DIVERSIFIED

T.E.S.T.

TECHNOLOGIES, INC.

4675 Burr Drive ● Liverpool, NY 13088 ● 1-800-724-6452 ● FAX: 315-457-0428 ● 315-457-0245

April 20, 2012

Mr. Brad Lightner
GOJO Industries
1 GOJO Plaza, Suite 500
Akron, OH. 44311

Dear Mr. Lightner:

Enclosed is the test report for the GOJO Industries; Buckeye 2840-811 People Counter which was tested at our facility located at 4675 Burr Drive in Liverpool, NY. This facility is on file with the Federal Communications Commission (FCC) per 47 CFR 2.948. (Site File Registration Number: 306552)

As narrated in the report, the product configuration meets the requirements of the FCC per CFR 47 Part 15.249 Class C for Intentional Radiators.

Thank you for selecting Diversified T.E.S.T. Technologies, Inc. for your testing needs. We look forward to working with you on future projects. Should you have any questions or concerns regarding this report, contact me at 315-457-0245. Please feel free to visit our website at www.dttlab.com.

Sincerely,

Michael McElroy
Technical Associate

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Emissions Testing

Documentation

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Test Report

Laboratory
Diversified TEST Technologies, Inc.
4675 Burr Drive
Liverpool, NY 13088
315-457-0245

Manufacturer
GOJO Industries
1 GOJO Plaza, Suite 500
Akron, OH. 44311

Report Issue Date: **April 20, 2012**
Project Number: **6350**
Report Number: **6350-042012 FCCC People Counter – (Edition 1)**

Date Received: **April 13, 2012**
Date Tested: **April 13, 2012 and March 22, 2013**
Product: **People Counter**
Model Numbers: 2840-811
FCC ID: O76-T2SG0910A
Traceability: *Reference standards of measurement have been calibrated by a competent body using standards traceable to NIST.*

The testing performed by Diversified TEST Technologies, Inc. has shown that the product referenced above complies with the electromagnetic compatibility requirements according to the standard(s) specified on page 3 of the test report. The results in this test report apply only to the product denoted above. The manufacturer is responsible for ensuring that additional units are manufactured with identical mechanical and electrical characteristics.
The equipment listed above conforms to the specified requirements of the test standards listed on page 3 of this report.

Complied by:
Signature: _____ Date: April 20, 2012
Michael McElroy
Technical Associate

Reviewed by:
Signature: _____ Date: April 20, 2012
Annelle Frierson
Vice- President

Emissions Test Regulations

The emissions tests were performed according to the following regulations:

☐EN 50081-1:1992

☐EN 50081-2:1995

☐EN 55011:1998 / A1:1999 / A2:2001 ☐Group 1 ☐Group 2 ☐Class A ☐Class B

☐EN 55013:1990 / A12:1994 / A13:1996 / A14:1999

☐EN 55014:1993 / A1: 1997 ☐Household appliances and similar ☐Portable tools ☐Semiconductor devices

☐EN 55022:1998 ☐Class A ☐Class B

☒**FCC Part 15.249** ☐Class A ☐Class B ☒**Class C**

☒**Certification**

☐Verification

☐Declaration of Conformity

Emissions Test Conditions: HARMONICS, BANDWIDTH TEST, AND SPURIOUS EMISSIONS

The Harmonics and Bandwidth measurements were tested in a horizontal and vertical polarization at the following test location:

☒ Diversified TEST Technologies, Inc. Open Area Test Site
☐ Diversified TEST Technologies, Inc. Lab

at a test distance of:

☒ 1 meter
☒ 3 meters
☐ 30 meters

Test equipment used:

Manufacturer	Model	Description	Serial #	Cal.	Cal. Due
Hewlett Packard	8593EM	Spectrum Analyzer	3536A00139	6/19/12	6/19/13
Electro-Metrics	RGA60	Ridge Horn Antenna	2981	8/25/12	8/25/13
Hewlett Packard	7550A	Plotter	2407A00476	CNR	CNR
Electro-Metrics	LPA-25	Log Periodic Antenna 200-1000 MHz	1242	9/11/12	9/11/13
	MFR-57500	Blue low-loss transmit cable	337	CNR	CNR
		Non-conductive wooden turntable		CNR	CNR
		10-meter open field test range, grounded with ¼ ” x ¼ ” hardware cloth		CNR	CNR
Hewlett Packard	8595E	Spectrum Analyzer	3746A03177	7/23/12	7/23/13
EMCO	6520	Active Loop Antenna	9110-2685	7/19/12	7/19/13
Agilent	E7402A	Spectrum Analyzer	MY45103221	3/25/12	3/25/13
Electro-Metrics	BIA-30W	Biconical Antenna	103	9/1/12	9/1/13

Equipment under Test (EUT) Test Operation Mode – Emissions Tests:

The device under test was operated under the following conditions during emissions testing:

☐ Standby

☒ Normal Operating Mode

☐ Practice Operation

Description / Configuration of the device under test:

People Counter used to communicate with Dispenser 910-1. The unit was powered by a 4.5 VDC Battery during the collection of data.

Rationale for EUT setup / configuration:

ANSI C63.4

Deviations from test method:

Testing performed at 1 meter test distance above 1 GHz to better represent harmonic emissions caused by the equipment under test. Testing with Loop Antenna was performed on 3/21/13.

Emissions Test Results:

FCC Part 15.249 Part C 910 MHz – 9100 MHz
The requirements are ☒ **MET** ☐ **NOT MET**

Spurious Emissions Test
The requirements are ☒ **MET** ☐ **NOT MET**

General Remarks:

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Measurements were taken up to the tenth harmonic.

The EUT was evaluated in 1 orthogonal orientation and the worst case data is reflected in the test report.

Radiated Measurements on the EUT were performed from 10 MHz up to the 10^{th} Harmonic and any emission found were more than 20 dB below the limit have not been reported.

Summary:

The requirements according to the technical regulations are

☒ Met.
☐ Not met.

The device under test does

☒ fulfill the general approval requirements mentioned on page 3.
☐ not fulfill the general approval requirements mentioned on page 3.

Testing Start Date: April 13, 2012

Testing End Date: April 13, 2012

Test Setup Photographs:

