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1002 **ISO/IEC 17025** Page 1(2)

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Ericsson AB Klaes Holm PDU HW 164 80 Stockholm

Class II permissive change on AIR 21 B4A B12P B5P 1700/2100 MHz radio equipment with FCC ID: TA8AKRC118048-1 and IC: 287AB-AS1180481

(6 appendices)

Test object

Product name: AIR 21 B4A B12P B5P Product number: KRC 118 048/1, R2A

Summary

See appendix 1 for general information and appendix 6 for external photos.

Standard	Compliant	Appendix	
FCC CFR 47 / IC RSS-	139 Issue 2		
2.1046 / RSS-139 6.4	RF power output conducted	Yes	2
2.1049 / RSS-Gen 4.6.1	Occupied bandwidth	Yes	3
2.1051 / RSS-139 6.5	Band edge	Yes	4
2.1051 / RSS-139 6.5	Spurious emission at antenna terminals	Yes	5

Note: Above RSS-139 items are given as cross-reference only. Measurements were performed according to ANSI procedures referenced by FCC and covered by SP's accreditation.

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Appendix 1

Description of the test object

Equipment:	Product name: AIR 21 B4A B12P B5P Product number: KRC 118 048/1, R2A FCC ID TA8AKRC118048-1 IC 287AB-AS1180481 IC MODEL NO: AS1180481		
Tested configuration:	LTE single RAT		
Frequency bands:	TX: 2110 – 2155 MHz RX: 1710 – 1755 MHz		
Antenna ports:	2 TX/RX ports, (internally connected to integrated Cross-Polarized antenna elements)		
RF configuration:	Single carrier, multi carrier and MIMO 2x2		
Nominal output power per antenna port:	Single carrier:1x 44.8 dBm (1 x 30W)Multi carrier:2 x 41.8 dBm (2 x 15W)		
Antenna type:	Cross- polarized antenna		
Antenna gain:	18 dBi		
Channel bandwidths:	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz and 20 MHz		
Modulations:	QPSK, 16QAM and 64QAM		
Nominal supply voltage:	-48VDC		



Operation mode during measurements

Measurements were performed with the test object transmitting test models as defined in 3GPP TS 36.141. Test model E-TM1.1 represent QPSK modulation, test model E-TM3.2 represent 16QAM modulation and test model E-TM3.1 represent 64QAM modulation.

The settings below were deemed representative for all traffic scenarios when settings with different modulations, channel bandwidths, number of carriers and RF configurations has been tested to find the worst case setting. All measurements were performed with the test object configured for maximum transmit power. The settings below were used for all measurements if not otherwise noted.

MIMO mode, single carrier, E-TM1.1 MIMO mode, multi carrier, 2 carriers, E-TM1.1

Conducted measurements

The conducted measurements were performed on AIR 21 B4A B12P B8P with product number KRC 118 056/1 including the radio unit ARUS B4 1/KRC 118 046 which is identical for AIR 21 B4 B12P B5P and is representative for conducted TX performance measurements.

The test object was pole mounted and powered with -48 VDC by an external power supply, unless noted otherwise. All TX parameters were measured at port RF A with port RF B terminated into 50 ohm. Complete measurements were made on RF A with additional measurements on RF B to verify that the ports are identical.

Purpose of test

The purpose of test is to justify a Class II Permissive Change of the test object with hardware update and to include the use of multi carrier and MIMO mode, by verifying compliance to the performance characteristics specified in applicable parts of FCC CFR 47, IC RSS-139 and IC RSS-Gen.

References

Measurements were done according to relevant parts of the following standards:

ANSI 63.4-2009 ANSI/TIA/EIA-603-C-2004 3GPP TS 36.141, version 11.4.0 CFR 47 part 2, October 1st, 2012 CFR 47 part 27, October 1st, 2012 RSS-Gen Issue 3 RSS-139 Issue 2



Uncertainties

Measurement and test instrument uncertainties are described in the quality assurance documentation "SP-QD 10885". The uncertainties are calculated with a coverage factor k=2 (95% level of confidence).

Compliance evaluation is based on a shared risk principle with respect to the measurement uncertainty.

Reservation

The test results in this report apply only to the particular test object as declared in the report.

Delivery of test object

The test object was delivered 2013-10-18.

Manufacturer's representative

Christer Gustavsson, Ericsson AB.

Test engineers

Andreas Johnson, Kexin Chen, Hyder Khalaf, Tomas Lennhager, Tomas Isbring, Jörgen Wassholm and Rolf Kühn, SP.

Test participant

None.



Appendix 1

Measurement equipment

	Calibration Due	SP number
Test site Tesla	2014-01	503 881
R&S FSIQ 40	2014-07	503 738
R&S ESU 26	2014-05	901 553
R&S FSQ 40	2014-03	504 143
Control computer with	-	503 899
R&S software EMC32 version 8.52.0		
High pass filter	2014-07	901 501
High pass filter	2014-07	901 502
High pass filter	2014-07	504 199
High pass filter	2014-09	901 373
High pass filter	2014-09	503 739
High pass filter	2014-07	503 740
RF attenuator	2014-07	504 159
RF attenuator	2014-07	900 233
RF attenuator	2014-07	900 691
RF attenuator	2014-07	901 384
RF attenuator	2013-12	901 508
Chase Bilog Antenna CBL 6111A	2014-10	503 182
EMCO Horn Antenna 3115	2015-09	502 175
Std.gain horn FLANN model 20240-20	-	503 674
µComp Nordic, Low Noise Amplifier	2014-04	901 545
Miteq Low Noise Amplifier	2014-09	503 285
Schwartzbeck preamplifier BBV 9742	2014-14	504 085
Temperature and humidity meter, Testo 635	2014-06	504 203
Temperature and humidity meter, Testo 625	2014-06	504 188
Temperature Chamber	2013-11	501 031
Multimeter Fluke 87	2014-08	502 190





Test frequencies used for conducted measurements

TX test frequencies EARFCN Frequency Symbolic Comment Downlink [MHz] name 1957 2110.7 В TX bottom frequency in 1.4 MHz BW configuration 2110.7 B2-1.4 2 carrier TX band bottom constellation 1957 1971 2112.1 1.4 MHz BW configuration 1965 2111.5 B2-3 2 carrier TX band bottom constellation 1995 2114.5 3 MHz BW configuration 1965 2111.5 TX bottom frequency in 3 MHz BW configuration В 1975 2112.5 В TX bottom frequency in 5 MHz BW configuration В TX bottom frequency in 10 MHz BW configuration 2000 2115.0 2025 2117.5 В TX bottom frequency in 15 MHz BW configuration 2120.0 TX bottom frequency in 20 MHz BW configuration 2050 В 2175 2132.5 Μ TX band mid frequency all BW configurations 2 carrier TX band mid constellation 2168 2131.8 M2 2182 2133.2 1.4 MHz BW configuration 2393 2154.3 Т TX top frequency in 1.4 MHz BW configuration 2385 2153.5 Т TX top frequency in 3 MHz BW configuration 2375 2152.5 Т TX top frequency in 5 MHz BW configuration 2350 2150.0 Т TX top frequency in 10 MHz BW configuration Т TX top frequency in 15 MHz BW configuration 2325 2147.5 2300 2145.0 Т TX top frequency in 20 MHz BW configuration T2-1.4 2 carrier TX band top constellation 2379 2152.9 2393 2154.3 1.4 MHz BW configuration 2385 2153.5 T2-3 2 carrier TX band top constellation 2355 2150.5 3 MHz BW configuration 1980 2113.0 Bim1 2 carrier TX band 1.4 MHz BW configuration 2117.2 2022 2328 2147.8 Tim1 2 carrier TX band 1.4 MHz BW configuration 2152.0 2370 2100 2125.0 Bim₂ 2 carrier TX band 1.4 MHz BW configuration 2262 2141.2 2088 2123.8 Tim2 2 carrier TX 1.4 MHz BW configuration 2250 2140.0

All RX frequencies were configured 400 MHz below the corresponding TX frequency according the applicable duplex offset for the operating band.



Appendix 1

Test setup conducted measurements



Test object

1.	AIR 21 B4A B12P B8P, KRC 118 056/1, revision R1A, s/n: CQ30112763
	with software: CXP 901 3268/6, revision R51NE
	1-2. Transciever, ARUS B4 1/KRC 118 046, revision R1C

Functional test equipment

2.	DUS 41 01, KDU 137 624/1, revision R6A, s/n: A401981392
3.	PDU 02 01, BMG 980 336/4, revision R2A, s/n: BJ31528316
4	RBS 6201 cabinet, BAMS – 1000778792
5.	Controlling laptop HP Elitebook 8560w, BAMS 1001236856
	running software MOSHELL V9.0z
6.	Fast Ethernet switch, Netgear FS726T
7.	GPS 02 01, NCD 901 41/1, revision R1D, s/n: TU8K475230
8.	GPS Active Antenna, KRE 101 2082/1
9.	Terminator, 50 ohm
10.	Attenuator, according respective appendix
11.	SP Test Instrumentation according to measurement equipment list





Interfaces:	Type of port:
Power: -48 VDC	DC Power
Antenna port (A), (passive antenna), 7/16-connector	Antenna
Antenna port (B), (passive antenna), 7/16-connector	Antenna
Data 1, Optical Interface Link, single mode opto fibre	Signal
Data 2, Optical Interface Link, single mode opto fibre, not in use	Signal
Ground wire	Ground

RBS software:

Software	Revision
CXP 102 051/19	R22EU



RF power output measurements according to CFR 47 §27.50 / IC RSS-139 6.4, conducted

Date	Temperature	Humidity
2013-11-05	$22 \ ^{\circ}C \pm 3 \ ^{\circ}C$	30 % ± 5 %
2013-11-06	$22 \ ^{\circ}C \pm 3 \ ^{\circ}C$	29 % ± 5 %

Test set-up and procedure

The test object was connected to a signal analyser measuring peak and RMS output power in CDF mode. A resolution bandwidth of 50 MHz was used.

Measurement equipment	SP number
R&S FSQ	504 143
RF attenuator	901 508
Testo 635, temperature and humidity meter	504 203

Measurement uncertainty: 1.1 dB

Results

MIMO mode, single carrier

Rated output power level at RF connector 1x 44.8 dBm.

Carrier BW	Symbolic	[RMS dBm/ PAR dB]		
[MHz]	name	Port RF A	Port RF B	Total power ¹⁾
1.4	В	44.59/ 7.19	44.37/ 7.21	47.49
20	В	44.80/ 7.36	44.60/ 7.36	47.71
1.4	М	44.67/ 7.19	44.67/ 7.21	47.68
3.0	М	44.80/ 7.26	44.73/ 7.28	47.78
5.0	М	44.79/ 7.33	44.73/ 7.36	47.77
10.0	М	44.74/ 7.28	44.63/ 7.28	47.70
15.0	М	44.76/ 7.28	44.61/7.28	47.70
20.0	М	44.78/ 7.28	44.60/ 7.31	47.70
1.4	Т	44.58/7.19	44.45/ 7.21	47.53
20	Т	44.77/ 7.38	44.62/ 7.38	47.71

¹⁾: Summed output power according to FCC KDB662911 Multiple transmitter output v02r01.

Note: The PAR value is the 0.1 % Peak to Average Ratio.



MIMO mode, multi carrier

Rated output power level at RF connector 2x 41.8 dBm.

Carrier BW Symbolic		[RMS dBm/ PAR dB]		
[MHz]	name	Port RF A	Port RF B	Total power ¹⁾
1.4	B2-1.4	44.52/ 6.97	44.55/ 7.00	47.55
1.4	M2	44.67/ 6.97	44.56/ 6.97	47.63
1.4	T2-1.4	44.58/ 6.97	44.58/ 7.00	47.59

¹⁾: Summed output power according to FCC KDB662911 D01 Multiple transmitter output v02

Note: The PAR value is the 0.1 % Peak to Average Ratio.

MIMO mode, single carrier

Measured	output	power	per	1	MHz
			r		

Carrier BW	Symbolic	[RMS o	dBm]	Total power ¹⁾
[MHZ]	name	Port RF A	Port RF B	
1.4	В	43.57	43.70	46.70
20	В	33.05	33.16	36.16
1.4	М	43.96	43.80	46.96
3.0	М	41.12	41.05	44.12
5.0	М	39.11	38.91	42.11
10.0	М	36.04	35.86	39.04
15.0	М	34.50	34.34	37.50
20.0	М	32.78	32.99	35.99
1.4	Т	43.69	43.82	46.82
20	Т	33.19	33.14	36.19

¹⁾: Measured according to FCC KDB662911 D01 Multiple Transmitter Output v02r01. Method E), 2), c). "Measure and add 10 log(N_{Ant})".





