TEST REPORT OF A 2.4/5 GHZ IEEE 802.11g/a WLAN CARDBUS CARD, BRAND AGERE, MODEL 1106, IN CONFORMITY WITH 47 CFR PART 15 (July 22, 2003).

FCC listed : 90828
Industry Canada : IC3501
VCCI registered : R-1518, C-1598

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MEASUREMENT/TECHNICAL REPORT

Agere Systems Nederland B.V.

Model : 1106

FCC ID: IMR1106CB

July 30, 2004

This report concerns:	Original grant/certification ~~Class 2 change~~ ~~Verification~~	
Equipment type:	Digital Transmission System	
Deferred grant requested per 47 CFR 0.457(d)(1)(ii) ?	~~Yes~~	No
Report prepared by:	Name	: P.A.J.M. Robben, B.Sc.E.E.
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The data taken for this test and report herein was done in accordance with 47 CFR Part 15 and the measurement procedures of ANSI C63.4-1992. TNO Electronic Products & Services (EPS) B.V. at Niekerk, The Netherlands, certifies that the data is accurate and contains a true representation of the emission profile of the Equipment Under Test (EUT) on the date of the test as noted in the test report. I have reviewed the test report and find it to be an accurate description of the test(s) performed and the EUT so tested.

Date: July 30, 2004 Signature: 

P. de Beer
TNO Electronic Products & Services (EPS) B.V.

Description of test item

Test item	:	2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card
Manufacturer	:	Agere Systems Nederland B.V.
Brand	:	Agere
Model	:	1106
Serial numbers	:	04NG22910024 and 04NG28910012
Revision	:	D1 & D2
Receipt number	:	1
Receipt date	:	June 14, 2004 and July 21, 2004

Applicant information

Applicant's representative	:	Mr. F. Hoekstra
Company	:	Agere Systems Nederland B.V.
Address	:	Zadelstede 1-10
Postal code	:	3431 JZ
City	:	Nieuwegein
PO-box	:	755
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City	:	Nieuwegein
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Test(s) performed

Location	:	Niekerk
Test(s) started	:	June 14, 2004
Test(s) completed	:	July 29, 2004
Purpose of test(s)	:	Type approval / certification
Test specification(s)	:	47 CFR Part 15 (July 22, 2003)

Test engineer	:	O.H. Hoekstra
		H.J. Pieters
Report written by	:	P.A.J.M. Robben, B.Sc.E.E.
Project leader	:	H.J. Pieters

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1 General information

1.1 Product description

The 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card, brand Agere, model 1106, is designed to operate in the 2.4 GHz ISM frequency band, channels 1 to 11 (2412 MHz to 2462 MHz), as specified by the Federal Communications Commission in the USA.

The 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card, brand Agere, model 1106, utilizes Direct Sequence Spread Spectrum (DSSS) and OFDM modulation techniques.

The 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card, brand Agere, model 1106, incorporates an integral antenna.

1.2 Related submittal(s) and/or Grant(s)

Not applicable.

1.3 Tested system details

Details and an overview of the system and all its components, as it has been tested, can be found in table 1 below. FCC ID's are stated in this overview where applicable. The EUT is listed in the first row of this table 1.

Description	Model number	Serial number	FCC ID	Cable descriptions
2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card	1106	04NG22910024 and 04NG28910012	IMR1106CB	None.
Dell notebook computer	D600	CN-03U652-48643-39K-5806	n.a. (DoC)	-Unshielded DC power cord to AC/DC adapter; -Shielded parallel cable to printer; -Shielded mouse cable to mouse.
Dell AC/DC power adapter 100-240 VAC/1.5 Amps to +20 VDC/3.5 Amps	AA20031, PA-6 family	CN-09T215-48010-36N-631A	n.a. (DoC)	-Unshielded DC power cord to notebook computer; -Unshielded power cord to AC mains.
Hewlett-Packard Mouse	C3751B	LZA73702141	n.a. (DoC)	-Shielded mouse cable to notebook computer.
HP DeskJet 895Cxi	C6410A	ES8B42307H	n.a. (DoC)	-Unshielded DC power cord to AC/DC adapter; -Shielded parallel cable to notebook computer.
HP AC/DC power adapter 100-240 VAC/1 Amps to +18 VDC/1.1 Amps	C6409-60014	n.a.	n.a. (DoC)	-Unshielded DC power cord to printer; -Unshielded power cord to AC mains.

Table 1 - Tested system details overview.

1.4 Test methodology

The test methodology used is based on the requirements of 47 CFR Part 15 (July 22, 2003), sections 15.107, 15.207, 15.109, 15.209, 15.205 and 15.247.

The test methods, which have been used, are based on ANSI C63.4: 1992.

Radiated emission tests above 30 MHz were performed at a measurement distance of 3 meters. Below 30 MHz the radiated emission tests were carried out at measurement distances of 3 and 10 meters. The test results regarding the radiated emission tests on frequencies below 30 MHz have been extrapolated in order to determine the field strength of the measured values at measurement distances of 30 and 300 meters (as required by 47 CFR Part 15).

The bandwidth of the receiver is switching automatically to the right bandwidth in accordance with CISPR 16. This is implemented in the receiver. The antenna factors are programmed in the test receiver. The receiver automatically calculates the appropriate correction factor for the utilized antenna and also the appropriate antenna factor for the cable loss. The total correction is automatically added to the measured value.

Radiated emission tests in the frequency range of 1 GHz – 26.5 GHz were performed with appropriate pre-amplifiers, antennas and a spectrum analyzer. At frequencies on which radiated emissions were found the level at the input of the pre-amplifier was reproduced by means of a RF signal generator. The output level of the signal generator was then increased with the antenna factor in order to obtain the actual field strength value for each individual frequency on which radiated emissions were found.

1.5 Test facility

The Federal Communications Commission has reviewed the technical characteristics of the test facilities at TNO Electronic Products & Services (EPS) B.V., located in Niekerk, 9822 TL Smidshornerweg 18, The Netherlands, and has found these test facilities to be in compliance with the requirements of 47 CFR Part 15, section 2.948, per October 23, 2000.

The description of the test facilities has been filed under registration number 90828 at the Office of the Federal Communications Commission. The facility has been added to the list of laboratories performing these test services for the public on a fee basis.

The list of all public test facilities is available on the Internet at http://www.fcc.gov.

1.6 Product labeling

In accordance with 47 CFR Part 15.19 (a)(3) the following text shall be placed on a label, which is attached to the EUT:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

In accordance with 47 CFR Part 2.925 (a)(1), the FCC ID shall be placed on a label, which is attached to the EUT.

For further details about the labeling requirements (size, legibility, etc.) as set by the Federal Communications Commission see 47 CFR Part 15.19 (a)(3), 47 CFR Part 15.19 (b)(2), 47 CFR Part 15.19 (b)(4), 47 CFR Part 2.925 and 47 CFR Part 2.926.

1.7 System test configuration

1.7.1 Justification

The EUT was mounted inside the Cardbus slot of the host system. The EUT was tested while using the integral antenna of the EUT.

The justification and manipulation of cables and equipment in order to simulate a worst-case behavior of the test setup has been carried out as prescribed in ANSI C63.4: 1992.

Tests were performed at the lowest operating frequency (channel 1: 2412 MHz), the operating frequency in the middle of the specified frequency band (channel 6: 2437 MHz) and the highest operating frequency (channel 11: 2462 MHz). Further details may be found in table 2 below.

Channel	Operating frequencies (MHz)	Rated output power (dBm)	Test performed
1	2412	+24.3	***yes***
2	2417	+24.3	no
3	2422	+24.3	no
4	2427	+24.3	no
5	2432	+24.3	no
6	2437	+24.3	***yes***
7	2442	+24.3	no
8	2447	+24.3	no
9	2452	+24.3	no
10	2457	+24.3	no
11	2462	+24.3	***yes***

Table 2 - Specification of channels and rated maximum output power.

The EUT is able to transmit at various transmission bit-rates and utilizes a number of modulation techniques and modulation schemes. Table 3 lists all possible transmission bit-rates, modulation techniques and modulation schemes the EUT may utilize. The choice of the various transmission bit-rates which should be selected during all tests is based on the results of pre-scans from which the worst-case behavior of the EUT at certain transmission bit-rates could be determined.

Transmission bit-rate (Mbit/s)	Modulation technique	Modulation	Test performed
1	DSSS	BPSK	***yes***
2	DSSS	BPSK	***yes***
5.5	DSSS	QPSK	***yes***
11	DSSS	QPSK	***yes***
6	OFDM	BPSK	***yes***
9	OFDM	BPSK	***yes***
12	OFDM	QPSK	no
18	OFDM	QPSK	*yes*
24	OFDM	16 QAM	no
36	OFDM	16 QAM	*yes*
48	OFDM	64 QAM	no
54	OFDM	64 QAM	***yes***

Table 3 - Specification of transmission bit-rates, modulation techniques and modulation schemes.

1.7.2 EUT test software

The EUT could be enabled to transmit or receive continuously on channels 1 (2412 MHz), 6 (2437 MHz) and 11 (2462 MHz) by means of test software, which was supplied by the manufacturer of the EUT.

Furthermore, the utilized test software also enables access to transmission bit-rate settings in the range of: 1 Mbit/s, 2 Mbit/s, 5.5 Mbit/s and 11 Mbit/s (DSSS mode); 6 Mbit/s, 9 Mbit/s, 12 Mbit/s, 18 Mbit/s, 24 Mbit/s, 36 Mbit/s, 48 Mbit/s and 54 Mbit/s (OFDM mode).

The test software enabled operation of the device with a duty-cycle of 100% in continuous transmit mode.

1.8 Special accessories

No special accessories are used and/or needed to achieve compliance with the appropriate sections of 47 CFR Part 15.

1.9 Equipment modifications

No modifications have been made to the equipment in order to achieve compliance with the appropriate sections of 47 CFR Part 15.

1.10 Configuration of the tested system

Not applicable. See table 1 in section 1.3 of this test report.

1.11 Block diagram(s) of the EUT

The block diagram is available as part of the documentation which is to be submitted to the FCC.

2 Radiated emission data

2.1 Test results with EUT operating in receive mode on channel 1

The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15.109 and 47 CFR Part 15.209 with the EUT operating in receive mode on channel 1 (2412 MHz), are depicted in table 4.

Frequency (MHz)	Test results quasi peak (dBµV/m)		Test results average (dBµV/m)		Test results peak (dBµV/m)		Resolution bandwidth (kHz)	Quasi peak limits (dBµV/m)	Average limits (dBµV/m)	Peak limits (dBµV/m)
	V	H	V	H	V	H				
140.00	18.8	16.9	-	-	-	-	120	43.5	-	-
300.23	20.6	21.3	-	-	-	-	120	46.0	-	-
455.17	27.8	26.9	-	-	-	-	120	46.0	-	-
455.50	28.8	26.1	-	-	-	-	120	46.0	-	-
4824.00	-	-	n.t.	n.t.	37.3	35.7	1000	-	54.0	74.0
7236.00	-	-	n.t.	n.t.	< 38.0	< 38.0	1000	-	54.0	74.0
9648.00	-	-	n.t.	n.t.	42.4	< 42.0	1000	-	54.0	74.0

Table 4 - Test results with the EUT operating in receive mode on channel 1 (2412 MHz).

Note: Above 1 GHz, all measured values of the spurious emissions with the detector in peak mode, are below the applicable limits, which are valid when using an average detector. Therefore, all spurious emissions above 1 GHz have been measured with the peak detector only (n.t. = not tested), unless otherwise noted.

Note: Field strength values of radiated emissions at frequencies not listed in table 4 are more than 20 dB below the applicable limit.

Test engineer

Signature : 

Name : H.J. Pieters

Date : July 29, 2004

2.2 Test results with EUT operating in receive mode on channel 6

The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15.109 and 47 CFR Part 15.209 with the EUT operating in receive mode on channel 6 (2437 MHz), are depicted in table 5.

Frequency (MHz)	Test results quasi peak (dBµV/m)		Test results average (dBµV/m)		Test results peak (dBµV/m)		Resolution bandwidth (kHz)	Quasi peak limits (dBµV/m)	Average limits (dBµV/m)	Peak limits (dBµV/m)
	V	H	V	H	V	H				
140.00	18.8	16.9	-	-	-	-	120	43.5	-	-
300.23	20.6	21.3	-	-	-	-	120	46.0	-	-
455.17	27.8	26.9	-	-	-	-	120	46.0	-	-
455.50	28.8	26.1	-	-	-	-	120	46.0	-	-
4874.00	-	-	n.t.	n.t.	36.2	35.1	1000	-	54.0	74.0
7311.00	-	-	n.t.	n.t.	< 38.0	< 38.0	1000	-	54.0	74.0
9748.00	-	-	n.t.	n.t.	43.1	< 42.0	1000	-	54.0	74.0

Table 5 - Test results with the EUT operating in receive mode on channel 6 (2437 MHz).

Note: Above 1 GHz, all measured values of the spurious emissions with the detector in peak mode, are below the applicable limits, which are valid when using an average detector. Therefore, all spurious emissions above 1 GHz have been measured with the peak detector only (n.t. = not tested), unless otherwise noted.

Note: Field strength values of radiated emissions at frequencies not listed in table 5 are more than 20 dB below the applicable limit.

Test engineer

Signature : 

Name : H.J. Pieters

Date : July 29, 2004

2.3 Test results with EUT operating in receive mode on channel 11

The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15.109 and 47 CFR Part 15.209 with the EUT operating in receive mode on channel 11 (2462 MHz), are depicted in table 6.

Frequency (MHz)	Test results quasi peak (dBµV/m)		Test results average (dBµV/m)		Test results peak (dBµV/m)		Resolution bandwidth (kHz)	Quasi peak limits (dBµV/m)	Average limits (dBµV/m)	Peak limits (dBµV/m)
	V	H	V	H	V	H				
140.00	18.8	16.9	-	-	-	-	120	43.5	-	-
300.23	20.6	21.3	-	-	-	-	120	46.0	-	-
455.17	27.8	26.9	-	-	-	-	120	46.0	-	-
455.50	28.8	26.1	-	-	-	-	120	46.0	-	-
4924.00	-	-	n.t.	n.t.	35.2	< 35.0	1000	-	54.0	74.0
7386.00	-	-	n.t.	n.t.	39.6	< 38.0	1000	-	54.0	74.0
9848.00	-	-	n.t.	n.t.	44.1	< 43.0	1000	-	54.0	74.0

Table 6 - Test results with the EUT operating in receive mode on channel 11 (2462 MHz).

Note: Above 1 GHz, all measured values of the spurious emissions with the detector in peak mode, are below the applicable limits, which are valid when using an average detector. Therefore, all spurious emissions above 1 GHz have been measured with the peak detector only (n.t. = not tested), unless otherwise noted.

Note: Field strength values of radiated emissions at frequencies not listed in table 6 are more than 20 dB below the applicable limit.

Test engineer

Signature : 

Name : H.J. Pieters

Date : July 29, 2004

2.4 Test results with EUT operating in transmit mode on channel 1

2.4.1 DSSS mode

The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15.109, 47 CFR Part 15.209 and 47 CFR Part 15.205 (restricted bands of operation) with the EUT operating in transmit mode on channel 1 (2412 MHz), are depicted in table 7.

Frequency (MHz)	Test results quasi peak (dBµV/m)		Test results average (dBµV/m)		Test results peak (dBµV/m)		Resolution bandwidth (kHz)	Quasi peak limits (dBµV/m)	Average limits (dBµV/m)	Peak limits (dBµV/m)
	V	H	V	H	V	H				
140.00	18.8	16.9	-	-	-	-	120	43.5	-	-
300.23	20.6	21.3	-	-	-	-	120	46.0	-	-
455.17	27.8	26.9	-	-	-	-	120	46.0	-	-
455.50	28.8	26.1	-	-	-	-	120	46.0	-	-
4824.00	-	-	n.t.	n.t.	44.7	50.1	1000	-	54.0	74.0
7236.00	-	-	n.t.	n.t.	41.9	41.3	1000	-	54.0	74.0
9648.00	-	-	n.t.	n.t.	49.7	50.4	1000	-	54.0	74.0

Table 7 - Test results with the EUT operating in transmit mode on channel 1 (2412 MHz).

Note: Above 1 GHz, alll measured values of the spurious emissions with the detector in peak mode, are below the applicable limits, which are valid when using an average detector. Therefore, all spurious emissions above 1 GHz have been measured with the peak detector only (n.t. = not tested), unless otherwise noted.

Note: Radiated emission tests have been performed with all possible transmission bit-rates (1 Mbit/s, 2 Mbit/s, 5.5 Mbit/s and 11 Mbit/s) in transmit mode. The highest values measured of the spurious emission components are reported by means of table 7.

Note: Field strength values of radiated emissions at frequencies not listed in table 7 are more than 20 dB below the applicable limit.

Test engineer

Signature : 

Name : H.J. Pieters

Date : July 29, 2004

2.4.2 OFDM mode

The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15.109, 47 CFR Part 15.209 and 47 CFR Part 15.205 (restricted bands of operation) with the EUT operating in transmit mode on channel 1 (2412 MHz), are depicted in table 8.

Frequency (MHz)	Test results quasi peak (dBµV/m)		Test results average (dBµV/m)		Test results peak (dBµV/m)		Resolution bandwidth (kHz)	Quasi peak limits (dBµV/m)	Average limits (dBµV/m)	Peak limits (dBµV/m)
	V	H	V	H	V	H				
140.00	18.8	16.9	-	-	-	-	120	43.5	-	-
300.23	20.6	21.3	-	-	-	-	120	46.0	-	-
455.17	27.8	26.9	-	-	-	-	120	46.0	-	-
455.50	28.8	26.1	-	-	-	-	120	46.0	-	-
4824.00	-	-	n.t.	n.t.	47.2	42.2	1000	-	54.0	74.0
7236.00	-	-	n.t.	n.t.	44.9	45.1	1000	-	54.0	74.0
9748.00	-	-	43.8	44.2	55.3	57.7	1000	-	54.0	74.0

Table 8 - Test results with the EUT operating in transmit mode on channel 1 (2412 MHz).

Note: Above 1 GHz, most measured values of the spurious emissions with the detector in peak mode, are below the applicable limits, which are valid when using an average detector. Therefore, most spurious emissions above 1 GHz have been measured with the peak detector only (n.t. = not tested), unless otherwise noted.

Note: Radiated emission tests have been performed with all possible transmission bit-rates (6/9 Mbit/s, 12/18 Mbit/s, 24/36 Mbit/s and 48/54 Mbit/s) in transmit mode. The highest values measured of the spurious emission components are reported by means of table 8.

Note: Field strength values of radiated emissions at frequencies not listed in table 8 are more than 20 dB below the applicable limit.

Test engineer

Signature : 

Name : H.J. Pieters

Date : July 29, 2004

2.5 Test results with EUT operating in transmit mode on channel 6

2.5.1 DSSS mode

The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15.109, 47 CFR Part 15.209 and 47 CFR Part 15.205 (restricted bands of operation) with the EUT operating in transmit mode on channel 6 (2437 MHz), are depicted in table 9.

Frequency (MHz)	Test results quasi peak (dBµV/m)		Test results average (dBµV/m)		Test results peak (dBµV/m)		Resolution bandwidth (kHz)	Quasi peak limits (dBµV/m)	Average limits (dBµV/m)	Peak limits (dBµV/m)
	V	H	V	H	V	H				
140.00	18.8	16.9	-	-	-	-	120	43.5	-	-
300.23	20.6	21.3	-	-	-	-	120	46.0	-	-
455.17	27.8	26.9	-	-	-	-	120	46.0	-	-
455.50	28.8	26.1	-	-	-	-	120	46.0	-	-
4874.00	-	-	n.t.	n.t.	43.3	48.2	1000	-	54.0	74.0
7311.00	-	-	n.t.	n.t.	42.8	41.8	1000	-	54.0	74.0
9748.00	-	-	n.t.	n.t.	50.9	51.2	1000	-	54.0	74.0

Table 9 - Test results with the EUT operating in transmit mode on channel 6 (2437 MHz).

Note: Above 1 GHz, all measured values of the spurious emissions with the detector in peak mode, are below the applicable limits, which are valid when using an average detector. Therefore, all spurious emissions above 1 GHz have been measured with the peak detector only (n.t. = not tested), unless otherwise noted.

Note: Radiated emission tests have been performed with all possible transmission bit-rates (1 Mbit/s, 2 Mbit/s, 5.5 Mbit/s and 11 Mbit/s) in transmit mode. The highest values measured of the spurious emission components are reported by means of table 9.

Note: Field strength values of radiated emissions at frequencies not listed in table 9 are more than 20 dB below the applicable limit.

Test engineer

Signature : 

Name : H.J. Pieters

Date : July 29, 2004

2.5.2 OFDM mode

The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15.109, 47 CFR Part 15.209 and 47 CFR Part 15.205 (restricted bands of operation) with the EUT operating in transmit mode on channel 6 (2437 MHz), are depicted in table 10.

Frequency (MHz)	Test results quasi peak (dBµV/m)		Test results average (dBµV/m)		Test results peak (dBµV/m)		Resolution bandwidth (kHz)	Quasi peak limits (dBµV/m)	Average limits (dBµV/m)	Peak limits (dBµV/m)
	V	H	V	H	V	H				
140.00	18.8	16.9	-	-	-	-	120	43.5	-	-
300.23	20.6	21.3	-	-	-	-	120	46.0	-	-
455.17	27.8	26.9	-	-	-	-	120	46.0	-	-
455.50	28.8	26.1	-	-	-	-	120	46.0	-	-
4874.00	-	-	n.t.	n.t.	47.2	42.2	1000	-	54.0	74.0
7311.00	-	-	n.t.	n.t.	44.9	45.1	1000	-	54.0	74.0
9748.00	-	-	43.8	44.2	55.3	57.7	1000	-	54.0	74.0

Table 10 - Test results with the EUT operating in transmit mode on channel 6 (2437 MHz).

Note: Above 1 GHz, most measured values of the spurious emissions with the detector in peak mode, are below the applicable limits, which are valid when using an average detector. Therefore, most spurious emissions above 1 GHz have been measured with the peak detector only (n.t. = not tested), unless otherwise noted.

Note: Radiated emission tests have been performed with all possible transmission bit-rates (6/9 Mbit/s, 12/18 Mbit/s, 24/36 Mbit/s and 48/54 Mbit/s) in transmit mode. The highest values measured of the spurious emission components are reported by means of table 10.

Note: Field strength values of radiated emissions at frequencies not listed in table 10 are more than 20 dB below the applicable limit.

