2480, Handset	Standard_	FCC § 15.247 (R.B.)
EUT: Cordless phone	S/N #:	Limits_	11
Project #: J20027358	Test Date: October 4, 2000	Test Distance_	3 meters
Test Mode: Transmitting at 2,407.5 MHz (low channel)	Engineer: Bruce G.	Duty Relaxation	0 dB

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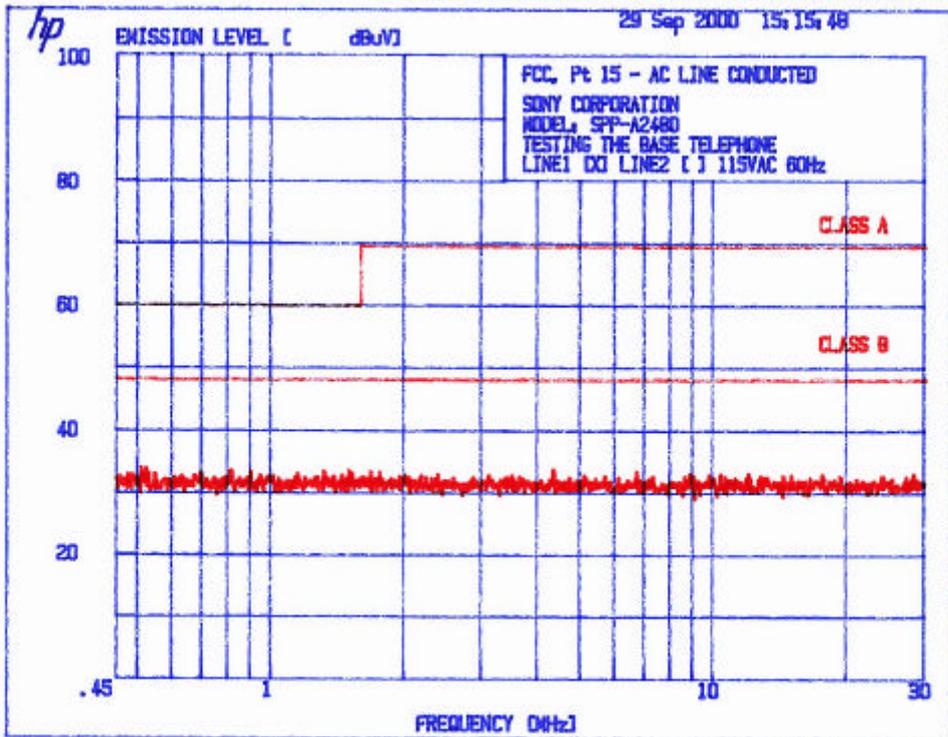
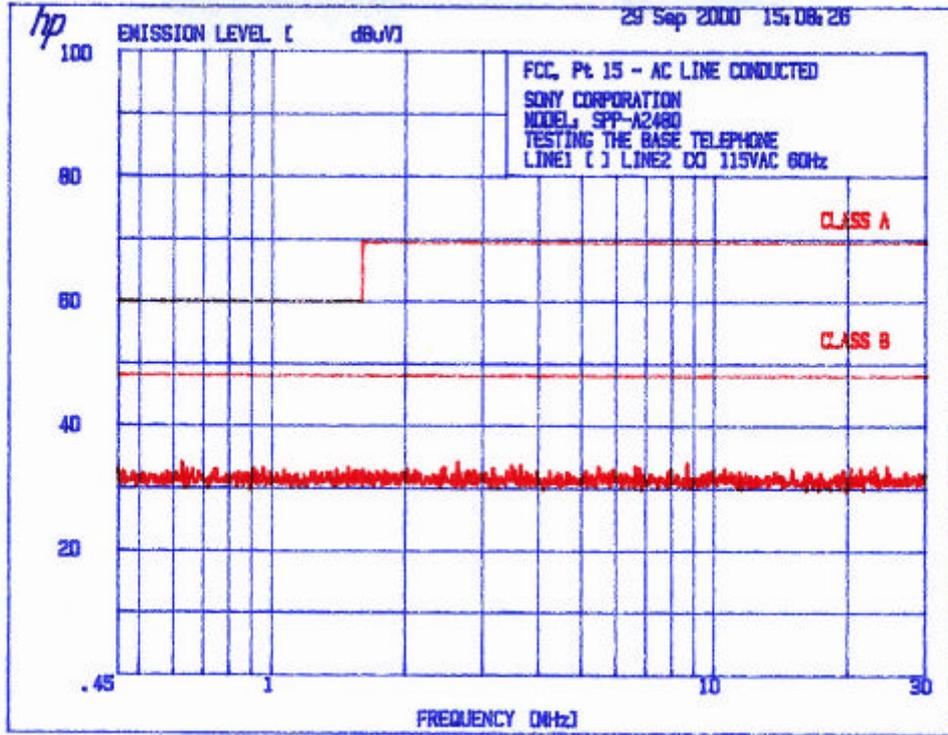
Number	Antenna Used			Pre-Amp Used			Cable Used			Transducer Used
	2	21	14	8	13	12	21	0	0	0
Model:	EMCO 3143	EMCO 3169-9	EMCO 3115	CDI_P1000	ACC/400	ACC/180	Gm_M=L	None	None	None

