

Test report no. : 110398-3

Item tested : KX-TG1031

Type of equipment : Isochronous UPCS Device

FCC ID : ACJ96NKX-TG1031

Client : Panasonic Communications Co. Ltd.

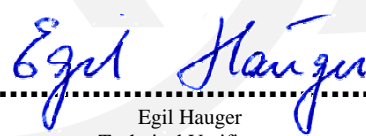
www.nemko.com

FCC Part 15, subpart D
Isochronous UPCS Device
1920 - 1930 MHz

Industry Canada RSS-213, Issue 2
2 GHz Licence-exempt Personal
Communications Service Devices
(LE-PCS)

19 August 2008

Authorized by :



Egil Hauger
Technical Vericator

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1 GENERAL INFORMATION

1.1 Testhouse Info

Name : Nemko AS
Address : Nemko Comlab
Gåsevikveien 8, Box 96
N-2027 Kjeller, NORWAY
Telephone : +47 64 84 57 00
Fax : +47 64 84 57 05
E-mail: comlab@nemko.com
FCC test firm
registration # : 994405
IC OATS
registration # : 2040D-1
Total Number
of Pages: 18

1.2 Client Information

Name : Panasonic Communications Co. Ltd.
Address : 1-62, 4-chome, Minoshima, Hakata-ku, Fukuoka 812-8531, Japan
Telephone : +81 92 477 1405

Contact:

Name : Mr. Junji Sumi
Telephone : +81 92 477 1405
E-mail : sumi.junji@jp.panasonic.com

1.3 Manufacturer (if other than client)

Name : /
Address : /
Telephone : /
Fax : /
E-mail : /

2 Test Information

2.1 Tested Item

Name :	Panasonic
FCC ID :	ACJ96NKX-TG1031
Industry Canada ID :	216A-KXTG1031
Model/version :	KX-TG1031
Serial number :	8CAQD169195
Hardware identity and/or version:	PQUP11502
Software identity and/or version :	DA81AA
Frequency Range :	1921.536 - 1928.448 MHz
Number of Channels :	5 RF Channels, 5x12 = 60 TDMA Duplex Channels
Type of Modulation :	GFSK (Gaussian Frequency Shift Keying)
User Frequency Adjustment :	None
Rated Output Power :	100 mW Peak Power, 10 mW Time Averaged Power
Type of Power Supply :	Panasonic PQLV219 AC Adaptor
Antenna Connector :	None
Number of Antennas :	2
Antenna Diversity Supported :	Yes

Description of Tested Device(s)

The tested equipment is a DECT base station which complies with ETSI EN 300 175. The frequencies have been reprogrammed and the output power reduced to comply with the FCC requirements to an Isochronous UPCS device after FCC Part 15D.

The EUT is a responding device as described in ANSI C63.17 and is designed to operate together with a DECT portable part (i.e. a handset), which is then the initiating device.

2.2 Test Environment

Temperature:	22 – 24 °C
Relative humidity:	30 – 40 %
Normal test voltage:	115 V 60 Hz AC

The values are the limit registered during the test period.

2.3 Test Period

Item received date:	2008-07-28
Test period :	from 2008-07-28 to 2008-07-31

2.4 Test Engineers

Frode Sveinsen / Tore Moe

2.5 Test Equipment

See list of test equipment in clause 6.

2.6 Other Comments

This test report covers only re-tests for use with the new AC Adaptor PQLV219.
The Radiated Emissions tests were performed with all ports populated and operating.

3 TEST REPORT SUMMARY

3.1 General

Manufacturer: Panasonic
Model No.: KX-TG1031
Serial No.: /

All measurements are traceable to national standards.

The tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC CFR47 Part 15, paragraph 15.323 for Isochronous UPCS Devices and Industry Canada RSS-213 Issue 2.

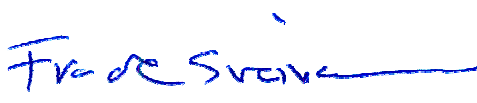
The conducted test methods have been in accordance with ANSI C63.17-2006 Draft 3.5 where applicable. Radiated tests were conducted in accordance with ANSI C63.4-2003. Radiated emissions are made in a 10m semi-anechoic chamber. A description of the test facility is on file with the FCC and Industry Canada.

- | | |
|--|---|
| <input type="checkbox"/> New Submission | <input type="checkbox"/> Production Unit |
| <input checked="" type="checkbox"/> Class II Permissive Change | <input checked="" type="checkbox"/> Pre-production Unit |
| PUB Equipment Code | <input type="checkbox"/> Family Listing |

**THIS TEST REPORT RELATES ONLY TO THE ITEM (S) TESTED.
Deviations from, additions to, or exclusions from the test specifications
are described in "Summary of Test Data".**



TEST REPORT NO: 110398-3

TESTED BY : 
Name, Chief Engineer

DATE: 31 July 2008

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3.2 Test Summary

Name of test	FCC CFR 47 Paragraph #	IC RSS-213 Paragraph #	Verdict
Power Line Conducted Emission	15.107(a) 15.207(a)	6.3 RSS-GEN 7.2.2	Complies
Out-of-band emissions	15.323(d)	6.7.1	Complies ¹
Receiver Spurious Emissions	N/A	6.8	Complies ¹

¹ This report covers only frequencies below 1 GHz.