Test engineer

Signature : 

Name : H.J. Pieters

Date : July 29, 2004

2.6 Test results with EUT operating in transmit mode on channel 11

2.6.1 DSSS mode

The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15.109, 47 CFR Part 15.209 and 47 CFR Part 15.205 (restricted bands of operation) with the EUT operating in transmit mode on channel 11 (2462 MHz), are depicted in table 11.

Frequency (MHz)	Test results quasi peak (dBµV/m)		Test results average (dBµV/m)		Test results peak (dBµV/m)		Resolution bandwidth (kHz)	Quasi peak limits (dBµV/m)	Average limits (dBµV/m)	Peak limits (dBµV/m)
	V	H	V	H	V	H				
140.00	18.8	16.9	-	-	-	-	120	43.5	-	-
300.23	20.6	21.3	-	-	-	-	120	46.0	-	-
455.17	27.8	26.9	-	-	-	-	120	46.0	-	-
455.50	28.8	26.1	-	-	-	-	120	46.0	-	-
4924.00	-	-	n.t.	n.t.	43.5	46.8	1000	-	54.0	74.0
7386.00	-	-	n.t.	n.t.	42.0	< 41.0	1000	-	54.0	74.0
9848.00	-	-	n.t.	n.t.	50.9	51.0	1000	-	54.0	74.0

Table 11 - Test results with the EUT operating in transmit mode on channel 11 (2462 MHz).

Note: Above 1 GHz, all measured values of the spurious emissions with the detector in peak mode, are below the applicable limits, which are valid when using an average detector. Therefore, all spurious emissions above 1 GHz have been measured with the peak detector only (n.t. = not tested), unless otherwise noted.

Note: Radiated emission tests have been performed with all possible transmission bit-rates (1 Mbit/s, 2 Mbit/s, 5.5 Mbit/s and 11 Mbit/s) in transmit mode. The highest values measured of the spurious emission components are reported by means of table 11.

Note: Field strength values of radiated emissions at frequencies not listed in table 11 are more than 20 dB below the applicable limit.

Test engineer

Signature : 

Name : H.J. Pieters

Date : July 29, 2004

2.6.2 OFDM mode

The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15.109, 47 CFR Part 15.209 and 47 CFR Part 15.205 (restricted bands of operation) with the EUT operating in transmit mode on channel 11 (2462 MHz), are depicted in table 12.

Frequency (MHz)	Test results quasi peak (dBµV/m)		Test results average (dBµV/m)		Test results peak (dBµV/m)		Resolution bandwidth (kHz)	Quasi peak limits (dBµV/m)	Average limits (dBµV/m)	Peak limits (dBµV/m)
	V	H	V	H	V	H				
140.00	18.8	16.9	-	-	-	-	120	43.5	-	-
300.23	20.6	21.3	-	-	-	-	120	46.0	-	-
455.17	27.8	26.9	-	-	-	-	120	46.0	-	-
455.50	28.8	26.1	-	-	-	-	120	46.0	-	-
4924.00	-	-	n.t.	n.t.	37.0	38.2	1000	-	54.0	74.0
7386.00	-	-	n.t.	n.t.	< 41.0	< 41.0	1000	-	54.0	74.0
9848.00	-	-	n.t.	n.t.	50.1	46.3	1000	-	54.0	74.0

Table 12 - Test results with the EUT operating in transmit mode on channel 11 (2462 MHz).

Note: Above 1 GHz, all measured values of the spurious emissions with the detector in peak mode, are below the applicable limits, which are valid when using an average detector. Therefore, all spurious emissions above 1 GHz have been measured with the peak detector only (n.t. = not tested), unless otherwise noted.

Note: Radiated emission tests have been performed with all possible transmission bit-rates (6/9 Mbit/s, 12/18 Mbit/s, 24/36 Mbit/s and 48/54 Mbit/s) in transmit mode. The highest values measured of the spurious emission components are reported by means of table 12.

Note: Field strength values of radiated emissions at frequencies not listed in table 12 are more than 20 dB below the applicable limit.

Test engineer

Signature : 

Name : H.J. Pieters

Date : July 29, 2004

3 Conducted emission data

3.1 AC mains with EUT operating in transmit and receive mode

The (worst-case) results of the conducted emission tests at the 110 Volts AC mains connection terminals of the AC/DC power adapter of the notebook computer in which the EUT is mounted, carried out in accordance with 47 CFR Part 15.107 and 47 CFR Part 15.207 with the EUT operating in transmit and receive mode on channels 1 (2412 MHz), 6 (2437 MHz) and 11 (2462 MHz) while utilizing all possible transmission bit-rates in DSSS mode (1 Mbit/s, 2 Mbit/s, 5.5 Mbit/s and 11 Mbit/s) and OFDM mode (6/9 Mbit/s, 12/18 Mbit/s, 24/36 Mbit/s and 48/54 Mbit/s), are depicted in table 13.

Frequency (MHz)	Measurement results dB(µV) Neutral		Measurement results dB(µV) Line 1		Limits dB(µV)		Margin (dB) Neutral		Margin (dB) Line 1		Result
	QP	AV	QP	AV	QP	AV	QP	AV	QP	AV	
0.15	44.8	16.9	45.2	16.6	66.0	56.0	-21.2	-39.1	-20.8	-39.4	PASS
0.28	41.0	32.4	39.3	31.3	60.8	50.8	-19.8	-18.4	-21.5	-19.5	PASS
0.47	32.7	27.6	34.9	30.2	56.5	46.5	-23.8	-18.9	-21.6	-16.3	PASS
0.95	30.9	27.9	31.6	28.5	56.0	46.0	-25.1	-18.1	-24.4	-17.5	PASS
1.95	32.9	27.8	33.3	28.0	56.0	46.0	-23.1	-18.2	-22.7	-18.0	PASS
3.00	35.5	30.5	35.2	30.3	56.0	46.0	-20.5	-15.5	-20.8	-15.7	PASS
5.75	34.0	29.0	33.3	29.8	60.0	50.0	-26.0	-21.0	-26.7	-20.2	PASS
9.50	28.7	22.9	28.7	23.1	60.0	50.0	-31.3	-27.1	-31.3	-26.9	PASS
14.75	22.5	16.9	21.9	16.3	60.0	50.0	-37.5	-33.1	-38.1	-33.7	PASS
22.50	15.0	8.5	14.9	8.3	60.0	50.0	-45.0	-41.5	-45.1	-41.7	PASS
29.00	21.5	15.8	21.1	15.5	60.0	50.0	-38.5	-34.2	-38.9	-34.5	PASS

Table 13 - Test results with the EUT operating in transmit and receive mode.

Note: Disturbance voltage values of conducted emissions at frequencies not listed in table 13 are more than 20 dB below the applicable limit.

Test engineer

Signature : 

Name : H.J. Pieters

Date : July 7, 2004

3.2 Emission in restricted bands nearest to the band 2400 - 2483.5 MHz

3.2.1 DSSS mode

The results of the conducted emission tests, carried out in accordance with 47 CFR Part 15.205 (restricted bands of operation, with the emphasis on the emission in restricted bands nearest to the band 2400-2483.5 MHz) with the EUT operating in transmit mode, are depicted in table 14. The plots of the measurement results may be found in section 5.1.1 of this test report.

Frequency (MHz)	Test results quasi peak (dBµV/m)	Test results average (dBµV/m)	Test results peak (dBµV/m)	Resolution bandwidth (kHz)	Quasi peak limits (dBµV/m)	Average limits (dBµV/m)	Peak limits (dBµV/m)
2385.8	-	53.2	60.3	1000	-	54.0	74.0
2487.7	-	52.4	61.4	1000	-	54.0	74.0

Table 14 - Test results with the EUT operating in transmit mode.

Note: Conducted emission tests have been performed with all possible transmission bit-rates (1 Mbit/s, 2 Mbit/s, 5.5 Mbit/s and 11 Mbit/s) in transmit mode. The highest values measured of the spurious emission components are reported by means of table 14.

Note: Field strength values of conducted emissions at frequencies not listed in table 14 are more than 20 dB below the applicable limit.

3.2.2 OFDM mode

The results of the conducted emission tests, carried out in accordance with 47 CFR Part 15.205 (restricted bands of operation, with the emphasis on the emission in restricted bands nearest to the band 2400-2483.5 MHz) with the EUT operating in transmit mode, are depicted in table 15. The plots of the measurement results may be found in section 5.1.2 of this test report.

Frequency (MHz)	Test results quasi peak (dBµV/m)	Test results average (dBµV/m)	Test results peak (dBµV/m)	Resolution bandwidth (kHz)	Quasi peak limits (dBµV/m)	Average limits (dBµV/m)	Peak limits (dBµV/m)
2390.0	-	52.3	70.9	1000	-	54.0	74.0
2483.5	-	48.6	73.7	1000	-	54.0	74.0

Table 15 - Test results with the EUT operating in transmit mode.

Note: Conducted emission tests have been performed with all possible transmission bit-rates (6/9 Mbit/s, 12/18 Mbit/s, 24/36 Mbit/s and 48/54 Mbit/s) in transmit mode. The highest values measured of the spurious emission components are reported by means of table 15.

Note: Field strength values of conducted emissions at frequencies not listed in table 15 are more than 20 dB below the applicable limit.

Test engineer

Signature : 

Name : Onno H. Hoekstra

Date : June 14, 2004

4 Test results of measurements in conformity with 47 CFR Part 15.247

4.1 Minimum 6 dB bandwidth

4.1.1 DSSS mode

The results of tests on the EUT, carried out in accordance with 47 CFR Part 15.247 (a)(2), are depicted in table 16.

The plots of the measurement results may be found in section 5.2.1 of this test report.

Transmission bit-rate (Mbit/s)	Minimum 6 dB bandwidth (kHz)			Limit (kHz)
	Channel 1 (2412 MHz)	Channel 6 (2437 MHz)	Channel 11 (2462 MHz)	
1	12600	12075	12150	>500
2	12450	12525	12525	>500
5.5	11775	11700	12700	>500
11	11700	11700	11775	>500

Table 16 - Minimum 6 dB bandwidth.

4.1.2 OFDM mode

The results of tests on the EUT, carried out in accordance with 47 CFR Part 15.247 (a)(2), are depicted in table 17.

The plots of the measurement results may be found in section 5.2.2 of this test report.

Transmission bit-rate (Mbit/s)	Minimum 6 dB bandwidth (kHz)			Limit (kHz)
	Channel 1 (2412 MHz)	Channel 6 (2437 MHz)	Channel 11 (2462 MHz)	
6	16650	16650	16725	>500
9	16650	16650	16650	>500
18	16650	16575	16575	>500
36	16650	16575	16575	>500
54	16575	16650	16575	>500

Table 17 - Minimum 6 dB bandwidth.

Test engineer

Signature : 

Name : Onno H. Hoekstra

Date : June 14, 2004

4.2 Maximum peak output power

4.2.1 DSSS mode

The results of tests on the EUT, carried out in accordance with 47 CFR Part 15.247 (b)(3), are depicted in table 18. The maximum peak output power (conducted) was measured directly at the antenna connector.

Transmission bit-rate (Mbit/s)	Maximum peak output power (conducted, dBm)			Limit (dBm) Antenna gain < 6 dBi
	Channel 1 (2412 MHz)	Channel 6 (2437 MHz)	Channel 11 (2462 MHz)	
1	18.8	21.2	21.1	30.0
2	19.1	21.2	21.1	30.0
5.5	18.5	20.6	20.5	30.0
11	19.2	21.1	21.2	30.0

Table 18 - Maximum peak output power (conducted).

Note: During the measurements, the AC mains supply voltage of the notebook PC to which the EUT is connected in was varied between 85% and 115% of the nominal value. The maximum measured values are depicted in table 18. No differences in measurement results, due to the AC mains voltage variations between 85% and 115% from the nominal value, have been observed. As the antenna gain does not exceed 6 dBi, no reduction of the maximum peak output power is required.

4.2.2 OFDM mode

The results of tests on the EUT, carried out in accordance with 47 CFR Part 15.247 (b)(3), are depicted in table 19. The maximum peak output power (conducted) was measured directly at the antenna connector.

Transmission bit-rate (Mbit/s)	Maximum peak output power (conducted, dBm)			Limit (dBm) Antenna gain < 6 dBi
	Channel 1 (2412 MHz)	Channel 6 (2437 MHz)	Channel 11 (2462 MHz)	
6	22.7	24.2	22.9	30.0
9	22.7	24.2	22.9	30.0
18	22.8	24.3	23.1	30.0
36	22.8	24.3	23.2	30.0
54	22.9	23.8	23.2	30.0

Table 19 - Maximum peak output power (conducted).

Note: During the measurements, the AC mains supply voltage of the notebook PC to which the EUT is connected in was varied between 85% and 115% of the nominal value. The maximum measured values are depicted in table 19. No differences in measurement results, due to the AC mains voltage variations between 85% and 115% from the nominal value, have been observed. As the antenna gain does not exceed 6 dBi, no reduction of the maximum peak output power is required.

Test engineer

Signature : 

Name : Onno H. Hoekstra

Date : June 16, 2004

4.3 Conducted emission data outside restricted bands

4.3.1 DSSS mode

The results of tests on the EUT, carried out in accordance with 47 CFR Part 15.247 (c), are depicted in table 20.

Conducted emission data outside restricted bands in a 100 kHz bandwidth shall be at least 20 dB below the highest level in a 100 kHz bandwidth within the band.

The plots of the measurement results may be found in section 5.3.1 of this test report.

Frequency (MHz)	Level below working channel (dB)	Limit of level below working channel (dB)
457.0	-47.1	< -20.0
1660.0	-51.4	< -20.0
2396.9	-34.1	< -20.0
other frequencies	< -40.0	< -20.0

Table 20 - Conducted emission data outside restricted bands.

Note: Worst case measurement values for transmissions with all possible transmission bit-rates (1 Mbit/s, 2 Mbit/s, 5.5 Mbit/s and 11 Mbit/s) and channel 1 (2412 MHz), channel 6 (2437 MHz) and channel 11 (2462 MHz)) combinations.

4.3.2 OFDM mode

The results of tests on the EUT, carried out in accordance with 47 CFR Part 15.247 (c), are depicted in table 21.

Conducted emission data outside restricted bands in a 100 kHz bandwidth shall be at least 20 dB below the highest level in a 100 kHz bandwidth within the band.

The plots of the measurement results may be found in section 5.3.2 of this test report.

Frequency (MHz)	Level below working channel (dB)	Limit of level below working channel (dB)
457.0	-52.3	< -20.0
1660.0	-45.5	< -20.0
2399.5	-21.4	< -20.0
other frequencies	< -40.0	< -20.0

Table 21 - Conducted emission data outside restricted bands.

Note: Worst case measurement values for transmissions with all possible transmission bit-rates (6/9 Mbit/s, 12/18 Mbit/s, 24/36 Mbit/s and 48/54 Mbit/s) and channel 1 (2412 MHz), channel 6 (2437 MHz) and channel 11 (2462 MHz)) combinations.

Test engineer

Signature : 

Name : Onno H. Hoekstra

Date : June 14, 2004

4.4 Peak power spectral density

4.4.1 DSSS mode

The results of the tests on the EUT, carried out in accordance with 47 CFR Part 15.247 (d), are depicted in table 22.

The plots of the measurement results may be found in section 5.4.1 of this test report.

Transmission bit-rate (Mbit/s)	Peak power spectral density (conducted) in any 3 kHz band (dBm)			Limit (dBm)
	Channel 1 (2412 MHz)	Channel 6 (2437 MHz)	Channel 11 (2462 MHz)	
1	-7.9	-5.7	-5.6	<8.0
2	-7.7	-5.5	-5.4	<8.0
5.5	-8.7	-6.3	-6.3	<8.0
11	-7.2	-4.9	-4.9	<8.0

Table 22 - Peak power spectral density.

4.4.2 OFDM mode

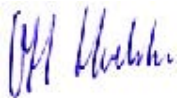
The results of the tests on the EUT, carried out in accordance with 47 CFR Part 15.247 (d), are depicted in table 23.

The plots of the measurement results may be found in section 5.4.2 of this test report.

Transmission bit-rate (Mbit/s)	Peak power spectral density (conducted) in any 3 kHz band (dBm)			Limit (dBm)
	Channel 1 (2412 MHz)	Channel 6 (2437 MHz)	Channel 11 (2462 MHz)	
6	-11.0	-4.3	-10.4	<8.0
9	-11.6	-4.5	-11.0	<8.0
18	-11.6	-6.4	-11.4	<8.0
36	-10.7	-6.6	-10.8	<8.0
54	-11.1	-8.3	-10.8	<8.0

Table 23 - Peak power spectral density.

Test engineer

Signature : 

Name : Onno H. Hoekstra

Date : June 16, 2004

5 Plots of measurement data

For reference purposes and visualization of spectrum analyzer settings during the measurements, a selection of plots of measurement data is included in this test report.

Test engineer

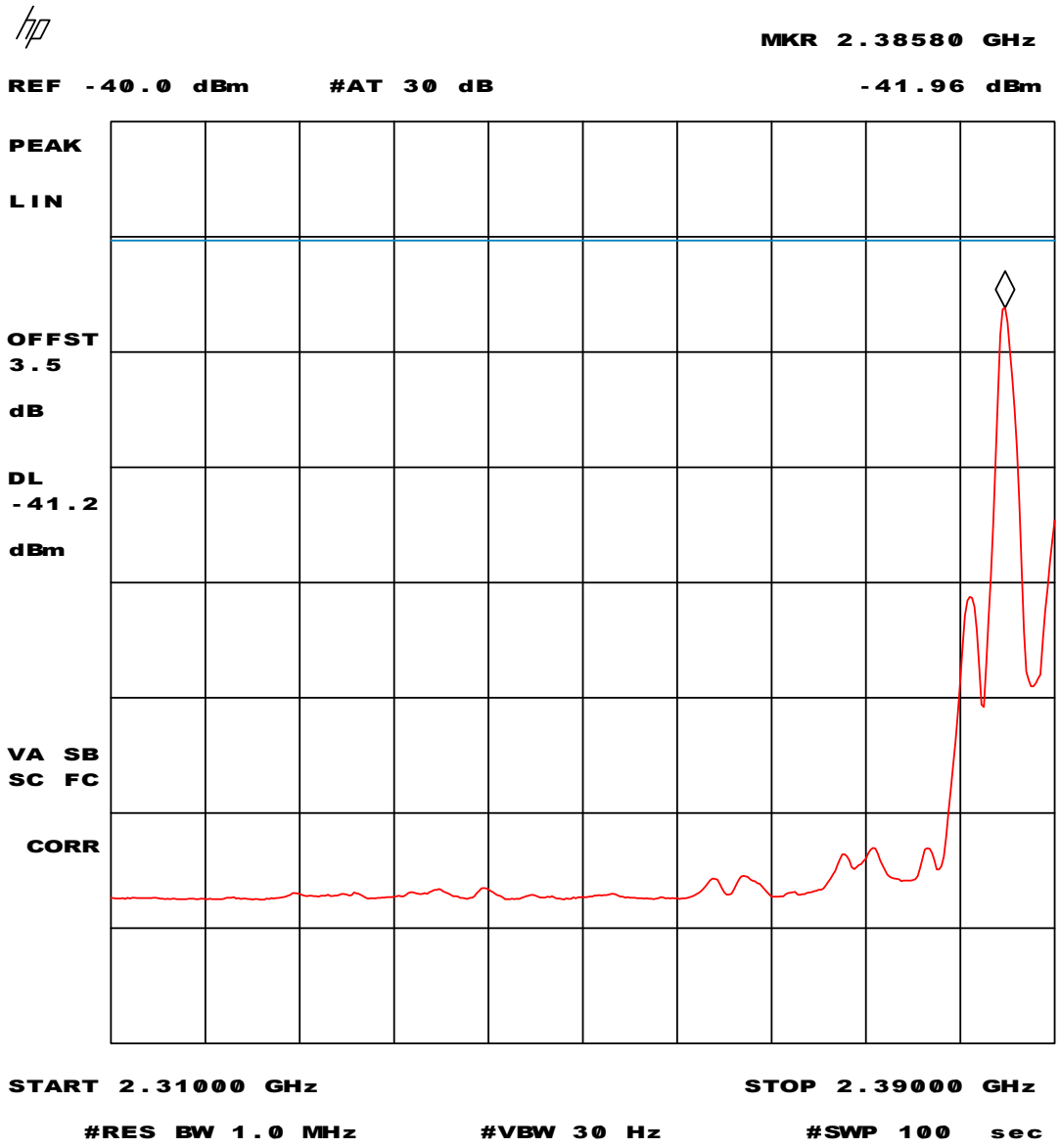
Signature : 

Name : Onno H. Hoekstra

Date : July 29, 2004

5.1 Emission in restricted bands nearest to the band 2400 - 2483.5 MHz

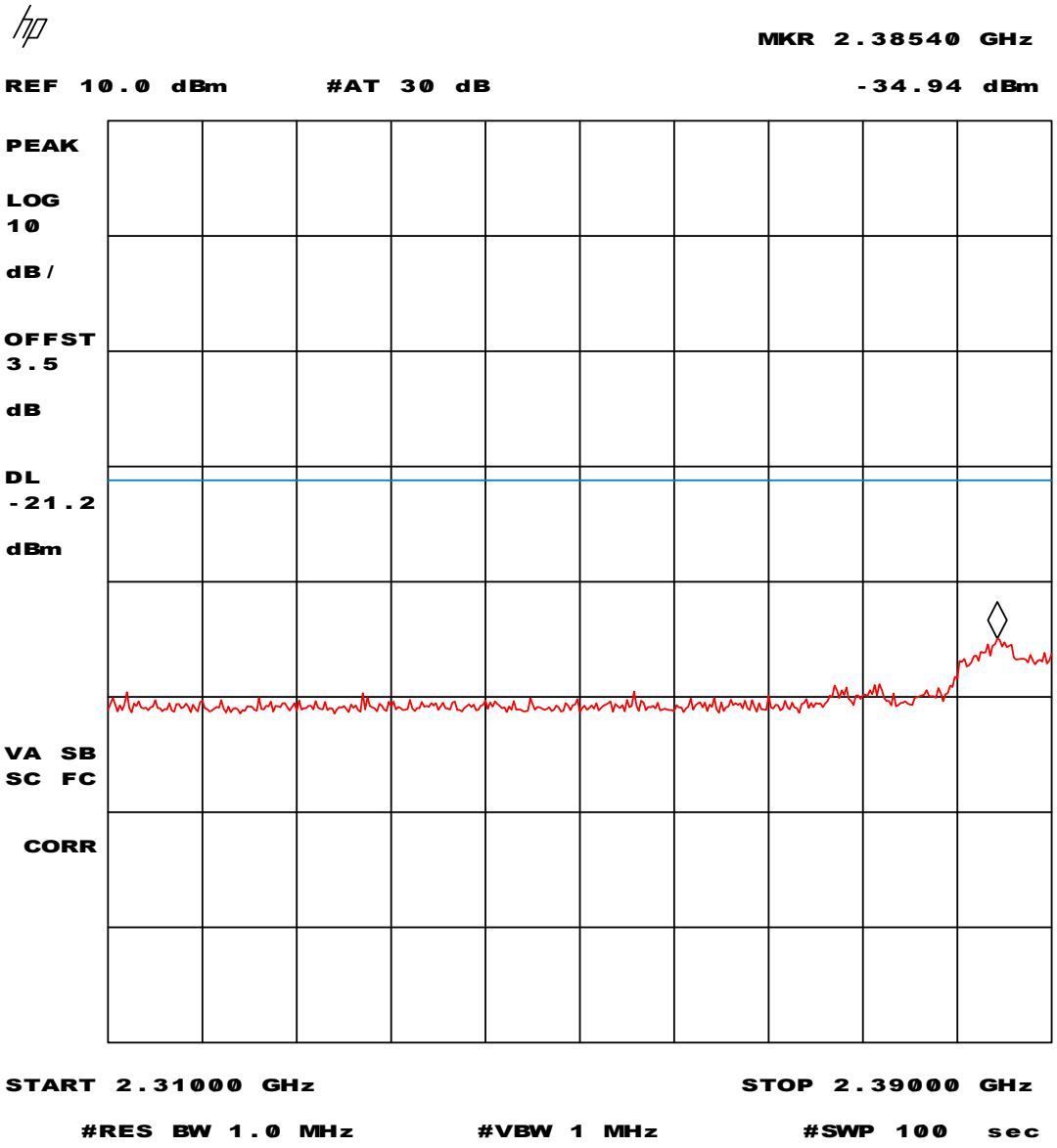
5.1.1 DSSS mode



Plot 1 - Average measurement values in restricted band 2310 - 2390 MHz.

