

Report No. SC304352-03

MEASUREMENT AND TECHNICAL REPORT

SOLECTEK CORPORATION
 6370 Nancy Ridge Drive, Suite 109
 San Diego, CA 92121-3212

DATE: 07 October 2003

This Report Concerns:	Original Grant: ☒ X	Class II Change: ☐
Equipment Type:	Skyway 5000	
Deferred grant requested per 47 CFR 0.457(d)(1)(ii)?	Yes: ☐ Defer until:	No: ☒ X
Company Name agrees to notify the Commission by:	N/A	
of the intended date of announcement of the product so that the grant can be issued on that date.		
Transition Rules Request per 15.37?	Yes: ☐	*No: ☒ X
(*) FCC Part 15, Paragraphs 15.2471(a), (b); (c); (d); RSS 210, 4.2, 5.9, 6.2.2(q1), 7.2		
Report Prepared by: TÜV AMERICA, INC. 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 546 3999 Fax: 858 546 0364		

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1 GENERAL INFORMATION

1.1 Product Description

EUT Description: Digital Transceiver

Model No.: Skyway 5000 Serial No.: n/a

Configurations to be tested: all antennas

EUT Specifications and Requirements

Length: 12-18" Width: 12-18" Height: 3" Weight: 14 lbs

Power Requirements

Voltage: 120 (If battery powered, make sure battery life is sufficient to complete testing.)

of Phases: 1

Current (Amps/phase(max)): <1 Current (Amps/phase(nominal)): <1

Typical Installation and/or Operating Environment

outdoor - mast / tower

EUT Power Cable

☐ Permanent OR ☒ Removable Length (in meters): 2m

EUT Interface Ports and Cables

Interface				Shielding								
	Analog	Digital	Qty	Yes	No							
Type						Type	Termination	Connector Type	Port Termination	Length (in meters)	Removable	Permanent
Ethernet/Power	☒	☐	1	☒	☐	Foil		RJ45	50 ohms differential	<=100	☒	☐

EUT Software.

Revision Level: 1.0

Description: initial release, with debug package

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EUT Operating Modes to be Tested

1. TX
2. RX

EUT System Components			
------------------------------	--	--	--

Description	Model #	Serial #	FCC ID #
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EUT

Power Injector

Support Equipment			
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Description	Model #	Serial #	FCC ID #
-------------	---------	----------	----------

Laptop

Toshiba Satellite

Oscillator Frequencies			
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Frequency	Derived Frequency	Component # / Location	Description of Use
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25 MHz

Ethernet

30 MHz

Baseband processor

RF LO

32 MHz

4580 MHz

Radio

Power Supply			
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Manufacturer	Model #	Serial #	Type
CUI	DTS240250UC -P5-ET		☒ Switched-mode: (Frequency) unknown ☐ Linear ☐ Other: _____

Power Line Filters: --

Critical EMI Components (Capacitors, ferrites, etc.): --

EMC Critical Detail --

1 GENERAL INFORMATION (continued)

1.2 Related Submittal/Grant

None

1.3 Tested System Details

The FCC IDs for all equipment, plus descriptions of all cables used in the tested system are:

None

1.4 Test Methodology

Purpose of Test: To demonstrate compliance with the ANSI C63.4 setup.

TEST	FCC CFR 47 #	PASS/FAIL
Conducted	15.107(a)	Pass
Radiated	15.107(a)	Pass
Channel Bandwidth	15.247(a)(2); RSS 210, 4.2; 5.9	Pass
RF Power Output	15.247(b)	Pass
Spurious Emissions at Terminals	15.247(c); RSS 210 6.2.2(q1)	Pass
Conducted Spurious Modulation	15.247(c); RSS 210, 7.2	Pass
Peak Power Density	15.247(d)	Pass
Frequency Stability	RSS 210, 6.4	Pass

Tests were performed according to the procedures in FCC/ANSI C63.4 and CSA 108.8 -M1983.

1.5 Test Facility

The open area test site and conducted measurement data were tested by:

TÜV PRODUCT SERVICE
10040 Mesa Rim Road
San Diego, CA 92121-2912
Phone: 858 546 3999
Fax: 858 546 0364

The Test Site Data and performance comply with ANSI 63.4 and are registered with the FCC, 7435 Oakland Mills Rd, Columbia Maryland 21046. All Measurement Data is acquired according to the content of FCC Measurement Procedure and ANSI C63.4, unless supplemented with additional requirements as noted in the test report.

2. SYSTEM TEST CONFIGURATION

2.1 Justification

The EUT was initially tested for FCC emission in the following configuration:

See Test Setup Photos exhibit.

2.2 EUT Exercise Software

None

2.3 Special Accessories

None

2.4 Modification

None

2.5 Configuration of Tested System

See Test Setup Photos exhibit.

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3. CONDUCTED EMISSION, CFR Part 15, 15.107(a)

3.1 EQUIPMENT

Emissions Test Conditions: CONDUCTED EMISSIONS

The *Conducted EMISSIONS* measurements were performed at the following test location :

☐ - Test not applicable

■ - SR 3, Shielded Room, 12' x 20' x 8', Metal Chamber

Test Equipment Used :

Model No.	Prop. No.	Description	Manufacturer	Serial No.	Cal Date
ESHS 30	6509	EMI Test Receiver	Rohde & Schwarz	832354/04	09/04
CAT-20	--	20 dB Attenuator	Mini-Circuits	000606	--
9242-50-R-24-BNC	458	LISN	Solar Electronics	941719	NCR

Remarks:

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3.2 DATA

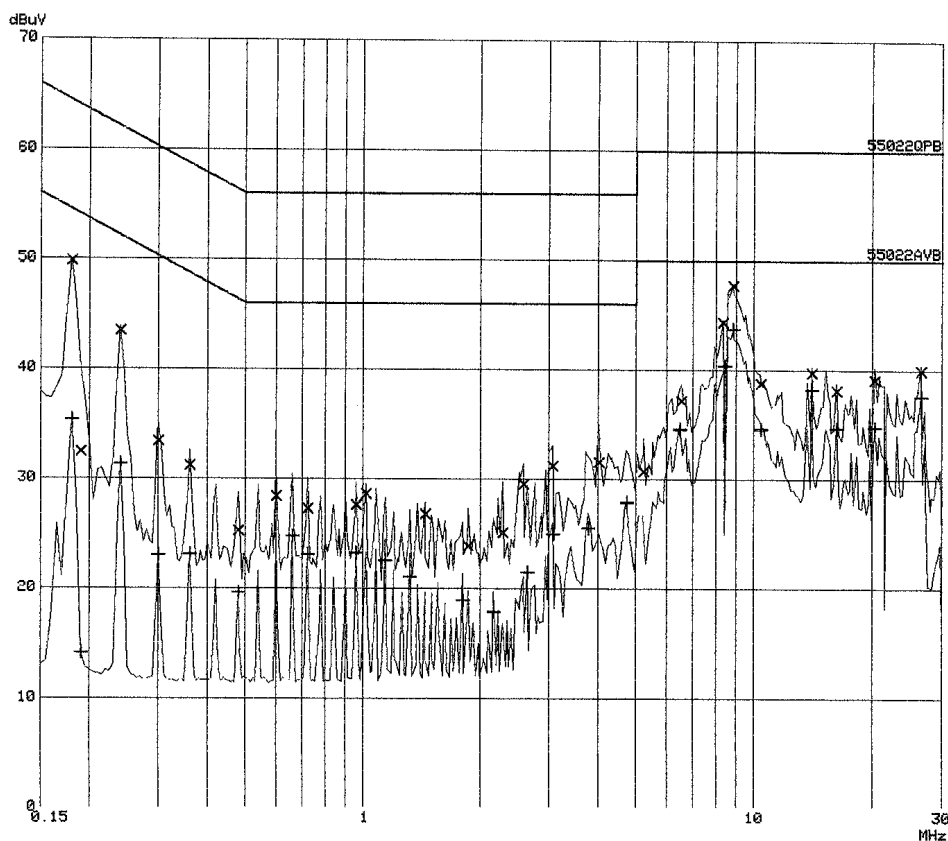
TUV America
Conducted Emissions
 EUT: Skyway 5000 + 9 dBi Omni
 Manuf: Solectek Corporation
 Op Cond: Receive 5735
 Operator: A. Laudani
 Test Spec: EN55022 Class B FCC 15.107(a)
 Comment: 115VAC 60 Hz. Line 1
 SC304352
 Date: 24. Sep 03 11:24

Scan Settings (2 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	1M	5k	10k	PK+AV	50ms	AUTO	LN OFF	60dB
1M	30M	5k	10k	PK+AV	2ms	AUTO	LN OFF	60dB

Transducer No.	Start	Stop	Name
1	20k	30M	20dBLISN

Final Measurement: x QP / + AV
 Meas Time: 1 s
 Subranges: 25
 Acc Margin: 45dB



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TUV America
Conducted Emissions
 EUT: Skyway 5000 + 9 dBi Omni
 Manuf: Solectek Corporation
 Op Cond: Receive 5735
 Operator: A. Laudani
 Test Spec: EN55022 Class B FCC 15.107(a)
 Comment: 115VAC 60 Hz. Line 1
 SC304352
 Date: 24. Sep 03 11:24

Final Measurement Results:

Frequency MHz	QP Level dBuV	QP Limit dBuV
0.18000	49.8	64.5
0.19000	32.4	64.1
0.24000	43.4	62.1
0.30000	33.4	60.2
0.36000	31.2	58.7
0.48000	25.3	56.4
0.60000	28.4	56.0
0.72000	27.3	56.0
0.96000	27.6	56.0
1.02000	28.6	56.0
1.44000	26.8	56.0
1.86000	23.9	56.0
2.28000	25.1	56.0
2.58000	29.5	56.0
3.06000	31.2	56.0
4.01500	31.5	56.0
5.23500	30.7	60.0
6.53500	37.2	60.0
8.33500	44.4	60.0
8.82500	47.7	60.0
10.41000	38.8	60.0
14.04500	39.8	60.0
16.23000	38.2	60.0
20.26000	39.2	60.0
26.61000	40.0	60.0

Frequency MHz	AV Level dBuV	AV Limit dBuV
0.18000	35.4	54.5
0.19000	14.1	54.1
0.24000	31.4	52.1
0.30000	23.0	50.2
0.36000	23.1	48.7
0.48000	19.6	46.4
0.66000	24.8	46.0
0.72000	23.1	46.0
0.96000	23.2	46.0
1.14000	22.6	46.0
1.32000	21.1	46.0
1.80000	18.9	46.0
2.16000	17.9	46.0

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2.64000	21.5	46.0
3.06000	25.0	46.0
3.77500	25.6	46.0
4.73500	27.9	46.0
6.47500	34.6	50.0
8.39500	40.4	50.0
8.82500	43.7	50.0
10.41000	34.6	50.0
14.04500	38.2	50.0
16.23000	34.7	50.0
20.26000	34.8	50.0
26.61000	37.6	50.0

* limit exceeded

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TUV America

Conducted Emissions

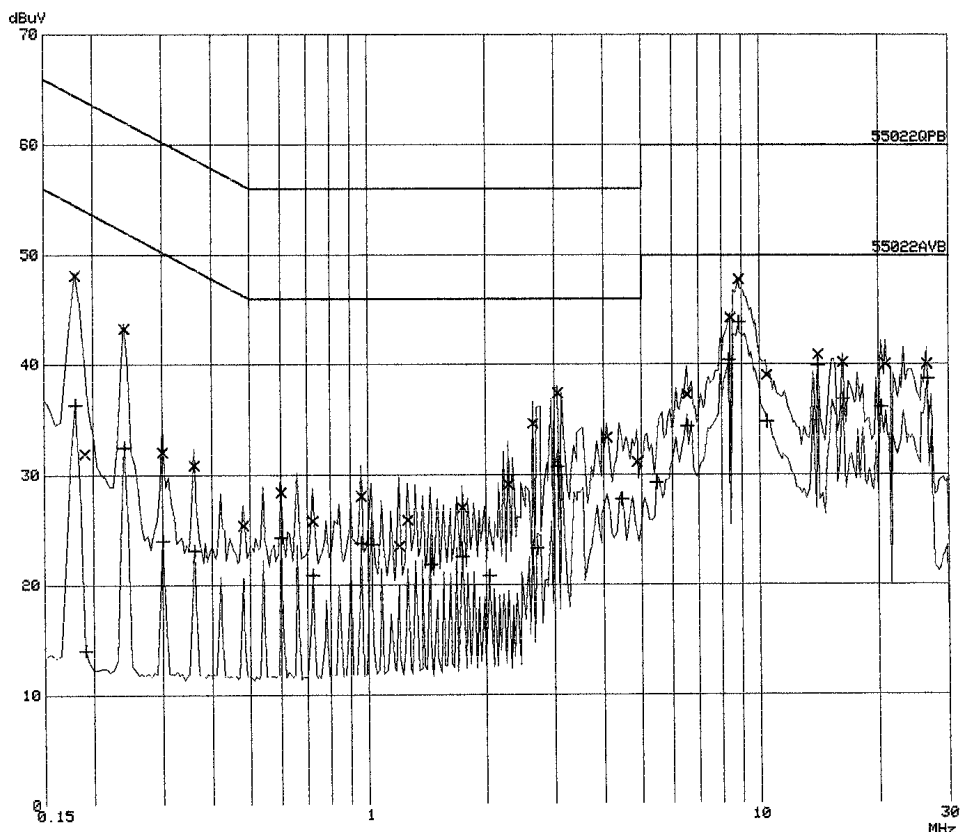
EUT: Skyway 5000 + 9 dBi Omni
 Manuf: Solectek Corporation
 Op Cond: Receive 5735
 Operator: A. Laudani
 Test Spec: EN55022 Class B FCC 15.107(a)
 Comment: 115VAC 60 Hz. Line 2
 SC304352
 Date: 24. Sep 03 11:09

Scan Settings (2 Ranges)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	1M	5k	10k	PK+AV	50ms	AUTO	LN OFF
1M	30M	5k	10k	PK+AV	2ms	AUTO	LN OFF

Transducer No.	Start	Stop	Name
1	20k	30M	20dBLISN

Final Measurement: x QP / + AV
 Meas Time: 1 s
 Subranges: 25
 Acc Margin: 45dB



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Conducted Emissions
 EUT: Skyway 5000 + 9 dBi Omni
 Manuf: Solectek Corporation
 Op Cond: Receive 5735
 Operator: A. Laudani
 Test Spec: EN55022 Class B FCC 15.107(a)
 Comment: 115VAC 60 Hz. Line 2
 SC304352
 Date: 24. Sep 03 11:09

Final Measurement Results:

Frequency MHz	QP Level dBuV	QP Limit dBuV
0.18000	48.1	64.5
0.19000	31.9	64.1
0.24000	43.2	62.1
0.30000	32.0	60.2
0.36000	30.8	58.7
0.48000	25.4	56.4
0.60000	28.4	56.0
0.72000	25.8	56.0
0.96000	28.0	56.0
1.20000	23.5	56.0
1.26000	25.9	56.0
1.74000	27.0	56.0
2.28000	29.1	56.0
2.64000	34.7	56.0
3.05500	37.4	56.0
4.07500	33.3	56.0
4.85500	31.1	56.0
6.52000	37.3	60.0
8.39500	44.2	60.0
8.82500	47.7	60.0
10.41000	39.0	60.0
14.05000	40.9	60.0
16.23000	40.1	60.0
20.81000	40.1	60.0
26.49000	40.0	60.0

Frequency MHz	AV Level dBuV	AV Limit dBuV
0.18000	36.3	54.5
0.19000	14.0	54.1
0.24000	32.4	52.1
0.30000	24.0	50.2
0.36000	23.1	48.7
0.48000	20.1	46.4
0.60000	24.3	46.0
0.72000	20.9	46.0
0.96000	23.8	46.0
1.02000	23.7	46.0
1.44000	21.9	46.0
1.74000	22.6	46.0
2.04000	20.8	46.0

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2.69500	23.3	46.0
3.05500	30.7	46.0
4.43500	27.8	46.0
5.45500	29.2	50.0
6.53500	34.4	50.0
8.33500	40.4	50.0
8.82500	43.8	50.0
10.41000	34.8	50.0
14.05000	39.9	50.0
16.23000	36.9	50.0
20.26000	36.1	50.0
26.61000	38.7	50.0

* limit exceeded

**TUV America
Conducted Emissions**

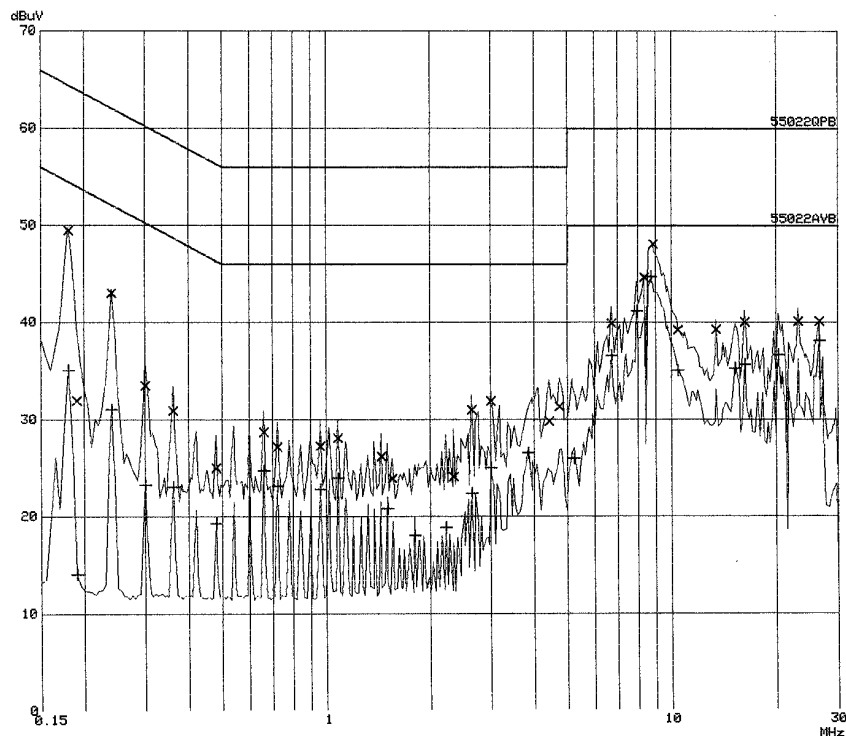
EUT: Skyway 5000 + 23 dBi
 Manuf: Solectek Corporation
 Op Cond: Receive 5735
 Operator: A. Laudani
 Test Spec: EN55022 Class B FCC 15.107(a)
 Comment: 115VAC 60 Hz. Line 1
 SC304352
 Date: 24. Sep 03 10:39

Scan Settings (2 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	1M	5k	10k	PK+AV	50ms	AUTO	LN OFF	60dB
1M	30M	5k	10k	PK+AV	2ms	AUTO	LN OFF	60dB

Transducer No.	Start	Stop	Name
1	20k	30M	20dBLISN

Final Measurement: x QP / + AV
 Meas Time: 1 s
 Subranges: 25
 Acc Margin: 45dB



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Conducted Emissions
 EUT: Skyway 5000 + 23 dBi
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 Operator: A. Laudani
 Test Spec: EN55022 Class B FCC 15.107(a)
 Comment: 115VAC 60 Hz. Line 1
 SC304352
 Date: 24. Sep 03 10:39

Final Measurement Results:

Frequency MHz	QP Level dBuV	QP Limit dBuV
0.18000	49.4	64.5
0.19000	32.0	64.1
0.24000	43.1	62.1
0.30000	33.5	60.2
0.36000	30.9	58.7
0.48000	25.0	56.4
0.66000	28.7	56.0
0.72000	27.2	56.0
0.96000	27.2	56.0
1.08000	28.0	56.0
1.44000	26.2	56.0
1.55500	23.9	56.0
2.33500	24.1	56.0
2.63500	31.0	56.0
2.99500	31.9	56.0
4.43000	29.8	56.0
4.73500	31.3	56.0
6.70000	39.9	60.0
8.33500	44.6	60.0
8.82500	48.0	60.0
10.41000	39.2	60.0
13.42000	39.2	60.0
16.23000	40.0	60.0
23.13000	40.1	60.0
26.61000	40.1	60.0

Frequency MHz	AV Level dBuV	AV Limit dBuV
0.18000	35.1	54.5
0.19000	14.0	54.1
0.24000	31.1	52.1
0.30000	23.2	50.2
0.36000	23.0	48.7
0.48000	19.3	46.4
0.66000	24.7	46.0
0.72000	23.1	46.0
0.96000	22.7	46.0
1.08000	24.0	46.0
1.50000	20.8	46.0
1.80000	18.0	46.0
2.21500	18.9	46.0

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2.63500	22.3	46.0
2.99500	25.0	46.0
3.83500	26.5	46.0
5.23500	25.9	50.0
6.70000	36.5	50.0
7.92500	41.2	50.0
8.71500	44.7	50.0
10.41000	35.0	50.0
15.25000	35.3	50.0
16.23000	35.6	50.0
20.26000	36.6	50.0
26.61000	38.1	50.0

* limit exceeded

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TUV America **Conducted Emissions**

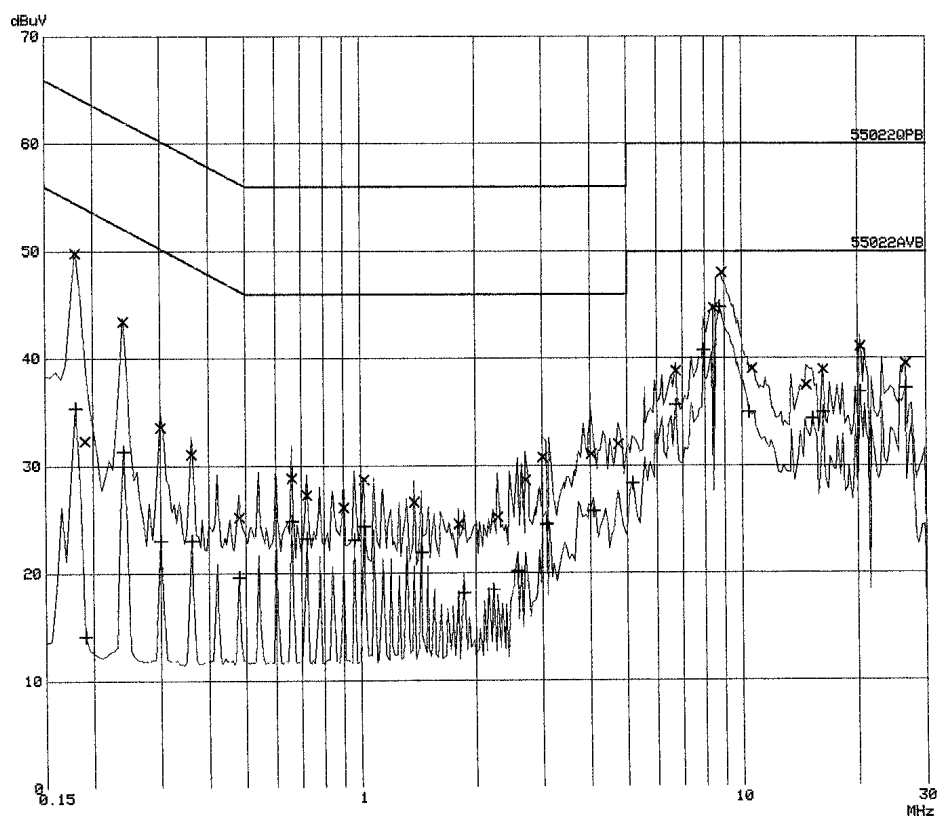
EUT: Skyway 5000 + 26 dBi
 Manuf: Solectek Corporation
 Op Cond: receive 5735 MHz
 Operator: A. Laudani
 Test Spec: EN55022 Class B FCC 15.107(a)
 Comment: 115VAC 60 Hz. Line 1
 SC304352
 Date: 24. Sep 03 09:28

Scan Settings (2 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	1M	5k	10k	PK+AV	50ms	AUTO	LN OFF	60dB
1M	30M	5k	10k	PK+AV	2ms	AUTO	LN OFF	60dB

Transducer No.	Start	Stop	Name
1	20k	30M	20dBLISN

Final Measurement: x QP / + AV
 Meas Time: 1 s
 Subranges: 25
 Acc Margin: 45dB



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TÜV America **Conducted Emissions**

:UT: Skyway 5000 + 26 dBi
 :anuf: Solectek Corporation
 :p Cond: receive 5735 MHz
 :perator: A. Laudani
 :est Spec: EN55022 Class B FCC 15.107(a)
 :omment: 115VAC 60 Hz. Line 1
 SC304352
 :ate: 24. Sep 03 09:28

Final Measurement Results:

Frequency MHz	QP Level dBuV	QP Limit dBuV
0.18000	49.8	64.5
0.19000	32.3	64.1
0.24000	43.4	62.1
0.30000	33.6	60.2
0.36000	31.1	58.7
0.48000	25.2	56.4
0.66000	28.8	56.0
0.72000	27.3	56.0
0.90000	26.1	56.0
1.02000	28.7	56.0
1.38000	26.6	56.0
1.80000	24.6	56.0
2.28000	25.2	56.0
2.69500	28.6	56.0
2.99500	30.8	56.0
4.02000	31.0	56.0
4.73500	32.0	56.0
6.70000	38.8	60.0
8.39500	44.7	60.0
8.82500	48.0	60.0
10.59500	39.0	60.0
14.70000	37.5	60.0
16.23000	38.9	60.0
20.26000	41.1	60.0
26.61000	39.5	60.0

