G.S.D. Srl PISA - Italy	***Test Report n. FCC-16547***	Rev. 00
Manufacturer	**CAEN RFID s.r.l.**	
Address	Via Vetraia, 11 55049 Viareggio (LU) Italy	
Test Family Name	**R4301P ION (UHF)**	
Testing Laboratory Name	**G.S.D. S.r.l.**	
Address	Via Marmiceto, 8 56121 Ospedaletto Pisa (PI) Italy	
Tel/Fax	+39 050 984254 / +39 050 984262	
P.IVA/VAT	01343950505	
http – e-mail	www.gsd.it - info@gsd.it	
	FCC Listed. Registration Number: 424037.	
Location and Date of Issue	Pisa, 2016 April 20	

G.S.D. s.r.l.
Via Marmiceto, 8
56121 OSPEDALETTO - PISA
Tel. 050.984254 - Fax 050.984262
P. IVA 01343950505

SENIOR EMC TEST MANAGER
Dr. Gian Luca Genovesi

QUALITY MANAGER
Dr. David Pelliccia

INDEX

Report Revision History

Revision details

Date	***Page No.(s)***	***Details***
2016 April 20	110	Rev. 00 Initial issue

1. MANUFACTURER AND EUT IDENTIFICATION[1]

Manufacturer	**CAEN RFID s.r.l..**
Address	Via Vetraia, 11 55049 Viareggio (LU) Italy
Test Family Name	**R4301P ION (UHF)**
Date of reception	**2016 March 04**
Sampling	**Laboratory sample for certification**
Test Item Description	**RFID Device**
Nominal Input Voltage	**24 Vdc**
FCC ID	**UVECAENRFID022**

[1]A detailed documentation is preserved in the internal fascicle.

Fig. 1.1
Equipment Photo

2. REFERENCE STANDARDS

Tests and measurements are performed accordingly to the reference standards given in the table below:

TEST	***STANDARD***
Emissions: Conducted and Radiated – Section 15.207 and 15.209	FCC Rules ad Regulations, Title 47 Part 15 – Sub part C ANSI C63.4 2014 – American National Standard for Methods of Measuring of Radio-Noise Emissions from Low Voltage Electrical and Electronic Equipment in the Range of 9 kHz – 40 GHz ANSI C63.10 2013 – American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
Operation within the band 902-928 MHz: Alternative Test Procedures 15.247 (b) and (c) , and (a) Bandwidth and average time of occupancy, Band Edge 15.247 (d)	FCC Rules ad Regulations, Title 47 Part 15 – Sub part C DA 00-705 (30 March 2000) – Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems ANSI C63.4 2014 – American National Standard for Methods of Measuring of Radio-Noise Emissions from Low Voltage Electrical and Electronic Equipment in the Range of 9 kHz – 40 GHz ANSI C63.10 2013 – American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
Antenna Requirement: §15.203	FCC Rules ad Regulations, Title 47 Part 15 – Sub part C

3. RESULT, CONDITION, MEASUREMENT UNCERTAINTY

Summary of Test Results

TEST	*RESULT*
Emissions: conducted *Section 15.207*	*Pass*
Emissions: radiated *Section 15.209*	*Pass*
Bandwidth and Average Time of Occupancy *Section 15.247 (a)*	*Pass*
Operation within the band 902-928 MHz: *Section 15.247 (b) and (c)*	*Pass*
Band Edge *Section 15.247 (d)*	*Pass*

Measurement uncertainty

TEST	*EXPANDED UNCERTAINTY*
Conducted Emission – 50Ω/50µH (150 kHz - 30 MHz)	± 3.5 dB
Radiated Emission – (Semianechoic Room) (30 MHz - 18 GHz)	± 4.7 dB

Climatic Conditions

PARAMETER	*VALUE*
Temperature	(293 ± 3) K
Relative humidity	(50 ± 5) %

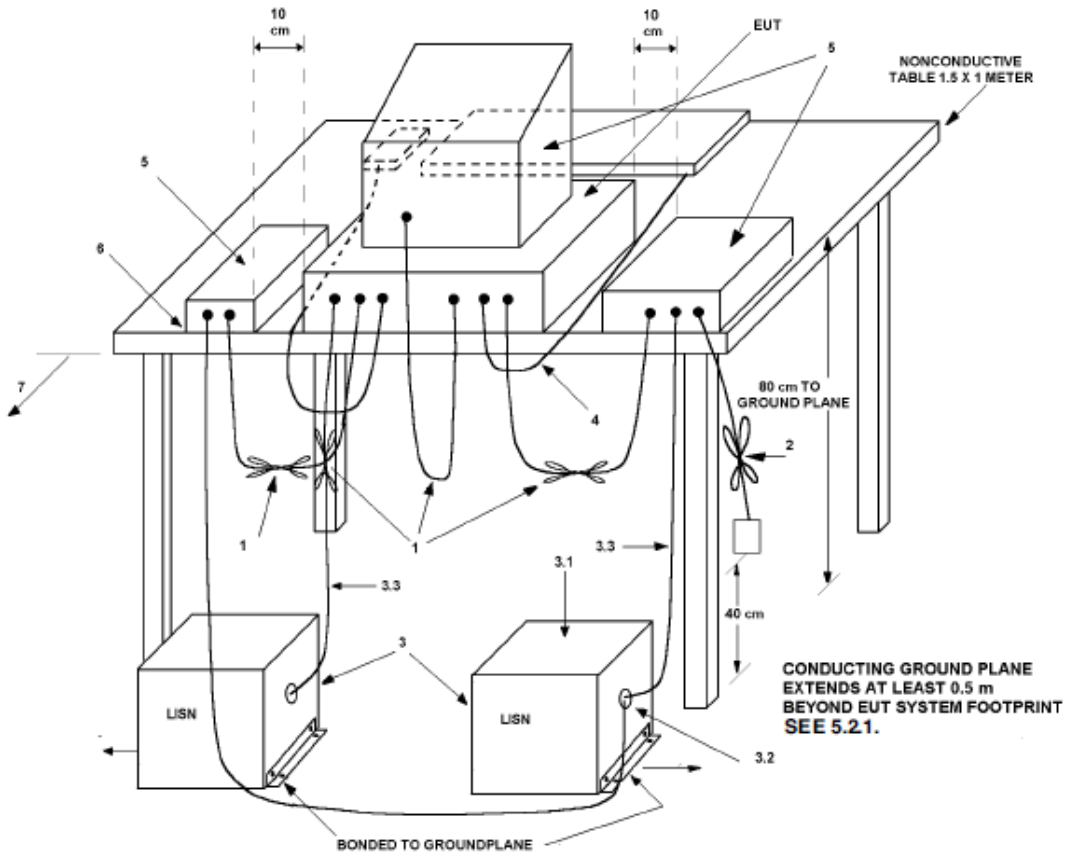
Extensions

The results refer only to the sampled EUT and under the specified conditions.

Modulations:

Type 1: PR_ASK_M4_TX40RX250

Type 2: DSB_ASK_FM0_TX160_RX400



Conducted and Radiated EUT Test Set-up example (ANSI C63.10 2013)

4. RADIATED EMISSIONS

In the following table you can find the limits established by the reference standard:

FREQUENCY RANGE *(MHz)*	***Field Strenght*** *QUASI-PEAK LIMITS* *[dB (µV/m)]*
0.009 ÷ 0.490	48.15 ÷ 13.8 @ 300m
0.490 ÷ 1.705	33.8 ÷ 23 @ 30m
1.705 ÷ 30	29.5 @ 30m
30 ÷ 88	40
88 ÷ 216	43,5
216 ÷ 960	46
Above 960	54

Test Equipment

EQUIPMENT	MANUFACTURER	MODEL	CAL. DUE
MXE EMI Receiver	Agilent/Keysight	N9038A	01/2017
Anechoic Chamber	Comtest	CSA01	01/2017
Bilog Antenna	Schaffner	CBL6112B	01/2017
Horn Antenna	EMCO	3115	01/2017
Horn Antenna	Alpha Industries	61932500	01/2017
Controller	Deisel	HD100	01/2017
Turn Table	Deisel	MA240	01/2017
LISN	GSD	NTW06	01/2017

Test procedure: RE22R02

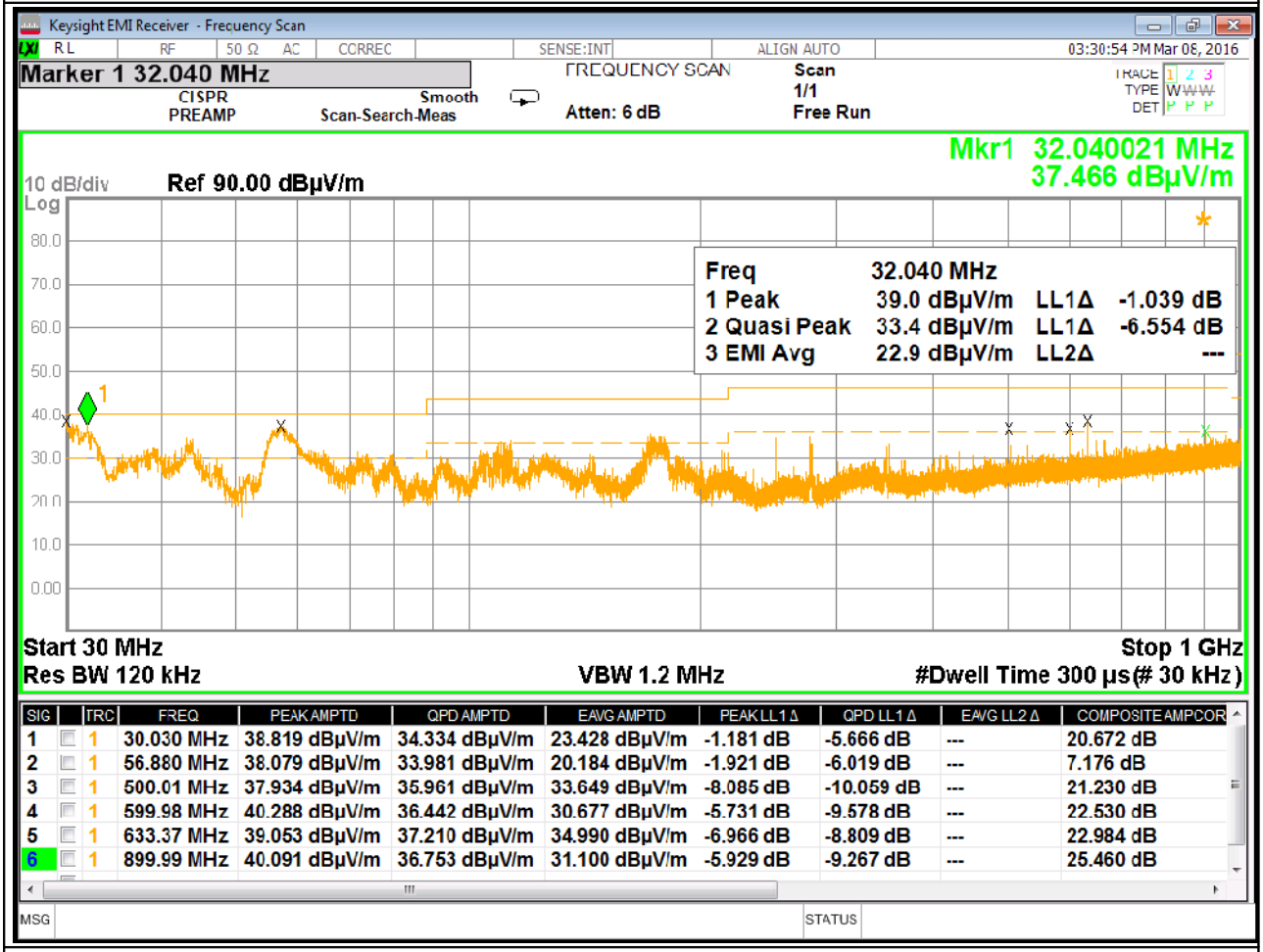
Notes

Azimuth position EUT-Antenna corresponding to 0° identifies the rotating table orientation (TT) in which the instrument to be tested shows the front part turned towards the antenna. Positive grades individuate clockwise rotations of TT when this one is observed from the top. For negative degrees, TT rotation is counter-clockwise.
Antenna height respect to the mass plane is conventionally individuated with: MA=XXX where XXX indicates the height (always positive and greater than 100) expressed in cm.
Antenna horizontal polarisation is indicated by POL=H.
Antenna vertical polarisation is indicated by POL=V.
EUT was tested in the three orthogonal planes.

Results and conclusions

In all the operative conditions, equipment complied with the standard limits. Graphics in following figures show the most significant registrations of the performed measurements.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)



