EMI TEST REPORT

Test Report No.: 25HE0087-HO-3a

Applicant	:	**Sharp Corporation**
Type of Equipment	:	**Wireless PDA**
Model No.	:	**PV200**
Test Standard	:	**FCC Part 24 2004**
FCC ID	:	**APYNAR0060**
Test Result	:	**Complied**

1. This test report shall not be reproduced in full or partial, without the written approval of UL Apex Co., Ltd.
2. The results in this report apply only to the sample tested.
3. This equipment is in compliance with the above regulation. We hereby certify that the data contain a true representation of the EMC profile.
4. The test results in this report are traceable to the national or international standards.

Date of test:

February 27 to April 18, 2006

Tested by:

Y. Yoshida

Yutaka Yoshida
EMC Services

Approved by :

H. Shimoji

Hironobu Shimoji
Group Leader of
EMC Services

UL Apex Co., Ltd.
Head Office EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
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SECTION 1: Client information

Company Name	:	SHARP CORPORATION
Address	:	492 Minosho-cho, Yamatokoriyama-city, NARA 639-1186, JAPAN
Telephone Number	:	+81-743-55-4022
Facsimile Number	:	+81-743-55-2553
Contact Person	:	Takahiro Inoue

SECTION 2: Equipment under test (E.U.T.)

2.1 Identification of E.U.T.

Type of Equipment	:	Wireless PDA
Model No.	:	PV200
Serial No.	:	5
Country of Manufacture	:	Japan
Rating	:	AC120V/60Hz (AC Adapter)
Receipt Date of Sample	:	February 23, 2006
Condition of EUT	:	Engineering prototype (Not for Sale: This sample is equivalent to mass-produced items.)

2.2 Product Description

Model No: PV200 (referred to as the EUT in this report) is the Wireless PDA.

Equipment Type	:	Transceiver
Frequency Operation	:	1850.2 – 1909.8MHz (PCS1900)
Type of Modulation	:	GMSK/8PSK
Bandwidth	:	338kHz
Channel Spacing	:	200kHz
Channel Number	:	299
Antenna fixed method	:	Integral
Antenna Type	:	PIFA (Type 53D)
Antenna Connector Type	:	Spring Contact
Antenna Gain	:	-2.29dBi max
Mode of Operation	:	Duplex
Other Clock Frequency	:	32.768kHz, 12MHz, 26MHz, 32MHz
Power Supply	:	DC3.7V – 4.2V
Temperature of Operation	:	-10 deg. C. to + 55 deg. C.

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part 24 2004

Title : FCC 47CFR Part 24
Personal Communications Services

3.2 Procedures and results

Item	Test Method	FCC Regulations	Remarks	Deviation	Worst margin	Results
Peak Output Power	Section 2.1046	Section 24.232(b)	Conducted/ Radiated	N/A	2.2dB 1880.0MHz (Radiated)	Complied
Emission Bandwidth, 99% Occupied Bandwidth	Section 2.1049	Section 24.238(b)	Conducted	N/A	-	Complied
Band-Edge	Section 2.1049	Section 24.238(b)	Conducted/ Radiated	N/A	0.4dB 1910.00MHz (Radiated)	Complied
Spurious Emission	Section 2.1051	Section 24.238(a)	Conducted	N/A	-	Complied
Spurious Radiation	Section 2.1053	Section 24.238(a)	Radiated	N/A	24.1dB 12951.4MHz Horizontal	Complied
Frequency Stability (Temperature Variation)	Section 2.1055(a) (1) and (b)	Section 24.235	Conducted	N/A	-	Complied
Frequency Stability (Voltage Variation)	Section 2.1055(d)(1) and (2)	Section 24.235	Conducted	N/A	-	Complied
Note: UL Apex's EMI Work Procedures No. QPM05						

*These tests were also referred to TIA-603-B " Land Mobile FM or PM Communications Equipment Measurement and Performance Standards."
*These tests were performed without any deviations from test procedure except for additions or exclusions.

3.3 Additions to standards

No addition, deviation or exclusion has been made from standards.

3.4 Uncertainty

Conducted

The measurement uncertainty (with a 95% confidence level) for this test is ±2.66dB.
The data listed in this report meets the limits unless the uncertainty is taken into consideration.

Radiated

The measurement uncertainty (with a 95% confidence level) for this test using Biconical antenna is ±4.59dB.
The measurement uncertainty (with a 95% confidence level) for this test using Logperiodic antenna is ±4.62dB.
The measurement uncertainty (with a 95% confidence level) for this test using Horn antenna is ±5.27dB.
The data listed in this test report has enough margin, more than the site margin.

3.5 Test Location

UL Apex Co., Ltd. Head Office EMC Lab. *NVLAP Lab. code: 200572-0
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone : +81 596 24 8116
Facsimile : +81 596 24 8124

	FCC Registration Number	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Other rooms
No.1 semi-anechoic chamber	313583	IC4247A	19.2 x 11.2 x 7.7m	7.0 x 6.0m	Preparation room
No.2 semi-anechoic chamber	846015	IC4247A-2	7.5 x 5.8 x 5.2m	4.0 x 4.0m	-
No.3 measurement room	148738	IC4247A-3	12.0 x 8.5 x 5.9m	6.8 x 5.75m	-
No.4 measurement room	134570	IC4247A-4	12.0 x 8.5 x 5.9m	6.8 x 5.75m	-
No.5 shielded room	-	-	6.0 x 6.0 x 3.9m	N/A	-
No.6 shielded room	-	-	4.0 x 4.5 x 2.7m	N/A	-
No.6 preparation room	-	-	4.75 x 5.4 x 3.0m	N/A	-
No.7 shielded room	-	-	4.7 x 7.5 x 2.7m	4.7 x 7.5m	-
No.8 measurement room	-	-	3.1 x 5.0 x 2.7m	N/A	-

* Size of vertical conducting plane (for Conducted Emission test) : 2.0 x 2.0m for No.1 and No.2 semi-anechoic and No.7 shielded room.

3.6 Test set up, Test instruments and Data of EMI

Refer to APPENDIX 1 to 3.

SECTION 4: Operation of E.U.T. during testing

4.1 Operating Modes

The EUT was operated in a manner similar to typical use during the tests.

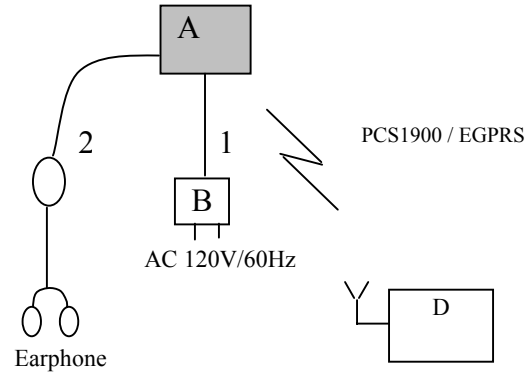
The mode is used : Transmitting mode (GSM, GMSK / EGPRS, 8PSK)
- Low Channel : 1850.2MHz (Ch 512)
- Mid Channel : 1880.0MHz (Ch 661)
- High Channel : 1909.8MHz (Ch 810)

- Mid Channel : 1880.0MHz (Ch 661)+Bluetooth Hopping

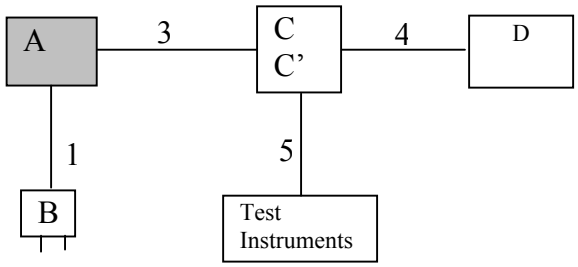
Justification: The system was configured in typical fashion (as a customer would normally use it) for testing.

4.2 Configuration and peripherals

Radiated



Conducted



* Cabling and setup were taken into consideration and test data was taken under worst case conditions.

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Wireless PDA	PV200	5	Sharp Corporation	EUT
B	AC Adapter	ADP-5FH B	49W0525000433	DELTA Electronics, INC	-
C	Power splitters/Combiners *1	ZFSC-2-2500	0124	Mini-Circuit	Below 2GHz
C'	Power splitters/Combiners *1	ZFSC-2-10G	0127	Mini-Circuit	Above 2GHz
D	Universal Radio Communication Tester	CMU200	130900897	ROHDE& SCHWARZ	-

*1 It was used depending on measurement frequency.

List of cables used

No.	Name	Length (m)	Shield	Remarks
1	DC Cable	1.5	N	-
2	Headset Cable	1.45	N	-
3	Coaxial Cable	1.0	Y	-
4	Coaxial Cable	1.2	Y	-
5	Coaxial Cable	0.5	Y	-

SECTION 5: Peak Output Power(Conducted/Radiated)

[Conducted]

Test Procedure
The peak output power (conducted) was measured with a power meter and an attenuator at the antenna port.

Test data : APPENDIX 3
Test result : Pass

[Radiated]

Test Procedure
1) EUT was placed on a platform of nominal size, 1.0by 0.5m, raised 80cm above the conducting ground plane. Test was made with the antenna positioned in both the horizontal and vertical planes of polarization. The Radiated Electric Field Strength intensity has been measured in No.1 semi anechoic chamber with a ground plane and at a distance of 3m (for the Peak Output Power for the Radiated). The measuring antenna height varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.

2) Exchanged the EUT to the Substitution Antenna, the measurement was set for the same height 1m as the EUT. The frequency above 1GHz of the Substitution antenna was used with Horn antenna calibrated with the
Half wave dipole antenna, which is harmonized with the measured frequency in 1).
The Substitution Antenna was connected with the Signal Generator, and the polarized electromagnetic radiation of the Substitution Antenna was matched with the one of the measuring Antenna, which was set with the Signal Generator to the measured frequency in 1). Then, we set with the Output power (CW) of the Signal Generator where the measuring electromagnetic field is equal to the measured value in 1).
The measuring antenna height varied between 1 and 4m to obtain the maximum receiving level.
Its Output power of Signal Generator was recorded.

3) Equivalent isotropic radiated power was calculated by subtracting the cable loss and the attenuator loss connected between the Signal Generator and the Substitution Antenna from the Output power of the Signal Generator recorded in 2).

Test data : APPENDIX 3
Test result : Pass

SECTION 6: Bandwidth and Band-Edge (Conducted)

Test Procedure
The Emission Bandwidth, 99% Occupied Bandwidth and Band-Edge was measured with a spectrum analyzer and attenuator connected to the antenna port.

Test data : APPENDIX 3
Test result : Pass

SECTION 7: Spurious Emission (Conducted)

Test Procedure
The Spurious Emission was measured with a spectrum analyzer and attenuator connected to the antenna port.

Test data : APPENDIX 3
Test result : Pass

SECTION 8: Spurious Radiation and Band-Edge (Radiated)

Test Procedure

1) EUT was placed on a platform of nominal size, 1m by 0.5m, raised 80cm above the conducting ground plane. Test was made with the antenna positioned in both the horizontal and vertical planes of polarization.
The Radiated Electric Field Strength intensity has been measured in No.1/No.2 semi anechoic chamber with a ground plane and at a distance of 3m.
The measuring antenna height was varied between 1 to 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.

2) Exchanged the EUT to the Substitution Antenna, the antenna was set for the same height as EUT on the table.
The frequency below 1GHz of the Substitution antenna was used as the Half wave dipole antenna and Shorted dipole antenna calibrated with the Half wave dipole antenna, which is harmonized with the measured frequency in 1). The frequency above 1GHz of the Substitution antenna was used with Horn antenna calibrated with the Half wave dipole antenna.
The Substitution antenna was connected with the Signal Generator, and the polarized electromagnetic radiation of the Substitution antenna was matched with the one of the measuring antenna, which was set with the Signal Generator to the measured frequency in 1). Then, we set with the Output power (CW) of the Signal Generator where the measuring electromagnetic field is equal to the measured value in 1).
The measuring antenna height varied between 1 and 4m to obtain the maximum receiving level.
Its Output power of Signal Generator was recorded.

3) Equivalent isotropic radiated power was calculated by subtracting the cable loss and the attenuator loss connected between the Signal Generator and the Substitution Antenna from the Output power of the Signal Generator recorded in 2).

- The carrier level and noise levels were confirmed at each position of X, Y and Z axis of EUT to see the position of maximum noise, and the test was made at the position that has the maximum noise.

Test data : APPENDIX 3
Test result : Pass

SECTION 9: Frequency Stability

Test Procedure
The Frequency Stability was measured with a frequency counter and attenuator connected to the antenna port. The Frequency Drift was measured with the 10 deg. C. steps from –30 deg. C. to 50 deg. C., and it is presented as the ppm unit. The Frequency Drift was measured with the normal temperature(20 deg. C.) and Voltage tolerance (DC3.6V to DC4.2V), and it is presented as the ppm unit.

Temperature : –30deg.C to +50deg.C (10 deg. C. step)
Voltage : Vnom:DC3.9V, Vmin:DC3.6V, Vmax:DC4.2V : Operating voltage range of EUT *

*The voltage supply beyond DC 4.2V exceeds the operating voltage range of EUT.
In case of the voltage supply below 3.6V, the EUT stops operation by "low battery detection function.
Therefore, Frequency Stability test was conducted under the above condition.

Test data : APPENDIX 3
Test result : Pass

APPENDIX 1: Photographs of test setup

Spurious Radiation

This page has been submitted for a separate exhibit.

Worst Case Position (Horizontal: Z-axis /:Vertical: Y-axis)

This page has been submitted for a separate exhibit.