Frequency MHz	AV Level dBuV	AV Limit dBuV
0.18000	35.4	54.5
0.19000	14.2	54.1
0.24000	31.3	52.1
0.30000	23.1	50.2
0.36000	23.0	48.7
0.48000	19.6	46.4
0.66000	24.8	46.0
0.72000	23.2	46.0
0.96000	23.1	46.0
1.02000	24.3	46.0
1.44000	21.9	46.0
1.86000	18.1	46.0
2.22000	18.4	46.0

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2.57500	20.2	46.0
3.06000	24.6	46.0
4.07500	25.8	46.0
5.15500	28.3	50.0
6.70000	35.6	50.0
7.92500	40.7	50.0
8.71500	44.7	50.0
10.41000	35.0	50.0
15.25000	34.3	50.0
16.23000	34.9	50.0
20.26000	36.9	50.0
26.61000	37.2	50.0

* limit exceeded

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TUV America **Conducted Emissions**

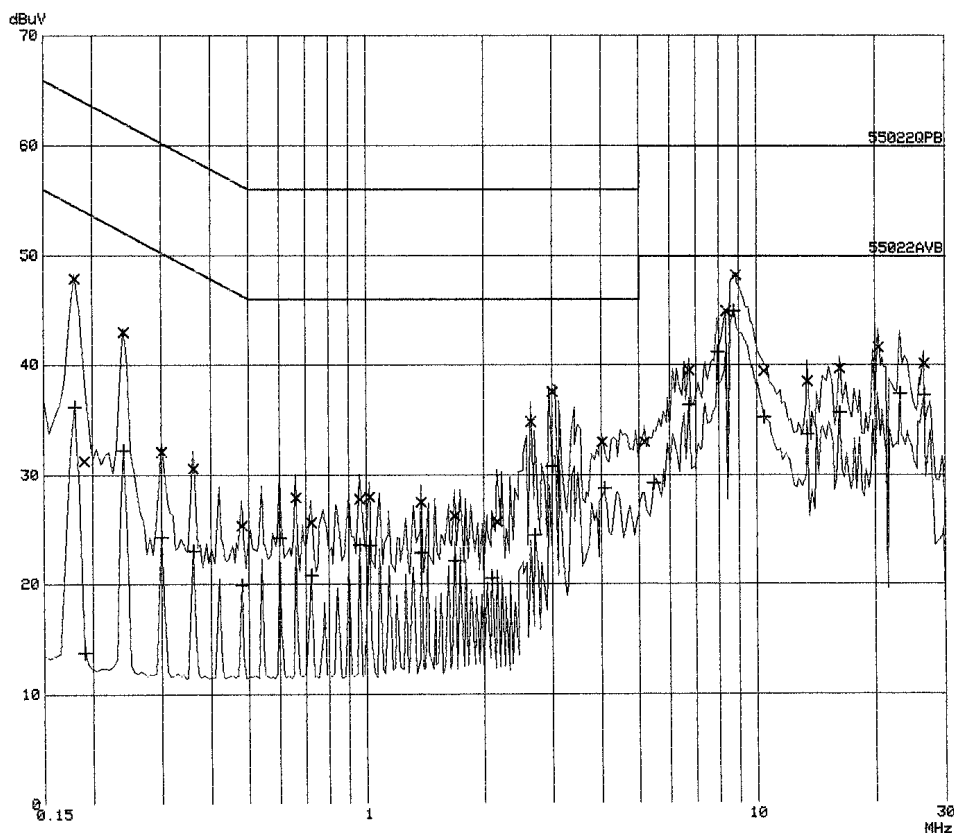
EUT: Skyway 5000 + 26 dBi
 Manuf: Solectek Corporation
 Op Cond: receive 5735 MHz
 Operator: A. Laudani
 Test Spec: EN55022 Class B FCC 15.107(a)
 Comment: 115VAC 60 Hz. Line 2
 SC304352
 Date: 24. Sep 03 09:10

Scan Settings (2 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	1M	5k	10k	PK+AV	50ms	AUTO	LN OFF	60dB
1M	30M	5k	10k	PK+AV	2ms	AUTO	LN OFF	60dB

Transducer No.	Start	Stop	Name
1	20k	30M	20dB LISN

Final Measurement: x QP / + AV
 Meas Time: 1 s
 Subranges: 25
 Acc Margin: 45dB



**TUV America
Conducted Emissions**

EUT: Skyway 5000 + 26 dBi
 Manuf: Solectek Corporation
 Op Cond: receive 5735 MHz
 Operator: A. Laudani
 Test Spec: EN55022 Class B FCC 15.107(a)
 Comment: 115VAC 60 Hz. Line 2
 SC304352
 Date: 24. Sep 03 09:10

Final Measurement Results:

Frequency MHz	QP Level dBuV	QP Limit dBuV
0.18000	47.9	64.5
0.19000	31.3	64.1
0.24000	42.9	62.1
0.30000	32.1	60.2
0.36000	30.5	58.7
0.48000	25.3	56.4
0.66000	27.9	56.0
0.72000	25.6	56.0
0.96000	27.8	56.0
1.02000	28.0	56.0
1.38000	27.5	56.0
1.68000	26.2	56.0
2.16000	25.7	56.0
2.63500	34.8	56.0
2.99500	37.5	56.0
4.01500	33.0	56.0
5.15500	33.0	60.0
6.70000	39.5	60.0
8.33500	44.9	60.0
8.82500	48.2	60.0
10.41000	39.4	60.0
13.42000	38.5	60.0
16.23000	39.7	60.0
20.38000	41.6	60.0
26.61000	40.1	60.0

Frequency MHz	AV Level dBuV	AV Limit dBuV
0.18000	36.1	54.5
0.19000	13.8	54.1
0.24000	32.2	52.1
0.30000	24.3	50.2
0.36000	23.0	48.7
0.48000	19.9	46.4
0.60000	24.2	46.0
0.72000	20.8	46.0
0.96000	23.6	46.0
1.02000	23.5	46.0
1.38000	22.9	46.0
1.68000	22.1	46.0
2.09500	20.5	46.0

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2.69500	24.5	46.0
2.99500	30.7	46.0
4.07500	28.8	46.0
5.45500	29.2	50.0
6.70000	36.3	50.0
7.92500	41.1	50.0
8.71500	44.9	50.0
10.41000	35.3	50.0
13.42000	33.7	50.0
16.23000	35.6	50.0
23.13000	37.4	50.0
26.61000	37.3	50.0

* limit exceeded

Report No. SC304352-03

TÜV America

Conducted Emissions

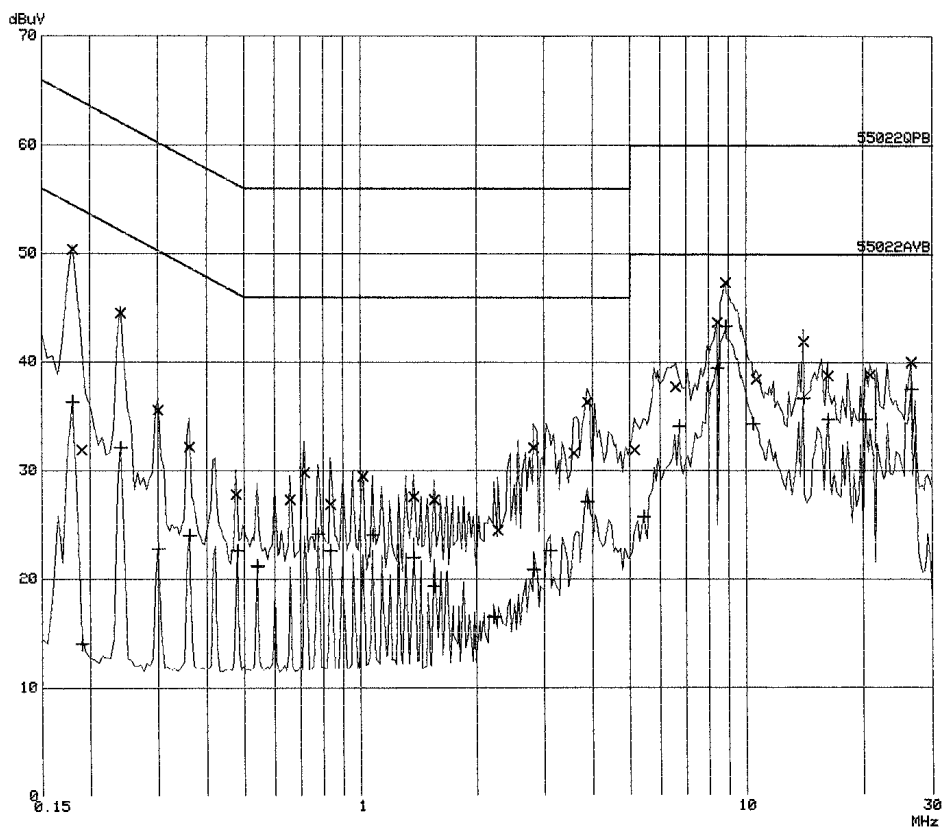
EUT: Skyway 5000 + 9 dBi Omni
 Manuf: Solectek Corporation
 Op Cond: transmit/receive 5735 MHz. 50% D Cycle
 Operator: A. Laudani
 Test Spec: EN55022 Class B FCC 15.107(a)
 Comment: 115VAC 60 Hz. Line 1
 SC304352
 Date: 24. Sep 03 11:41

Scan Settings (2 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	1M	5k	10k	PK+AV	50ms	AUTO	LN OFF	60dB
1M	30M	5k	10k	PK+AV	2ms	AUTO	LN OFF	60dB

Transducer No.	Start	Stop	Name
1	20k	30M	20dBLISN

Final Measurement: x QP / + AV
 Meas Time: 1 s
 Subranges: 25
 Acc Margin: 45dB



TUV America
Conducted Emissions

IUT: Skyway 5000 + 9 dBi Omni
 Manuf: Solecetek Corporation
 Op Cond: transmit/receive 5735 MHz. 50% D Cycle
 Operator: A. Laudani
 Test Spec: EN55022 Class B FCC 15.107(a)
 Comment: 115VAC 60 Hz. Line 1
 SC304352
 Date: 24. Sep 03 11:41

Final Measurement Results:

Frequency MHz	QP Level dBuV	QP Limit dBuV
0.18000	50.3	64.5
0.19000	31.9	64.1
0.24000	44.5	62.1
0.30000	35.6	60.2
0.36000	32.1	58.7
0.47500	27.8	56.4
0.65500	27.3	56.0
0.71500	29.8	56.0
0.83500	26.9	56.0
1.01500	29.4	56.0
1.37000	27.6	56.0
1.55000	27.3	56.0
2.27000	24.5	56.0
2.80500	32.1	56.0
3.57500	31.6	56.0
3.87500	36.4	56.0
5.12500	31.9	60.0
6.56500	37.8	60.0
8.39500	43.7	60.0
8.82500	47.3	60.0
10.59500	38.5	60.0
14.02500	41.9	60.0
16.23000	38.8	60.0
20.81000	38.9	60.0
26.61000	40.0	60.0

Frequency MHz	AV Level dBuV	AV Limit dBuV
0.18000	36.4	54.5
0.19000	14.0	54.1
0.24000	32.1	52.1
0.30000	22.8	50.2
0.36000	24.0	48.7
0.48000	22.6	46.4
0.54000	21.2	46.0
0.77500	24.2	46.0
0.83500	22.6	46.0
1.07500	24.1	46.0
1.37500	22.0	46.0
1.55000	19.4	46.0
2.21000	16.5	46.0

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2.80500	20.9	46.0
3.10000	22.6	46.0
3.87500	27.1	46.0
5.42500	25.7	50.0
6.70000	34.1	50.0
8.39500	39.5	50.0
8.82500	43.3	50.0
10.41000	34.3	50.0
14.02500	36.7	50.0
16.23000	34.7	50.0
20.26000	34.8	50.0
26.61000	37.5	50.0

* limit exceeded

Report No. SC304352-03

TUV America

Conducted Emissions

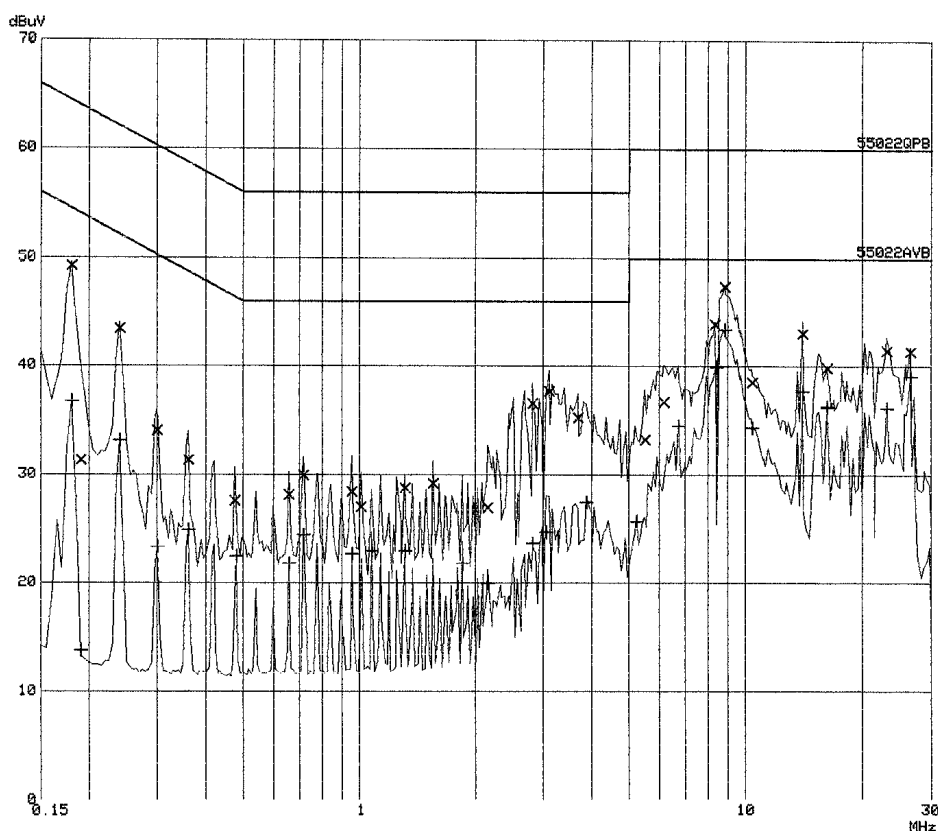
EUT: Skyway 5000 + 9 dBi Omni
 Manuf: Solectek Corporation
 Op Cond: transmit/receive 5735 MHz. 50% D Cycle
 Operator: A. Laudani
 Test Spec: EN55022 Class B FCC 15.107(a)
 Comment: 115VAC 60 Hz. Line 2
 SC304352
 Date: 24. Sep 03 11:54

Scan Settings (2 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	1M	5k	10k	PK+AV	50ms	AUTO	LN OFF	60dB
1M	30M	5k	10k	PK+AV	2ms	AUTO	LN OFF	60dB

Transducer No.	Start	Stop	Name
1	20k	30M	20dB LISN

Final Measurement: x QP / + AV
 Meas Time: 1 s
 Subranges: 25
 Acc Margin: 45dB



Report No. SC304352-03

TUV America

Conducted Emissions

EUT: Skyway 5000 + 9 dBi Omni
 Manuf: Solectek Corporation
 Op Cond: transmit/receive 5735 MHz. 50% D Cycle
 Operator: A. Laudani
 Test Spec: EN55022 Class B FCC 15.107(a)
 Comment: 115VAC 60 Hz. Line 2
 SC304352
 Date: 24. Sep 03 11:54

Final Measurement Results:

Frequency MHz	QP Level dBuV	QP Limit dBuV
0.18000	49.2	64.5
0.19000	31.3	64.1
0.24000	43.5	62.1
0.30000	34.1	60.2
0.36000	31.4	58.7
0.47500	27.6	56.4
0.65500	28.1	56.0
0.71500	29.9	56.0
0.95500	28.4	56.0
1.01000	27.0	56.0
1.31000	28.8	56.0
1.55000	29.1	56.0
2.15000	26.9	56.0
2.80500	36.6	56.0
3.10500	37.7	56.0
3.69500	35.3	56.0
5.49000	33.2	60.0
6.15000	36.7	60.0
8.33500	43.9	60.0
8.82500	47.4	60.0
10.41000	38.5	60.0
14.02000	43.0	60.0
16.23000	39.8	60.0
23.13000	41.4	60.0
26.61000	41.4	60.0

Frequency MHz	AV Level dBuV	AV Limit dBuV
0.18000	36.8	54.5
0.19000	13.8	54.1
0.24000	33.1	52.1
0.30000	23.4	50.2
0.36000	24.9	48.7
0.48000	22.5	46.4
0.65500	21.8	46.0
0.71500	24.5	46.0
0.95500	22.7	46.0
1.07500	23.0	46.0
1.31500	23.0	46.0
1.85000	21.8	46.0
2.15000	20.0	46.0

Report No. SC304352-03

Date: 24. Sep 03 11:54

2.80500	23.7	46.0
3.04500	24.7	46.0
3.87500	27.4	46.0
5.23500	25.7	50.0
6.70000	34.5	50.0
8.39500	39.9	50.0
8.82500	43.4	50.0
10.41000	34.3	50.0
14.02000	37.7	50.0
16.23000	36.2	50.0
23.13000	36.1	50.0
26.61000	39.1	50.0

* limit exceeded

Report No. SC304352-03

TUV America Conducted Emissions

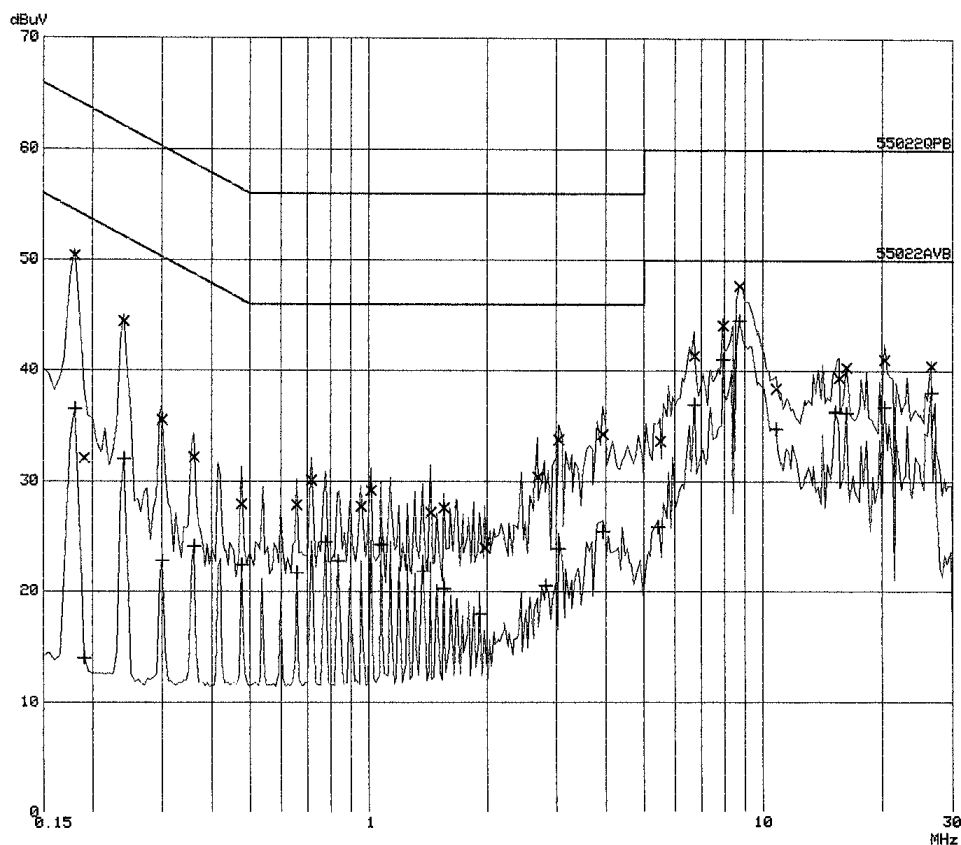
UT: Skyway 5000 + 23 dBi
anuf: Solecetek Corporation
p Cond: Transmit/receive 5735 MHz. 50% D Cycle
operator: A. Laudani
est Spec: EN55022 Class B FCC 15.107(a)
omment: 115VAC 60 Hz. Line 1
SC304352
ate: 24. Sep 03 10:09

Scan Settings (2 Ranges)

Frequencies			Receiver Settings						
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge	
150k	1M	5k	10k	PK+AV	50ms	AUTO	LN	OFF 60dB	
1M	30M	5k	10k	PK+AV	2ms	AUTO	LN	OFF 60dB	

Transducer No.	Start	Stop	Name
1	20k	30M	20dBLISN

Final Measurement: x QP / + AV
Meas Time: 1 s
Subranges: 25
Acc Margin: 45dB



Report No. SC304352-03

TÜV America **Conducted Emissions**

UT: Skyway 5000 + 23 dBi
 anuf: Solectek Corporation
 p Cond: Transmit/receive 5735 MHz. 50% D Cycle
 perator: A. Laudani
 est Spec: EN55022 Class B FCC 15.107(a)
 omment: 115VAC 60 Hz. Line 1
 SC304352
 ate: 24. Sep 03 10:09

Final Measurement Results:

frequency MHz	QP Level dBuV	QP Limit dBuV
0.18000	50.3	64.5
0.19000	32.1	64.1
0.24000	44.4	62.1
0.30000	35.5	60.2
0.36000	32.2	58.7
0.47500	27.9	56.4
0.65500	27.8	56.0
0.71500	30.1	56.0
0.95500	27.7	56.0
1.01500	29.2	56.0
1.43500	27.2	56.0
1.55000	27.6	56.0
1.97000	24.0	56.0
2.68000	30.4	56.0
3.04000	33.8	56.0
3.93500	34.3	56.0
5.48500	33.6	60.0
6.70000	41.4	60.0
7.92500	44.1	60.0
8.71500	47.6	60.0
10.79500	38.4	60.0
15.55500	39.3	60.0
16.23000	40.3	60.0
20.26000	41.0	60.0
26.61000	40.4	60.0

frequency MHz	AV Level dBuV	AV Limit dBuV
0.18000	36.5	54.5
0.19000	14.0	54.1
0.24000	32.0	52.1
0.30000	22.8	50.2
0.36000	24.1	48.7
0.47500	22.4	46.4
0.65500	21.7	46.0
0.77500	24.5	46.0
0.83500	22.8	46.0
1.07500	24.2	46.0
1.37500	21.8	46.0
1.55000	20.3	46.0
1.91000	17.9	46.0

Report No. SC304352-03

ate: 24. Sep 03 10:09

2.80500	20.5	46.0
3.04000	23.9	46.0
3.93500	25.4	46.0
5.42500	25.9	50.0
6.70000	36.9	50.0
7.92500	41.0	50.0
8.71500	44.6	50.0
10.79500	34.8	50.0
15.25000	36.3	50.0
16.23000	36.2	50.0
20.26000	36.7	50.0
26.61000	38.0	50.0

* limit exceeded

Report No. SC304352-03

TUV America Conducted Emissions

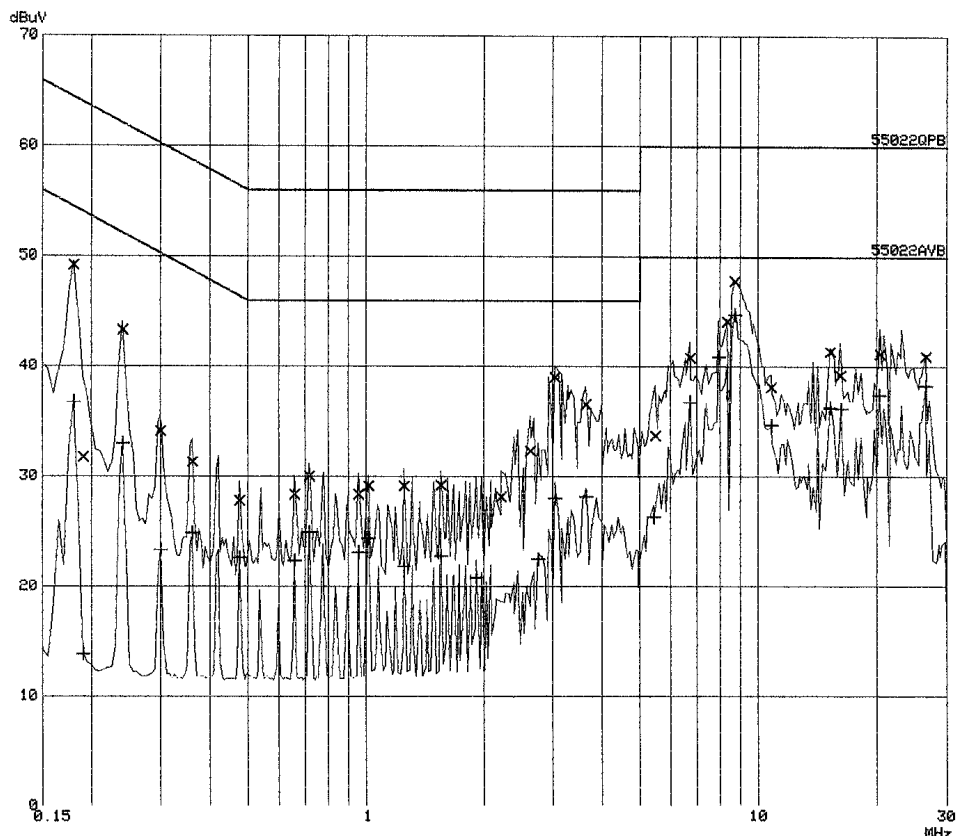
UT: Skyway 5000 + 23 dBi
anuf: Solectek Corporation
p Cond: Transmit/receive 5735 MHz. 50% D Cycle
perator: A. Laudani
est Spec: EN55022 Class B FCC 15.107(a)
omment: 115VAC 60 Hz. Line 2
SC304352
ate: 24. Sep 03 10:20