Limits

§27.50:

There is no maximum output power specified for base stations transmitting in the 2110-2155 MHz band. However, a licensee operating a base or fixed station in the 2110-2155 MHz band utilizing a power greater than 1640 watts EIRP and greater than 1640 watts/MHz EIRP must coordinate such operations in advance with the parties addressed in the rules. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

RSS-139 6.4:

The average equivalent isotropically radiated power (e.i.r.p.) limits in SRSP-513 apply, resulting in a maximum EIRP of 1640 W/ MHz for the scope of this report. The peak-to-average ratio PAR of the power shall not exceed 13 dB.

Complies? Yes





Appendix 3

Occupied bandwidth measurements according to 47 CFR 2.1049 / RSS-Gen 4.6.1

Date	Temperature	Humidity
2013-11-05	$22 \degree C \pm 3 \degree C$	30 % ± 5 %
2013-11-06	$22 \ ^{\circ}C \pm 3 \ ^{\circ}C$	29 % ± 5 %
2013-11-25	$24 \ ^{\circ}C \pm 3 \ ^{\circ}C$	16 % ± 5 %

Test set-up and procedure

The measurements were made per definition in §2.1049. The output was connected to a signal analyser with the RMS detector activated. The signal analyser was connected to an external 10 MHz reference standard during the measurements.

Measurement equipment	SP number
R&S FSW 43	902 073
RF attenuator	902 282
Testo 635, temperature and humidity meter	504 203

Measurement uncertainty: 3.7 dB

Results

MIMO mode, single carrier

Diagram	BW configuration	Tested frequency	Tested Port	Occupied BW (99%) [MHz]
1	1.4 MHz	В	RF A	1.09
2	20 MHz	В	RF A	17.85
3	1.4 MHz	М	RF A	1.09
4	1.4 MHz	М	RF B	1.09
5	3 MHz	М	RF A	2.69
6	5 MHz	М	RF A	4.48
7	10 MHz	М	RF A	8.94
8	15 MHz	М	RF A	13.41
9	20 MHz	М	RF A	17.86
10	20 MHz	М	RF B	17.86
11	1.4 MHz	Т	RF A	1.09
12	20 MHz	Т	RF A	17.85



Appendix 3

Diagram 1:



Date: 5.NOV 2013 13:49:38

Diagram 2:



Date: 5.NOV 2013 13:41:37



Appendix 3

Diagram 3:



Date: 5.NOV 2013, 13:21:57

Diagram 4:





Appendix 3

Diagram 5:



Date: 25 NOV 2013 13 27 59

Diagram 6:



Date: 5.NOV 2013 13:34:09



Appendix 3

Diagram 7:



Diagram 8:



Date: 5.NOV 2013 13:38:09



Appendix 3

Diagram 9:



Date: 5.NOV 2013 13:39:31

Diagram 10:



Date: 5.NOV 2013 13:54:37



Appendix 3

Diagram 11:



Date: 5.NOV 2013 13:47:09

Diagram 12:



Date: 5.NOV 2013 13:43/28



Appendix 4

Band edge measurements according to CFR 47 §27.53(h) / IC RSS-139 6.5

Date	Temperature	Humidity
2013-11-04	19 °C ± 3 °C	35 % ± 5 %
2013-11-05	$22 \ ^{\circ}C \pm 3 \ ^{\circ}C$	30 % ± 5 %
2013-11-06	$22 \degree C \pm 3 \degree C$	29 % ± 5 %

Test set-up and procedure

The measurements were made per definition in §27.53(h). The test object was connected to a spectrum analyser with the RMS detector activated. The spectrum analyser was connected to an external 10 MHz reference standard during the measurements.

Beyond the 1st MHz off the band edges the limit was adjusted to compensate for reduced measurement bandwidths pursuant to the FCC rules, specifying a RBW of at least 1% of the fundamental emission bandwidth up to 1 MHz away from the band edges and a RBW of 1 MHz for measurements of emissions more than 1 MHz away from the band edges.

A resolution bandwidth of 200 kHz was used 1 MHz to 6 MHz away from the band edges, to compensate for the reduced resolution bandwidth the limit was adjusted by 7 dB to -20 dBm.

Before comparing the results to the limit, 3 dB [10 log (2)] should be added according to method E), 3), a), (iii) Measure and add 10 log(N_{ANT})" of FCC KDB662911 D01 Multiple Transmitter Output v02r01.

Measurement equipment	SP number
R&S FSW 43	902 073
RF attenuator	902 282
Testo 635, temperature and humidity meter	504 203

Measurement uncertainty: 3.7 dB



Appendix 4

Results

MIMO mode, single carrier

Diagram	BW configuration	Tested frequency	Tested Port
1 a-c	1.4 MHz	В	RF A
2 a-c	3 MHz	В	RF A
3 a-c	3 MHz	В	RF B
4 a-c	5 MHz	В	RF A
5 a-c	10 MHz	В	RF A
6 a-c	15 MHz	В	RF A
7 a-c	20 MHz	В	RF A
8 a-c	1.4 MHz	Т	RF A
9 a-c	3 MHz	Т	RF A
10 a-c	3 MHz	Т	RF B
11 a-c	5 MHz	Т	RF A
12 а-с	10 MHz	Т	RF A
13 a-c	15 MHz	Т	RF A
14 a-c	20 MHz	Т	RF A

MIMO mode, multi carrier

Diagram	BW configuration	Testedfrequency	Tested Port
15 а-с	1.4 MHz	B2-1.4	RF A
16 a-c	3 MHz	B2-3	RF A
17 a-c	1.4 MHz	T2-1.4	RF A
18 a-c	3 MHz	T2-3	RF A

Limits

CFR 47 §27.53(h) and RSS-139 6.5

Outside a licensee's frequency band(s) of operation the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log (P) dB$, resulting in a limit of -13 dBm.

Complies?	Yes
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Appendix 4

Diagram 1 a:

 MultiView
 Spectrum

 Ref Level 48.94 dBm
 = RBW
 20 kHz

 + Att
 10 dB
 SWT
 10 s

 VBW
 200 kHz
 Mode Auto Sweep
 TDF 1 Frequency Sweep IRm Max M1[1] 19.69 dBm 2.1 10000000 GHz 30.45 20 18 10 49 10 d H1 -13.000 dBm ag da eb de an de -50 dBn -60 00 Start 2.109 GH 3001 pts 200.0 kHz 111 GHz Measuring... 100 100.00 5.11.2013 1 Date: 5.NOV 2013 14:12:33

Diagram 1 b:

MultiView	Spectrum						 12
Ref Level 48.9	4 dBm	= RBW	200 kHz	a Auto Curren			
TDF	10.00 # 2441	10.3 4044	2 mine Moo	e Mato Sweep			
Frequency Sv	/eep						⇒1R/n Max
2.000						WI[1]	33.17 dBn 2 10898880 GH
HO dBm			-				
dān							
o dam-							 -
0 dBm			-				
	1.111						
dam							
10 dBin			-	-			
andb es	0.0000						
30 dam				-			
40 d8m			-	-			
58 dBm			-				
ou dom			1.				
tart 2.104 GH	z	-	2001	pts	500.0	kHz/	Stop 2.109 GH
				Sec. 19.		Measuring	 05.11/2013

Date: 5.NOV 2013 14:13:22





Appendix 4

Diagram 1 c:

Lip Alight Alight <th>Ref Level 4</th> <th>8.94 dBm 10 dB w SWT</th> <th>10 s VBW</th> <th>/ 1 MHz / 10 MHz Mode</th> <th>Auto Sweep</th> <th></th> <th></th> <th></th>	Ref Level 4	8.94 dBm 10 dB w SWT	10 s VBW	/ 1 MHz / 10 MHz Mode	Auto Sweep			
10 den .114.61 10 den .10399.250 10 den	Frequency	Sweep						⇒ 1Rm Max
49 9hn		1				W1[1]		34.61 dBe
B4.0m Image: Sector	HD gBn	-	-	_			1 1	
90.00m								
9 dem 1	d dbn							
10 d8n Image: state stat	aŭ diŝm-			-				
10 dBm- 10				-				-
1 dbm Image: state	Lő dBm-			-				
10 dbm 11 -12 000 dbm 20 dbm 11 -12 000 dbm 90 dbm	dim							
10 dBm 41 - 12 000 dBm -	- Gam	-						
1.1.1000 della 1.1.1000 dell	10 dBim				-			
20 dam		H1. 12:000 08/16						
90 dam Image: Constraint of the cons	20 dBin							
AD dam	en dem-			_				
AD dbm- 55 dbm- 642 dbm-								
50 dbm	40 dBm-							
60 dam	55 dBm-							
60 gam	to done			10				
	60 d0m			-				
start 2.094 GHz 2001 pts 1.0 MHz/ Stop 2.104	start 2.094 G	SHz	1.	2001	pts	1.0 MHz/		Stop 2,104 GH

de: 5.NOV 2013 14-14/06



Appendix 4

Diagram 2 a:

 NuttiView
 Spectrum

 Ref Level 48.94 dbm
 = RBW
 30 kHz

 + Att
 10 dB
 SWT
 10 s

 VBW
 300 kHz
 Mode Auto Sweep
 TDF 1 Frequency Sweep 18m May M1[1] 17.39 dBm 2.110000000 GHz 30.45 20.40 10.40 10 0 H1 -19.000 dBm 20 d8 io de 58 an io a Start 2.109 GH 3001 pts 200.0 kHz 111 GHz Measuring... 100 CT 10 A 5.11.2013 1 Date: 5.NOV 2013 14 21 12

Diagram 2 b:

MultiView	Spectrum							12
Ref Level 48	.94 dBm	= RBW	200 kHz	ALL ALL THINK				
TDF	10 db # SW1	10.5 VBW	2 MPIZ MOC	e Auto Sweep				
Frequency S	weep							 1Rm Max
	1		-			WI[1]		32.79 dBr
HO dBm	-		-					
id dBini			-					
0 dßm-			_	-				
Lũ đãm-								
dife								
1 Up M			-					
10 dBm								
mdb @s	u. 40.666 mm							
30 dBm			_	-			_	_
v0 d8m								
50 dBm	1		-					
60 d0m				-				
tart 2.104 G	lz	-	2001	pts	500.0	kHz/		Stop 2.109 GH
			100	10. C		Measu	ring 1 🔰 🚧	05.11.2013

Date: 5.NOV 2013 14:16:55





Appendix 4

Diagram 2c:

MultiView	Spectrum	a 11.							. 12
Ref Level 48 Att	10 dB w SWT	= RBY	/ IMHz / IOMHz Mod	e Auto Sweep					-
Frequency S	Sweep			_					= 18m Max
			_			WI[1]			34.64 dBr
40 dbn				-				3	.10390750 GH
	1				1				
nigh be			-	-					
			-				-		
20 dBm	-	-	-	-	-				
lû dBm	-				-				
DBM-			_		· · · · · ·				
10 dBim									
	H1 -13.000 dar	1	_						
ad dBin			-	-					
						-			
30 d8m-									4
Lin di		1							
au dem									
50 dBm									
and denie				-					
60 d0m				-	-				
tart 2.094 G	H7		2001	nts		0 MHz/	<u> </u>		top 2 104 GH
	11		2.001						05.11.2013

Date 5.NOV 2013 14:16:04



Appendix 4

Diagram 3 a:

 MultiView
 Spectrum

 Ref Level 48.94 dBm
 = RBW
 30 kHz

 + Att
 10 dB
 SWT
 10 s

 VBW
 300 kHz
 Mode Auto Sweep
 TOF 1 Frequency Sweep IRm Max M1[1] 18.54 dBn 2.110000000 GH 30.45 20 4 10.49 10 0 H1 -19.000 dBm 20 d8 io de sa ar Start 2,109 GH 3001 pts 200.0 kHz Measuring... 10 13:59:53 Date: 5.NOV 2013 13:59:54

Diagram 3 b:

TDF	/BW 2 MHz Mode Auto Sweep		
1 Frequency Sweep		M1[1]	 18m Max 33.22 dBr
40 dBm	_		2.10898880 GH
30. dBm			
tő dám-		· · · · · · · · · · · · · · · · · · ·	
n dbus			
dâm-			
10 dBim			
e9 d0m (1), (0,000 com			
90 dBm			
10 d8m			
50 d0m			
60 a0m			
Start 7 104 GHz	2001 str	500.0 kHz/	Cher 7, 100 Chi

ate: 5.NOV.2013 14:01/25





Appendix 4

Diagram 3 c:

MultiView	Spectrum	6.00						11
Ref Level 48 Att	94 dBm 10 dB w SWT	= RBW 10 s VBW	1 MHz 10 MHz Mode	Auto Sweep				
TDF	Carlo and a							
Frequency s	weep					AUT 11		- IRM Max
						analy1		2.10398750 Gi
40 000		-	-					
90 dBm			-	+ +				
	1 10							
a dam-		-	-	-				
	· · · · · · · · · · · · · · · · · · ·							
ið d8m			_	-				
dim								
- Carrie								
in the								
TO COM-	H1 -19.000 dam		-					
ag dBin								
90 d8m								
			-					
40 dBm				1 1				
58 dBm		-		+				
60 d0m	-		-	+ +				
1			2001			A 140-7		Char 15 10 1 Ch
nart 2.094 G	12		2001 (JIS	1	.0 MHZ/		Stup 2.104 GH
						M	easuring 💶 💷	14:02:36



Appendix 4

Diagram 4 a:

 MultiView
 Spectrum

 Ref Level 48.94 dBm
 = RBW
 50 kHz

 + Att
 10 dB
 SWT
 10 s

 VBW
 500 kHz
 Mode Auto Sweep
 . 12 TOF 1 Frequency Sweep IRm Max M1[1] 20.18 dBn 2.110000000 GH 30.45 50 A 10.46 10 d H1 -13.000 dBm 20 dB eb de -TO dBr -55 d8 Start 2.109 GH 3001 pts 200.0 kHz 111 GHz Measuring... 1 10 14 14:24:50 Date: 5.NOV 2013 14:24:49

Diagram 4 a:

Ref Level 48.94 Att 1 TDF	dBm 0 dB ⊜ SWT 10	= RBW 20 0 s VBW	0 kHž 2 MHz - Mode	: Auto Sweep			
1 Frequency Swe	ep	_				vra[1]	 1Rm May 32.65 dBr
40 dBm			_				2.10899630 GH
30. dBm							
20 d8m-						_	
Lũ dBm-		_					
ā dēm		_					
10 dBm						_	
-20 dDm	-10,000 mm	_					
30 dam-		_				_	
-10 dBm		-					
50 dBm							
-60 a0m		_					
Start 2.104 GHz		_	2001 p	ots	500.0 ki	Hz/	Stop 2.109 GH

ate: 5.NOV.2013 14:25:31



Appendix 4

Diagram 4 c:

Frequency Sweep				 TR/n Max
			wis[1]	34.38 dBr 2.10397250 GH
d dBm				
d dBri				
û dâm-				
ű dBm-				
dām				
0 dBm +11 -19 000 c	Sm			
10 dBin				
i0 d8m				
i0 dBm				
-mdb D:				
60 d0m				
tart 2 004 GHz		2001 pts	1.0 MHz/	Stop 2 104 GH



Appendix 4

Diagram 5 a:

 Ref Level 48.94 dBm
 RBW 100 kHz

 Att
 10 dB = SWT 10 s
 VBW
 1 MHz
 Mode Auto Sweep
 TDF 1 Frequency Sweep 18m May M1[1] 33.21 dBm 2.109057200 GHz .35.66 dBm 2.110000000 GHz M2[1] 30.45 20 48 10.40 10 0 H1 -19.000 dBm 20 d8 io de ti de 58 an -60 d Start 2.109 GH 3001 pts 200.0 kHz 111 GHz Measuring... 10 14:32:28 A Date: 5.NOV 2013 14:32:29

Diagram 5 b:

Ref Level 48 Att TDF	94 dBm 10 dB w SWT	10 s VBW	1 MHz 10 MHz Mode	Auto Sweep			
Frequency S	weep				MILL		IRAT Max
40.484							2.10398750 GH
io april	· · · · · · · · · · · · · · · · · · ·			1		-	
30 dBm			-	-		-	
20 d6m-			_				
Lũ đăm-				1 1		-	
0 d9m							
-10 dBin	H1 -13.000 ger	-					
-20 dBin			-	-			
Si dan							
-10 d8m							
-58 dBm						_	
	17						
-60 d0m							
Start 2.094 G	17	-	2001	ots	1.0 MHz/		Stop 2, 104 GH
a con a service i con	11		2001	210	2.0 10112/		05.11.2013

Date 5.NOV 2013 14 29:44





Appendix 4

Diagram 5 c

TDF	Curann					 - Day Max
rrequenty	SWEED.				M1[1]	BELEO dBr
40 dBn	-	-		-		 2.10399250 GH
30 d5m			-			
nû dilim	_					
0 đBm		-				_
dām						
10 dBim	ALL -19 001 (Trees		-			
a0 dBm			-			_
en dem		-	-			 -
tū dēm						
58 dBm			-			_
sa abm						_
	11.		2001 -	ste	1.0 MHz/	 Stop 2 104 CH

Date: 5.NOV 2013 14 29:04





Appendix 4

Diagram 6 a:

 Ref Level 48.94 dBm
 RBW 200 kHz

 Att
 10 dB = SWT 10 s
 VBW 2 MHz
 Mode Auto Sweep
 TDF 1 Frequency Sweep 1Rm Max M1[1] 33.17 dBm 2.110000000 Gip 30.45 20 18 10 49 10 d H1 -19.000 dBm ad db eb de -AU dên -50 00/ -60 di Start 2.109 GH 3001 pts 200.0 kHz 111 GHz Measuring... 10.000 5.11.2013 14:34:47 10 Date: 5.NOV 2013 14:34:48

Diagram 6 b:

			1	Spectrum	MultiView
		Sec.	= RBW 200 kHz	dBm	Ref Level 48.94
		oweep	VBW 2 MHz Mode Auto	10 db # SWT 10 5	TDF
≃1Rm Max	1			ep	Frequency Sw
2.10875140 GH	MILI				
					KO dBm
					d dBm
					0 dBm
					0 dBm
					dam
					10 dBm
				-10,000 mm	an dom u
					mab 06
14					
					ua dem
					50 dBm
					60 d0m
Stop 2,109 GH	500.0 kHz/	X	2001 pts		tart 2.104 GHz
	500.0 kHz/ Measuring		2001 pts		-60 d0m -60 d0m Start 2.104 GHz

Date: 5.NOV 2013 14:35:35





Appendix 4

Diagram 6 c:

TDF	10 dB w SWT	10 s VBW 10	MHz Mode /	Auto Sweep			
Frequenc	y Sweep				-wit[1]		 18m Max 33-11 dBn 2 10399250 CH
HO GDM		-				1	
d dBm	-						
o dam-							
ið dBm-							
dām-							
10 dBm	H1 120010-0						
og dBin							_
en dem			_				_
to dBm							
5ð d0m							_
60 aDm	-				_		
tart 7 004	GHz		2001 p	ts	1.0 MHz/		Stop 2.104 GH:

Date 5.NOV 2013 14:36:21



Appendix 4

Diagram 7 a:

 Ref Level 48.94 dBm
 RBW 200 kHz

 Att
 10 dB = SWT 10 s
 VBW 2 MHz
 Mode Auto Sweep
 . 12 TDF 1 Frequency Sweep IRm Max M1[1] 34.84 dBo 2.110000000 GI0 30.45 20 18 10 49 -10 d H1 -19.000 dBm ad db eb de AU dBm -55 dBr -60 di Start 2.109 GH 3001 pts 200.0 kHz 111 GHz Measuring... 14:39:37 A Date: 5.NOV 2013 14:39:37

Diagram 7 b:

MultiView	Spectrum							12
Ref Level 48	.94 dBm	= RBW 3	100 kHz	A				
Att	10 dB = SWT 1	Os VBW	2 MHz Mode	Auto Sweep				
Frequency S	weep							■1Rm Max
	1					WI[1]		35.35 dBr
HO dBm			-					a base da ar
a dBn								-
o dam-			_					
0 dBm								
dime								
- Carrier								
tā dBim			1					
andb es	10. 40.600 mm							
30 dBm		_		-			In	-
in them							Ť	
								-
58 dBm								
sù dùm			-					
tart 2.104 GF	lz		2001 p	ots	500	.0 kHz/		stop 2.109 GH
				2		Meas	uring 🚺 🗤 🚧	05.11.2013

Date: 5.NOV 2013 14:38:35





Appendix 4

Diagram 7 c:

TUP					
Frequency	vsweep			MIT[1]	32,76 dB
40.000					2.10399750 Gi
o obiii	1		1		
dā dām	-				
math Ga	-	 -			
ID GRUE					
dām					
10 dBm	111 - 111 1000 mm				
	11 12000 000				
20 dBm					
neb dem					
10 200		 			
AU dBm	-				
50 dBm	-				
60 dBm		 			
es sem					
	-	 		1.0101.1	
tart 2.094	GHz	2001 p	s	1.0 MHz/	Stop 2.104 GH



Appendix 4

Diagram 8 a:

 MultiView
 Spectrum

 Ref Level 48.94 dBm
 = RBW
 20 kHz

 + Att
 10 dB
 SWT
 10 s

 VBW
 200 kHz
 Mode Auto Sweep
 TOF 1 Frequency Sweep IRm Max M1[1] 20.43 dBe 2.15500000 Gip 30 45 0.40 10 d H1 -19.000 dBm ad da en de AD de -50 db 60 a Start 2.154 GH 3001 pts 200.0 kHz 156 GHz Measuring... 14:51:42 J. Date: 5.NOV 2013 14:51:42

Diagram 8 b:

MultiView Spectrum			. 12
Ref Level 48.94 dBm	= RBW 200 kHz		
Att 10 dB # SWT	IO's VBW 2 MHz Mode Auto Sweep		
Frequency Sweep			⇒ 1R/m Max
2 m 1 m 1 m 1 m 1 m		wii[1]	34.16 dBr
ið dBmi			2.13000870 GF
43 dBm			
ů dám			
ű dBm-			
(Marine)			
up in the second s			
0 dBm			
9 d0m (1). (0,000 mm			
0 dBm			
0 dBm	International Property of Contraction of Contractio		
ā gām			
Q dām			
tart 2.156 GHz	2001 pts	500.0 kHz/	Stop 2.161 GH

Date: 5.NOV 2013 14:50:02




Appendix 4

Diagram 8 c:

Ref Level 48.94 dBm	RBW 1 MHz		
Att 10 dB w SWT 10 s	VBW 10 MHz Mode Auto Sweep		
Frequency Sweep			= 1Rm Max
· · · · · · · · · · · · · · · · · · ·		W1[1]	34.40 dBr
io abn			2.16117740.04
90. dBn			
0 dam-			
ið dBm-			
0 d0/m			
10 dBm			
H1 -13.000 dBr			
20 dBm			
(A) dBm			
40 dBm			
50 d0m			
60 aDm			
			0
Aart 2,161 GHZ	2001 pts	1.0 MHZ/	Stop 2,171 GH

te 5.NOV 2013 14:49:25



Appendix 4

Diagram 9 a:

 MultiView
 Spectrum

 Ref Level 48.94 dBm
 = RBW
 30 kHz

 + Att
 10 dB
 SWT
 10 s

 VBW
 300 kHz
 Mode Auto Sweep
 . 12 TDF 1 Frequency Sweep 18m Max M1[1] 18.57 dBn 2.155000000 GH 33,45 20 dBr 10 48 10 d H1 -19.000 dBm ad da eb de AD de -50 db io a Start 2.154 GH 3001 pts 200.0 kHz Measuring... 1000 14:53:17 a Date: 5.NOV 2013 14:53:18

Diagram 9 b:

Ref Level 48.94 dBm =	RBW 200 kHz		
Att 10 dB = SWT 10 s	VBW 2 MHz Mode Auto Sweep		
Frequency Sweep		M1[1]	32.01 dBr
0 dBm			2.1.3000170 01
ið dBru			
0 dBm-			
0 dBm-			
dan			
10 dBm			
29 dDm 911 - 00,000 dDm			
10 dBm			
iŭ d8m			
50 dBm			
50 dBm			
tart 2.156 GHz	2001 pts	500.0 kHz/	Stop 2.161 GH

Date: 5.NOV 2013 14:53:54





Appendix 4

Diagram 9 c:

TDF		54.5.1.V.1.V.1.V				100	NAME OF TAXABLE
Frequency S	weep				MI[1]	182	76 dBr
40.000						2.161012	50 GH
e teo				1			
od dBin							
sō dām							
0 d8m							
dăm							
10 dBm	H1 -19.000 der						
20 dBin		_					
30 d8m-			-				
40 d8m-							
58 dBm							_
		1	10				
60 dDm		-					
			1.1.1.1		1 m m		
tart 2.161 GH	z	1.	2001 p	ts	1.0 MHz/	Stop 2.1	71 GH



Appendix 4

Diagram 10 a:

 Ref Level 48:94 dBm
 RBW
 30 kHz

 Att
 10 dB
 SWT 10 s
 VBW 300 kHz
 Mode Auto Sweep
 TOF 1 Frequency Sweep 1Rm Max M1[1] 2.15500000 GH 30,45) 20 dBr 10 48 10 d H1 -19.000 dBm ad da eb de àŭ dê -50 db io a Start 2.154 GH 3001 pts 200.0 kHz Measuring... 10 100 14:05:50 12 Date: 5.NOV 2013 14:05:50