Average measurement values in restricted band. All possible transmission bit-rates (1 Mbit/s, 2 Mbit/s, 5.5 Mbit/s and 11 Mbit/s), conducted measurement, corrected for 3.0 dBi antenna gain (including antenna cable losses) and 0.5 dB cable losses (measurement cable).

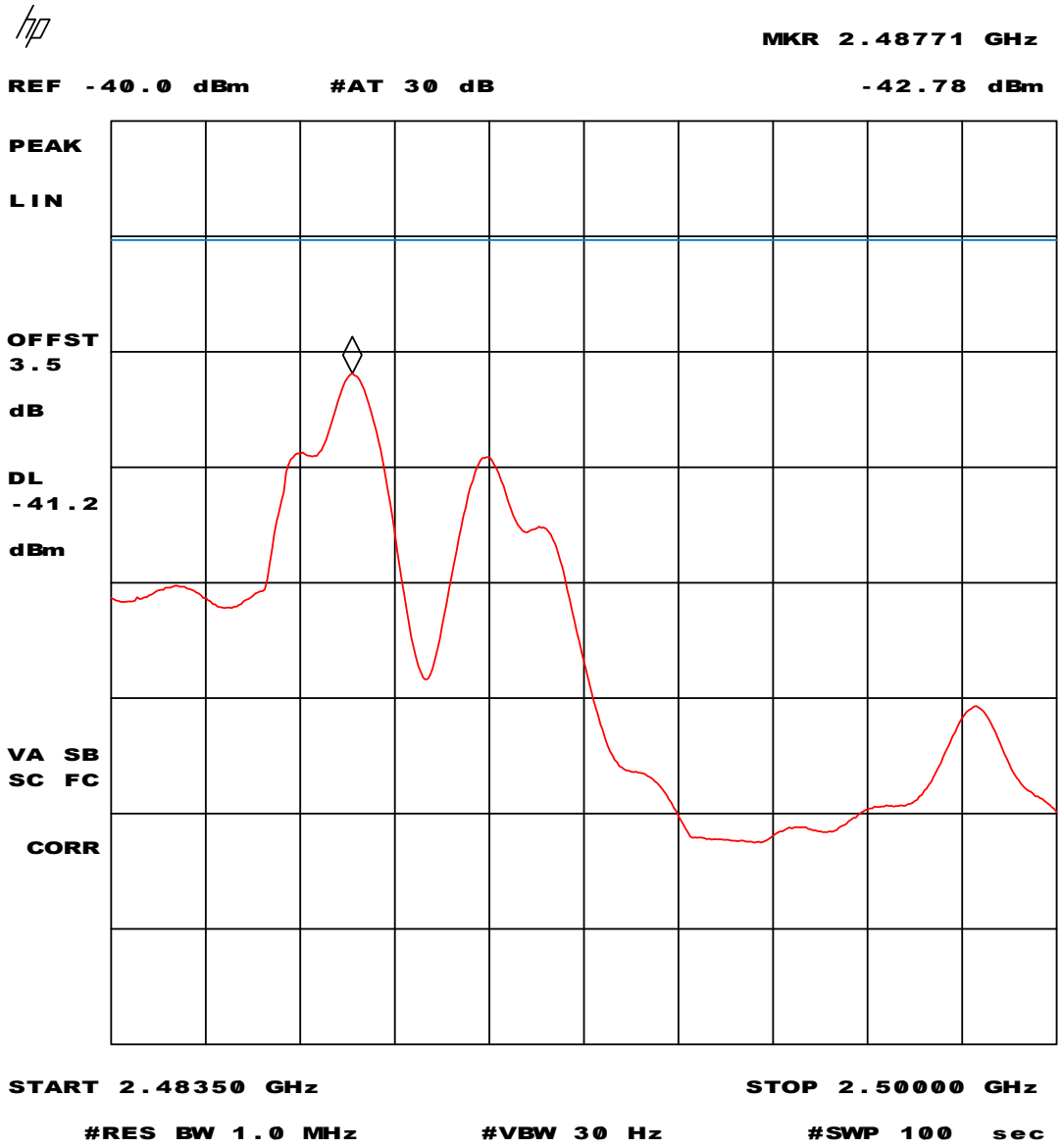
Note: 54 dBµV/m :: -41.2 dBm display line setting.



Plot 2 - Peak measurement values in restricted band 2310 - 2390 MHz.

Peak measurement values in restricted band. All possible transmission bit-rates (1 Mbit/s, 2 Mbit/s, 5.5 Mbit/s and 11 Mbit/s), conducted measurement, corrected for 3.0 dBi antenna gain (including antenna cable losses) and 0.5 dB cable losses (measurement cable).

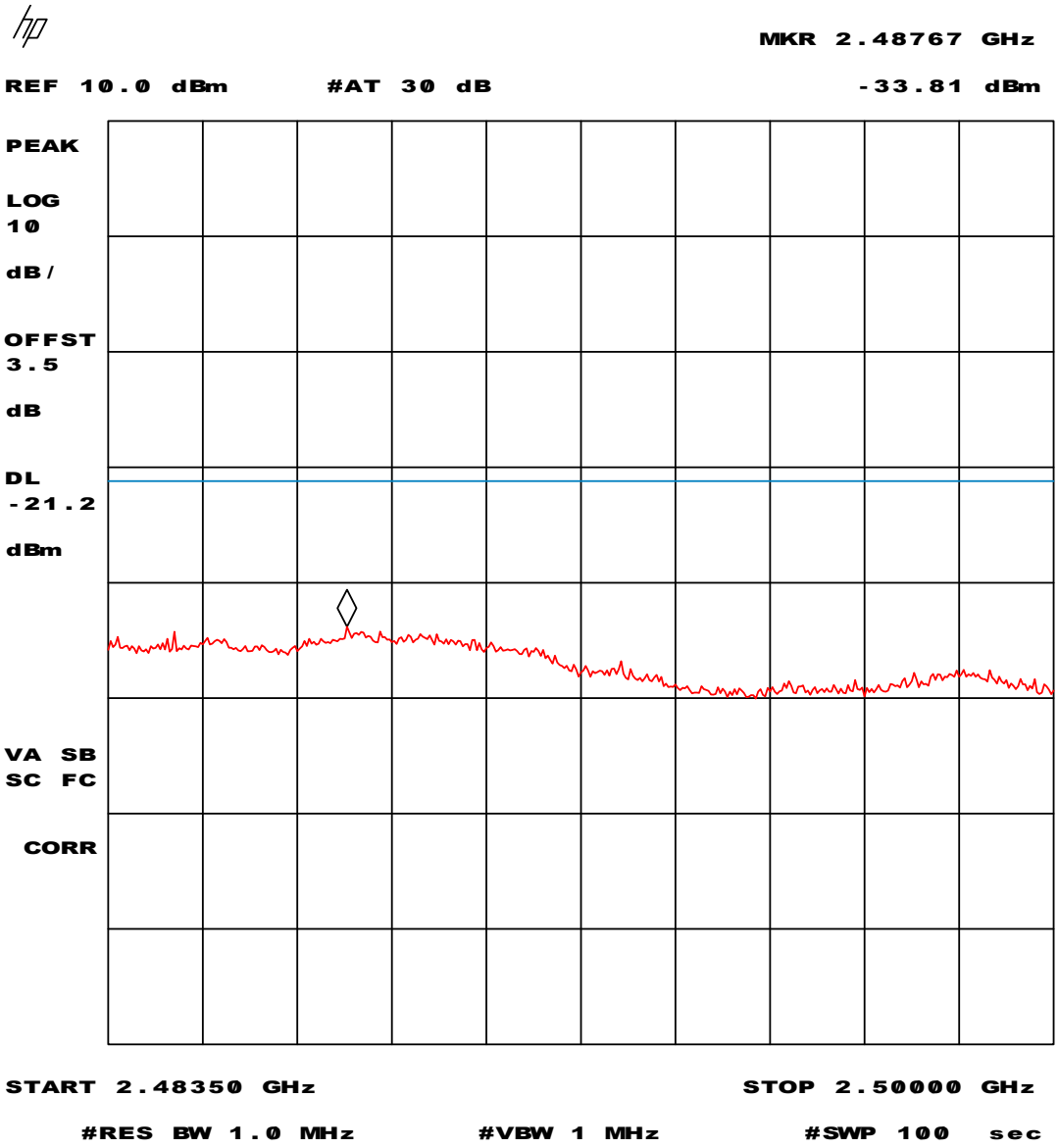
Note: 74 dBµV/m :: -21.2 dBm display line setting.



Plot 3 - Average measurement values in restricted band 2483.5 - 2500 MHz.

Average measurement values in restricted band. All possible transmission bit-rates (1 Mbit/s, 2 Mbit/s, 5.5 Mbit/s and 11 Mbit/s), conducted measurement, corrected for 3.0 dBi antenna gain (including antenna cable losses) and 0.5 dB cable losses (measurement cable).

Note: 54 dBµV/m :: -41.2 dBm display line setting.

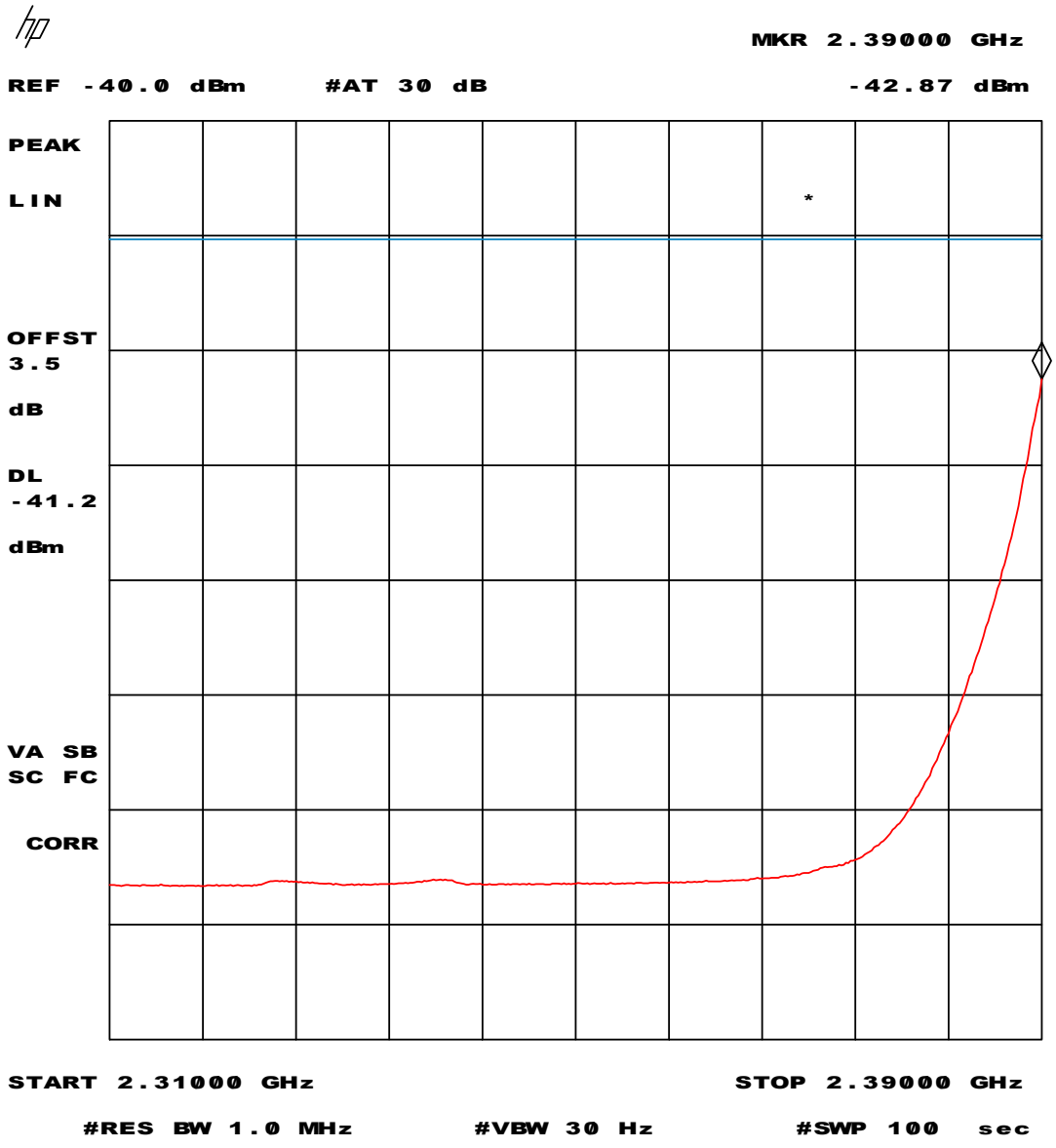


Plot 4 - Peak measurement values in restricted band 2483.5 - 2500 MHz.

Peak measurement values in restricted band. All possible transmission bit-rates (1 Mbit/s, 2 Mbit/s, 5.5 Mbit/s and 11 Mbit/s), conducted measurement, corrected for 3.0 dBi antenna gain (including antenna cable losses) and 0.5 dB cable losses (measurement cable).

Note: 74 dBµV/m :: -21.2 dBm display line setting.

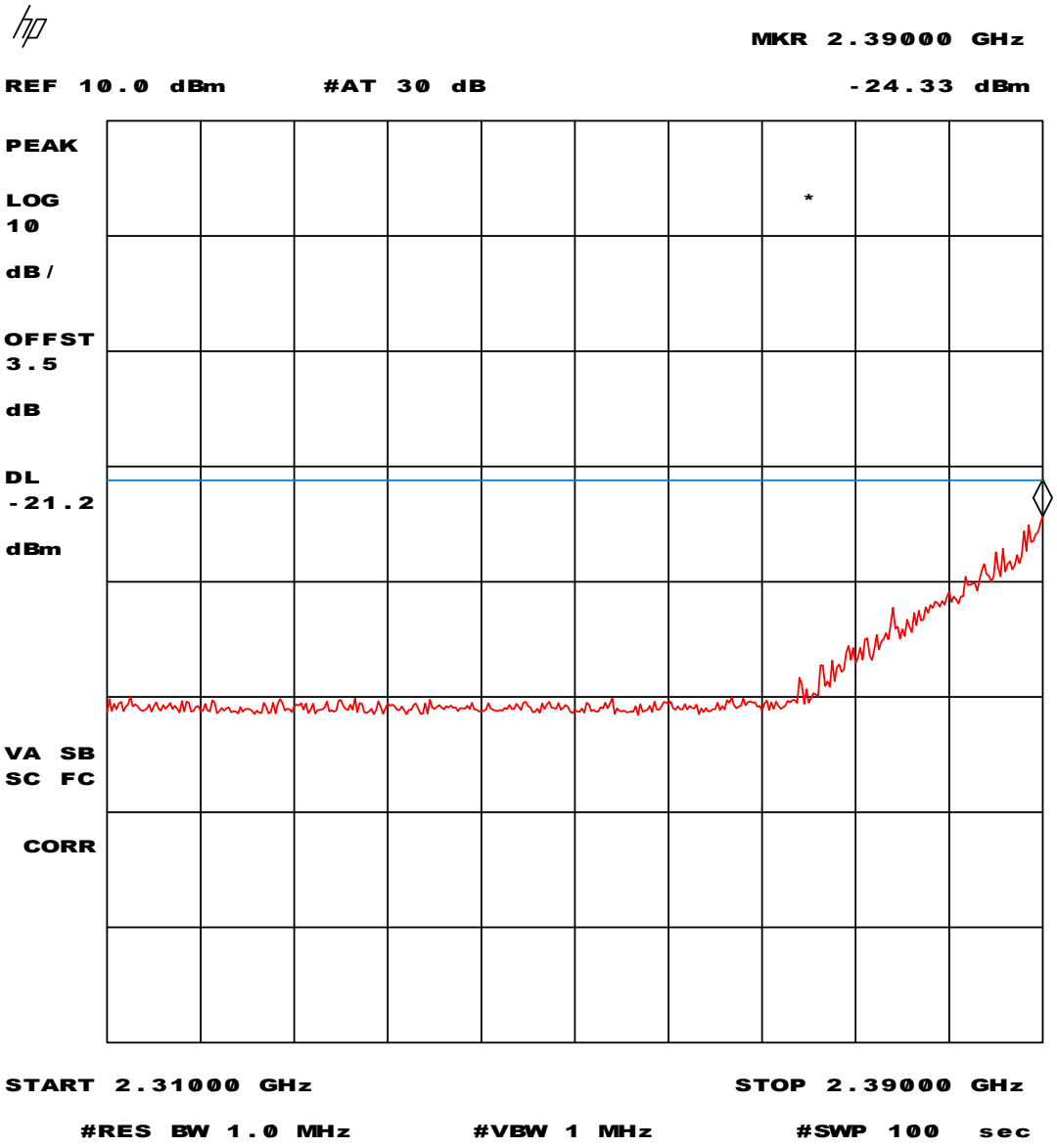
5.1.2 OFDM mode



Plot 5 - Average measurement values in restricted band 2310 - 2390 MHz.

Average measurement values in restricted band. All possible transmission bit-rates (6/9 Mbit/s, 12/18 Mbit/s, 24/36 Mbit/s and 48/54 Mbit/s), conducted measurement, corrected for 3.0 dBi antenna gain (including antenna cable losses) and 0.5 dB cable losses (measurement cable).

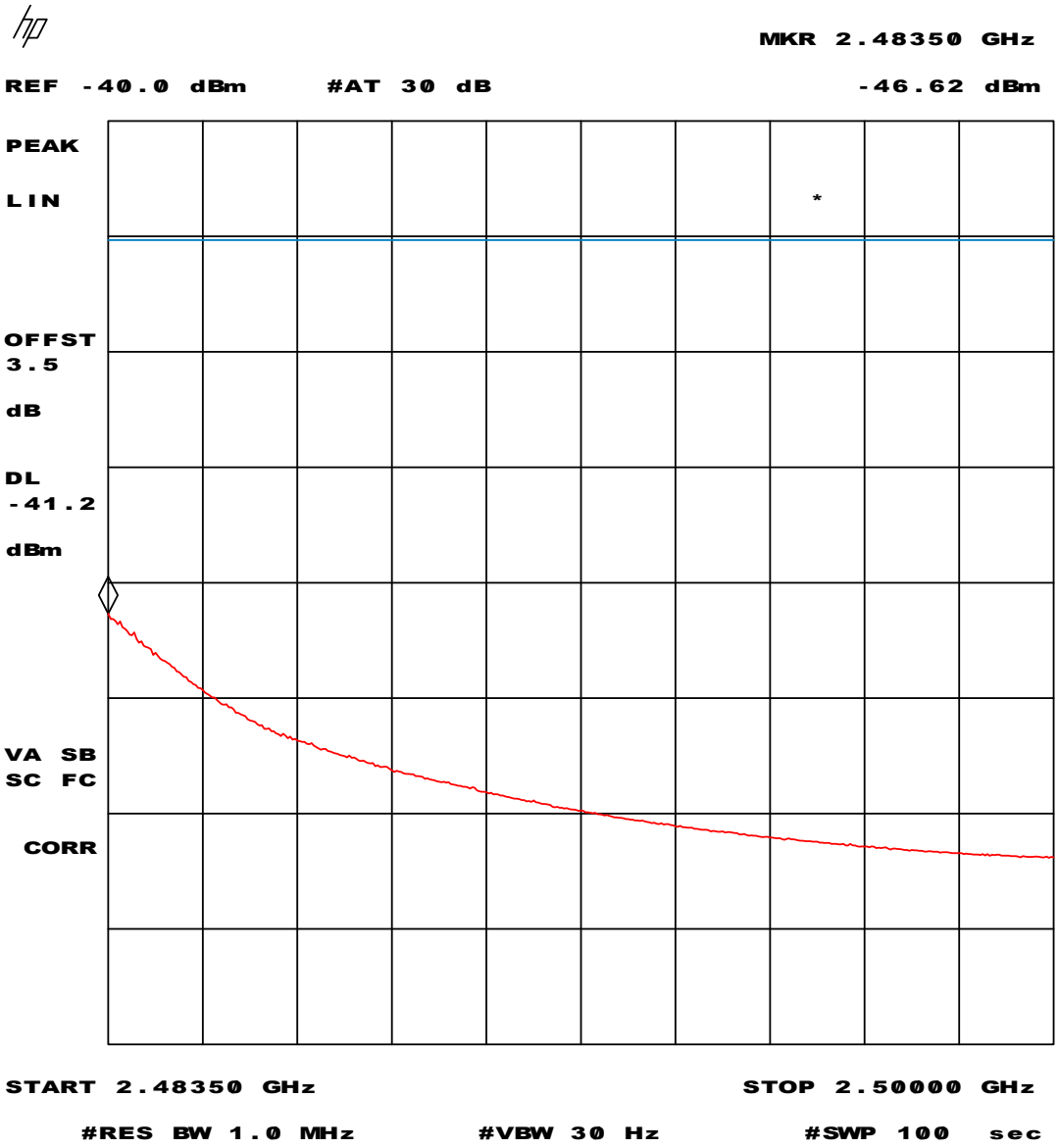
Note: 54 dBµV/m :: -41.2 dBm display line setting.