Scan Settings (2 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	1M	5k	10k	PK+AV	50ms	AUTO	LN OFF	60dB
1M	30M	5k	10k	PK+AV	2ms	AUTO	LN OFF	60dB

Transducer No.	Start	Stop	Name
1	20k	30M	20dBLISN

Final Measurement: x QP / + AV
Meas Time: 1 s
Subranges: 25
Acc Margin: 45dB



TUV America
Conducted Emissions

AUT: Skyway 5000 + 23 dBi
 Manuf: Solectek Corporation
 op Cond: Transmit/receive 5735 MHz. 50% D Cycle
 Operator: A. Laudani
 Test Spec: EN55022 Class B FCC 15.107(a)
 Comment: 115VAC 60 Hz. Line 2
 SC304352
 Date: 24. Sep 03 10:20

Final Measurement Results:

frequency MHz	QP Level dBuV	QP Limit dBuV
0.18000	49.2	64.5
0.19000	31.8	64.1
0.24000	43.3	62.1
0.30000	34.1	60.2
0.36000	31.3	58.7
0.47500	27.8	56.4
0.65500	28.4	56.0
0.71500	30.0	56.0
0.95500	28.4	56.0
1.01500	29.1	56.0
1.25000	29.1	56.0
1.55000	29.1	56.0
2.21000	28.1	56.0
2.62000	32.3	56.0
3.04000	39.0	56.0
3.63500	36.5	56.0
5.48000	33.7	60.0
6.70500	40.8	60.0
8.33500	44.1	60.0
8.71500	47.7	60.0
10.79500	38.1	60.0
15.25000	41.4	60.0
16.16500	39.2	60.0
20.32000	41.1	60.0
26.61000	41.0	60.0

frequency MHz	AV Level dBuV	AV Limit dBuV
0.18000	36.7	54.5
0.19000	13.8	54.1
0.24000	33.0	52.1
0.30000	23.4	50.2
0.36000	24.8	48.7
0.47500	22.7	46.4
0.65500	22.4	46.0
0.71500	24.9	46.0
0.95500	23.1	46.0
1.01500	24.4	46.0
1.25000	21.8	46.0
1.55000	22.8	46.0
1.91000	20.8	46.0

Report No. SC304352-03

date: 24. Sep 03 10:20

2.74500	22.5	46.0
3.04000	28.0	46.0
3.63500	28.1	46.0
5.42000	26.3	50.0
6.70000	36.8	50.0
7.92500	40.9	50.0
8.71500 <i>mp</i>	44.7	50.0
10.79500	34.7	50.0
15.25000	36.3	50.0
16.23000	36.2	50.0
20.26000	37.4	50.0
26.61000	38.2	50.0

* limit exceeded

Report No. SC304352-03

TUV America **Conducted Emissions**

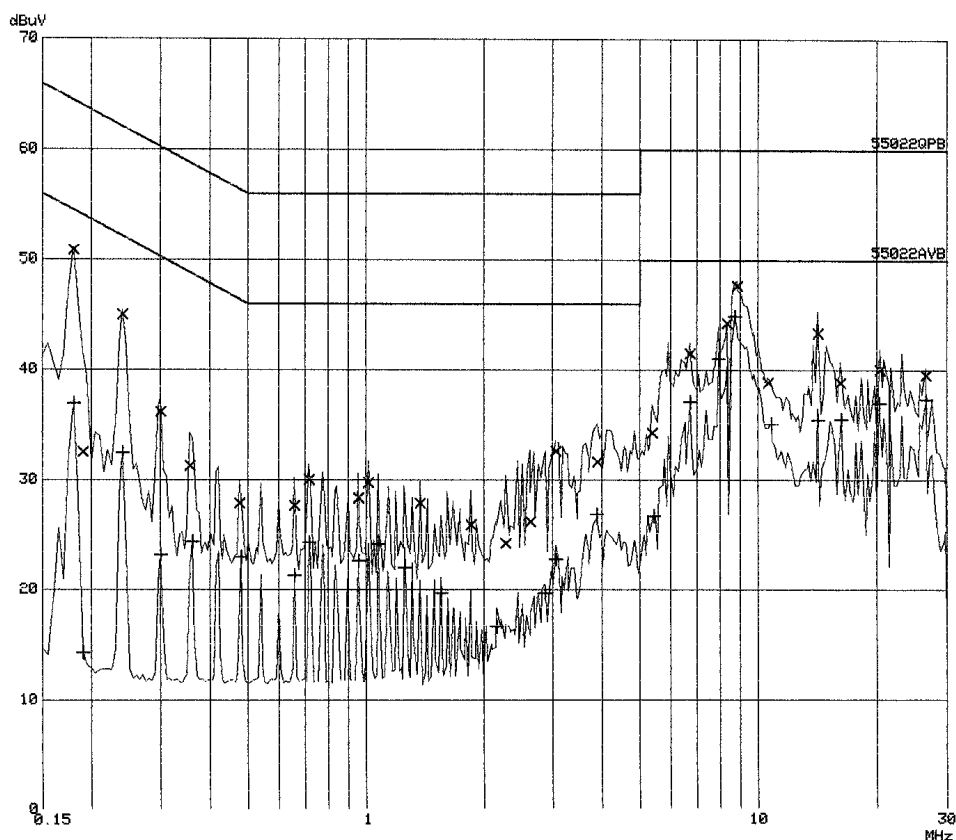
EUT: Skyway 5000 + 26 dBi
 Manuf: Solectek Corporation
 Op Cond: Transmit/receive 5735 MHz 50% duty cycle
 Operator: A. Laudani
 Test Spec: EN55022 Class B FCC 15.107(a)
 Comment: 115VAC 60 Hz. Line 1
 SC304352
 Date: 24. Sep 03 08:32

Scan Settings (2 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	1M	5k	10k	PK+AV	50ms	AUTO	LN OFF	60dB
1M	30M	5k	10k	PK+AV	2ms	AUTO	LN OFF	60dB

Transducer No.	Start	Stop	Name
1	20k	30M	20dBLISN

Final Measurement: x QP / + AV
 Meas Time: 1 s
 Subranges: 25
 Acc Margin: 45dB



TUV America Conducted Emissions

EUT: Skyway 5000 + 26 dBi
Manuf: Solectek Corporation
Op Cond: Transmit/receive 5735 MHz 50% duty cycle
Operator: A. Laudani
Test Spec: EN55022 Class B FCC 15.107(a)
Comment: 115VAC 60 Hz. Line 1
SC304352
Date: 24. Sep 03 08:32

Final Measurement Results:

Frequency MHz	QP Level dBuV	QP Limit dBuV
0.18000	50.9	64.5
0.19000	32.5	64.1
0.24000	45.0	62.1
0.30000	36.2	60.2
0.35500	31.3	58.8
0.47500	27.9	56.4
0.65500	27.6	56.0
0.71500	30.0	56.0
0.95500	28.3	56.0
1.01500	29.7	56.0
1.37500	27.8	56.0
1.85000	25.9	56.0
2.27500	24.2	56.0
2.62000	26.1	56.0
3.04500	32.6	56.0
3.89000	31.6	56.0
5.36500	34.2	60.0
6.70500	41.5	60.0
8.33500	44.2	60.0
8.82500	47.7	60.0
10.59500	38.9	60.0
14.15000	43.3	60.0
16.16500	38.9	60.0
20.38000	40.0	60.0
26.61000	39.6	60.0

Frequency MHz	AV Level dBuV	AV Limit dBuV
0.18000	36.9	54.5
0.19000	14.2	54.1
0.24000	32.4	52.1
0.30000	23.2	50.2
0.36000	24.3	48.7
0.48000	23.0	46.4
0.65500	21.3	46.0
0.71500	24.3	46.0
0.95500	22.6	46.0
1.07500	24.1	46.0
1.25500	22.0	46.0
1.55500	19.7	46.0
2.15000	16.6	46.0

Report No. SC304352-03

Date: 24. Sep 03 08:32

2.86500	19.7	46.0
3.04500	22.7	46.0
3.88000	26.8	46.0
5.43000	26.7	50.0
6.70000	37.1	50.0
7.92500	41.0	50.0
8.71500	44.9	50.0
10.79500	35.1	50.0
14.15000	35.5	50.0
16.23000	35.5	50.0
20.26000	37.0	50.0
26.61000	37.3	50.0

* limit exceeded

Report No. SC304352-03

TUV America **Conducted Emissions**

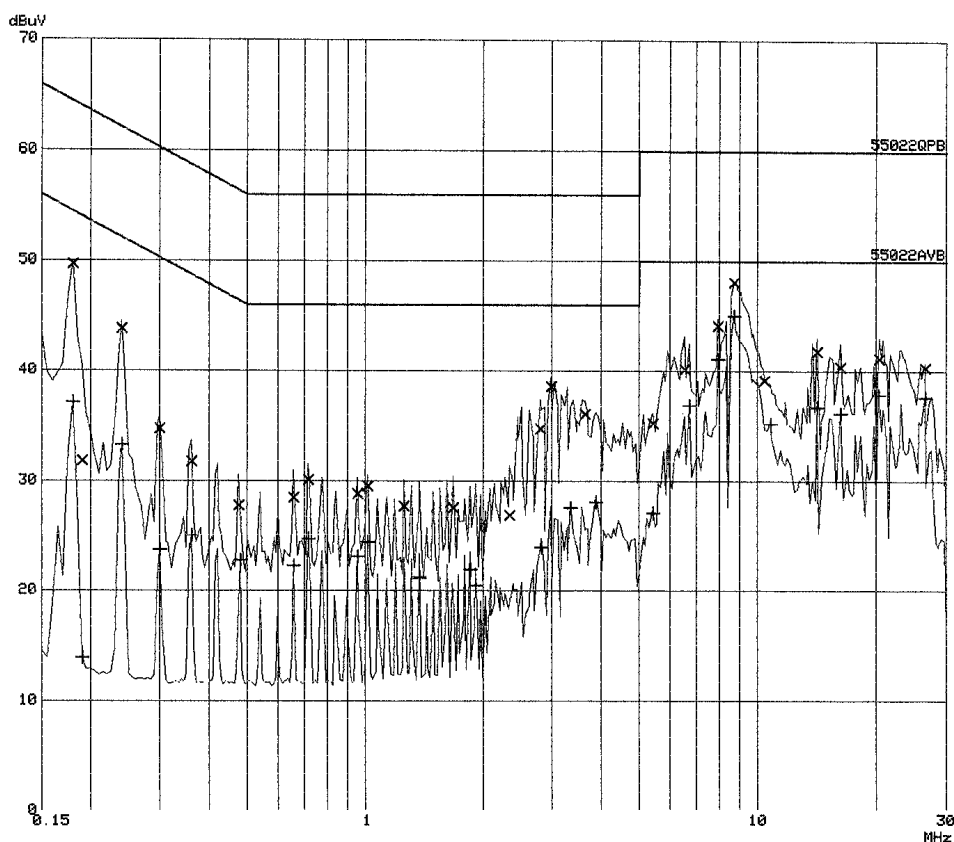
EUT: Skyway 5000 + 26 dBi
 Manuf: Solectek Corporation
 Op Cond: Transmit/receive 5735 MHz 50% duty cycle
 Operator: A. Laudani
 Test Spec: EN55022 Class B FCC 15.107(a)
 Comment: 115VAC 60 Hz. Line 2
 SC304352
 Date: 24. Sep 03 08:47

Scan Settings (2 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	1M	5k	10k	PK+AV	50ms	AUTO	LN OFF	60dB
1M	30M	5k	10k	PK+AV	2ms	AUTO	LN OFF	60dB

Transducer No.	Start	Stop	Name
1	20k	30M	20dBLISN

Final Measurement: x QP / + AV
 Meas Time: 1 s
 Subranges: 25
 Acc Margin: 45dB



TUV America
Conducted Emissions

EUT: Skyway 5000 + 26 dBi
 Manuf: Solectek Corporation
 Op Cond: Transmit/receive 5735 MHz 50% duty cycle
 Operator: A. Laudani
 Test Spec: EN55022 Class B FCC 15.107(a)
 Comment: 115VAC 60 Hz. Line 2
 SC304352
 Date: 24. Sep 03 08:47

Final Measurement Results:

Frequency MHz	QP Level dBuV	QP Limit dBuV
0.18000	49.6	64.5
0.19000	31.8	64.1
0.24000	43.8	62.1
0.30000	34.7	60.2
0.36000	31.7	58.7
0.47500	27.8	56.4
0.65500	28.5	56.0
0.71500	30.1	56.0
0.95500	28.8	56.0
1.01500	29.5	56.0
1.25500	27.7	56.0
1.67500	27.5	56.0
2.33000	26.9	56.0
2.80000	34.7	56.0
2.98000	38.6	56.0
3.63500	36.0	56.0
5.42500	35.2	60.0
6.52000	40.1	60.0
7.92500	44.1	60.0
8.71500	48.0	60.0
10.41000	39.2	60.0
14.15500	41.8	60.0
16.23000	40.4	60.0
20.32000	41.2	60.0
26.61000	40.3	60.0

Frequency MHz	AV Level dBuV	AV Limit dBuV
0.18000	37.1	54.5
0.19000	13.9	54.1
0.24000	33.3	52.1
0.30000	23.7	50.2
0.36000	25.1	48.7
0.48000	22.7	46.4
0.65500	22.3	46.0
0.71500	24.7	46.0
0.95500	23.1	46.0
1.01500	24.4	46.0
1.37500	21.2	46.0
1.85000	21.9	46.0
1.91000	20.5	46.0

Report No. SC304352-03

Date: 24. Sep 03 08:47

2.80500	23.9	46.0
3.34000	27.6	46.0
3.87500	28.1	46.0
5.42500	27.1	50.0
6.70000	36.8	50.0
7.92500	41.1	50.0
8.71500	45.0	50.0
10.79500	35.2	50.0
14.15500	36.7	50.0
16.23000	36.1	50.0
20.26000	37.9	50.0
26.61000	37.6	50.0

* limit exceeded

Report No. SC304352-03

4. RADIATED EMISSION EQUIPMENT/DATA, CFR 47, Part 15, 15.109(a)

4.1 EQUIPMENT

Emissions Test Conditions: RADIATED EMISSIONS

The *RADIATED EMISSIONS* measurements were performed at the following test location :

☐ - Test not applicable

■ - Canyon #1 (3- and 10-Meter Open Area Test Site), Carroll Canyon, San Diego

Testing was performed at a test distance of:

10 meters

Test Equipment Used :

Model No.	Prop. No.	Description	Manufacturer	Serial No.	Cal Date
ESVS30	6732	EMC Receiver	Rohde & Schwarz	833825/003	04/04
LPB25020/	739	Bilog Antenna	Antenna Research	1170	05/04

Remarks: Receive 5735 MHz, +23 dBi, +26 dBi and Transmit/Receive 5735 MHz +26 dBi, shielding added to ethernet cable from PC to DC injector.

4.2 FIELD STRENGTH CALCULATION

If a preamplifier was used during the Radiated Emission Testing, it is required that the amplifier gain must be subtracted from the Spectrum Analyzer (Meter) Reading. In addition, a correction factor for the antenna, cable used and a distance factor, if any, must be applied to the Meter Reading before a true field strength reading can be obtained. In the automatic measurement, these considerations are automatically presented as a part of the print out. In the case of manual measurements and for greater efficiency and convenience, instead of using these correlation factors for each meter reading, the specification limit was modified to reflect these correlation factors at each frequency value so that the meter readings can be compared directly to the modified specification limit. This modified specification limit is referred to as the "Corrected Meter Reading Limit" or simply the CMRL, which is the actual field strength present at the antenna. The quantity can be derived in the following manner:

$$\text{Corrected Meter Reading Limit (CMRL)} = \text{SAR} + \text{AF} + \text{CL} - \text{AG} - \text{DC}$$

Where, SAR = Spectrum Analyzer Reading

AF = Antenna Factor

CL = Cable Loss

AG = Amplifier Gain (if any)

DC = Distance Correction (if any)

Assume the following situation: A meter reading of 29.4 dBuV was obtained from a Class A computing device measured at 83 MHz. Assume an antenna factor of 9.2 dB, a cable loss of 1.4 dB and amplifier gain of 20.0 dB at 83 MHz. The final field strength would be determined as follows:

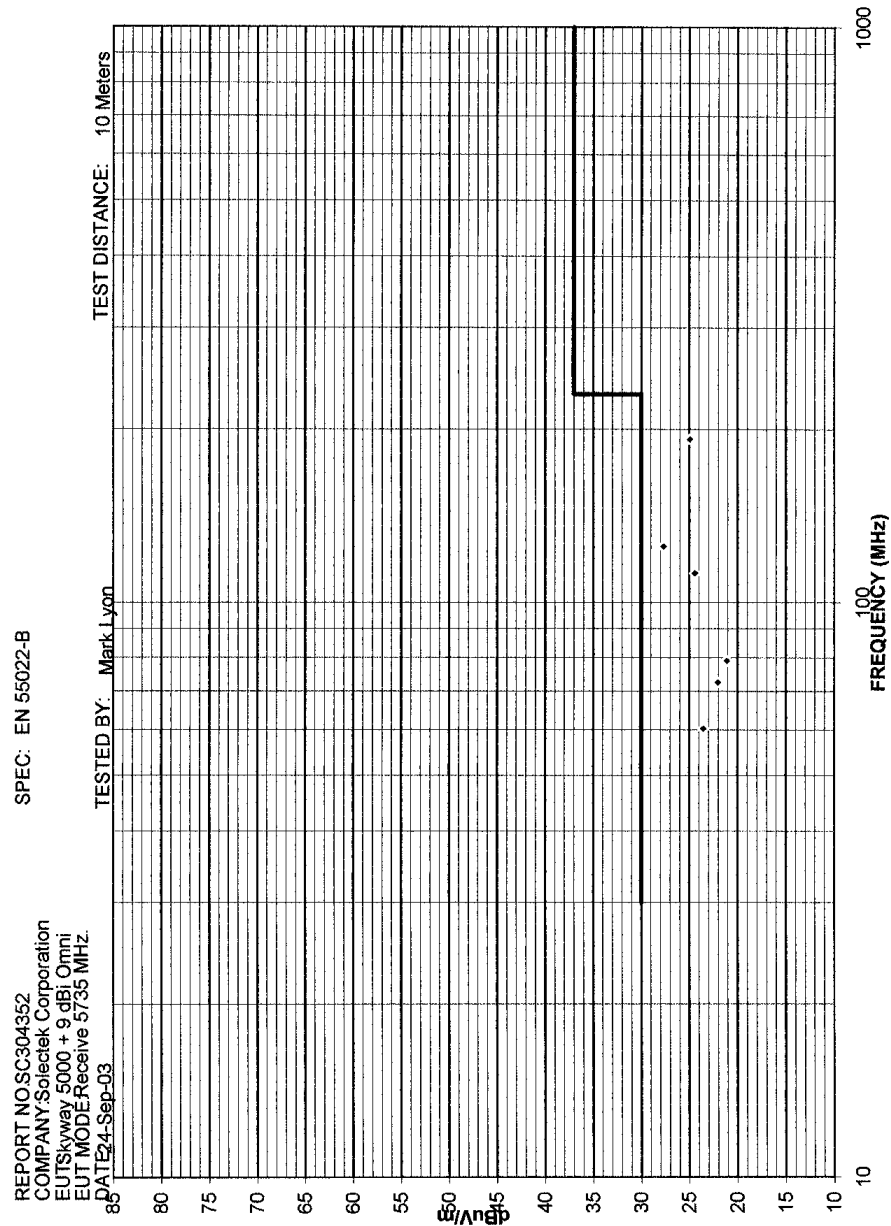
$$\text{CMRL} = 29.4 \text{ dBuV} + 9.2 \text{ dB} - 1.4 \text{ dB} - 20 \text{ dB/M} - 0.0 \text{ dB}$$

$$\text{CMRL} = 20.0 \text{ dBuV/M}$$

This result is well below the FCC and CSA Class A limit of 29.5 dBuV/m at 83 MHz.

For the manual mode of measurement, a table of corrected meter reading limit was used to permit immediate comparison of the meter reading to determine if the measure emission amplitude exceeded the specification limit at that specific frequency.

4.3 DATA



REPORT No: SC304352

SPEC: EN 55022-B

CUSTOMER: Solectek Corporation

TEST DIST: 10 Meters

E U T: Skyway 5000 + 9 dBi Omni

TEST SITE: 1

EUT MODE: Receive 5735 MHz.

BICONICAL: 739

DATE: 24-Sep-03 TESTED BY: Mark Lyon

LOG PERIODIC: 739

NOTES: Quasi-Peak with 120 KHz measurement bandwidth.
115 VAC/60 Hz.

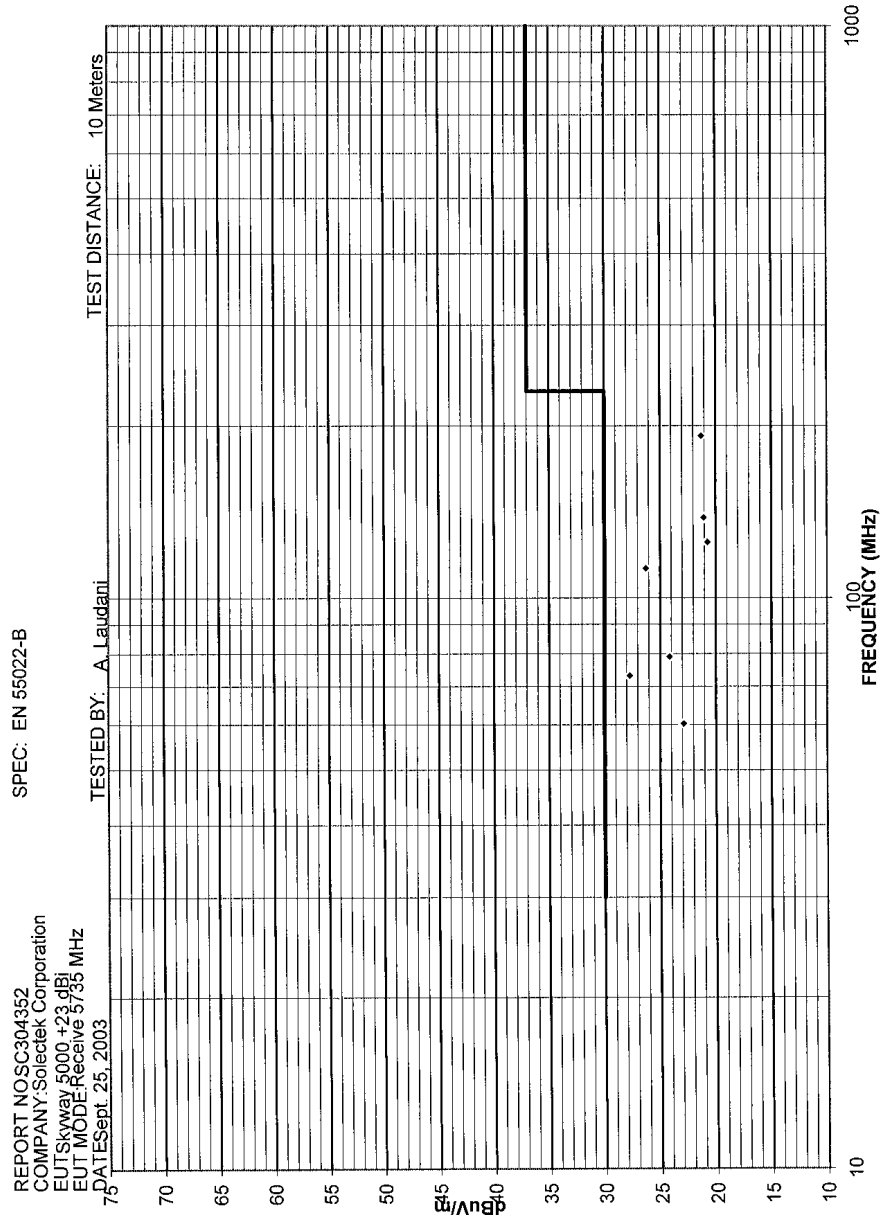
RCVR: 6723

Temperature: 21 Relative Humidity: 50

EUT MARGIN	-2.3	dB at 125.2 MHz
-------------------	------	-----------------

ver 1.8a

[illegible]



REPORT No: SC304352

SPEC: EN 55022-B

CUSTOMER: Solectek Corporation

TEST DIST: 10 Meters

E U T: Skyway 5000 +23 dBi

TEST SITE: 1

EUT MODE: Receive 5735 MHz

BICONICAL: 739

DATE: Sept. 25, 200 TESTED BY: A. Laudani

LOG PERIODIC: 739

NOTES: Quasi-Peak with 120 KHz measurement bandwidth.