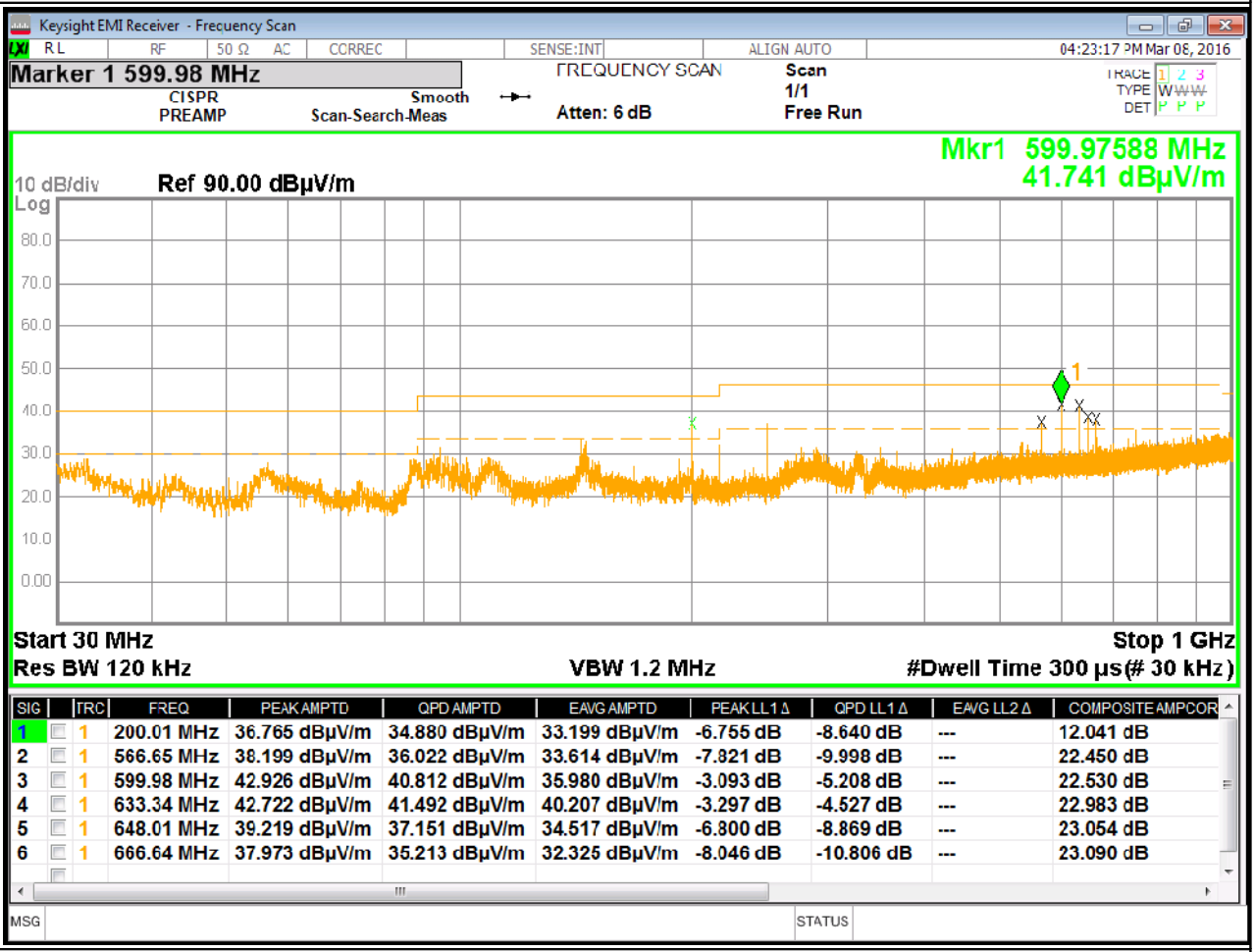
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	30.030 MHz	38.819 dBµV/m	34.334 dBµV/m	23.428 dBµV/m	-1.181 dB	-5.666 dB	---	20.672 dB
2	1	56.880 MHz	38.079 dBµV/m	33.981 dBµV/m	20.184 dBµV/m	-1.921 dB	-6.019 dB	---	7.176 dB
3	1	500.01 MHz	37.934 dBµV/m	35.961 dBµV/m	33.649 dBµV/m	-8.085 dB	-10.059 dB	---	21.230 dB
4	1	599.98 MHz	40.288 dBµV/m	36.442 dBµV/m	30.677 dBµV/m	-5.731 dB	-9.578 dB	---	22.530 dB
5	1	633.37 MHz	39.053 dBµV/m	37.210 dBµV/m	34.990 dBµV/m	-6.966 dB	-8.809 dB	---	22.984 dB
6	1	899.99 MHz	40.091 dBµV/m	36.753 dBµV/m	31.100 dBµV/m	-5.929 dB	-9.267 dB	---	25.460 dB

Fig. 4.1

POL V
MA: 100 cm
TT: 0°
EUT mode: Standby

Record of the measurement of radiated emissions (PK)
Maximum disturbance determined in the frequency range 30 – 1000 MHz, Pol. V.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)



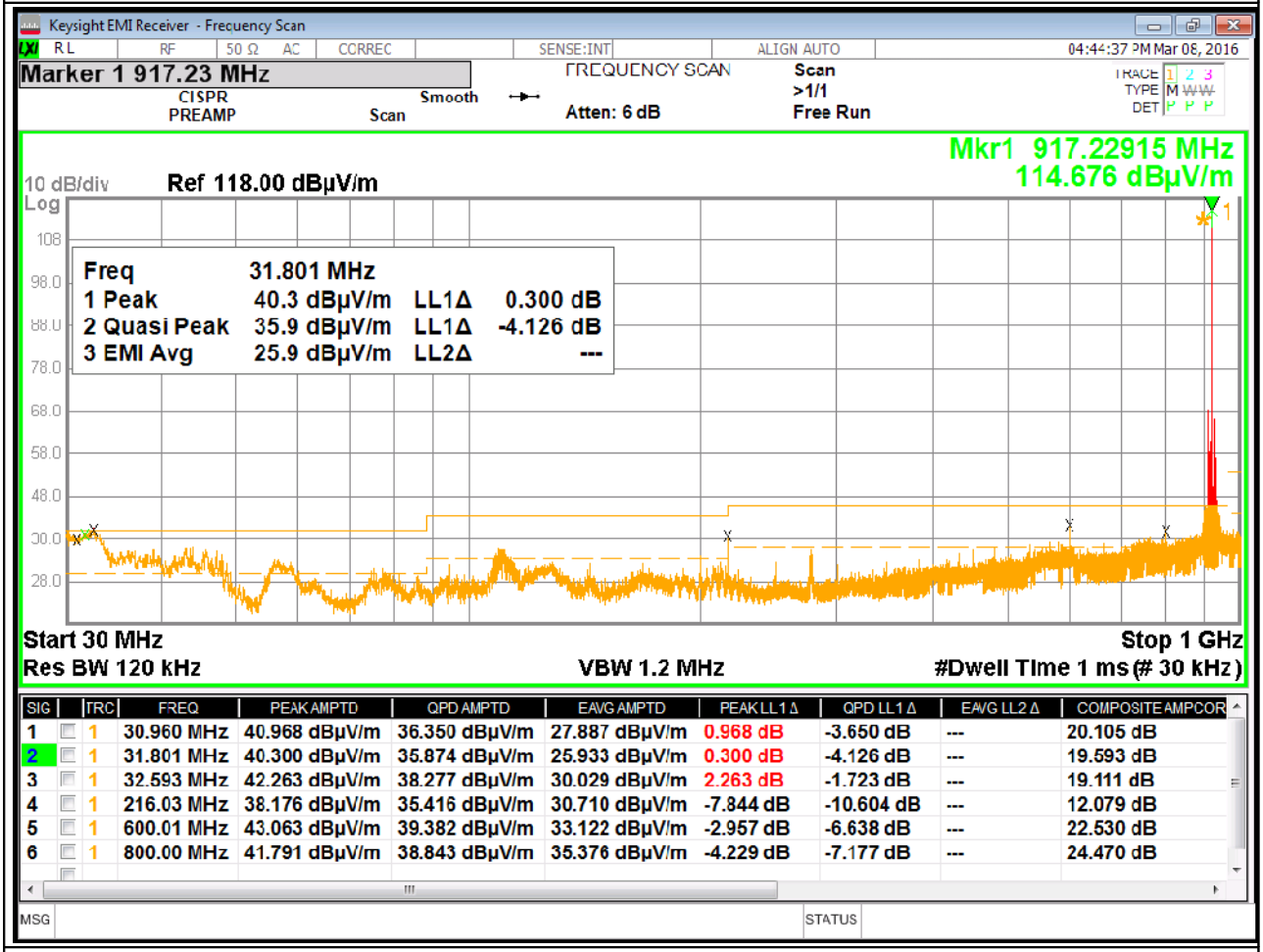
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	200.01 MHz	36.765 dBµV/m	34.880 dBµV/m	33.199 dBµV/m	-6.755 dB	-8.640 dB	---	12.041 dB
2	1	566.65 MHz	38.199 dBµV/m	36.022 dBµV/m	33.614 dBµV/m	-7.821 dB	-9.998 dB	---	22.450 dB
3	1	599.98 MHz	42.926 dBµV/m	40.812 dBµV/m	35.980 dBµV/m	-3.093 dB	-5.208 dB	---	22.530 dB
4	1	633.34 MHz	42.722 dBµV/m	41.492 dBµV/m	40.207 dBµV/m	-3.297 dB	-4.527 dB	---	22.983 dB
5	1	648.01 MHz	39.219 dBµV/m	37.151 dBµV/m	34.517 dBµV/m	-6.800 dB	-8.869 dB	---	23.054 dB
6	1	666.64 MHz	37.973 dBµV/m	35.213 dBµV/m	32.325 dBµV/m	-8.046 dB	-10.806 dB	---	23.090 dB

Fig. 4.2

POL H
MA: 170 cm
TT: 0°
EUT mode: Standby

Record of the measurement of radiated emissions (PK)
Maximum disturbance determined in the frequency range 30 – 1000 MHz, Pol. H.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)



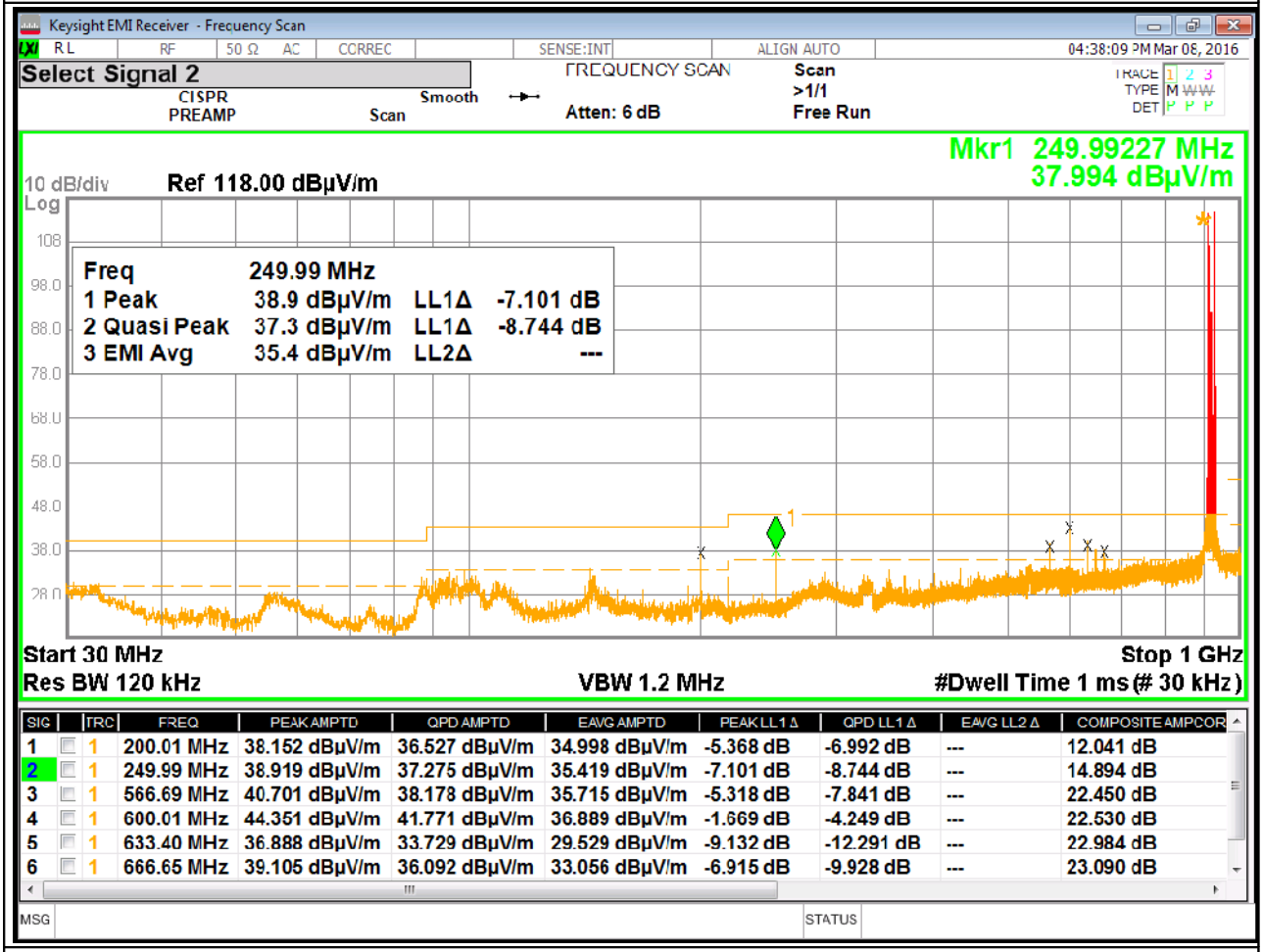
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	30.960 MHz	40.968 dBµV/m	36.350 dBµV/m	27.887 dBµV/m	0.968 dB	-3.650 dB	---	20.105 dB
2	1	31.801 MHz	40.300 dBµV/m	35.874 dBµV/m	25.933 dBµV/m	0.300 dB	-4.126 dB	---	19.593 dB
3	1	32.593 MHz	42.263 dBµV/m	38.277 dBµV/m	30.029 dBµV/m	2.263 dB	-1.723 dB	---	19.111 dB
4	1	216.03 MHz	38.176 dBµV/m	35.416 dBµV/m	30.710 dBµV/m	-7.844 dB	-10.604 dB	---	12.079 dB
5	1	600.01 MHz	43.063 dBµV/m	39.382 dBµV/m	33.122 dBµV/m	-2.957 dB	-6.638 dB	---	22.530 dB
6	1	800.00 MHz	41.791 dBµV/m	38.843 dBµV/m	35.376 dBµV/m	-4.229 dB	-7.177 dB	---	24.470 dB

Fig. 4.3

POL V
MA: 100 cm
TT: 0°
EUT mode: Modulation type 1

Record of the measurement of radiated emissions (PK)
Maximum disturbance determined in the frequency range 30 – 1000 MHz, Pol. V.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)