APPENDIX 2: Test instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval (month)
MAEC-01	Anechoic Chamber	TDK	Semi Anechoic Chamber 10m	RE	2005/11/14 * 12
MHA-05	Horn Antenna	Schwarzbeck	BBHA9120D	RE	2006/01/09 * 12
MHA-01	Horn Antenna	EMCO	3160-09	RE	2006/01/09 * 12
MPA-01	Pre Amplifier	Agilent	8449B	RE	2006/02/09 * 12
MCC-18	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX 104	RE	2006/02/02 * 12
MCC-15	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX 104	RE	2006/02/02 * 12
MCC-26	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	RE/AT	2005/08/30 * 12
MAT-24	Attenuator(10dB)(above1GHz)	Agilent	8493C	RE	2005/06/03 * 12
MHF-05	High Pass Filter	Tokimec	TF323DCA	RE	2006/01/24 * 12
MSA-03	Spectrum Analyzer	Agilent	E4448A	RE	2005/09/16 * 12
MOS-01	Digital Humidity Indicator	N.T	NT-1800	RE	2004/11/25 * 24
MURC-01	Universal Radio communication Tester	Rohde & Schwarz	CMU200	RE/AT	Pre Check
MBA-01	Biconical Antenna	Schwarzbeck	BBA9106	RE	2005/10/10 * 12
MLA-01	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2005/10/14 * 12
MAT-07	Attenuator(6dB)	Weinschel Corp	2	RE	2005/12/16 * 12
MCC-01	Coaxial Cable 0.1-3000MHz	Suhner/storm/Agilent/TSJ	-	RE	2006/02/20 * 12
MTR-01	Test Receiver	Rohde & Schwarz	ESI40	RE	2005/11/10 * 12
MSG-02	Signal Generator	Rohde & Schwarz	SML03	RE	2005/07/22 *12
MDA-04	Dipole Antenna	Schwarzbeck	UHAP	RE	2005/10/14 *12
MCC-10	Coaxial cable	Storm	90-195-394	RE	2005/03/17 *12 2006/03/18 *12
MCC-31	Coaxial cable	ULApex	-	RE	2005/06/02 *12
MHA-06	Horn Antenna	Schwarzbeck	BBHA9120D	RE	2006/01/09 *12
MSA-04	Spectrum Analyzer	Agilent	E4448A	AT	2006/02/11 * 12
MCC-25	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	AT	2005/08/30 * 12
MCC-14	Microwave Cable 1G-50GHz	Suhner	SUCOFLEX 101	AT	2006/02/02 * 12
MPSC-01	Power splitters/Combiners	Mini-Circuit	ZFSC-2-2500	AT	2005/09/27 * 12
MPSC-02	Power Splitters/Combiners	Mini-Circuit	ZFSC-2-10G	AT	2005/09/27 * 12
MAT-25	Attenuator(10dB)(above1GHz)	Agilent	8493C	AT	2005/06/03 * 12
MAT-20	Attenuator(10dB)(above1GHz)	HIROSE ELECTRIC CO.,LTD.	AT-110	AT	2006/01/10 * 12
MOS-16	Thermo-Hygrometer	Custom	CTH-180	AT	2006/01/19 * 24
MRENT-23	Spectrum Analyzer	Advantest	R3273	AT	2006/01/10 * 12
MCC-22	Microwave Cable 1G-50GHz	Storm	421-011 (90-011-080)	AT	2005/04/29 * 12
MDPS-04	DC Power Supply	KENWOOD TMI	PW18-1.3AT	AT	Pre Check
MAEC-02	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	RE	2006/04/10 * 12
MOS-02	Digital Humidity Indicator	N.T	NT-1800	RE	2004/11/25 * 24
MBA-02	Biconical Antenna	Schwarzbeck	BBA9106	RE	2005/10/10 * 12
MLA-02	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2005/10/14 * 12
MAT-07	Attenuator(6dB)	Weinschel Corp	2	RE	2005/12/16 * 12
MPA-09	Pre Amplifier	Agilent	8447D	RE	2005/09/07 * 12
MAT-24	Attenuator(10dB)(above1GHz)	Agilent	8493C	RE	2005/06/03 * 12
MCC-16	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX 104	RE	2006/02/02 * 12
MCC-47	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	RE	2005/08/30 * 12
MSA-04	Spectrum Analyzer	Agilent	E4448A	RE	2006/02/11 * 12
MPA-10	Pre Amplifier	Agilent	8449B	RE	2005/09/07 * 12
MHF-05	High Pass Filter	Tokimec	TF323DCA	RE	2006/01/24 * 12
MHA-06	Horn Antenna	Schwarzbeck	BBHA9120D	RE	2006/01/09 * 12
MHA-02	Horn Antenna	EMCO	3160-09	RE	2006/01/09 * 12

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

Test Item: RE: Radiated Emission, AT: Antenna Terminal Conducted test

APPENDIX 3: Data of EMI test

Peak Output Power (Conducted)

UL Apex Co., Ltd.
Head Office EMC Lab. No.7 Shielded Room

COMPANY	SHARP CORPORATION	REPORT NO	25HE0087-HO
EQUIPMENT	Wireless PDA	REGULATION	FCC Part24 Section 24.232(b)
MODEL	PV200	TEST METHOD	FCC Part2 Section 2.1046
S/N	5	TEST DISTANCE	-
POWER	DC3.9V(AC120V/60Hz)	DATE	April 17, 2006
MODE	Tx PCL=0(MAX Pow)	TEMPERATURE	22℃
		HUMIDITY	36%
		ENGINEER	Yutaka Yoshida

<PCS1900>

Ch	Frequency [MHz]	P/M Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]	Convert [mW]
Low	1850.2	8.9	20.0	0.5	29.4	33.0	3.6	736.2
Mid	1880.0	9.1	20.0	0.5	29.6	33.0	3.4	751.6
High	1909.8	9.0	20.0	0.5	29.5	33.0	3.5	693.4

<PCS1900+EGPRS>

Ch	Frequency [MHz]	P/M Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]	Convert [mW]
Low	1850.2	8.9	20.0	0.5	29.4	33.0	3.6	736.2
Mid	1880.0	9.1	20.0	0.5	29.6	33.0	3.4	751.6
High	1909.8	9.2	20.0	0.5	29.7	33.0	3.3	693.4

Sample Calculation : Result = Reading + Atten. + Cable Loss

Peak Output Power (Radiated)

UL Apex Co., Ltd.
Head Office EMC Lab. Semi Anechoic Chamber : No.1/No.2

COMPANY	Sharp corporation	REPORT NO	25HE0087-HO
EQUIPMENT	Wireless PDA	REGULATION	FCC Part24 Sectiom 24.232(b)
MODEL	PV200	TEST METHOD	FCC Part2 Sectiom 2.1046
S/N	5	TEST DISTANCE	3m
POWER	DC3.9V(AC120V/60Hz)	DATE	February 27, 2006 / April 18, 2006
MODE	Tx PCL=0(MAX Pow)	TEMPERATURE	26℃ / 27℃
POSITION	H:Z-axis / V:Y-axis	HUMIDITY	30% / 38%
		CALIBRATION	OK
		ENGINEER	Yutaka Yoshida

<PCS1900> (No.1 Semi Anechoic Chamber)

No.	FREQ	SG READING		CABLE	ANT	ATTEN	RESULT		LIMITS	MARGIN	
		HOR	VER	LOSS	GAIN		HOR	VER	(EIRP)	HOR	VER
	[MHz]	[dBm]		[dB]	[dBi]	[dB]	[dBm]		[dBm]	[dB]	
1	1850.20	15.8	14.1	2.4	9.4	0.0	22.8	21.1	33.0	10.2	11.9
2	1880.00	16.3	14.1	2.4	9.6	0.0	23.5	21.3	33.0	9.5	11.7
3	1909.80	15.9	13.2	2.5	9.7	0.0	23.1	20.4	33.0	9.9	12.6

<PCS1900+EGPRS> (No.2 Semi Anechoic Chamber)

No.	FREQ	SG READING		CABLE	ANT	ATTEN	RESULT		LIMITS	MARGIN	
		HOR	VER	LOSS	GAIN		HOR	VER	(EIRP)	HOR	VER
	[MHz]	[dBm]		[dB]	[dBi]	[dB]	[dBm]		[dBm]	[dB]	
1	1850.20	22.9	23.1	2.4	9.4	0.0	29.9	30.1	33.0	3.1	2.9
2	1880.00	23.6	22.1	2.4	9.6	0.0	30.8	29.3	33.0	2.2	3.7
3	1909.80	23.5	19.0	2.5	9.7	0.0	30.7	26.2	33.0	2.3	6.8

CALCULATION:READING(SG)-LOSS(CABLE)+ANT.GAIN-ATTEN
Rx-ANTENNA : Biconical Antena(30-300MHz), Logperriodic Antenna(300-1000MHz), Horn Antenna(1-19GHz)
Tx-ANTENNA : Shorted Dipole Antenna(30-120MHz), Dipole Antenna(120-1000MHz), Horn Anrenna(1-19GHz)
The noise was measured at each position of all three axes X, Y and Z to compare the level, and the maximum noise.
With the result above, the effective radiated power was calculated on the basis of the reference value
- for the calibration data on the substitution measurement.

S/A PK (RBW: 3MHz , VBW:3MHz)

Emission Bandwidth

UL Apex Co., Ltd.
Head Office EMC Lab. No.7 Shielded Room

COMPANY	SHARP CORPORATION	REPORT NO	25HE0087-HO
EQUIPMENT	Wireless PDA	REGULATION	FCC Part24 Section 24.238(b)
MODEL	PV200	TEST METHOD	FCC Part2 Section 2.1049
S/N	5	TEST DISTANCE	-
POWER	DC3.9V (AC120V/60Hz)	DATE	March 24, 2006 / April 17, 2006
MODE	Tx PCL=0(MAX Pow)	TEMPERATURE	24℃ / 22℃
		HUMIDITY	34% / 36%
		ENGINEER	Yutaka Yoshida

<PCS1900>

CH	FREQ [MHz]	Bandwidth [kHz]	Limit [kHz]
Low	1850.2	337.0	-
Mid	1880.0	337.0	-
High	1909.8	337.5	-

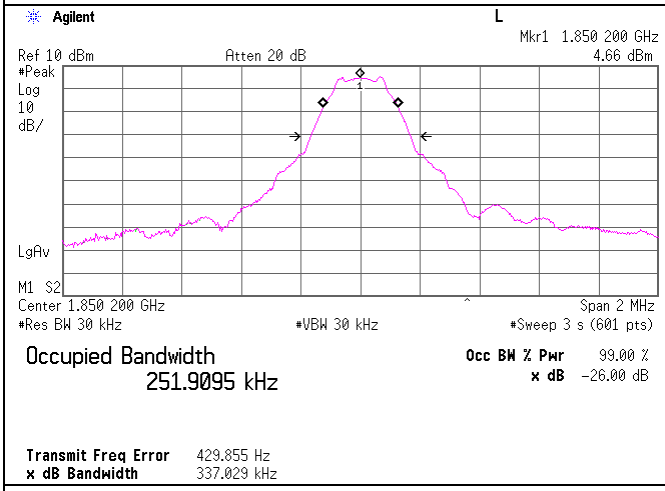
<PCS1900+EGPRS>

CH	FREQ [MHz]	Bandwidth [kHz]	Limit [kHz]
Low	1850.2	338.0	-
Mid	1880.0	337.0	-
High	1909.8	338.2	-