RCVR: 6723

115 Vac/60 Hz

Shielding added to ethernet cable from PC to DC Injector *

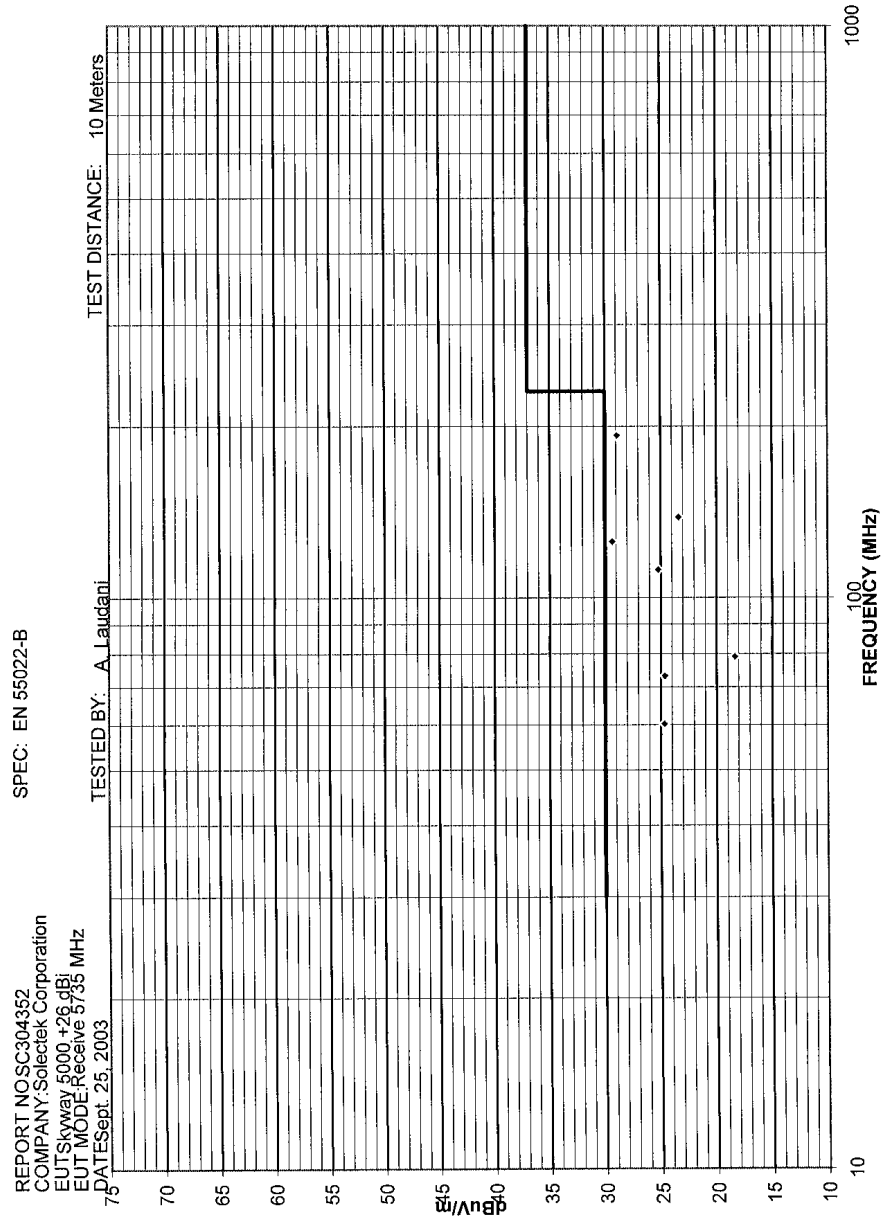
Temperature: 21°C Relative Humidity: 50%

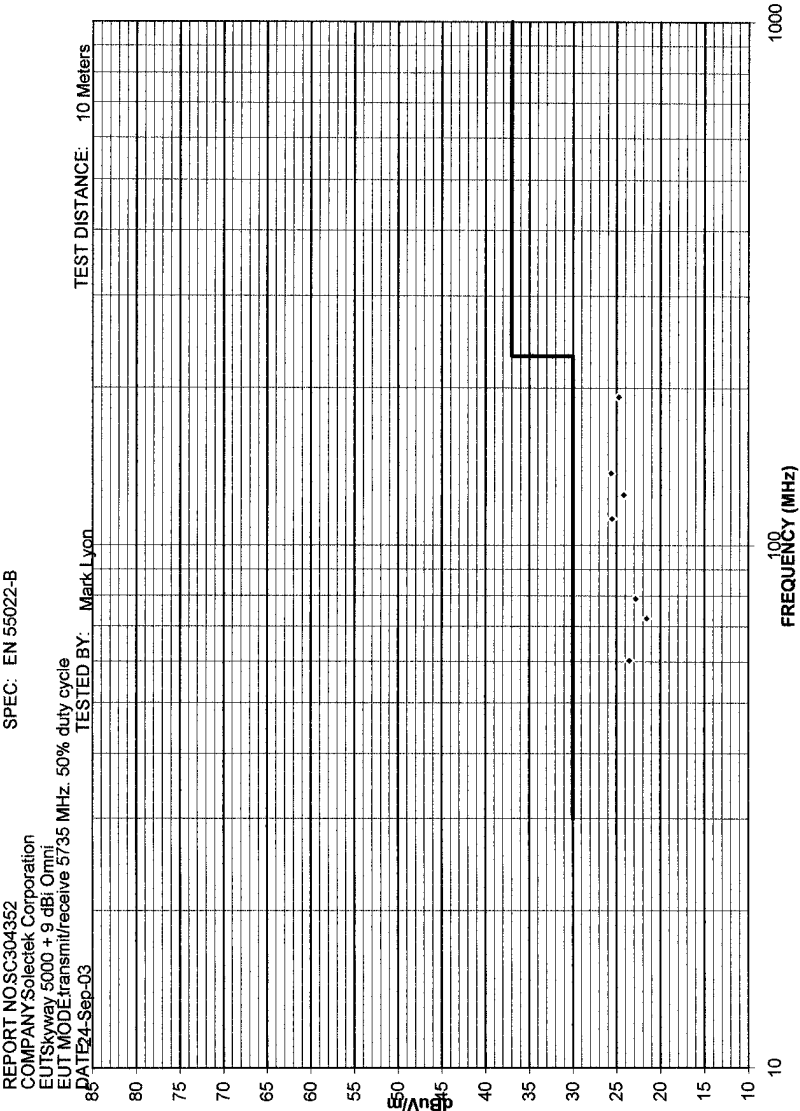
EUT MARGIN

Temperature:	21°C	F
-2.3	dB at 73.11 MHz	

ver 1.8

[illegible]





REPORT No: SC304352

SPEC: EN 55022-B

CUSTOMER: Solectek Corporation

TEST DIST: 10 Meters

E U T: Skyway 5000 + 9 dBi Omni

TEST SITE: 1

EUT MODE: transmit/receive 5735 MHz. 50% duty cycle

BICONICAL: 739

DATE: 24-Sep-03 TESTED BY: Mark Lyon

LOG PERIODIC: 739

NOTES: Quasi-Peak with 120 KHz measurement bandwidth.
115 VAC/60 Hz.

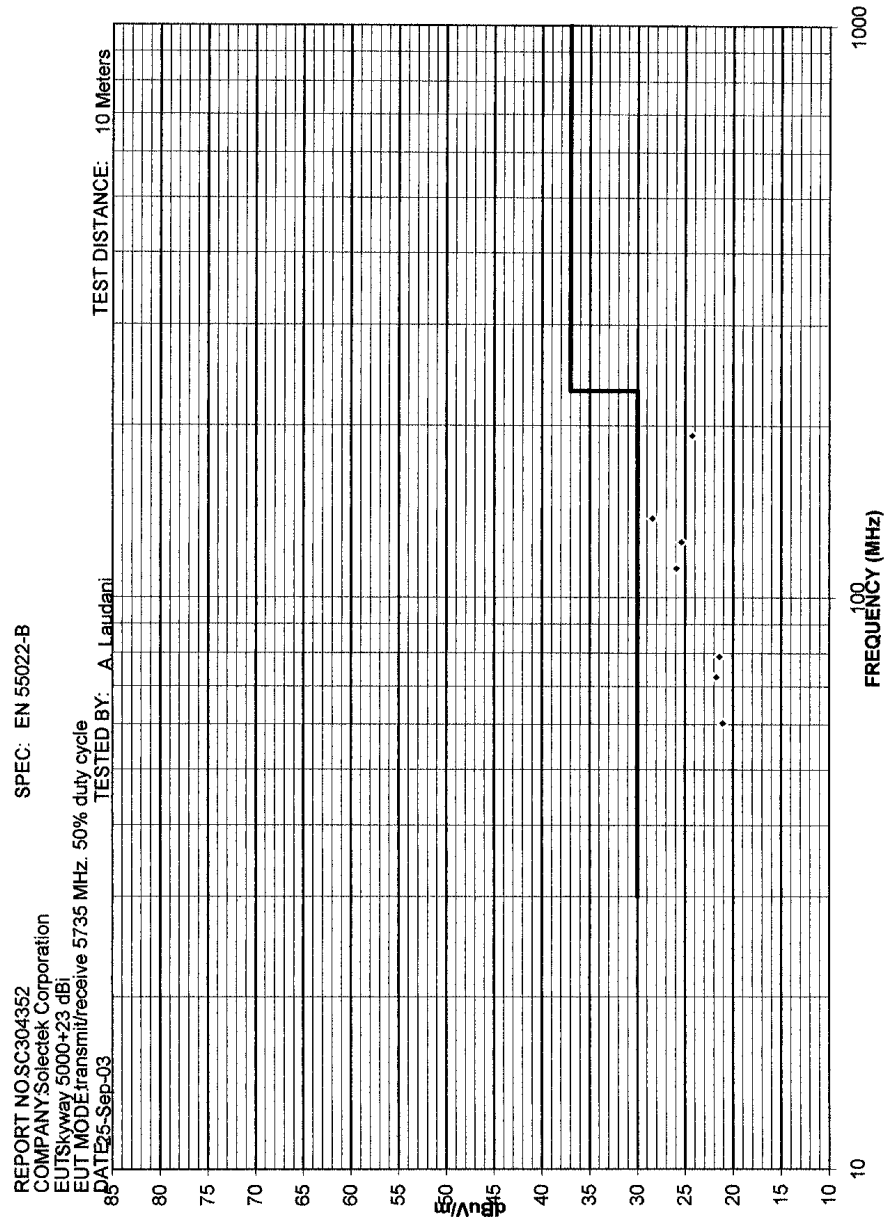
RCVR: 6723

Temperature:	21	Relative Humidity:	50
--------------	----	--------------------	----

EUT MARGIN	-4.4	dB at 137.5 MHz
------------	------	-----------------

ver 1.8a

[illegible]



REPORT No: SC304352

SPEC: EN 55022-B

CUSTOMER: Solectek Corporation

TEST DIST: 10 Meters

E U T: Skyway 5000+23 dBi

TEST SITE: 1

EUT MODE: transmit/receive 5735 MHz. 50% duty cycle

BICONICAL: 739

DATE: 25-Sep-03 TESTED BY: A. Laudani

LOG PERIODIC: 739

NOTES: Quasi-Peak with 120 KHz measurement bandwidth.
115 VAC/60 Hz.

RCVR: 6723

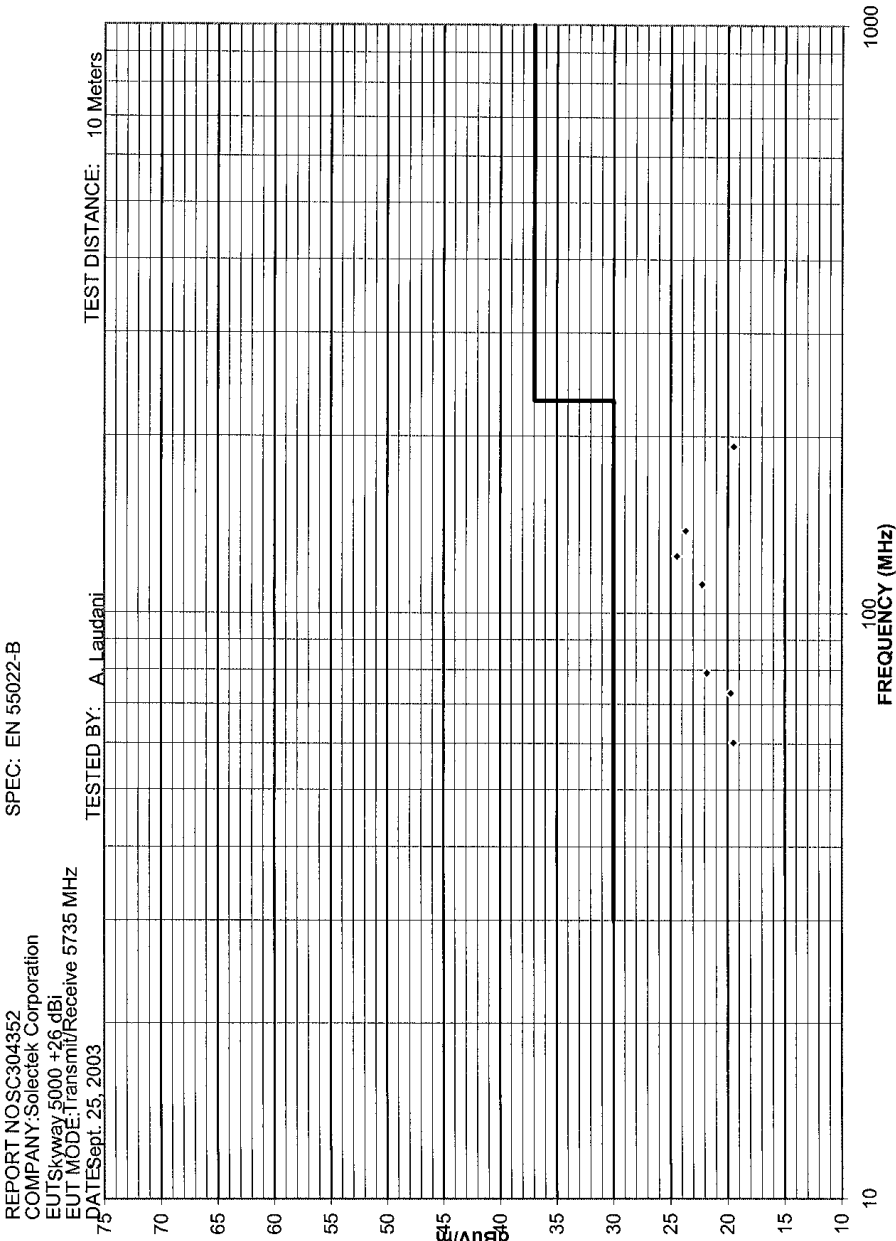
Temperature: 21 Relative Humidity: 50

EUT MARGIN

-1.6 dB at 137.5 MHz

ver 1.8a

[illegible]



REPORT No: SC304352

SPEC: EN 55022-B

CUSTOMER: Solectek Corporation

TEST DIST: 10 Meters

E U T: Skyway 5000 +26 dBi

TEST SITE: 1

EUT MODE: Transmit/Receive 5735 MHz

BICONICAL: 739

DATE: Sept. 25, 200 TESTED BY: A. Laudani

LOG PERIODIC: 739

NOTES: Quasi-Peak with 120 KHz measurement bandwidth.

RCVR: 6723

115 Vac/60 Hz

Shielding added to ethernet cable from PC to DC Injector *

Temperature: 21°C Relative Humidity: 50%

EUT MARGIN

-5.6 dB at 125.2 MHz

ver 1.8

[illegible]

Report No. SC304352-03

5. CHANNEL BANDWIDTH, CFR 47, Part 15, 15.247(a)(2)

5.1 EQUIPMENT

Emissions Test Conditions: CHANNEL BANDWIDTH

The *Channel Bandwidth* measurements were performed at the following test location :

☐ - Test not applicable

■ - SR-3, Shielded Room, 12' x 20' x 8', Metal Chamber

Test Equipment Used :

Model No.	Prop. No.	Description	Manufacturer	Serial No.	Cal Date
E4440A	6814	Spectrum Analyzer	Agilent	--	08/04

Remarks:

Report No. SC304352-03

5.2 DATA

Channel Bandwidth

SHEET 1 OF 2



TEST REPORT # SC304352

TEST AREA SR3

DATE Sept. 26, 2003

EUT MODEL # Skypower 5000

TEMPERATURE 22 °C

SPECIFICATION:

EUT SERIAL # _____

HUMIDITY 50 %

FCC 15.247(a)(2)

EUT DESCRIPTION

AIR PRESSURE 100.2 kPa

Measured with spectrum analyzer.

Frequency MHz	Measured Bandwidth	Bandwidth Requirement	Margin	<u>COMPLIES</u>	REMARKS
5735	19.5 MHz	500 kHz	>>500 kHz	<u>YES</u>	Low Channel
5785	35 MHz	500 kHz	>>500 kHz	<u>YES</u>	Mid Channel
5835	18.5 MHz	500 kHz	>>500 kHz	<u>YES</u>	High Channel

Tuned by client prior to formal testing.

Equipment used: Agilent E4416A power meter (SN: GB41291574 Calibration Date 16 April 2003) w/ E9322A power sensor (SN: US40400294 Calibration Date 6 June 2003). Tolerance is +/- 1dB for measured level.

NOTES: Nominal Voltage = 120 Vac

OFDM Modulation.

TEST EQUIP. :

TESTED BY:

REVIEWED BY:



A. Laudani

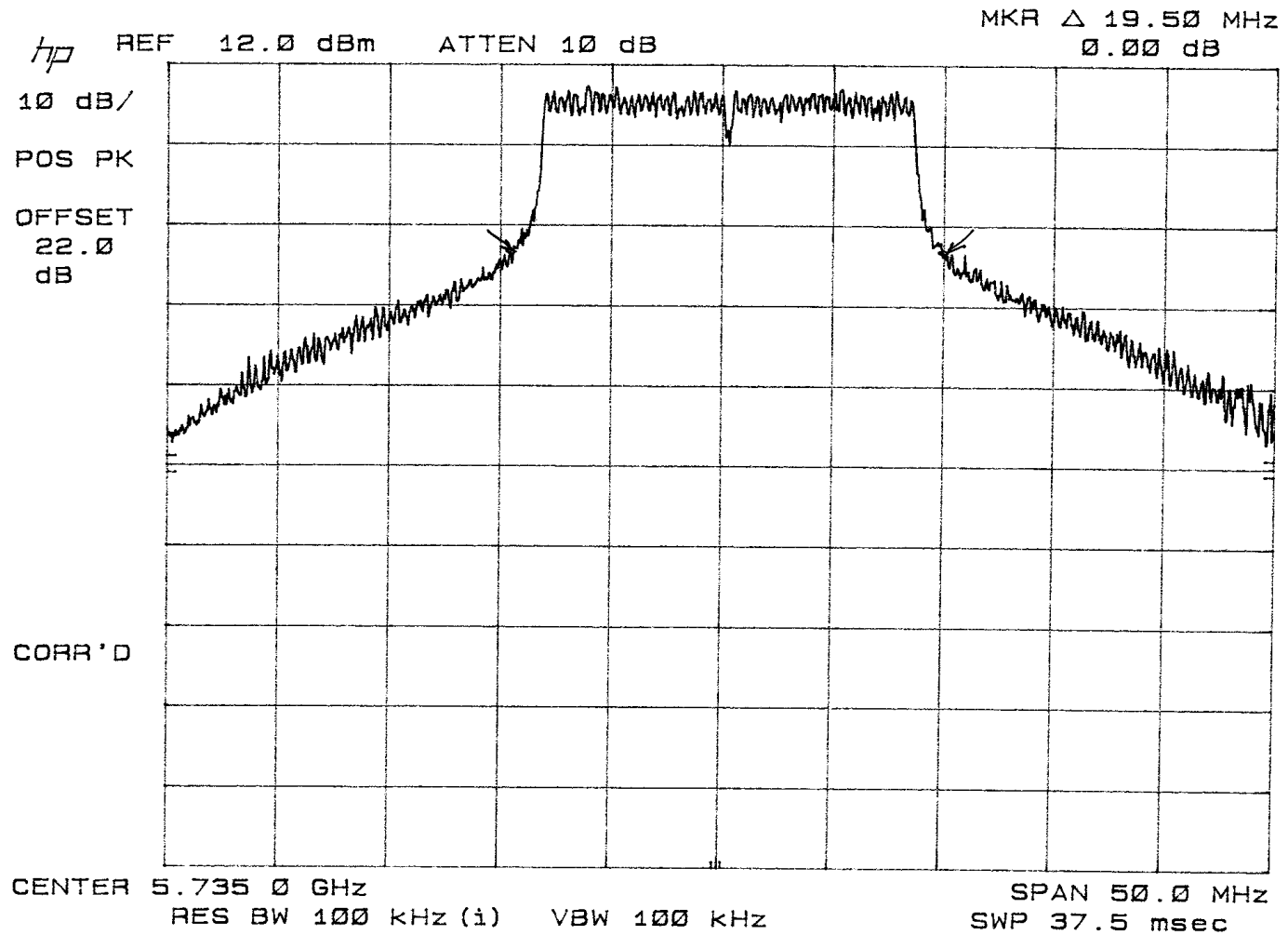


Jim Owen

CLIENT: SOLECTEK
SPEC: 15.247(a)(2)

TEST: CHANNEL BANDWIDTH DATE: 9/26/03

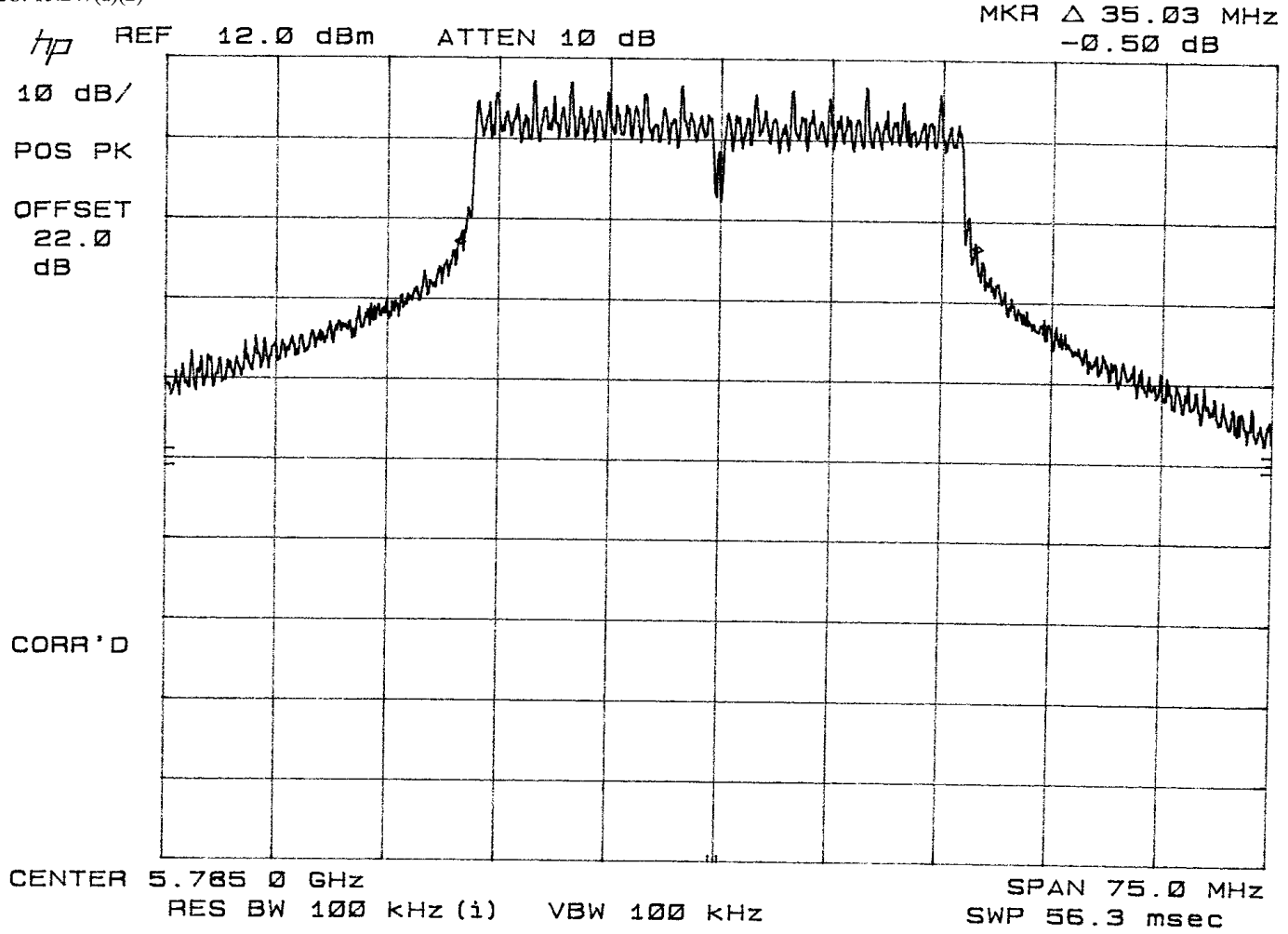
REPORT: SC304352



CLIENT: SOLECTEK
SPEC: 15.247(a)(2)