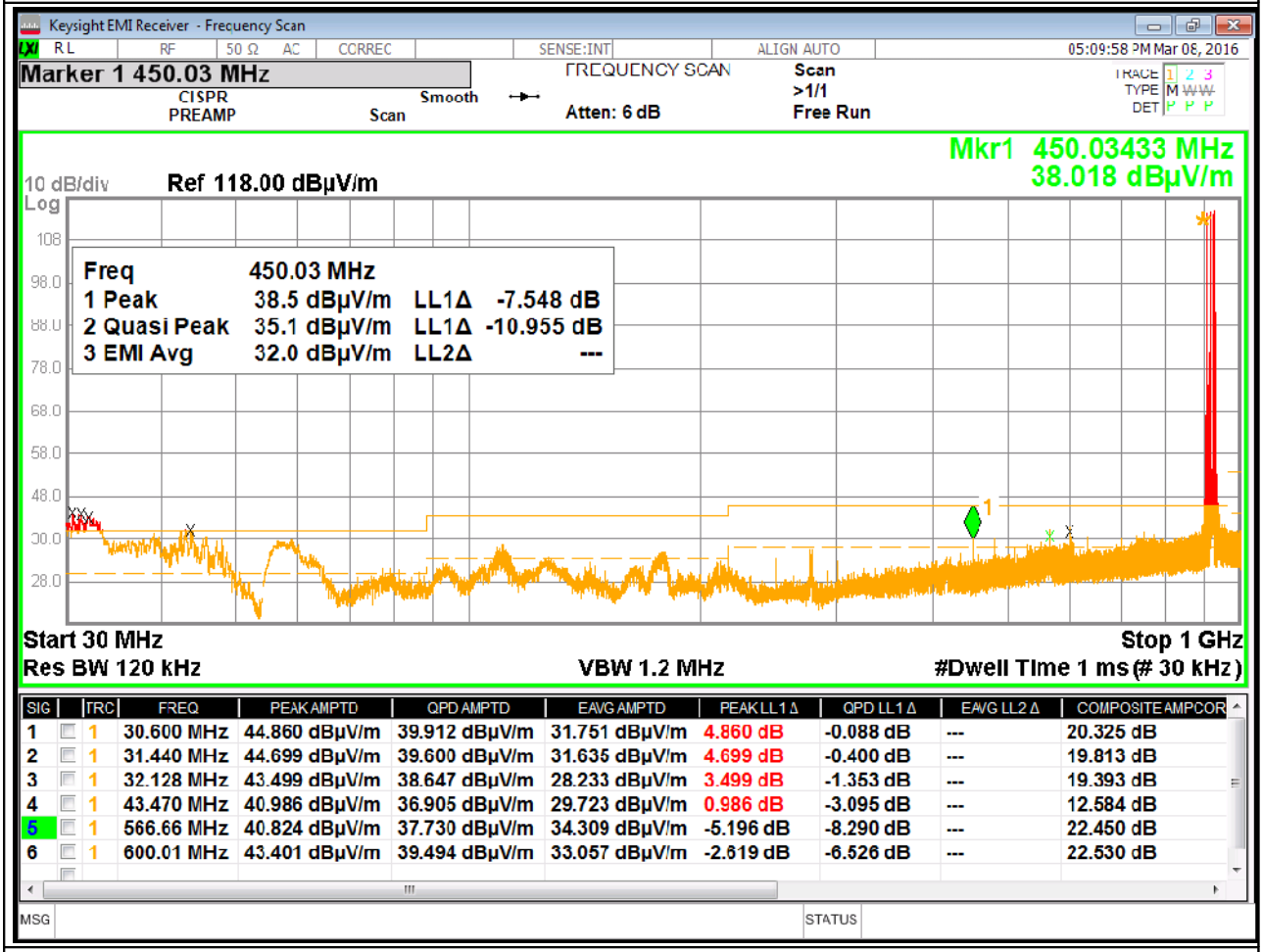
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	200.01 MHz	38.152 dBµV/m	36.527 dBµV/m	34.998 dBµV/m	-5.368 dB	-6.992 dB	---	12.041 dB
2	1	249.99 MHz	38.919 dBµV/m	37.275 dBµV/m	35.419 dBµV/m	-7.101 dB	-8.744 dB	---	14.894 dB
3	1	566.69 MHz	40.701 dBµV/m	38.178 dBµV/m	35.715 dBµV/m	-5.318 dB	-7.841 dB	---	22.450 dB
4	1	600.01 MHz	44.351 dBµV/m	41.771 dBµV/m	36.889 dBµV/m	-1.669 dB	-4.249 dB	---	22.530 dB
5	1	633.40 MHz	36.888 dBµV/m	33.729 dBµV/m	29.529 dBµV/m	-9.132 dB	-12.291 dB	---	22.984 dB
6	1	666.65 MHz	39.105 dBµV/m	36.092 dBµV/m	33.056 dBµV/m	-6.915 dB	-9.928 dB	---	23.090 dB

Fig. 4.4

POL H
MA: 170 cm
TT: 0°
EUT mode: Modulation type 1

Record of the measurement of radiated emissions (PK)
Maximum disturbance determined in the frequency range 30 – 1000 MHz, Pol. H.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)



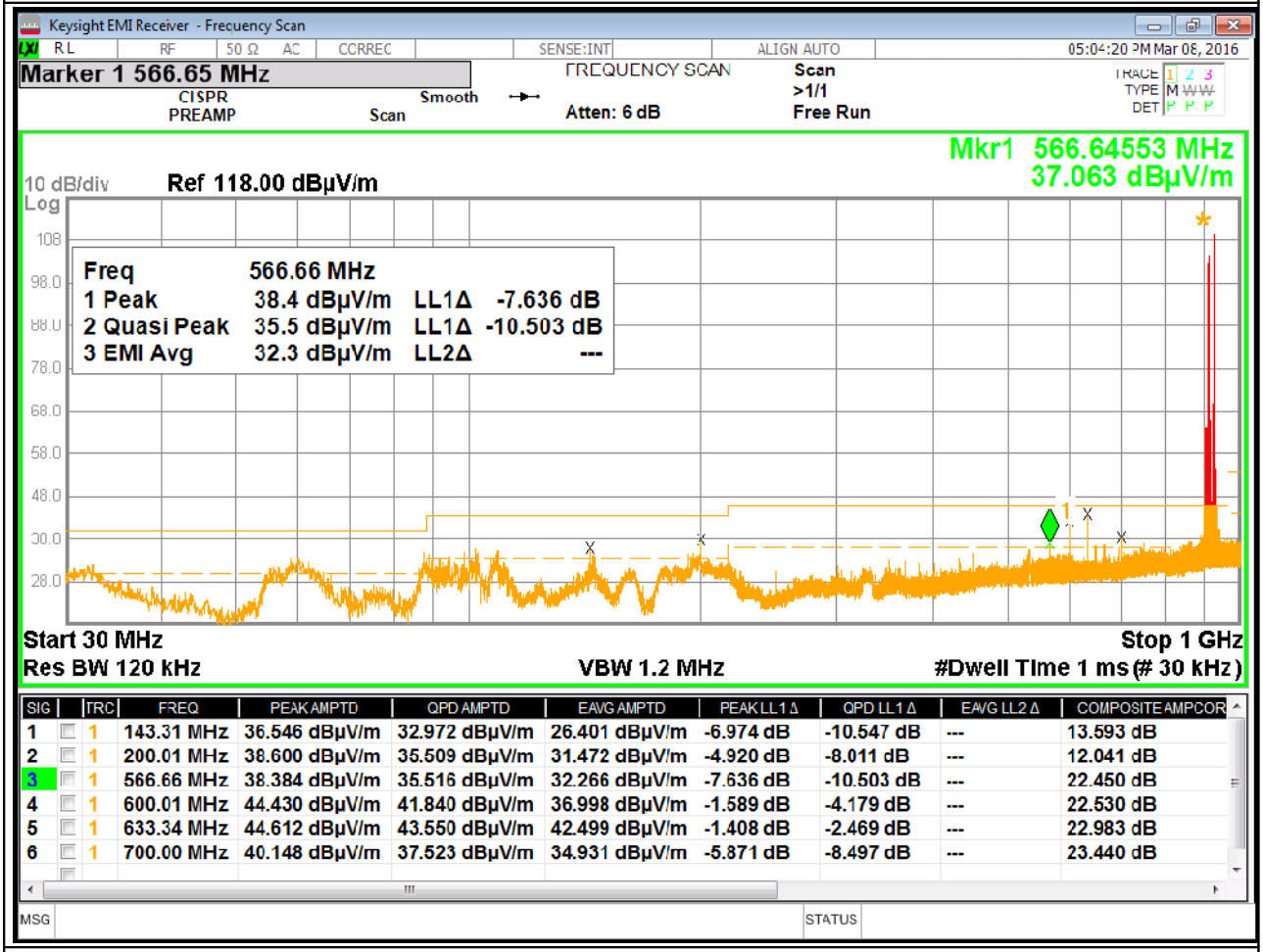
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	30.600 MHz	44.860 dBµV/m	39.912 dBµV/m	31.751 dBµV/m	4.860 dB	-0.088 dB	---	20.325 dB
2	1	31.440 MHz	44.699 dBµV/m	39.600 dBµV/m	31.635 dBµV/m	4.699 dB	-0.400 dB	---	19.813 dB
3	1	32.128 MHz	43.499 dBµV/m	38.647 dBµV/m	28.233 dBµV/m	3.499 dB	-1.353 dB	---	19.393 dB
4	1	43.470 MHz	40.986 dBµV/m	36.905 dBµV/m	29.723 dBµV/m	0.986 dB	-3.095 dB	---	12.584 dB
5	1	566.66 MHz	40.824 dBµV/m	37.730 dBµV/m	34.309 dBµV/m	-5.196 dB	-8.290 dB	---	22.450 dB
6	1	600.01 MHz	43.401 dBµV/m	39.494 dBµV/m	33.057 dBµV/m	-2.619 dB	-6.526 dB	---	22.530 dB

Fig. 4.5

POL V
MA: 100 cm
TT: 0°
EUT mode: Modulation type 2

Record of the measurement of radiated emissions (PK)
Maximum disturbance determined in the frequency range 30 – 1000 MHz, Pol. V.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)



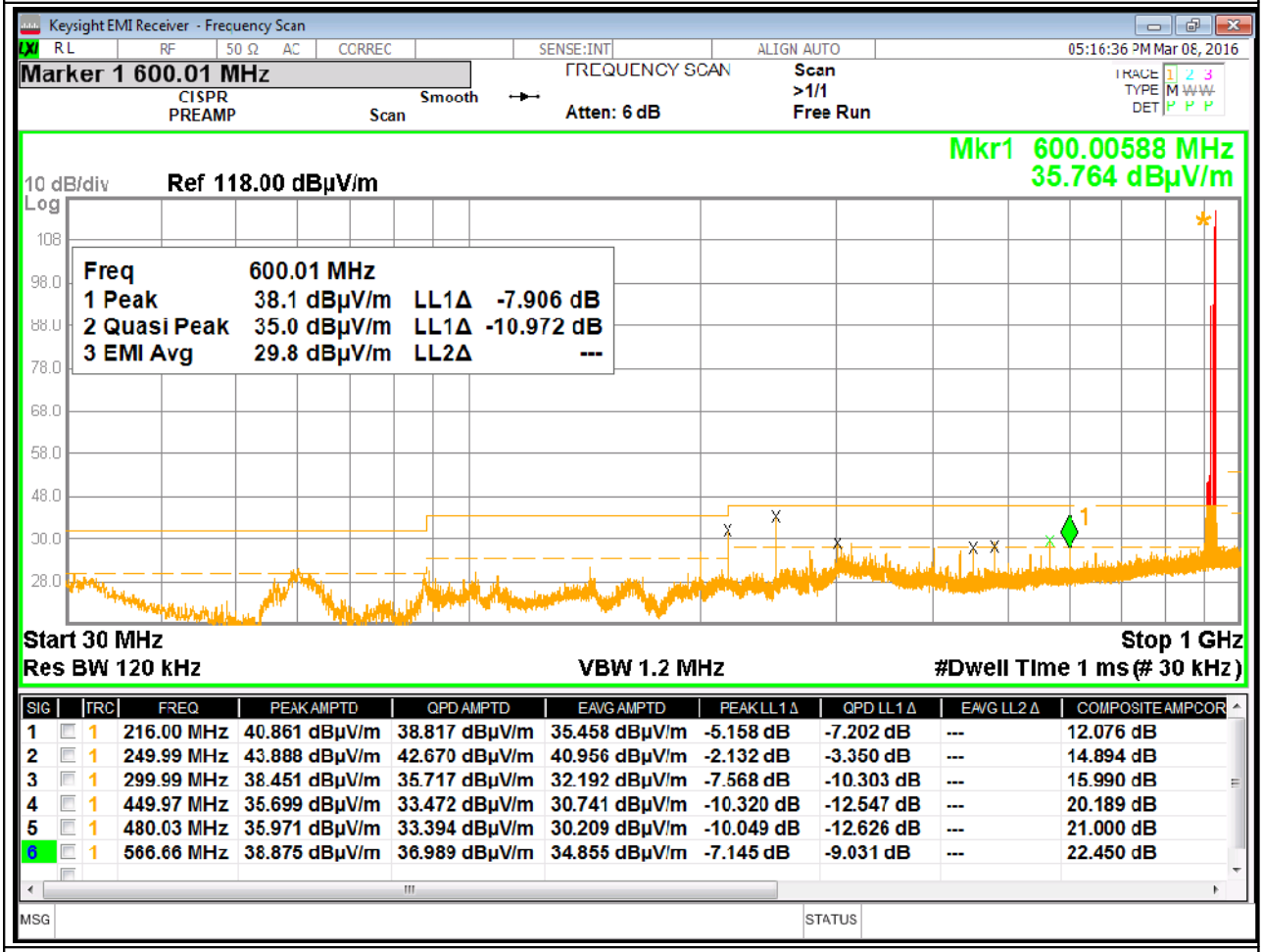
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	143.31 MHz	36.546 dBµV/m	32.972 dBµV/m	26.401 dBµV/m	-6.974 dB	-10.547 dB	---	13.593 dB
2	1	200.01 MHz	38.600 dBµV/m	35.509 dBµV/m	31.472 dBµV/m	-4.920 dB	-8.011 dB	---	12.041 dB
3	1	566.66 MHz	38.384 dBµV/m	35.516 dBµV/m	32.266 dBµV/m	-7.636 dB	-10.503 dB	---	22.450 dB
4	1	600.01 MHz	44.430 dBµV/m	41.840 dBµV/m	36.998 dBµV/m	-1.589 dB	-4.179 dB	---	22.530 dB
5	1	633.34 MHz	44.612 dBµV/m	43.550 dBµV/m	42.499 dBµV/m	-1.408 dB	-2.469 dB	---	22.983 dB
6	1	700.00 MHz	40.148 dBµV/m	37.523 dBµV/m	34.931 dBµV/m	-5.871 dB	-8.497 dB	---	23.440 dB

Fig. 4.6

POL H
MA: 170 cm
TT: 0°
EUT mode: Modulation type 2

Record of the measurement of radiated emissions (PK)
Disturbance determined in the frequency range 30 – 1000 MHz, Pol. H.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)