Plot 6 - Peak measurement values in restricted band 2310 - 2390 MHz.

Peak measurement values in restricted band. All possible transmission bit-rates (6/9 Mbit/s, 12/18 Mbit/s, 24/36 Mbit/s and 48/54 Mbit/s), conducted measurement, corrected for 3.0 dBi antenna gain (including antenna cable losses) and 0.5 dB cable losses (measurement cable).

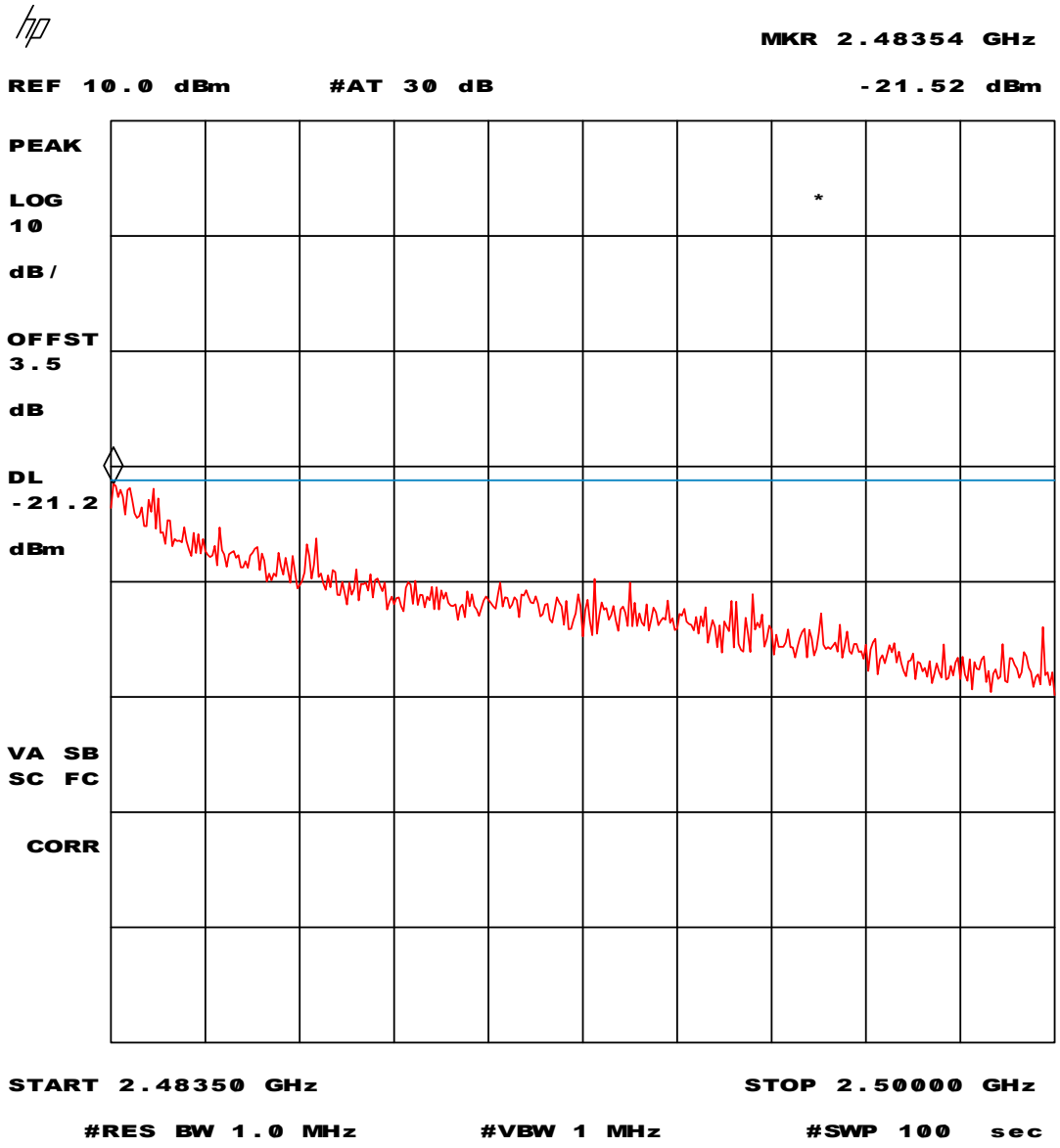
Note: 74 dBµV/m :: -21.2 dBm display line setting.



Plot 7 - Average measurement values in restricted band 2483.5 - 2500 MHz.

Average measurement values in restricted band. All possible transmission bit-rates (6/9 Mbit/s, 12/18 Mbit/s, 24/36 Mbit/s and 48/54 Mbit/s), conducted measurement, corrected for 3.0 dBi antenna gain (including antenna cable losses) and 0.5 dB cable losses (measurement cable).

Note: 54 dBµV/m :: -41.2 dBm display line setting.



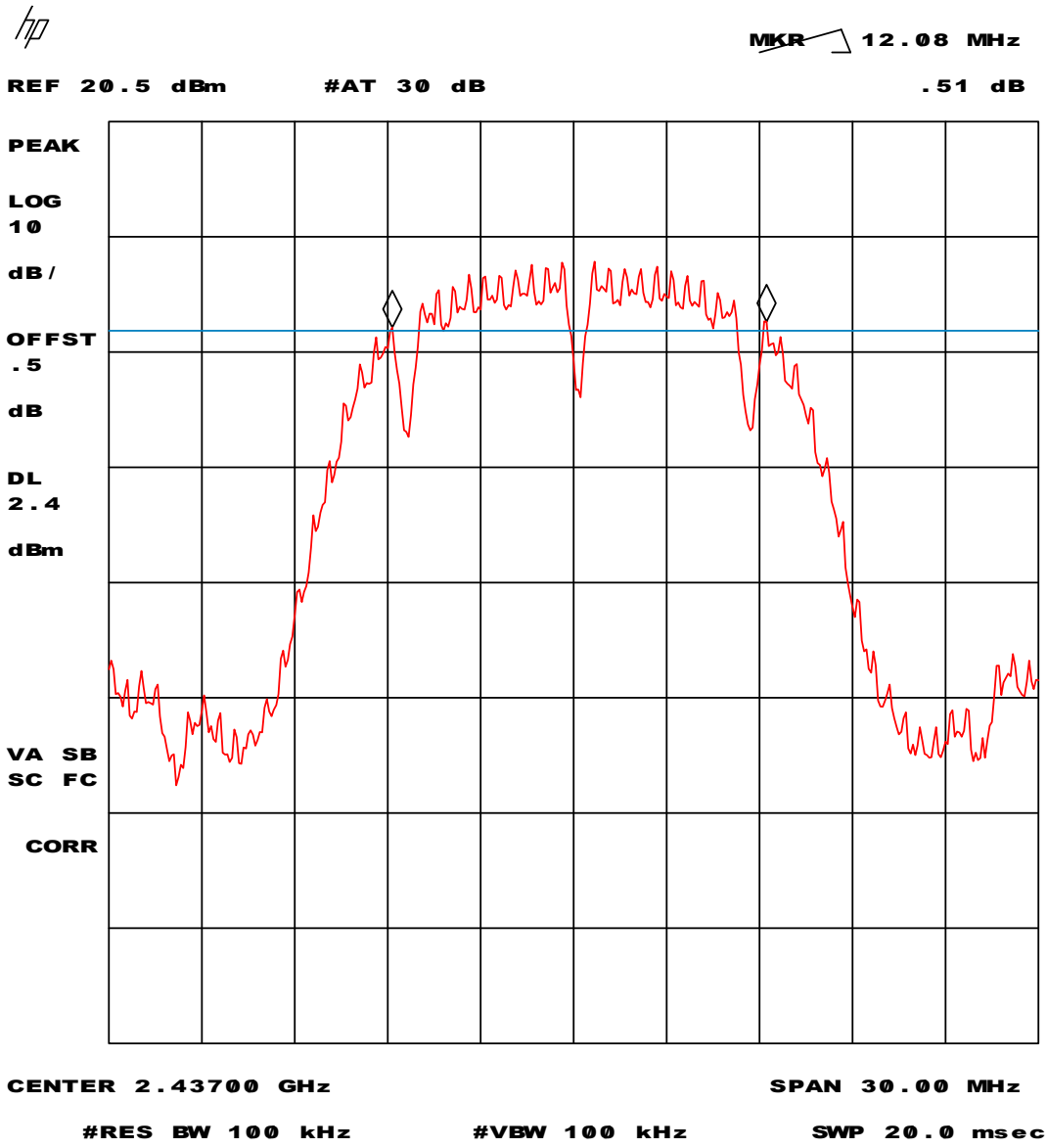
Plot 8 - Peak measurement values in restricted band 2483.5 - 2500 MHz.

Peak measurement values in restricted band. All possible transmission bit-rates (6/9 Mbit/s, 12/18 Mbit/s, 24/36 Mbit/s and 48/54 Mbit/s), conducted measurement, corrected for 3.0 dBi antenna gain (including antenna cable losses) and 0.5 dB cable losses (measurement cable).

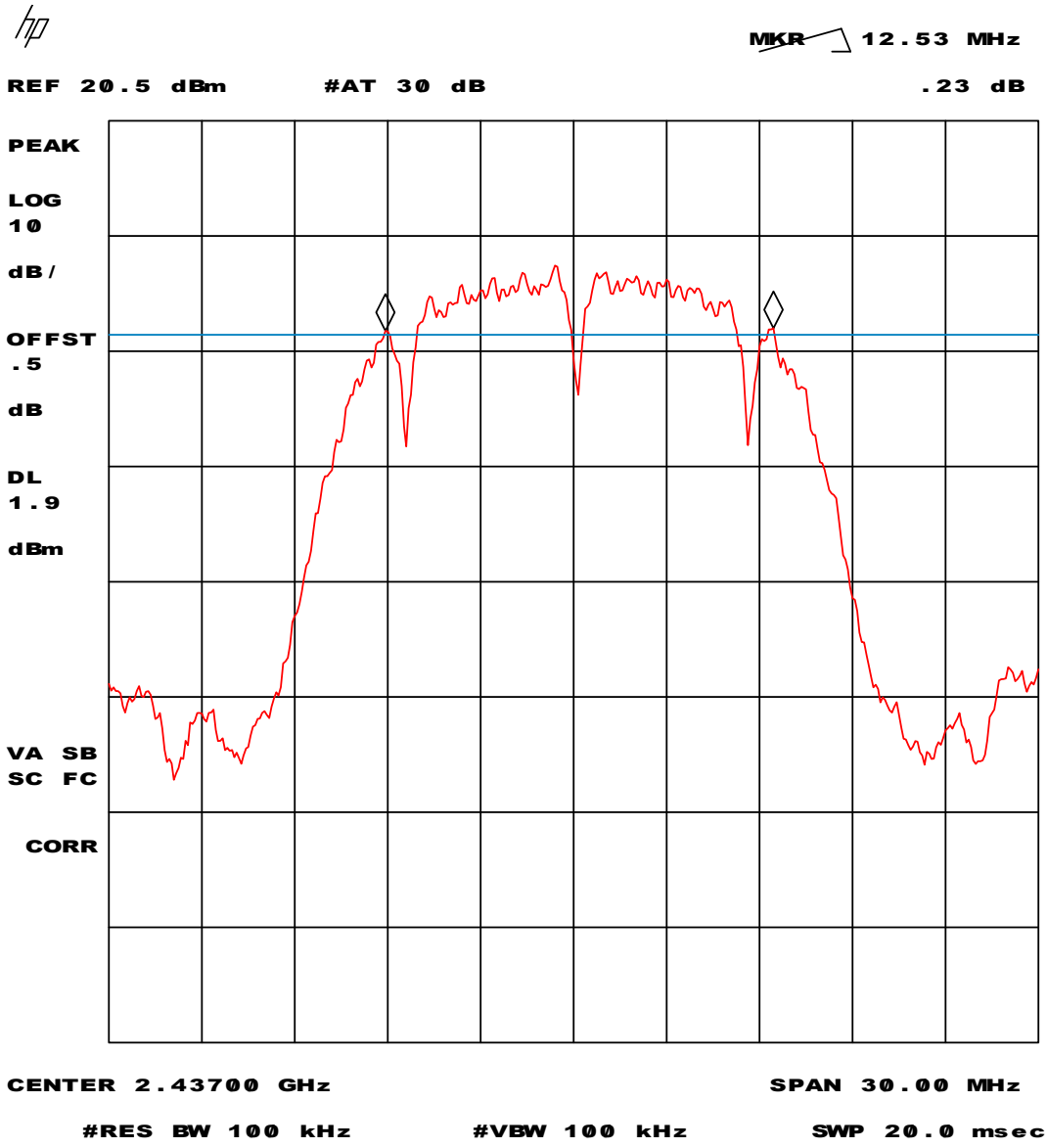
Note: 74 dBµV/m :: -21.2 dBm display line setting.

5.2 Minimum 6 dB bandwidth

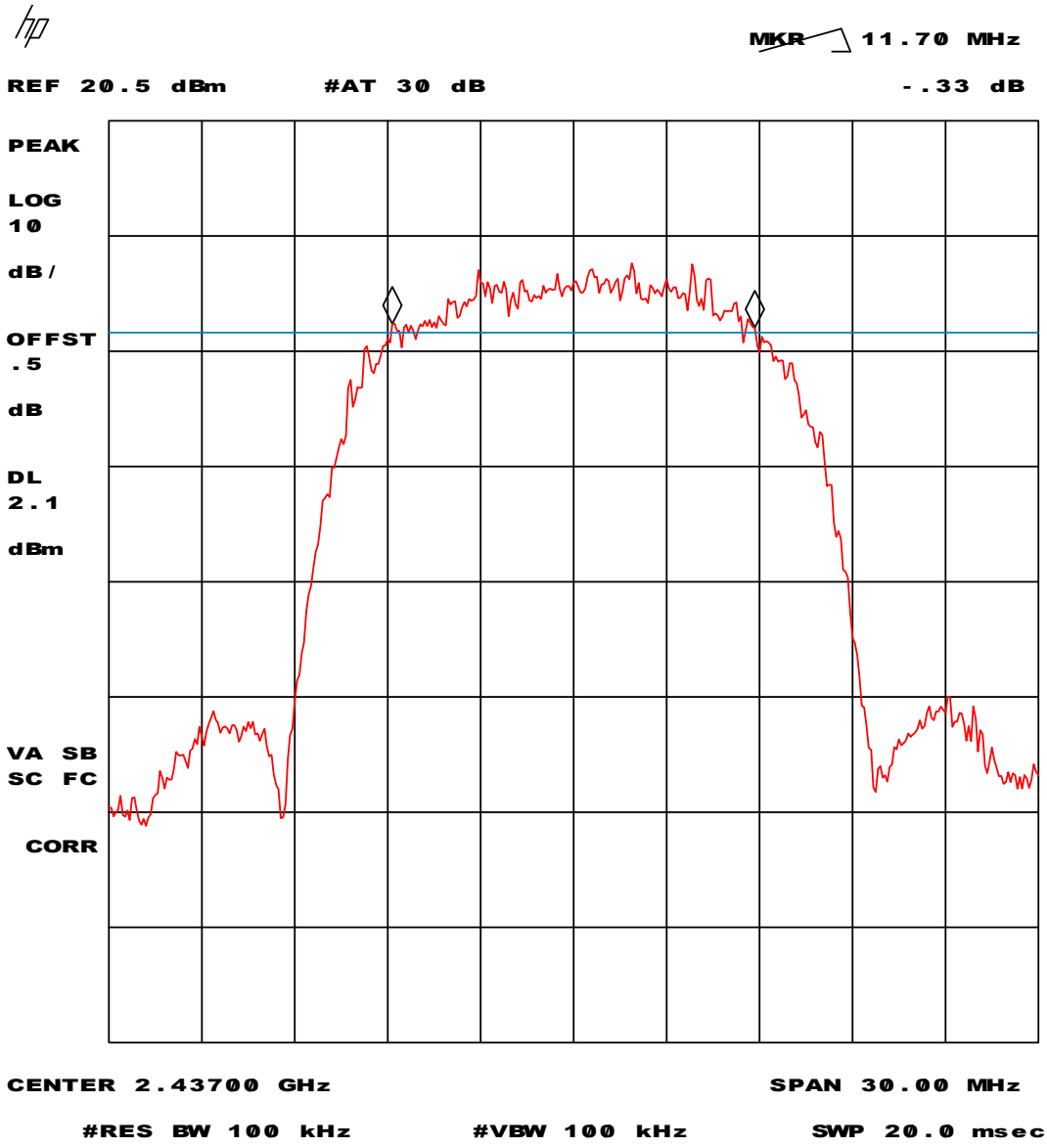
5.2.1 DSSS mode



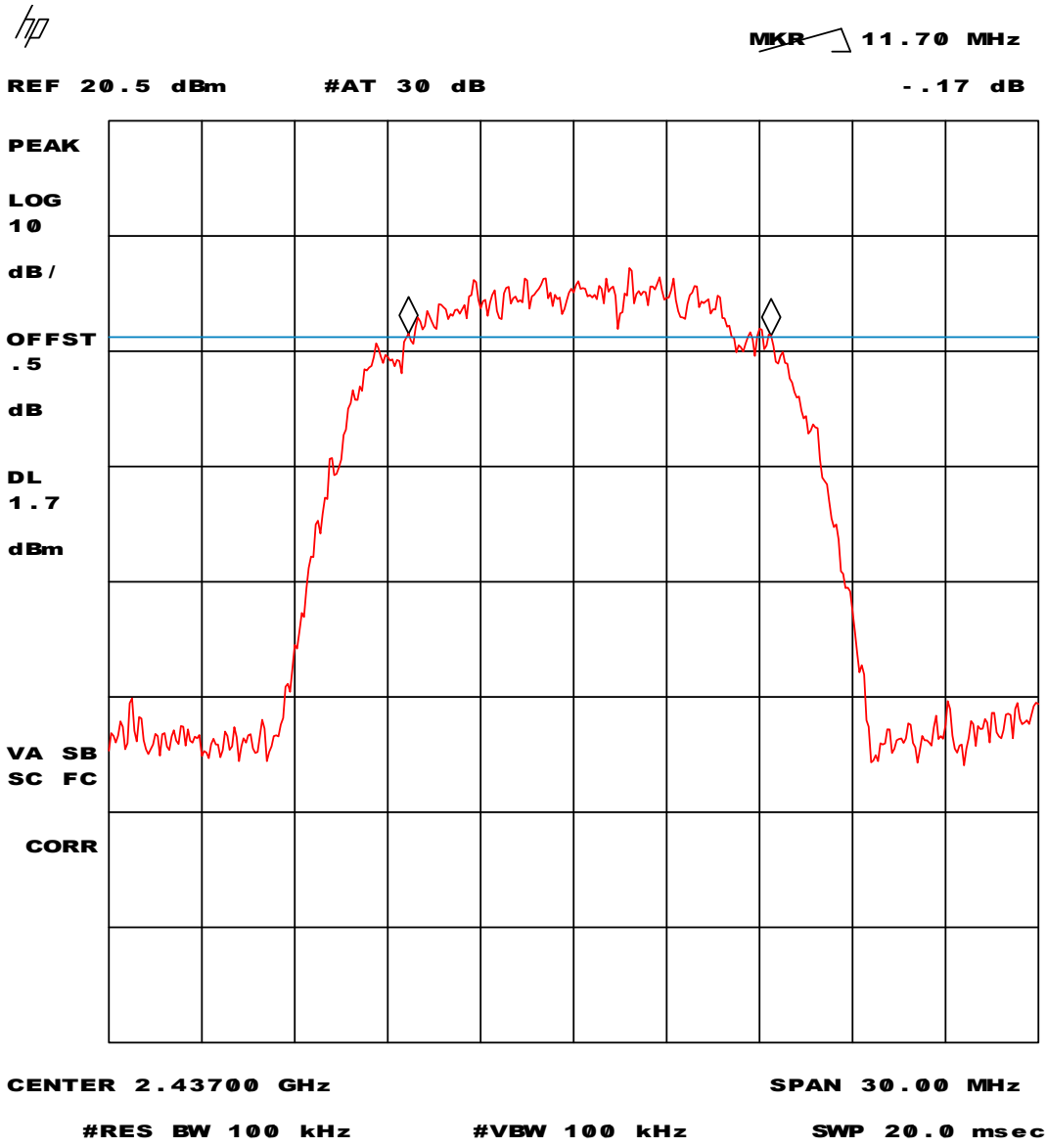
Plot 9 - Minimum 6 dB bandwidth at a transmission bit-rate of 1 Mbit/s. Corrected (offset) for cable losses.



Plot 10 - Minimum 6 dB bandwidth at a transmission bit-rate of 2 Mbit/s. Corrected (offset) for cable losses.