TEST: CHANNEL BANDWIDTH DATE: 9/26/03

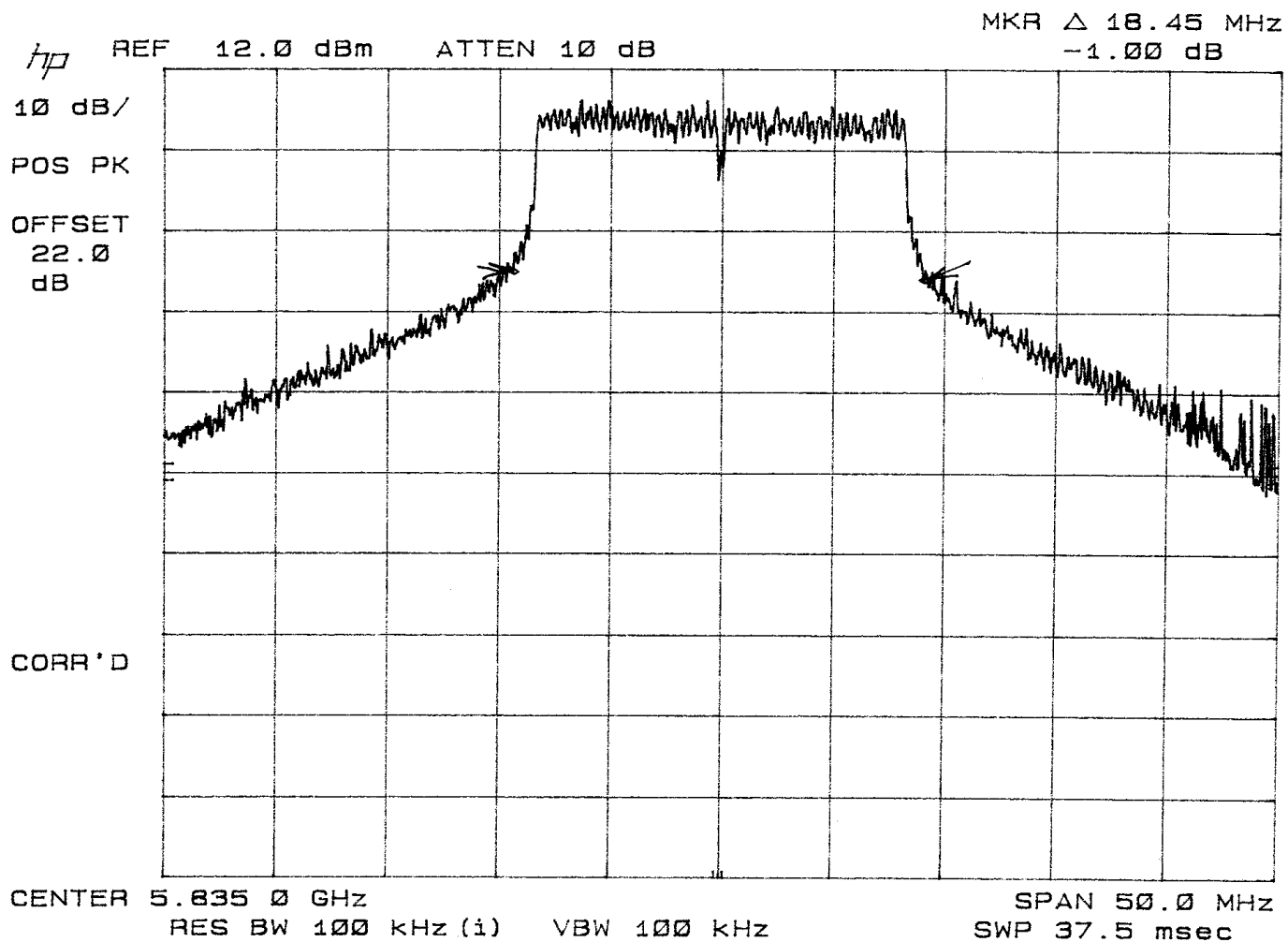
REPORT: SC304352



CLIENT: SOLECTEK
SPEC: 15.247(a)(2)

TEST: CHANNEL BANDWIDTH DATE: 9/26/03

REPORT: SC304352



Report No. SC304352-03

6. RF POWER OUTPUT CFR 47, Part 15, 15.247(b)

6.1 EQUIPMENT

The *RF POWER OUTPUT* measurements were performed at the following test location :

☐ - Test not applicable

■ - SR-3, Shielded Room, 12' x 20' x 8', Metal Chamber

Test Equipment Used :

Model No.	Prop. No.	Description	Manufacturer	Serial No.	Cal Date
ESHS30	6509	Emi Test Receiver	Rohde & Schwarz	832354/004	05/04
E4440A	6814	Spectrum Analyzer	Agilent	--	08/04
CBL6111	6527	Bilog Antenna	Chase	1013	NCR
E4416A	--	Power Meter	Agilent	GB41291574	04/04
E9322A	--	Power Sensor	Agilent	US40400294	06/04

Remarks: _____

Report No. SC304352-03

6.2 DATA

RF Power Output

SHEET 1 OF 2



TEST REPORT # SC304352

TEST AREA SR3

DATE Sept. 26, 2003

EUT MODEL # Skypower 5000

TEMPERATURE 22 °C

SPECIFICATION:

EUT SERIAL # _____

HUMIDITY 50 %

FCC 15.247(b)

EUT DESCRIPTION

AIR PRESSURE 100.2 kPa

Measured with Averaging Power Meter, corrected for path loss.

Frequency MHz	Peak Power Level dBm	Peak Power Level (Watts)	Margin dB	COMPLIES	REMARKS
5735	25	.316 Watts	-13.8	YES	Low Channel
5785	25	.316 Watts	-13.3	YES	Mid Channel
5835	25	.316 Watts	-13.5	YES	High Channel

Tuned by client prior to formal testing.

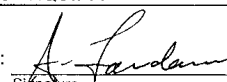
Equipment used: Agilent E4416A power meter (SN: GB41291574 Calibration Date 16 April 2003) w/ E9322A power sensor (SN: US40400294 Calibration Date 6 June 2003). Tolerance is +/- 1dB for measured level.

NOTES: Nominal Voltage = 120 Vac

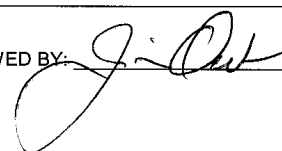
OFDM Modulation.

TEST EQUIP. :

TESTED BY:


Signature
A. Laudani

REVIEWED BY:



FREQ STAB.doc
5/23/02

Report No. SC304352-03

7. SPURIOUS EMISSIONS AT ANTENNA TERMINALS, CFR 47, Part 15, 15.247(c)

7.1 EQUIPMENT

The *Spurious EMISSIONS* measurements were performed at the following test location :

☐ - Test not applicable

Roof

Test Equipment Used :

Model No.	Prop. No.	Description	Manufacturer	Serial No.	Cal Date
HP8566B	6488	Spectrum Analyzer	Hewlett Packard	--	12/03
AMF-5D-010180-35-10P	719	Preamplifier, 40 Db	Miteq	--	NCR
3115	251	Horn Antenna	EMCO	--	12/05
8445B	6677	Preselector	--	--	NCR
12A-18	6377	Horn Antenna	Scientific Atlanta	--	NCR
11970K	652	Harmonic Mixer	Hewlett Packard	--	NCR
11975A	716	Amplifier	Hewlett Packard	--	NCR

Remarks: _____

Report No. SC304352-03

7.1 DATA

SPURIOUS EMISSIONS AT ANTENNA TERMINALS

SHEET 1 OF 2



TEST REPORT # SC304352

TEST AREA SR3

DATE Sept. 25, 2003

EUT MODEL # Skypower 5000

TEMPERATURE 22 °C

SPECIFICATION (S):

EUT SERIAL # _____

HUMIDITY 50 %

FCC 15.247(c)

EUT DESCRIPTION with 9 dBi antenna

AIR PRESSURE 100.2 kPa

Alternative Test

Procedures

RBW = 1000 MHz

Frequency MHz	Emission Level - dBm	Limit dBm	Margin dB	COMPLIES	REMARKS
5735	32.635	--	--		Low Channel
11470	<-37.475	12.635	>>20dB	YES	Noise floor
17205	<-23.765	12.635	>>20dB	YES	Noise floor
22940		12.635		YES	
28675		12.635		YES	
34410		12.635		YES	

Frequency MHz	Emission Level - dBm	Limit dBm	Margin dB	COMPLIES	REMARKS
5785	31.735	--	--		Mid Channel
11570	<-38.805	11.735	>>20dB	YES	Noise floor
17355	<-23.095	11.735	>>20dB	YES	Noise floor
23140		11.735		YES	
28925		11.735		YES	
34710		11.735		YES	

NOTES: Nominal Voltage = 120 Vac

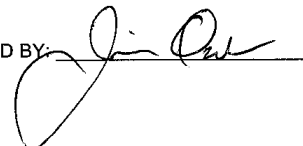
OFDM Modulation.

TEST EQUIP. :

TESTED BY:


A. Laudani

REVIEWED BY:



FREQ STAB.doc
5/23/02

Report No. SC304352-03

SPURIOUS EMISSIONS AT ANTENNA TERMINALS

SHEET 2 OF 2

TEST REPORT # SC304352

TEST AREA SR 3



Frequency MHz	Emission Level - dBm	Limit dBm	Margin dB	COMPLIES	REMARKS
5835	33.235	--	--		High Channel
11670	<-35.905	13.235	>>20dB	YES	Noise floor
17505	<-21.455	13.235	>>20dB	YES	Noise floor
23340		13.235		YES	
29175		13.235		YES	
35010		13.235		YES	

TESTED BY: A. Laudani
A. Laudani

REVIEWED BY: J. Oak

FREQ STAB.doc
5/23/02

above 1GHz: RBW & VBW 1 MHz for Pk; RBW 1MHz and VBW 10Hz for AVG
below 1GHz: RBW & VBW 100 kHz for Pk; RBW 100kHz and VBW 10Hz for AVG
CF = Antenna Factor + Cable Loss - Preamplifier Gain + Preselector Loss

Rev.No 1.0

CF = Antenna Factor + Cable Loss - Preamplifier Gain + Preselector Loss

[illegible]

above 1GHz: RBW & VBW 1 MHz for Pk; RBW 1MHz and VBW 10Hz for AVG
below 1GHz: RBW & VBW 100 kHz for Pk; RBW 100kHz and VBW 10Hz for AVG
CF = Antenna Factor + Cable Loss - Pre-amplifier Gain + Preselector Loss

TÜV AMERICA, INC. 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone 858 546 3999 FAX 858 546 0364

Report No. SC304352-03

8. CONDUCTED SPURIOUS MODULATION, CFR 47, Part 15, 15.247(c)

8.1 EQUIPMENT

The *CONDUCTED SPURIOUS* measurements were performed at the following test location :

☐ - Test not applicable

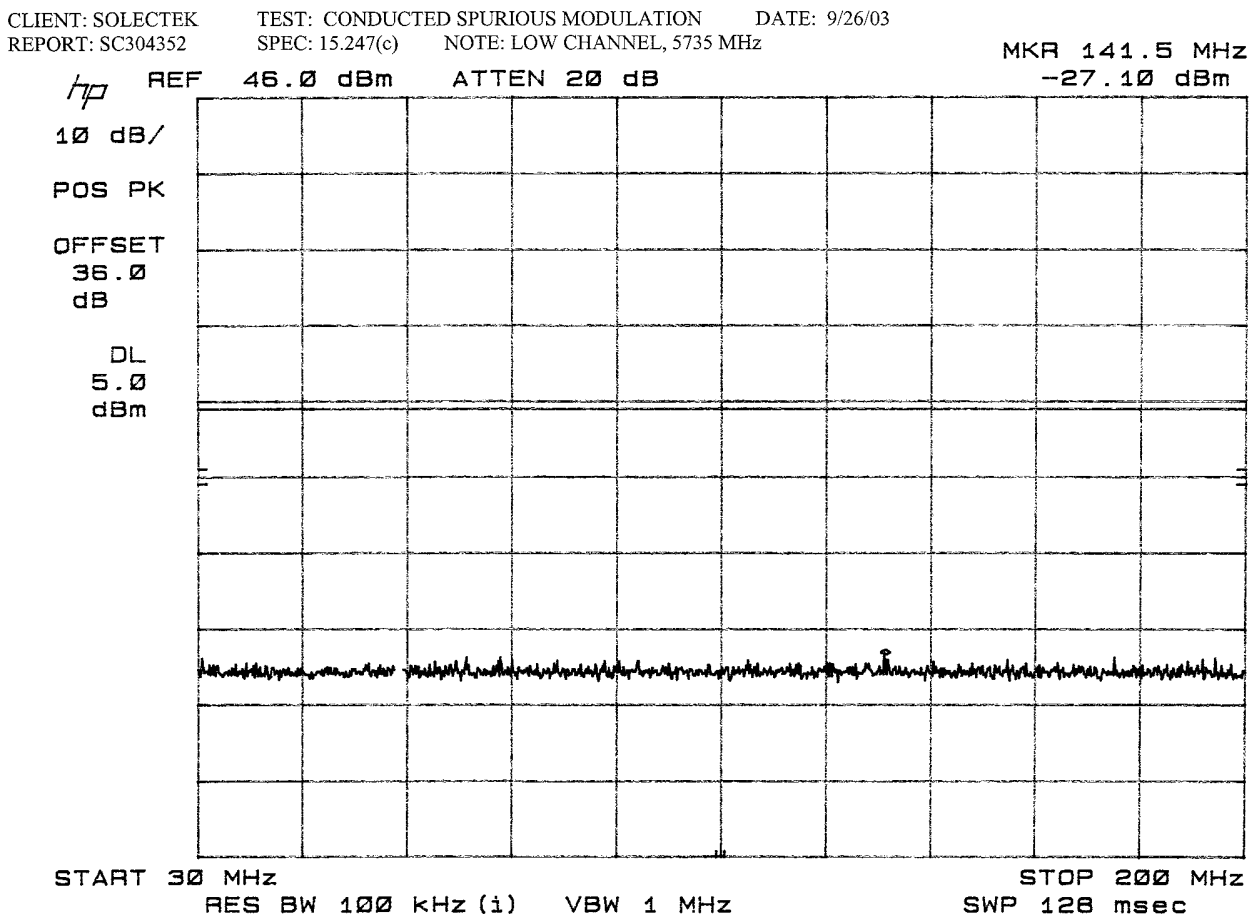
■ - SR-3, Shielded Room, 12' x 20' x 8', Metal Chamber

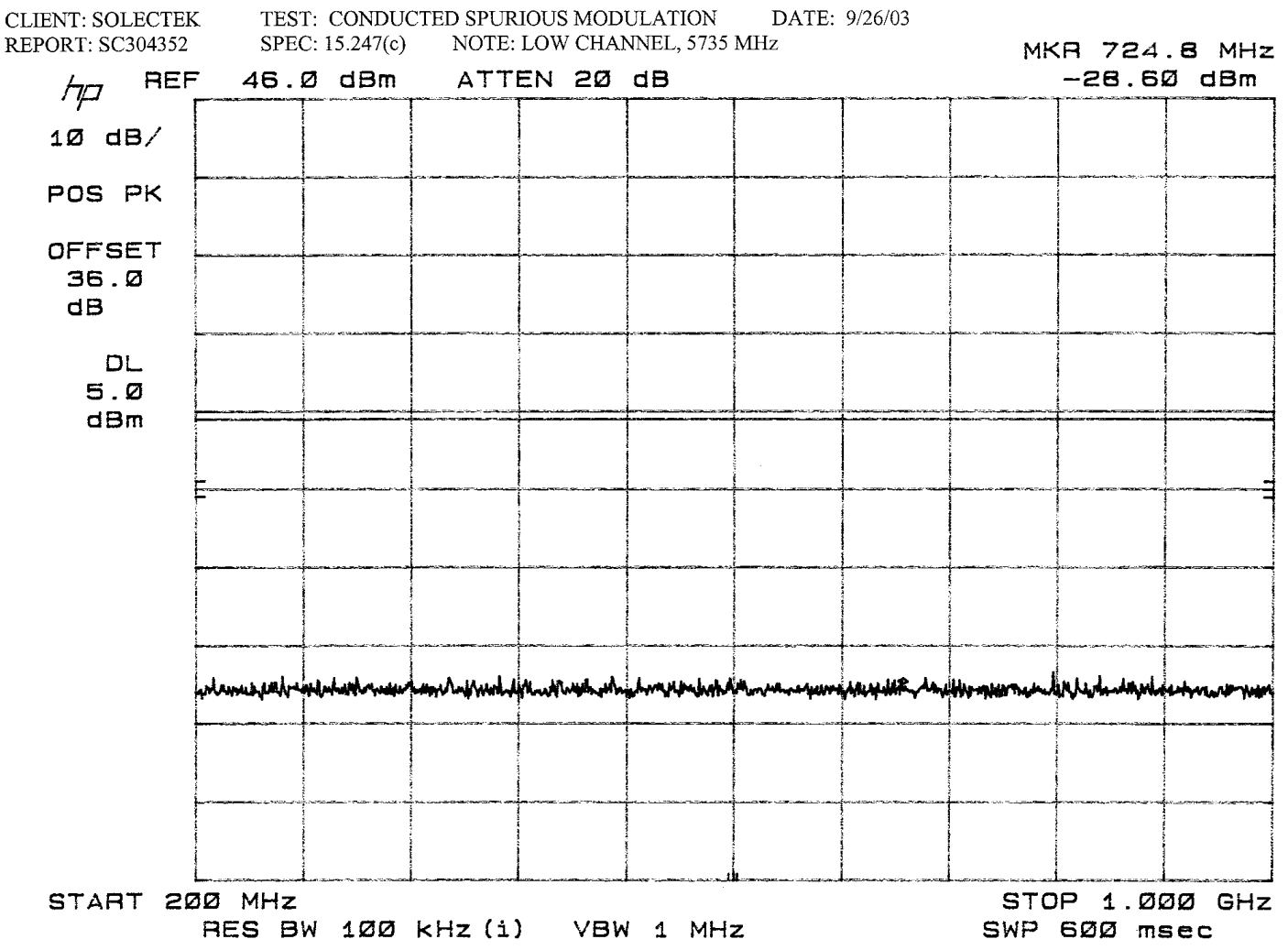
Test Equipment

Model No.	Prop. No.	Description	Manufacturer	Serial No.	Cal Date
11975A	716	Amplifier	Hewlett Packard	2517A00639	NCR
8566B	823	Spectrum Analyzer	Hewlett Packard	2332A02751	09/04
11970A	653	Harmonic Mixer	Hewlett Packard	3003A07466	NCR
11970K	652	Harmonic Mixer	Hewlett Packard	3003A05400	NCR