FCC PART 15.249 CLASS C – 910 MHZ

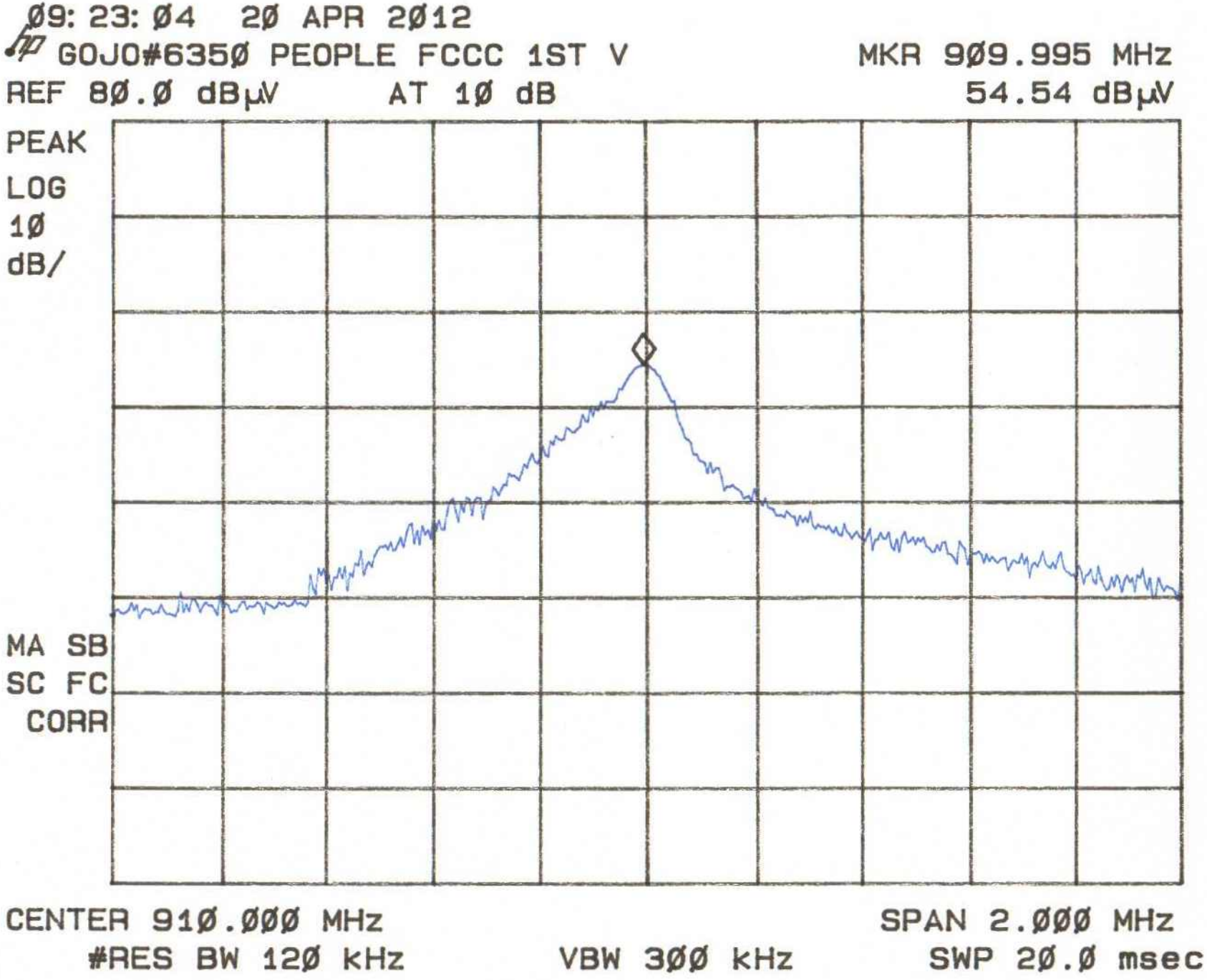
Photograph 1: FCC Part 15.247/249 Class C

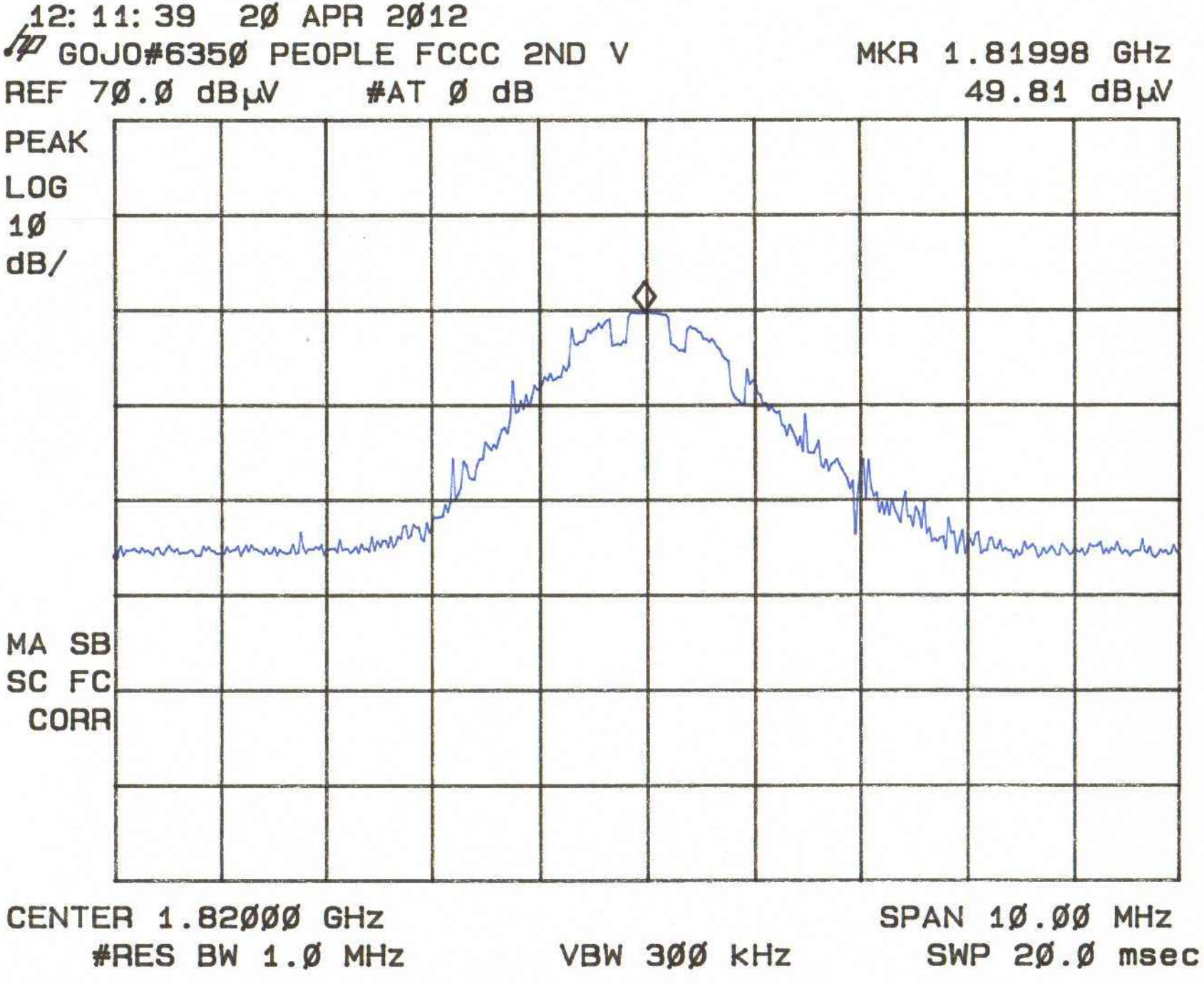
Photograph 2 Spurious Emissions testing using loop antenna