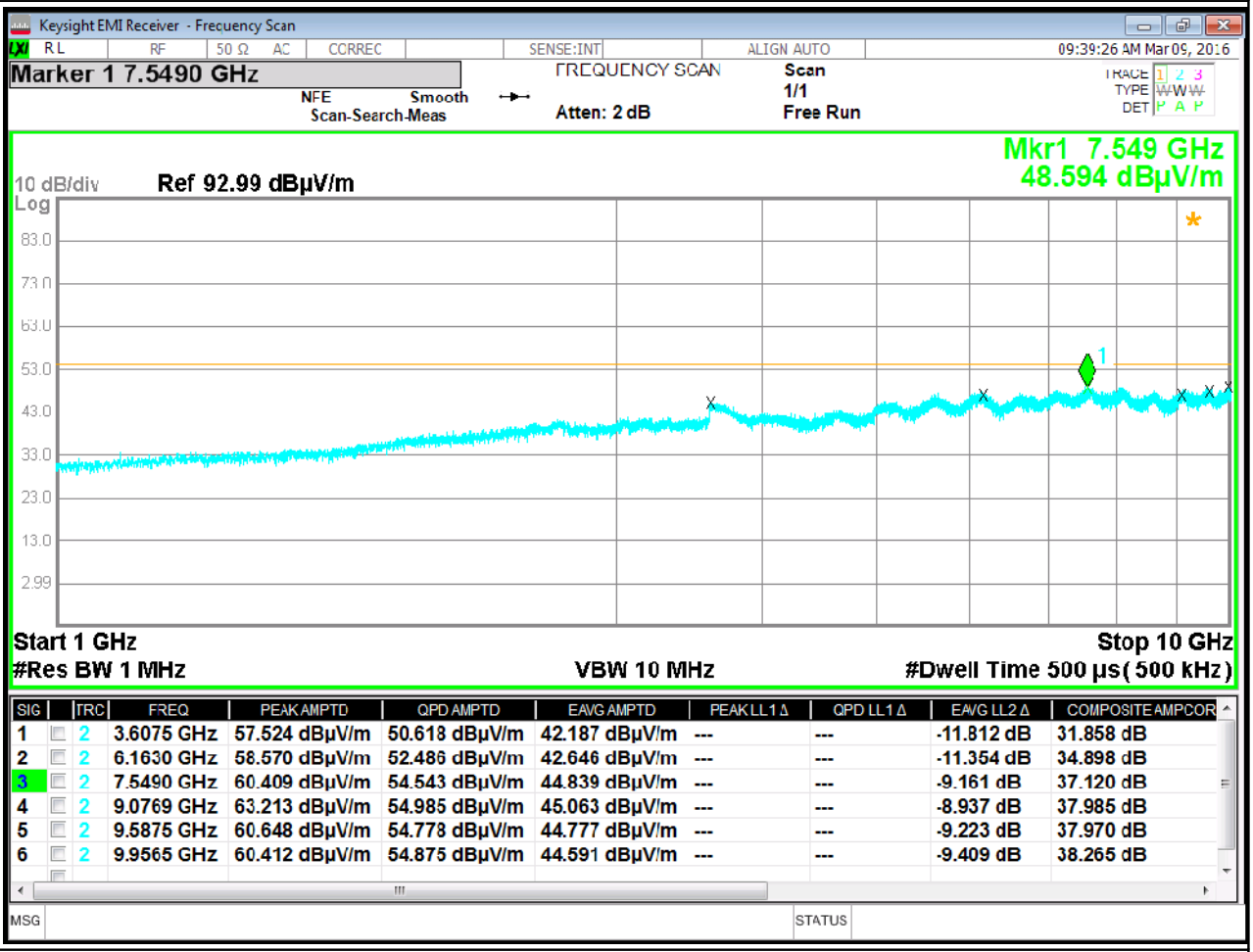
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	216.00 MHz	40.861 dBµV/m	38.817 dBµV/m	35.458 dBµV/m	-5.158 dB	-7.202 dB	---	12.076 dB
2	1	249.99 MHz	43.888 dBµV/m	42.670 dBµV/m	40.956 dBµV/m	-2.132 dB	-3.350 dB	---	14.894 dB
3	1	299.99 MHz	38.451 dBµV/m	35.717 dBµV/m	32.192 dBµV/m	-7.568 dB	-10.303 dB	---	15.990 dB
4	1	449.97 MHz	35.699 dBµV/m	33.472 dBµV/m	30.741 dBµV/m	-10.320 dB	-12.547 dB	---	20.189 dB
5	1	480.03 MHz	35.971 dBµV/m	33.394 dBµV/m	30.209 dBµV/m	-10.049 dB	-12.626 dB	---	21.000 dB
6	1	566.66 MHz	38.875 dBµV/m	36.989 dBµV/m	34.855 dBµV/m	-7.145 dB	-9.031 dB	---	22.450 dB

Fig. 4.7

POL H
MA: 100 cm
TT: 169°
EUT mode: Modulation type 2

Record of the measurement of radiated emissions (PK)
Disturbance determined in the frequency range 30 – 1000 MHz, Pol. H.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)



SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	2	3.6075 GHz	57.524 dBµV/m	50.618 dBµV/m	42.187 dBµV/m	---	---	-11.812 dB	31.858 dB
2	2	6.1630 GHz	58.570 dBµV/m	52.486 dBµV/m	42.646 dBµV/m	---	---	-11.354 dB	34.898 dB
3	2	7.5490 GHz	60.409 dBµV/m	54.543 dBµV/m	44.839 dBµV/m	---	---	-9.161 dB	37.120 dB
4	2	9.0769 GHz	63.213 dBµV/m	54.985 dBµV/m	45.063 dBµV/m	---	---	-8.937 dB	37.985 dB
5	2	9.5875 GHz	60.648 dBµV/m	54.778 dBµV/m	44.777 dBµV/m	---	---	-9.223 dB	37.970 dB
6	2	9.9565 GHz	60.412 dBµV/m	54.875 dBµV/m	44.591 dBµV/m	---	---	-9.409 dB	38.265 dB

Fig. 4.8

POL V
MA: 100 cm
TT: 0°
EUT mode: Standby

Record of the measurement of radiated emissions (AVG detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. V.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)

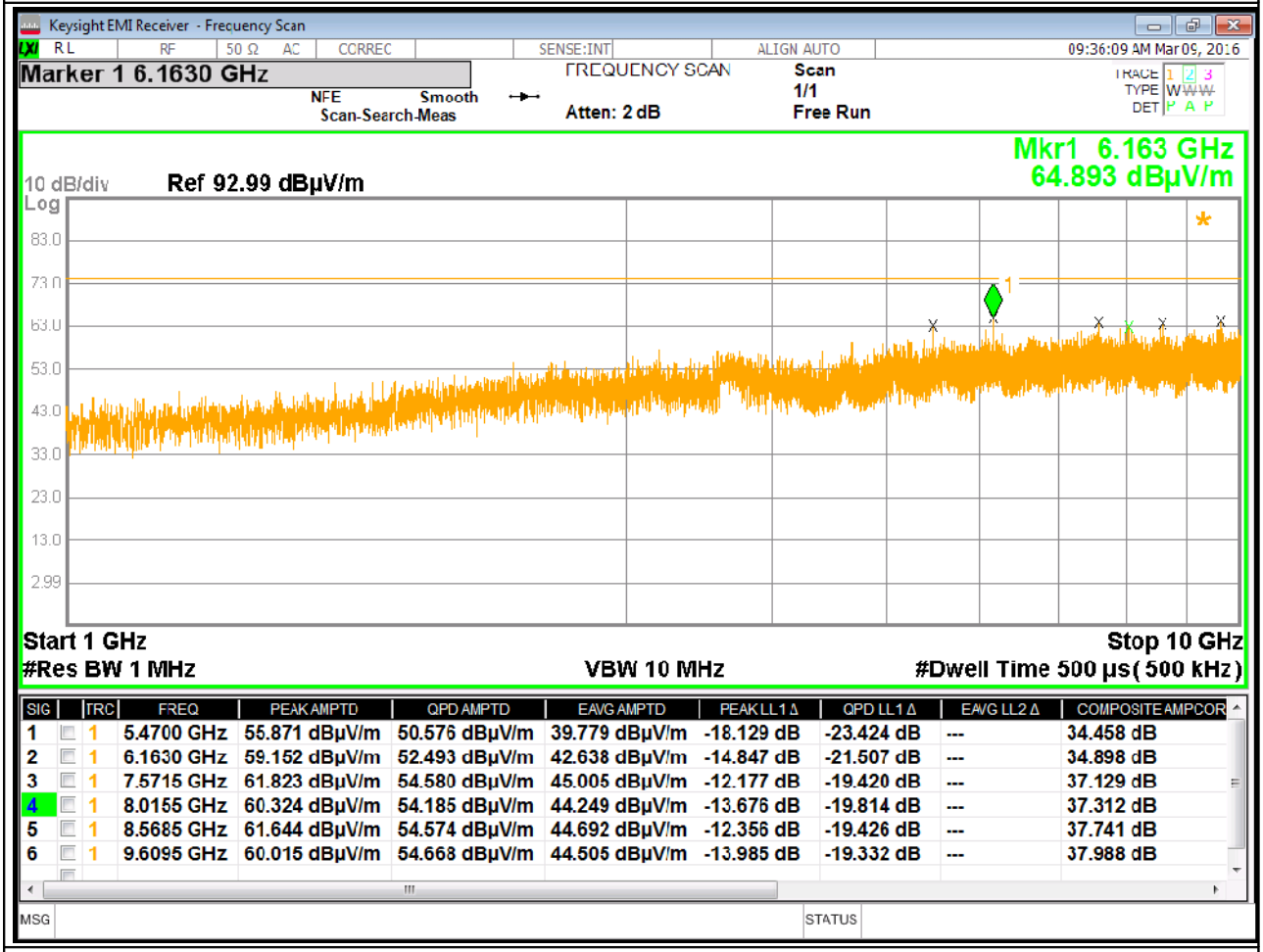


Fig. 4.9

POL V
MA: 100 cm
TT: 0°
EUT mode: Standby

Record of the measurement of radiated emissions (Peak detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. V.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)

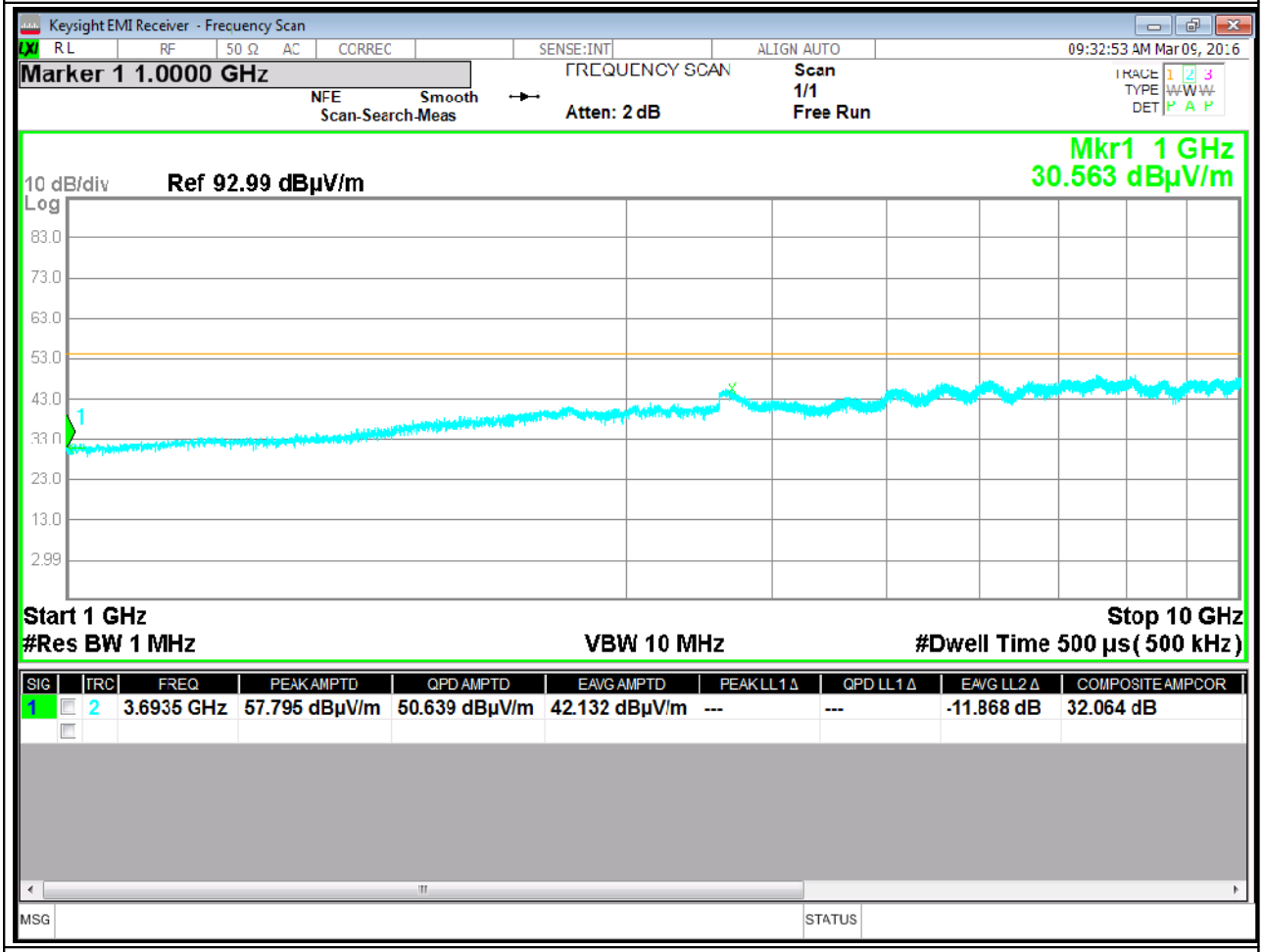
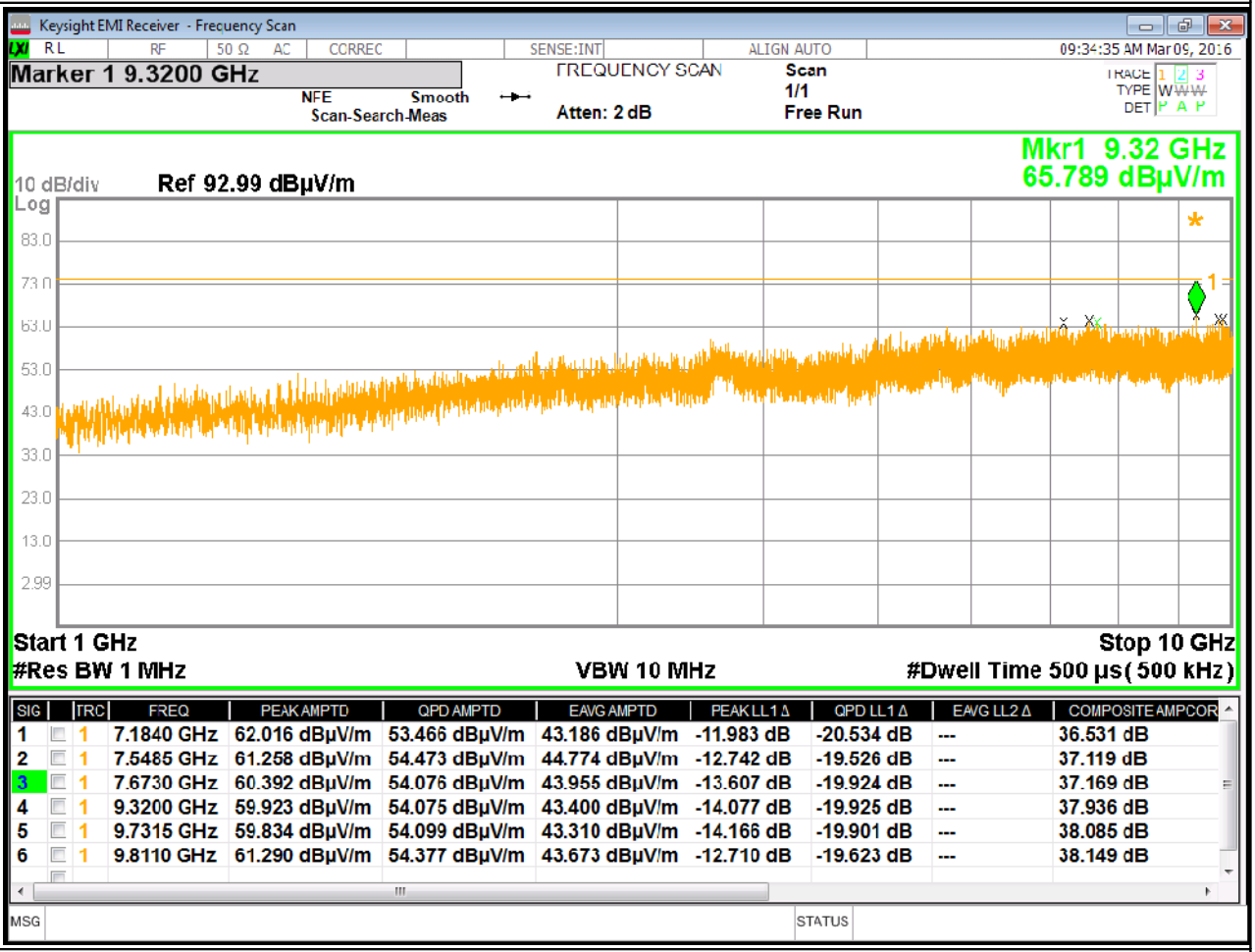