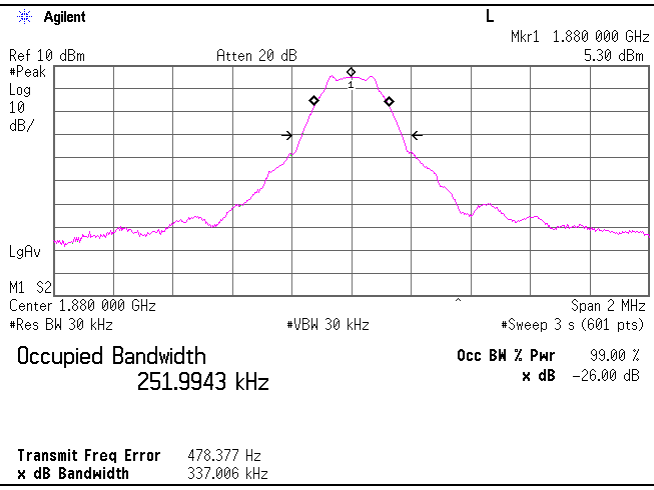
Emission Bandwidth

<PCS1900>

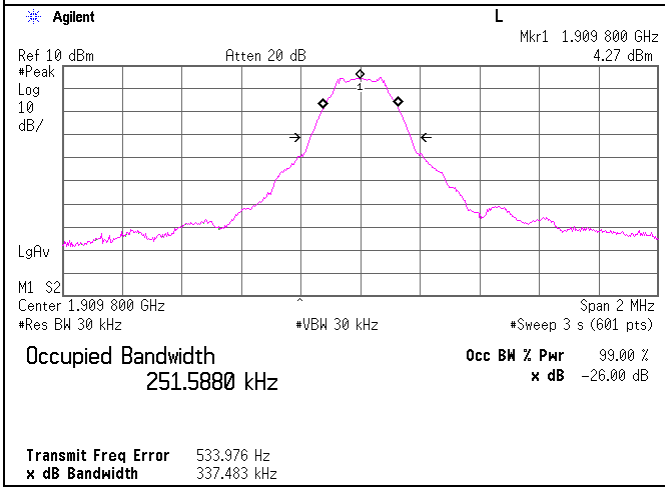
Tx:1850.2MHz



Tx:1880.0MHz



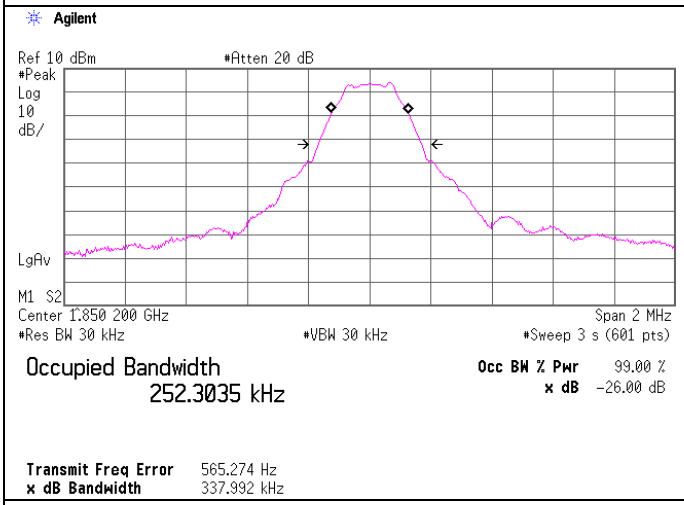
Tx:1909.8MHz



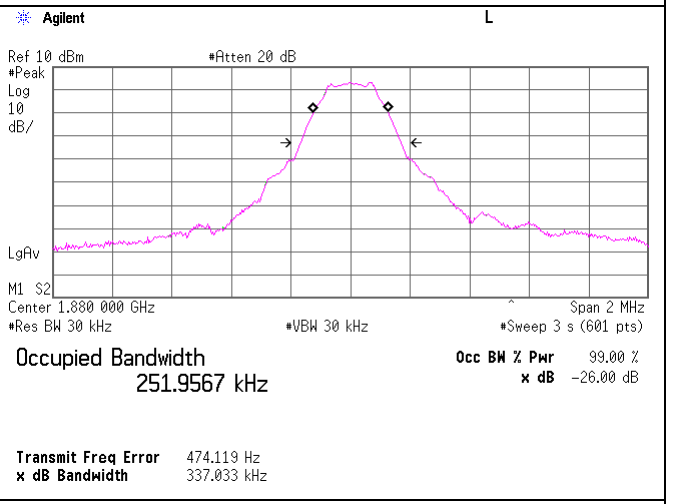
Emission Bandwidth

<PCS1900+EGPRS>

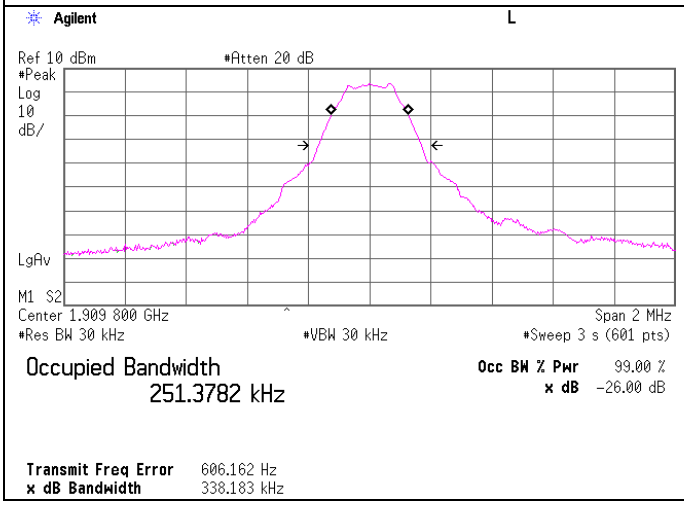
Tx:1850.2MHz



Tx:1880.0MHz



Tx:1909.8MHz



99%Occupied Bandwidth

UL Apex Co., Ltd.
Head Office EMC Lab. No.7 Shielded Room

COMPANY	SHARP CORPORATION	REPORT NO	25HE0087-HO
EQUIPMENT	Wireless PDA	REGULATION	FCC Part24 Section 24.238(b)
MODEL	PV200	TEST METHOD	FCC Part2 Section 2.1049
S/N	5	TEST DISTANCE	-
POWER	DC3.9V (AC120V/60Hz)	DATE	March 24, 2006/April 17, 2006
MODE	Tx PCL=0(MAX Pow)	TEMPERATURE	24℃/22℃
		HUMIDITY	34%/36%
		ENGINEER	Yutaka Yoshida

<PCS1900>

CH	FREQ [MHz]	Bandwidth [kHz]	Limit [kHz]
Low	1850.2	251.9	-
Mid	1880.0	252.0	-
High	1908.8	251.6	-

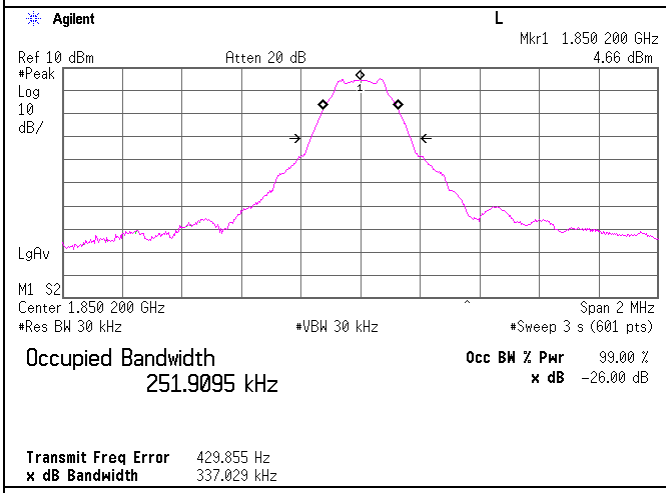
<PCS1900+EGPRS>

CH	FREQ [MHz]	Bandwidth [kHz]	Limit [kHz]
Low	1850.2	252.3	-
Mid	1880.0	252.0	-
High	1908.8	251.4	-

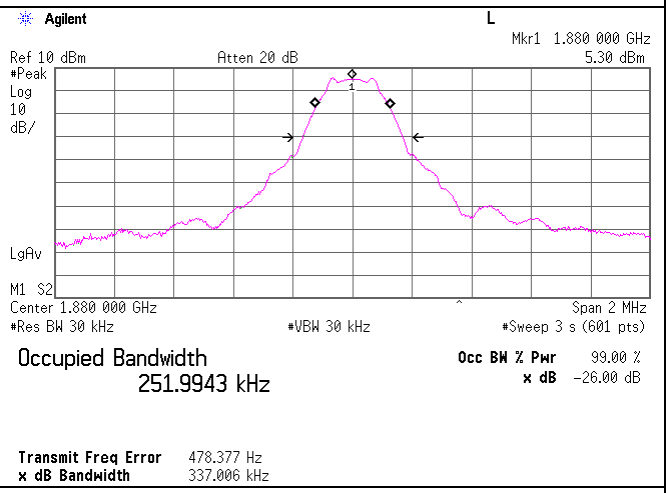
99%Occupied Bandwidth

<PCS1900>

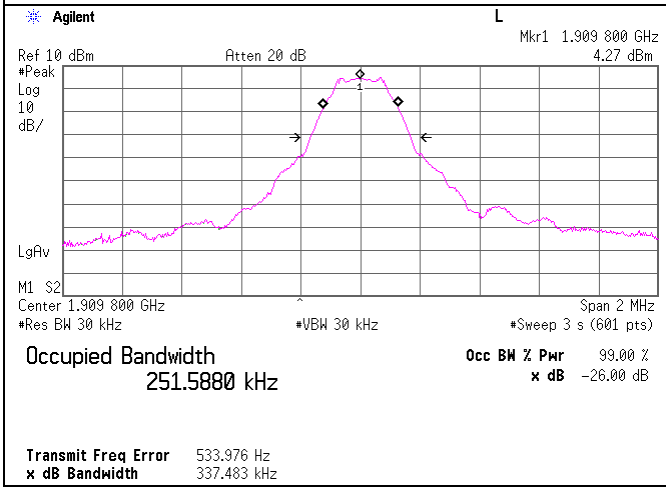
Tx:1850.2MHz



Tx:1880.0MHz



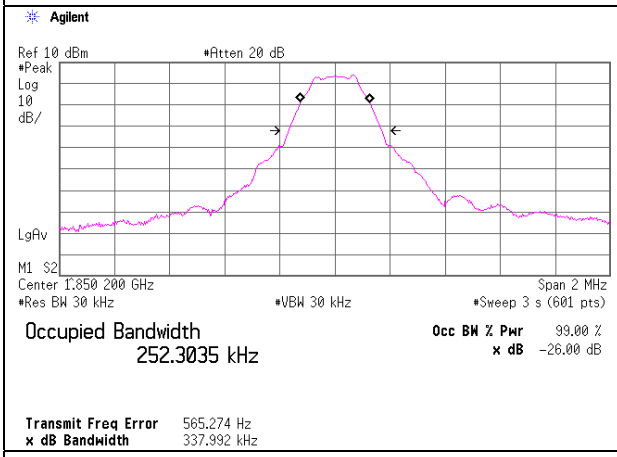
Tx:1909.8MHz



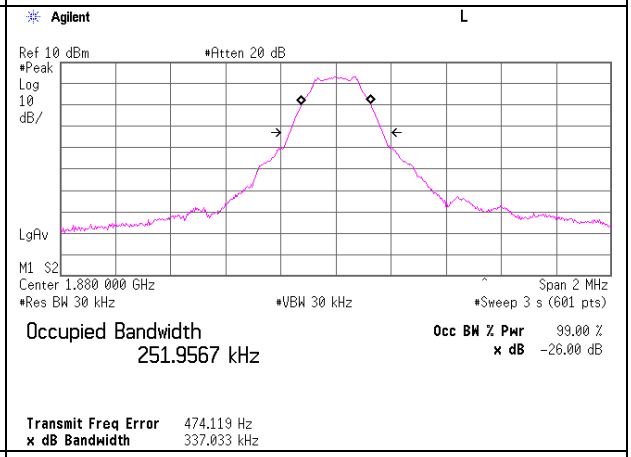
99%Occupied Bandwidth

<PCS1900+EGPRS>

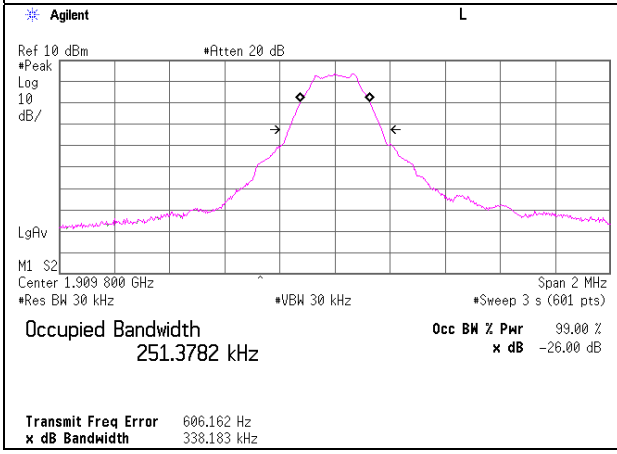
Tx:1850.2MHz



Tx:1880.0MHz



Tx:1909.8MHz



Band Edge(Conducted)

UL Apex Co., Ltd.
Head Office EMC Lab. No.7 Shielded Room

COMPANY	SHARP CORPORATION	REPORT NO	25HE0087-HO
EQUIPMENT	Wireless PDA	REGULATION	FCC Part24 Section 24.238(b)
MODEL	PV200	TEST METHOD	FCC Part2 Section 2.1049
S/N	5	TEST DISTANCE	-
POWER	DC3.9V (AC120V/60Hz)	DATE	March 24, 2006/April 17, 2006
MODE	Tx PCL=0(MAX Pow)	TEMPERATURE	24℃/22℃
		HUMIDITY	34%/36%
		ENGINEER	Yutaka Yoshida

VIDEO AV 30 times

<PCS1900>

Frequency [MHz]	Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Limit [dBm]
1849.99	-39.4	20.0	4.0	-15.4	-13.0
1910.02	-38.4	20.0	4.0	-14.4	-13.0

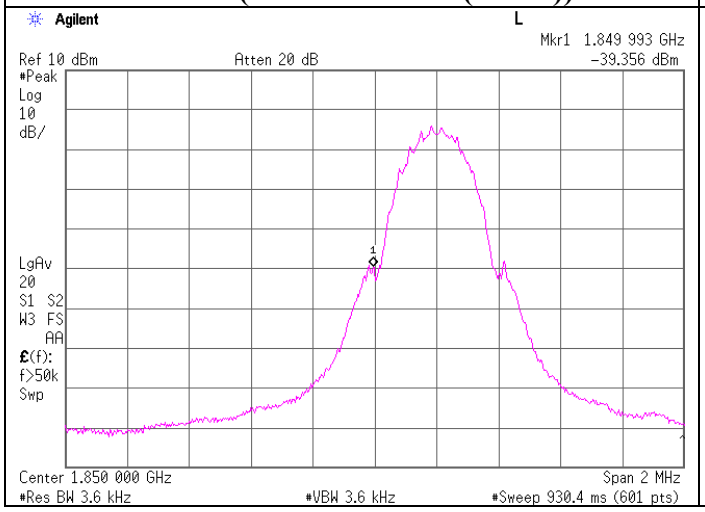
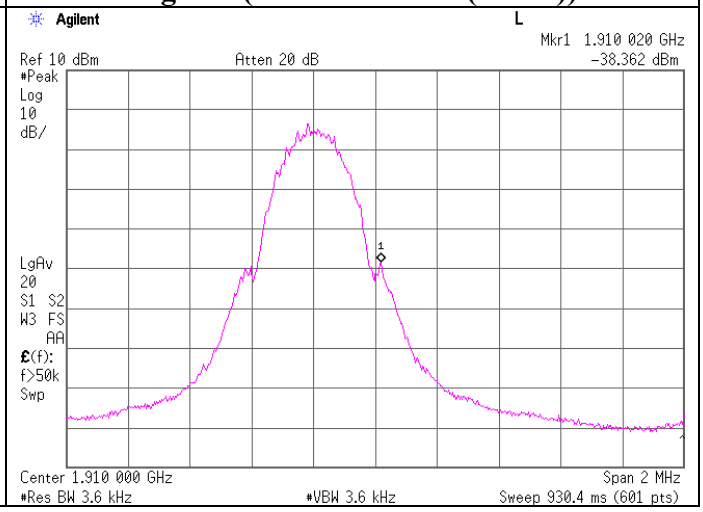
<PCS1900+EGPRS>

Frequency [MHz]	Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Limit [dBm]
1849.98	-38.9	20.0	4.0	-14.9	-13.0
1910.02	-38.9	20.0	4.0	-14.9	-13.0