Remarks: _____

8.2 DATA



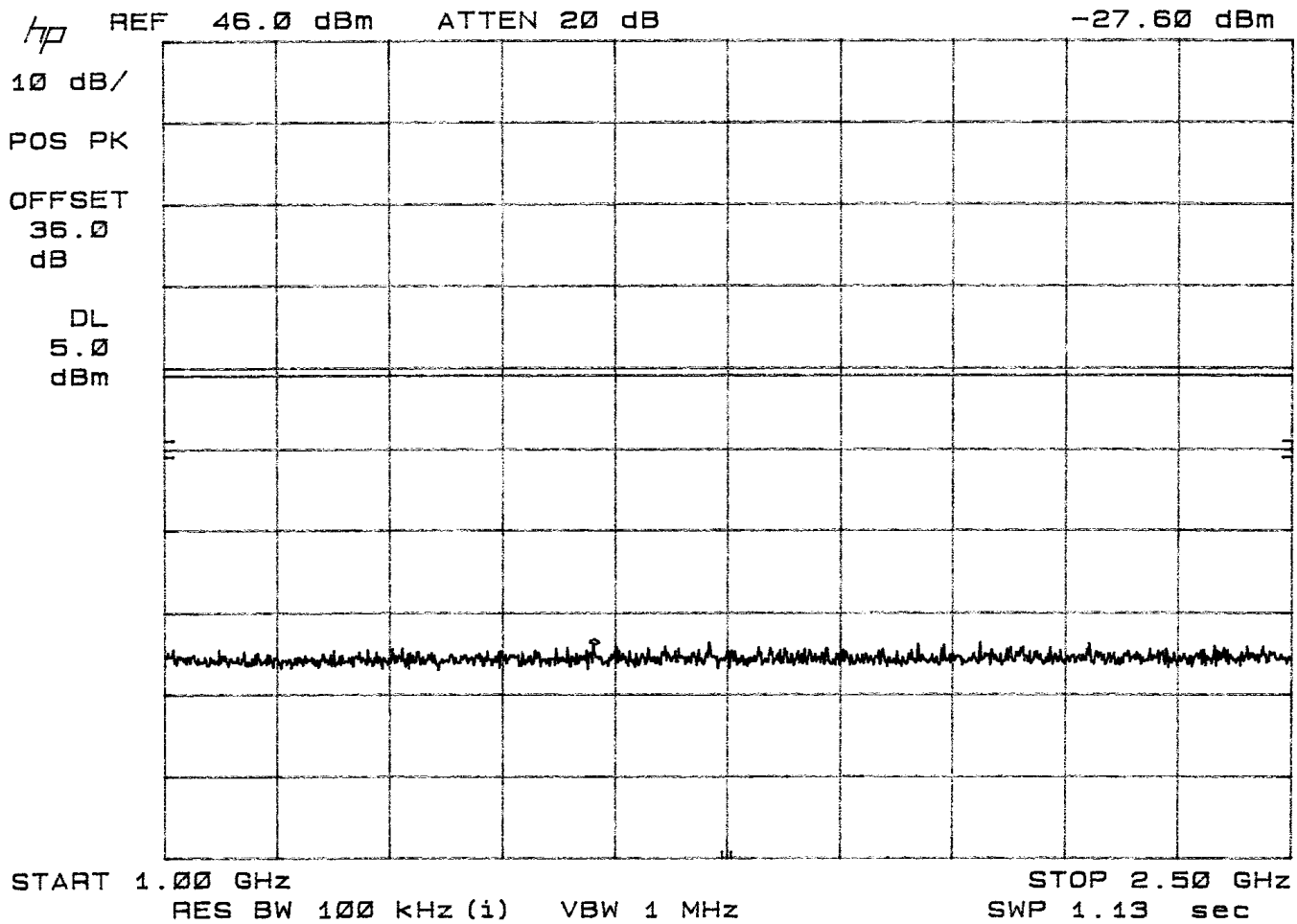


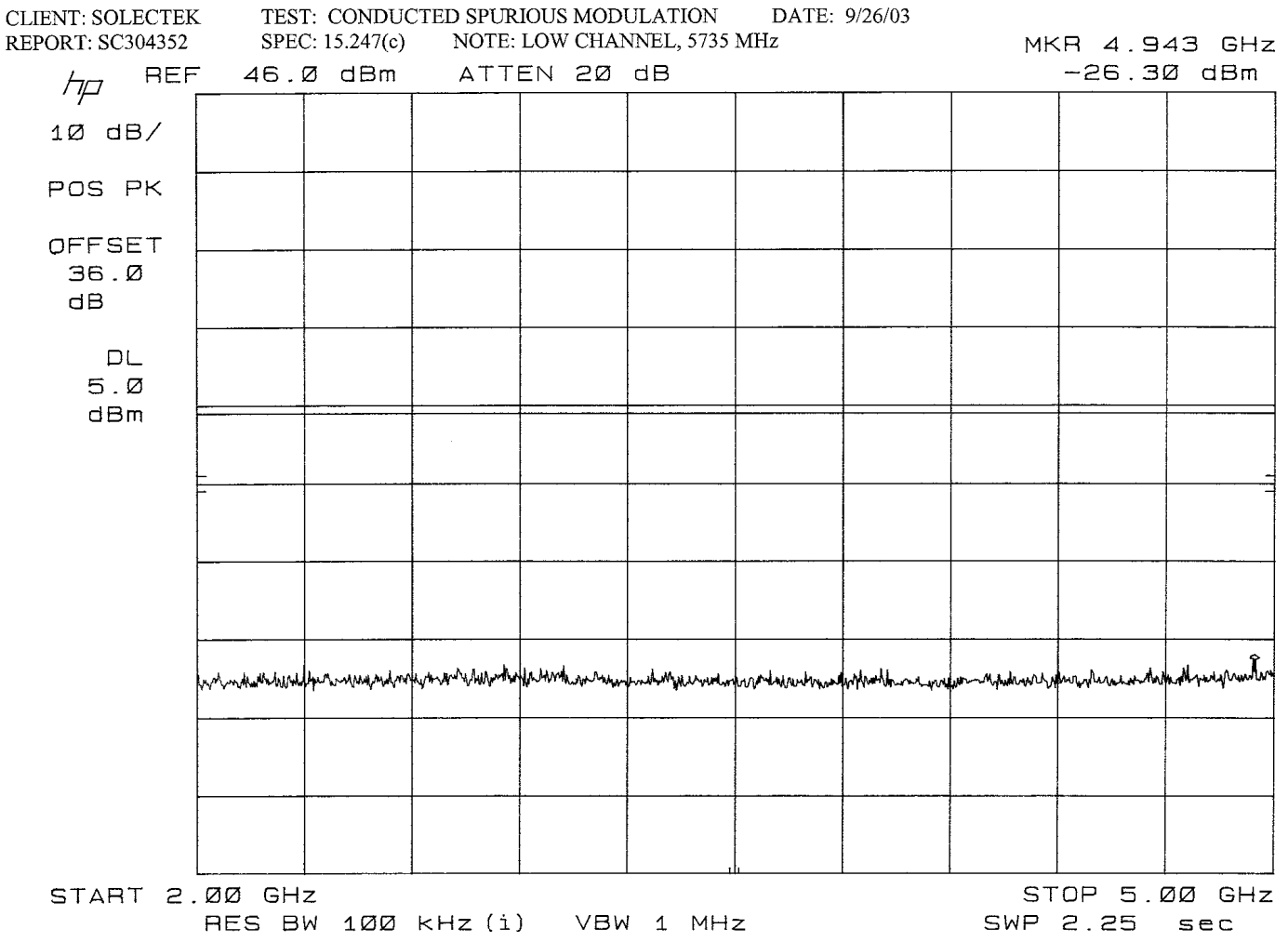
CLIENT: SOLECTEK
REPORT: SC304352

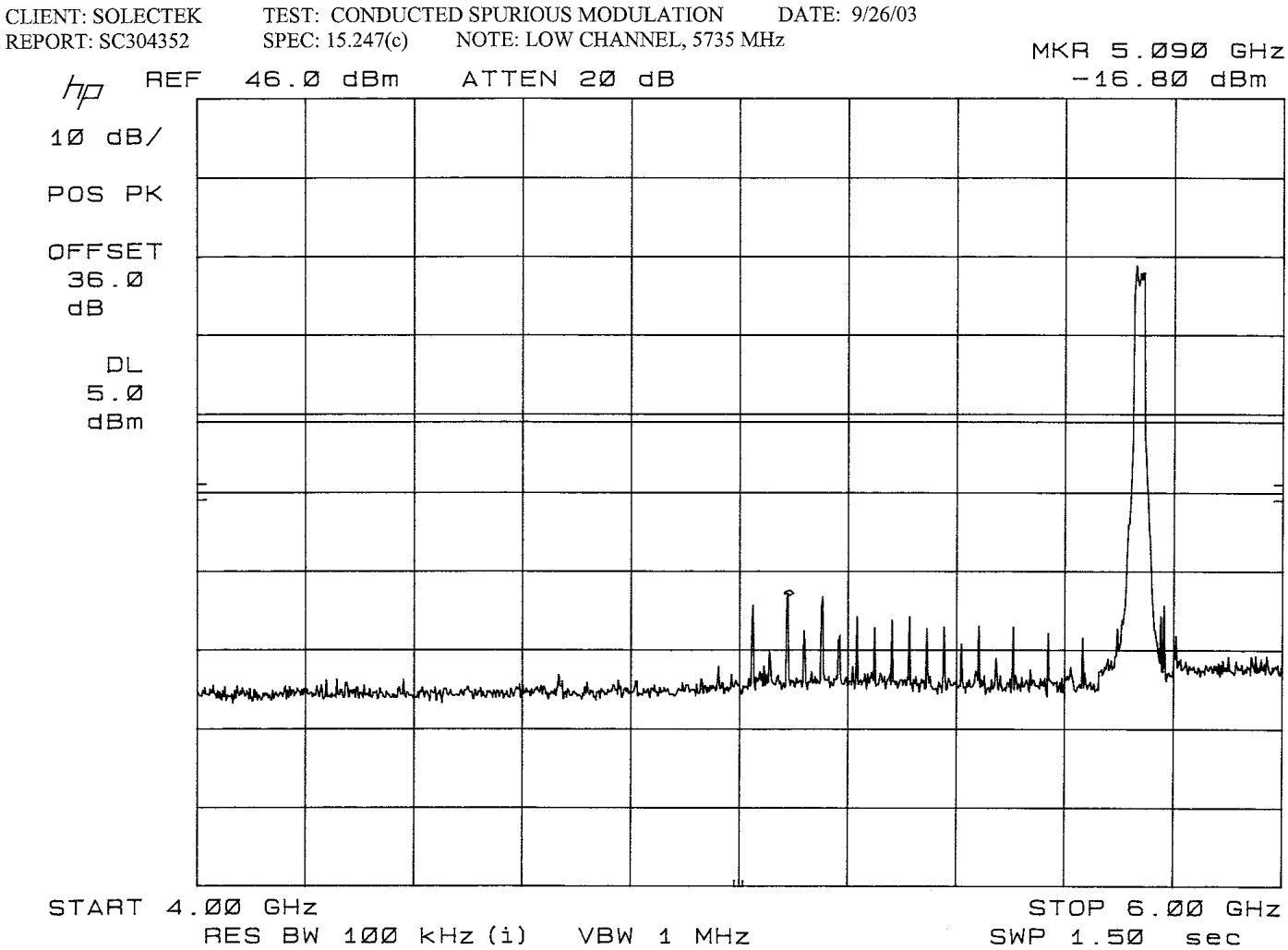
TEST: CONDUCTED SPURIOUS MODULATION
SPEC: 15.247(c) NOTE: LOW CHANNEL, 5735 MHz

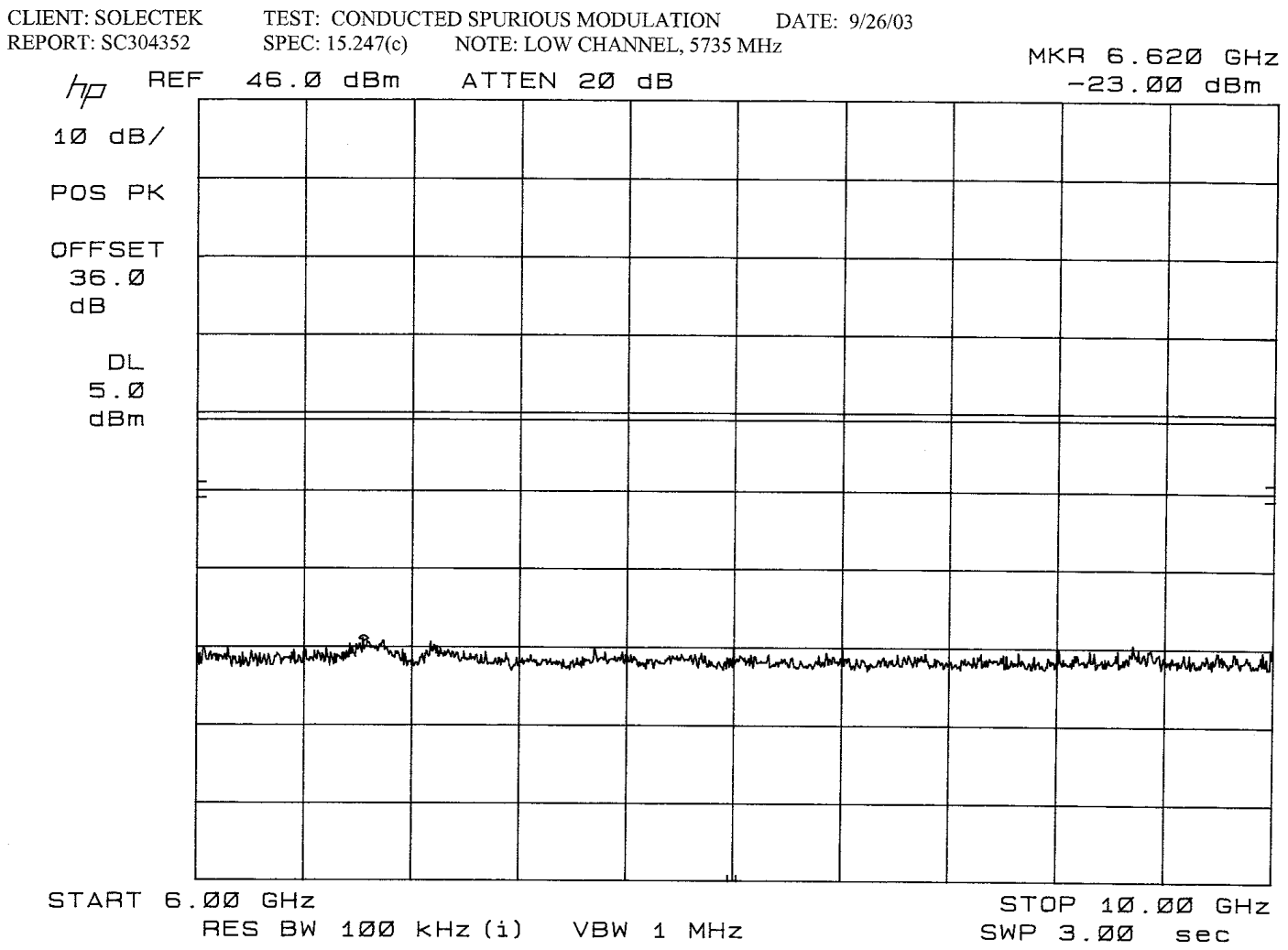
DATE: 9/26/03

MKR 1.572 GHz
-27.60 dBm

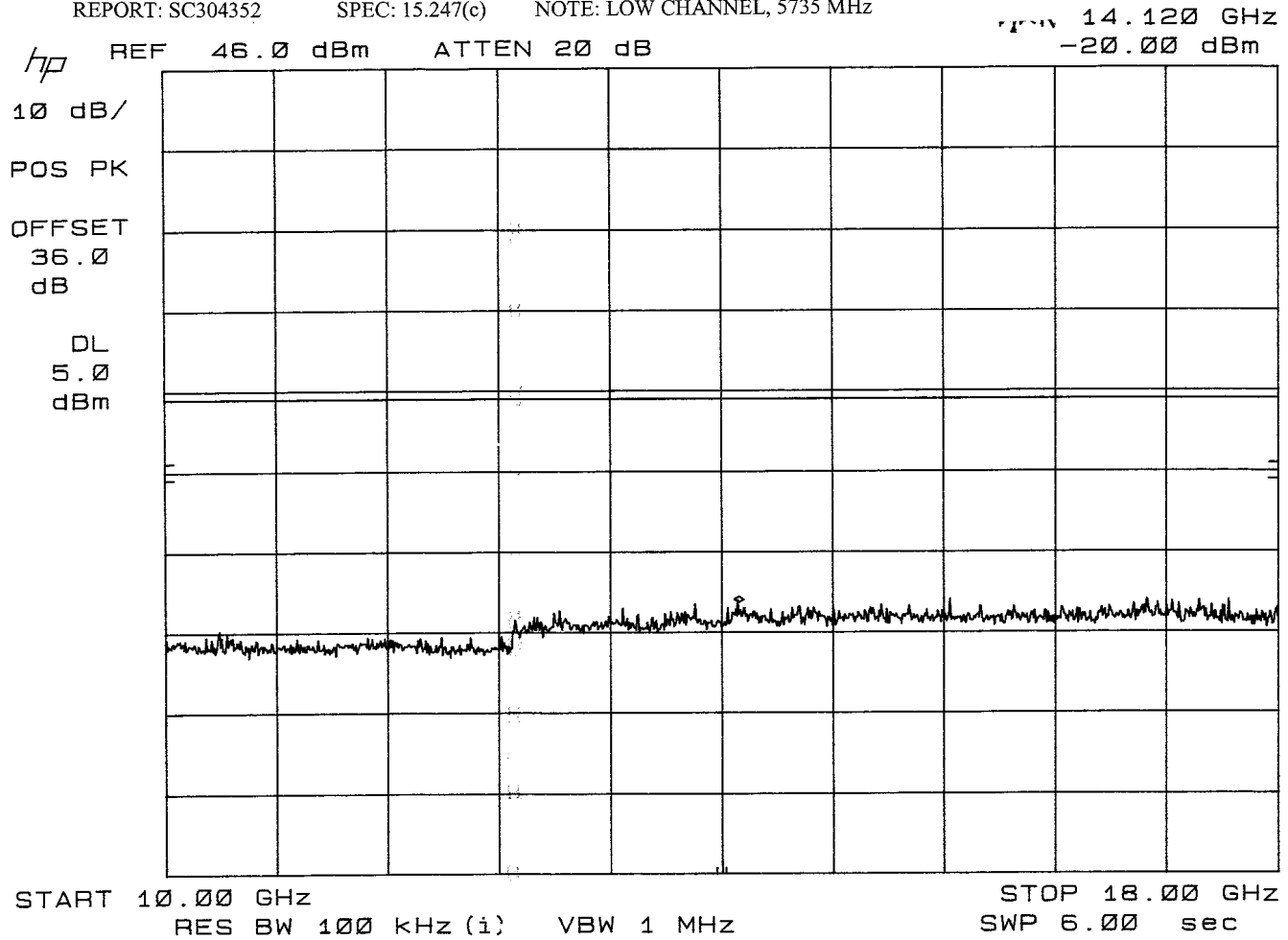








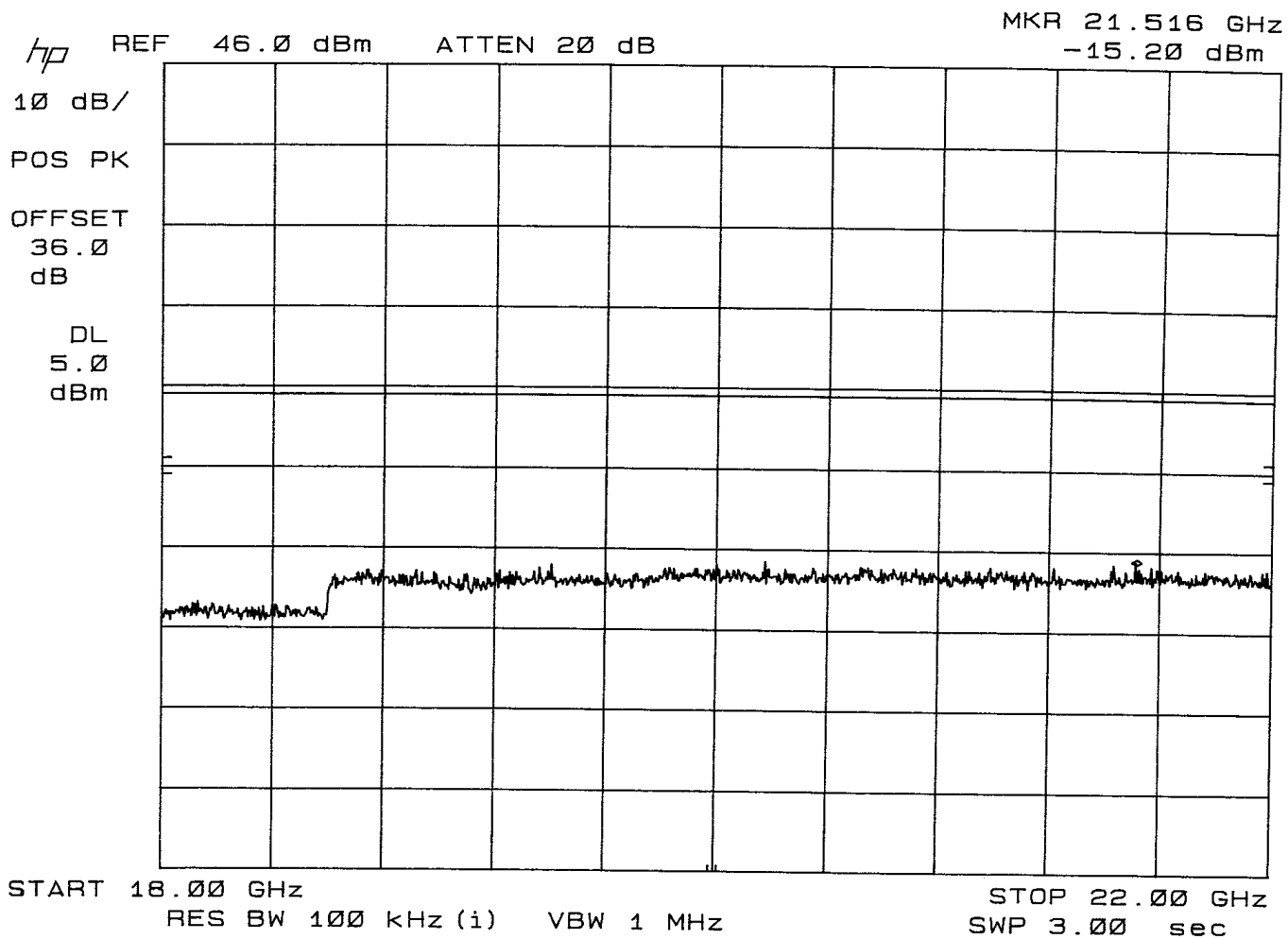
CLIENT: SOLECTEK TEST: CONDUCTED SPURIOUS MODULATION DATE: 9/26/03
 REPORT: SC304352 SPEC: 15.247(c) NOTE: LOW CHANNEL, 5735 MHz