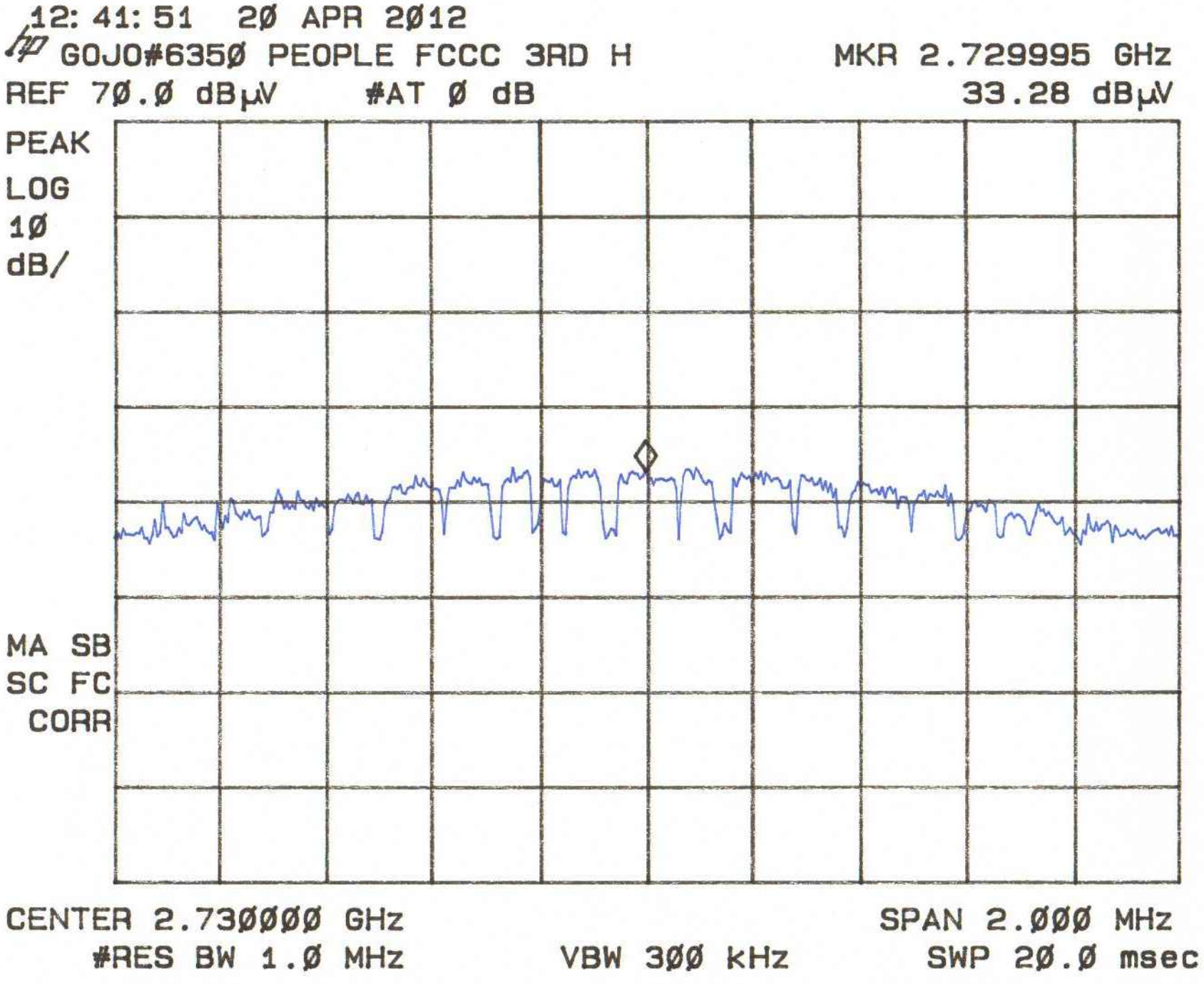
Test Datasheets – 910 MHz- 9100 MHz

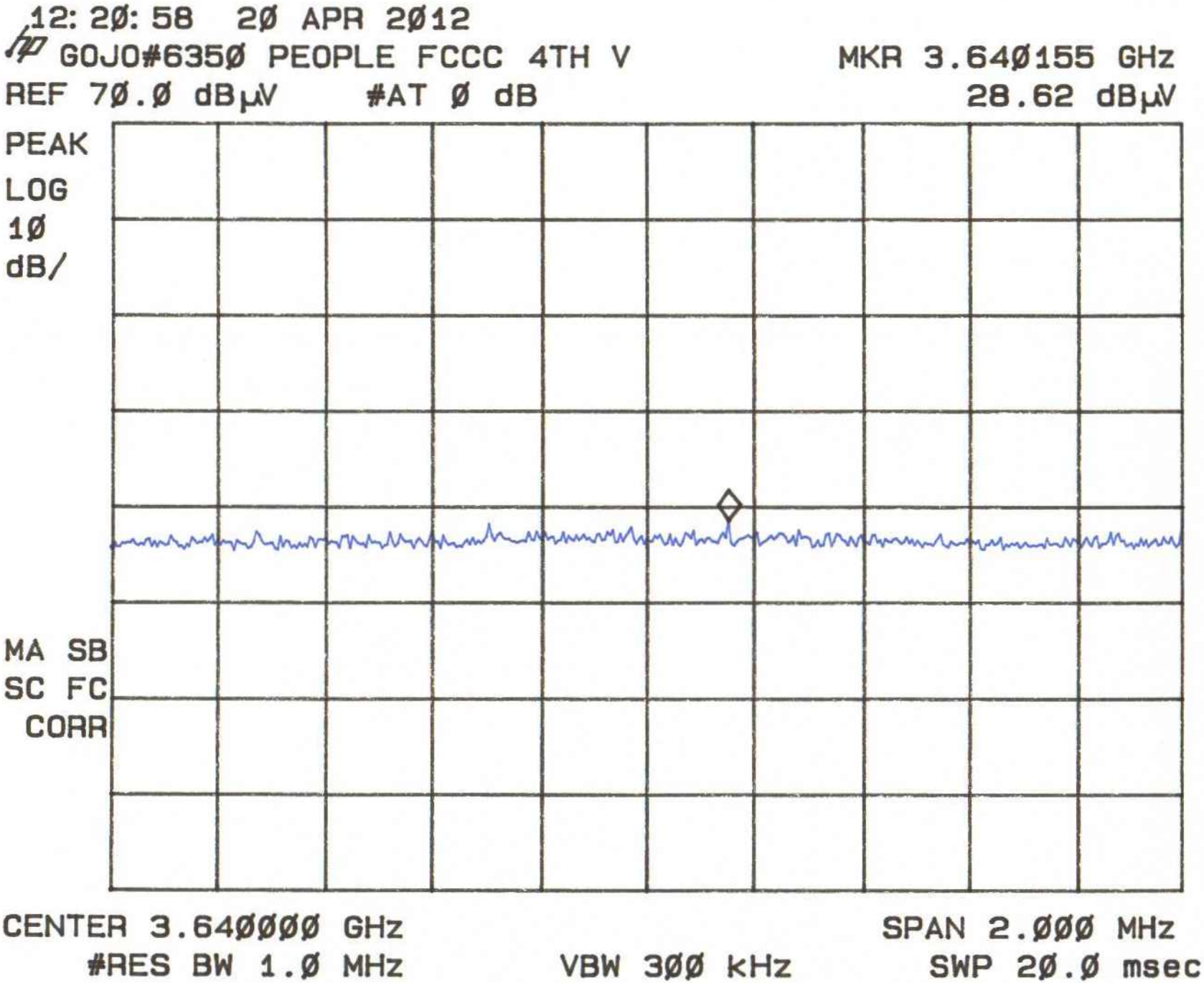
11 pages of data sheets to follow.