Fig. 4.10

POL H
MA: 100 cm
TT: 0°
EUT mode: Standby

Record of the measurement of radiated emissions (AVG detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. H.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)



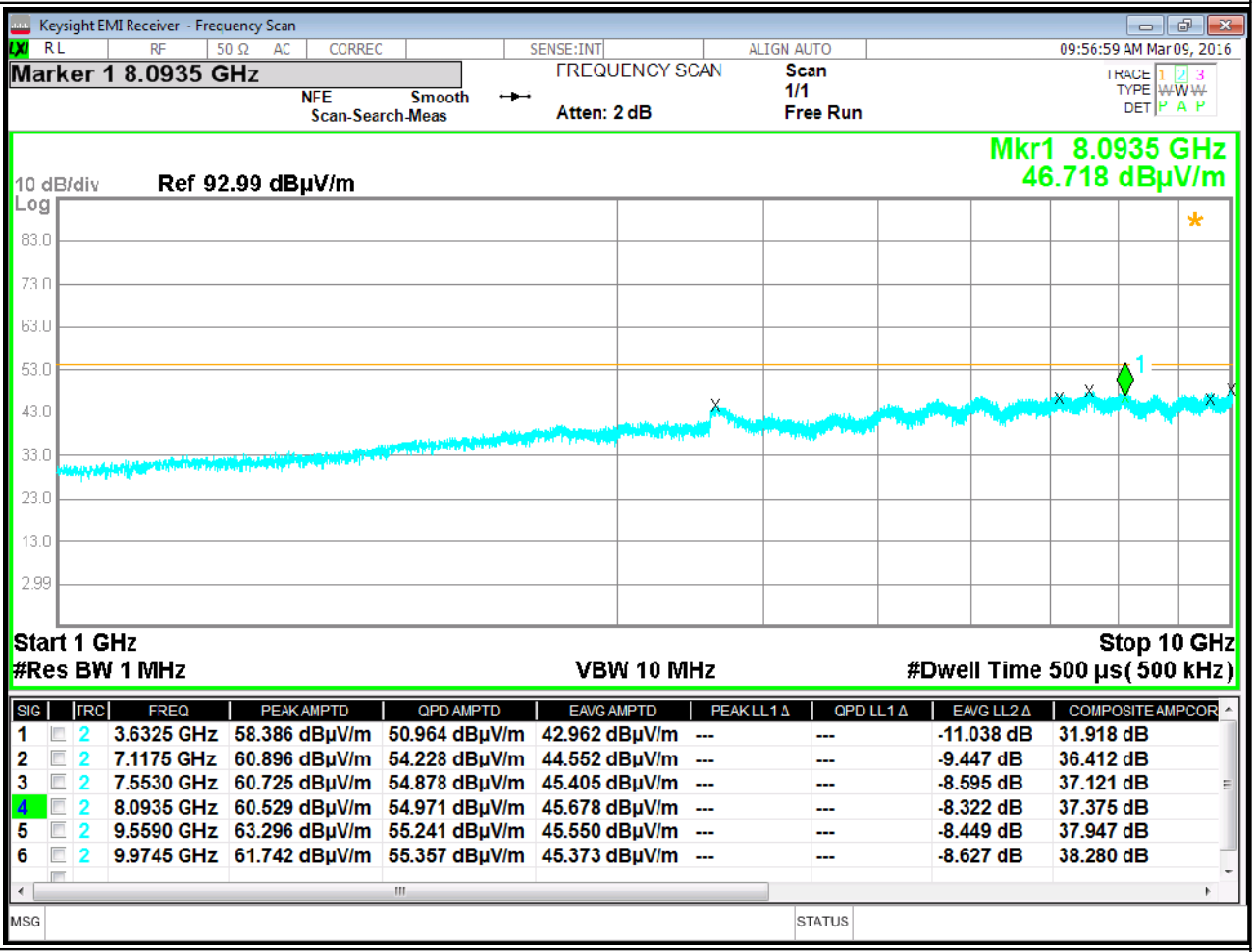
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	7.1840 GHz	62.016 dBµV/m	53.466 dBµV/m	43.186 dBµV/m	-11.983 dB	-20.534 dB	---	36.531 dB
2	1	7.5485 GHz	61.258 dBµV/m	54.473 dBµV/m	44.774 dBµV/m	-12.742 dB	-19.526 dB	---	37.119 dB
3	1	7.6730 GHz	60.392 dBµV/m	54.076 dBµV/m	43.955 dBµV/m	-13.607 dB	-19.924 dB	---	37.169 dB
4	1	9.3200 GHz	59.923 dBµV/m	54.075 dBµV/m	43.400 dBµV/m	-14.077 dB	-19.925 dB	---	37.936 dB
5	1	9.7315 GHz	59.834 dBµV/m	54.099 dBµV/m	43.310 dBµV/m	-14.166 dB	-19.901 dB	---	38.085 dB
6	1	9.8110 GHz	61.290 dBµV/m	54.377 dBµV/m	43.673 dBµV/m	-12.710 dB	-19.623 dB	---	38.149 dB

Fig. 4.11

POL H
MA: 100 cm
TT: 0°
EUT mode: Standby

Record of the measurement of radiated emissions (Peak detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. H.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)



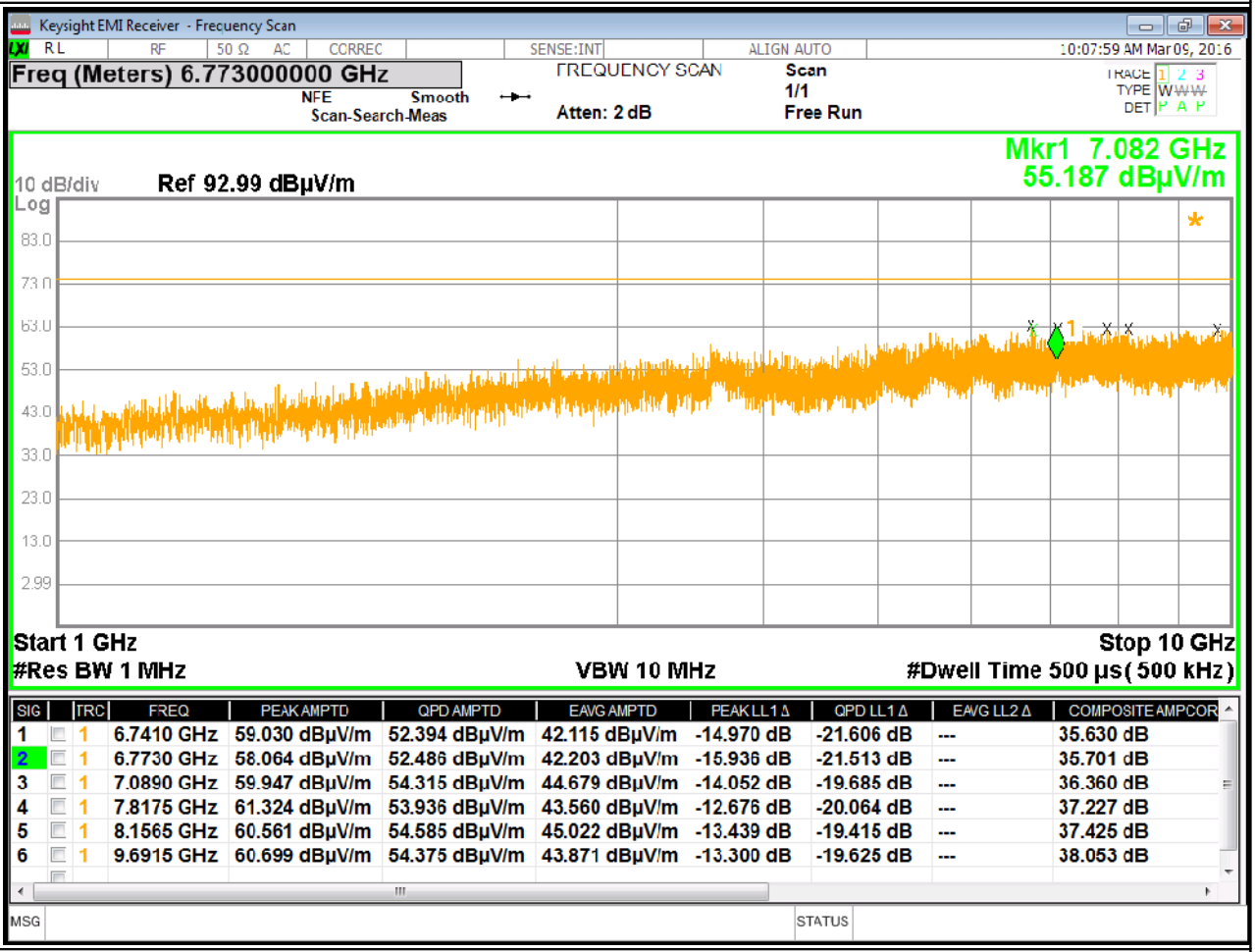
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	2	3.6325 GHz	58.386 dBµV/m	50.964 dBµV/m	42.962 dBµV/m	---	---	-11.038 dB	31.918 dB
2	2	7.1175 GHz	60.896 dBµV/m	54.228 dBµV/m	44.552 dBµV/m	---	---	-9.447 dB	36.412 dB
3	2	7.5530 GHz	60.725 dBµV/m	54.878 dBµV/m	45.405 dBµV/m	---	---	-8.595 dB	37.121 dB
4	2	8.0935 GHz	60.529 dBµV/m	54.971 dBµV/m	45.678 dBµV/m	---	---	-8.322 dB	37.375 dB
5	2	9.5590 GHz	63.296 dBµV/m	55.241 dBµV/m	45.550 dBµV/m	---	---	-8.449 dB	37.947 dB
6	2	9.9745 GHz	61.742 dBµV/m	55.357 dBµV/m	45.373 dBµV/m	---	---	-8.627 dB	38.280 dB

Fig. 4.12

POL V
MA: 100 cm
TT: 0°
EUT mode: Modulation type 1

Record of the measurement of radiated emissions (AVG detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. V.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)



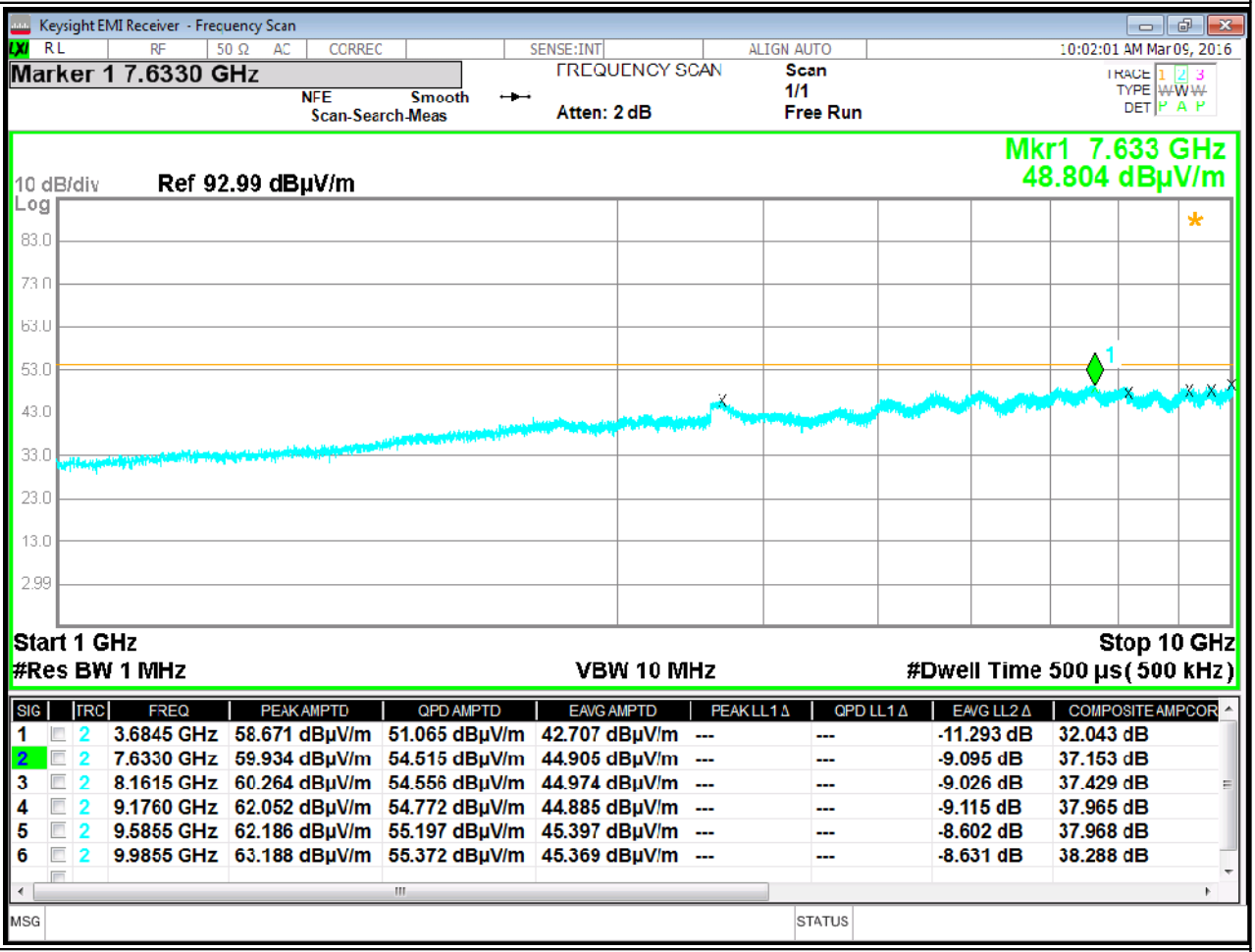
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	6.7410 GHz	59.030 dBµV/m	52.394 dBµV/m	42.115 dBµV/m	-14.970 dB	-21.606 dB	---	35.630 dB
2	1	6.7730 GHz	58.064 dBµV/m	52.486 dBµV/m	42.203 dBµV/m	-15.936 dB	-21.513 dB	---	35.701 dB
3	1	7.0890 GHz	59.947 dBµV/m	54.315 dBµV/m	44.679 dBµV/m	-14.052 dB	-19.685 dB	---	36.360 dB
4	1	7.8175 GHz	61.324 dBµV/m	53.936 dBµV/m	43.560 dBµV/m	-12.676 dB	-20.064 dB	---	37.227 dB
5	1	8.1565 GHz	60.561 dBµV/m	54.585 dBµV/m	45.022 dBµV/m	-13.439 dB	-19.415 dB	---	37.425 dB
6	1	9.6915 GHz	60.699 dBµV/m	54.375 dBµV/m	43.871 dBµV/m	-13.300 dB	-19.625 dB	---	38.053 dB