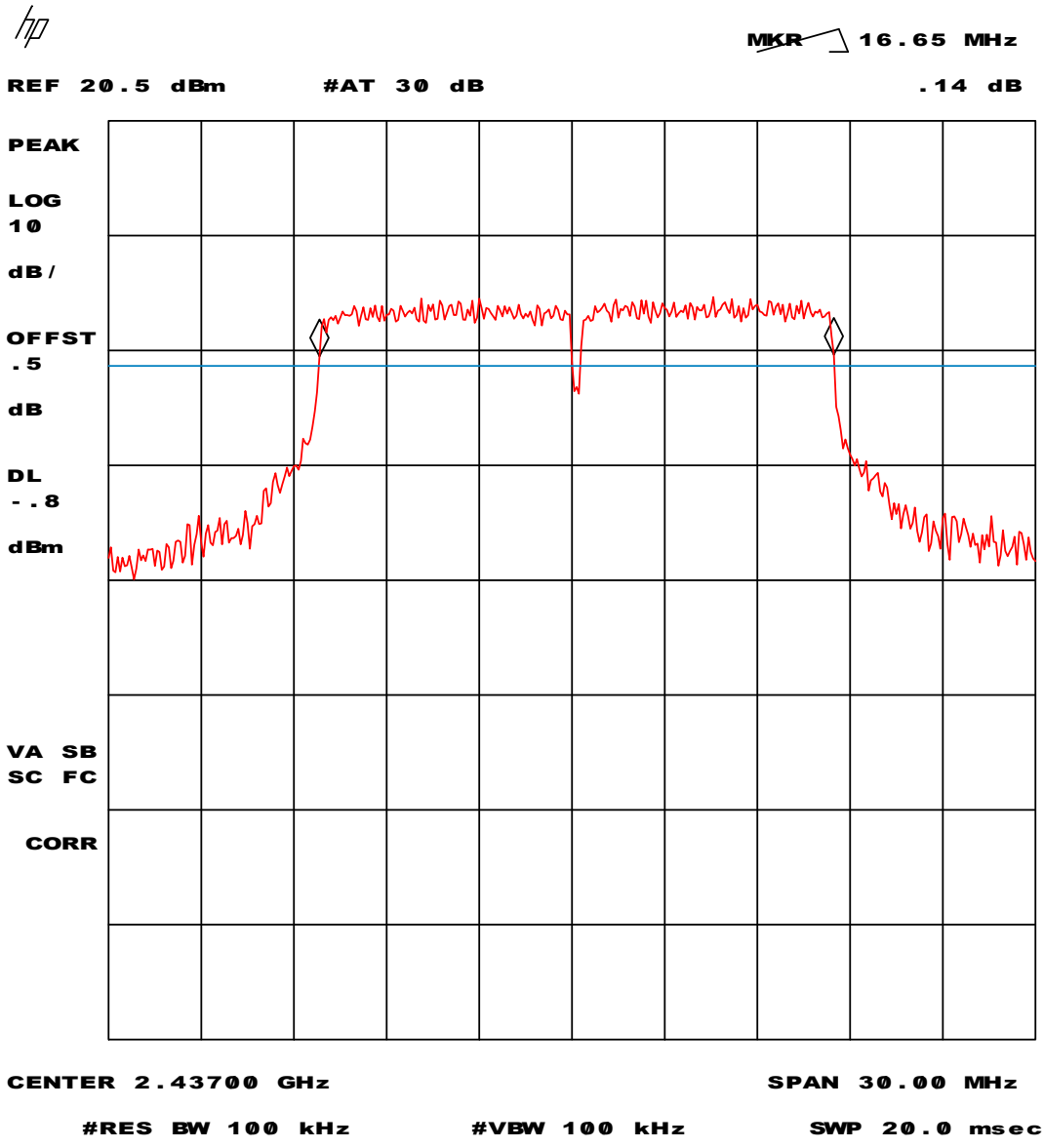


Plot 11 - Minimum 6 dB bandwidth at a transmission bit-rate of 5.5 Mbit/s. Corrected (offset) for cable losses.

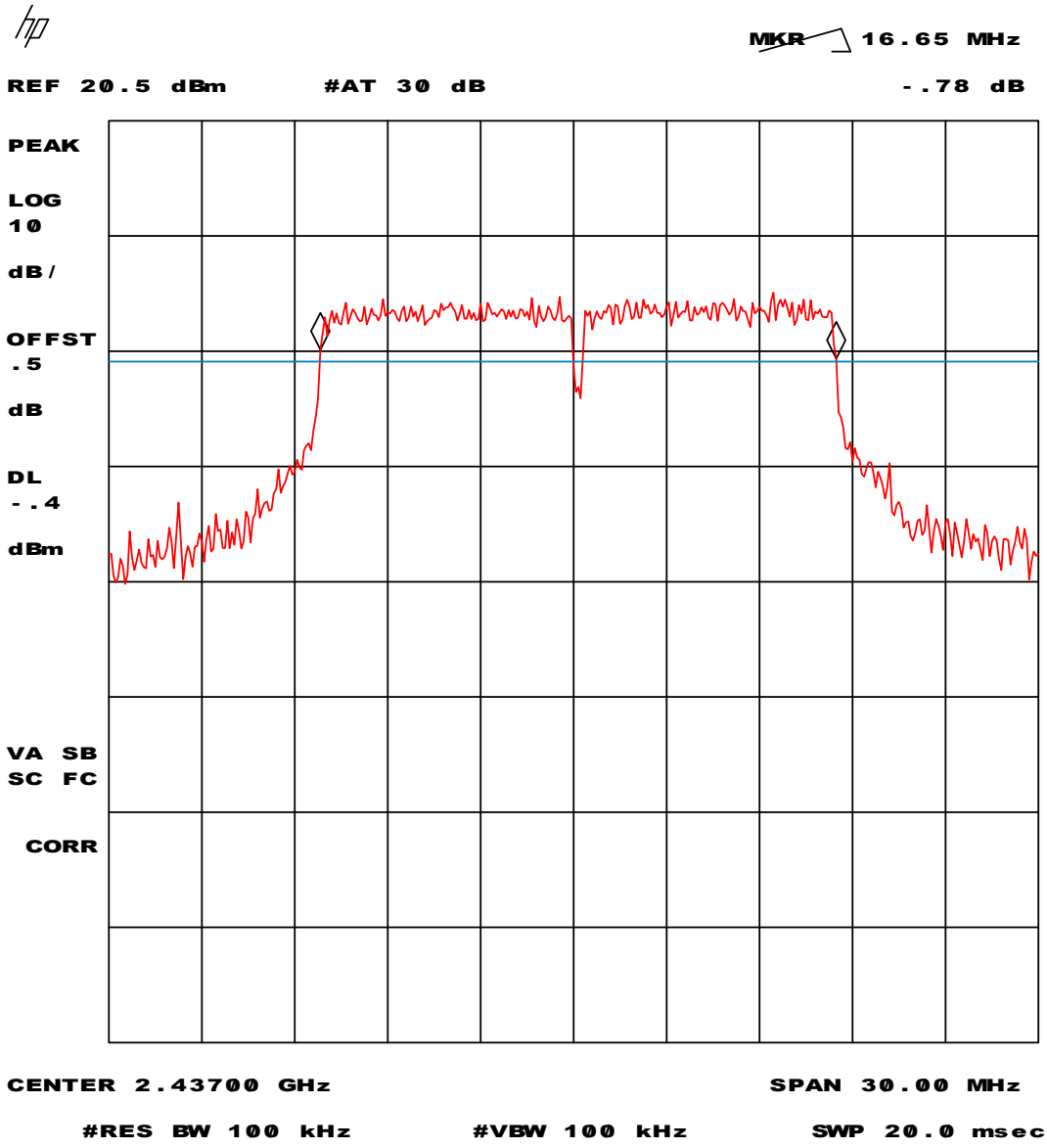


Plot 12 - Minimum 6 dB bandwidth at a transmission bit-rate of 11 Mbit/s. Corrected (offset) for cable losses.

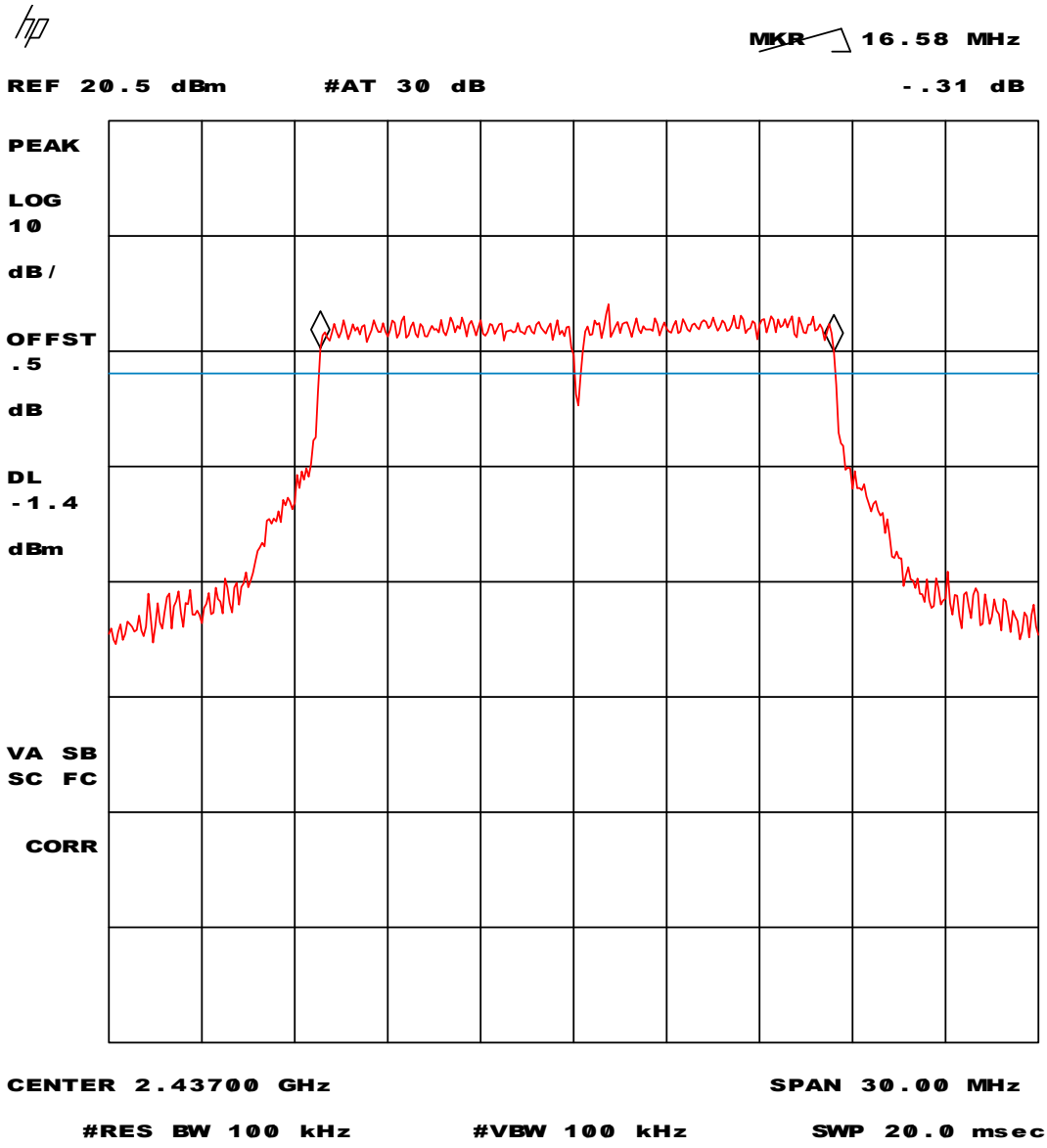
5.2.2 OFDM mode



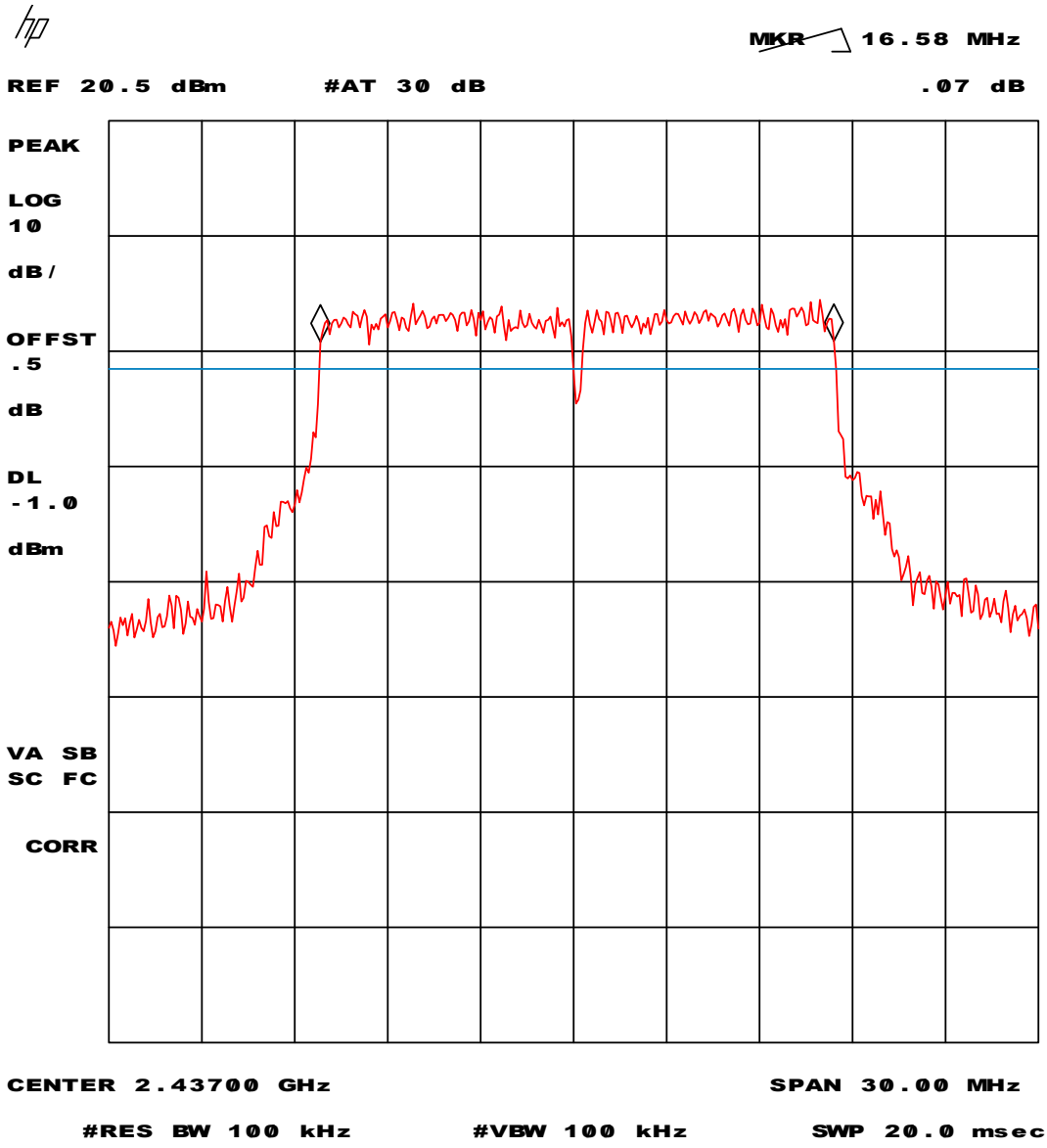
Plot 13 - Minimum 6 dB bandwidth at a transmission bit-rate of 6 Mbit/s. Corrected (offset) for cable losses.



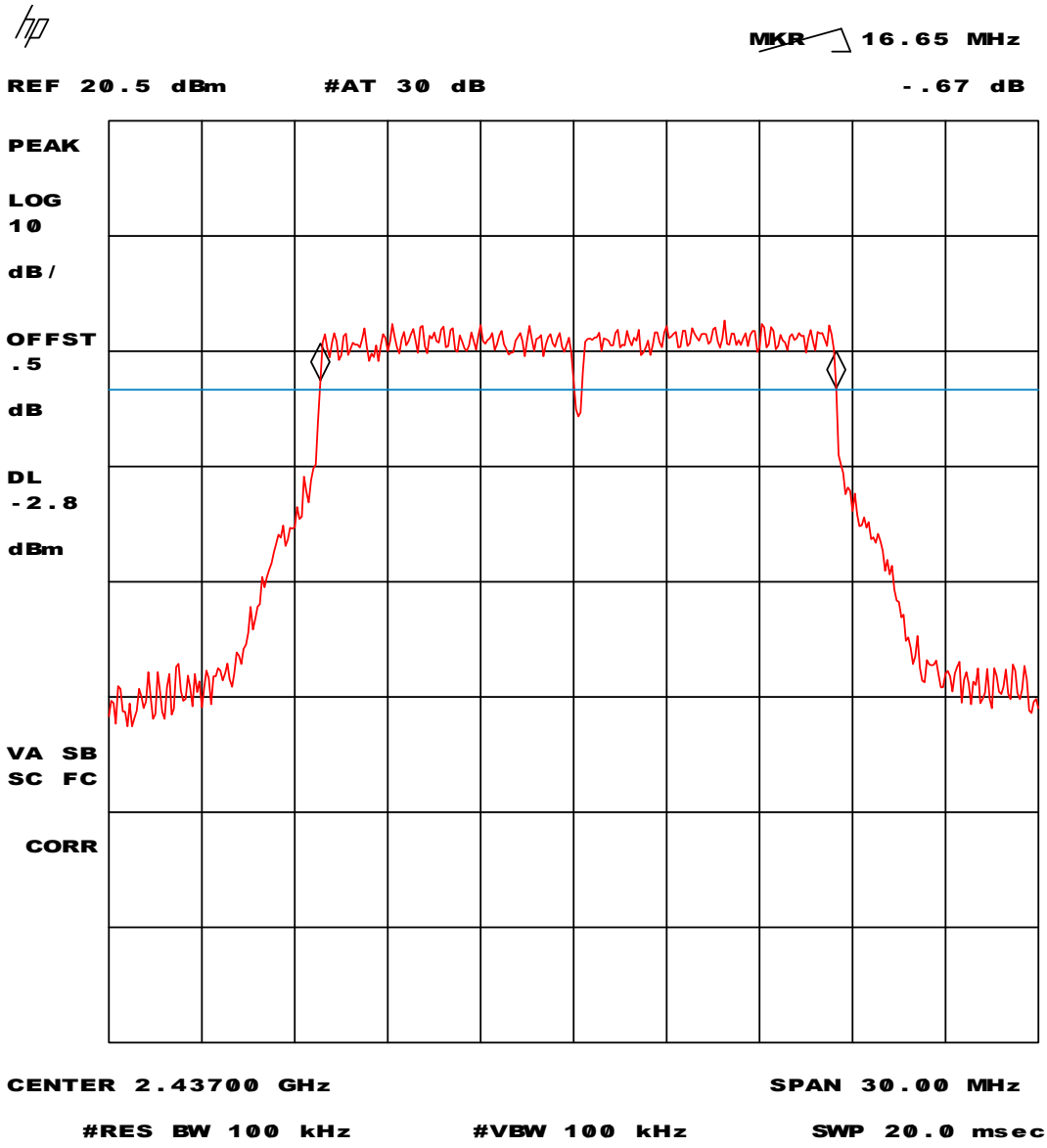
Plot 14 - Minimum 6 dB bandwidth at a transmission bit-rate of 9 Mbit/s. Corrected (offset) for cable losses.



Plot 15 - Minimum 6 dB bandwidth at a transmission bit-rate of 18 Mbit/s. Corrected (offset) for cable losses.



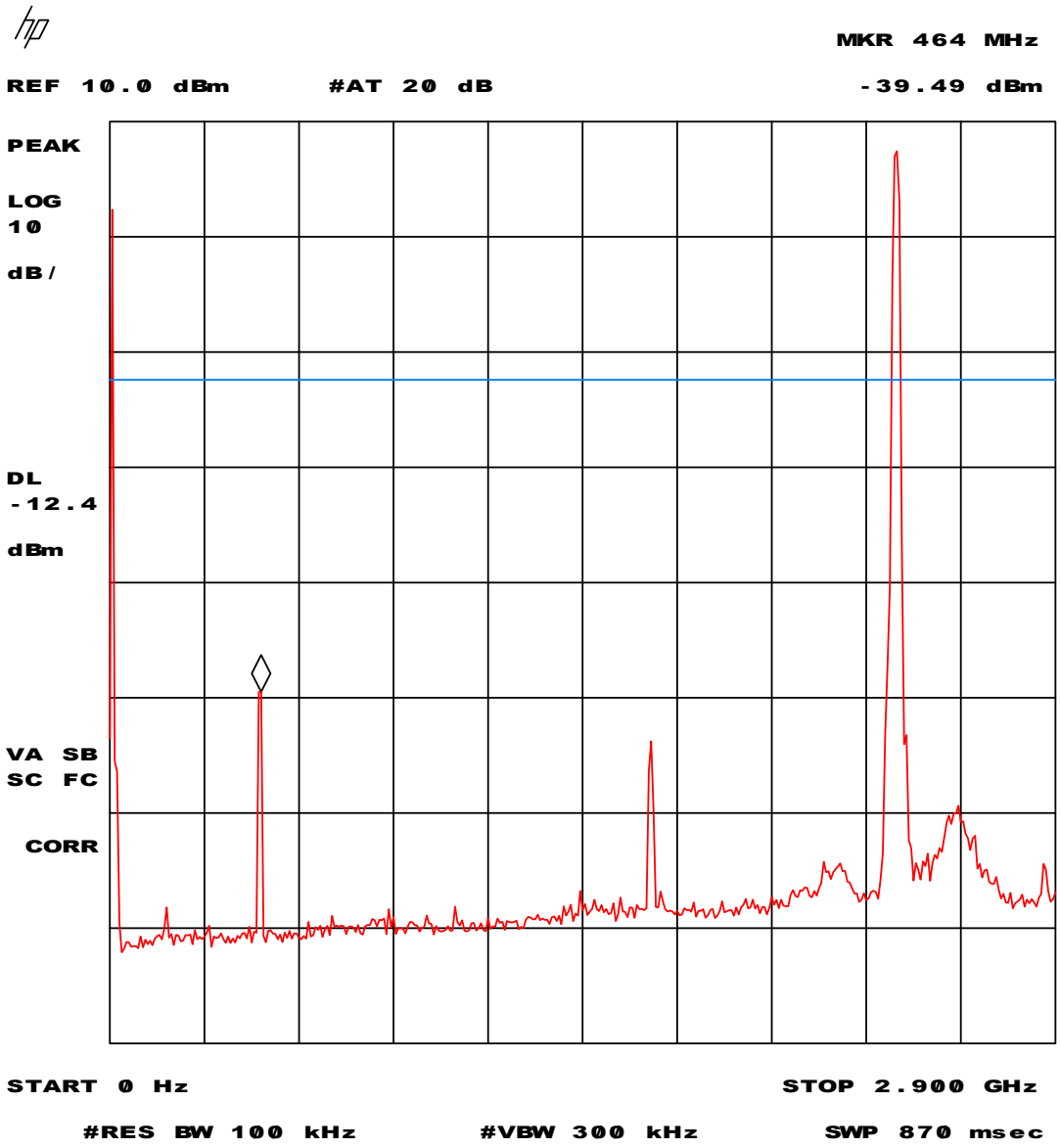
Plot 16 - Minimum 6 dB bandwidth at a transmission bit-rate of 36 Mbit/s. Corrected (offset) for cable losses.



Plot 17 - Minimum 6 dB bandwidth at a transmission bit-rate of 54 Mbit/s. Corrected (offset) for cable losses.