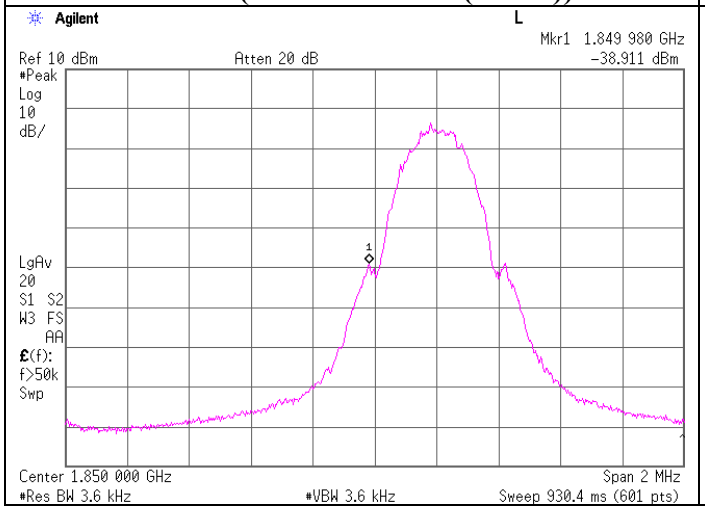
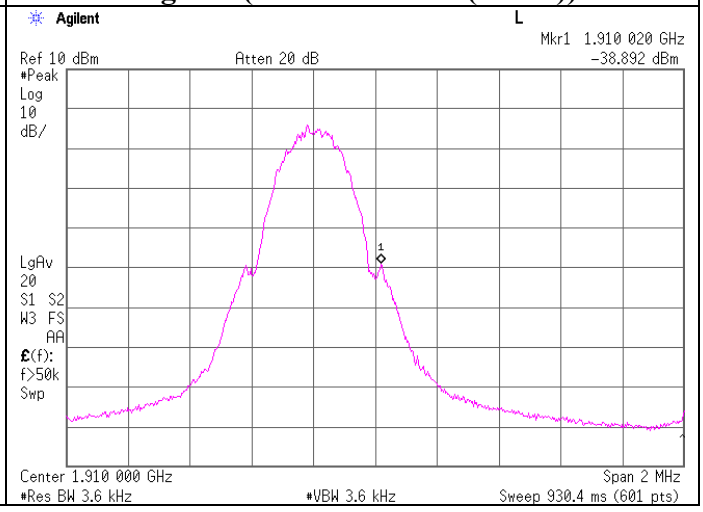
Sample Calculation : Result = Reading + Atten. + Cable Loss

Band Edge(Conducted)

<PCS1900>

Low ch (Tx:1850.2MHz (512ch))	High ch (Tx:1909.8MHz (810ch))
	

<PCS1900+EGPRS>

Low ch (Tx:1850.2MHz (512ch))	High ch (Tx:1909.8MHz (810ch))
	

Band Edge (Radiated)

UL Apex Co., Ltd.
Head Office EMC Lab. Semi Anechoic Chamber : No.1 / No.2

COMPANY	Sharp corporation	REPORT NO	25HE0087-HO
EQUIPMENT	Wireless PDA	REGULATION	FCC Part24 Section 24.238(b)
MODEL	PV200	TEST METHOD	FCC Part2 Section 2.1049
S/N	5	TEST DISTANCE	3m
POWER	DC3.9V(AC120V/60Hz)	DATE	February 27, 2006 / April 18, 2006
MODE	Tx PCL=0(MAX Pow)	TEMPERATURE	26℃ / 27℃
		HUMIDITY	30% / 38%
POSITION	H:X-axis / V:Y-axis	CALIBRATION	OK
		ENGINEER	Yutaka Yoshida

<PCS1900> (No.1 Semi Anechoic Chamber)

No.	FREQ	SG READING HOR [dBm]	SG READING VER [dBm]	CABLE LOSS [dB]	ANT GAIN [dBi]	ATTEN [dB]	RESULT HOR [dBm]	RESULT VER [dBm]	LIMITS (EIRP) [dBm]	MARGIN HOR [dB]	MARGIN VER [dB]
1	1850.00	-26.9	-29.2	2.4	9.4	0.0	-19.9	-22.2	-13.0	6.9	9.2
2	1910.00	-28.3	-30.3	2.5	9.7	0.0	-21.1	-23.1	-13.0	8.1	10.1

<PCS1900+EGPRS> (No.2 Semi Anechoic Chamber)

No.	FREQ	SG READING HOR [dBm]	SG READING VER [dBm]	CABLE LOSS [dB]	ANT GAIN [dBi]	ATTEN [dB]	RESULT HOR [dBm]	RESULT VER [dBm]	LIMITS (EIRP) [dBm]	MARGIN HOR [dB]	MARGIN VER [dB]
1	1850.00	-20.7	-20.5	2.4	9.4	0.0	-13.7	-13.5	-13.0	0.7	0.5
2	1910.00	-20.6	-24.8	2.5	9.7	0.0	-13.4	-17.6	-13.0	0.4	4.6

Result calculation:SG READING-CABLE LOSS+ANT.GAIN-ATTEN
Rx-ANTENNA : Biconical Antena(30-300MHz), Logperriodic Antenna(300-1000MHz), Horn Antenna(1-19GHz)
Tx-ANTENNA : Shorted Dipole Antenna(30-120MHz), Dipole Antenna(120-1000MHz), Horn Anrenna(1-19GHz)
The noise was measured at each position of all three axes X, Y and Z to compare the level, and the maximum noise.

S/A PK (RBW: 3.6kHz , VBW:3.6kHz)

Spurious Emission (Conducted)

UL Apex Co., Ltd.
Head Office EMC Lab. No.7 Shielded Room

COMPANY	SHARP CORPORATION	REPORT NO	25HE0087-HO
EQUIPMENT	Wireless PDA	REGULATION	Fcc Part 24 Section 24.238(a)
MODEL	PV200	TEST METHOD	Fcc Part 2 Section 2.1051
S/N	5	TEST DISTANCE	-
POWER	DC3.9V (AC120V/60Hz)	DATE	March 24, 2006
MODE	Tx PCL=0(MAX Pow)	TEMPERATURE	24℃
		HUMIDITY	34%
		ENGINEER	Yutaka Yoshida

Limit Line

<PCS1900>

Limit [dBm]	Atten. [dB]	Cable Loss [dB]	Limit Line [dBm]
-13.0	20.0	1.9	-34.9

<PCS1900+EGPRS>

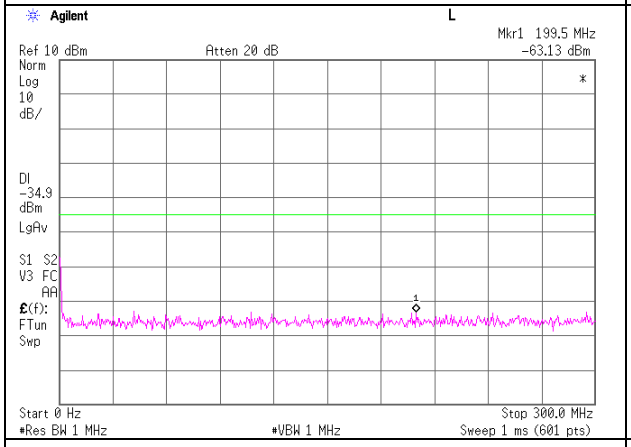
Limit [dBm]	Atten. [dB]	Cable Loss [dB]	Limit Line [dBm]
-13.0	20.0	4.0	-37.0