Diagram 10 b:

Ref Level 48.94 dBm Att 10 dB = SWT 10	= RBW 200 kHz s VBW 2 MHz Mode Auto Sweep		
TDF			
Frequency Sweep		wi[1]	2,15600870 GH
+O dBm			
od dBin			
10 dBm-			
10 d6m-			
1 dām-			
10 dBine			
0.00 mm 0.00.00 mm			
30 dam			
40 d8m-			-
50 dBm			
60 d0m			
Start 2.156 GHz	2001 pts	500.0 kHz/	Stop 2.161 GH
	100 March 100 Ma	Measuring	05.11.2013

ate: 5.NOV 2013 14:06:44



Appendix 4

Diagram 10 c:

Frequenc	y Sweep				Ma	[1]	2,161	33.04 (B) 91750 G)
HO UDM				1				
d dBm								
0 dßm-	-	-	-					
0 dBm	-	-				_		
dâm-								
0 dBm			_					
0 dBm	H1 -13-000 der							
i0 dam	_							
iū dėm-								
dom								
sà abm			-			_		



Appendix 4

Diagram 11a:

 MultiView
 Spectrum

 Ref Level 48.94 dBm
 = RBW
 50 kHz

 + Att
 10 dB
 SWT
 10 s

 VBW
 500 kHz
 Mode Auto Sweep
 TOF 1 Frequency Sweep IRm Max M1[1] 29.67 dBm 2.155000000 Gip 30.45 20 dBr 10 48 -10 d H1 -19.000 dBm ad da eb de AD de -50 db 60 a Start 2.154 GH 3001 pts 200.0 kHz Measuring... 10 1000 14:57:48 a Date: 5.NOV 2013 14:57:48

Diagram 11 b:

MultiView	Spectrum	6									12
Ref Level 48.	94 dBm	= R	BW 200 kH:		1						
TOF	10 db # SW1	10 S V	BM 5 WH	Mode	Auto Sweep						
Frequency Sy	veep										IRm Max
1							-1013	01		210	32.15 dBn
HO dBmi					1		_			2.4.0	101.170.01
d dBm			-		-	-					
a) dBm-			_	_				_			
lő dBm											
08/11											
tū dBm						-					
mdb @	1010.000 rum					-		-			
an dam-						-	-	-	_		
NO dem											
abm								_			
so dom			_	_				_			
		_	_								
tart 2.156 GH	Z	_	-	2001 p	ts	- A-	500.0 kHz			Stop	2.161 GH

Date: 5.NOV 2013 14:57:02





Appendix 4

Diagram 11 c:

TDF	10 dB # SWT	10 s VBW	10 MHz Mode	Auto Sweep			
Frequency	Sweep				_	MITTI	• 18/m M
						- and all	2.16103250
10 UDM	· · · · · · · · · · · · · · · · · · ·			1			
dām							
og dam-							
lā dBm-	-			+ +			
) DB/A							
10 dBin	A11		-				
20 dBu	112 120,000 001						
Ea abili							
ao dam-							
AU dBm-		1					
50 dBm							
60 dDm			-				
	1		1 C				
tart 2.161 G	Hz		2001	ots	1.0 M	Hz/	Stop 2.171



Appendix 4

Diagram 12 a:



Diagram 12 b:





Appendix 4

Diagram 12 c:

MultiView	Spectrum	a 11.				1
Ref Level 48 Att	10 dB = SWT	= RBY	Y IMHz V 10 MHz Mod	le Auto Sweep		
DF	41.10-11-1	24 C 1 V 1		VIII.		
Frequency \$	weep				Adv F 1 1	 IRm Max
					wit 11	2.16101250 G
0 dBm	-					
d dBm						
			_			
o dano-						
0 dSm						
in another						
dām	_					
t0 dBim	-	-	_			
	H1 -13 000 dBm					
20 dBin						
30 dBm			-			
10 dem-						
50.0800						
ia alan	1					
60 d0m	-					
1			2001		1010-7	Char D 171 CH
tart 2,101 G	12		2001	i pis	1.0 MH2/	Stop 2,171 GP

ate: 5.NOV 2013 15:00:49



Appendix 4

Diagram 13a:

 MultiView
 Spectrum

 Ref Level 48.94 dBm
 = RBW 200 kHz

 + Att
 10 dB = SWT 10 s
 VBW
 2 MHz
 Mode Auto Sweep
 TOF 1 Frequency Sweep 18m May M1[1] 31.74 dBo 2.155000000 GHz 30,65 20 dB 10 48 10 d H1 -19-000 dBm ad da eb de AD de -50 db io a Start 2.154 GH 3001 pts 200.0 kHz 156 GHz 15:04:20 Measuring... 10 100 10 10 10 Date: 5.NOV 2013 15:04:20

Diagram 13 b:

Ref Level 48.94 dBm Att 10 dB = SWT 10 s	RBW 1 MHz VBW 10 MHz Mode Auto Sweep		
TUP Frequency Sweep			 IR/II Max
2 TH 10 TH 10 TH 10 TH 10 TH		wit[1]	32,04 dBr 2,46102750 GH
40 dBm			
30 dBm			
20 d8m-			
Lū dām-			
1 (B/n			
-10 dBm			
20 dBm			
en dem			
-40 dBm			
50 abm			
60 aDm			
Start 2.161 GHz	2001 pts	1.0 MHz/	Stop 2,171 GH

Date: 5.NOV 2013 15:02:20



Appendix 4

Diagram 13 c:

[1] 2.16102750 GH
2.16102750 G4

SP Technical Research Institute of Sweden



Appendix 4

Diagram 14 a:

 MultiView
 Spectrum

 Ref Level 48.94 dBm
 = RBW 200 kHz

 + Att
 10 dB = SWT 10 s
 VBW
 2 MHz
 Mode Auto Sweep
 TDF 1 Frequency Sweep 18m May M1[1] 32.60 dBn 2.155000000 GH 30, 45) 20 39 0.40 10 0 ad de en de àŭ dê 50 00 io a 3001 pts 200.0 kHz Start 2.154 GH Measuring... NOTION DI A 15:06:13 a Date: 5.NOV 2013 15:06:13

Diagram 14 b:

MultiView	Spectrum	1 Juli					12
Ref Level 48	.94 dBm	= RBW	200 kHz	a sa tana			
Att	10 dB = SW1	10 s VBW	2 MHz Mod	e Auto Sweep			
Frequency S	weep						 TR/n Max
	and the second second				-MIX	[1]	33.27 dBr
HO dBm	-		-	1			2.13070010 01
d dBn							
o dam-	_		_	-		_	
0 dBm						_	
dām							
10 dBm	-						
20 dDm	1019.666 com		-				
en damen						_	
10 d8m-							
dom-	-		-			-	
iQ dQm			-	-	_		
			2001		500 0 kUz	,	Char 7 161 Ch
tart 2.130 G	12		2001	pts	- 300.0 KHZ		Stup 2,161 GP

Date: 5.NOV 2013 15:08:35



Appendix 4

Diagram 14 c:

Frequency Sweep		M1[1]	 18/1 Max 32/38 dB
0 dBm			2.15101750 G
3 dBm		1	
0 d&m-		1	
) dBm-			
dam			
0 d8m			
9 dBm			
0 dBm			
0 dBm			
ð dBm			
0.40m			
No. Name of the second s		1 - 1 - 1	
tart 2,161 GHz	2001 nts	1.0 MHz/	Stop 2,171 GH



Appendix 4

Diagram 15 a:

 Ref Level 48:94 dBm
 RBW
 20 kHz

 Att
 10 dB
 SWT 10 s
 VBW 200 kHz
 Mode Auto Sweep
 . 12 TOF 1 Frequency Sweep 18m Maz M1[1] 23.58 dBo 30.45 00.4 10.40 10 0 H1 -13.000 dBm 20 d8 eb de 58 an io a Start 2.109 GH 3001 pts 200.0 kHz 111 GHz Measuring... 100 1000 13:05:05 Date 6.NOV 2013 13:05:05

Diagram 15 b:

MultiView Spect	rum			
Att 10 dB =	SWT 10 s VBW 2 MHz 1	Mode Auto Sweep		
TDF		200 C 1 1 2		
Frequency Sweep			M1[1]	 16/1 Max 31,92 dBr
HO dBm			1 1	2.10898880 GH
30 dBm				
20 dBm-				
a) dBm				
1 d8/m				
10 dBm				
00.00 m m m m m m m m m m m m m m m m m	ium.			
30 dam				
40 d8m				and the second s
oo dam				
60 d0m				
itart 2.104 GHz	20	001 pts	500.0 kHz/	Stop 2.109 GH
			Measuring	06.11.2013

Date 6.NOV 2013 13:06:32



Appendix 4

Diagram 15 c:

		- 147		
Att 10.de	= RBW	10 Miles Mode Auto Super-		
TDF		ionate mode mate streep		
Frequency Sweep				 ТРлт Мах.
2 11 12 11 12 12 12 12 12 12 12 12 12 12			W1[1]	34.71 (Bn
d dbn				2.10.1907,81 (41
d dBm				
û dâm-				
100 C				
0 dBm				
dām				
10 dBm	000 000			
au dam				
an dam				
30 000				
aŭ dam-				
50 dBm				
60 d0m				
hart 2 004 CHa		2001 ptc	1.0 MHz/	Stop 2 104 Cht
dart 27094 GHZ		2001 pts	1.0 (9112)	06.11.2013



Appendix 4

Diagram 16 a:

Ref Level	148.94 dBm 10 dB = SWT	= RBW	300 kHz Mode	e Auto Sweep			
Frequenc	cy Sweep		-			111713	 1Rm Max
	1.1.1					willi	2.110000000 GH
40 dBm	-	-					
30. dBm	-						
20 d8m-					r		 _
L0 d8m							
and applied							
dâm				-	1		_
10 dBin	-				1		
64 M	941 -13-000 dam-				/		
29 dBm							
90 dem			-	and and			
40 d8m		to an other states of the stat					 _
50 dBm		-					
100					1 I I I		
or any					4		
start 2 100	GH7		3001	ots	20	0.0 kHz/	 Stop 2 111 GH

Date: 6.NOV 2013 13:14:28

Diagram 16 b:

TDF 1 Frequency Sweep	10.2.1 10.0.0		 1Rm Max
		wi1]1	33.94 dBe 2.10898880 GH
40 dBm			
30 dBm			
20 d8m-			
Lő dBm-			
1 dam			
10 dBm			
20 d0m (1) (0) (0) (0)			
30 dam			
-10 dBm			
50 gBm			
60 d0m			

Date: 6.NOV 2013 13:13:44



Appendix 4

Diagram 16 c:

TOF			 			No. of Concession, Name
rrequency sweep			MI[1]			34.50 dBr
10 (10.00)					2.103	98750 GH
10 UDIN		1	 	Supervised in the second		
93 dBm			 			
û dâm-			 			
0 dBm						
dim						
- Carrier - Carr						
10 dBm		_	 			
H113	ODC dBm					
00 dBm						
in an						
40 dBm	-					
at dBm						
50 dBm			 			
1.2						
60 d0m						_
			and the second sec			
tart 2.094 GHz	-1.	2001 pts	1.0 MHz/		Stop	2.104 GH



Appendix 4

Diagram 17 a:



Diagram 17 b:

the second se	Parate and	1 m m m m m m							12
Ref Level 48.94 d	Bm	= RBW 200 k	Hž						
TOF 10	00 # SW1 10:	S VOW 20	Mode A	Auto Sweep					
Frequency Swee	p								 1Rm Max
						-WI1[1]			32:39 dBr
0 dBm								1	515000870 GH
							-		
a dam							-		-
						-			
0 dBm-							-	-	
						-			
û dBm							-		-
							1		
dam									1
O days									
u dom									
D dDm	0.000 000								
in dam							-	-	
IO d8m					-				
ið dðm									-
7									
/Q dBm									1
F 2.1585 GHz	4		2001 pt	S	- 50	0.0 kHz/			Span 5.0 MHz
						100	Measuring	0 0 W	06.11.2013

Date: 6.NOV.2013 13:25:19



Appendix 4

Diagram 17 c:

Frequenc	y Sweep		-		110743		≥ 1Rm Max
					walij		2.16117740 G
HO dBm							
90 dBm	-						
0 dBm	-		-				_
0 dBm-	-			-			
dêm							
10 dBim	H1 -19 000 dam						
20 dBm							
0 dem		-	- 57-				
i0 d8m-						_	
50 abm							
60 dBm							
tart 2 161	GHz	1	2001 p	ts	1.0 MHz/		Stop 2 171 GH



Appendix 4

Diagram 18 a:

 MultiView
 Spectrum

 Ref Level 48:94 dbm
 = RBW
 30 kHz

 + Att
 10 dB
 SWT
 10 s

 VBW
 300 kHz
 Mode Auto Sweep
 TOF 1 Frequency Sweep 18m Max M1[1] 21.50 dBn 2.155000000 Giu 30.45 0.4 10 49 10 d H1 -19.000 dBm ad da eb de àŭ dê 50 00 io a Start 2.154 GH 3001 pts 200.0 kHz Measuring... 13:36:37 A. Date: 6.NOV.2013 13:36:38

Diagram 18 b:

Ref Level 48.9 Att TDF	4 dBm 10 dB ⇒ SWT	= RBW 10 s VBW	200 kHz 2 MHz Mod	e Auto Sweep			
Frequency Sv	/eep					Mi[1]	2 1860 M
HD dBm			-				
90 dBin							
20 dBm-		_		-			
ið dBm-				-	_		
dam				-			
tū dēm			-	-			
eo dom	00.666 mm -		-				
s0 d8m-			1			-	
40 dBm-			-				
50 gBm							
60 dBm	-						
Start 2.156 GH	z		2001	pts	500	.0 kHz/	Stop 2.161 0

ate: 6.NOV 2013 13:35:54



Appendix 4

Diagram 18 c:

TDF	10.00 0.000	1211 1440	10 mile mode	Hate Sheep			
Frequency	Sweep				- 1	47713	 IR/n May. 121 1/6 (10).
						arts1	2.16100250 GH
HO OD()							
dha							
o upin							
o dam-	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			1 1 m			
0 dBm	-		-	+ +			
dâm-							
to dam							
10 0011	H1 -19.000 dBm						
20 dBin	-		-				
	1						
-i0 dem-			-	1			
10.46							
au dem-							
50 dBm	-						
		1	1 fr	11 11			
60 a0m	-			+ +		_	
tart 2.161	GHz	1.	2001	ots	1.0 MH	2/	Stop 2,171 GH



Appendix 5

Conducted spurious emission measurements according to CFR 47 27.53(h)/ IC RSS-139 6.5

Date	Temperature	Humidity
2013-11-04	19 °C ± 3 °C	35 % ± 5 %
2013-11-06	$22 \ ^{\circ}C \pm 3 \ ^{\circ}C$	29 % ± 5 %

Test set-up and procedure

The measurements were made per definition in §27.53(h). The output was connected to a spectrum analyser with a RBW setting of 1 MHz and RMS detector activated. The spectrum analyser was connected to an external 10 MHz reference standard during the measurements.

Before comparing the results to the limit, 3 dB [10 log (2)] should be added according to method E), 3), (iii) "measure and add 10 log(N_{ANT})" of FCC KDB662911 D01 Multiple Transmitter Output v02r01.

Measurement equipment	SP number
R&S FSW 43	902 073
RF attenuator	902 282
HP filter	901 502
Testo 635, temperature and humidity meter	504 203

Measurement uncertainty: 3.7 dB



Appendix 5

Results

MIMO mode, single carrier

Diagram	BW configuration / [MHz]	Symbolic name	Tested Port
1 a+b+c+d	1.4 MHz	В	RF A
2 a+b+c+d	20 MHz	В	RF A
3 a+b+c+d	1.4 MHz	М	RF A
4 a+b+c+d	1.4 MHz	М	RF B
5 a+b+c+d	3 MHz	М	RF A
6 a+b+c+d	5 MHz	М	RF A
7 a+b+c+d	10 MHz	М	RF A
8 a+b+c+d	15 MHz	М	RF A
9 a+b+c+d	20 MHz	М	RF A
10 a+b+c+d	20 MHz	М	RF B
11 a+b+c+d	1.4 MHz	Т	RF A
12 a+b+c+d	20 MHz	Т	RF A

MIMO mode, multi carrier

Diagram	BW configuration	Symbolic name	Tested Port
13 a+b+c+d+e	1.4 MHz	B2im1	RF A
14 a+b+c+d+e	1.4 MHz	B2im2	RF A
15 a+b+c+d	1.4 MHz	M3	RF A
16 a+b+c+d+e	1.4 MHz	T2im1	RF A
17 a+b+c+d+e	1.4 MHz	T2im2	RF A

Note: Measurements were limited to port RF A due to the measurement result in single carrier mode that shows that the ports are electrical identical as declared by the client.



Appendix 5

Remark

The emission at 9 kHz on the plots was not generated by the test object. A complementary measurement with a smaller RBW showed that it was related to the LO feed-through.

The highest fundamental frequency is 2.155 GHz. The measurements were made up to 22 GHz (10x2.155 GHz = 21.55 GHz).

Limits

§27.53(h) and RSS-139 6.5

Outside a licensee's frequency band(s) of operation the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log (P) dB$, resulting in a limit of -13 dBm per 1 MHz RBW.

Complies? Yes	
---------------	--





Appendix 5

Diagram 1 a:

 MultiView
 Spectrum

 Ref Level 50.00 dbm
 = RBW 1 MHz

 Att
 10 dB = SWT 30 s
 VBW 10 MHz
 .44. TOF 1 Frequency Sweep 1Rm Max
 43.61 dBm
 2.1107000 GHz
 31.52 dBm
 2.9986200 GHz M1[1] M2[1] 40 df L -13,000 de 20 de 60 d Start 9.0 kHz 32001 pt 300.0 MHz/ Stop 3.0 GHz 10:12:30 10 Measuring... Date: 6.NOV 2013 10 12:31

Diagram 1 b:

Ref Level 1	3.94 dBm Offset 1.50	B . RBW 1 MHz		
Att	10 dB = SWT 10	Is VBW 10 MHz Mode Auto Swi	eep	
TDF	P			all Day Mar
r rrequency	sweep		Wa[1]	29.05 dBn
10 dBm				5.193R05 GH
3 CBM-				
to dam				
10 0000	H1 15000 650			1
20 d8m-				
		745		
-90 dBm				
-40 dBm				+ +
ed dbm-				
-				
CO OBIN-				
70 dam				
-in diam-				
40 dam				
100 dbm				
Start 3.0 GHz		32001 ots	700.0 MHz/	Stop 10.0 GH

Date: 6.NOV 2013 10:15:30



Appendix 5

Diagram 1 c:

MultiView Spectrum				
Ref Level 13.94 dBm Offset 0.7 Att 5 dB = SWT	10 s VBW 10 MHz Mode Auto	Sweep		
1 Frequency Sweep				=1Rm Max
10 dBm		MI[1]		30.66 dBn
			1	13.827412 GH
0 dam-				_
10 dBm				-
H1 13,000 date				
-20 d8m				
		100		
- 20 dBm				
			and the second sec	1
-40 dBm				-
ed dam-				-
co dem-				
				_
-70 dam-				
20 45-				
and chine				
and dama				
100 dbm			· · · · · · · · · · · · · · · · · · ·	
		1		- Locat 7. 3
Start 10.0 GHz	32001 pts	600.0 MHz/		Stop 16.0 GH
			Measuring 🖬 🖬 🚧	06.11.2013 10:16:44

Date: 6.NOV 2013 10:16:44

Diagram 1 d:

1 Frequency Sweep			= IR/n Max
10 dBm -		MILLI	21.03 dBr 21.090220 GH
0 cem-	 		
10 dBm	 		
H1 13,000 dam			-
20 dBm-			
40 d8m-			
SO dBm-	 		
čo dem-			
70 dBms			
RO dām-			
90 dBm-			
100 dbm			
100 dbm	1	1	

Date: 6.NOV 2013 10:17:44



Appendix 5

Diagram 2 a:

1DF				A			
40 dBm	Sweep				-M1[11 11 12	2.1200000.GH 32.50 dB 2.1200000.GH .31.73 dB 2.9962030 GH
30 dBm-			-			- A	
30 dBm-			-	-			
10 dBm	1						
3 dBm			-				
10 dBm	-11: -13,000 dBm-		-				
20 dBm			-	-			
30. dB//v-	-		-				
10 dBm			-				
-50 dBm		-	-	-		_	
-60 d6m				-			
Start 0 0 kHa			3200	1 ots	300.0 MHz		Stop 3.0 GH

Diagram 2 b:

Ref Level 13	.94 dBm Offset 1.50	dB = RBW 1 MHz		
Att	10 dB = SWT 10	0 s VBW 10 MHz Mode Auto Sweep		
TOF	ween			DB Mar
requentiye			-MI[1]	20.06 dBr
LU BBR				5.193R00 GH
o com				
10 dBm				
	H1 13,000 08/			
20 d8m				
		NEL .		
90 d8m				
-40 dBm				
-				
ed dBm-				
to dam-				
ee genn				
70 dBm-				
-RO dBm-				
-90 dam-				
100 dbm				
Start 3.0 GHz		32001 pts	700.0 MHz/	Stop 10.0 GH
			Measurin	06.11.2013

Date: 6.NOV 2013 10:22:03





Appendix 5

Diagram 2 c:

Frequency Sweep		 IRm Ma.
L9 dBm	Ma[1]	30-52 08
	1	13.827410.G
dam		
i dem-		
11 13,000 651		
20 dBm		
a) dBm	19	
dBm		
50 dBm-		
in due		
CO GBIN		
70 dBm-		
RO dBm-		
AD CHID		
100 dBm		
	The second se	

Diagram 2 d:

Att 5 dB = SWT	10 s VBW 10 MHz Mode Auto Sweep		
1 Frequency Sweep			1R/n May.
10 dBm -		MIX[1]	21.13 dBn 21.956700 GH
0 dam-			
10 dem-			
H1 13,000 d8m			4
-su dem	The second second		
-40 dBm			
rša dBm-			
ićo gemi-			
-70 dim-			
-80 dBm-			
40 dBm			
-100 dbm			
Start 16.0 GHz	32001 pts	600.0 MHz/	Stop 22.0 GH

Date: 6.NOV 2013 10:19:57



Appendix 5

Diagram 3 a:

MultiView	Spectrum	10 L					
Ref Level 50. Att	00 dBm 10 dB = SWT	= RBW 30 s VBW	1 MHz 10 MHz Mod	e Auto Sweep			
Frequency St	weep						1Rm Max.
40 dBm-	-			_	WI[1]	MT	43,54 dBn 2,1325000 GH ,31,92 dBn 2,9825160 GH
30 dBm-			_	-			2.102.5100 011
20 dBm-							
10 dBm							
5 dBm	_			-			
107 dBm-	11 -13 057 49m-						
20 dBm-	The California durit		-				
30. dBm				-			
10 dBm						A	
-50 dBm			-	-			
-60 d8m-				-			
Start 9.0 kHz			3200	1 pts	300.0 MHz/		Stop 3.0 GHz
1.				10.31		Measuring	06.11.2013

Diagram 3 b:

Ref Level 13	10 dB = SWI	dB = RBW 1 MHz	en.		
TDF	1 1 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		-		
1 Frequency 3	Sweep				 IRm Max
10 dBm					5.193R05 GH
3 dam-					
10 dem-					
	H1 15000 as/m				
20 dBm					_
		ATL .	1		
- Wi dBm					
-40 dBm-					
ea abm-			-		
ićo gem-					
70 dBm-					
-RO dAm-					
-90 dām					
- All disc					
100 004			1 I martine		
Start 3.0 GHz	A	32001 pts	700.0 MHz/	A A	Stop 10.0 GHz

Date: 6.NOV 2013 10:44 53



Appendix 5

Diagram 3 c:

RefLevel 13.94 dBm Offset 0 Att 5 dB = SWT TDF	10 s VBW 10 MHz Mode Auto Swe	ьер	
Frequency Sweep			1Rm Ma.
LO dBm		MI[1]	13.827412 G
dam			
d dem-			
in practice of			
30 dem-			
20 aBm		- 01.	
of dealers	the second se		
0 dBm			
		The second secon	
d dbm-			
		1	
to dem-			
d dam-			-
io dBm			
A street			
LA MARTIN			
(ii) disa			
		and the second second	
tart 10.0 GHz	32001 pts	600.0 MHz/	Stop 16.0 G

Diagram 3 d:

TDF	5 dB = SWT 10 s	VBW 10 MHz Mode Auto Sweep	61	
1 Frequency Swe	eep	-		1R/m May.
10 dam-		-	-Ma(1)	21.943850 GH
0 d8m				
10 dem				
**1	13,000 05/			
-20 d8m		-		
	~			
-40 dBm				
SO OBIN-			· · · · · · · · · · · · · · · · · · ·	
éo gem-				
•76 dBm				
RO dBm				
90 dBm				
100 diam				
		Bobb		

Date: 6.NOV 2013 10:46:16



Appendix 5

Diagram 4 a:

TUP					
40 dBm-	/Sweep		 M1[]	ar _{ang}	43,34 dBr 2,1325000 GH 3,1,84 dBr
				1	2,9025162 GH
sā dām-					
0 dBm-	-	 -	 		
0 dBm	-	 	 		
¢8m		-			
Lữ đãm-	101-12402 mm	-			
70 dBm	da d'ann aite				
ad dBm			 		
40 dBm					
50 dBm				-	
0 d8m-		 	 		
		 22001	300.0 MHz/		Stop 3.0 CH

Diagram 4 b:

Att 10	dB = SWT 10 s	VBW 10 MHz Mode	Auto Sweep		
Frequency Swee	p				 18лт Мах
l0 dBm				-MI[1]	-1.3-13410 GH
dam-					
10 dem-					
H1	Là DUO dem				
20 dBm					
20 dBm	Mi				
40 d8m-					
Sa aBm-					
co dem-					
70 dBm					
eo dem-					
90 dām					
100 0000					
100 050					
itart 3.0 GHz	- A	32001 pts	A	700.0 MHz/	Stop 10.0 GH

Date: 6.NOV 2013 12:40:58





Appendix 5

Diagram 4 c:

Ref Level 13.94 dBm Offset 0.7 Att 5 dB = SWT TDF TDF SWT SWT	10 dB = RBW 1 MHz 10 s VBW 10 MHz Mode Auto Sweet	p	
Frequency Sweep			 1R/n Ma;
l0 dBm		MIT[1]	30.49 /8
			1 any return
dam-			
iŭ dem-			
H1 13,009 080			
20 dBm			
		46	
20 dBm			
40 dBm			
S.T. (Buy			
o don-			
dem-			
70 dBm			
RO dBm-			
90 dBm-			-
100 dbm			
tart 10.0 GHz	32001 pts	600.0 MHz/	Stop 16.0 G
			06.11.2013

Diagram 4 d:

Ref Level 13 Att	.94 dBm Offset 0.70 d 5 dB = SWT 10	B = RBW I MHz s VBW 10 MHz Mode Auto Sw	vecp	
I Frequency S	weep			 1Rm Max.
10 dam			MIX[1]	21,77,08n 21,980410 GH
0 08m				
ti dan				
10 000	H1 13,000 d8m			
20 d8m				
-40 dBm				
ea abm-				
éo dem-				
-70 dBm-				
ao dam-				
-90 dBm-				
top day				
200 00m		22001 040	500 0 MUE (Char 00.0 (1)
start 10.0 GH	2	32001 pts	000.0 MH2/	300 22.0 GH

Date: 6.NOV 2013 12:34:53





Appendix 5

Diagram 5 a:

 MultiView
 Spectrum

 Ref Level 50.00 dbm
 = RBW 1 MHz

 + Att
 10 dB + SWT 30 s
 VBW 10 MHz
 .44 TOF 1 Frequency Sweep 1Rm Max 40.68 dBm 2.1325000 GHz .31.97 dBm 2.9825160 GHz M1[1] M2[1] an à LL -13,000 dB an an 10 dB a de 60 d Start 9.0 kHz 32001 pt 300.0 MHz/ Stop 3.0 GHz 6.11.2013 10:51:02 Measuring... 10 Date: 6.NOV 2013 10:51/02

Diagram 5 b:

Ref Level 13 Att	10 dB = SWT 1	dB = RBW 1 MHz 0 s VBW 10 MHz Mode Auto 3	Sweep		
TOF	Sween				Dia Mau
10 dom	AMAGE D		Mill		711.65 dBn
LO LIBIN	1			1 a 1	5.193RH0 GH
0 68m				_	
10 dem-	H1 13,000 d8m				
ciū dem-	a lead to be				
		NEL.			
-30 d8m		- Martin and a state of the sta			
HO OBM					
ea dam-					
-co gem					
-76 dBm-					
					_
-RO dBm-					
-90 d8m					
-100 dBm					
Start 3.0 GHz	-	32001 pts	700.0 MHz/		Stop 10.0 GH

Date: 6.NOV 2013 10:49:07





Appendix 5

Diagram 5 c:

Ref Level 13.94 dBm Offset 0. Att 5 dB = SWT TDF TDF SWT	70 dB = RBW 1 MHz 10 s VBW 10 MHz Mode Auto	Sweep	
Frequency Sweep			= 1R/n Ma
0 dBm		M1[1]	30.50 dB
			13.027410.0
dam			
ŭ dem-			
H1 13,000 0000			
20 dBm-			
		10	
in ab Ci			
and the second sec			
40 dBm			
ST THUS			
co dem-			
/d dBm-			
RD dBm			
Ro dRm-			
1.1			
LOG dBm			
tart 10.0 GHz	32001 pts	600.0 MHz/	Stop 16.0 G
		Measuring	06.11.2013

Diagram 5 d:

		CONT 1141		
Att	5 dB = SWT 10 s	VBW 10 MHz Mode Auto Sweep		
I Frequency	Sweep			PIRm Max
10 dBm			M1[1]	21.91 dBn 21.943850 GH
0 dBm-				
10 dBm				
	H1 13,000 05/-	· · · · · · · · · · · · · · · · · · ·		
-20 d8m				
-40 dBm		_		
rèa dam-				
-čo dem				
70 dBm				
-74 GRINS				
-R0 dBm				
-90 dBm		-		
100 dbm				
Start 16.0 GH	z	32001 pts	600.0 MHz/	Stop 22.0 GH

Date: 6.NOV 2013 10:47:41



Appendix 5

Diagram 6 a:

 MultiView
 Spectrum

 Ref Level 50.00 dbm
 = RBW 1 MHz

 Att
 10 dB = SWT 30 s
 VBW 10 MHz
 .44 TOF 1 Frequency Sweep 1Rm Max 38,42 dBm 2,1325000 GHz 32,04 dBm 2,9825160 GHz M1[1] M2[1] an à 3ă d 10.0 LL -13,000 dB as no t0 dB a de 60 d Start 9.0 kHz 32001 pts 300.0 MHz/ Stop 3.0 GHz 6.11.2013 10:52:34 Measuring... 10 10 le. Date: 6.NOV 2013 10:52:34

Diagram 6 b:

Att	10 dB = SWT 10	Dis VBW 10 MHz Mode Auto Sw	eep	
TDF 1 Frequency	Sweep			TR/n Max
10 dBm			M1[1]	28.93 dBn 5.193880 GH
0 dBm	1 m			
10.0				
10 dBm	H1 13,000 dBm			
20 dBm				
- 70 dBm		Mi l		
-AD dBm-	200			
red dBm-				
ćo dbm-				
-70 dBm-				
-RO dBm-				
-90 d8m-				
-100 dbm				
Charles D D Cl. 14		00001		

Date: 6.NOV 2013 10:55:56



Appendix 5

Diagram 6 c:

			18m Mai
ân			
		W1[1]	13.827410 G
			1
Di-			
lem-			
112 123,000 001			
18m			
		144	
lum.			
19 m			
Bin			
Bm-			
IAm-			
ikm			
Bm			
dbm			
rt 10.0 GHz	32001 pts	600.0 MHz/	Stop 16.0 G

Diagram 6 d:

TDF	5 dB = SWT 10 s	VBW 10 MHz Mode Auto Sweep		
1 Frequency	/ Sweep			 1Rm Max.
10 dBm			Malil	21,983030 GH
0 6800				
10 dem-	41 13 000 cm			
20 dBm	The Astronome			
-to delle		The Designer of the second		
-MI dBm-				
ea dam-				
co dem-				
-76 dBm-				
-RO dAm-				
-90 dBm				
-100 dbm				
		00001		

Date: 6.NOV 2013 10:59:10


Appendix 5

Diagram 7 a:

TDF	10 dB = SW1	30 s VBW	10 MHz Mode	Auto Sweep				
40 dBm	Sweep					M1[1]	543 1	 18m Max 35.54 d8n 2.1325000 GH 31.04 d8n 2.9025160 GH
30 dBm-		-	-	-				
20 dBm-			-	-				
10 dBm		-	-	-				
5 dBm			-	-				
-10° dBm	-12.002 dBm-							
20 dBm					_			
30 dBm							A	
40 dBm				-			1-	
50 dBm		-		-	_			
60 d8m-			-	-				
Start 9.0 kHz	-		32001	pts	30	0.0 MHz/		Stop 3.0 GH

Diagram 7 b:

D-41-mal 12	Of the Other Line	10 - 0.010 1.444			
Att	10 dB = SWT 16	Dis VBW 10 MHz Mode Auto	o Sweep		
Intrequency S	Sweep				SIRm May
10 d8m				MI[1]	20.60 dBe
LO MENT				1	5.193RH0 GH
0 dBm					
10 dBm					
	H1 13,000 dam				
20 dBm					
		NEL.			
-20 dBm					
all dem	2				
HO GBIN					
Sa dBm					
co gem-					
-70 dBm-					
5. (ar-					
-RO dBm-					
mab 09					
-100 dbm					
		Popper L		· · · · · · · · · · · · · · · · · · ·	
start 3.0 GHz		32001 pts	700.01	MHz/	Stop 10.0 GH

Date: 6.NOV 2013 11:01:54





Appendix 5

Diagram 7 c:

Ref Level 13.94 dBm Att 5 dB	Offset 0.70 dB = RI = SWT 10 s VI	BW 1 MHz 3W 10 MHz Mode Auto S	weep	
TDF	130 <u>. at</u> 1	TO TO . TA 312		
Frequency Sweep			- Adv (4.3	 1R/n Max
0 dBm			witti	13.827410.G
68m				
ill dem-	in role			
10 170	1.45			
20 dBm				
			144	 -
aŭ d8m		1		
in dam				
+O OBIN				
SCI (Ball				
				 _
o dem-				
/d diama-		-		
RO dAm				
PO dBm-				
100 dbm				
tart 10.0 GHz		32001 pts	600.0 MHz/	 Stop 16.0 GH
Sur C. ANTY SILK		water a pro	000.0 101122	06.11.2013

Diagram 7 d:

Ref Level 1	3.94 dBm Offset 0.70 dB	BBW 1 MHz	~	
TDF	5 db = 5W1 10 5	VBW 10 MHZ Mode Auto Swee	P	
1 Frequency	Sweep			 1R/m May.
10 dBm		_	M1[1]	21,983030 GH
0 dBm				
ia dem-				
-20 dBm	H1 13,000 dBM			
	100 million			
-40 dBm				
réa dem-				
éo dem		_		
-70 dAm				
-RO dAm				
-90 d8m				
-100 dbm				
Start 16.0 G	Hz	32001 pts	600.0 MHz/	Stop 22.0 GH

Date: 6.NOV 2013 11:00:32



Appendix 5

Diagram 8 a:

 MultiView
 Spectrum

 Ref Level 50.00 dbm
 = RBW
 1 MHz

 Att
 10 dB
 SWT 30 s
 VBW 10 MHz
 Mode Auto Sweep
 TOF 1 Frequency Sweep M1[1] -M2[1] L -13,000 dt an ar Start 9.0 kHz 32001 pt 300.0 MHz/ Stop 3.0 GHz 6.11.2013 12:13:47 Measuring... 101 1 Date: 6.NOV 2013 12:13:46

Diagram 8 b:

Ref Level 13	.94 dBm Offset 1.50	dB = RBW 1 MHz		
Att	10 dB = SWT 10	is VBW 10 MHz Mode Auto Swe	ep	
1 Frequency S	weep			■1Rm Max.
10 d8m			Ma[1]	29.21 dBn 5.193880 GH
0 dam				
10 dem				
-20 dBm	H1 (13,000 Dam			
		112		
-30 d8m				
-40 d8m				
red dem-				
éo dem-				
•70 dBm				
-RO dRm				
-90 d8m-				
-100 dbm				
Start 3.0 GHz	1	32001 pts	700.0 MHz/	Stop 10.0 GH

Date: 6.NOV 2013 12:15:22



Appendix 5

Diagram 8 c:

Frequency Sweep			 1Rm May
l0 dBm		M1[1]	30.20 98
			13.027410.64
dem-			
0 dBm-++1 -13 000 dam-			
n da in			
u dem			
alam.		PI	
			The second se
0 dBm-			
d dbm			
a dum			
or game			
0 dBm-			
-			
i0 dBm			
5 Z			
0 dBm-			
in dim			
		1	
tart 10.0 GHz	32001 pts	600.0 MHz/	Stop 16.0 GH

Diagram 8 d:

Att	5 dB = SWT 10	s VBW 10 MHz Mode Auto Sweep		
1 Frequency \$	Sweep			 1R/m May.
10 dBm			M1[1]	21.967200 Cit
0 d8m				
10 dBm	H1 13000 d8m			
20 dBm	a freque i			
an delle		1 3 4 4 5 1 1 1 1		
- com				
-40 dBm				
red dBm-				
Lo dan				
ico geni-				
-70 dBm-				-
-RD dBm-				
			1	
-90 dBm-				
1.0				
100 dB%				
Start 16.0 GH	z	32001 ots	600.0 MHz/	Stop 22.0 GH