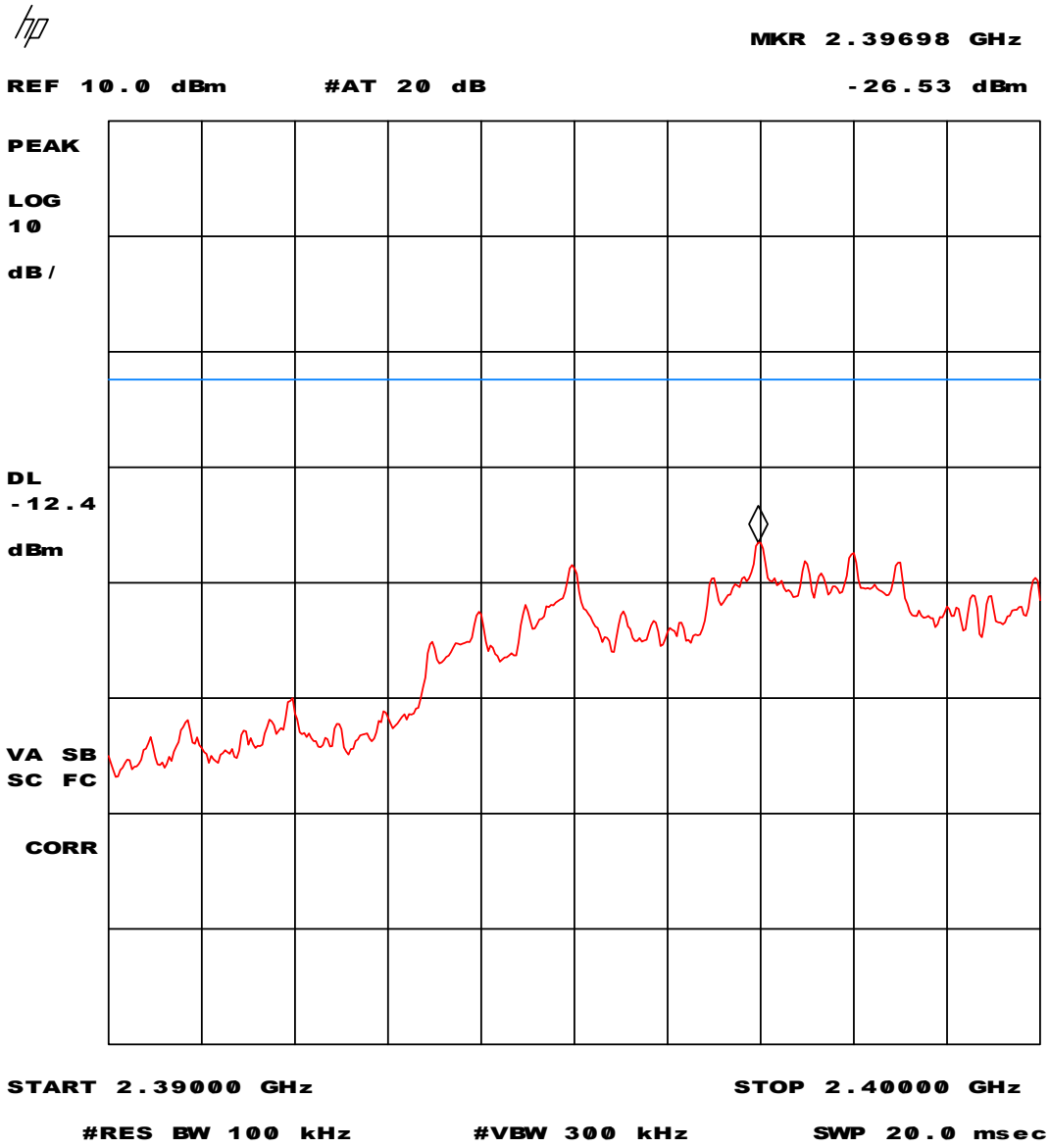
5.3 Conducted emission data outside restricted bands

5.3.1 DSSS mode



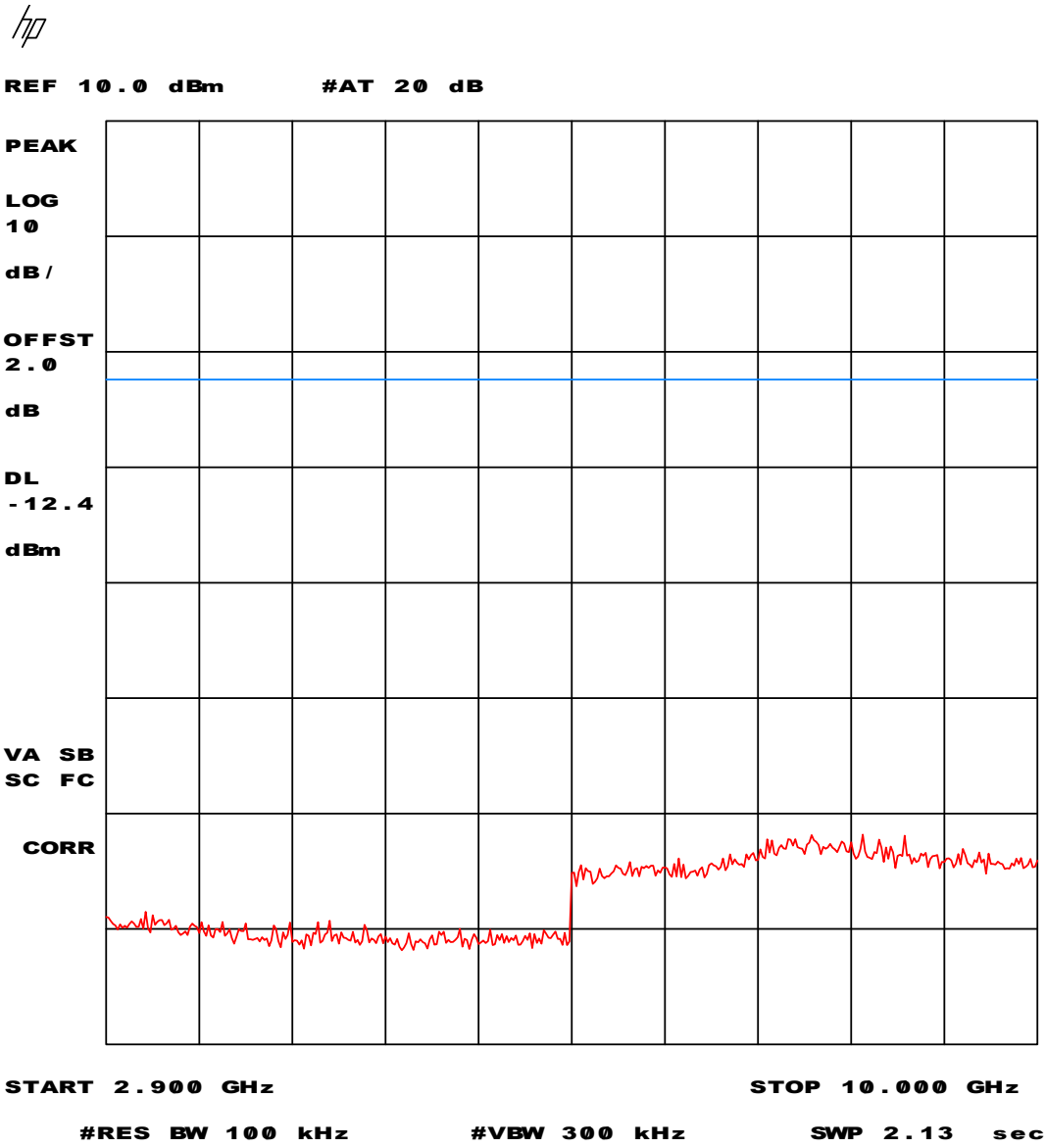
Plot 18 - Conducted emission outside restricted bands (DSSS mode).

Conducted emission data outside restricted bands in a 100 kHz bandwidth shall be at least 20 dB below the highest level in a 100 kHz bandwidth within the band. Display line :: -20 dB limit line.



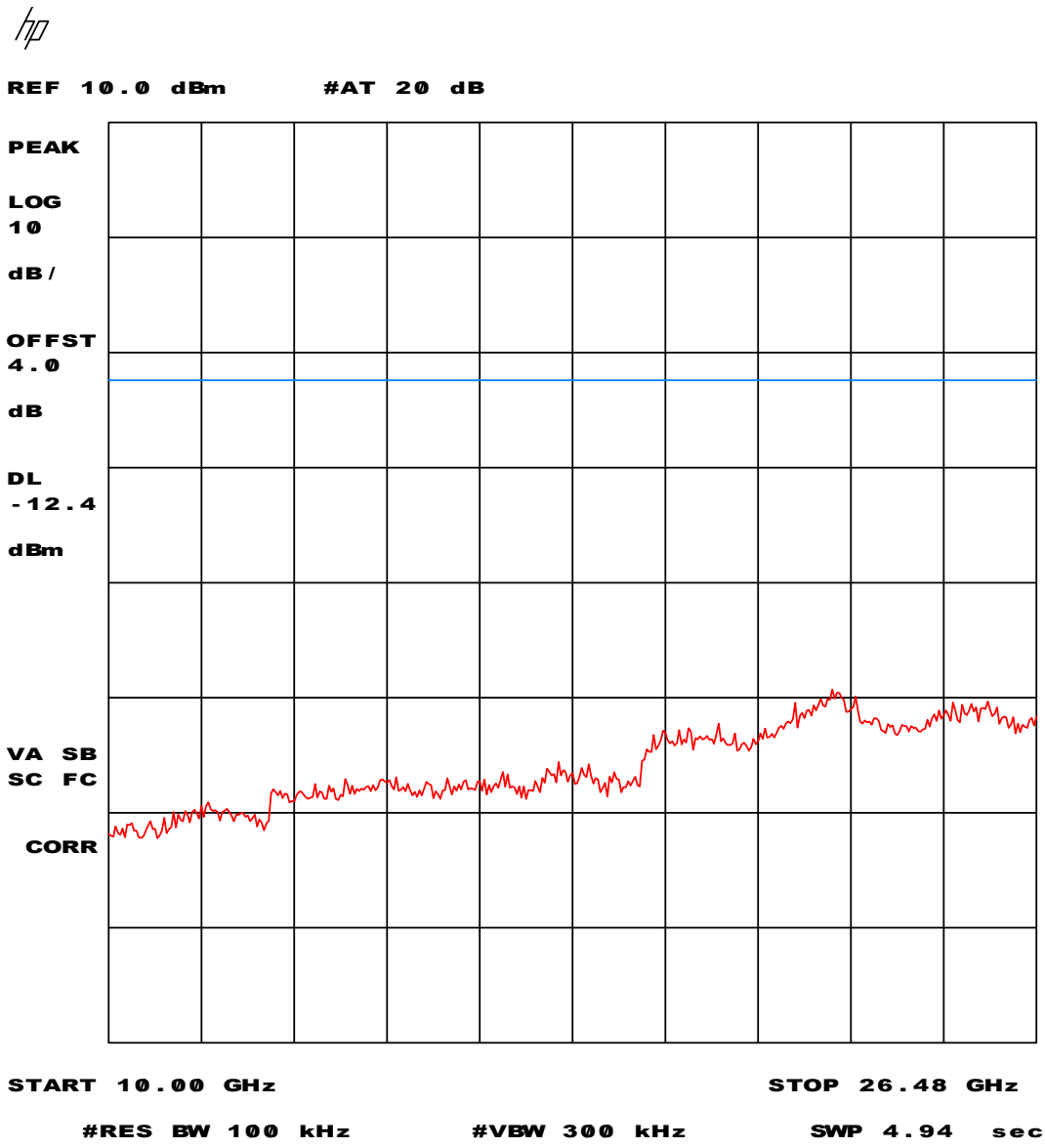
Plot 19 - Conducted emission outside restricted bands (DSSS mode).

Conducted emission data outside restricted bands in a 100 kHz bandwidth shall be at least 20 dB below the highest level in a 100 kHz bandwidth within the band. Display line :: -20 dB limit line.



Plot 20 - Conducted emission outside restricted band (DSSS mode).

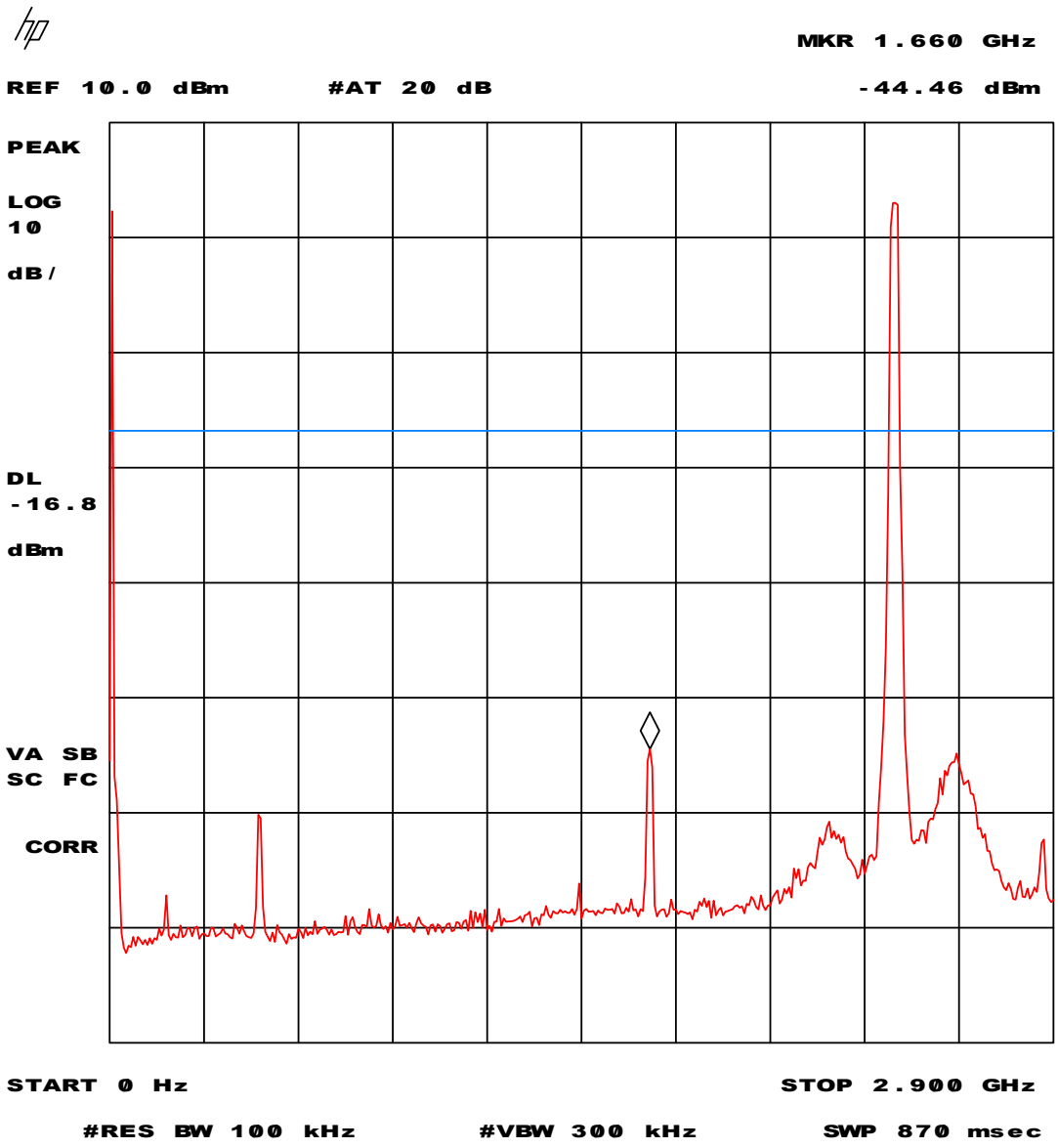
Conducted emission data outside restricted bands in a 100 kHz bandwidth shall be at least 20 dB below the highest level in a 100 kHz bandwidth within the band. Display line :: -20 dB limit line. Corrected (offset) for cable losses.



Plot 21 - Conducted emission outside restricted band (DSSS mode).

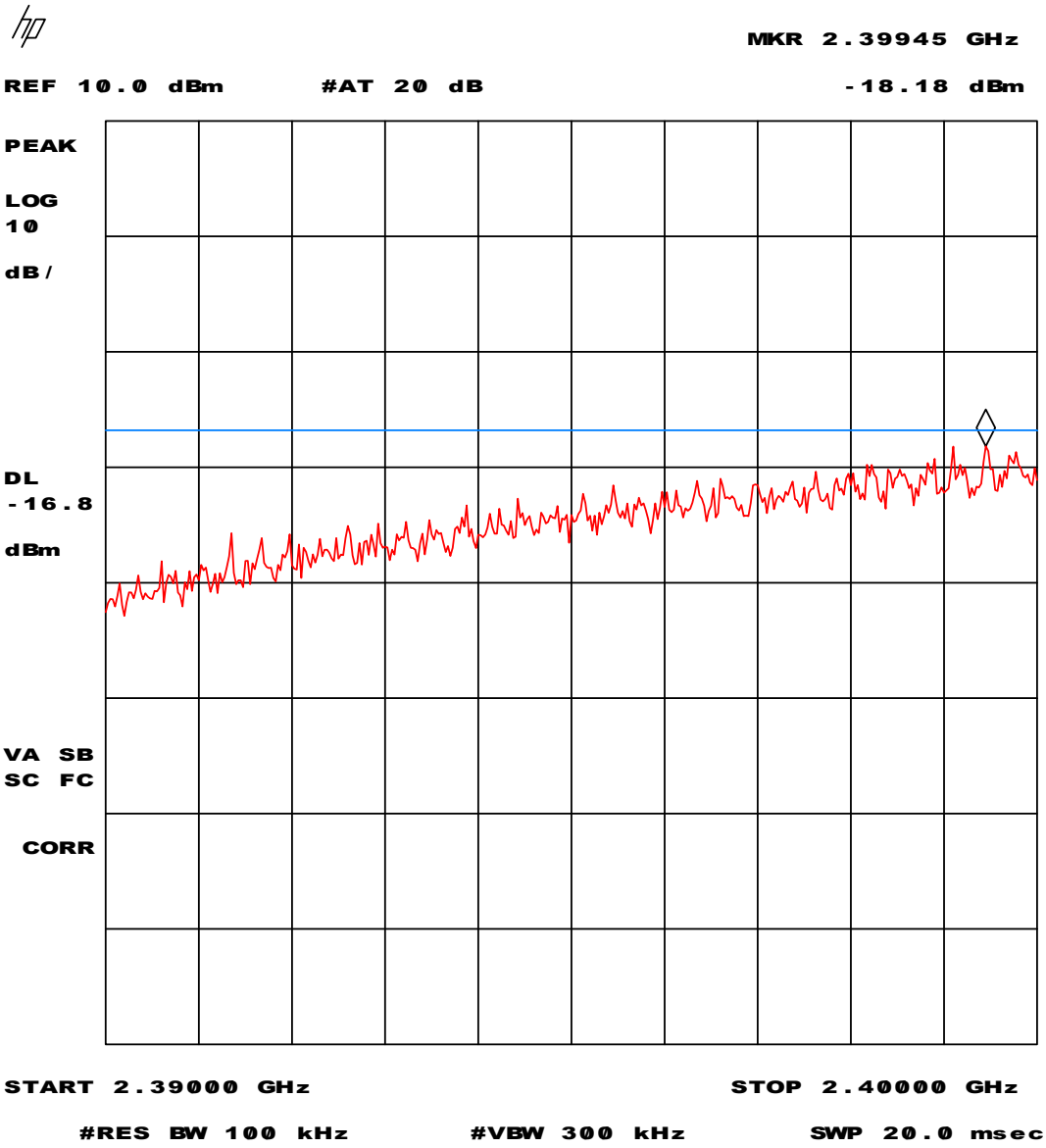
Conducted emission data outside restricted bands in a 100 kHz bandwidth shall be at least 20 dB below the highest level in a 100 kHz bandwidth within the band. Display line :: -20 dB limit line. Corrected (offset) for cable losses.

5.3.2 OFDM mode



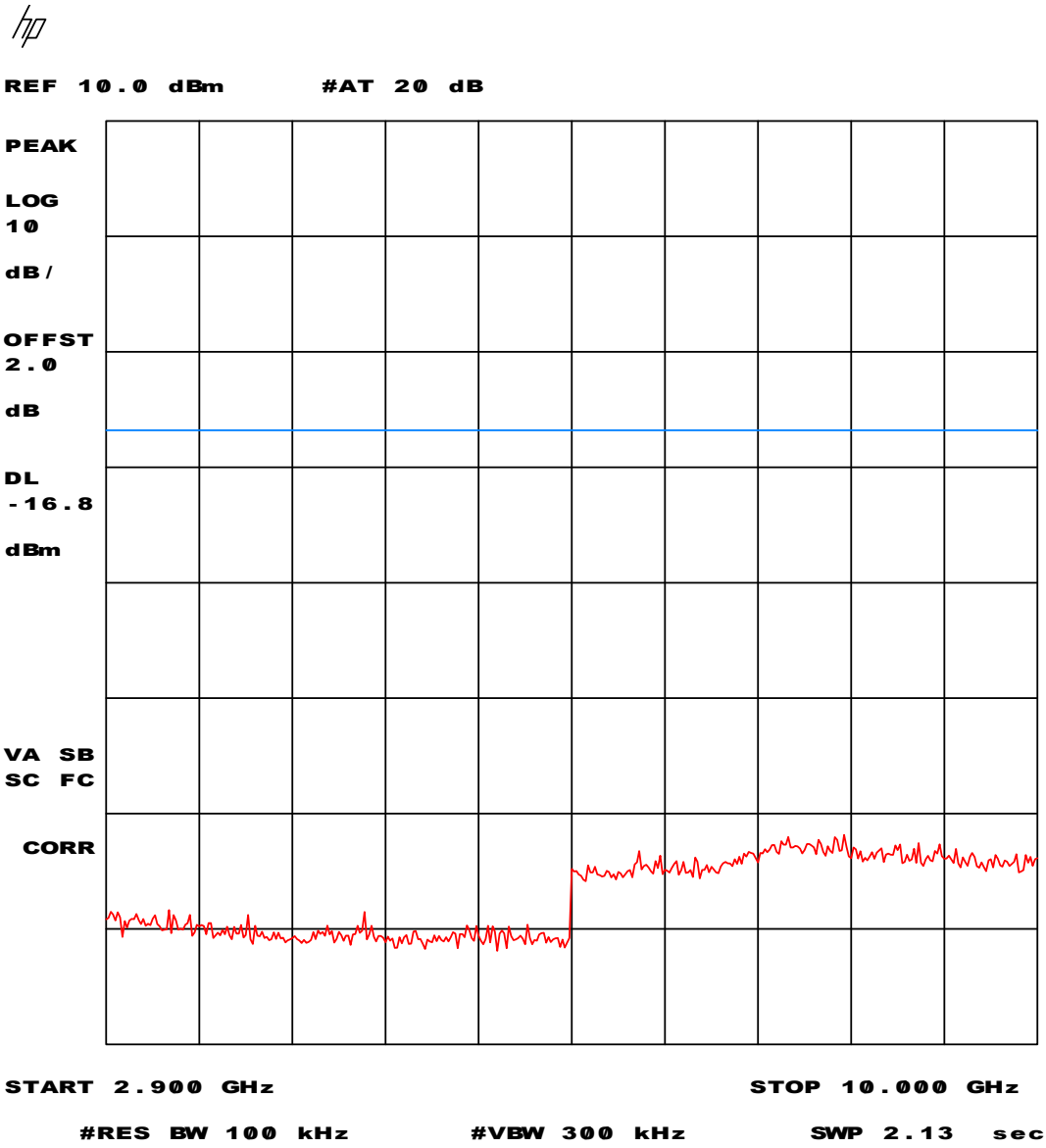
Plot 22 - Conducted emission outside restricted bands (OFDM mode).