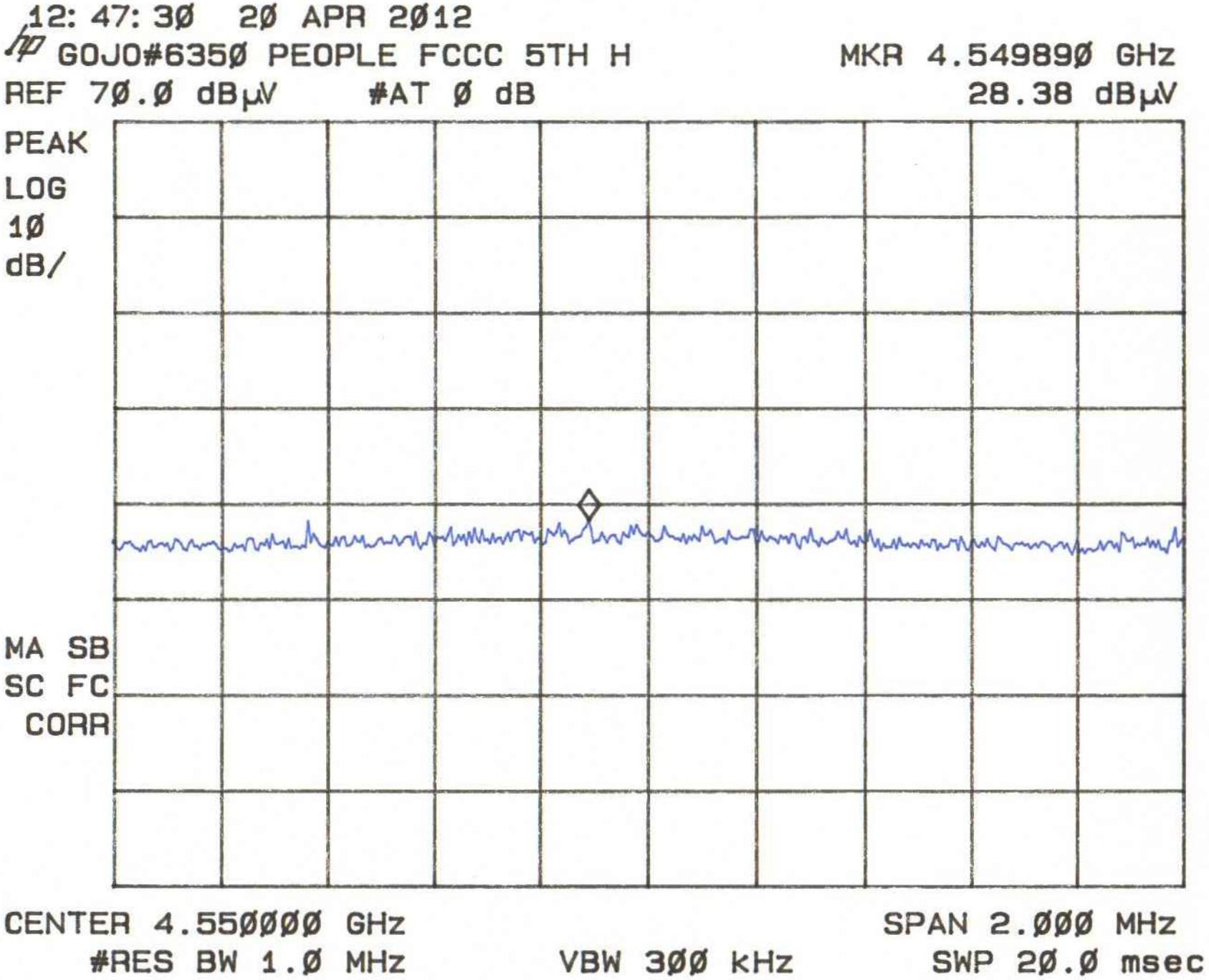
FCC Part 15.249 Transmitter Test												
						GOJO						
Measured	Res.	DUT	Measured	Azimuth	Cable	Antenna	Measurement	Duty Cycle	Corrected	FCC	Delta	
Field Strength	Bandwidth	Frequency	Frequency	degrees	Factor	Factor	Distance	Correction	Field Strength	Limit	Limit	Polarity
(dBµV)	(Khz)	(Mhz)	(Mhz)		(dB)	(dB)	(Meters)	(dB)	**to 3M**	(uV/M)	(dB)	
Peak									**in uV/M Peak**	**at 3M**		
54.54	120	910	910	135	16.6	19.6	3	0	34,434.99	50000	-3.24	V
49.81	120	910	1820	0.00	2.1	7.6	1	0	315.05	500	-4.01	V
33.28	1000	910	2730	0	2.2	9.2	1	0	57.13	500	-18.84	H
28.62	1000	910	3640	0	2.4	8.9	1	0	33.03	500	-23.60	V
28.38	1000	910	4550	0	2.5	10	1	0	36.89	500	-22.64	H
27.51	1000	910	5460	0	2.7	10	1	0	34.15	500	-23.31	H
27.47	1000	910	6370	0	2.8	12	1	0	43.29	500	-21.25	V
25.40	1000	910	7280	0	2.8	10.5	1	0	28.70	500	-24.82	V
25.63	1000	910	8190	0	3.0	10.3	1	0	29.47	500	-24.59	V
26.17	1000	910	9100	0	3.1	11.2	1	0	35.19	500	-23.05	H
Unit Under Test:	Gojo	People	Counter	PN: 2840-811	4/20/2012							

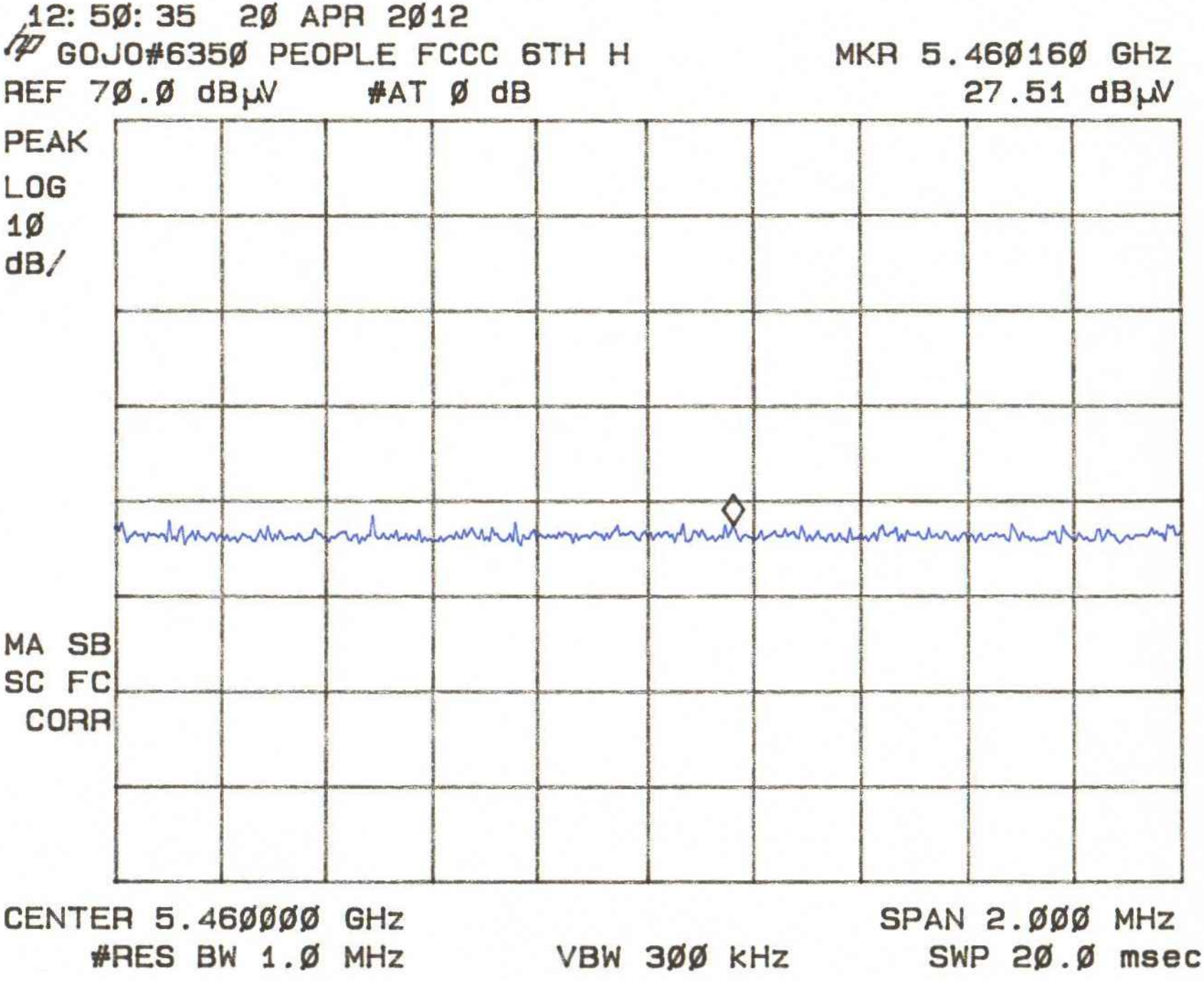

09: 23: 04 20 APR 2012
GOJO#6350 PEOPLE FCCC 1ST V
MKR 909.995 MHz
REF 80.0 dBµV
AT 10 dB
54.54 dBµV
PEAK
LOG
10
dB/
MA SB
SC FC
CORR
CENTER 910.000 MHz
SPAN 2.000 MHz
#RES BW 120 kHz
VBW 300 kHz
SWP 20.0 msec