4 TEST RESULTS

4.1 Power Line Conducted Emissions

Para. No.: 15.207 (a)

Test Performed By: Tore Moe	Date of Test: 29 Jul 2008
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Measurement procedure: ANSI C63.4-2003 using 50 μ H/50 ohms LISN.

Test Results: Complies

Measurement Data: See attached graph, (Peak detector).

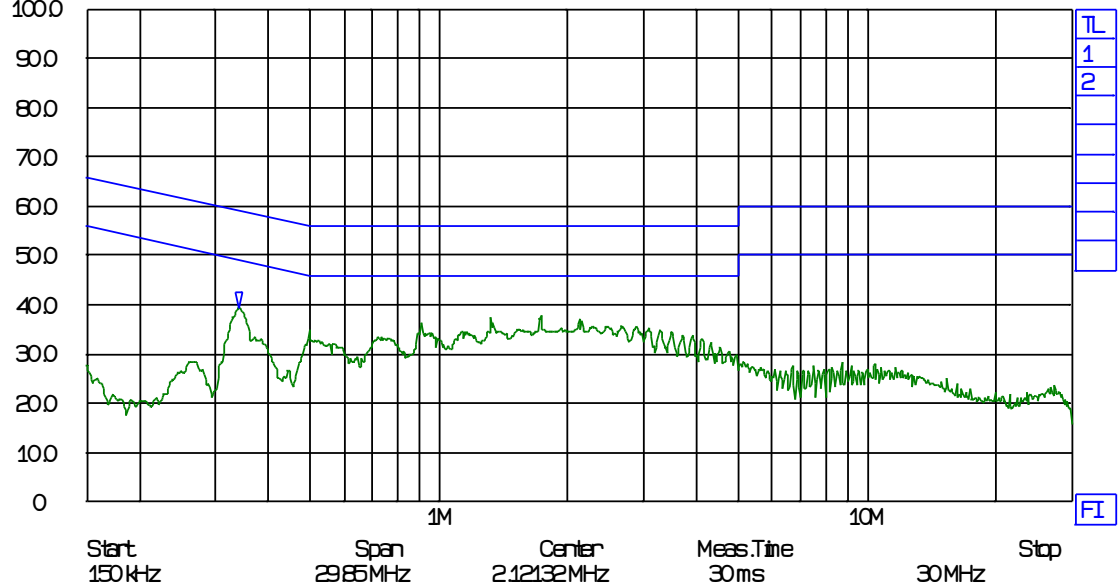
All values were below the limits when measured with Peak Detector.

Frequency	Detector	Measured value	Limit	Margin
KHz	Peak/QP/AV	dB μ V	dB μ V	dB
/	QP	/	/	/
/	AV	/	/	/
/	QP	/	/	/
/	AV	/	/	/



Date 30 Jul 08 Time 13:51:53
 Ref Lvl 100.00 dBµV
 Marker 39.34 dBµV
 342.00200 kHz

Res Bw 9 kHz [imp]
 TG Lvl off
 Scan Stp 4500 kHz
 T1: PK+ T3:
 T2: T4:
 RF Att 10 dB
 Unit [dBµV]



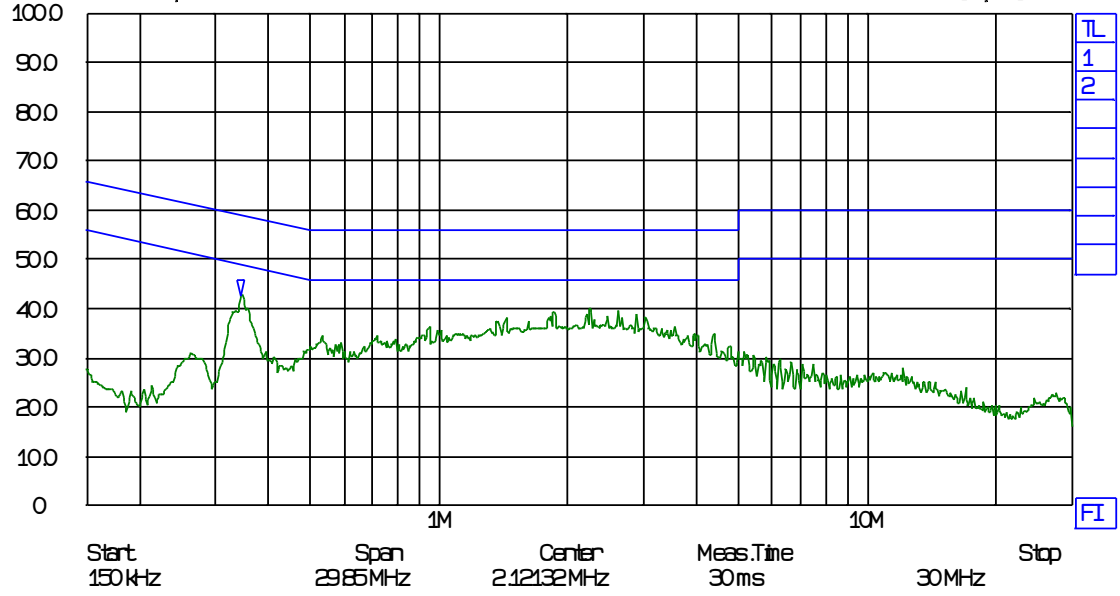
KX-TG1081, Base KX-TG1082S, AC adapter FQLV219.0 off hook. AC N