Conducted emission data outside restricted bands in a 100 kHz bandwidth shall be at least 20 dB below the highest level in a 100 kHz bandwidth within the band. Display line :: -20 dB limit line.



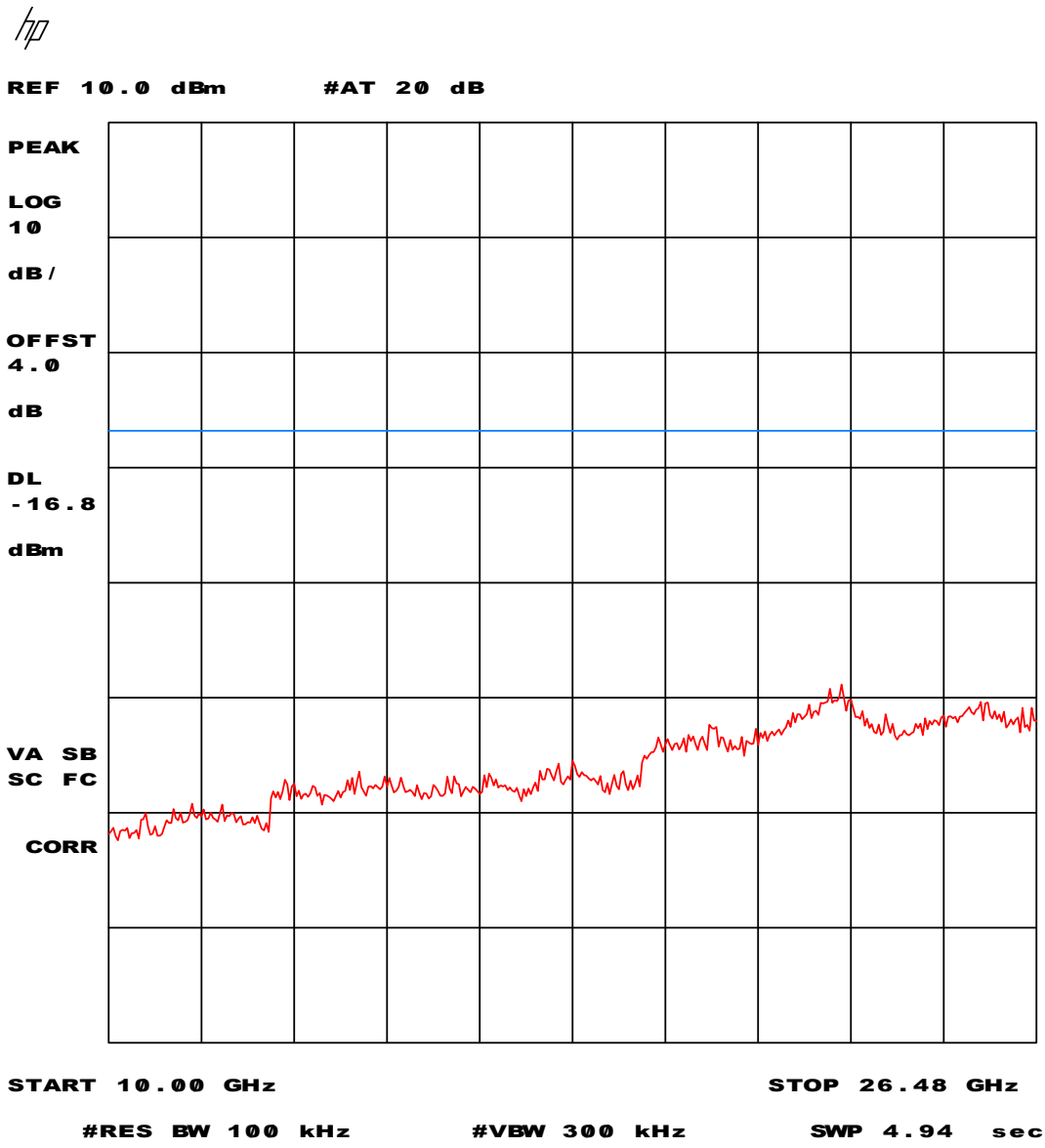
Plot 23 - Conducted emission outside restricted bands (OFDM mode).

Conducted emission data outside restricted bands in a 100 kHz bandwidth shall be at least 20 dB below the highest level in a 100 kHz bandwidth within the band. Display line :: -20 dB limit line.



Plot 24 - Conducted emission outside restricted band (OFDM mode).

Conducted emission data outside restricted bands in a 100 kHz bandwidth shall be at least 20 dB below the highest level in a 100 kHz bandwidth within the band. Display line :: -20 dB limit line. Corrected (offset) for cable losses.

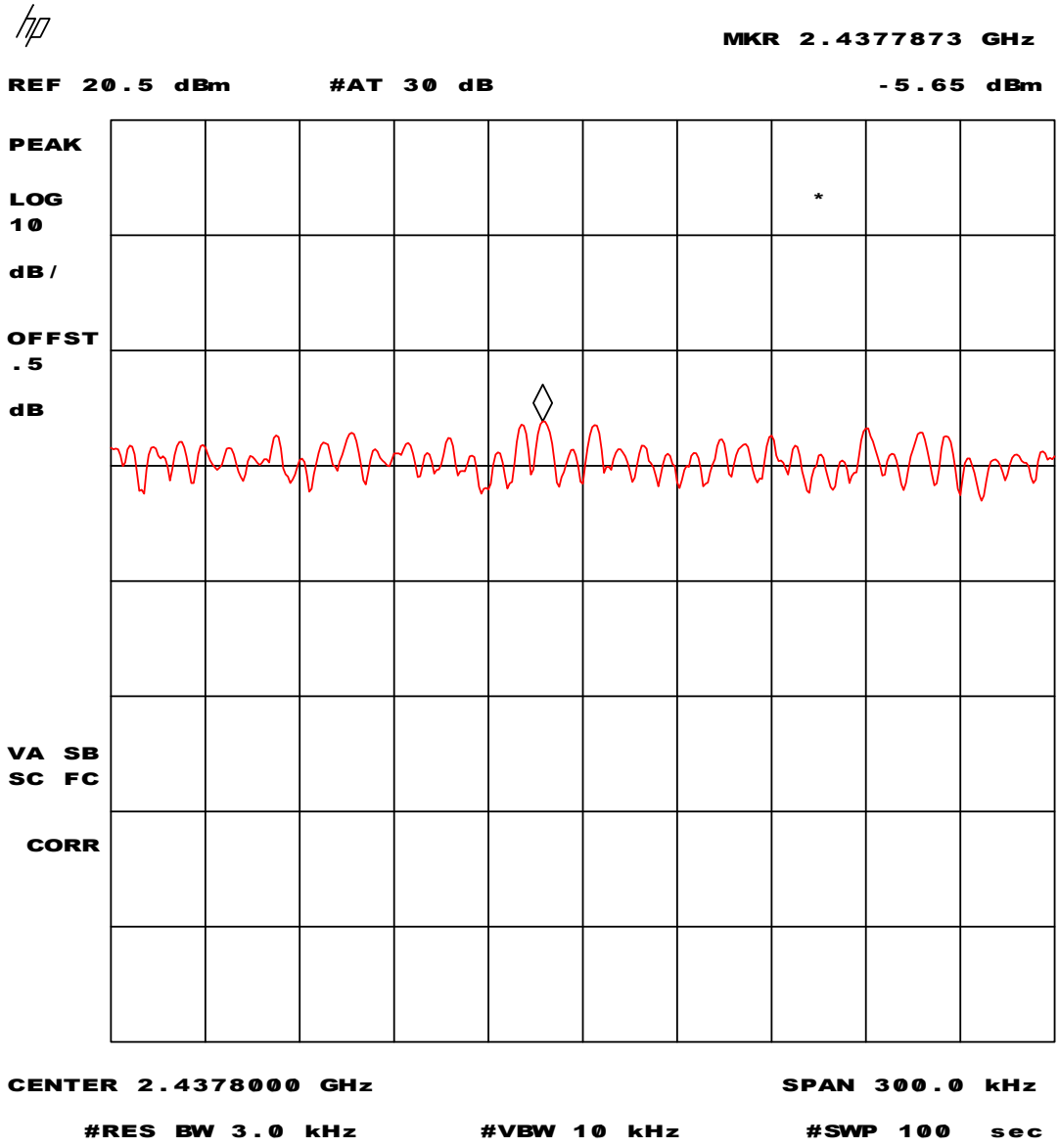


Plot 25 - Conducted emission outside restricted band (OFDM mode).

Conducted emission data outside restricted bands in a 100 kHz bandwidth shall be at least 20 dB below the highest level in a 100 kHz bandwidth within the band. Display line :: -20 dB limit line. Corrected (offset) for cable losses.

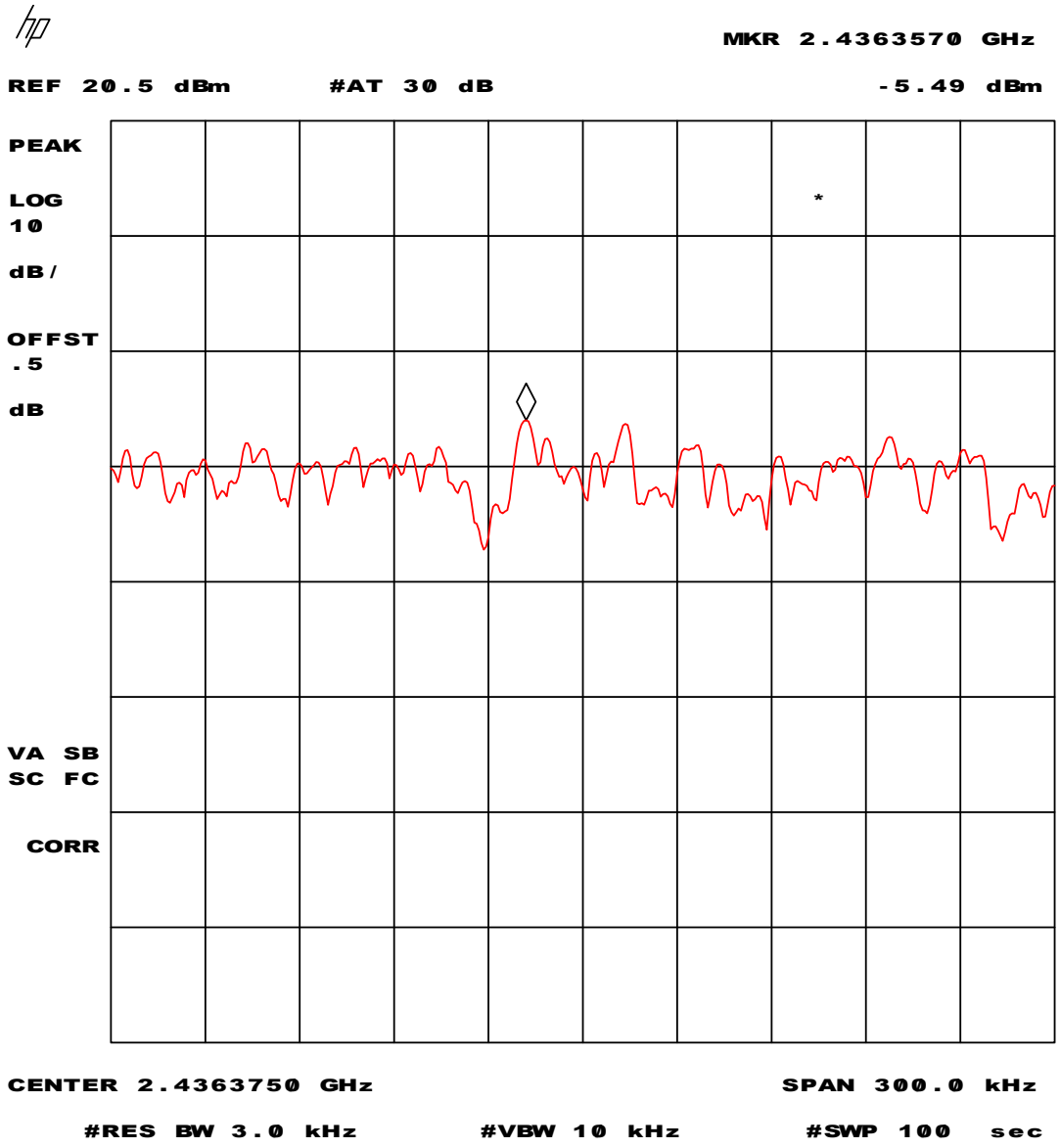
5.4 Peak power spectral density

5.4.1 DSSS mode



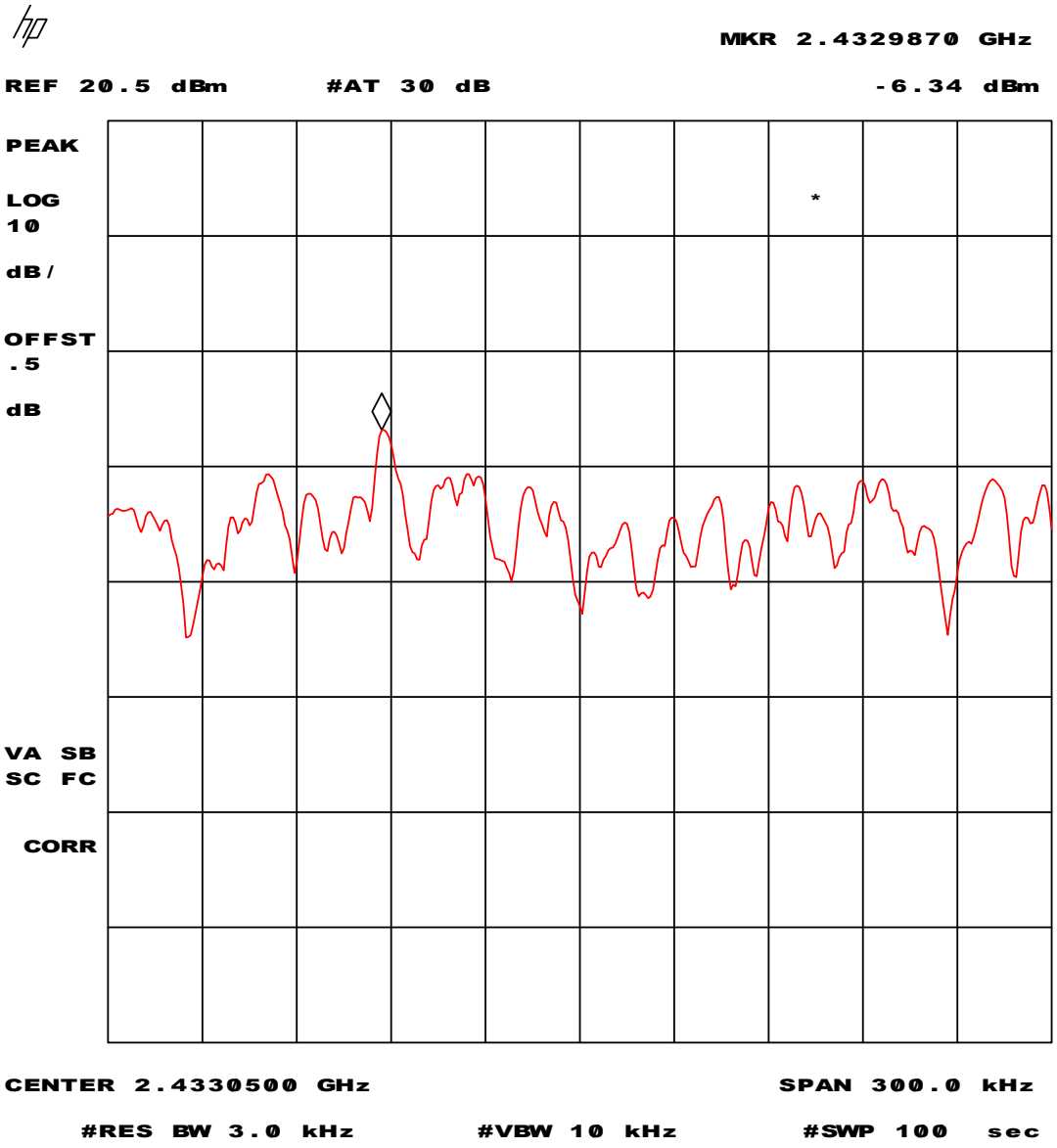
Plot 26 - Peak power spectral density (conducted) from the intentional radiator in any 3 kHz band.

Peak power spectral density (conducted) in a 3 kHz bandwidth at a transmission bit-rate of 1 Mbit/s. Corrected (offset) for cable losses.



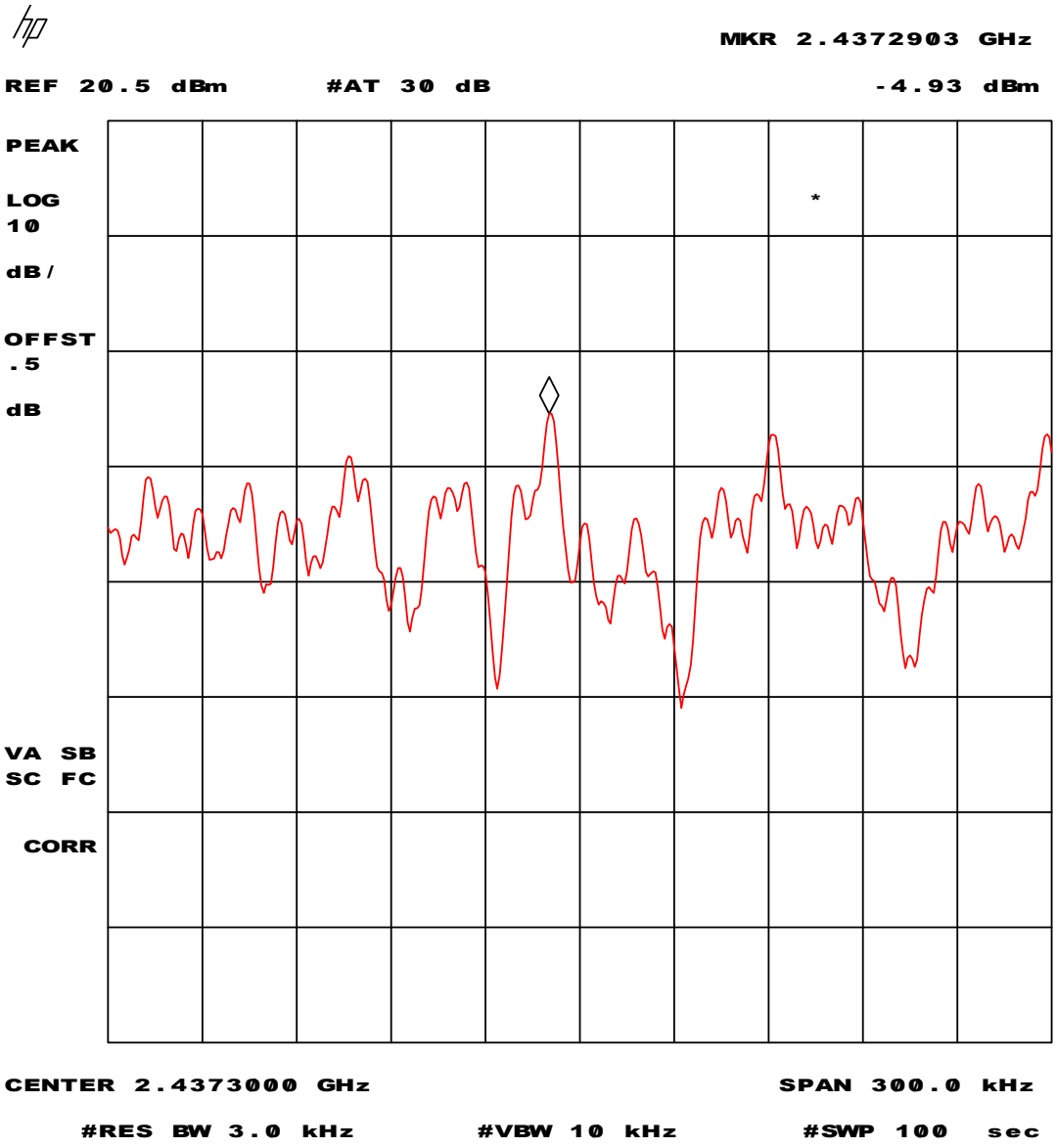
Plot 27 - Peak power spectral density (conducted) from the intentional radiator in any 3 kHz band.

Peak power spectral density (conducted) in a 3 kHz bandwidth at a transmission bit-rate of 2 Mbit/s. Corrected (offset) for cable losses.



Plot 28 - Peak power spectral density (conducted) from the intentional radiator in any 3 kHz band.