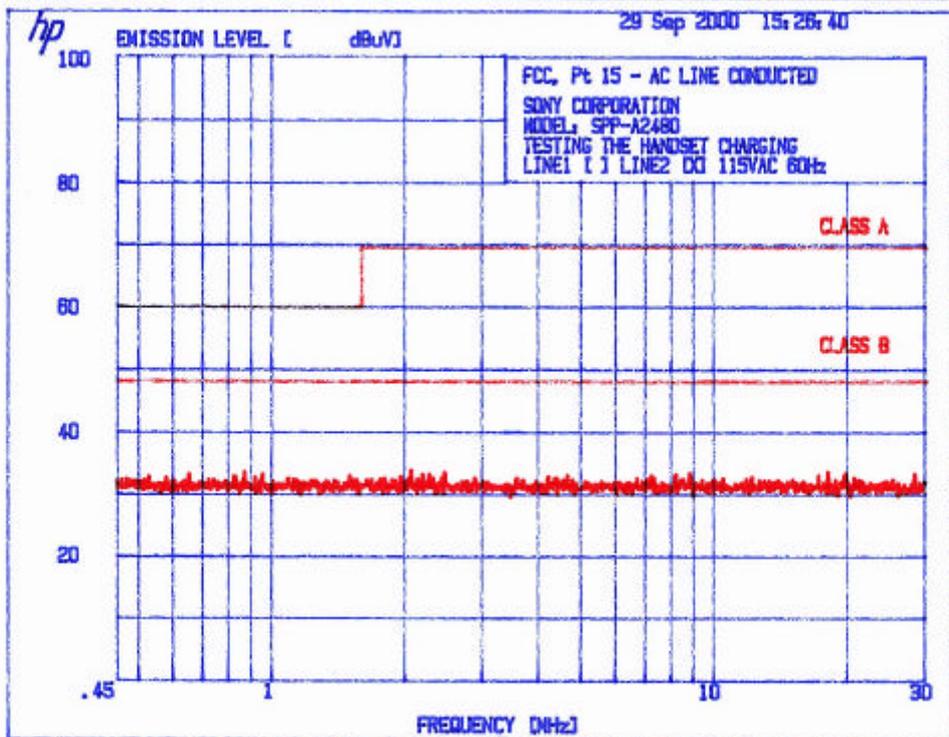
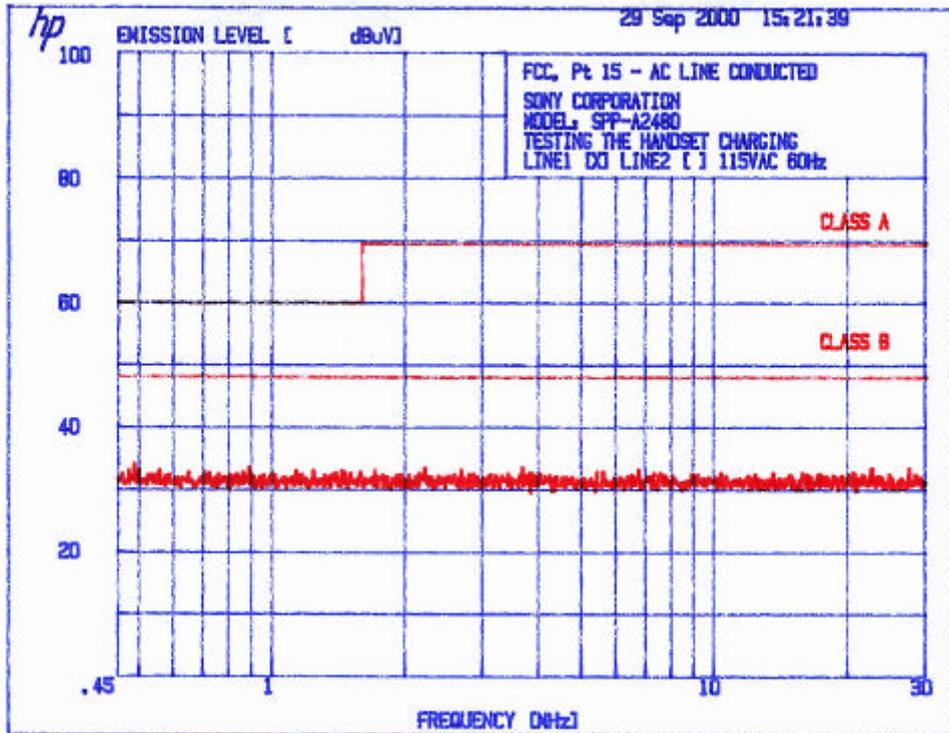
Frequency	Reading	Detector	Ant. Amp.	Ant. Pol.	Ant. Factor	Pre-Amp	Insert. Loss	D. C. F.	Net	Limit @3m	Margin	
MHz	dB(µV)	P/A/C	#	#	H/V	dB(1/m)	dB	dB	dB(µV/m)	dB(µV/m)	dB	
2407.50	84.2	Peak	14	-	V	30.1	0.0	2.3	0.0	116.6	-	
2407.50	73.8	Ave.	14	-	V	30.1	0.0	2.3	0.0	106.2	-	
4815.00	57.9	Peak	14	8	V	33.9	28.1	3.2	0.0	66.9	74.0	-7.1
4815.00	41.1	Ave.	14	8	V	33.9	28.1	3.2	0.0	50.1	54.0	-3.9
7222.50	38.5	Ave.	14	8	V	38.0	28.0	4.3	0.0	52.8	54.0	-1.2
7222.50	53.6	Peak	14	8	V	38.0	28.0	4.3	0.0	67.9	74.0	-6.1
12037.50	44.0 *	Peak	14	12	V	42.3	32.4	5.9	-9.5	50.3	74.0	-23.7
12037.50	34.0 *	Ave.	14	12	V	42.3	32.4	5.9	-9.5	40.3	54.0	-13.7
19260.00	40.0 *	Peak	21	13	V	40.2	23.3	7.7	-9.5	55.1	74.0	-18.9
19260.00	30.0 *	Ave.	21	13	V	40.2	23.3	7.7	-9.5	45.1	54.0	-8.9