Phase N, Off Hook



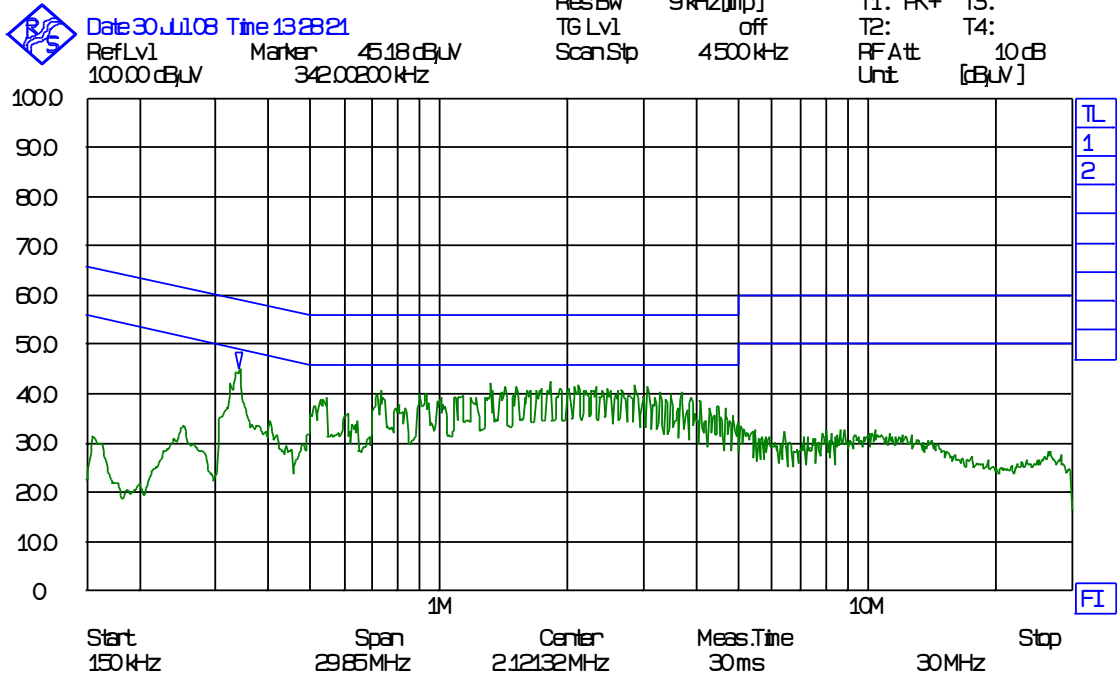
Date 30 Jul 08 Time 14:05:22
 Ref Lvl 100.00 dBµV
 Marker 42.92 dBµV
 346.05300 kHz

Res Bw 9 kHz [imp]
 TG Lvl off
 Scan Stp 4500 kHz
 T1: PK+ T3:
 T2: T4:
 RF Att 10 dB
 Unit [dBµV]



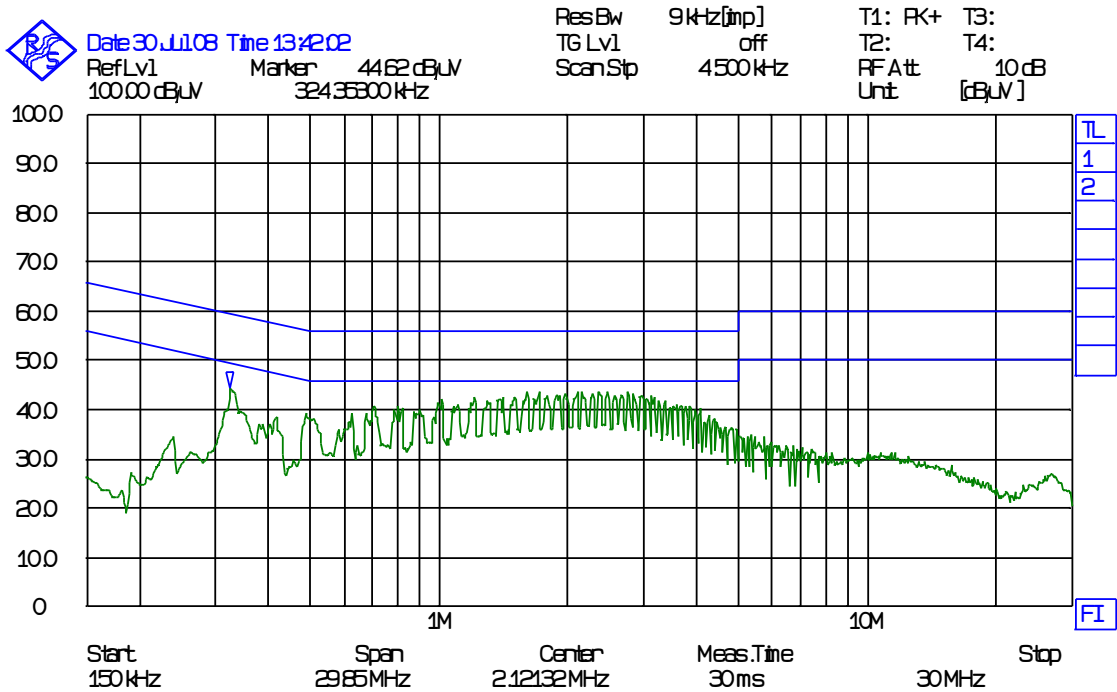
KX-TG1081, Base KX-TG1082S, AC adapter FQLV219.0 off hook. AC L1

Phase L1, Off Hook



KX-TG1031, Base KX-TG1082S, AC adapter FQLV219, Charging, AC N

Phase N, Handset Charging



KX-TG1031, Base KX-TG1082S, AC adapter FQLV219, Charging, AC L1

Phase L1, Handset Charging

4.2 Out-of-band Emissions, Conducted

Test Method:

ANSI C63.17, clause 6.1.6.2.