Date: 6.NOV 2013 12:16:55



Appendix 5

Diagram 9 a:

 MultiView
 Spectrum

 Ref Level 50.00 dbm
 = RBW 1 MHz

 Att
 10 dB = SWT 30 s
 VBW 10 MHz
 .44 TOF 1 Frequency Sweep IRm Max M1[1] 32.52 dBm 2.1325000 GHz 31.84 dBm 2.9025160 GHz -M2[1] an à L -13,000 dt 20 de Start 9.0 kHz 32001 pts 300.0 MHz/ Stop 3.0 GHz 6.11.2013 12:22:28 Measuring... 10 10 Date: 6.NOV 2013 12:22:28

Diagram 9 b:

Ref Level 13. Att	94 dBm Offset 1.50 10 dB = SWT 10	dB = RBW I MHz I s VBW 10 MHz Mode Auto Sw	eep	
I Frequency S	weep			■1Rm Max.
10 d8m -			-Mit[1]	78,99 dBn 5,193880 GH
0 dBm-				
10 dBm-	H1 13,000 d8/			
-20 d8m				
-70 dBm		ML		
-40 dBm-				
ord diama				
ćo dBm-				
-70 dBm-				
-RO dAm-				
-90 dAm-				
100 dbm				
Start 2 D CHa		22001 otc	700.0 MHz (Char 10 0 CH

Date: 6.NOV 2013 12:19:56





Appendix 5

Diagram 9 c:

TOF			
Frequency Sweep		-Ma[1]	30.51 dF
U dam-			13.827410.G
dam-			
d dBm-			
20 dem			
a dam		<u>M1</u>	
0 dBm-			
d dbm			
50 dBm			
O dam-			
i0 dBm			
iù dBm-			
(i) (lim			
LOG CIENT			
tart 10.0 GHz	32001 pts	600.0 MHz/	Stop 16.0 G

Diagram 9 d:

Att	5 dB = SWT	10 s VBW 10 MH	z Mode Auto Sweep			
Frequency	Sweep					 18/m Max.
10 dBm				M1[1]		21.11 dBn 21.997530 GH
		-			1 1	
) ¢8m-						
10 dem	1					
	H1 13,000 dam	-				
20 dBm	-					-
			_			
ing an						
-40 d8m						
ea abiii-						
éo dem-						
70 dBm						
an dam						
ab dain						
-90 dBm						
100 dbm						
Start 16.0 GH	z	32	001 pts	600.0 MHz/		Stop 22.0 GH:

Date: 6.NOV 2013 12:18:07



Appendix 5

Diagram 10 a:

 MultiView
 Spectrum

 Ref Level 50.00 dbm
 = RBW 1 MHz

 Att
 10 dB = SWT 30 s
 VBW 10 MHz
 TOF 1 Frequency Sweep 1Rm Max 32.39 dBm 2.1325000 GHz 31.79 dBm 2.9025160 GHz M1[1] -M2[1] an à A tit d L -13,000 dB an an 40 dB Start 9.0 kHz 32001 pts 300.0 MHz/ Stop 3.0 GHz 6.11.2013 12:26:22 Measuring... 10 1 Date: 6.NOV 2013 12:26:22

Diagram 10 b:

Ref Level 13	194 dBm Offset 1.50	dB = RBW 1 MHz		
Att	10 dB = SWT 10	Dis VBW 10 MHz Mode Auto Sweep		
TOF	Sween			 TEPH May
in the equention			-MIL[1]	-2B.69 0Br
LU BBRH				5.19300 GH
n citin				
o com				
10 dem-				
	H1 15000 050			
20 d8m				
		111		
-90 dBm				
All dBm				
of the count				
ed dem-				
éo dem-				
-70 dēm-				
an dam-				
-90 dām				
100 dim				
Start 3.0 GHz		32001 pts	700.0 MHz/	Stop 10.0 GH
				06.11.2013

Date: 6.NOV 2013 12:31:33



Appendix 5

Diagram 10 c:

Frequency Sweep		18m Mai
0 dBm	M1[1]	30.25 dB
	 1	13.827410 G
dam	 	
0 dem-		
12 12000 000		
0 dem		
0 dBm	MI	
0 dBm		
d dBm-		
o dam		
e guir		
0 dBm-		
0 dBm		
o dam		
tóù dism	 	
Contraction of the second se	The second se	

Diagram 10 d:

Det Level 13	94 dBm Offset 0 70 dE	BRW I MHS		
Att	5 dB = SWT 10 :	VBW 10 MHz Mode Auto Sweep		
1 Frequency St	weep			= 18m Max
10 dBm-			-M1[1]	21,01 dBn 21,980410 GH
0 dBm				
1				
10 dem-	H1 13,000 usm	-		
-20 dBm				
-				- Martin - M
-40 dBm				
red dam-				
éo dem-				
+70 dam-				
ait dam				
-90 dBm-				
100 dbm				
Start 16.0 GHz		32001 pts	600.0 MHz/	Stop 22.0 GH

Date: 6.NOV 2013 12:33:02



Appendix 5

Diagram 11 a:

Ref Level 50.	Spectrum	= RBV	W 1 MHz					
Att TDF	10 dB = SW1	30 s VBV	V 10 MHz Mod	de Auto Sweep				
Frequency St	weep							1R/m Max
40 dBm							I.	2.1543000 GH 3.1.87 dBr
			_				1 1	2.9025160 GH
a dBm-		-	-					
20 dBm-			_					
LQ dBm		-						
5 cBm			_					
-107 dBm-	10 055 aller							
20 dBm	alt -Talone data		_					
30. dBm			_	_				
		-		-			hat	
40 dBm								
50 dBm			-	-				
60 d8m-			_					
Start 0.0 kHz	1		3200	llots	300	0 MHz/		Stop 2.0 CH
nart 270 KHz			3200	/1 pta	.300	W MINZ/		06.11.2013

Diagram 11 b:

Ref Level 13	.94 dBm Offset 1.50	dB = RBW I MHz		
Att	10 dB = SWT 10	is VBW 10 MHz Mode Auto Sweep		
1 Frequency S	weep			⇒1Rm Max
10 dBm			M1[1]	29.13 dBr 5.193880 GH
0 68m				
10 dem-				
-20 d8m	H1 13,000 dBm			
		Ms		
-yo dam				
-40 d8m				
rêd dêm-				
éo gem				
-70 dBm-				
-RO dAm				
-eo dam-				
-100 dBm				
Start 3.0 GHz	1	32001 pts	700.0 MHz/	Stop 10.0 GH

Date: 6.NOV 2013 10:35:33



Appendix 5

Diagram 11 c:

Frequency Sweep			a IR/m Ma)
0 dBm		wix[1]	30.56 dB 13.827410 G
dam			
0 dem-			
20 dBm			
jû dêm			
0 dBm			
a dbm-			
io gem-			
0 dBm-			
0 dBm-			
0 dBm-			
cóu dam			
10.0 011	DODD L	500 0 H H - /	

Diagram 11 d:

TOF	C. (019-14) 24 202		. 16
Thequency Sweep		-MIT[1]	21.13 dBr
LU dam-		1	21.973840.GH
) dam-			
10 dem			
H1 13,000 date			
20 dBm-			
27.0000-00-00-00-00-00-00-00-00-00-00-00-0			
40 dBm			
So dBm-			
ćo dem-			
70 dām-			_
R0 dBm-			
90 dBm-			
100 dbm			
Contraction in the second seco		1	

Date: 6.NOV 2013 10:34:11



Appendix 5

Diagram 12 a:

	Jopeenan	-					
Ref Level 50.0 Att TDF	0 d8m 10 d8 = SWT	30 s VBV	V 10 MHz Mod	e Auto Sweep			
Frequency Sw	eep						= 1R/n Max
40 dBm-					M1[]	l Maria	32,54 dBr 2,1450000 GH 31,69 dBr 2,9962030 GH
30 dBm-			_	-		1	
20 dBm-			_				
tā dām			-	-			
5 dBm	_		-	-			
107 dBm	113.050 dBm					_	
20 dBm	-		-	-			
30 dBm				-		1	
40 dBm							
50 dBm							
60 d8m			-				
CF 1.5000045 G	Hz	_	3200	1 pts	300.0 MHz/		Span 2.999991 GH
	Y L					Measuring	06.11.2013

Diagram 12 b:

DetLevel 13	94 dBm Offset 1 50	IR - DRW I MHS		
Att	10 dB = SWT 10	s VBW 10 MHz Mode Auto Sweep	6	
TDF		E OUTO TO THE PARTY		
Frequency S	weep		100 F 1 3	 1Rm Max
10 dBm			witti	5.193RH5 G
				1
dem-				
10 dBm				
	H1 (13)000 d8/m			
20 dem				
		515		
30 dBm				
All dBm		A A A A A A A A A A A A A A A A A A A		
10 0000				
Sa dam-				
1.2.2.2			1	
éo gem-				
No. Line				
70 dime				
-RO dAm				
eo dam-				
1.1.1				
100 dbm				1
Start 3.0 GHz		32001 pts	700.0 MHz/	Stop 10.0 GH

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Appendix 5

Diagram 12 c:

Ref Level 13.94 dBm Offset Att 5 dB = SWT TDF	0.70 dB = RBW 1 MHz 10 s VBW 10 MHz Mode Auto S	Sweep	
Frequency Sweep	1 7		 TRm Ma)
L0 dBm		with	30.46 dB 13.827412 G
dBm-			
0 dem-			
20 dem			
20 49 5		Hit	
a) dem			
40 dBm			
ea abm-			
60 dem-			
/0 dBms			
1			
RO dame			
20 d8m			
N MAIN			
100 dim			
		and the second second	
tart 10.0 GHz	32001 pts	600.0 MHz/	Stop 16.0 G

Diagram 12 d:

TOF	VT 10 s VBW 10 MHz	Mode Auto Sweep		
1 Frequency Sweep				 1Rm Max
10 dBm			witti	21,987340 GH
0 dam-				
10 dBm				
H1 13,000 d8m		-		
-20 dBm-		_		
	and the second			
-Poten				
-40 d8m-				
esa dem-				
ico gem-		_		
+70 dBm				
and dam-				
-90 d8m-				
100 dBm				
and the second se				

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Appendix 5

Diagram 13 a:

Ref Level 5 Att TDF	10 dB 🖬 SW1	= RBW	1 MHz 10 MHz Mod	le Auto Sweep					
1 Frequency	Sweep								 TR/m Max
40 dEm-	1			-		Ma(1)	ME I		-40,72 dBm 2.1 (30000 Gio -40,82 dBm
30 dBm-			-				1	1	2.1172000 GHz
20 dBm	-	-	-						
10 dBm									
0.08m									
-10 d8m-	111 -13 000 dow		-	-					
-20 dBm			-	-				_	
-SO dem-			-				K		
d dbm			-						
r50 dBm-			-				-		
-60 d8m			-	-	-		-		
Start 9.0 kH	2		3200	1 pts		0.0 MHz/	-	4	Stop 3.0 GHz
2 Marker Ta	ble	and the			1			in and a	and the second
M1 M2 M3	1 1 1 1	2.113 2.1172 2.991797	GHZ GHZ GHZ	40.72 dBm 40.82 dBm -31.57 dBm		cuon	·	Punction	Result
							Measuring		06.11.2013

Diagram 13 b:



Date: 6.NOV 2013 14:29:25



Appendix 5

Diagram 13 c:

10 dBm	Frequency S	weep			≃1Rm Max
0 dbm. 11 UV0 0 dbm.	lū dām			MI[1]	29,14 //Bi 5,1930/00 Gi
dbm II 11009dm III 11009dm III II 1009dm III III III III III III III III III II					1
10 dem 11 11000 dem 100 em 100 em<	dBm-				
	û dêm-				
10 den 1 <td></td> <td>H1 13,000 080</td> <td></td> <td></td> <td></td>		H1 13,000 080			
	dem				
00 d8m			742		
A0 GBm A0 GBm <td>all dBm</td> <td></td> <td></td> <td></td> <td></td>	all dBm				
	dBm-				
NO 080- Image: Control of the contro	in dens				
50 Jem Image: Control of the control	ea dBm-				
00 dBm-					
	50 dBm-				
	d dam-			-	
20 dBm	RO dBm				
ioù devr	an dem-				
	too daw				

Diagram 13 d:

Att TDF	5 dB = SWT	10 s VB	W 10 MHz Me	de Auto Sweep			
Frequency:	Sweep			-			 IRm Max.
10 dBm			_			M1[1]	13.827410.GH
) diam-						_	
in days		_			_		
10 0000	H1 13,000 d8m						
20 dBm	-						
10 dBm		_			-	-44	
an dBm							
ea dem-			-				
éo dem-							
70 dam-							
an dam			_				
and Linne							
90 dBm-		-					
100 dBm							
Start 10.0 GH	17		32001 p	s	60	0.0 MHz/	 Stop 16.0 GH