- Notes:**
- a) D.C.F.: Distance Correction Factor
  - b) Insert. Loss (dB) = Cable A + Cable B + Cable C .
  - c) Net (dB) = Reading + Antenna Factor - Pre-amp + Insert. Loss. - Transducer Loss - Duty Relaxation (transmitter only).
  - d) Negative signs (-) in Margin column signify levels below the limits.
  - e) All other emissions not reported are below the equipment noise floor which is at least 20 dB below the limits.
  - f) Measurements above 10 GHz. were performed at a 1 meter distance.
  - g) \* indicates a noise floor

4.7 AC Line Conducted Emission,

Test was performed on the Base unit. No emissions were detected above the noise floor.  
See attached plots.





4.8 Radiated Emissions from Digital Section of Transceiver, FCC 15.109

Test Procedure.

The EUT was positioned on a non-conductive turntable, 0.8m above the ground plane on an open test site.

The radiated emission was measured at 3 m distance with a test antenna and spectrum analyzer. During the measurement, the resolution and video bandwidth of the spectrum analyzer were set to 100 kHz. To maximize emissions, the system was rotated through 360°, the antenna height was varied from 1m to 4 m, and the antenna polarization was changed.

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included. All measurements were performed with peak detector unless otherwise specified.

Test Result.

- Not required - No digital part
- Test results are attached
- Included in the separate DOC report.

**ITS** Intertek Testing Services

**Radiated emissions test**

<b>Company:</b> Sony Corporation	<b>Model #:</b> SPP-A2480	<b>Standard:</b> FCC § 15B
<b>EUT:</b> 2.4 GHz Cordless telephone	<b>S/N #:</b> none	<b>Limits:</b> 2
<b>Project #:</b> J20027358	<b>Test Date:</b> September 19, 2000	<b>Test Distance:</b> 3 meters
<b>Test Mode:</b> Normal standby	<b>Engineer:</b> Bruce G.	<b>Duty Relaxation:</b> 0 dB

Number:	Antenna Used		Pre-Amp Used		Cable Used			Transducer Used
	9	7	7		1	0	0	0
Model:	EMCO 3:04	EM-LPA-25	CPPA_502		Site 2.3m	None	None	None

Frequency MHz	Reading dB(μV)	Detector P/A/Q	Ant #	Amp #	Ant. Pol. H/V	Ant. Factor dB(1/m)	Pre-Amp dB	Insert. Loss dB	D. C. F. dB	Net dB(μV/m)	Limit @3m dB(μV/m)	Margin dB
45.70	58.0	Peak	9	7	V	11.3	36.6	0.9	0.0	33.6	40.0	-6.4
131.07	61.0	Peak	9	7	V	13.2	36.7	2.0	0.0	39.5	43.5	-4.0
131.07	61.8	Peak	9	7	H	13.0	36.7	2.0	0.0	40.1	43.5	-3.4
217.50	49.1	Peak	7	7	V	11.3	37.2	2.0	0.0	25.2	46.0	-20.8
218.45	47.0	Peak	7	7	V	11.3	37.2	2.0	0.0	23.1	46.0	-22.9
229.37	53.3	Peak	7	7	V	11.1	37.4	2.8	0.0	29.8	46.0	-16.2

- Notes:**
- a) D.C.F.: Distance Correction Factor
  - b) Insert. Loss (dB) = Cable A + Cable B + Cable C.
  - c) Net (dB) = Reading + Antenna Factor - Pre-amp + Insert. Loss. - Transducer Loss - Duty Relaxation (transmitter only).
  - d) Negative signs (-) in Margin column signify levels below the limits.
  - e) All other emissions not reported are below the equipment noise floor which is at least 20 dB below the limits.

4.9 Radiated Emissions from Receiver Section of Transceiver (L.O. Radiation),

Not required - EUT operates above 960 MHz

Test results are attached

4.10 Processing Gain , FCC 15.247(e)

See exhibits.

4.11 RF Exposure requirement, FCC 15.247(d)

Not Applicable. RF output power is below 100 mW.

5.0 List of test equipment

Equipment	Manufacturer	Model	Serial #	Cal. Int.	Cal. Due	Used
Biconical Antenna	EMCO	3104	3789	12	4/10/01	X
Log Periodic Antenna	EMCO	EM LPA-25	1079	12	4/10/01	X
Double-ridged Horn Antenna	EMCO	3115	9107-3712	12	6/25/01	X
Double-ridged Horn Antenna	EMCO	3115	8812-3049	12	2/5/01	X
Horn Antenna	EMCO	3160-9	N/A	#	#	X
Pre-amplifier	ComPower	CPPA-102	1256	12	4/28/01	X
Pre-amplifier	CDI	P1000	N/A	12	10/14/00	X
Pre-amplifier	Avantek	AFT18855	8723H705	12	10/14/00	X
Pre-amplifier	CTT	ACO/400	47526	12	10/14/00	X
Spectrum Analyzer w/8650 QP Adaptor	Hewlett Packard	HP 8566B	2416A00317 2521A01021	6	2/03/01	X
Spectrum Analyzer	Tektronix	2784	B3020108	12	8/4/01	X
Peak Power Meter	Hewlett Packard	8900D	3607U0067 3	12	7/31/01	X
Peak Power Sensor	Hewlett Packard	84811A	3318A05091	12	12/7/99	X

# Calibration is not required

6.0 Miscellaneous Information or other comments

None.