Sample Calculation : Limit Line = Limit - Atten. - Cable Loss

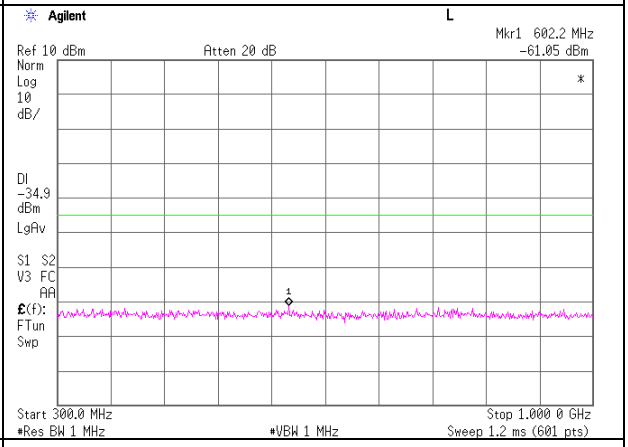
Result OK

Spurious Emission (Conducted)
PCS1900 / Tx:1850.2MHz

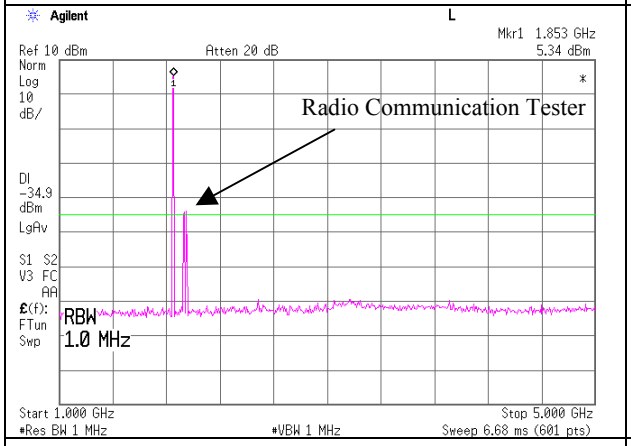
0Hz-300MHz



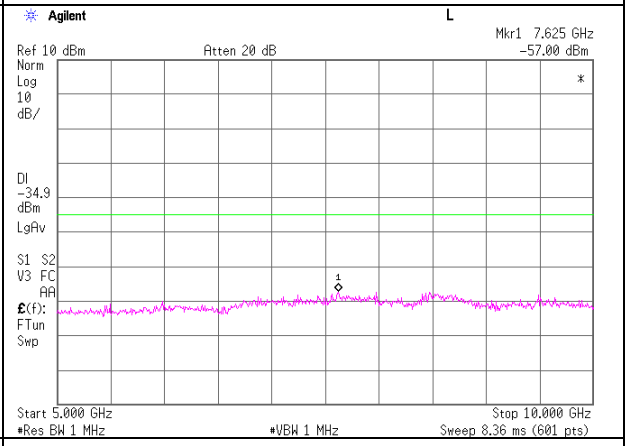
300MHz-1GHz



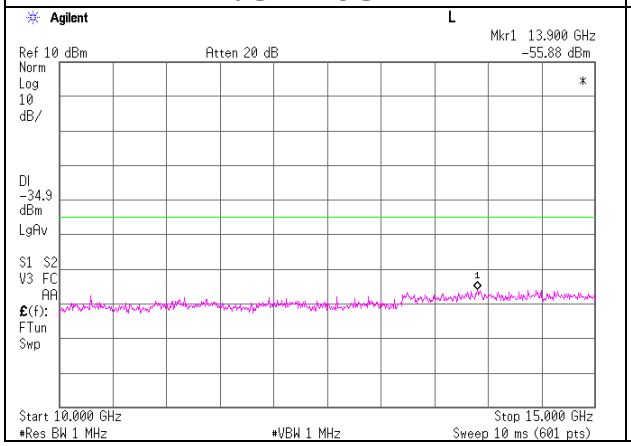
1GHz-5GHz



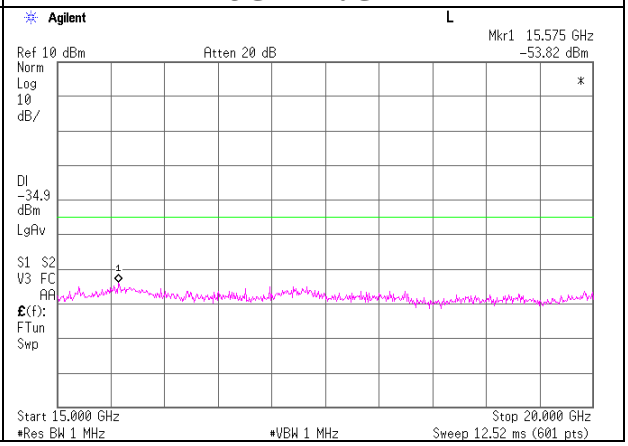
5GHz-10GHz



10GHz-15GHz

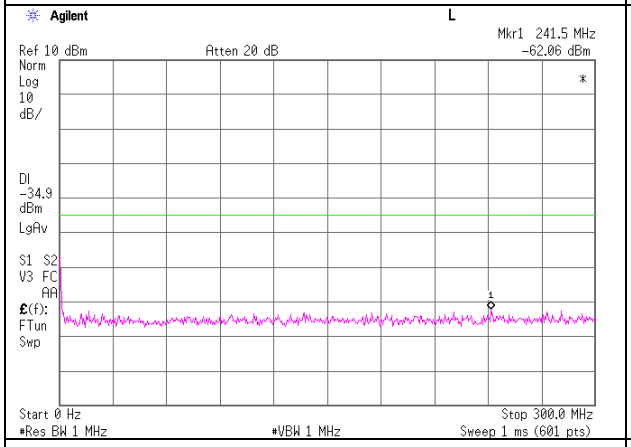


15GHz-20GHz

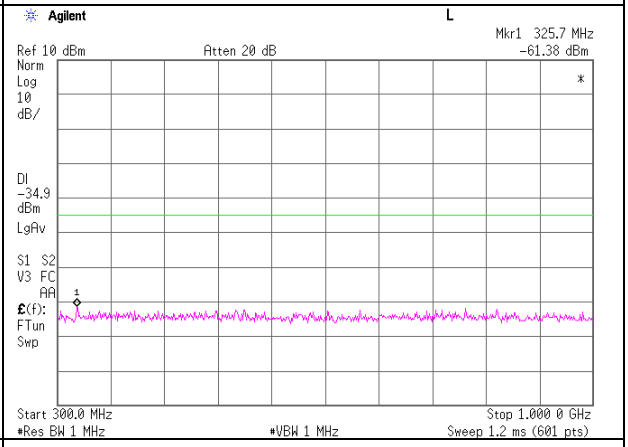


Spurious Emission (Conducted)
PCS1900 / Tx:1880.0MHz

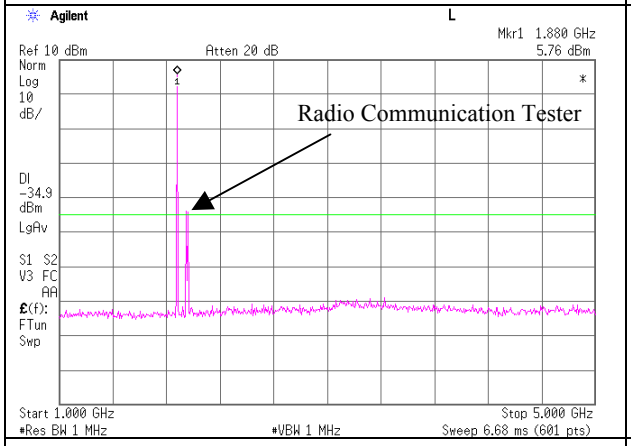
0Hz-300MHz



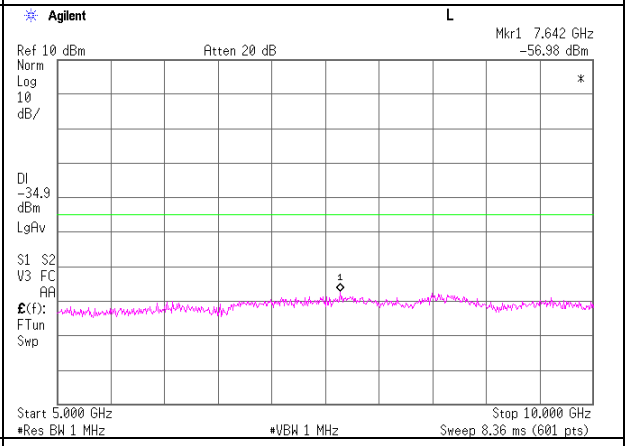
300MHz-1GHz



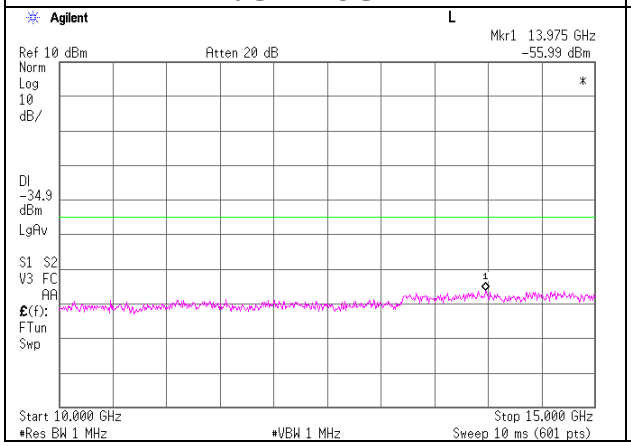
1GHz-5GHz



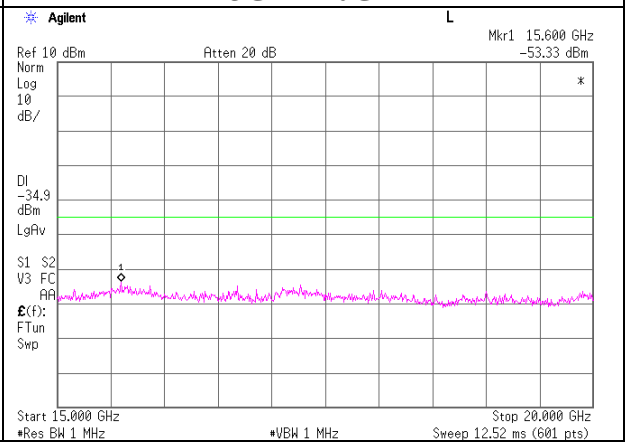
5GHz-10GHz



10GHz-15GHz

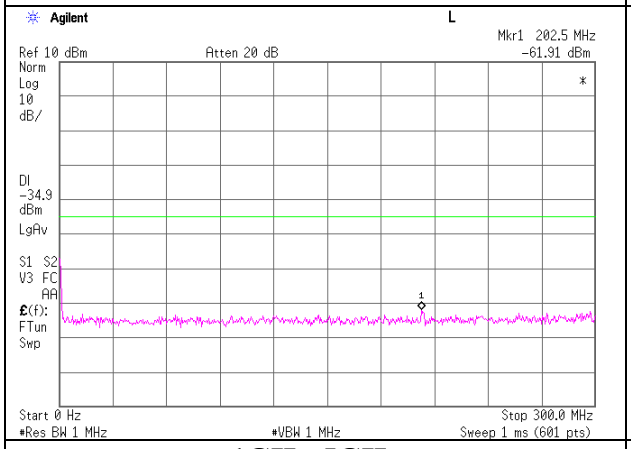


15GHz-20GHz

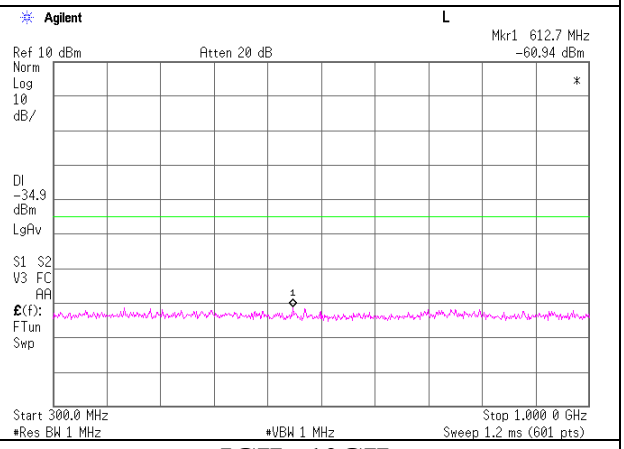


Spurious Emission (Conducted)
PCS1900 / Tx:1909.8MHz

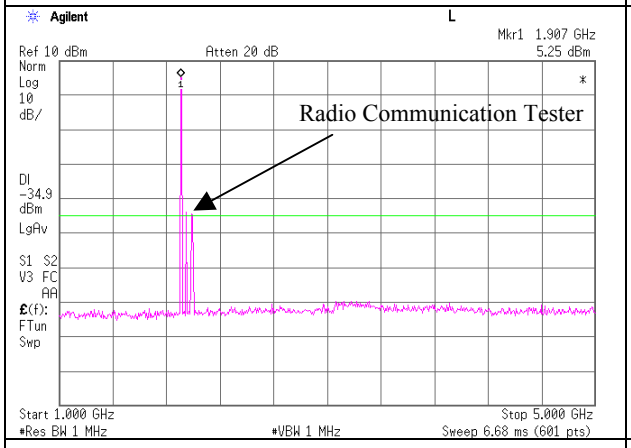
0Hz-300MHz



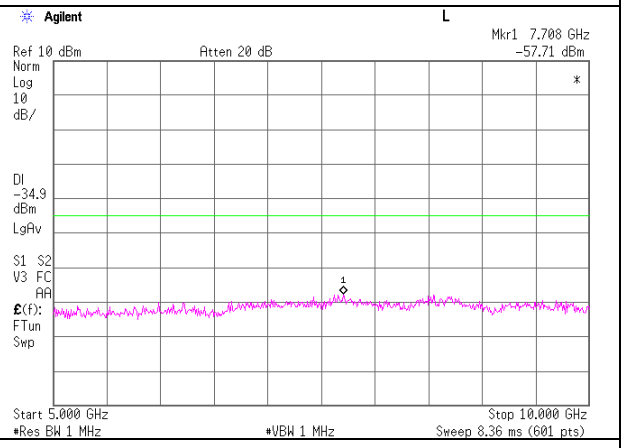
300MHz-1GHz



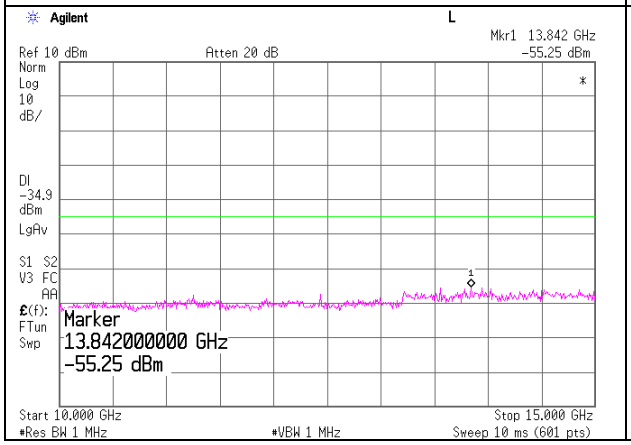
1GHz-5GHz



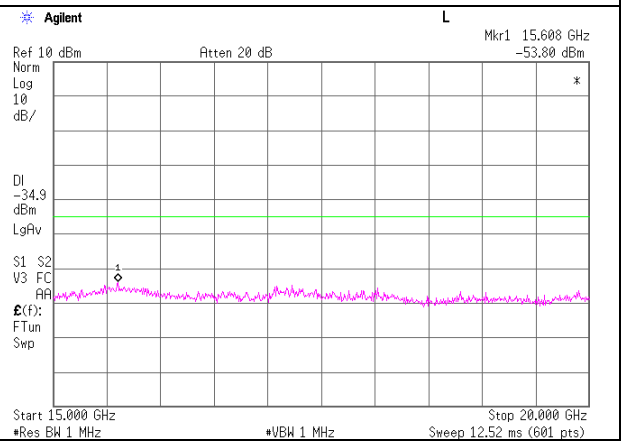
5GHz-10GHz



10GHz-15GHz

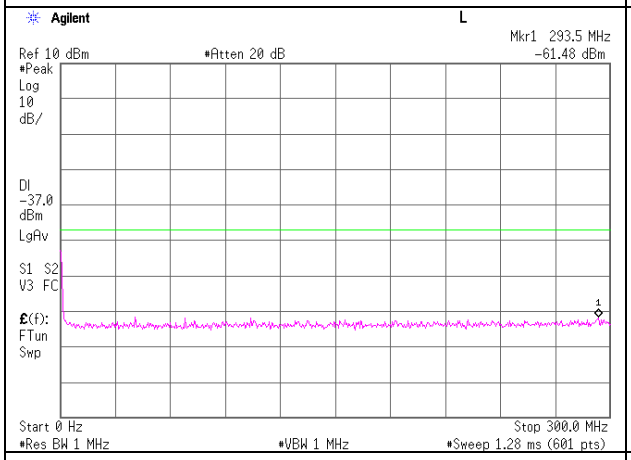


15GHz-20GHz

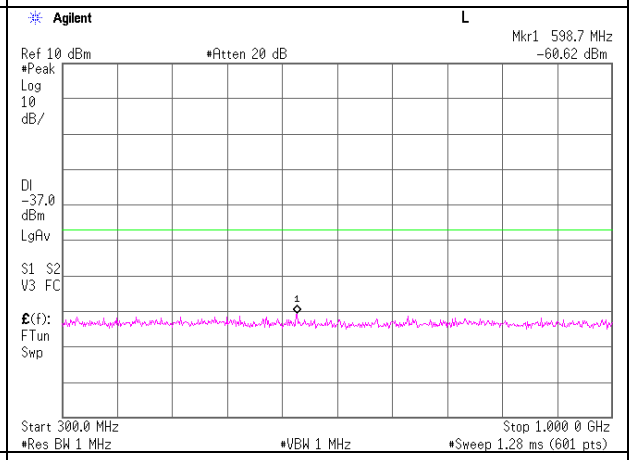


Spurious Emission (Conducted)
PCS1900+EGPRS / Tx:1850.2MHz

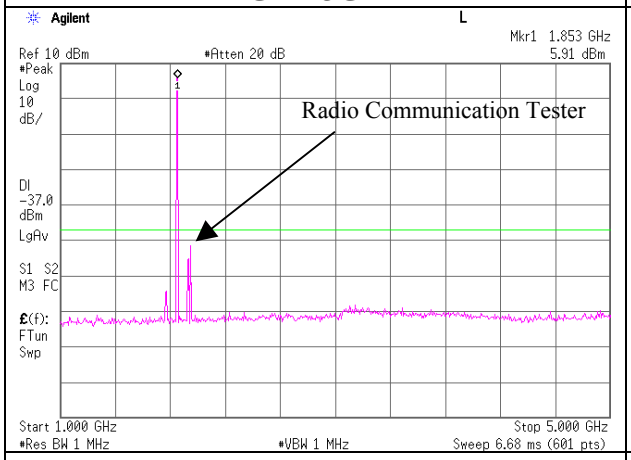
0Hz-300MHz



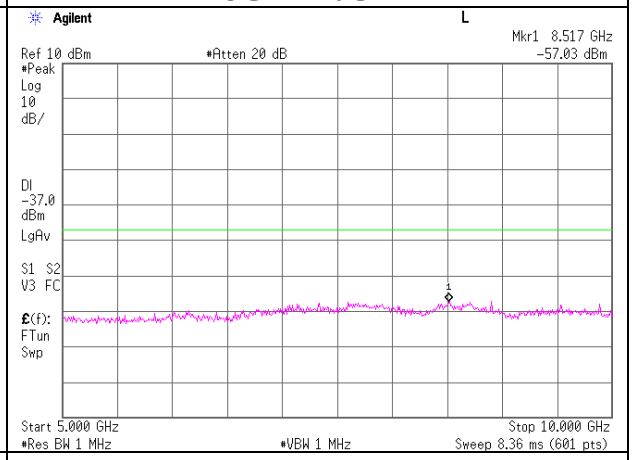