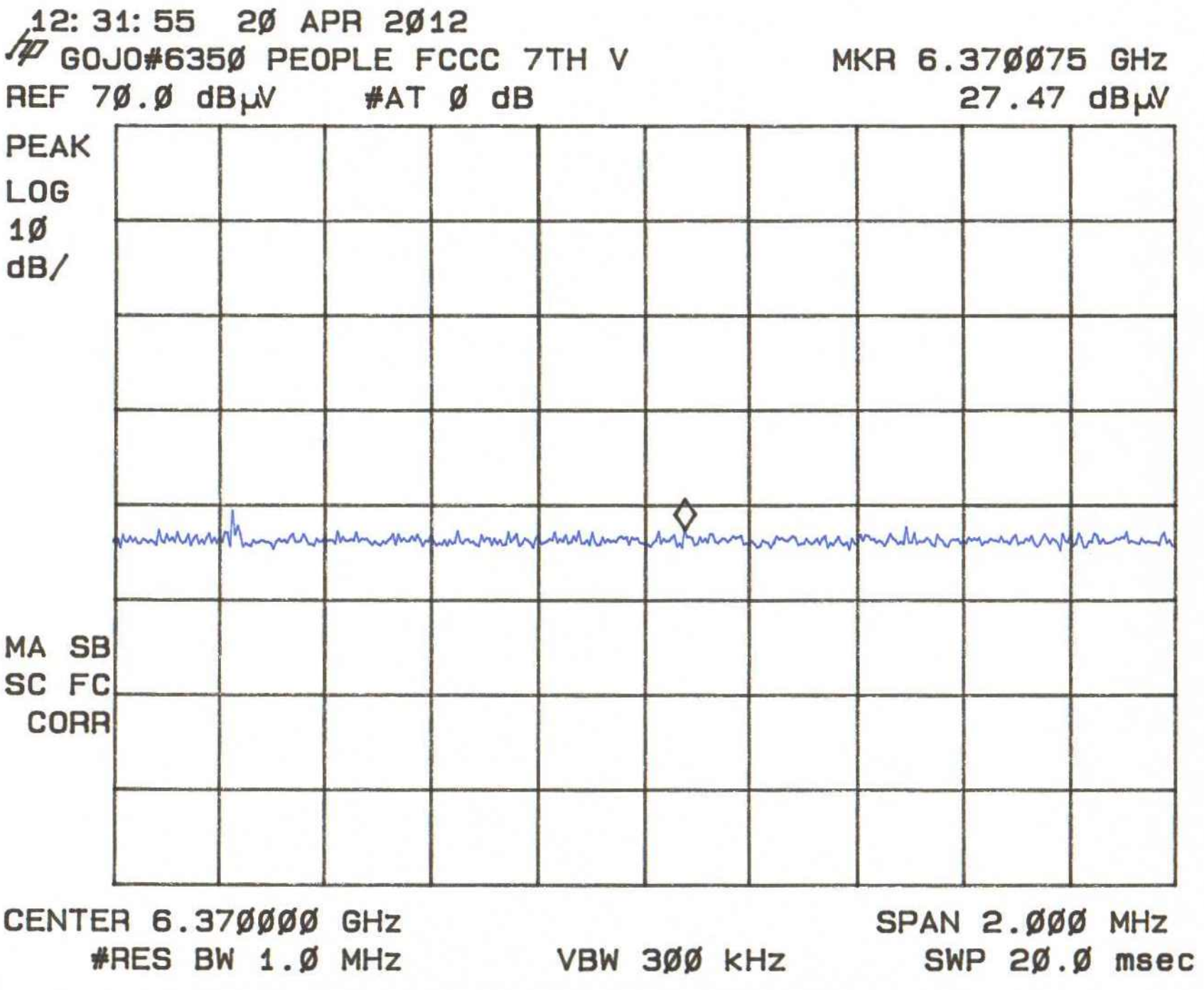

12: 11: 39 2Ø APR 2Ø12
GOJO#635Ø PEOPLE FCCC 2ND V
MKR 1.81998 GHz
REF 7Ø.Ø dBµV
#AT Ø dB
49.81 dBµV
PEAK
LOG
1Ø
dB/
MA SB
SC FC
CORR
CENTER 1.82ØØØ GHz
SPAN 1Ø.ØØ MHz
#RES BW 1.Ø MHz
VBW 3ØØ kHz
SWP 2Ø.Ø msec


12: 41: 51 2Ø APR 2Ø12
GOJO#635Ø PEOPLE FCCC 3RD H
MKR 2.729995 GHz
REF 7Ø.Ø dBµV
#AT Ø dB
33.28 dBµV
PEAK
LOG
1Ø
dB/
MA SB
SC FC
CORR
CENTER 2.73ØØØØ GHz
SPAN 2.ØØØ MHz
#RES BW 1.Ø MHz
VBW 3ØØ kHz
SWP 2Ø.Ø msec


12: 2Ø: 58 2Ø APR 2Ø12
GOJO#635Ø PEOPLE FCCC 4TH V
MKR 3.64Ø155 GHz
REF 7Ø.Ø dBµV
#AT Ø dB
28.62 dBµV
PEAK
LOG
1Ø
dB/
MA SB
SC FC
CORR
CENTER 3.64ØØØØ GHz
SPAN 2.ØØØ MHz
#RES BW 1.Ø MHz
VBW 3ØØ kHz
SWP 2Ø.Ø msec


12: 47: 3Ø 2Ø APR 2Ø12
GOJO#635Ø PEOPLE FCCC 5TH H
MKR 4.549895Ø GHz
REF 7Ø.Ø dBµV
#AT Ø dB
28.38 dBµV
PEAK
LOG
1Ø
dB/
MA SB
SC FC
CORR
CENTER 4.55ØØØØ GHz
SPAN 2.ØØØ MHz
#RES BW 1.Ø MHz
VBW 3ØØ kHz
SWP 2Ø.Ø msec