Test Results: Complies

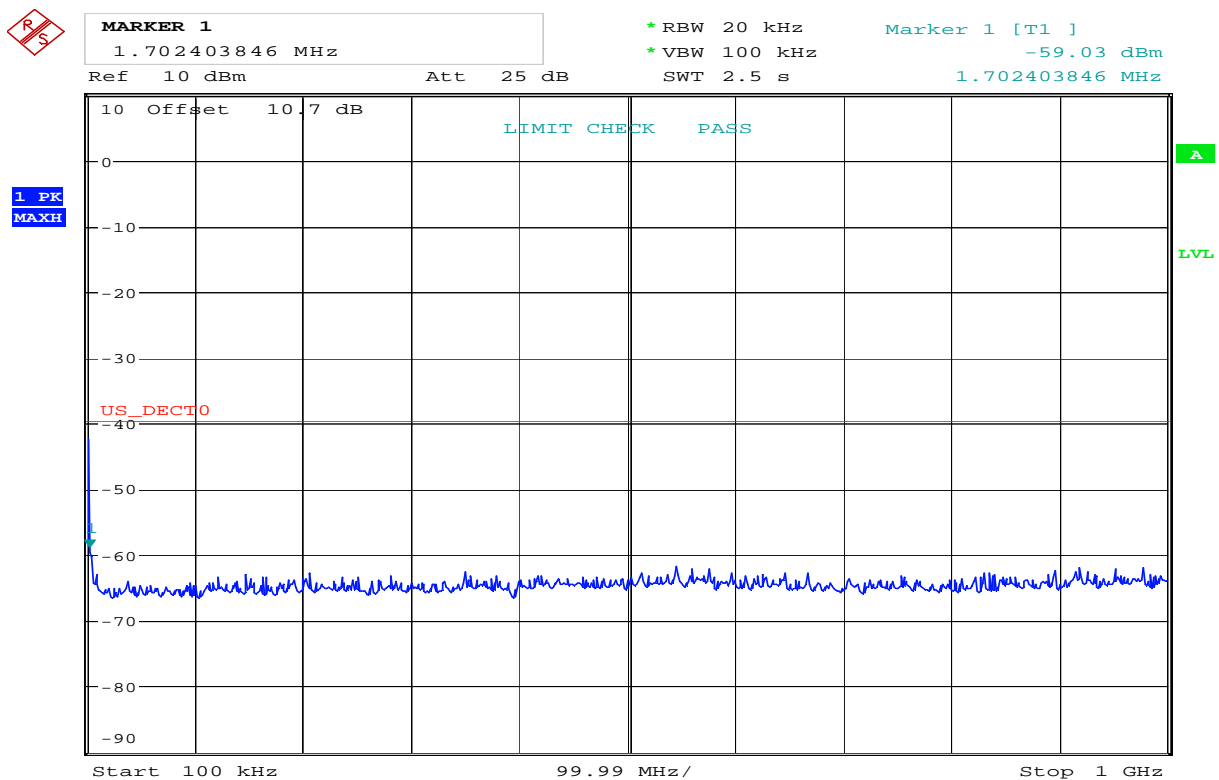
Measurement Data:

See plots. Emissions above 1 GHz are covered by the previous test report.

Requirements, FCC 15.323(d):

$f \leq 1.25\text{MHz}$ outside UPCS band : $\leq -9.5\text{dBm}$
 $1.25\text{MHz} \leq f \leq 2.5\text{MHz}$ outside UPCS band : $\leq -29.5\text{ dBm}$
 $f \geq 2.5\text{MHz}$ outside UPCS band : $\leq -39.5\text{ dBm}$

Out-of-Band Emissions, Conducted



Date: 28.JUL.2008 14:26:55

Lower Channel

4.3 Receiver Spurious Emissions

Measurement Procedure:

Industry Canada RSS-213 paragraph 6.8 and RSS-GEN paragraphs 4.8 and 6.

Test results:

See plots. The Receiver Radiated Emissions were at least 10 dB below the limit at all frequencies when measured with Peak Detector. Frequencies above 1 GHz is not covered by this test report.

Requirements, RSS-GEN Issue 2, clause 6

The measurement can be performed either radiated or conducted.

When measured Conducted: no spurious signals appearing at the antenna terminals shall exceed 2 nW per any 4 kHz spurious frequency in the band 30-1000 MHz, or 5 nW above 1 GHz.

When measured Radiated: See Table 1 in RSS-GEN Issue 2, clause 6.