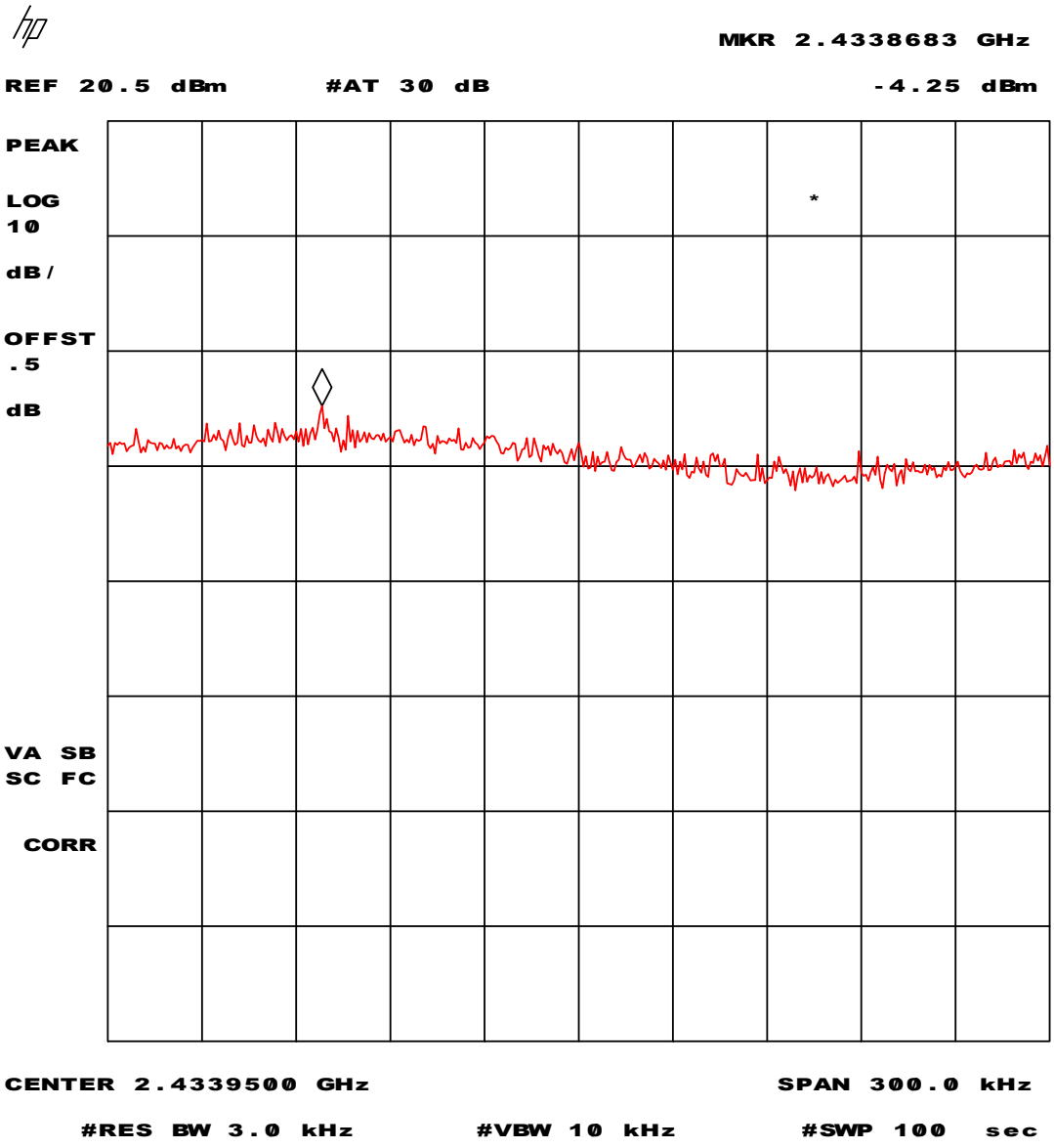
Peak power spectral density (conducted) in a 3 kHz bandwidth at a transmission bit-rate of 5.5 Mbit/s. Corrected (offset) for cable losses.



Plot 29 - Peak power spectral density (conducted) from the intentional radiator in any 3 kHz band.

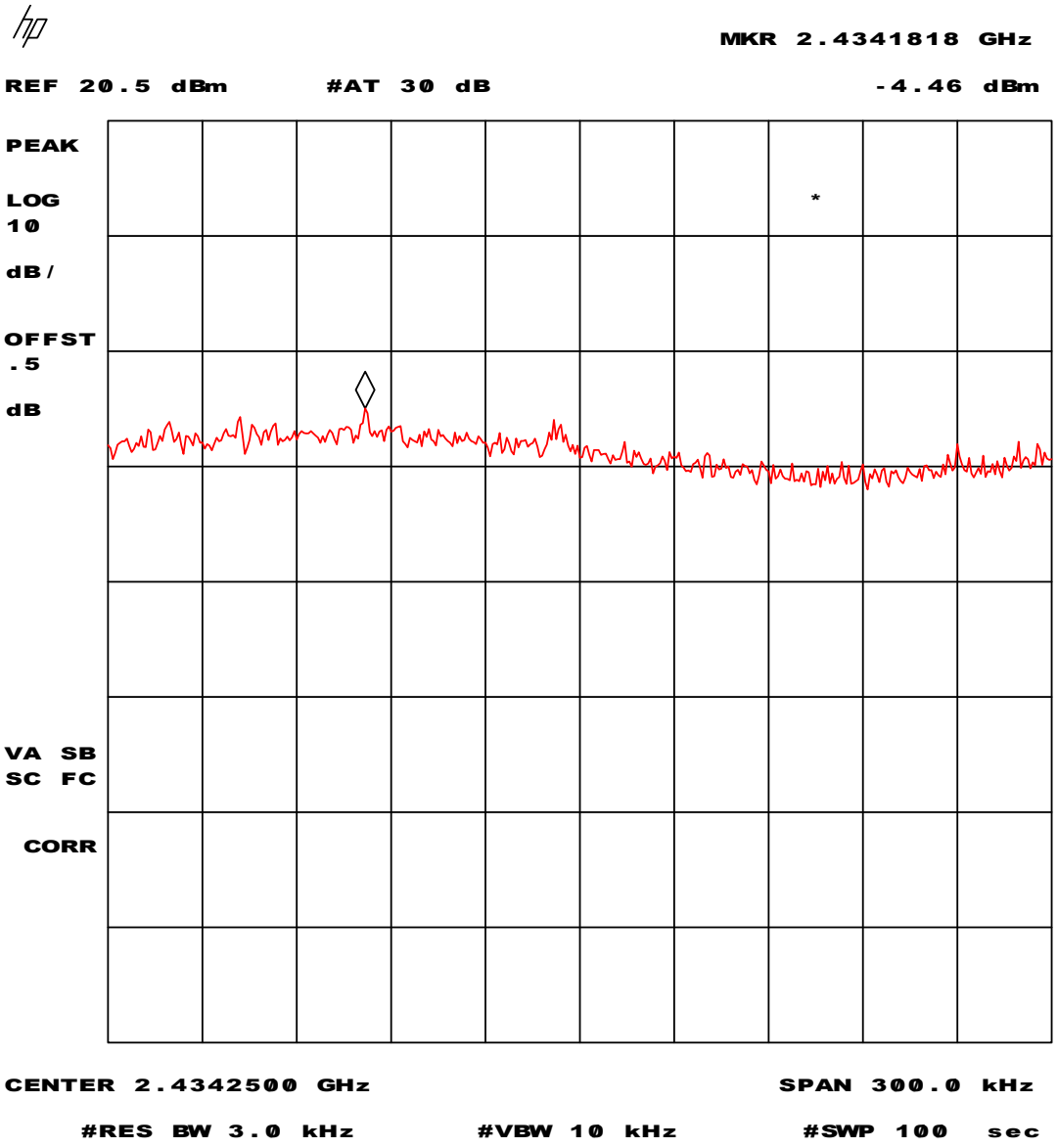
Peak power spectral density (conducted) in a 3 kHz bandwidth at a transmission bit-rate of 11 Mbit/s. Corrected (offset) for cable losses.

5.4.2 OFDM mode



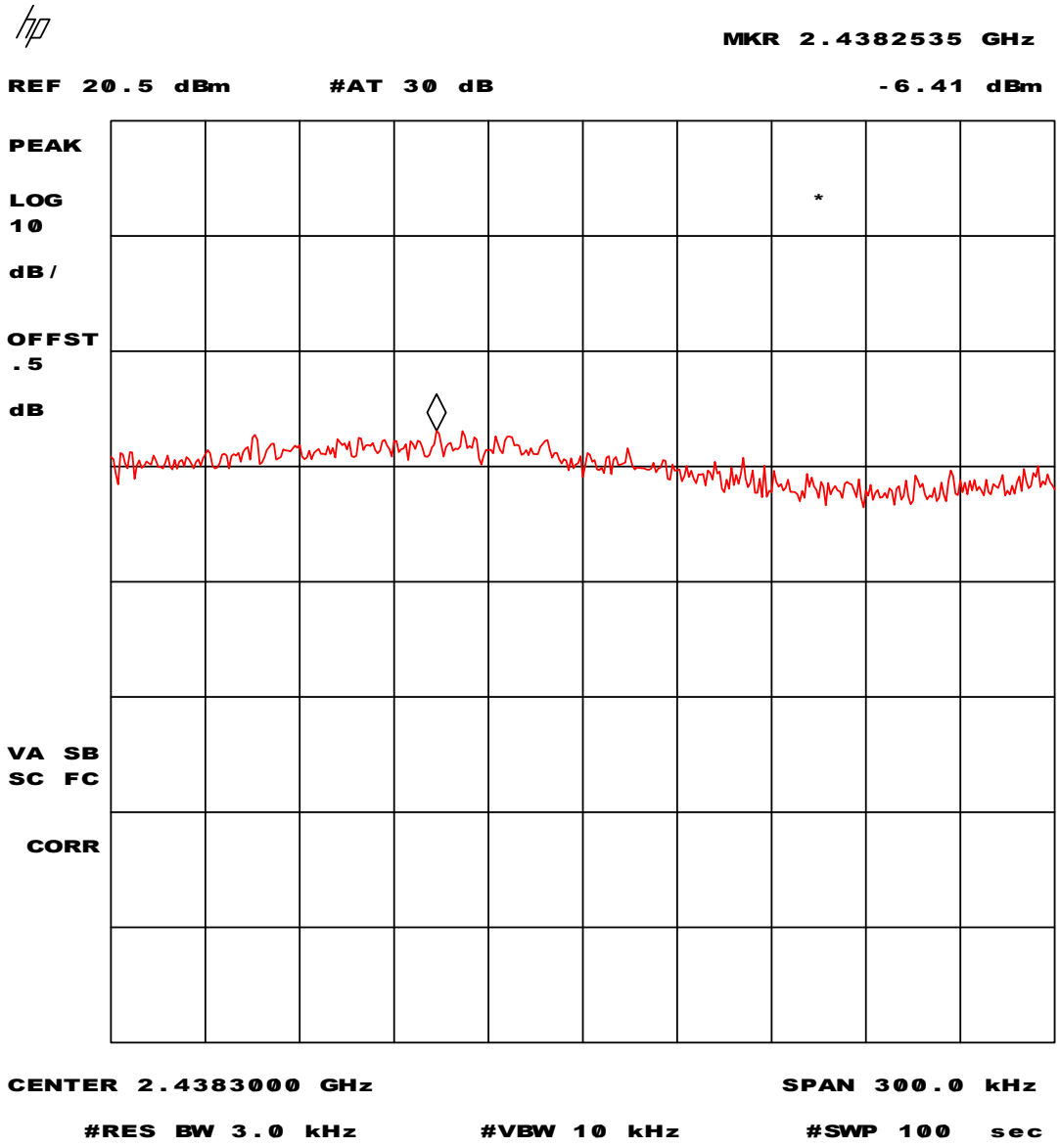
Plot 30 - Peak power spectral density (conducted) from the intentional radiator in any 3 kHz band.

Peak power spectral density (conducted) in a 3 kHz bandwidth at a transmission bit-rate of 6 Mbit/s. Corrected (offset) for cable losses.



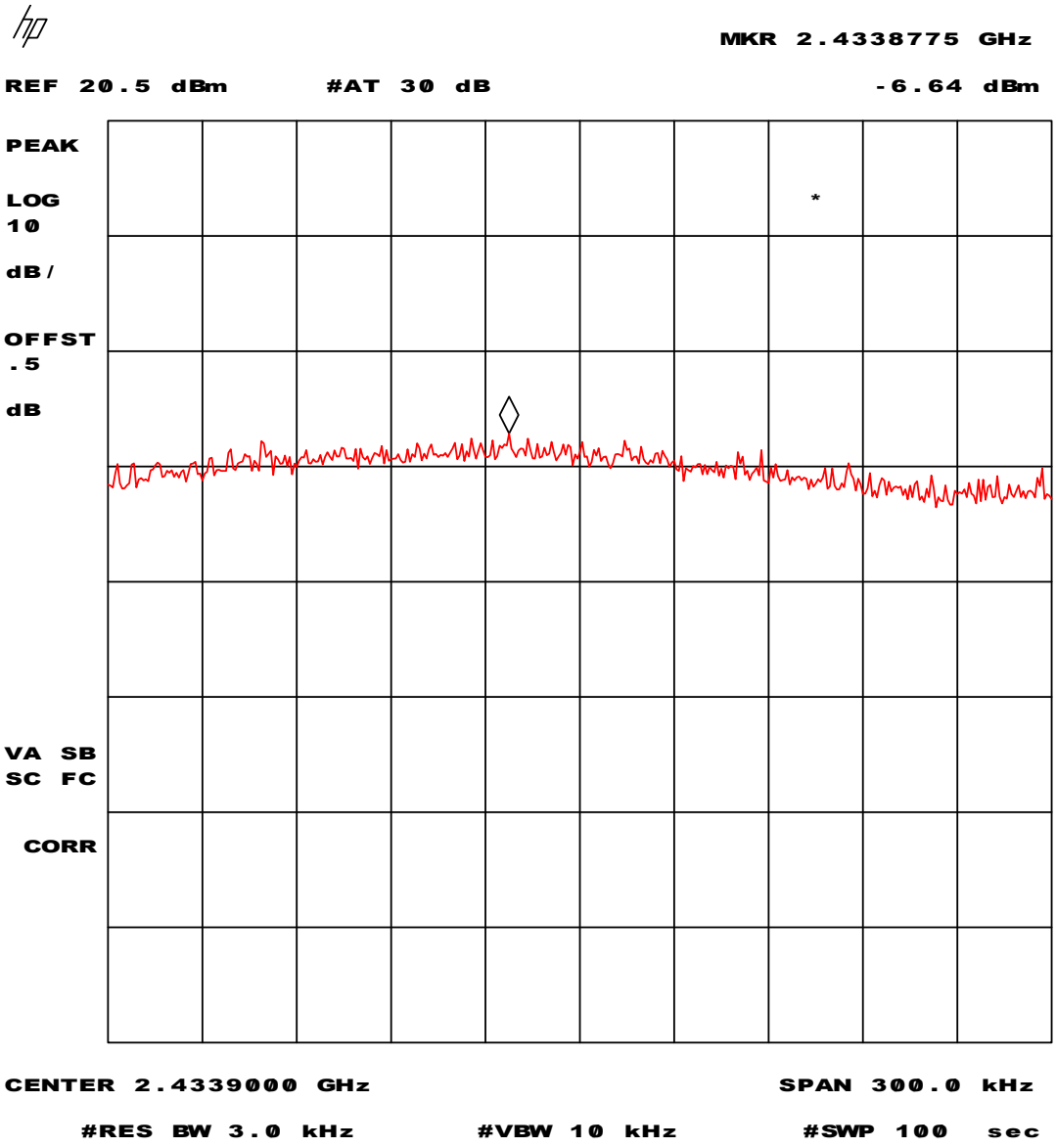
Plot 31 - Peak power spectral density (conducted) from the intentional radiator in any 3 kHz band.

Peak power spectral density (conducted) in a 3 kHz bandwidth at a transmission bit-rate of 9 Mbit/s. Corrected (offset) for cable losses.



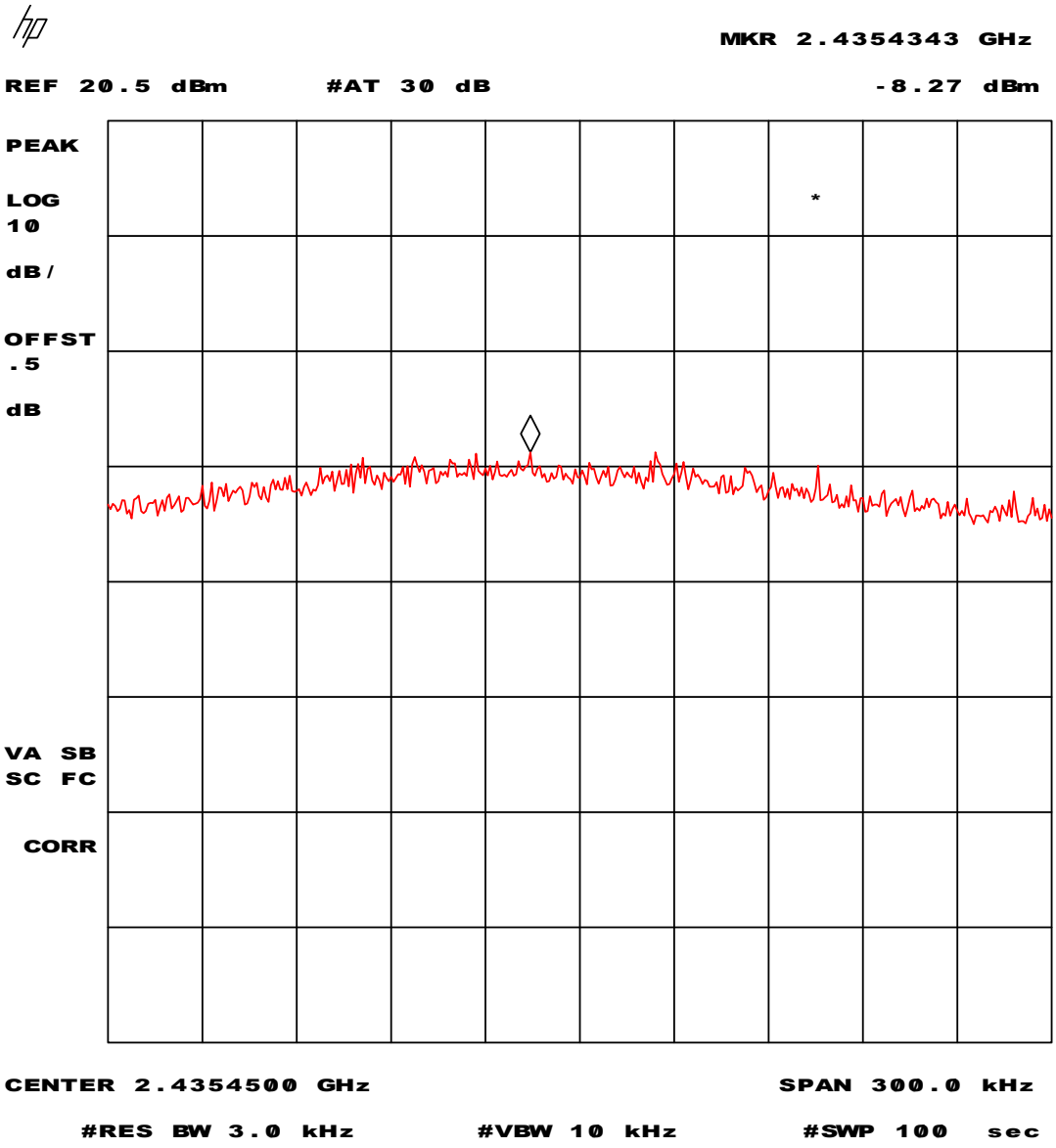
Plot 32 - Peak power spectral density (conducted) from the intentional radiator in any 3 kHz band.

Peak power spectral density (conducted) in a 3 kHz bandwidth at a transmission bit-rate of 18 Mbit/s. Corrected (offset) for cable losses.



Plot 33 - Peak power spectral density (conducted) from the intentional radiator in any 3 kHz band.

Peak power spectral density (conducted) in a 3 kHz bandwidth at a transmission bit-rate of 36 Mbit/s. Corrected (offset) for cable losses.



Plot 34 - Peak power spectral density (conducted) from the intentional radiator in any 3 kHz band.

Peak power spectral density (conducted) in a 3 kHz bandwidth at a transmission bit-rate of 54 Mbit/s. Corrected (offset) for cable losses.

6 List of utilized test equipment

Inventory number	Description	Brand	Model
12471	Biconical antenna 20MHz-200MHz	EATON	94455-1
12473	Log-per antenna 200-1000MHz	EATON	96005
12476	Antenna mast	EMCO	TR3
12477	Antenna mast 1-4 mtr	Poelstra	--
12482	Loop antenna	EMCO	6507
12483	Guidehorn	EMCO	3115
12484	Guidehorn	EMCO	3115
12488	Guidehorn 18 - 26.5 GHz	EMCO	RA42-K-F-4B-C
12533	Signalgenerator	MARCONI	2032
12559	Digital storage oscilloscope	Le Croy	9310M
12561	DC Power Supply 20A/70V	DELTA	SM7020D
12567	Plotter	HP	7440A
12605	calibrated dipole 28MHz-1GHz	Emco	3121c
12608	HF milliwattmeter	Hewlett Packard	HP435a
12609	Power sensor 10MHz-18GHz	Hewlett Packard	HP8481A
12636	Polyester chamber	Polyforce	--
12640	Temperature chamber	Heraeus	VEM03/500
13664	Spectrum analyzer	HP	HP8593E
13078	Preamplifier 0.1 GHz - 12 GHz	Miteq	AMF-3D-001120-35-14p
13452	Digital multi meter	HP	34401A
13526	Signalgenerator 20 GHz	Hewlett & Packard	83620A
13594	Preamplifier 10 GHz - 25 GHz	Miteq	AMF-6D-100250-10p
13886	Open Area testsite	Comtest	--
14051	Anechoic room	Comtest	--
14450	2.4 GHz bandrejectfilter	BSC	XN-1783
15633	Biconilog Testantenna	Chase	CBL 6111B
15667	Measuring receiver	R&S	ESCS 30
99045	DC Power Supply 3A/30V	DELTA	E030/3
99055	Non-conducting support	NMi	--
99061	Non-conducting support 150cm	NMi	--
99068	Detector N-F/BNC-F	Radiall	R451576000
99069	Cable 5m RG214	NMi	--
99071	Cable 10m RG214	NMi	--
99076	Bandpassfilter 4 - 10 GHz	Reactel	7AS-7G-6G-511
99077	Regulating trafo	RFT	LTS006
99112	Tripod	Chase	--
99136	Bandpassfilter 10 - 26.5 GHz	Reactel	9HS-10G/26.5G-S11