Fig. 4.13

POL V
MA: 100 cm
TT: 0°
EUT mode: Modulation type 1

Record of the measurement of radiated emissions (Peak detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. V.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)



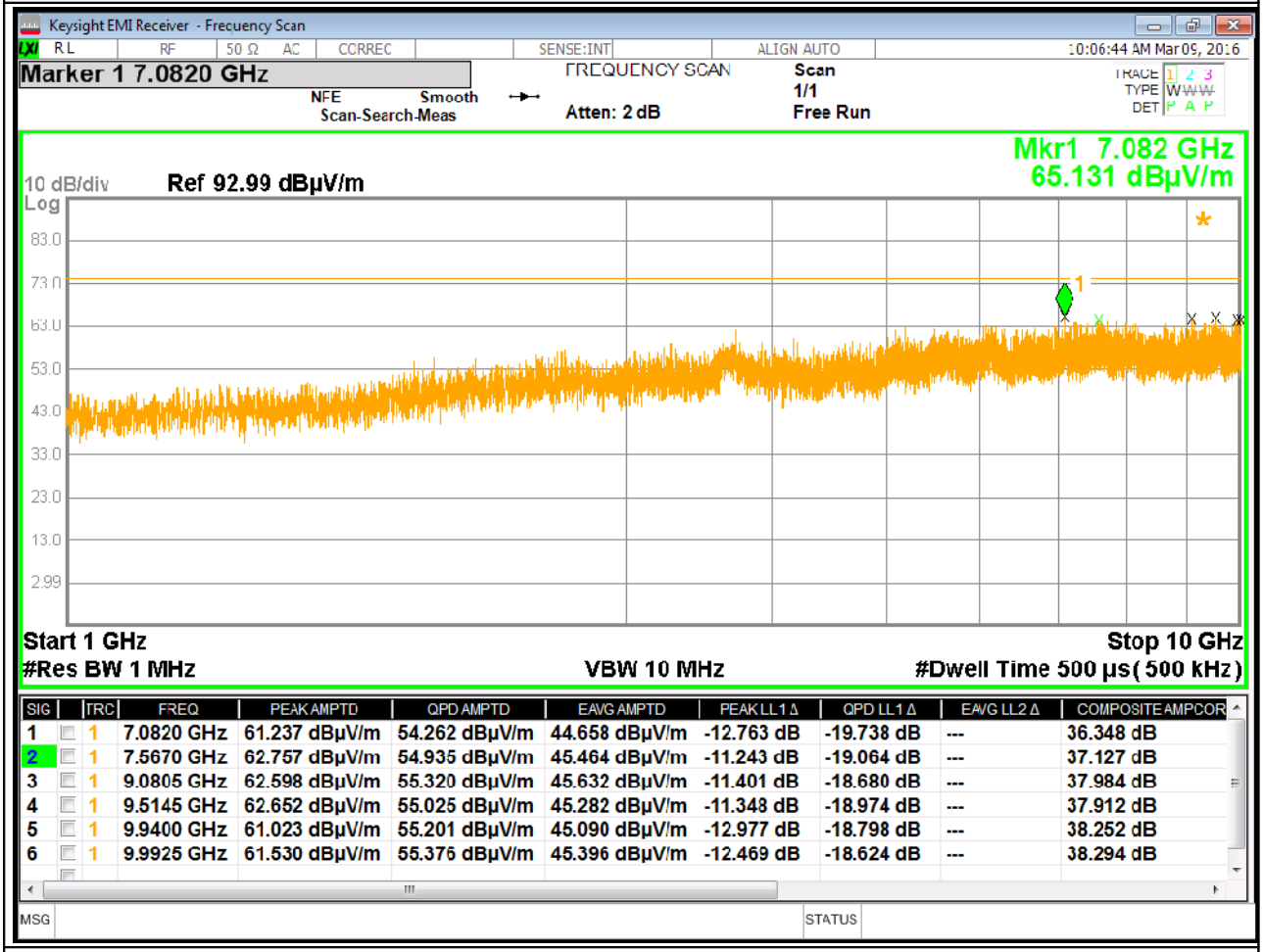
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	2	3.6845 GHz	58.671 dBµV/m	51.065 dBµV/m	42.707 dBµV/m	---	---	-11.293 dB	32.043 dB
2	2	7.6330 GHz	59.934 dBµV/m	54.515 dBµV/m	44.905 dBµV/m	---	---	-9.095 dB	37.153 dB
3	2	8.1615 GHz	60.264 dBµV/m	54.556 dBµV/m	44.974 dBµV/m	---	---	-9.026 dB	37.429 dB
4	2	9.1760 GHz	62.052 dBµV/m	54.772 dBµV/m	44.885 dBµV/m	---	---	-9.115 dB	37.965 dB
5	2	9.5855 GHz	62.186 dBµV/m	55.197 dBµV/m	45.397 dBµV/m	---	---	-8.602 dB	37.968 dB
6	2	9.9855 GHz	63.188 dBµV/m	55.372 dBµV/m	45.369 dBµV/m	---	---	-8.631 dB	38.288 dB

Fig. 4.14

POL H
MA: 100 cm
TT: 0°
EUT mode: Modulation type 1

Record of the measurement of radiated emissions (AVG detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. H.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)



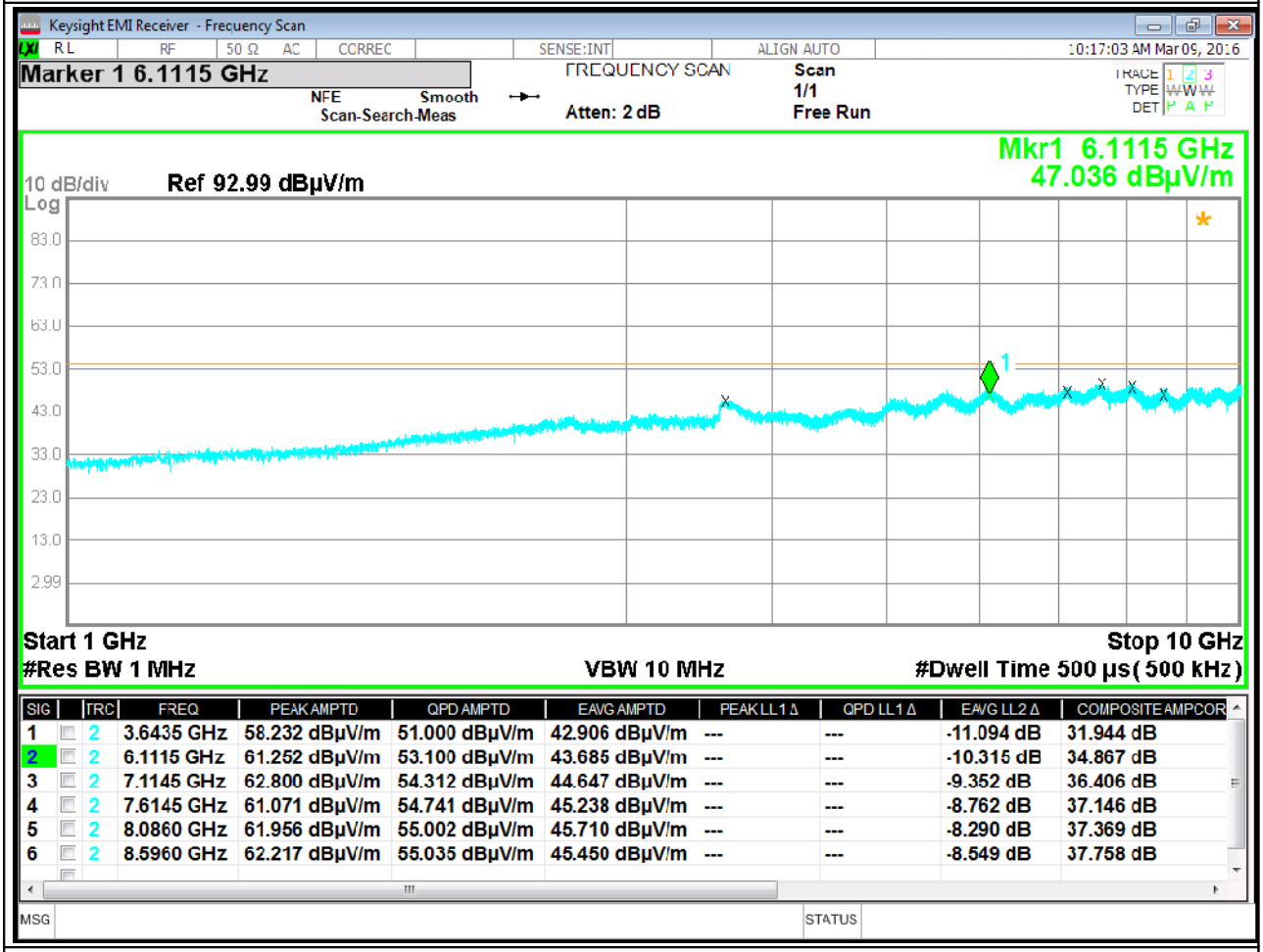
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	7.0820 GHz	61.237 dBµV/m	54.262 dBµV/m	44.658 dBµV/m	-12.763 dB	-19.738 dB	---	36.348 dB
2	1	7.5670 GHz	62.757 dBµV/m	54.935 dBµV/m	45.464 dBµV/m	-11.243 dB	-19.064 dB	---	37.127 dB
3	1	9.0805 GHz	62.598 dBµV/m	55.320 dBµV/m	45.632 dBµV/m	-11.401 dB	-18.680 dB	---	37.984 dB
4	1	9.5145 GHz	62.652 dBµV/m	55.025 dBµV/m	45.282 dBµV/m	-11.348 dB	-18.974 dB	---	37.912 dB
5	1	9.9400 GHz	61.023 dBµV/m	55.201 dBµV/m	45.090 dBµV/m	-12.977 dB	-18.798 dB	---	38.252 dB
6	1	9.9925 GHz	61.530 dBµV/m	55.376 dBµV/m	45.396 dBµV/m	-12.469 dB	-18.624 dB	---	38.294 dB

Fig. 4.15

POL H
MA: 100 cm
TT: 0°
EUT mode: Modulation type 1

Record of the measurement of radiated emissions (Peak detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. H.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)



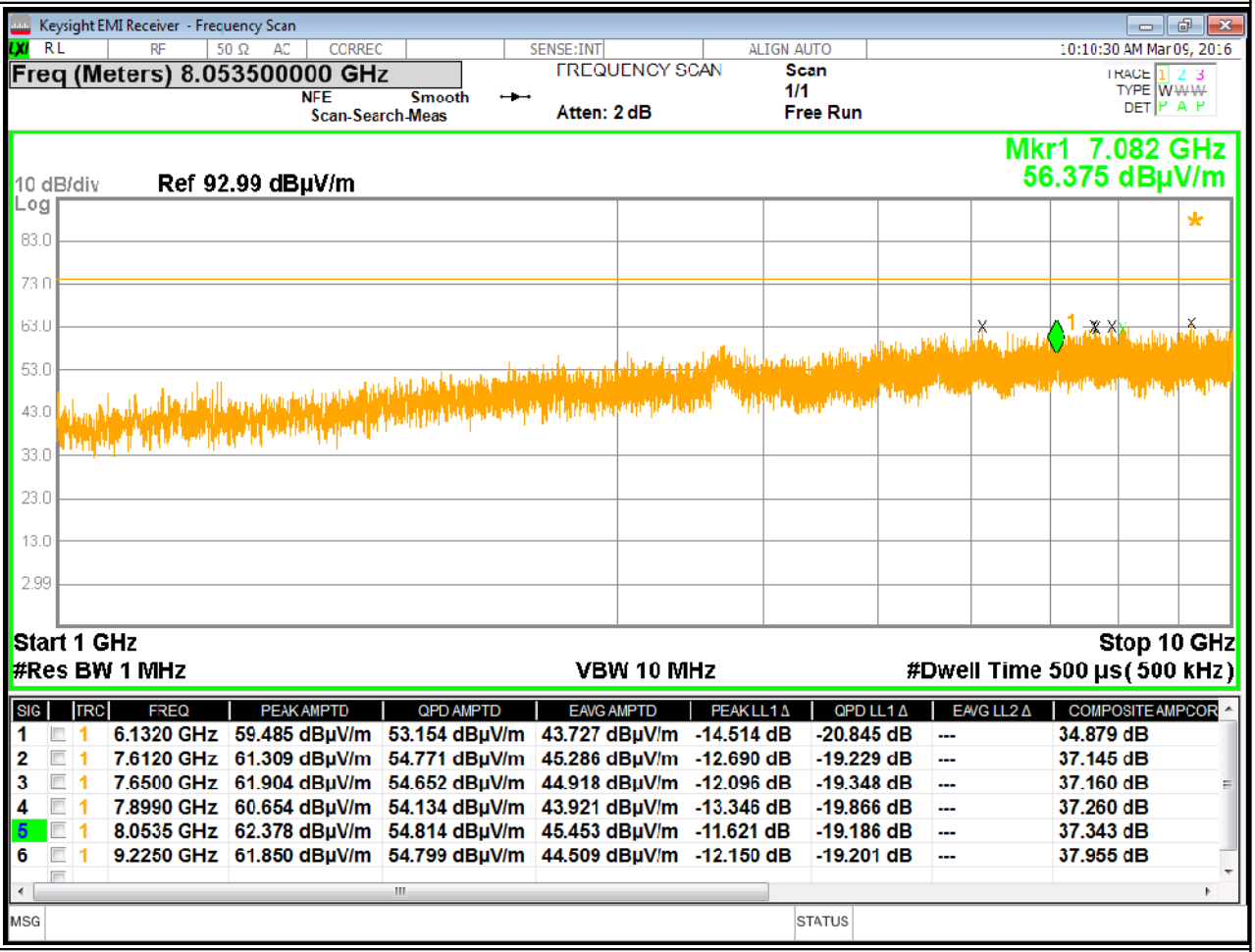
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	2	3.6435 GHz	58.232 dBµV/m	51.000 dBµV/m	42.906 dBµV/m	---	---	-11.094 dB	31.944 dB
2	2	6.1115 GHz	61.252 dBµV/m	53.100 dBµV/m	43.685 dBµV/m	---	---	-10.315 dB	34.867 dB
3	2	7.1145 GHz	62.800 dBµV/m	54.312 dBµV/m	44.647 dBµV/m	---	---	-9.352 dB	36.406 dB
4	2	7.6145 GHz	61.071 dBµV/m	54.741 dBµV/m	45.238 dBµV/m	---	---	-8.762 dB	37.146 dB
5	2	8.0860 GHz	61.956 dBµV/m	55.002 dBµV/m	45.710 dBµV/m	---	---	-8.290 dB	37.369 dB
6	2	8.5960 GHz	62.217 dBµV/m	55.035 dBµV/m	45.450 dBµV/m	---	---	-8.549 dB	37.758 dB