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Appendix 5

Diagram 13 e:

Att 5 dB = SWT	10 s VBW 10 MHz Mode Auto Sweep	61	
Frequency Sweep			 IRm Max
10 dBm -		MILI	21,992030 GH
0 dam			
10 dBm			
H1 13,000 dam			
20 dêm			
40 dBm-			
Sa abu			
čo gem			
70 dam-			-
R0 dBm			
90 dBm			
100 dBm			
tart 16.0 GHz	32001 pts	600.0 MHz/	Stop 22.0 GH

Date: 6.NOV 2013 14:19:22



Appendix 5

Diagram 14 a:

 MultiView
 Spectrum

 Ref Level 50.00 dBm
 = RBW
 1 MHz

 + Att
 10 dB + SWT 30 s
 VBW 10 MHz
 Mode Auto Sweep
 100 1Rm May 40.75 dBm
 2.1250000 GHz 40.55 dbm
 2.1412000 GHz 1 Frequency Sweep M1[1] M2[1] 30 AL 20 dB LO dBr to da 1 -13 000 45 20 dBr Start 9.0 kHz 2 Marker Table Type | Ref | Trc. | 32001 pts 300.0 MHz/ Stop 3.0 GHz Stimulus 2.125 GHz 2.1412 GHz 2.993016 GHz Response 40.75 dBm 40.55 dBm -31.76 dBm Function Result 4 4 Function 1 M2 M3 06.11/2013 15:05:20 Measuring... Date 6 NOV 2013 15 05:19

Diagram 14 b:



Date: 6.NOV 2013 15:08:56



Appendix 5

Diagram 14 c:

Frequency Sweep			 18m Mai
9 dBm		-M1[1]	201.86 (B
		1	5,191040,0
d8m-			
10 dBm-			
10 dBm		· · · · · · · · · · · · · · · · · · ·	
an deale	141		
20 dBm			
40 dBm			
AT THE		1	
Co donne			
io gem-			
/d dBm-			
in dime			
a dan			
million and the second se			
100 dem			
tart 2 0 CHa	32001 ots	700.0 MHz/	Stop 10.0 GH

Diagram 14 d:

Ref Level 13.94 dBm Offset Att 5 dB = SWT	0.70 dB = RBW 1 M	Hz Hz Mode Auto Sweep			
TDF	AC SOLO	A THE STREET			
Frequency Sweep			-hasts		 IRm Max
10 dBm			- oral 1		13,805100 GH
) dam-					
1					
10 dBm					
a state of product					
20 d8m					
271 inD m			00	-	
au dam.					
40 dBm					
Sa dBm-					
éo dem-					
70 dBm-					
ao dam-					
				-	
90 dBm-					
- A					
100 dBm					
Start 10.0 GHz	3	2001 pts	600.0 MHz/		Stop 16.0 GH
					06.11.2013

Date: 6.NOV 2013 15:12:45





Appendix 5

Diagram 14 e:

Ref Level 13.94 dBm Offset 0.70 d Att 5 dB = SWT 10	B = RBW I MHz s VBW 10 MHz Mode Auto Sweep		
Frequency Sween			= IBm May
		·Ma[1]	21.07 dB
U dam			21,933160 G
cem-			
and the second s			
H1 13000 dam			
au dem-			
- Contraction of the Contraction			-
40 dBm-			
ed dBm-			
o gen-			
O DAME			
to dam-			
10 47			
NA MARTIN			
dia diamana dia dia dia dia dia dia dia dia dia di			
LOG GBM			
tart 16.0 GHz	32001 pts	600.0 MHz/	Stop 22.0 GH
		Mosturing	06.11.2013

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Appendix 5

Diagram 15 a:

 MultiView
 Spectrum

 Ref Level 50.00 dBm
 = RBW
 1 MHz

 Att
 10 dB = SWT 30 g
 VBW 10 MHz
 Mode Auto Sweep
 1Pm Max 40.61 (Bm 2.1518000 GHz 00.69 dbm 2.1352000 GHz 1 Frequency Sweep M1[1] M2[1] 30 AL 20 dB LO dBr to da 1 -11 000 40 20 dBr Start 9.0 kHz 2 Marker Table Type | Ref | Trc. | M1 1 32001 pts 300.0 MHz/ Stop 3.0 GHz Stimulus 2.1318 GHz 2.1332 GHz 2.993016 GHz Response 40.61 dBm 40.69 dBm -31.55 dBm Function Result 1 4 Eunction 1 M2 M3 06.11.2013 14:33:41 Measuring... Date 6 NOV 2013 14:33:41

Diagram 15 b:



Date: 6.NOV 2013 14:07:40



Appendix 5

Diagram 15 c:

Frequency Sweep			🗢 IRm Maj
0 d8m		-Ma[1]	5,193R05 G
dam-			
û dêm-			
H1 13000 Gale			
o delle	NL.		
0 dBm			
0 dBm			
a agui			
o dem-			
o damo-			
0 dBm			
0 dBm			
00 dim			
0.0.01	22201	700.0 MHz (Stop 10.0 Ch

Diagram 15 d:

TOF	10 10 10 10 10	INTE MODE ADLO SWEEP		
1 Frequency Sweep			- 107 [1]	 IRm May
10 dBm				13.827412 G
0 dBm-				
10 dem-				
H1 13,000 date				
-20 d8m				
10 dBm			PI	
40 d8m				
Sa dBm-				
éo jem	-			
70 dBm-				
RO dAm-				
90 dBm-				
100 0000				
200 000			The second second	

Date: 6.NOV 2013 14:12:08





Appendix 5

Diagram 15 e:

1[1] 21.992020 GH
1[1] 20,92 den 21,992000 GH
z/ Stop 22.0 GHz

Date: 6.NOV 2013 14:12:56



Appendix 5

Diagram 16 a:

 MultiView
 Spectrum

 Ref Level 50.00 dbm
 = RBW
 1 MHz

 Att
 10 dB
 SWT 30 s
 VBW 10 MHz
 Mode Auto Sweep
 10. TDF 1 Frequency Sweep IRm Max -40.84 dBm 2.1479000 CHz 00.50 dBm 2.1520000 CHr M1[1] M2[1] 20 48 20 dB LO dBr to de 1 -11 000 000 20 dBr Start 9.0 kHz 2 Marker Table Type | Ref | Trc | M1 1 32001 pts 300.0 MHz/ Stop 3.0 GHz Stimulus 2.1478 GHz 2.152 GHz 2.989641 GHz Response 40.84 dBm 40.50 dBm -31.63 dBm Eunction Function Result 4 4 14 -3 M2 M3 06.11.2013 15:29:40 Measuring... Date: 6.NOV 2013 15:29:40

Diagram 16 b:

MultiView	Spectrum	6 . C			
Ref Level 4	8.94 dBm	= RBW 100	Hz		
Att	10 dB . SWT	10's VBW 1W	Hz Mode Auto Sweep		
1 Frequency	Sweep				●1Rm Max
1.				MITIL	4.4.93 dBu
40 dBm-				242(1)	2.1038000 GH
20 dbm				A A	2.1478000 GH
20 4800					
20 d8m-					
10.00					
10 450-					
D dBm					
til daus					
10 000					
-20 dBm	111 -23.000 time				
20 dBur	The strate service				
					X
-40 dBm-		101		~~ ~	
20 dBm					
-60 dBm-					M
	-	Y			
CF 2,1325 GH	12		6001 pts	10.0 MHz/	Span 100.0 MH
Z Marker Tal	f Trc	Stimulus	Response	Function	Function Result
MI	1	2.1088 GHz	-44.93 dBm	, arradiant	1 Great Trader
M2	1	2.1478 GHz	31.07 dBm		
M4	1	2.15645 GHZ	-34.61 dBm		
				21	nasuring 06.11.2013

Date: 6.NOV 2013 15:31:08



Appendix 5

Diagram 16 c:

TOF	10 05 # SW1	TO S VBW TO MARE A	Mode Auto Sweep			
Frequency 3	Sweep			-MITELL		201-01 / R
lo dam					5	5.1938A0 G
dBm-						
u dem-	H1 13000 Gall					
iū dem						
		710				
il dBm						
0 dBm		100	-			
d dBm-						
o dem-			-			
0 dem						
0 dêm-						
0 dam-						
ioù den						
tart 2 0 CHa		22001	ots	700.0 MHz/		Stop 10.0 GH

Diagram 16 d:

Att	5 dB = SWT	10 s VI	W 1 MHz W 10 MHz Mo	de Auto Sweep				
Frequency Sy	weep							 18/m May
10 dBm						M1[1]		30.81 dBr
i abii							1	13.827410 GH
0 dBm	_	_				_		
1					_		_	
10 dBm	41 . 13 000 care							-
	a maden.							
-20 dBm-		-						
20 dBm						- #11		
10 Gent								
40 dBm-								
Sa dBm-								
co dem-								 -
							_	
70 dam-								1
an dam								
au dant								
90 dBm								 -
100 dim								
tart 10 0 CH-			32001 of		600	0 MHz/		 Stop 16 0 CH
Mart 10.0 GH2			32001 pt	3	000.	W 19112/		 atop 10.0 GH.

Date: 6.NOV 2013 15:19:14





Appendix 5

Diagram 16 e:

Ref Level 13.94 dBm Offset 0.7 Att 5 dB = SWT TDF	10 dB = RBW 11 MHz 10 s VBW 10 MHz Mode Auto Swe	ер	
Frequency Sweep			 1Rm May
10 dBm		MILI	21,933160 GH
			1
) dam-			
the second se			
41 13,000 d8m			
20 dBm-			
40 dBm-			
dia dan			
Ed dBrie			
60 dem-			
70 dBm-			
ao dam-			
an dam			
100 dBm			
tart 16.0 CHr	22001 otc	600 0 MHz (Stop 22.0 CH
Mart 1040 GHZ	32001 pts	000.0 MINZ/	500 22.0 GH

e 6.NOV 2013 15:18:20



Appendix 5

Diagram 17 a:

 MultiView
 Spectrum

 Ref Level 50.00 dBm
 = RBW
 1 MHz

 + Att
 10 dB + SWT 30 s
 VBW 10 MHz
 Mode Auto Sweep
 10. 16/11 Max
 31,74 dBm
 2.9927350 GHz
 40.401 dBm
 2.1228000 GHz 1 Frequency Sweep M3[1] M1[1] 30 AL 20 dB LO dBr to da 1 -11 000 40 20 dBr Start 9.0 kHz 2 Marker Table Type | Ref | Trc. | 32001 pts 300.0 MHz/ Stop 3.0 GHz Stimulus 2.1238 GHz 2.14 GHz 2.992735 GHz Response 40.81 dBm 40.68 dBm -31.74 dBm Function Result 4 4 Eunction 1 M2 M3 15:38:34 Measuring... Date: 6.NOV 2013 15:38:35

Diagram 17 b:



Date: 6.NOV.2013 15:36/53



Appendix 5

Diagram 17 c:

Frequency Sweep		444743	⇒1Rm Ma)
0 dBm		MALIT	20.93 dB 5.193805 G
8m-			
H1 13,000 dBm			
Q dBm			
	NEL		
0 dBm			
0 dBm			
in the		- 1/1	
d dbiin			
o dem-			
70 dBm			
0 dBm			
0 dam			
a soli			
00 dBm			
Carte Contra da Carta		A REPORT OF A R	

Diagram 17 d:

Att 5 dB	SWT 10 S VB	W 10 MHz Mode Auto	Sweep		
1 Frequency Sweep					 1Rm Max.
10 dBm				M1[1]	30.301 dBn 13.827412 GH
0 c8m					
10 dBm-					
-20 dBm	IQO Game				
				Mt	
- 20 dam					
-40 dBm	-				
rsa abm-					
čo gem-					
-70 dBm-					
-RO dRm-					
-90 dBm					
100 dbm					
Chamber 10 0 Cities		22001.017	60	0.0 MHz/	Char 16 0 Cit

Date: 6.NOV 2013 15:40:57





Appendix 5

Diagram 17 e:

TOF Frequency Sween	C. CARLES DE D'AND		18m Ma
0 d8n		-Ma[1]	21,13.08
			21,088840.64
dam-			
to dem			
H1 15000 GBM			
20 dem			
a dui			
40 dBm-			
and the			
o dom-			
50 gem-			
10 dBm			
L GANNE			
i0 dAm			
o dBm			
tóù dim			
tart 16.0 GHz	32001 ots	500.0 MHz/	Stop 22.0 Gb



Appendix 6

External photos

Front side





Appendix 6

Left side







Appendix 6

Top side



Bottom side