300MHz-1GHz



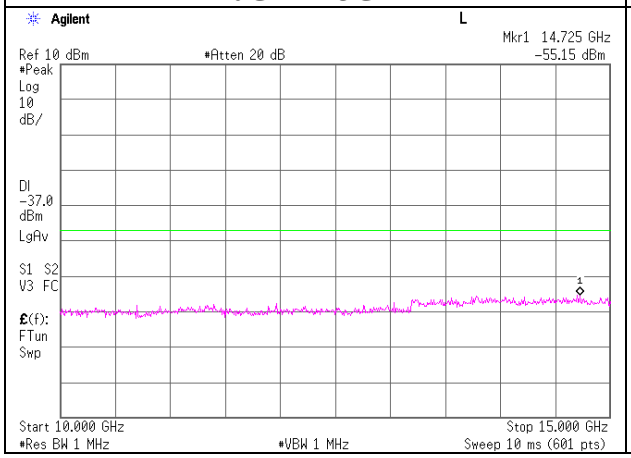
1GHz-5GHz



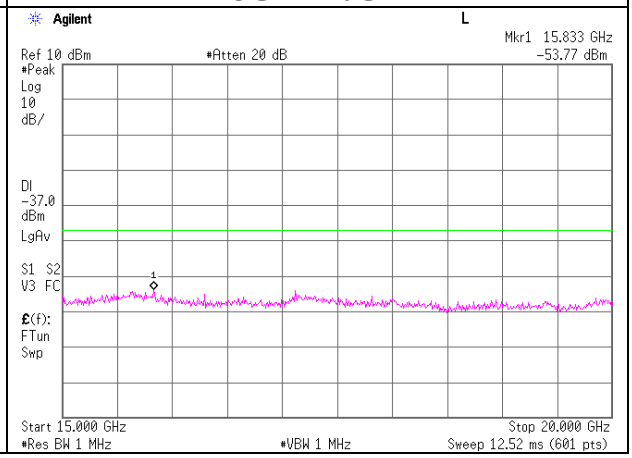
5GHz-10GHz



10GHz-15GHz

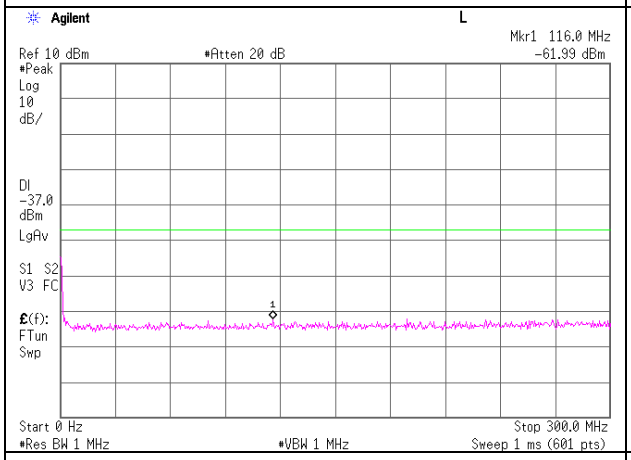


15GHz-20GHz

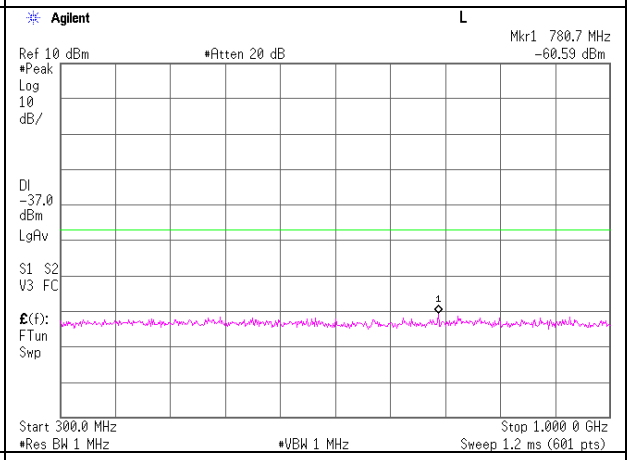


Spurious Emission (Conducted)
PCS1900+EGPRS / Tx:1880.0MHz

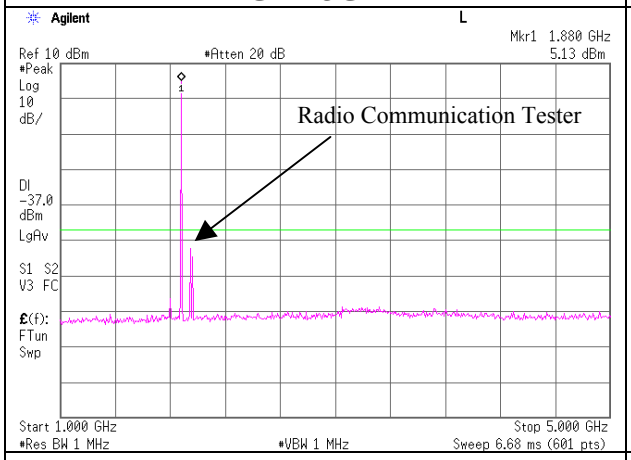
0Hz-300MHz



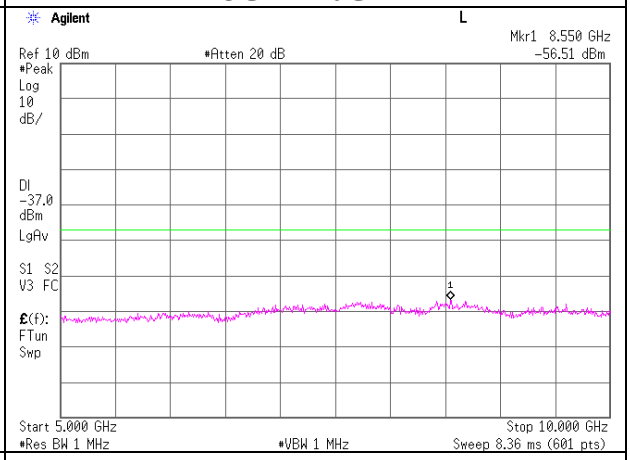
300MHz-1GHz



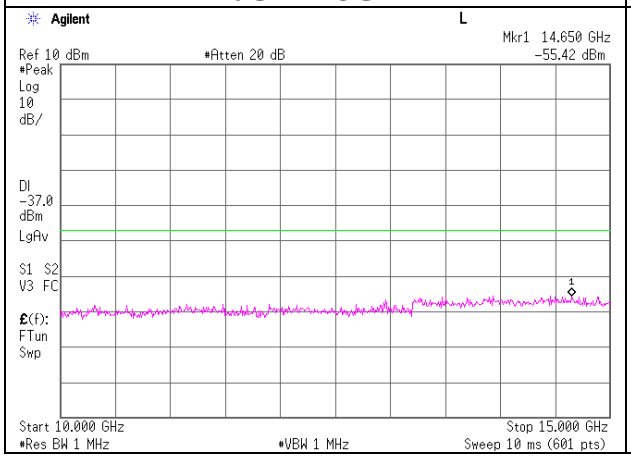
1GHz-5GHz



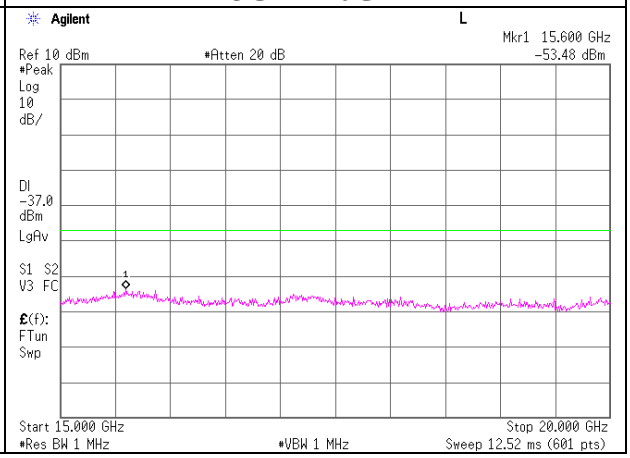
5GHz-10GHz



10GHz-15GHz

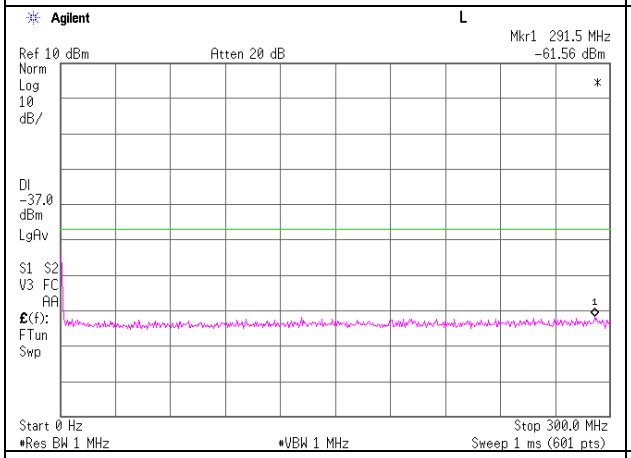


15GHz-20GHz

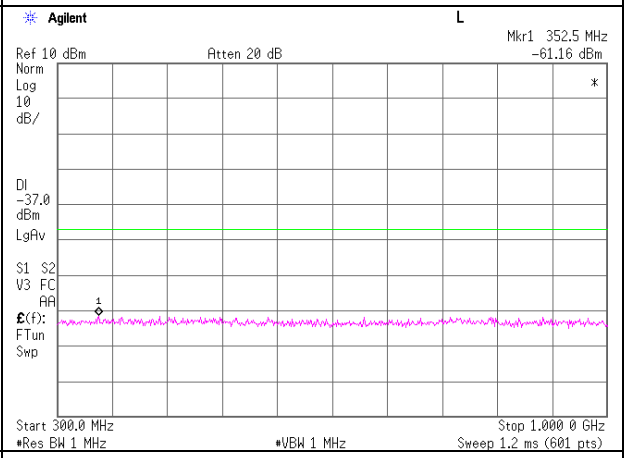


Spurious Emission (Conducted)
PCS1900+EGPRS / Tx:1909.8MHz

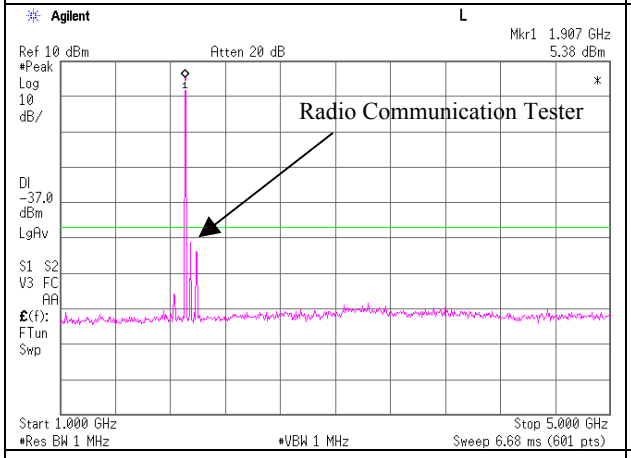
0Hz-300MHz



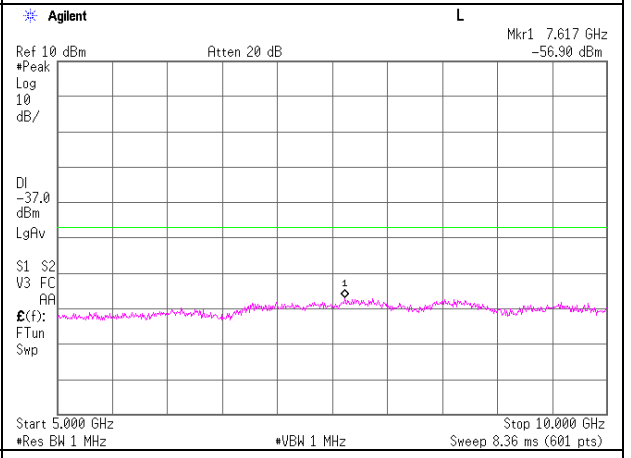
300MHz-1GHz



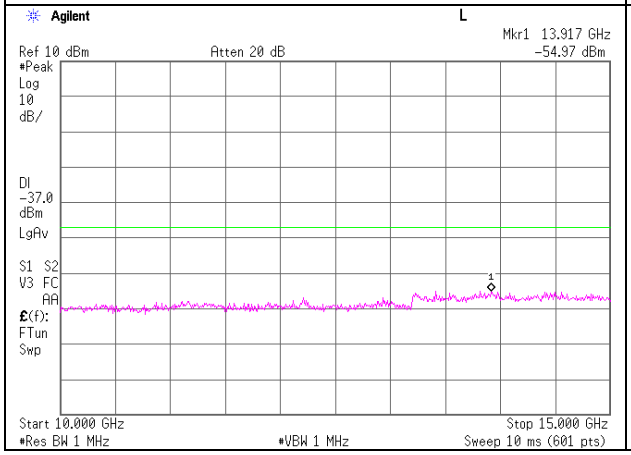
1GHz-5GHz



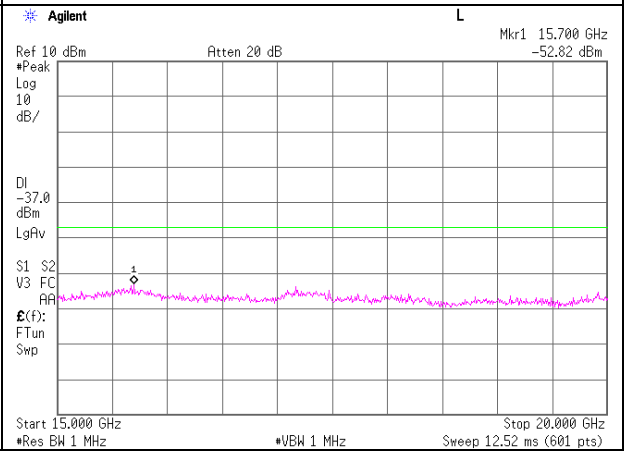
5GHz-10GHz



10GHz-15GHz



15GHz-20GHz



Spurious Radiation

UL Apex Co., Ltd.
Head Office EMC Lab. Semi Anechoic Chamber : No.1

COMPANY	Sharp corporation	REPORT NO	25HE0087-HO
EQUIPMENT	Wireless PDA	REGULATION	FCC Part24 Section 24.232(b)
MODEL	PV200	TEST METHOD	FCC Part2 Section 2.1046
S/N	5	TEST DISTANCE	3m
POWER	DC3.9V(AC120V/60Hz)	DATE	February 27, 2006
MODE	Tx 1850.2MHz (512ch)/PCL=0(MAX Pow)	TEMPERATURE	26℃
POSITION	H:Z-axis / V:Y-axis	HUMIDITY	30%
		CALIBRATION	OK
		ENGINEER	Yutaka Yoshida