NEMKO AS
 Peak

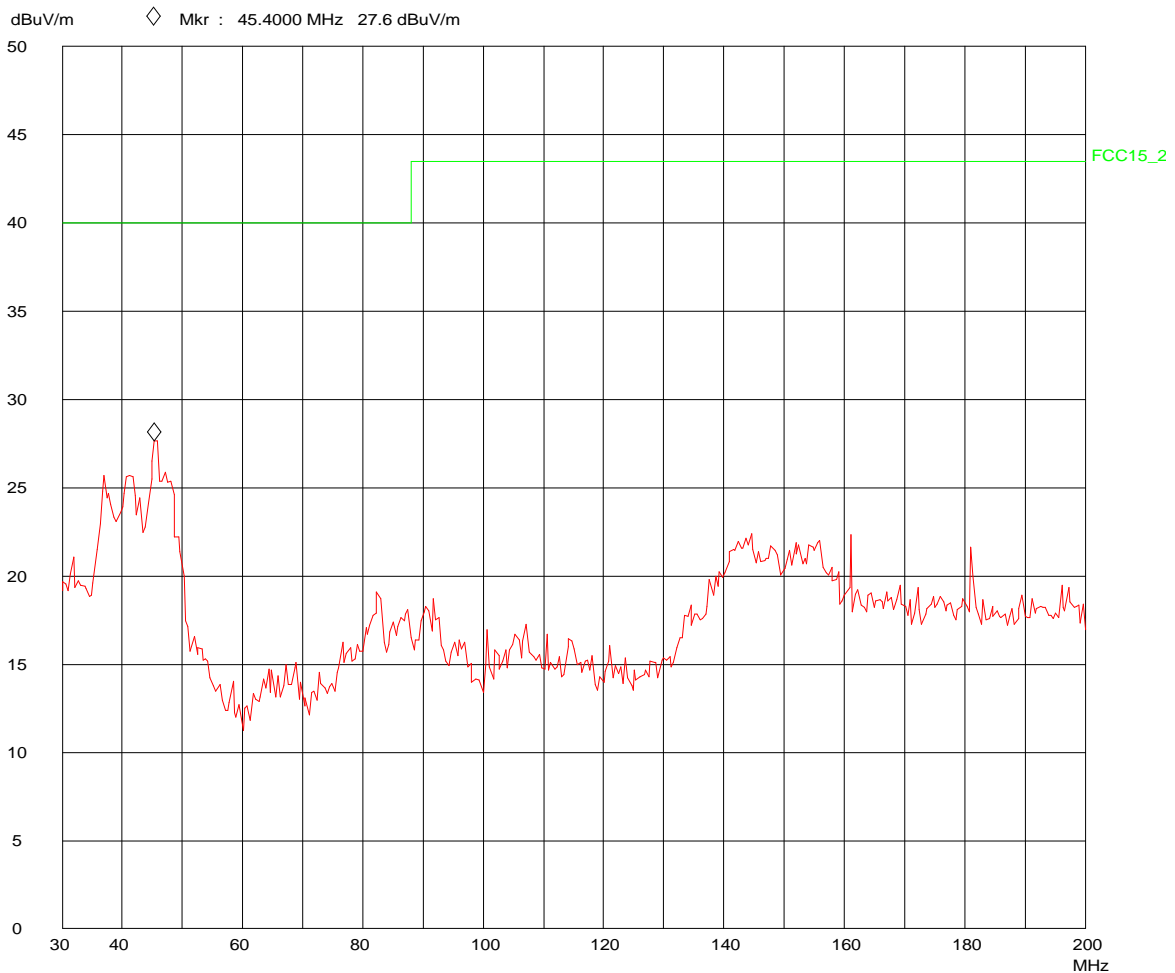
31. Jul 08 13:21

Operator: FS
 Comment: Panasonic
 KX-TG1031
 VP h=1m, dist=3m
 RSS-GEN
 Receiver Emissions
 Normal Mode

Scan Settings (1 Range)

|----- Frequencies -----||----- Receiver Settings -----|
 Start Stop Step IF BW Detector M-Time Atten Preamp OpRge
 30M 200M 50k 120k PK 50ms AUTO LN ON 60dB