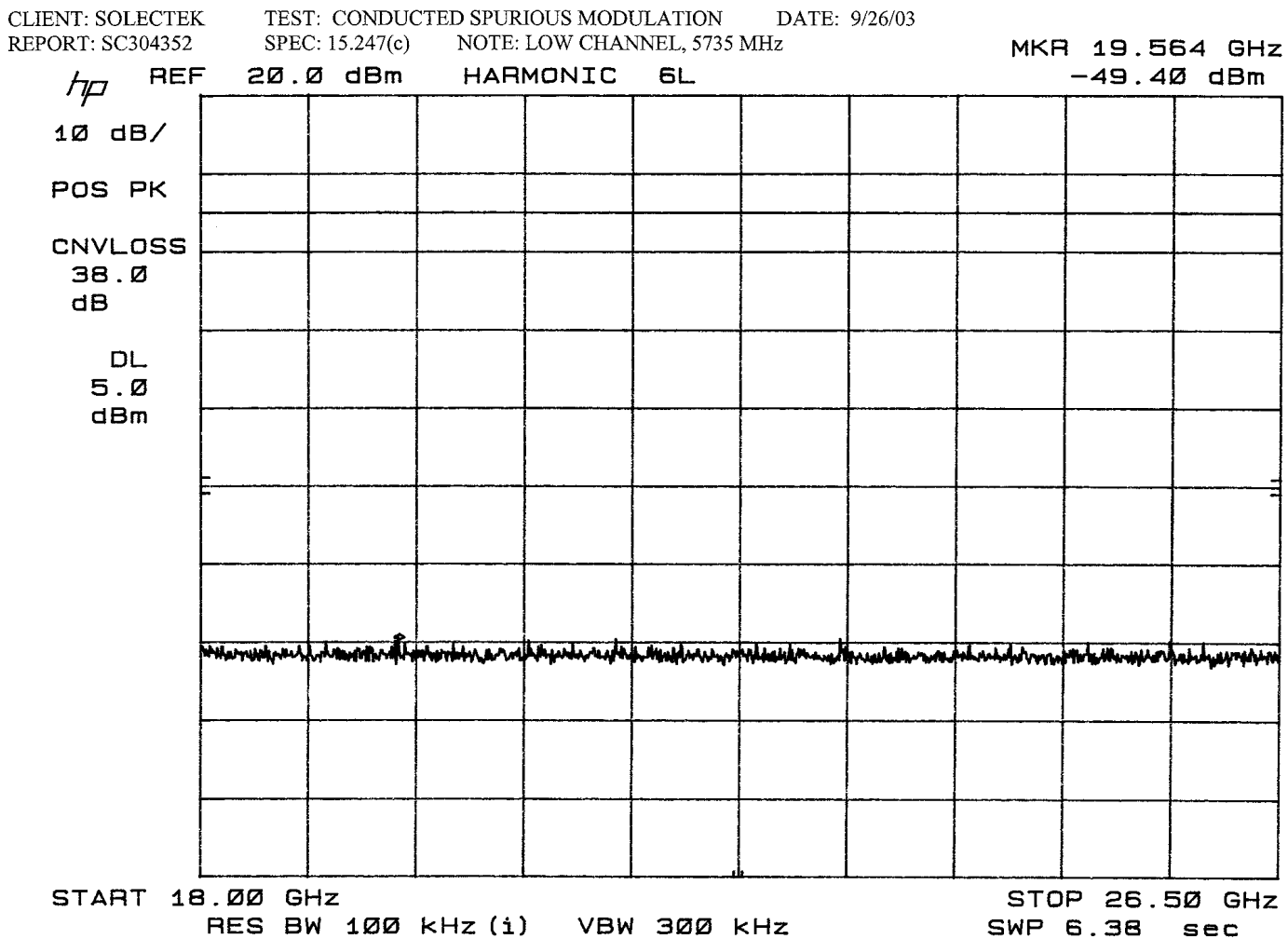


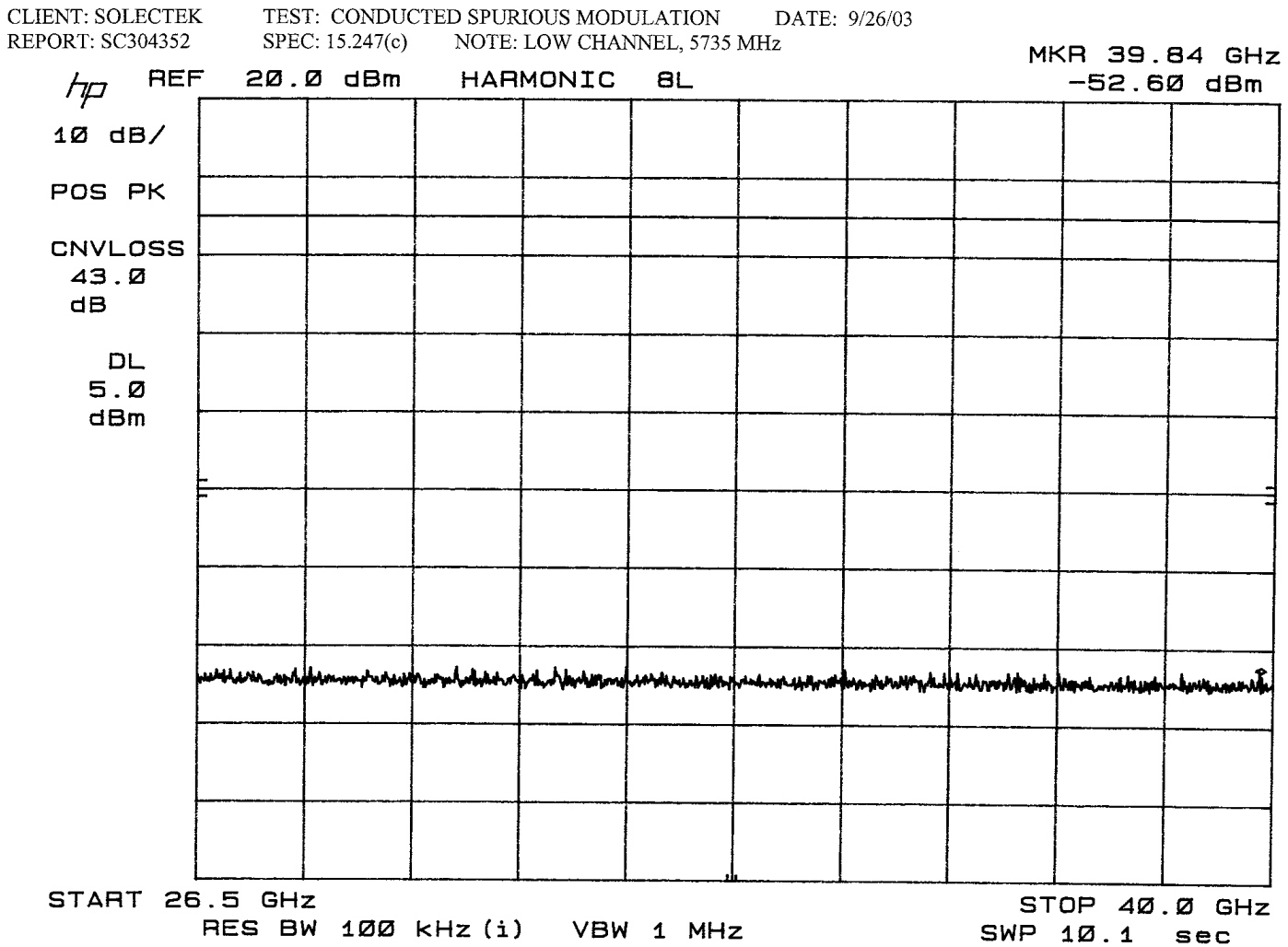
CLIENT: SOLECTEK
REPORT: SC304352

TEST: CONDUCTED SPURIOUS MODULATION
SPEC: 15.247(c) NOTE: LOW CHANNEL, 5735 MHz

DATE: 9/26/03



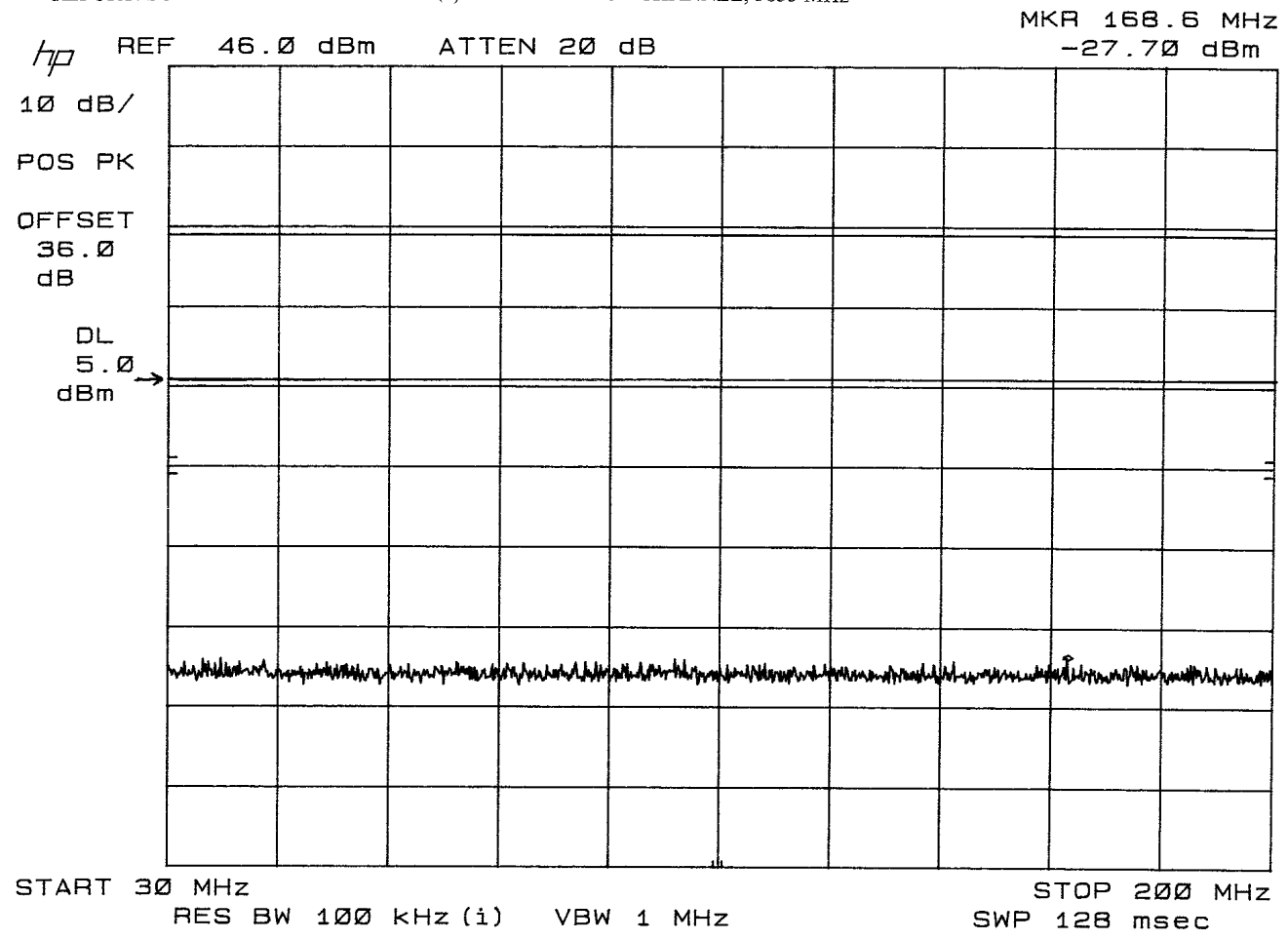




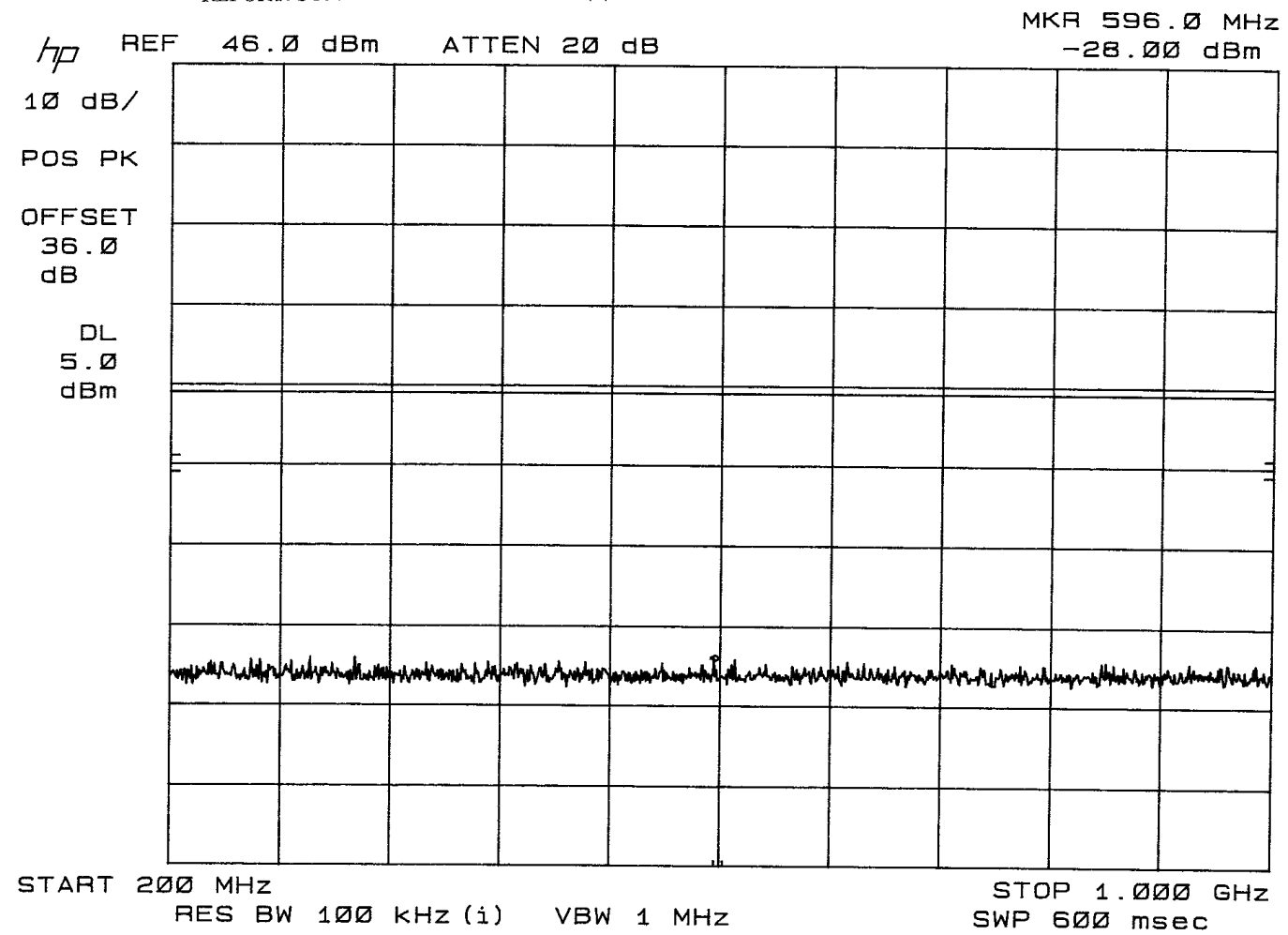
CLIENT: SOLECTEK
REPORT: SC304352

TEST: CONDUCTED SPURIOUS MODULATION
SPEC: 15.247(c) NOTE: HIGH CHANNEL, 5835 MHz

DATE: 9/26/03



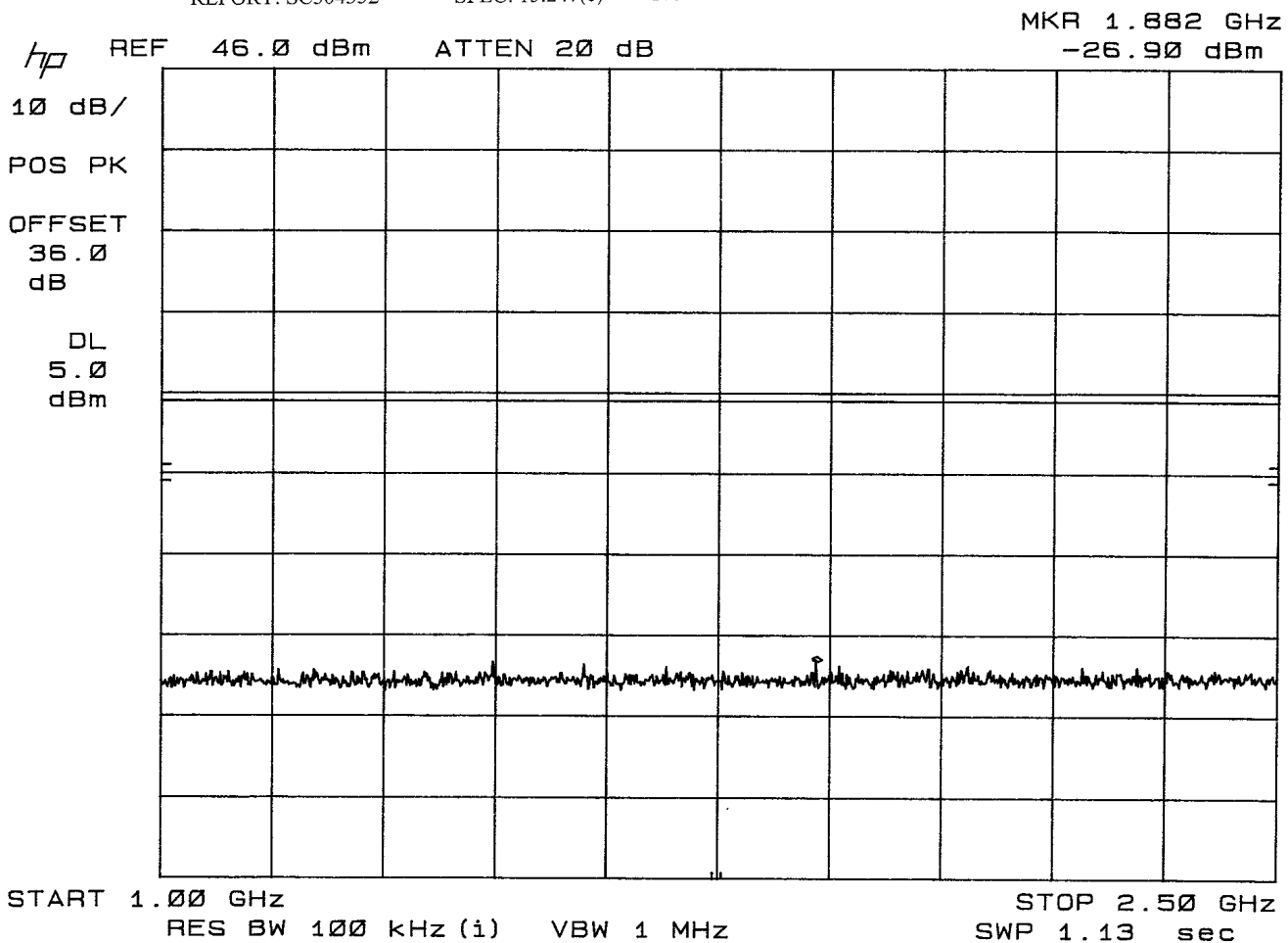
CLIENT: SOLECTEK TEST: CONDUCTED SPURIOUS MODULATION DATE: 9/26/03
 REPORT: SC304352 SPEC: 15.247(c) NOTE: HIGH CHANNEL, 5835 MHz



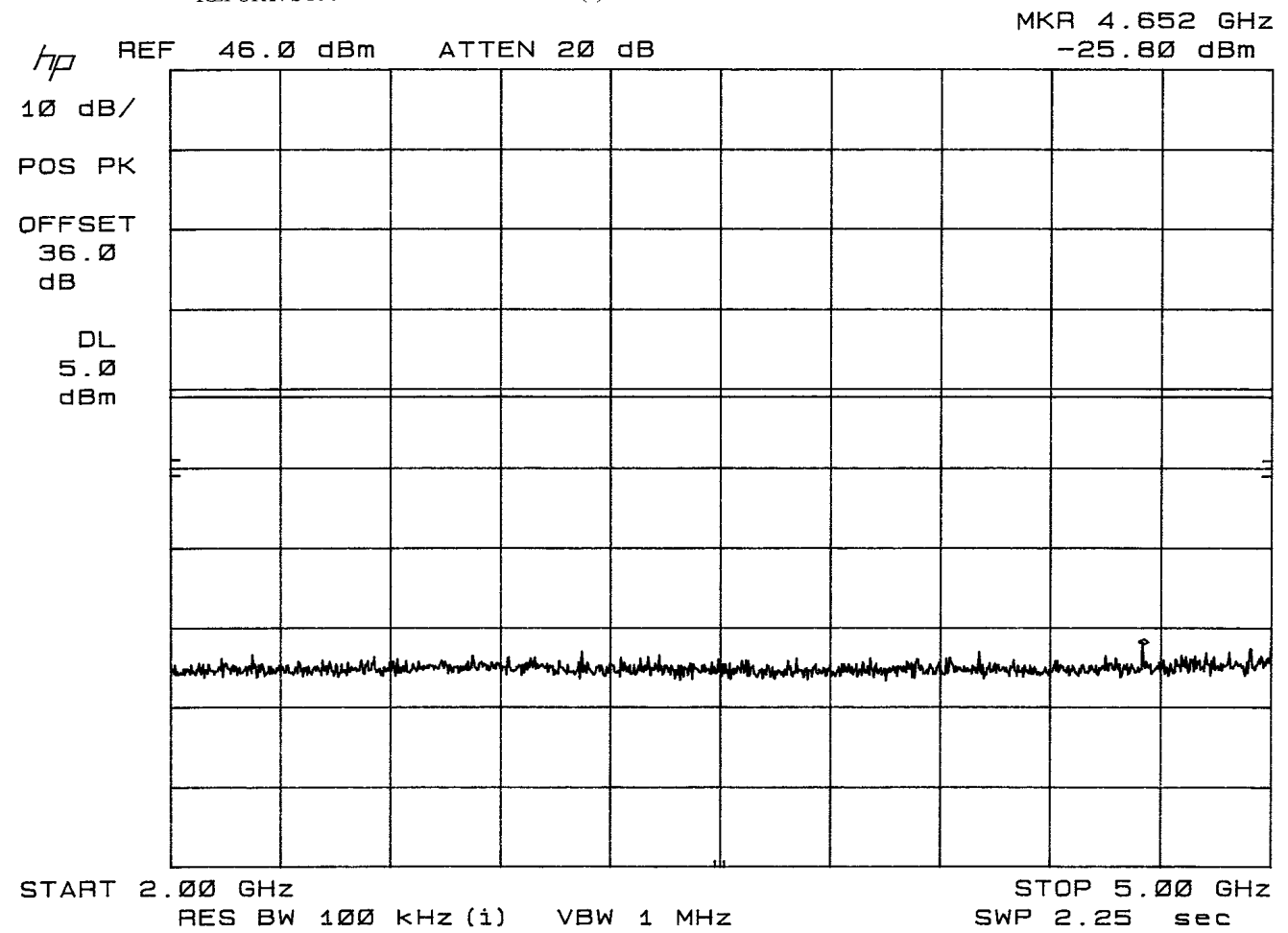
CLIENT: SOLECTEK
REPORT: SC304352

TEST: CONDUCTED SPURIOUS MODULATION
SPEC: 15.247(c) NOTE: HIGH CHANNEL, 5835 MHz

DATE: 9/26/03



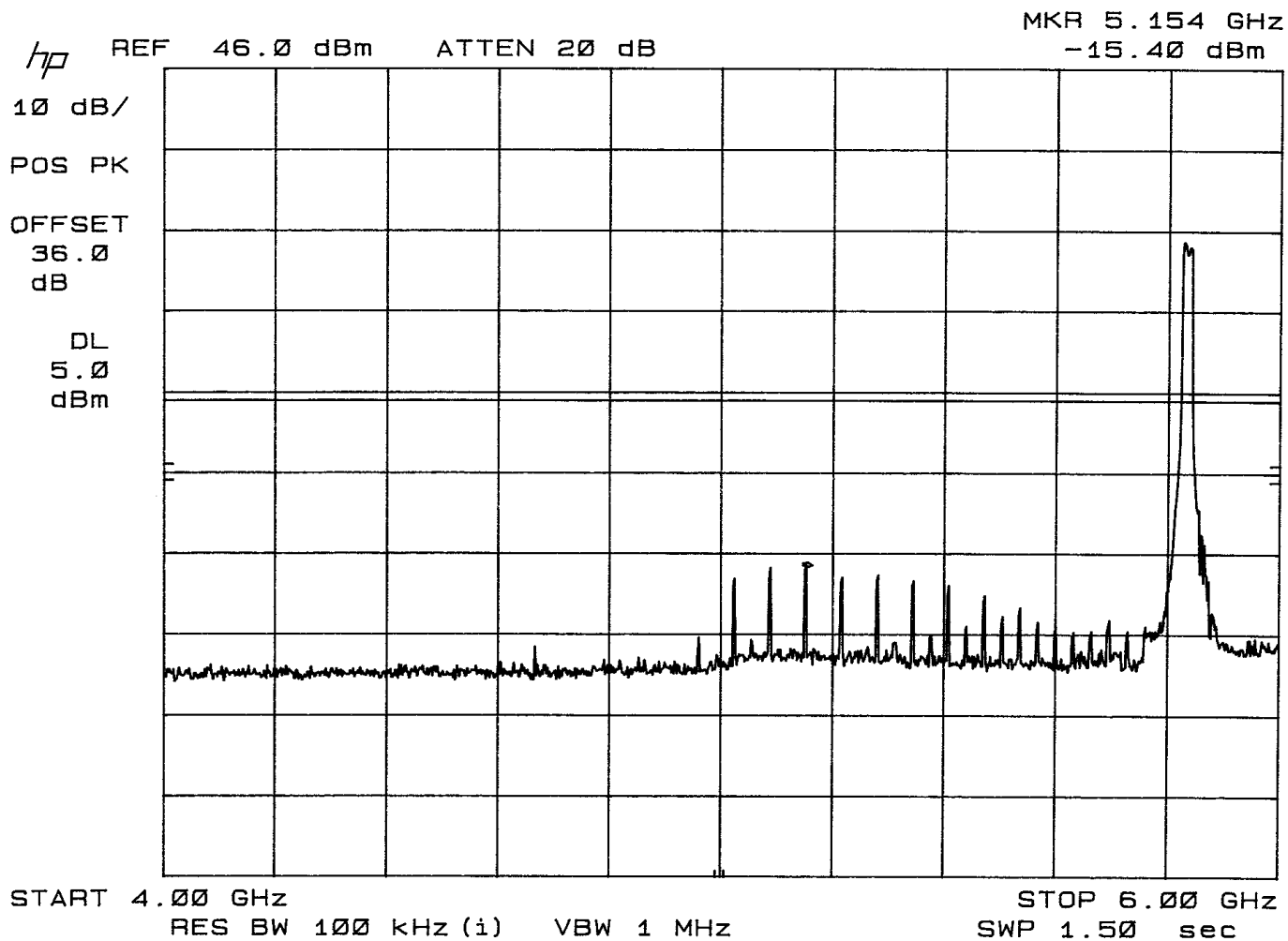
CLIENT: SOLECTEK TEST: CONDUCTED SPURIOUS MODULATION DATE: 9/26/03
 REPORT: SC304352 SPEC: 15.247(c) NOTE: HIGH CHANNEL, 5835 MHz



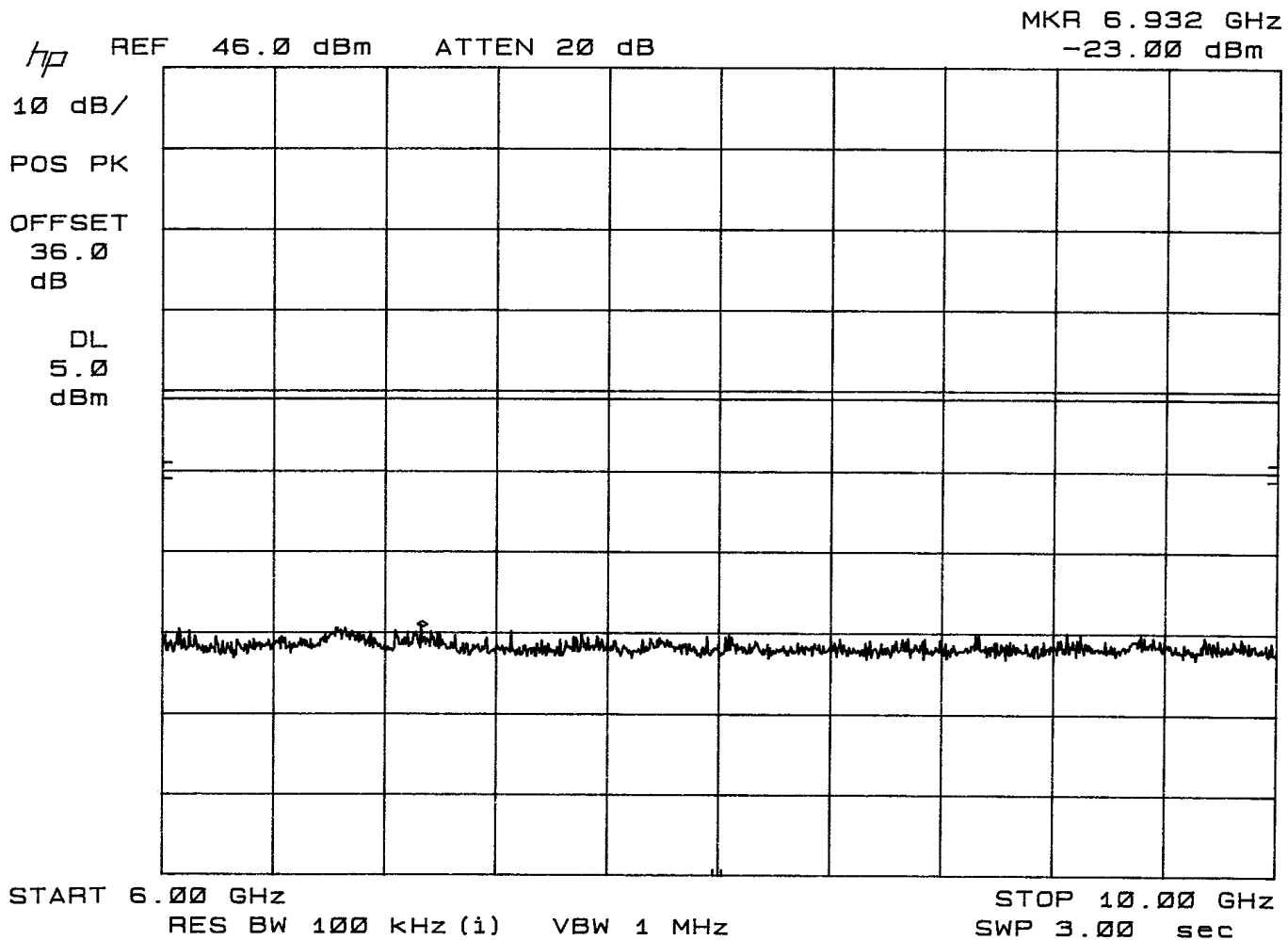
CLIENT: SOLECTEK
REPORT: SC304352

TEST: CONDUCTED SPURIOUS MODULATION
SPEC: 15.247(c) NOTE: HIGH CHANNEL, 5835 MHz

DATE: 9/26/03



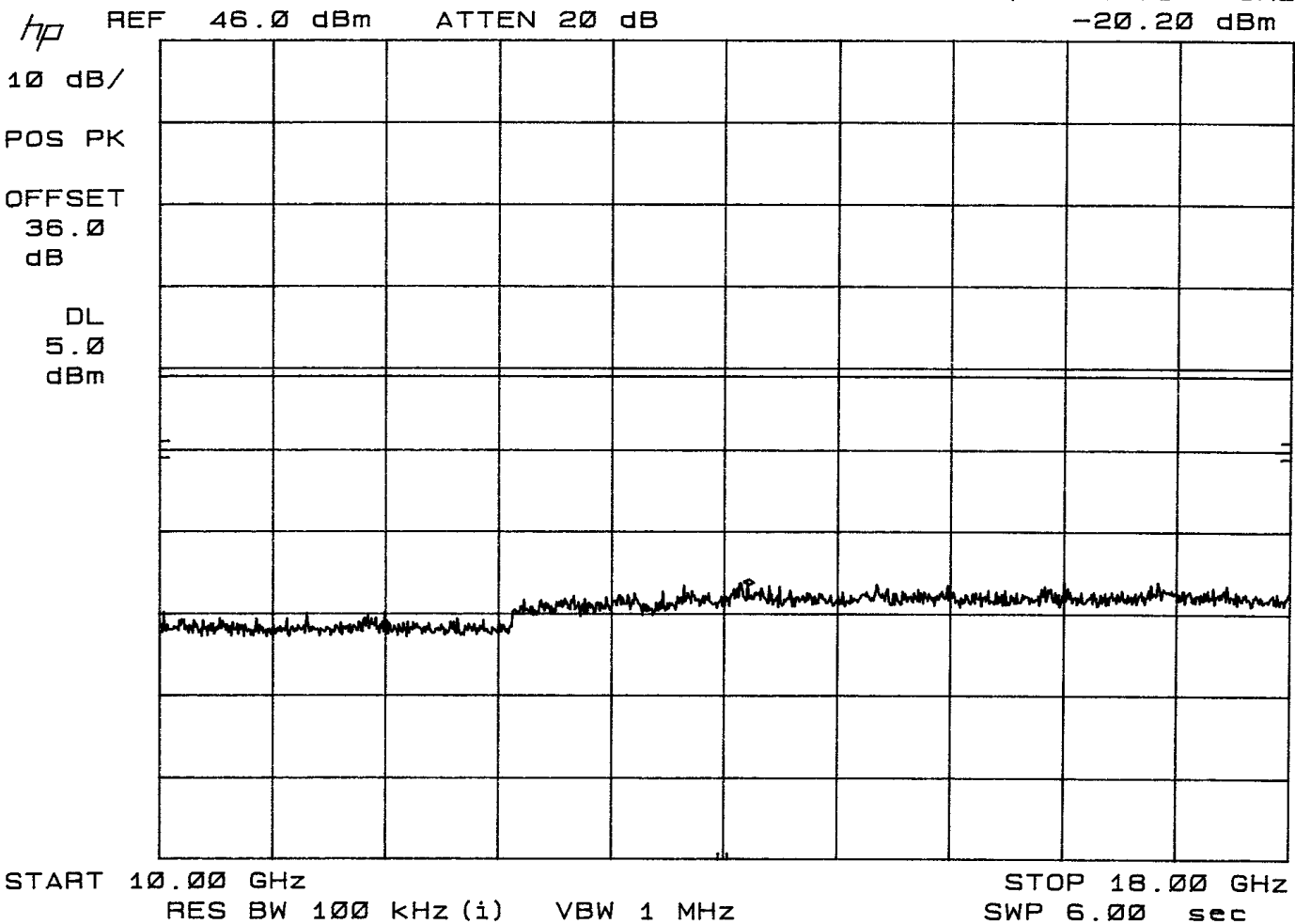
CLIENT: SOLECTEK TEST: CONDUCTED SPURIOUS MODULATION DATE: 9/26/03
REPORT: SC304352 SPEC: 15.247(c) NOTE: HIGH CHANNEL, 5835 MHz