<PCS1900>

No.	FREQ	SG READING		CABLE	ANT	ATTEN	RESULT		LIMITS	MARGIN	
		HOR	VER	LOSS	GAIN		HOR	VER	(EIRP)	HOR	VER
	[MHz]	[dBm]		[dB]	[dBi]	[dB]	[dBm]		[dBm]	[dB]	
1	42.86	-22.7	-19.1	0.1	-22.50	9.9	-55.1	-51.5	-13.0	42.1	38.5
2	79.13	-46.9	-32.4	0.1	-7.60	9.9	-64.4	-49.9	-13.0	51.4	36.9
3	136.05	-39.6	-36.3	0.1	2.15	9.9	-47.4	-44.1	-13.0	34.4	31.1
4	173.65	-44.8	-49.7	0.1	2.15	9.9	-52.6	-57.5	-13.0	39.6	44.5
5	322.45	-47.6	-54.2	0.1	2.15	9.9	-55.4	-62.0	-13.0	42.4	49.0
6	365.93	-48.1	-53.0	0.1	2.15	9.9	-55.9	-60.8	-13.0	42.9	47.8
7	3700.00	-54.0	-58.5	3.5	12.00	0.0	-45.5	-50.0	-13.0	32.5	37.0
8	5550.60	-52.9	-53.9	4.5	13.10	0.0	-44.3	-45.3	-13.0	31.3	32.3
9	7400.80	-53.8	-51.2	5.5	12.10	0.0	-47.2	-44.6	-13.0	34.2	31.6
10	9251.00	-51.3	-51.9	6.4	11.80	0.0	-45.9	-46.5	-13.0	32.9	33.5
11	11101.20	-45.3	-52.6	7.1	11.10	0.0	-41.3	-48.6	-13.0	28.3	35.6
12	12951.40	-43.5	-48.4	7.1	13.50	0.0	-37.1	-42.0	-13.0	24.1	29.0
13	14801.60	-52.7	-55.8	8.1	12.90	0.0	-47.9	-51.0	-13.0	34.9	38.0
14	16651.80	-55.7	-54.7	8.4	15.20	0.0	-48.9	-47.9	-13.0	35.9	34.9
15	18502.00	-57.1	-58.1	9.8	15.30	0.0	-51.6	-52.6	-13.0	38.6	39.6

CALCULATION:READING(SG)-LOSS(CABLE)+ANT.GAIN-ATTEN
Rx-ANTENNA : Biconical Antenna(30-300MHz), Logperriodic Antenna(300-1000MHz), Horn Antenna(1-19GHz)
Tx-ANTENNA : Shorted Dipole Antenna(30-120MHz), Dipole Antenna(120-1000MHz), Horn Antenna(1-19GHz)
All other emissions were at least 20dB below the specification limit.
*The noise level was too low to detect.
The noise was measured at each position of all three axes X, Y and Z to compare the level, and the maximum noise.

S/A PK (RBW: 1MHz , VBW:1MHz)

Spurious Radiation

UL Apex Co., Ltd.
Head Office EMC Lab. Semi Anechoic Chamber : No.1

COMPANY	Sharp corporation	REPORT NO	25HE0087-HO
EQUIPMENT	Wireless PDA	REGULATION	FCC Part24 Section 24.232(b)
MODEL	PV200	TEST METHOD	FCC Part2 Section 2.1046
S/N	5	TEST DISTANCE	3m
POWER	DC3.9V(AC120V/60Hz)	DATE	February 27, 2006
MODE	Tx 1880.0MHz (661ch)/PCL=0(MAX Pow)	TEMPERATURE	26℃
POSITION	H:Z-axis / V:Y-axis	HUMIDITY	30%
		CALIBRATION	OK
		ENGINEER	Yutaka Yoshida

<PCS1900>

No.	FREQ	SG READING		CABLE	ANT	ATTEN	RESULT		LIMITS	MARGIN	
		HOR	VER	LOSS	GAIN		HOR	VER	(EIRP)	HOR	VER
	[MHz]	[dBm]		[dB]	[dBi]	[dB]	[dBm]		[dBm]	[dB]	
1	41.36	-23.4	-14.3	0.1	-22.40	9.9	-55.7	-46.6	-13.0	42.7	33.6
2	81.40	-48.8	-30.5	0.1	-7.50	9.9	-66.2	-47.9	-13.0	53.2	34.9
3	136.05	-38.0	-36.7	0.1	2.15	9.9	-45.8	-44.5	-13.0	32.8	31.5
4	171.22	-45.1	-47.2	0.1	2.15	9.9	-52.9	-55.0	-13.0	39.9	42.0
5	321.04	-47.9	-53.5	0.1	2.15	9.9	-55.7	-61.3	-13.0	42.7	48.3
6	422.45	-50.8	-51.7	0.1	2.15	9.9	-58.6	-59.5	-13.0	45.6	46.5
7	3760.00	-51.2	-54.4	3.7	12.10	0.0	-42.8	-46.0	-13.0	29.8	33.0
8	5640.00	-51.1	-51.5	5.1	13.10	0.0	-43.1	-43.5	-13.0	30.1	30.5
9	7520.00	-50.9	-45.7	5.9	11.60	0.0	-45.2	-40.0	-13.0	32.2	27.0
10	9400.00	-50.6	-51.2	6.8	11.80	0.0	-45.6	-46.2	-13.0	32.6	33.2
11	11280.00	-52.4	-57.4	8.6	13.40	0.0	-47.6	-52.6	-13.0	34.6	39.6
12	13160.00	-50.4	-54.5	7.5	14.20	0.0	-43.7	-47.8	-13.0	30.7	34.8
13	15040.00	-57.4	-57.4	8.3	13.10	0.0	-52.6	-52.6	-13.0	39.6	39.6
14	16920.00	-53.7	-53.5	8.4	14.00	0.0	-48.1	-47.9	-13.0	35.1	34.9
15	18800.00	-57.3	-57.2	9.9	15.20	0.0	-52.0	-51.9	-13.0	39.0	38.9

CALCULATION:READING(SG)-LOSS(CABLE)+ANT.GAIN-ATTEN
Rx-ANTENNA : Biconical Antenna(30-300MHz), Logperriodic Antenna(300-1000MHz), Horn Antenna(1-19GHz)
Tx-ANTENNA : Shorted Dipole Antenna(30-120MHz), Dipole Antenna(120-1000MHz), Horn Antenna(1-19GHz)
All other emissions were at least 20dB below the specification limit.
*The noise level was too low to detect.
The noise was measured at each position of all three axes X, Y and Z to compare the level, and the maximum noise.

S/A PK (RBW: 1MHz , VBW:1MHz)

Spurious Radiation

UL Apex Co., Ltd.
Head Office EMC Lab. Semi Anechoic Chamber : No.1

COMPANY	Sharp corporation	REPORT NO	25HE0087-HO
EQUIPMENT	Wireless PDA	REGULATION	FCC Part24 Section 24.232(b)
MODEL	PV200	TEST METHOD	FCC Part2 Section 2.1046
S/N	5	TEST DISTANCE	3m
POWER	DC3.9V(AC120V/60Hz)	DATE	February 27, 2006
MODE	Tx 1909.8MHz (810ch)/PCL=0(MAX Pow)	TEMPERATURE	26℃
POSITION	H:Z-axis / V:Y-axis	HUMIDITY	30%
		CALIBRATION	OK
		ENGINEER	Yutaka Yoshida

<PCS1900>

No.	FREQ	SG READING		CABLE	ANT	ATTEN	RESULT		LIMITS	MARGIN	
		HOR	VER	LOSS	GAIN		HOR	VER	(EIRP)	HOR	VER
	[MHz]	[dBm]		[dB]	[dBi]	[dB]	[dBm]		[dBm]	[dB]	
1	43.53	-24.3	-14.6	0.1	-22.40	9.9	-56.6	-46.9	-13.0	43.6	33.9
2	80.32	-46.2	-31.5	0.1	-7.50	9.9	-63.6	-48.9	-13.0	50.6	35.9
3	134.97	-38.3	-37.0	0.1	2.15	9.9	-46.1	-44.8	-13.0	33.1	31.8
4	166.89	-54.9	-42.0	0.1	2.15	9.9	-62.7	-49.8	-13.0	49.7	36.8
5	234.53	-47.4	-51.1	0.1	2.15	9.9	-55.2	-58.9	-13.0	42.2	45.9
6	325.25	-46.4	-52.2	0.1	2.15	9.9	-54.2	-60.0	-13.0	41.2	47.0
7	3819.60	-51.9	-54.3	3.7	12.20	0.0	-43.4	-45.8	-13.0	30.4	32.8
8	5729.40	-53.8	-52.2	5.1	13.10	0.0	-45.8	-44.2	-13.0	32.8	31.2
9	7639.20	-46.3	-46.4	5.8	11.50	0.0	-40.6	-40.7	-13.0	27.6	27.7
10	9549.00	-51.3	-51.9	6.9	11.70	0.0	-46.5	-47.1	-13.0	33.5	34.1
11	11458.80	-48.0	-51.9	8.1	13.50	0.0	-42.6	-46.5	-13.0	29.6	33.5
12	13368.60	-49.2	-52.3	7.6	14.10	0.0	-42.7	-45.8	-13.0	29.7	32.8
13	15278.40	-56.7	-57.6	8.3	13.30	0.0	-51.7	-52.6	-13.0	38.7	39.6
14	17188.20	-49.9	-53.0	8.5	14.20	0.0	-44.2	-47.3	-13.0	31.2	34.3
15	19098.00	-57.7	-56.5	10.2	15.20	0.0	-52.7	-51.5	-13.0	39.7	38.5

CALCULATION:READING(SG)-LOSS(CABLE)+ANT.GAIN-ATTEN
Rx-ANTENNA : Biconical Antenna(30-300MHz), Logperriodic Antenna(300-1000MHz), Horn Antenna(1-19GHz)
Tx-ANTENNA : Shorted Dipole Antenna(30-120MHz), Dipole Antenna(120-1000MHz), Horn Antenna(1-19GHz)
All other emissions were at least 20dB below the specification limit.
*The noise level was too low to detect.
The noise was measured at each position of all three axes X, Y and Z to compare the level, and the maximum noise.

S/A PK (RBW: 1MHz , VBW:1MHz)

Spurious Radiation

UL Apex Co., Ltd.
Head Office EMC Lab. Semi Anechoic Chamber : No.2

COMPANY	Sharp corporation	REPORT NO	25HE0087-HO
EQUIPMENT	Wireless PDA	REGULATION	FCC Part24 Section 24.232(b)
MODEL	PV200	TEST METHOD	FCC Part2 Section 2.1046
S/N	5	TEST DISTANCE	3m
POWER	DC3.9V(AC120V/60Hz)	DATE	April 18, 2006
MODE	Tx 1850.2MHz (512ch)/PCL=0(MAX Pow)	TEMPERATURE	27℃
POSITION	H:Z-axis / V:Y-axis	HUMIDITY	38%
		CALIBRATION	OK
		ENGINEER	Yutaka Yoshida

<PCS1900+EGPRS>

No.	FREQ	SG READING		CABLE	ANT	ATTEN	RESULT		LIMITS	MARGIN	
		HOR	VER	LOSS	GAIN		HOR	VER	(EIRP)	HOR	VER
	[MHz]	[dBm]		[dB]	[dBi]	[dB]	[dBm]		[dBm]	[dB]	
1	42.12	-18.1	-23.6	0.4	-23.61	9.9	-51.9	-57.4	-13.0	38.9	44.4
2	72.48	-47.5	-45.3	0.5	-11.10	9.9	-68.9	-66.7	-13.0	55.9	53.7
3	106.95	-50.6	-51.1	0.6	-2.17	9.9	-63.2	-63.7	-13.0	50.2	50.7
4	3700.00	-52.2	-57.3	3.5	12.00	0.0	-43.7	-48.8	-13.0	30.7	35.8
5	5550.60	-49.3	-50.9	4.5	13.10	0.0	-40.7	-42.3	-13.0	27.7	29.3
6	7400.80	-54.9	-54.8	5.5	12.10	0.0	-48.3	-48.2	-13.0	35.3	35.2
7	9251.00	-52.2	-54.8	6.4	11.80	0.0	-46.8	-49.4	-13.0	33.8	36.4
8	11101.20	-52.9	-54.2	7.1	11.10	0.0	-48.9	-50.2	-13.0	35.9	37.2
9	12951.40	-45.8	-47.8	7.1	13.50	0.0	-39.4	-41.4	-13.0	26.4	28.4
10	14801.60	-54.9	-54.5	8.1	12.90	0.0	-50.1	-49.7	-13.0	37.1	36.7
11	16651.80	-51.5	-53.3	8.4	15.20	0.0	-44.7	-46.5	-13.0	31.7	33.5
12	18502.00	-54.0	-53.2	9.8	15.30	0.0	-48.5	-47.7	-13.0	35.5	34.7

CALCULATION:READING(SG)-LOSS(CABLE)+ANT.GAIN-ATTEN
Rx-ANTENNA : Biconical Antenna(30-300MHz), Logperriodic Antenna(300-1000MHz), Horn Antenna(1-19GHz)
Tx-ANTENNA : Shorted Dipole Antenna(30-120MHz), Dipole Antenna(120-1000MHz), Horn Antenna(1-19GHz)
All other emissions were at least 20dB below the specification limit.
*The noise level was too low to detect.
The noise was measured at each position of all three axes X, Y and Z to compare the level, and the maximum noise.