Transducer No. Start Stop Name
 20 30M 200M HK116



Receiver Emissions, Radiated, 30 – 200 MHz, Vertical Polarization

NEMKO AS
 Peak

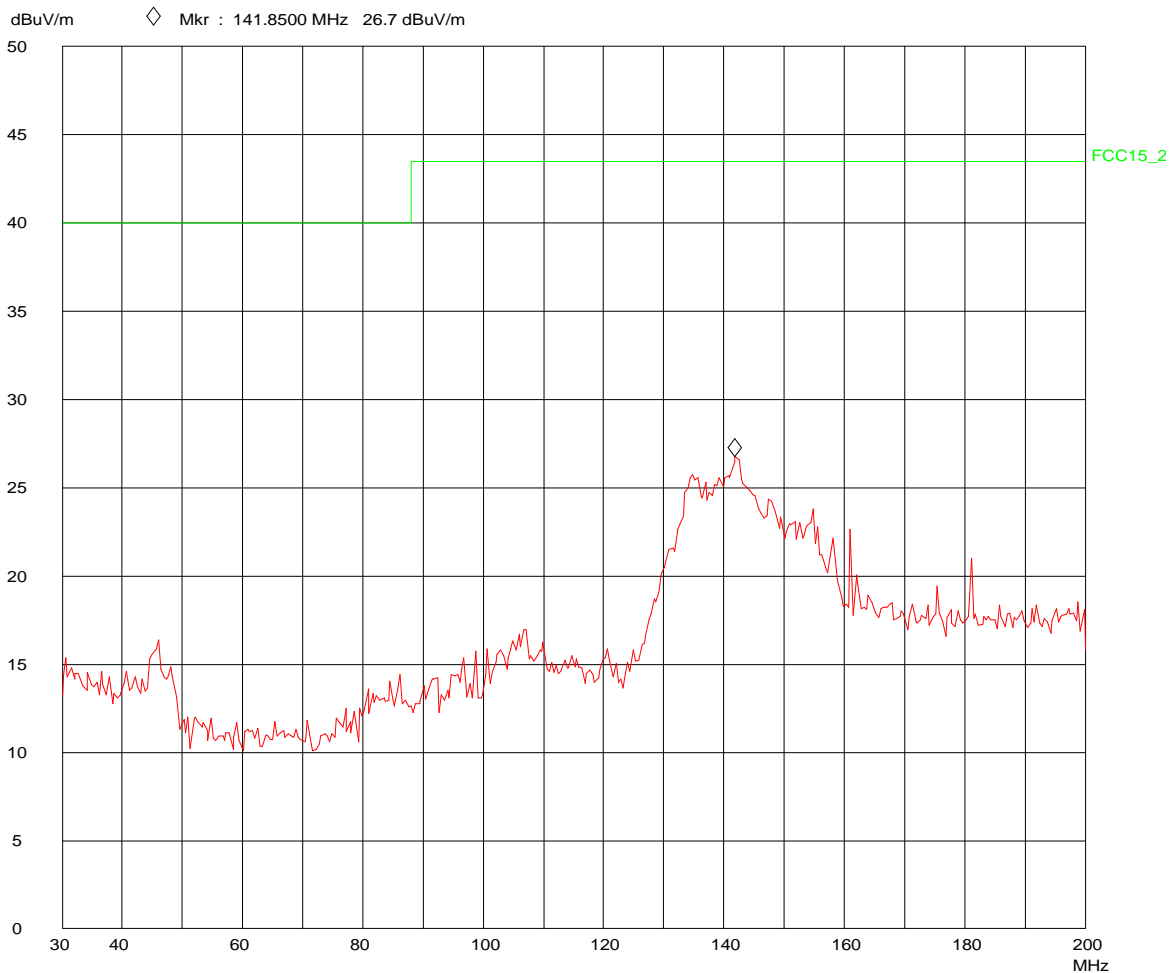
31. Jul 08 13:26

Operator: FS
 Comment: Panasonic
 KX-TG1031
 HP h=2m, dist=3m
 RSS-GEN
 Receiver Emissions
 Normal Mode

Scan Settings (1 Range)

|----- Frequencies -----||----- Receiver Settings -----|
 Start Stop Step IF BW Detector M-Time Atten Preamp OpRge
 30M 200M 50k 120k PK 50ms AUTO LN ON 60dB