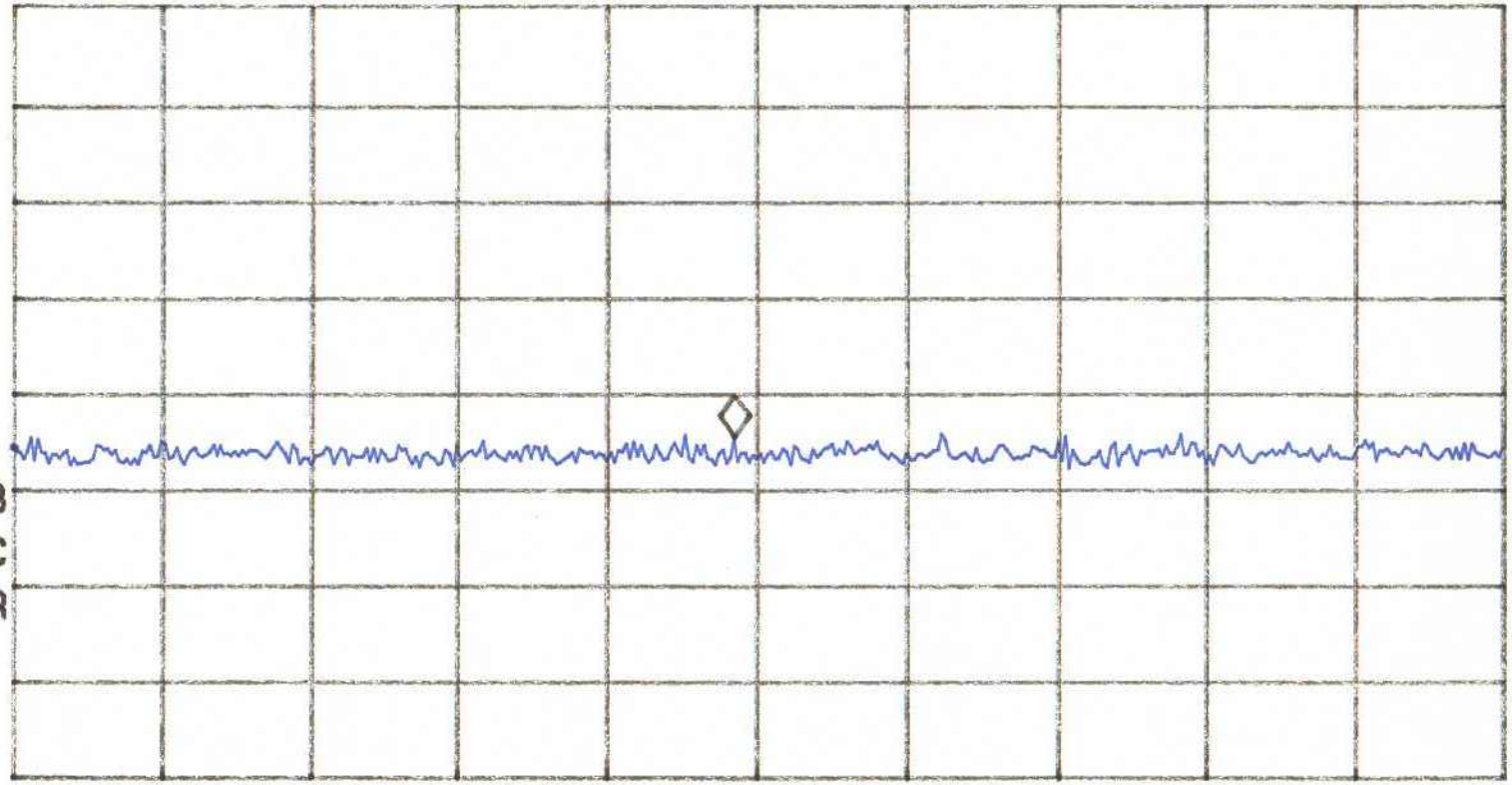

12: 5Ø: 35 2Ø APR 2Ø12
GOJO#635Ø PEOPLE FCCC 6TH H
MKR 5.46Ø16Ø GHz
REF 7Ø.Ø dBµV
#AT Ø dB
27.51 dBµV
PEAK
LOG
1Ø
dB/
MA SB
SC FC
CORR
CENTER 5.46ØØØØ GHz
SPAN 2.ØØØ MHz
#RES BW 1.Ø MHz
VBW 3ØØ kHz
SWP 2Ø.Ø msec


12: 31: 55 2Ø APR 2Ø12
GOJO#635Ø PEOPLE FCCC 7TH V
MKR 6.37ØØ75 GHz
REF 7Ø.Ø dBµV
#AT Ø dB
27.47 dBµV
PEAK
LOG
1Ø
dB/
MA SB
SC FC
CORR
CENTER 6.37ØØØØ GHz
SPAN 2.ØØØ MHz
#RES BW 1.Ø MHz
VBW 3ØØ kHz
SWP 2Ø.Ø msec

13: 15: 35 APR 2Ø, 2Ø12
GOJO#6350 PEOPLE FCCC 8TH V

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 7.279970 GHz
25.40 dBµV
PREAMP ON

LOG REF 70.0 dBµV
10
dB/
#ATN
0 dB

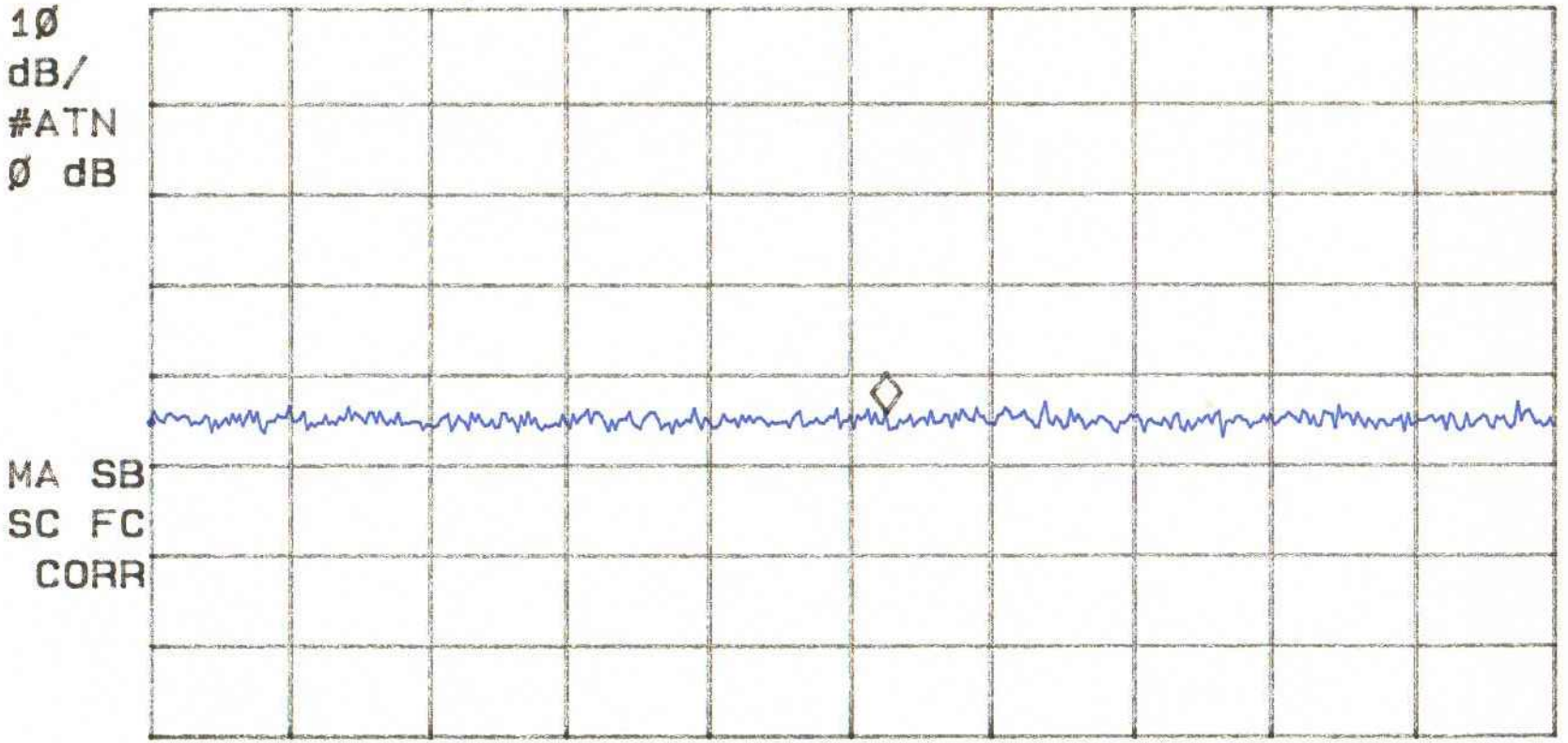


MA SB
SC FC
CORR

CENTER 7.280000 GHz
SPAN 2.000 MHz
#IF BW 1.0 MHz
AVG BW 300 kHz
SWP 20.0 msec

13: 18: 12 APR 2Ø, 2Ø12
GOJO#6350 PEOPLE FCCC 9TH V

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 819.Ø5Ø MHz
25.63 dBµV
PREAMP ON