S/A PK (RBW: 1MHz , VBW:1MHz)

Spurious Radiation

UL Apex Co., Ltd.
Head Office EMC Lab. Semi Anechoic Chamber : No.2

COMPANY	Sharp corporation	REPORT NO	25HE0087-HO
EQUIPMENT	Wireless PDA	REGULATION	FCC Part24 Section 24.232(b)
MODEL	PV200	TEST METHOD	FCC Part2 Section 2.1046
S/N	5	TEST DISTANCE	3m
POWER	DC3.9V(AC120V/60Hz)	DATE	April 18, 2006
MODE	Tx 1880.0MHz (661ch)/PCL=0(MAX Pow)	TEMPERATURE	27℃
POSITION	H:Z-axis / V:Y-axis	HUMIDITY	38%
		CALIBRATION	OK
		ENGINEER	Yutaka Yoshida

<PCS1900+EGPRS>

No.	FREQ	SG READING		CABLE	ANT	ATTEN	RESULT		LIMITS	MARGIN	
		HOR	VER	LOSS	GAIN		HOR	VER	(EIRP)	HOR	VER
	[MHz]	[dBm]		[dB]	[dBi]	[dB]	[dBm]		[dBm]	[dB]	
1	42.15	-17.6	-22.5	0.4	-23.61	9.9	-51.4	-56.3	-13.0	38.4	43.3
2	59.25	-42.5	-40.2	0.4	-16.47	9.9	-69.2	-66.9	-13.0	56.2	53.9
3	115.49	-52.7	-53.3	0.6	-0.01	9.9	-63.2	-63.8	-13.0	50.2	50.8
4	3760.00	-55.9	-56.7	3.7	12.10	0.0	-47.5	-48.3	-13.0	34.5	35.3
5	5640.00	-47.5	-48.6	5.1	13.10	0.0	-39.5	-40.6	-13.0	26.5	27.6
6	7520.00	-50.4	-51.7	5.9	11.60	0.0	-44.7	-46.0	-13.0	31.7	33.0
7	9400.00	-50.8	-53.7	6.8	11.80	0.0	-45.8	-48.7	-13.0	32.8	35.7
8	11280.00	-55.5	-59.0	8.6	13.40	0.0	-50.7	-54.2	-13.0	37.7	41.2
9	13160.00	-51.7	-53.7	7.5	14.20	0.0	-45.0	-47.0	-13.0	32.0	34.0
10	15040.00	-58.3	-57.3	8.3	13.10	0.0	-53.5	-52.5	-13.0	40.5	39.5
11	16920.00	-49.7	-49.8	8.4	14.00	0.0	-44.1	-44.2	-13.0	31.1	31.2
12	18800.00	-54.2	-53.8	9.9	15.20	0.0	-48.9	-48.5	-13.0	35.9	35.5

CALCULATION:READING(SG)-LOSS(CABLE)+ANT.GAIN-ATTEN
Rx-ANTENNA : Biconical Antenna(30-300MHz), Logperriodic Antenna(300-1000MHz), Horn Antenna(1-19GHz)
Tx-ANTENNA : Shorted Dipole Antenna(30-120MHz), Dipole Antenna(120-1000MHz), Horn Antenna(1-19GHz)
All other emissions were at least 20dB below the specification limit.
*The noise level was too low to detect.
The noise was measured at each position of all three axes X, Y and Z to compare the level, and the maximum noise.

S/A PK (RBW: 1MHz , VBW:1MHz)

Spurious Radiation

UL Apex Co., Ltd.
Head Office EMC Lab. Semi Anechoic Chamber : No.2

COMPANY	Sharp corporation	REPORT NO	25HE0087-HO
EQUIPMENT	Wireless PDA	REGULATION	FCC Part24 Section 24.232(b)
MODEL	PV200	TEST METHOD	FCC Part2 Section 2.1046
S/N	5	TEST DISTANCE	3m
POWER	DC3.9V(AC120V/60Hz)	DATE	April 18, 2006
MODE	Tx 1909.8MHz (810ch)/PCL=0(MAX Pow)	TEMPERATURE	27℃
POSITION	H:Z-axis / V:Y-axis	HUMIDITY	38%
		CALIBRATION	OK
		ENGINEER	Yutaka Yoshida

<PCS1900+EGPRS>

No.	FREQ	SG READING		CABLE	ANT	ATTEN	RESULT		LIMITS	MARGIN	
		HOR	VER	LOSS	GAIN		HOR	VER	(EIRP)	HOR	VER
	[MHz]	[dBm]		[dB]	[dBi]	[dB]	[dBm]		[dBm]	[dB]	
1	39.98	-18.5	-26.7	0.3	-27.23	9.9	-55.9	-64.1	-13.0	42.9	51.1
2	70.51	-51.6	-44.7	0.5	-11.10	9.9	-73.0	-66.1	-13.0	60.0	53.1
3	119.93	-53.5	-52.1	0.6	-0.01	9.9	-64.0	-62.6	-13.0	51.0	49.6
7	3819.60	-56.0	-56.7	3.7	12.20	0.0	-47.5	-48.2	-13.0	34.5	35.2
8	5729.40	-47.6	-48.6	5.1	13.10	0.0	-39.6	-40.6	-13.0	26.6	27.6
9	7639.20	-50.6	-51.7	5.8	11.50	0.0	-44.9	-46.0	-13.0	31.9	33.0
10	9549.00	-50.5	-53.7	6.9	11.70	0.0	-45.7	-48.9	-13.0	32.7	35.9
11	11458.80	-58.2	-59.9	8.1	13.50	0.0	-52.8	-54.5	-13.0	39.8	41.5
12	13368.60	-48.4	-53.2	7.6	14.10	0.0	-41.9	-46.7	-13.0	28.9	33.7
13	15278.40	-58.1	-58.0	8.3	13.30	0.0	-53.1	-53.0	-13.0	40.1	40.0
14	17188.20	-50.8	-49.7	8.5	14.20	0.0	-45.1	-44.0	-13.0	32.1	31.0
15	19098.00	-52.6	-54.2	10.2	15.20	0.0	-47.6	-49.2	-13.0	34.6	36.2

CALCULATION:READING(SG)-LOSS(CABLE)+ANT.GAIN-ATTEN
Rx-ANTENNA : Biconical Antenna(30-300MHz), Logperriodic Antenna(300-1000MHz), Horn Antenna(1-19GHz)
Tx-ANTENNA : Shorted Dipole Antenna(30-120MHz), Dipole Antenna(120-1000MHz), Horn Antenna(1-19GHz)
All other emissions were at least 20dB below the specification limit.
*The noise level was too low to detect.
The noise was measured at each position of all three axes X, Y and Z to compare the level, and the maximum noise.

S/A PK (RBW: 1MHz , VBW:1MHz)

Spurious Radiation

UL Apex Co., Ltd.
Head Office EMC Lab. Semi Anechoic Chamber : No.2

COMPANY	Sharp corporation	REPORT NO	25HE0087-HO
EQUIPMENT	Wireless PDA	REGULATION	FCC Part24 Section 24.232(b)
MODEL	PV200	TEST METHOD	FCC Part2 Section 2.1046
S/N	5	TEST DISTANCE	3m
POWER	DC3.9V(AC120V/60Hz)	DATE	April 18, 2006
MODE	Tx 1880.0MHz (661ch)/PCL=0(MAX Pow)	TEMPERATURE	27℃
POSITION	H:Z-axis / V:Y-axis	HUMIDITY	38%
		CALIBRATION	OK
		ENGINEER	Yutaka Yoshida

<PCS1900+EGPRS+Bluetooth Hopping>

No.	FREQ	SG READING		CABLE	ANT	ATTEN	RESULT		LIMITS	MARGIN	
		HOR	VER	LOSS	GAIN		HOR	VER	(EIRP)	HOR	VER
	[MHz]	[dBm]		[dB]	[dBi]	[dB]	[dBm]		[dBm]	[dB]	
1	41.25	-23.0	-25.6	0.4	-23.61	9.9	-56.8	-59.4	-13.0	43.8	46.4
2	133.50	-58.1	-48.6	0.7	2.15	9.9	-66.4	-56.9	-13.0	53.4	43.9
3	537.20	-46.4	-45.8	1.5	2.15	9.9	-55.7	-55.1	-13.0	42.7	42.1
4	3760.00	-55.8	-57.0	3.7	12.10	0.0	-47.4	-48.6	-13.0	34.4	35.6
5	5640.00	-48.0	-48.9	5.1	13.10	0.0	-40.0	-40.9	-13.0	27.0	27.9
6	7520.00	-50.2	-52.0	5.9	11.60	0.0	-44.5	-46.3	-13.0	31.5	33.3
7	9400.00	-51.1	-53.7	6.8	11.80	0.0	-46.1	-48.7	-13.0	33.1	35.7
8	11280.00	-55.5	-58.0	8.6	13.40	0.0	-50.7	-53.2	-13.0	37.7	40.2
9	13160.00	-51.5	-52.7	7.5	14.20	0.0	-44.8	-46.0	-13.0	31.8	33.0
10	15040.00	-58.4	-56.6	8.3	13.10	0.0	-53.6	-51.8	-13.0	40.6	38.8
11	16920.00	-49.8	-49.8	8.4	14.00	0.0	-44.2	-44.2	-13.0	31.2	31.2
12	18800.00	-53.7	-53.8	9.9	15.20	0.0	-48.4	-48.5	-13.0	35.4	35.5

CALCULATION:READING(SG)-LOSS(CABLE)+ANT.GAIN-ATTEN
Rx-ANTENNA : Biconical Antenna(30-300MHz), Logperriodic Antenna(300-1000MHz), Horn Antenna(1-19GHz)
Tx-ANTENNA : Shorted Dipole Antenna(30-120MHz), Dipole Antenna(120-1000MHz), Horn Antenna(1-19GHz)
All other emissions were at least 20dB below the specification limit.
*The noise level was too low to detect.
The noise was measured at each position of all three axes X, Y and Z to compare the level, and the maximum noise.

S/A PK (RBW: 1MHz , VBW:1MHz)

Frequency Stability(Temperature/Voltage Variation)

UL Apex Co., Ltd.
Head Office Measurement Room

COMPANY	Sharp Corporation	REPORT NO	25HE0087-HO
EQUIPMENT	Wireless PDA	REGULATION	FCC Part24 Section 24.235
MODEL	PV200	TEST METHOD	FCC Part2 Section 2.1055(a)(1) and(b)
S/N	5		FCC Part2 Section 2.1055(d)(1) and(2)
POWER	DC3.9V (AC120V/60Hz)	TEST DISTANCE	-
MODE	Tx 1880.0MHz (661ch)/PCL=0(MAX Pow)	DATE	March 27, 2006
		TEMPERATURE	23℃
		HUMIDITY	38%
		ENGINEER	Yutaka Yoshida

<PCS1900>

Temp. [deg.C]	Volt. [V]	Frequency Reading [MHz]	Frequency Error [Hz]	Frequency Error [ppm]	Limit [ppm]
-30.0	3.9	1880.067549	1196	0.636	-
-20.0	3.9	1880.067386	1359	0.723	-
-10.0	3.9	1880.067219	1526	0.812	-
0.0	3.9	1880.068219	526	0.280	-
10.0	3.9	1880.068074	671	0.357	-
20.0	3.9	1880.068745	0	0.000	-
30.0	3.9	1880.068574	171	0.091	-
40.0	3.9	1880.067596	1149	0.611	-
50.0	3.9	1880.067602	1143	0.608	-

Temp. [deg.C]	Volt. [V]	Frequency Reading [MHz]	Frequency Error [Hz]	Frequency Error [ppm]	Limit [ppm]
20.0	3.600	1880.068415	330	0.176	-
20.0	3.900	1880.068745	0	0.000	-
20.0	4.200	1880.068821	-76	-0.040	-

Frequency Stability(Temperature/Voltage Variation)

UL Apex Co., Ltd.
Head Office EMC Lab No.7 Shielded Room

COMPANY	Sharp Corporation	REPORT NO	25HE0087-HO
EQUIPMENT	Wireless PDA	REGULATION	FCC Part24 Section 24.235
MODEL	PV200	TEST METHOD	FCC Part2 Section 2.1055(a)(1) and(b)
S/N	5		FCC Part2 Section 2.1055(d)(1) and(2)
POWER	DC3.9V (AC120V/60Hz)	TEST DISTANCE	-
MODE	Tx 1880.0MHz (661ch)/PCL=0(MAX Pow)	DATE	April 17, 2006
		TEMPERATURE	22℃
		HUMIDITY	36%
		ENGINEER	Yutaka Yoshida

<PCS1900+EGPRS>

Temp. [deg.C]	Volt. [V]	Frequency Reading [MHz]	Frequency Error [Hz]	Frequency Error [ppm]	Limit [ppm]
-30.0	3.9	1879.999998	9	0.005	-
-20.0	3.9	1880.000001	6	0.003	-
-10.0	3.9	1880.000014	-7	-0.004	-
0.0	3.9	1879.999991	16	0.009	-
10.0	3.9	1879.999984	23	0.012	-
20.0	3.9	1880.000007	0	0.000	-
30.0	3.9	1880.000013	-6	-0.003	-
40.0	3.9	1880.000012	-5	-0.003	-
50.0	3.9	1880.000009	-2	-0.001	-

Temp. [deg.C]	Volt. [V]	Frequency Reading [MHz]	Frequency Error [Hz]	Frequency Error [ppm]	Limit [ppm]
20.0	3.600	1880.000018	-11	-0.006	-
20.0	3.900	1880.000007	0	0.000	-
20.0	4.200	1879.999988	19	0.010	-