Transducer No. Start Stop Name
 20 30M 200M HK116



Receiver Emissions, Radiated, 30 – 200 MHz, Horizontal Polarization

NEMKO AS
 Peak

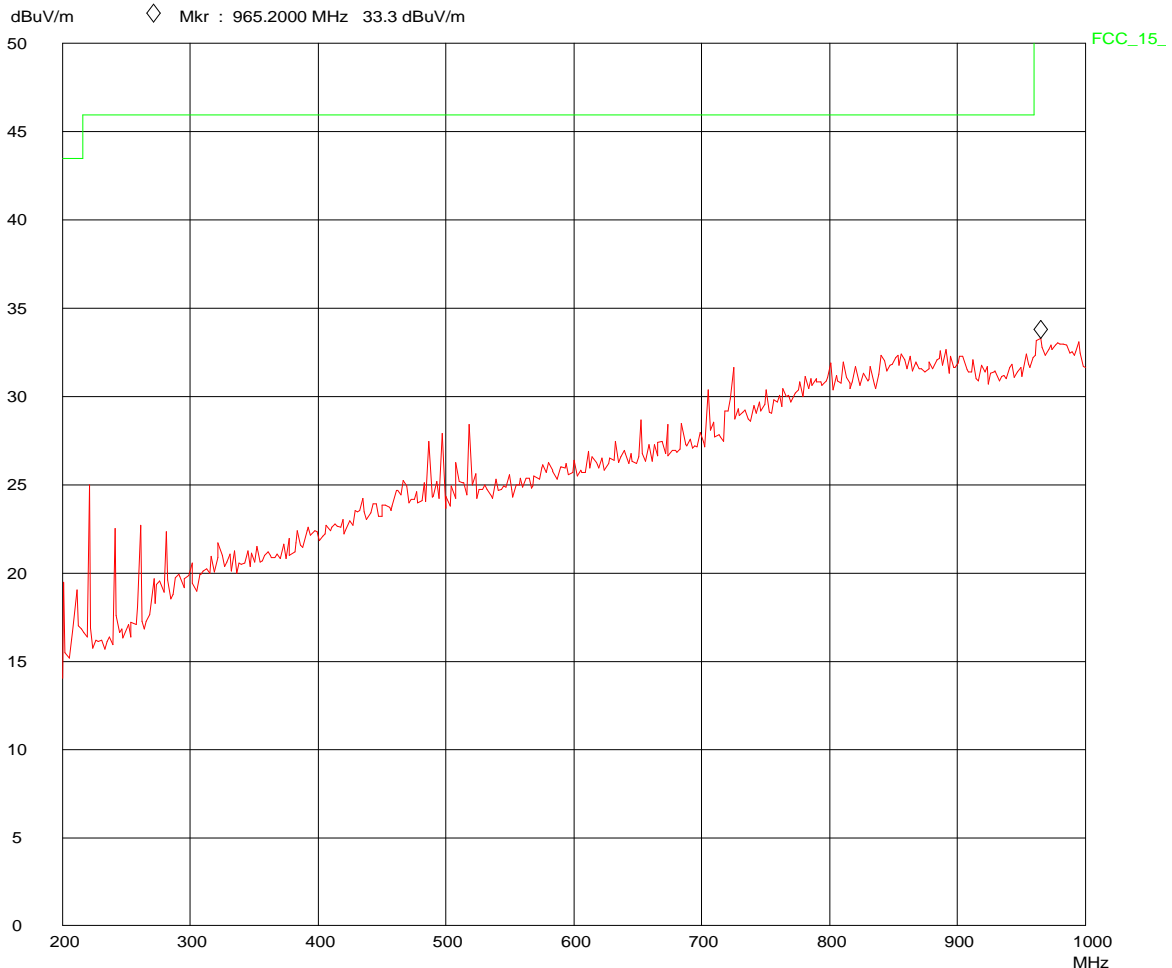
31. Jul 08 12:57

Operator: FS
 Comment: Panasonic
 KX-TG1031
 VP h=1m, dist=3m
 RSS-GEN
 Receiver Emissions
 Normal Mode

Scan Settings (1 Range)

----- Frequencies -----||----- Receiver Settings -----
 Start Stop Step IF BW Detector M-Time Atten Preamp OpRge
 200M 1000M 50k 120k PK 20ms AUTO LN ON 60dB

Transducer No. Start Stop Name
 21 200M 1000M HL223



Receiver Emissions, Radiated, 200 – 1000 MHz, Vertical Polarization

NEMKO AS
 Peak

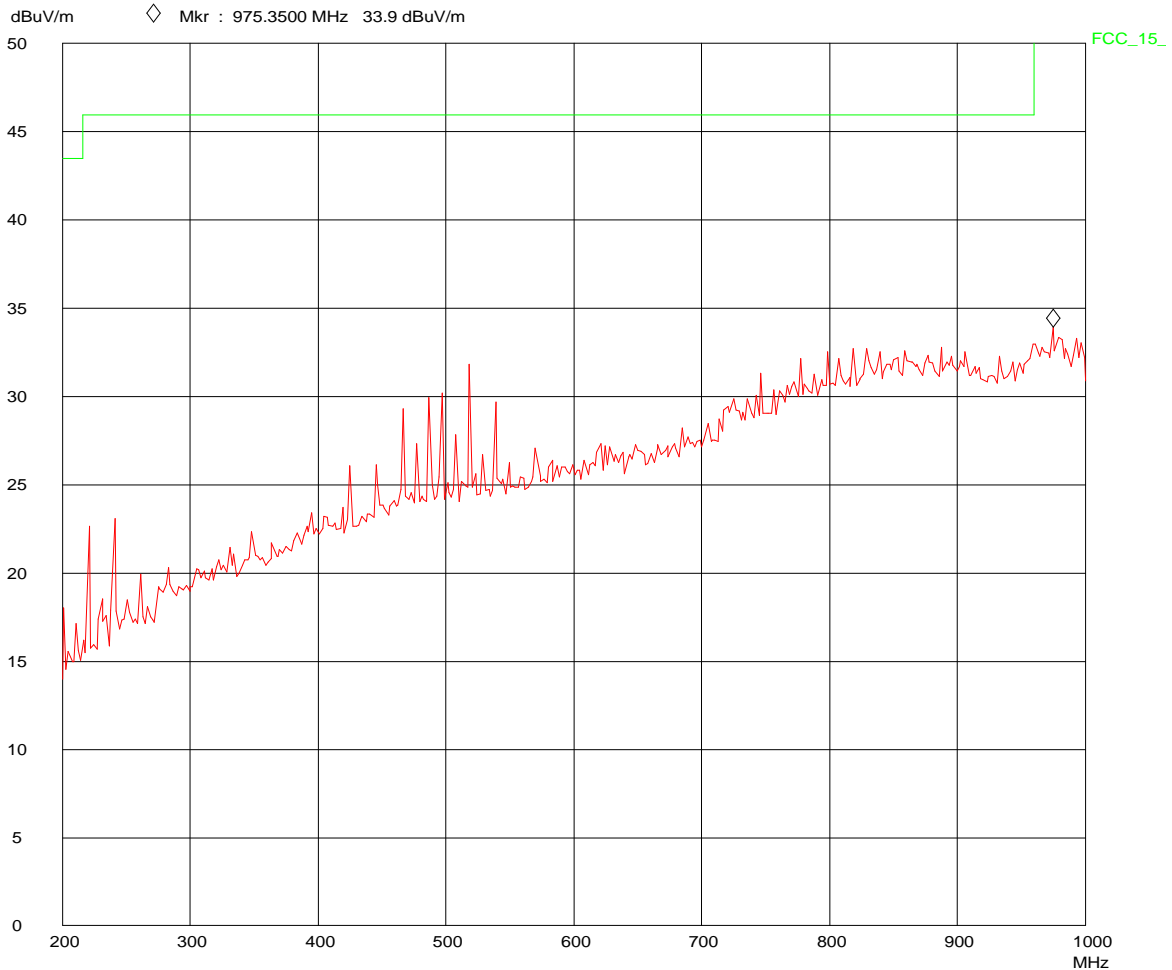
31. Jul 08 13:08

Operator: FS
 Comment: Panasonic
 KX-TG1031
 HP h=2m, dist=3m
 RSS-GEN
 Receiver Emissions
 Normal Mode