CLIENT: SOLECTEK
REPORT: SC304352

TEST: CONDUCTED SPURIOUS MODULATION
SPEC: 15.247(c) NOTE: HIGH CHANNEL, 5835 MHz

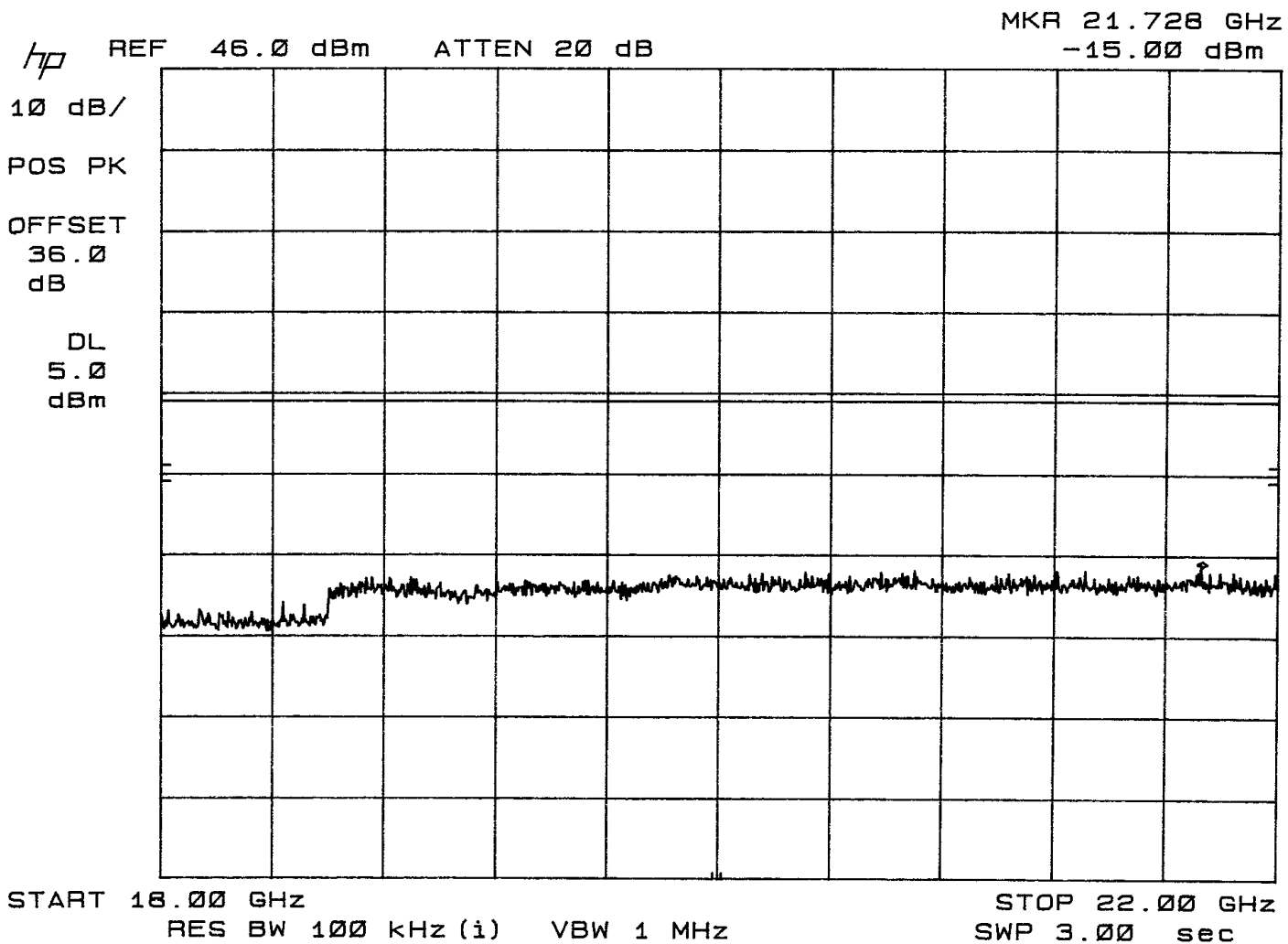
MKR 14.168 GHz
-20.20 dBm



CLIENT: SOLECTEK
REPORT: SC304352

TEST: CONDUCTED SPURIOUS MODULATION
SPEC: 15.247(c) NOTE: HIGH CHANNEL, 5835 MHz

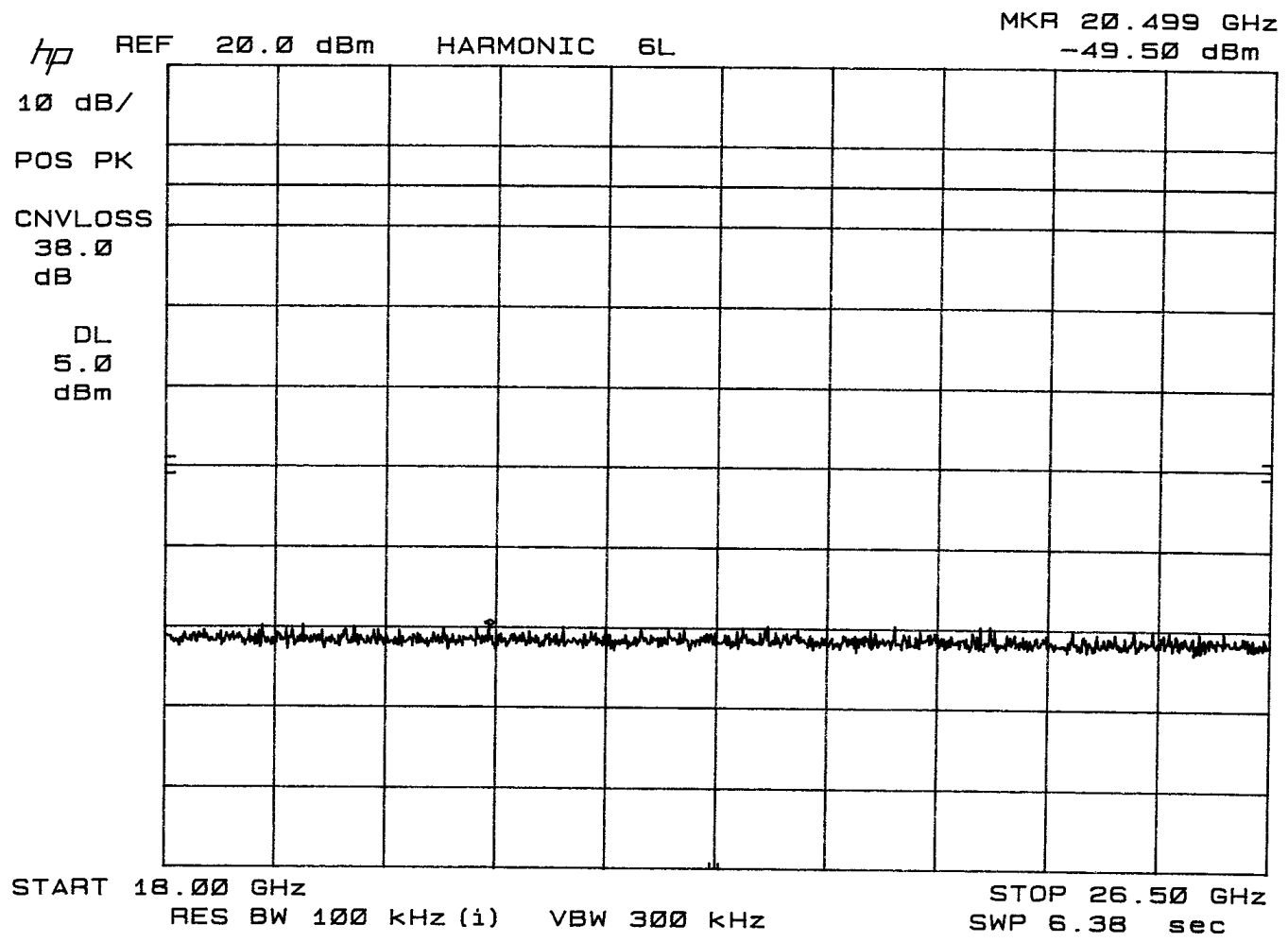
DATE: 9/26/03



CLIENT: SOLECTEK
REPORT: SC304352

TEST: CONDUCTED SPURIOUS MODULATION
SPEC: 15.247(c) NOTE: HIGH CHANNEL, 5835 MHz

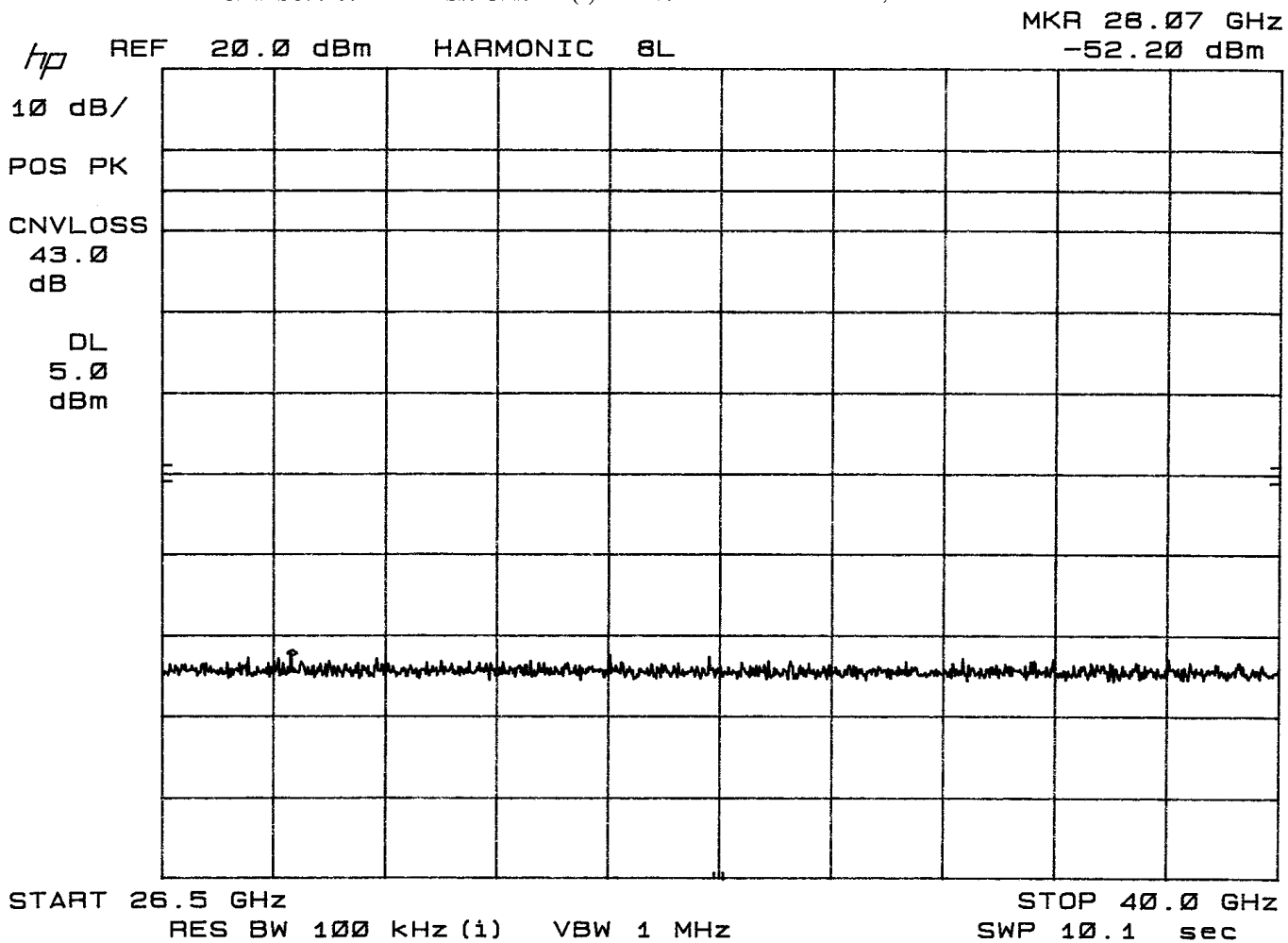
DATE: 9/26/03



CLIENT: SOLECTEK
REPORT: SC304352

TEST: CONDUCTED SPURIOUS MODULATION
SPEC: 15.247(c) NOTE: HIGH CHANNEL, 5835 MHz

DATE: 9/26/03



Report No. SC304352-03

9. PEAK POWER DENSITY, CFR 47, Part 15, 15.247(c)

9.1 EQUIPMENT

The *CONDUCTED SPURIOUS* measurements were performed at the following test location :

☐ - Test not applicable

■ - SR-3, Shielded Room, 12' x 20' x 8', Metal Chamber

Test Equipment

Model No.	Prop. No.	Description	Manufacturer	Serial No.	Cal Date
8566B	823	Spectrum Analyzer	Hewlett Packard	2332A02751	09/04
ESHS30	6509	Emi Test Receiver	Rohde & Schwarz	832354/004	05/04
E4440A	6814	Spectrum Analyzer	Agilent	--	08/04
CBL6111	6527	Bilog Antenna	Chase	1013	NCR
E4416A	--	Power Meter	Agilent	GB41291574	04/04
E9322A	--	Power Sensor	Agilent	US40400294	06/04

Remarks:

Report No. SC304352-03

9.2 DATA

Peak Power Density

SHEET 1 OF 2



TEST REPORT # SC304352

TEST AREA TR2

DATE Sept. 26, 2003

EUT MODEL # Skypower 5000

TEMPERATURE 22 °C

SPECIFICATION (S):

EUT SERIAL # _____

HUMIDITY 60 %

FCC 15.247(d)

EUT DESCRIPTION

AIR PRESSURE 99.6 kPa

Measured with Spectrum Analyzer at 3 kHz VBW, corrected for path loss.

Frequency MHz	Emission Level – dBm	Limit dBm	Margin dB	COMPLIES	REMARKS
5735	-4.1	8	-13.1	YES	Low Channel
5785	-2.7	8	-11.7	YES	Mid Channel, TURBO
5835	-4.8	8	-13.8	YES	High Channel

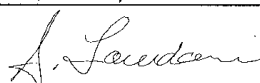
Tuned by client prior to formal testing.

Power setting Equipment used: Agilent E4416A power meter (SN: GB41291574 Calibration Date 16 April 2003) w/ E9322A power sensor (SN: US40400294 Calibration Date 6 June 2003).

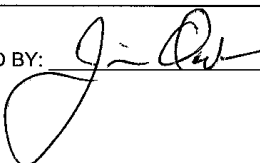
NOTES: Nominal Voltage = 120 Vac, modulation applied.

TEST EQUIP. : 16, 17

TESTED BY:


A. Laudani

REVIEWED BY:

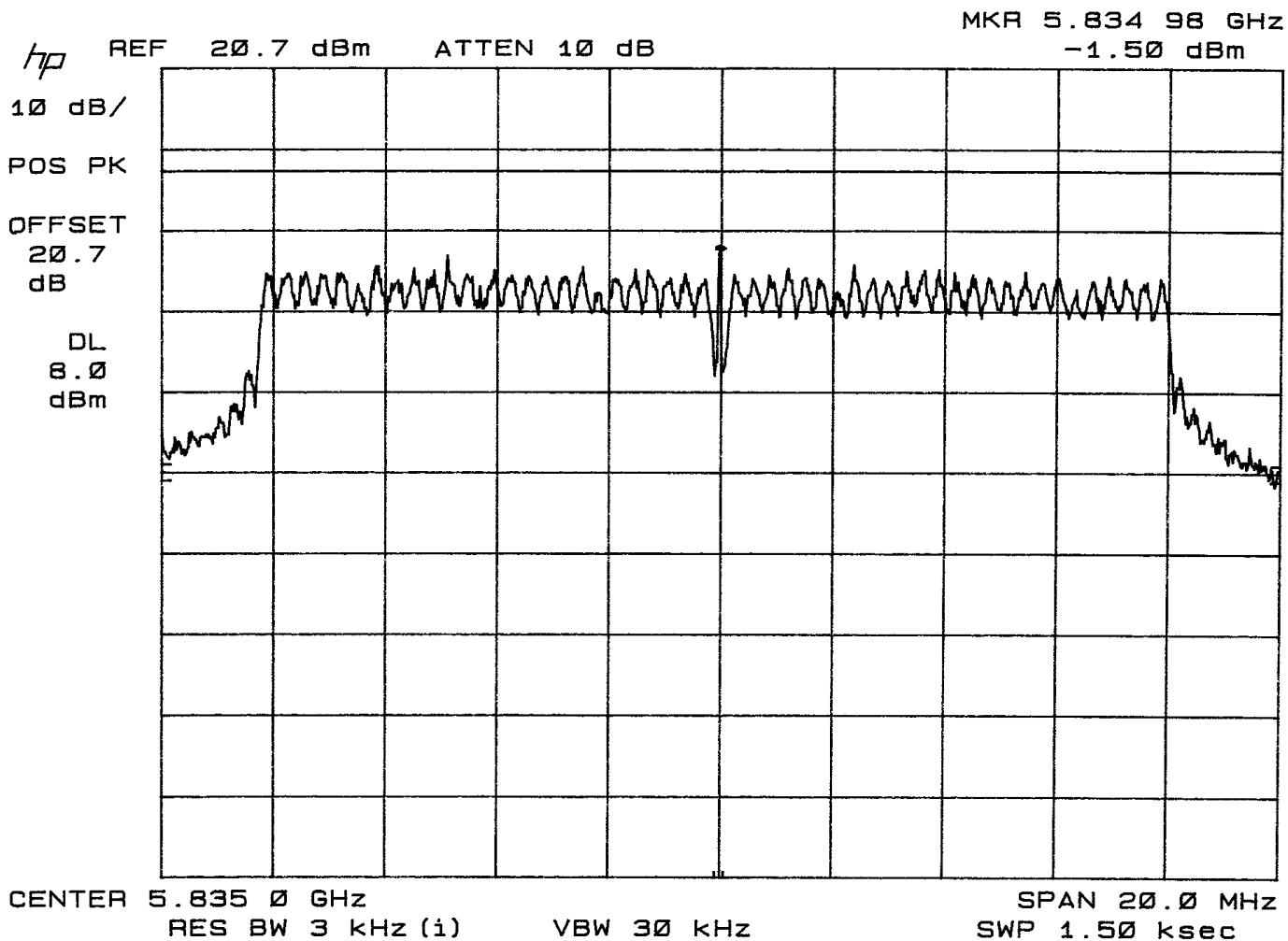


FREQ STAB.doc
5/23/02

CLIENT: SOLECTEK
SPEC: 15.247(d)

TEST: PEAK POWER DENSITY DATE: 9/26/03

REPORT: SC304352



Report No. SC304352-03

10. FREQUENCY STABILITY, RSS 210, 6.4

10.1 EQUIPMENT

The *FREQUENCY STABILITY* measurements were performed at the following test location :

☐ - Test not applicable

TR2 - Test Room 2

Test Equipment Used :

Model No.	Prop. No.	Description	Manufacturer	Serial No.	Cal Date
9552-5024-BNC	458	LISN	Solar	--	NCR
6843A	6529	Power Supply	Elgar	--	09/04
8566A	6676	Spectrum Analyzer	Hewlett Packard	--	09/04
Versa Tenn III	62265	Environmental Chamber	Tenney	--	04/04

Remarks: _____

Report No. SC304352-03

10.2 DATA

FREQUENCY STABILITY

SHEET 1 OF 4



TEST REPORT # SC303452

TEST AREA TestRoom 2

DATE Sept. 26, 2003

EUT MODEL # SKYPOWER 5000

TEMPERATURE 22 °C

SPECIFICATION (S):

EUT SERIAL # _____

HUMIDITY 60 %

RSS-210 Clause 6.4

EUT DESCRIPTION

AIR PRESSURE 99.6 kPa

TEMP 20 °C Baseline	Frequency MHz	DELTA Hz	COMPLIES	REMARKS
				Limit is 10 ppm of frequency = 57,349 Hz
120 Vac	5734.993000	--	--	
102 Vac	5734.994700	1700	YES	
138 Vac	5734.994300	1300	YES	
+ 50°C				
120 Vac	5734.997800	4800	YES	
102 Vac	5734.999600	6600	YES	
138 Vac	5735.002000	9000	YES	
- 20 °C				
120 Vac	5735.004800	11,800	YES	
102 Vac	5735.008200	15,200	YES	
138 Vac	5735.010600	17,600	YES	

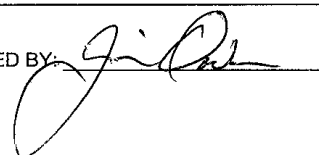
NOTES: Nominal Voltage = 120 Vac

TEST EQUIP.: 16, 17, 18

TESTED BY:

A. Laudani

REVIEWED BY:



FREQ STAB.doc
5/23/02

11. ATTESTATION STATEMENT

GENERAL REMARKS:

Radiated Emissions: Receive 5735 MHz, +23 dBi, +26 dBi and Transmit/Receive 5735 MHz +26 dBi, shielding added to ethernet cable from PC to DC injector.

SUMMARY:

All tests were performed per CFR 47, *Part 15, Paragraphs 15.2471(a), (b); (c); (d); RSS 210, 4.2, 5.9, 6.2.2(q1), 7.2*

■ - Performed

The Equipment Under Test

■ - **Fulfills** the requirements of CFR 47, *Part 15, Paragraphs 15.2471(a), (b); (c); (d); RSS 210, 4.2, 5.9, 6.2.2(q1), 7.2*

- TÜV PRODUCT SERVICE, INC. -

Responsible Engineer:



Jim Owen
EMC Engineer

Responsible Engineer:



Alan Laudani
EMC Engineer