Fig. 4.16

POL V
MA: 100 cm
TT: 0°
EUT mode: Modulation type 2

Record of the measurement of radiated emissions (AVG detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. V.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)



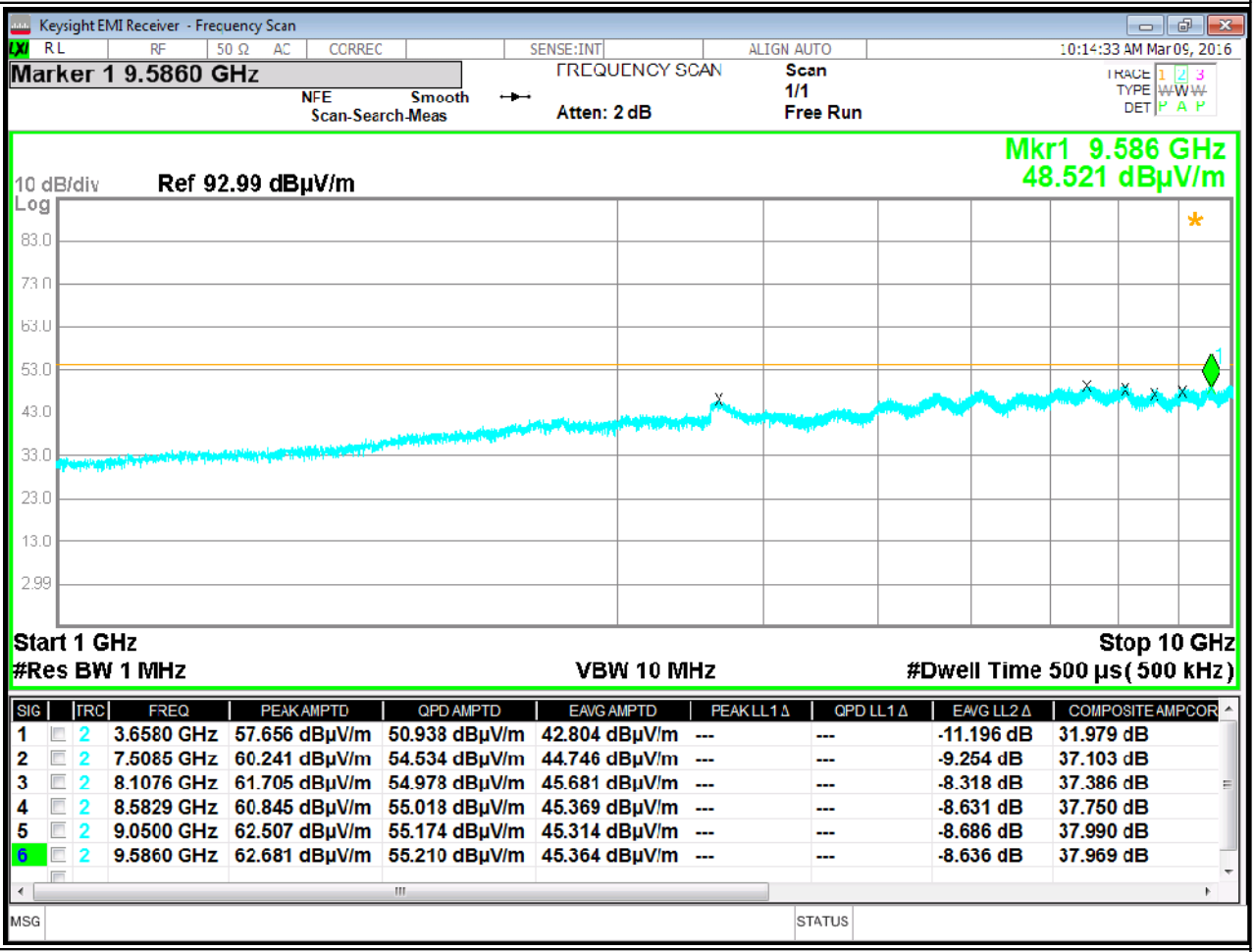
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	6.1320 GHz	59.485 dBµV/m	53.154 dBµV/m	43.727 dBµV/m	-14.514 dB	-20.845 dB	---	34.879 dB
2	1	7.6120 GHz	61.309 dBµV/m	54.771 dBµV/m	45.286 dBµV/m	-12.690 dB	-19.229 dB	---	37.145 dB
3	1	7.6500 GHz	61.904 dBµV/m	54.652 dBµV/m	44.918 dBµV/m	-12.096 dB	-19.348 dB	---	37.160 dB
4	1	7.8990 GHz	60.654 dBµV/m	54.134 dBµV/m	43.921 dBµV/m	-13.346 dB	-19.866 dB	---	37.260 dB
5	1	8.0535 GHz	62.378 dBµV/m	54.814 dBµV/m	45.453 dBµV/m	-11.621 dB	-19.186 dB	---	37.343 dB
6	1	9.2250 GHz	61.850 dBµV/m	54.799 dBµV/m	44.509 dBµV/m	-12.150 dB	-19.201 dB	---	37.955 dB

Fig. 4.17

POL V
MA: 100 cm
TT: 0°
EUT mode: Modulation type 2

Record of the measurement of radiated emissions (Peak detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. V.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)



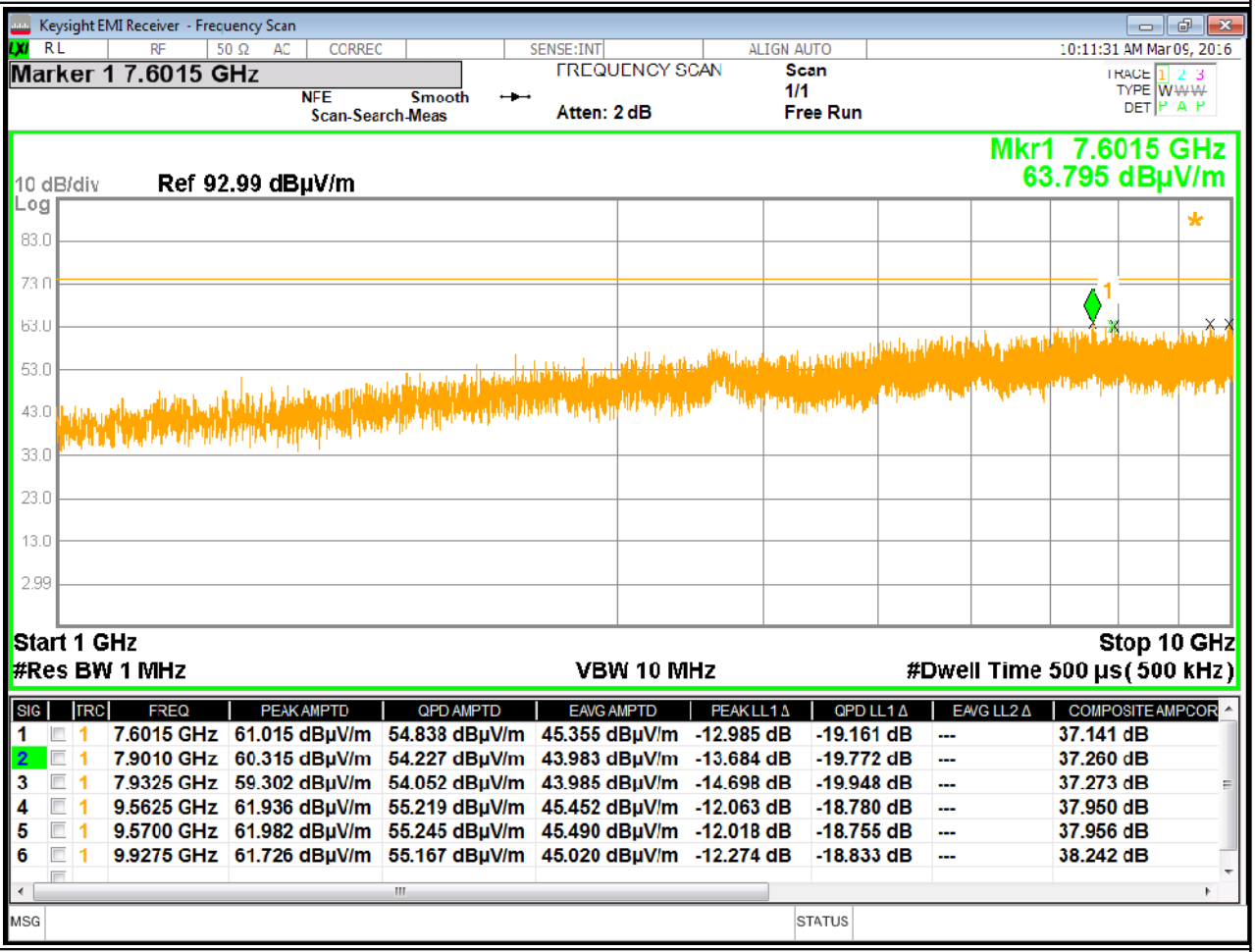
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	2	3.6580 GHz	57.656 dBµV/m	50.938 dBµV/m	42.804 dBµV/m	---	---	-11.196 dB	31.979 dB
2	2	7.5085 GHz	60.241 dBµV/m	54.534 dBµV/m	44.746 dBµV/m	---	---	-9.254 dB	37.103 dB
3	2	8.1076 GHz	61.705 dBµV/m	54.978 dBµV/m	45.681 dBµV/m	---	---	-8.318 dB	37.386 dB
4	2	8.5829 GHz	60.845 dBµV/m	55.018 dBµV/m	45.369 dBµV/m	---	---	-8.631 dB	37.750 dB
5	2	9.0500 GHz	62.507 dBµV/m	55.174 dBµV/m	45.314 dBµV/m	---	---	-8.686 dB	37.990 dB
6	2	9.5860 GHz	62.681 dBµV/m	55.210 dBµV/m	45.364 dBµV/m	---	---	-8.636 dB	37.969 dB

Fig. 4.18

POL H
MA: 100 cm
TT: 0°
EUT mode: Modulation type 2

Record of the measurement of radiated emissions (AVG detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. H.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)



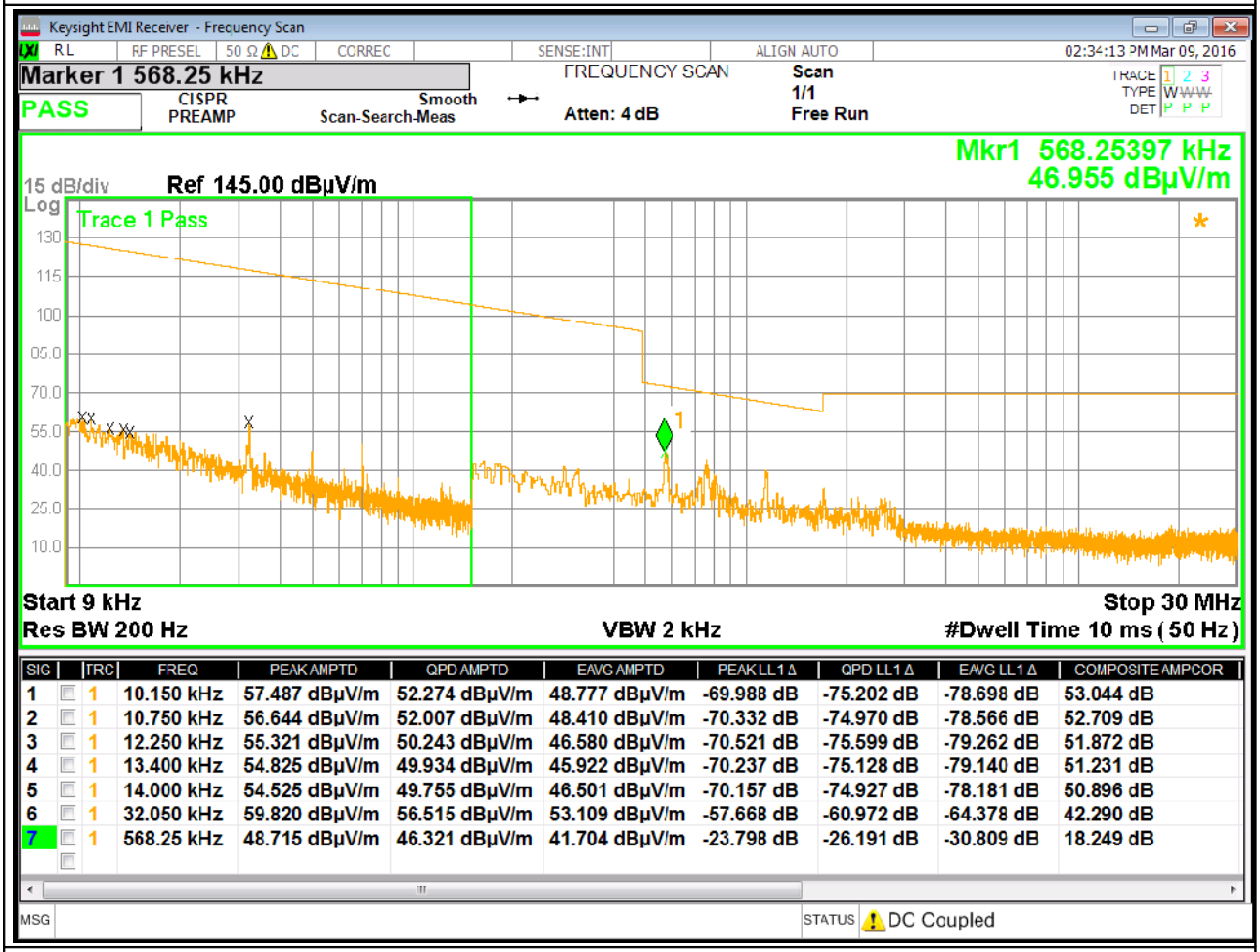
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	7.6015 GHz	61.015 dBµV/m	54.838 dBµV/m	45.355 dBµV/m	-12.985 dB	-19.161 dB	---	37.141 dB
2	1	7.9010 GHz	60.315 dBµV/m	54.227 dBµV/m	43.983 dBµV/m	-13.684 dB	-19.772 dB	---	37.260 dB
3	1	7.9325 GHz	59.302 dBµV/m	54.052 dBµV/m	43.985 dBµV/m	-14.698 dB	-19.948 dB	---	37.273 dB
4	1	9.5625 GHz	61.936 dBµV/m	55.219 dBµV/m	45.452 dBµV/m	-12.063 dB	-18.780 dB	---	37.950 dB
5	1	9.5700 GHz	61.982 dBµV/m	55.245 dBµV/m	45.490 dBµV/m	-12.018 dB	-18.755 dB	---	37.956 dB
6	1	9.9275 GHz	61.726 dBµV/m	55.167 dBµV/m	45.020 dBµV/m	-12.274 dB	-18.833 dB	---	38.242 dB