Scan Settings (1 Range)

|----- Frequencies -----||----- Receiver Settings -----|
 Start Stop Step IF BW Detector M-Time Atten Preamp OpRge
 200M 1000M 50k 120k PK 20ms AUTO LN ON 60dB

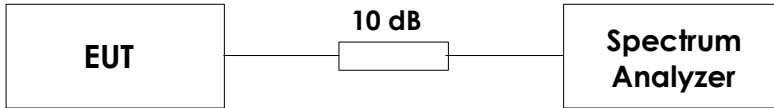
Transducer No. Start Stop Name
 21 200M 1000M HL223



Receiver Emissions, Radiated, 200 – 1000 MHz, Horizontal Polarization

5 Test Setups

5.1 Conducted Emission Test

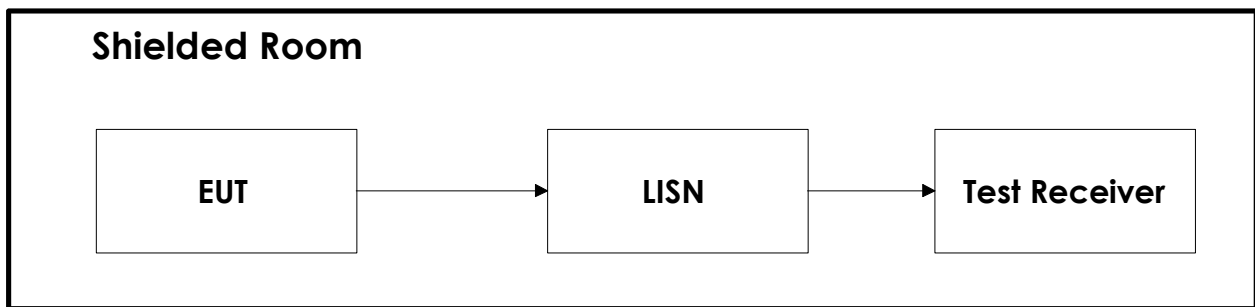


Test equipment included: 13, 29

Test Set-up 3

This setup is used for all conducted emission tests.

5.2 Power Line Conducted Emissions Test



Test equipment: 12, 27, 28

Test Set-Up 5

6 Test Equipment Used

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment and ancillaries are identified (numbered) by the Testhouse.

No.	Instrument/ancillary	Type of instrument/ancillary	Manufacturer	Ref. no.
1	FSEK30	Spectrum Analyzer	Rohde & Schwarz	LR 1337
2	SME03	Signal generator	Rohde & Schwarz	LR 1238
3	SMP04	Signal generator	Rohde & Schwarz	LR 1336
4	SMHU52	Signal generator	Rohde & Schwarz	LR 1240
5	53310A	Modulation Domain Analyzer	Hewlett Packard	LR 1483
6	81104A	Pulse-/ Pattern Generator	Agilent	LR 1502
7	8470B	Crystal Detector	Hewlett Packard	LR 1207
8	8449B	Preamplifier	Hewlett Packard	LR 1322
9	4HC3000/18000	High-pass filter	Trilithic	S.No.: 9849045
10	ESVS30	Measuring Receiver	Rohde & Schwarz	LR 1101
11	ESN	Measuring Receiver	Rohde & Schwarz	LR 1237
12	ESAI	Measuring Receiver	Rohde & Schwarz	LR 1090
13	6810.17B	Attenuator	Narda	LR1212
14	745-69	Step Attenuator	Narda	LR 1442
15	WE 1506A	Power Splitter	Weinchel	LR 244
16	WE 1506A	Power Splitter	Weinchel	LR 245
17	H-9	Hybrid	Anzac	LR 86
18	H-9	Hybrid	Anzac	LR 257
19	S212DS	RF Switch	Narda	LR 1244
20	3115	Horn Antenna	EMCO	LR 1226
21	PM7320-X	Horn Antenna	Sivers Lab	LR 102
22	DBF-520-20	Horn Antenna	Systron Donner	LR 100
23	638	Horn Antenna	Narda	LR 1480
24	HL223	Biconical Antenna	Rohde & Schwarz	LR 1261
25	HK116	Log-period Antenna	Rohde & Schwarz	LR 1260
26	HFH2-Z2	Loop Antenna	Rohde & Schwarz	LR 285
27	ESH3-Z5	Two Line V-Network	Rohde & Schwarz	LR 1076
28	80S	Signal Generator	Powertron	LT 502
29	FSU26	Spectrum Analyzer	Rohde & Schwarz	LR 1504