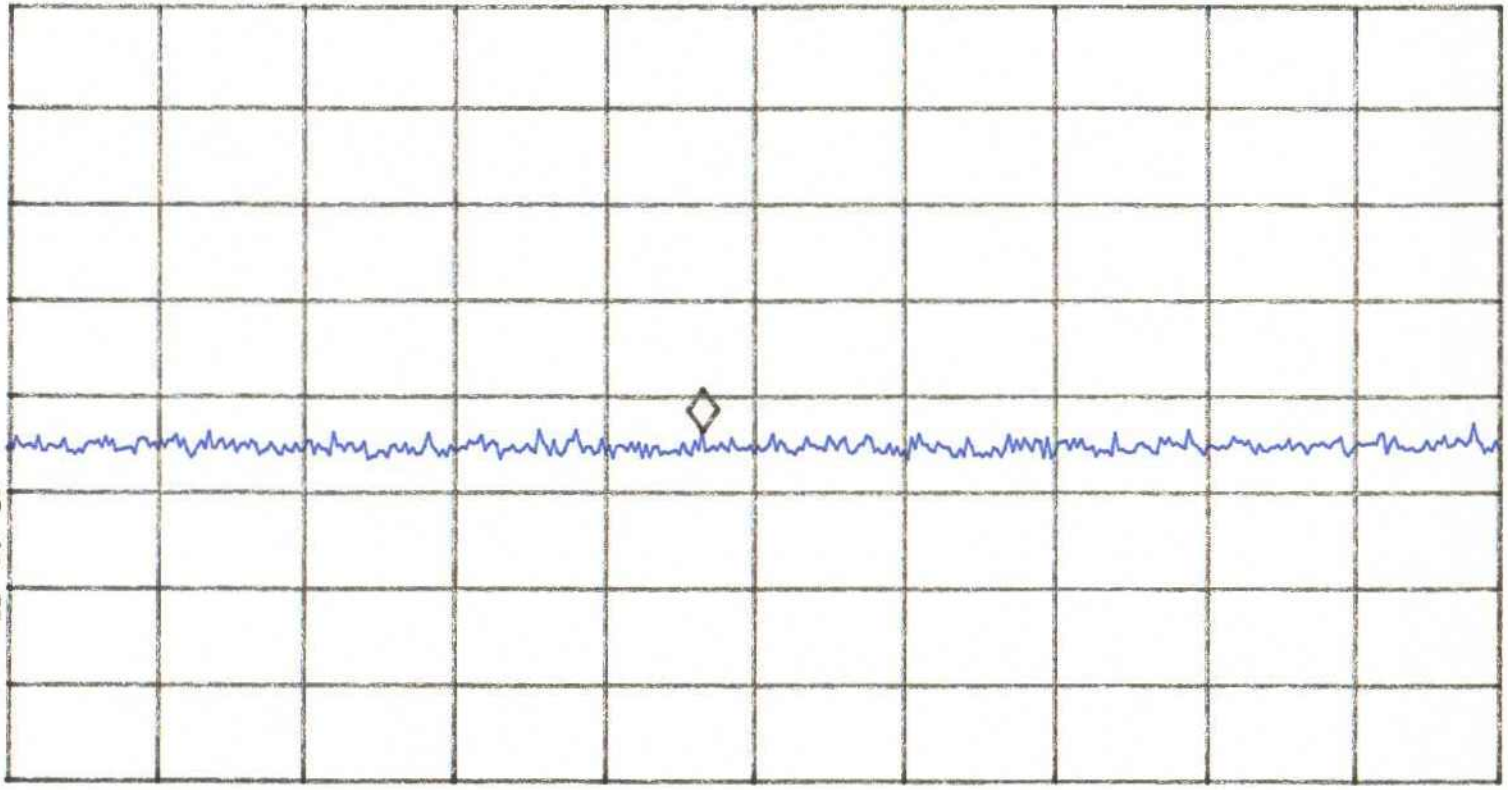


CENTER 819.ØØØ MHz
SPAN 2.ØØØ MHz
#IF BW 1.Ø MHz
AVG BW 3ØØ kHz
SWP 2Ø.Ø msec

13: 11: 43 APR 2Ø, 2Ø12
GOJO#635Ø PEOPLE FCCC 1ØTH H

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 9.Ø9993Ø GHz
26.17 dBµV
PREAMP ON

LOG REF 7Ø.Ø dBµV
1Ø
dB/
#ATN
Ø dB

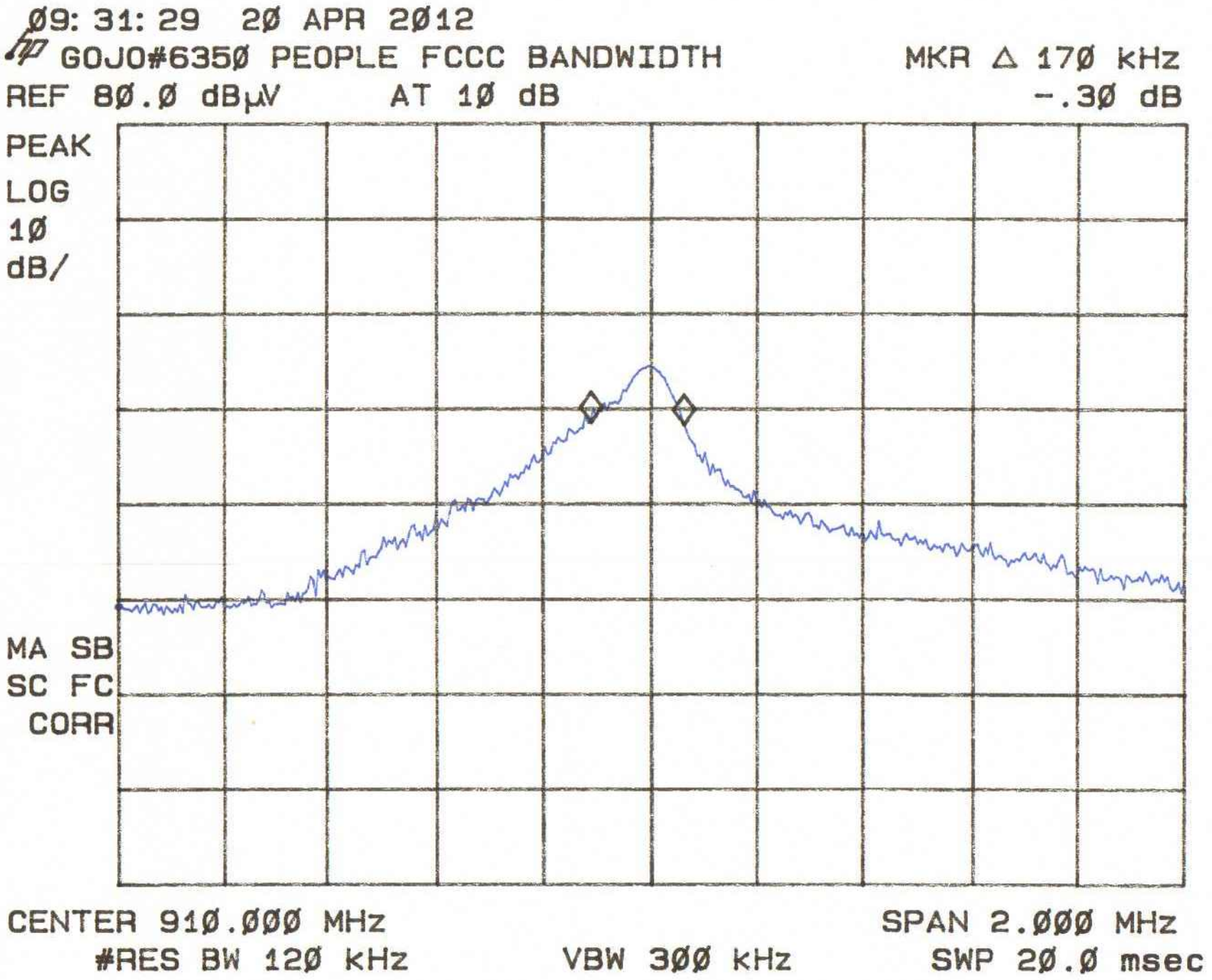


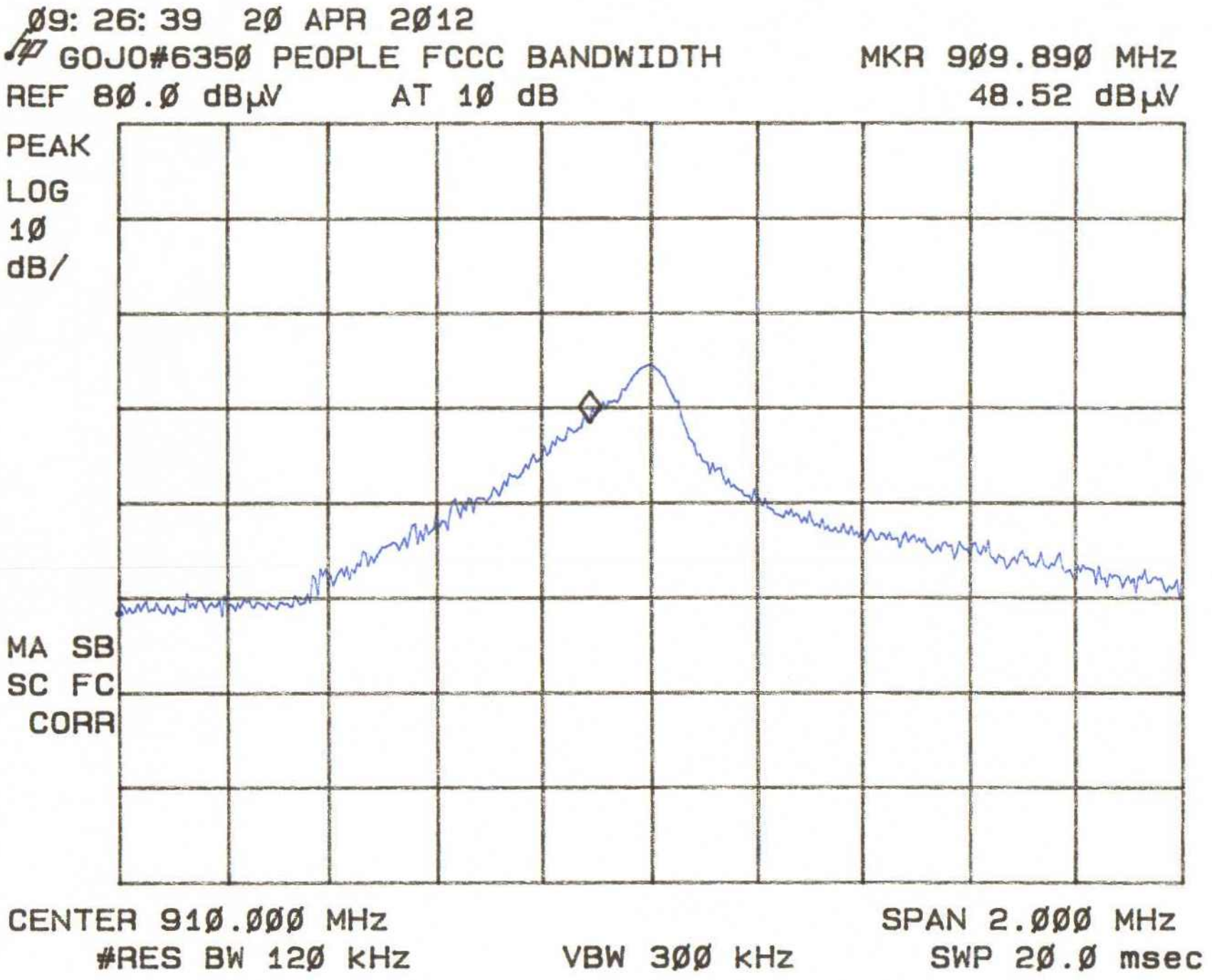
MA SB
SC FC
CORR

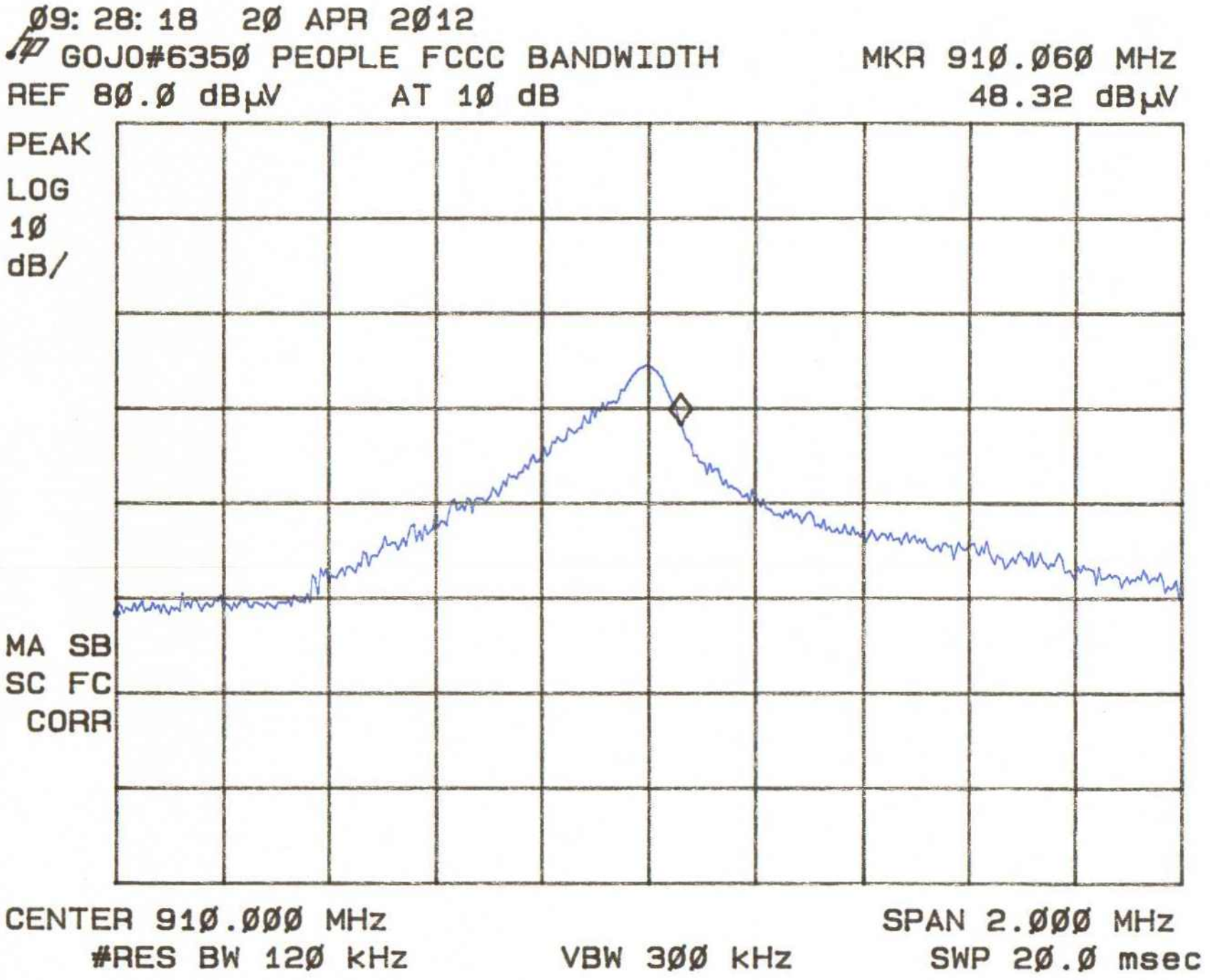
CENTER 9.1ØØØØØ GHz
SPAN 2.ØØØ MHz
#IF BW 1.Ø MHz
AVG BW 3ØØ kHz
SWP 2Ø.Ø msec

Test Datasheets-Bandwidth Test Minimum 6dB Bandwidth less than 500 KHz

3 Pages of Data to Follow


09: 31: 29 20 APR 2012
GOJO#6350 PEOPLE FCCC BANDWIDTH
MKR Δ 170 kHz
REF 80.0 dBμV
AT 10 dB
-.30 dB
PEAK
LOG
10
dB/
MA SB
SC FC
CORR
CENTER 910.000 MHz
SPAN 2.000 MHz
#RES BW 120 kHz
VBW 300 kHz
SWP 20.0 msec


09: 26: 39 20 APR 2012
GOJO#6350 PEOPLE FCCC BANDWIDTH
MKR 909.890 MHz
REF 80.0 dBµV
AT 10 dB
48.52 dBµV
PEAK
LOG
10
dB/
MA SB
SC FC
CORR
CENTER 910.000 MHz
SPAN 2.000 MHz
#RES BW 120 kHz
VBW 300 kHz
SWP 20.0 msec


09: 28: 18 20 APR 2012
GOJO#6350 PEOPLE FCCC BANDWIDTH
MKR 910.060 MHz
REF 80.0 dBµV
AT 10 dB
48.32 dBµV
PEAK
LOG
10
dB/
MA SB
SC FC
CORR
CENTER 910.000 MHz
SPAN 2.000 MHz
#RES BW 120 kHz
VBW 300 kHz
SWP 20.0 msec

Measurement Protocol

The methodology used during the testing performed on the EUT in this report was ANSI C63.4:2009.

The EUT was powered with 4.5 Volts DC during the collection of data included within this report.

The data is compared to FCC Part 15.249 C limits.

Please have a company official review this report and sign.