Fig. 4.19

POL H
MA: 100 cm
TT: 0°
EUT mode: Modulation type 2

Record of the measurement of radiated emissions (Peak detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. H.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)



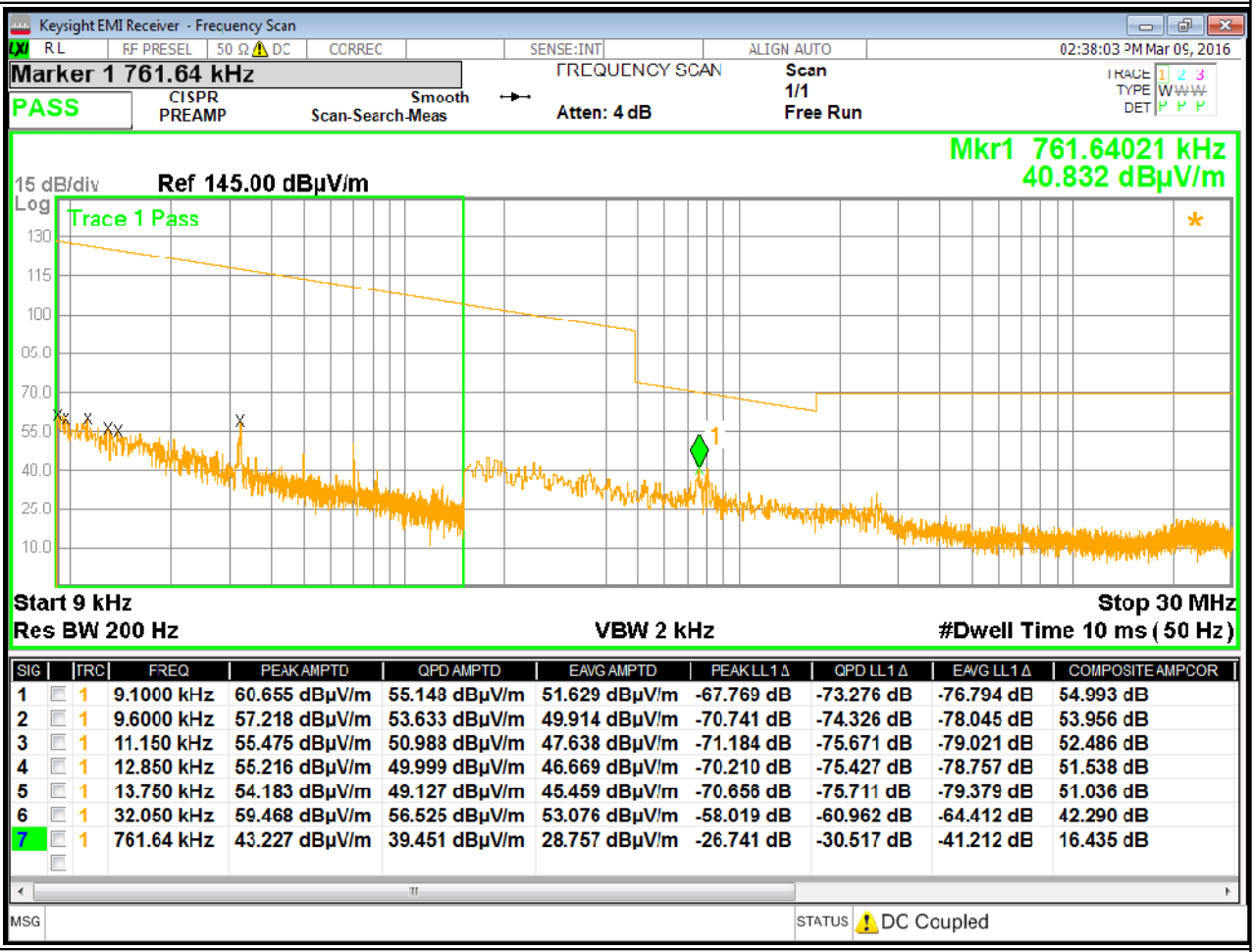
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL1 Δ	COMPOSITE AMPCOR
1	1	10.150 kHz	57.487 dBµV/m	52.274 dBµV/m	48.777 dBµV/m	-69.988 dB	-75.202 dB	-78.698 dB	53.044 dB
2	1	10.750 kHz	56.644 dBµV/m	52.007 dBµV/m	48.410 dBµV/m	-70.332 dB	-74.970 dB	-78.566 dB	52.709 dB
3	1	12.250 kHz	55.321 dBµV/m	50.243 dBµV/m	46.580 dBµV/m	-70.521 dB	-75.599 dB	-79.262 dB	51.872 dB
4	1	13.400 kHz	54.825 dBµV/m	49.934 dBµV/m	45.922 dBµV/m	-70.237 dB	-75.128 dB	-79.140 dB	51.231 dB
5	1	14.000 kHz	54.525 dBµV/m	49.755 dBµV/m	46.501 dBµV/m	-70.157 dB	-74.927 dB	-78.181 dB	50.896 dB
6	1	32.050 kHz	59.820 dBµV/m	56.515 dBµV/m	53.109 dBµV/m	-57.668 dB	-60.972 dB	-64.378 dB	42.290 dB
7	1	568.25 kHz	48.715 dBµV/m	46.321 dBµV/m	41.704 dBµV/m	-23.798 dB	-26.191 dB	-30.809 dB	18.249 dB

Fig. 4.20

POL Parallel
MA: 150 cm
TT: 0°
EUT mode: Standby

Record of the measurement of radiated emissions (PK)
Maximum disturbance determined in the frequency range 0.009 – 30 MHz, Pol. Parallel.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)



SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL1 Δ	COMPOSITE AMPCOR
1	1	9.1000 kHz	60.655 dBµV/m	55.148 dBµV/m	51.629 dBµV/m	-67.769 dB	-73.276 dB	-76.794 dB	54.993 dB
2	1	9.6000 kHz	57.218 dBµV/m	53.633 dBµV/m	49.914 dBµV/m	-70.741 dB	-74.326 dB	-78.045 dB	53.956 dB
3	1	11.150 kHz	55.475 dBµV/m	50.988 dBµV/m	47.638 dBµV/m	-71.184 dB	-75.671 dB	-79.021 dB	52.486 dB
4	1	12.850 kHz	55.216 dBµV/m	49.999 dBµV/m	46.669 dBµV/m	-70.210 dB	-75.427 dB	-78.757 dB	51.538 dB
5	1	13.750 kHz	54.183 dBµV/m	49.127 dBµV/m	45.459 dBµV/m	-70.656 dB	-75.711 dB	-79.379 dB	51.036 dB
6	1	32.050 kHz	59.468 dBµV/m	56.525 dBµV/m	53.076 dBµV/m	-58.019 dB	-60.962 dB	-64.412 dB	42.290 dB
7	1	761.64 kHz	43.227 dBµV/m	39.451 dBµV/m	28.757 dBµV/m	-26.741 dB	-30.517 dB	-41.212 dB	16.435 dB

Fig. 4.21

POL Orthogonal
MA: 150 cm
TT: 0°
EUT mode: Standby

Record of the measurement of radiated emissions (PK)
Maximum disturbance determined in the frequency range 0.009 – 30 MHz, Pol. Orthogonal.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)

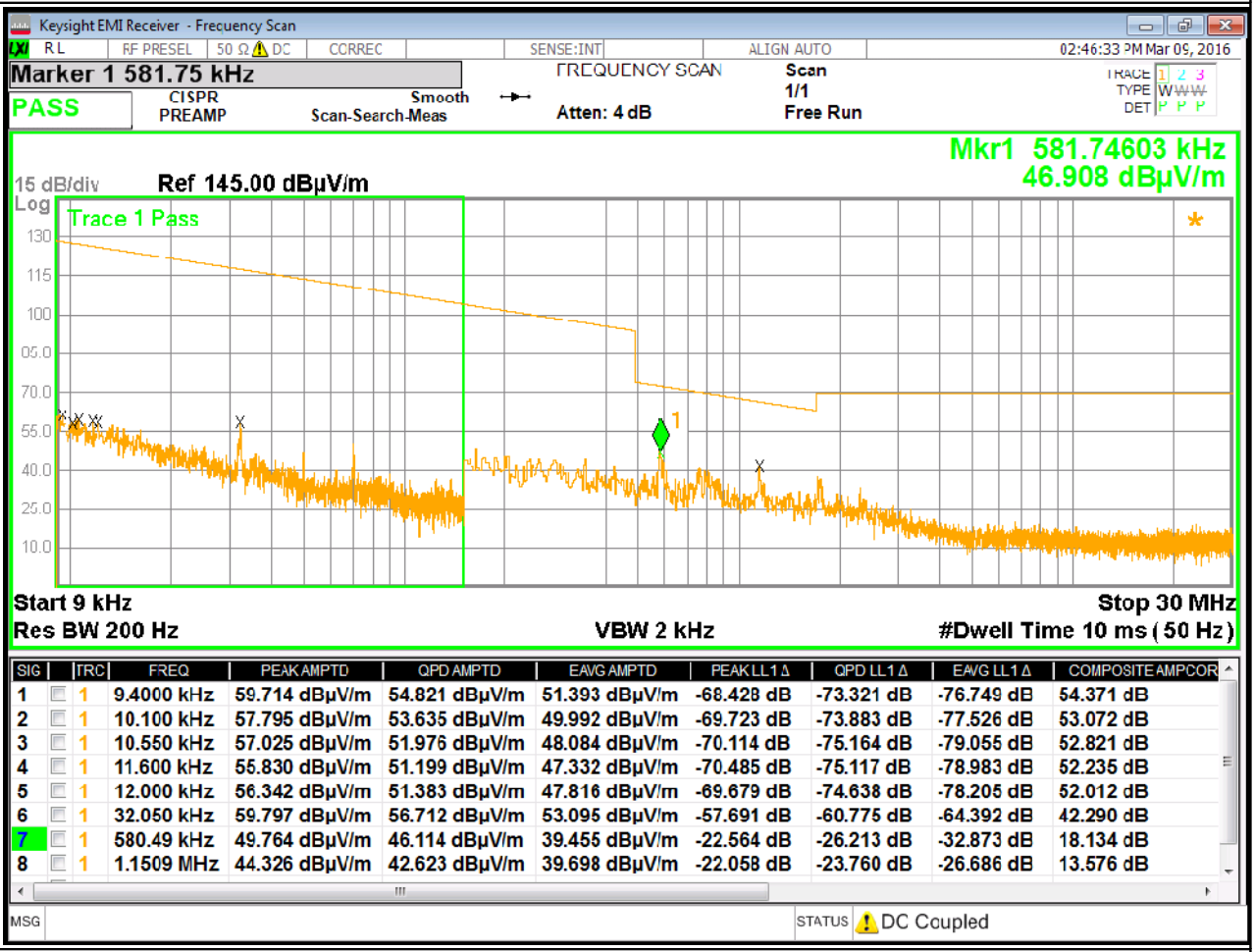


Fig. 4.22

POL Parallel
MA: 150 cm
TT: 0°
EUT mode: Modulation type 1

Record of the measurement of radiated emissions (PK)
Maximum disturbance determined in the frequency range 0.009 – 30 MHz, Pol. Parallel.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)

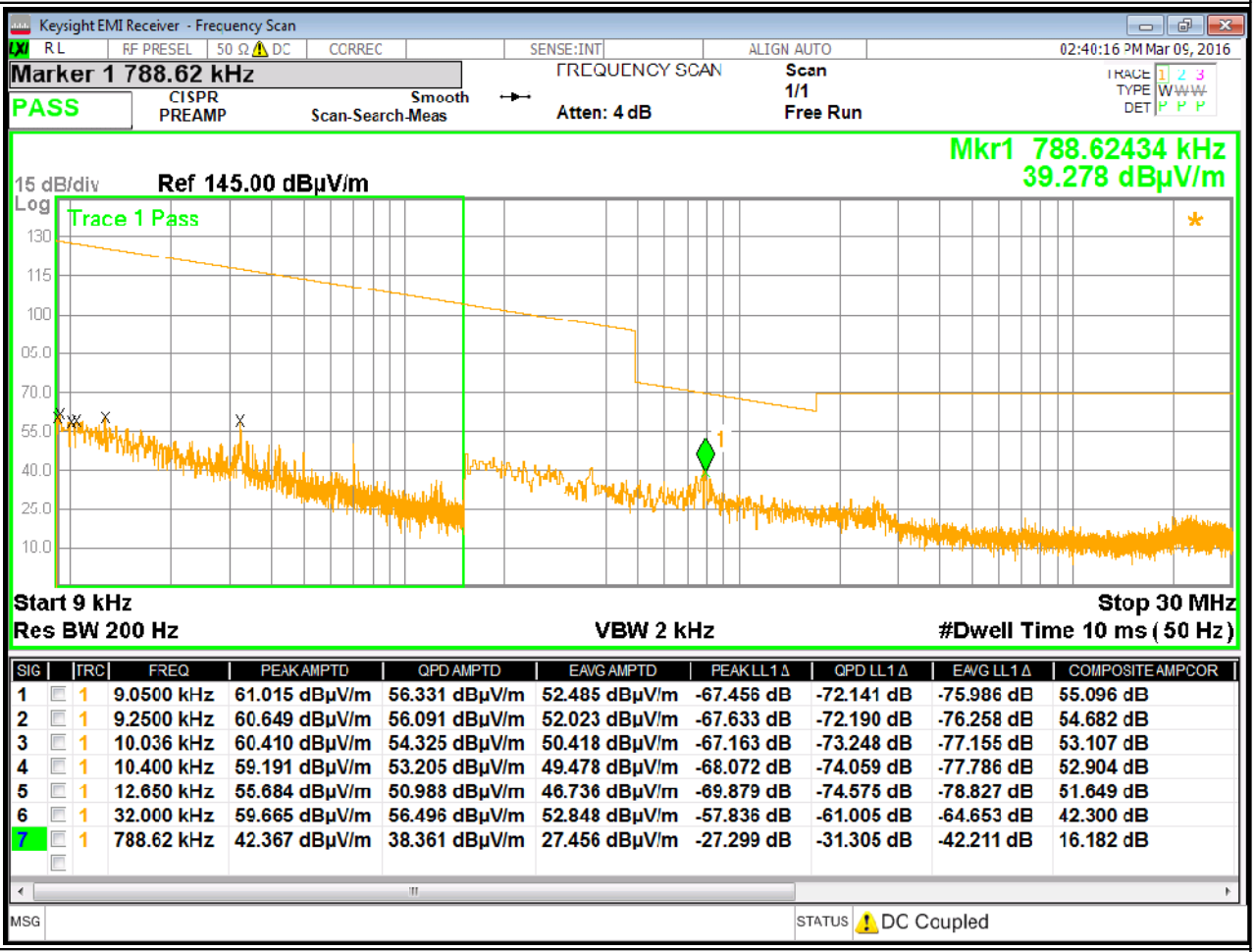
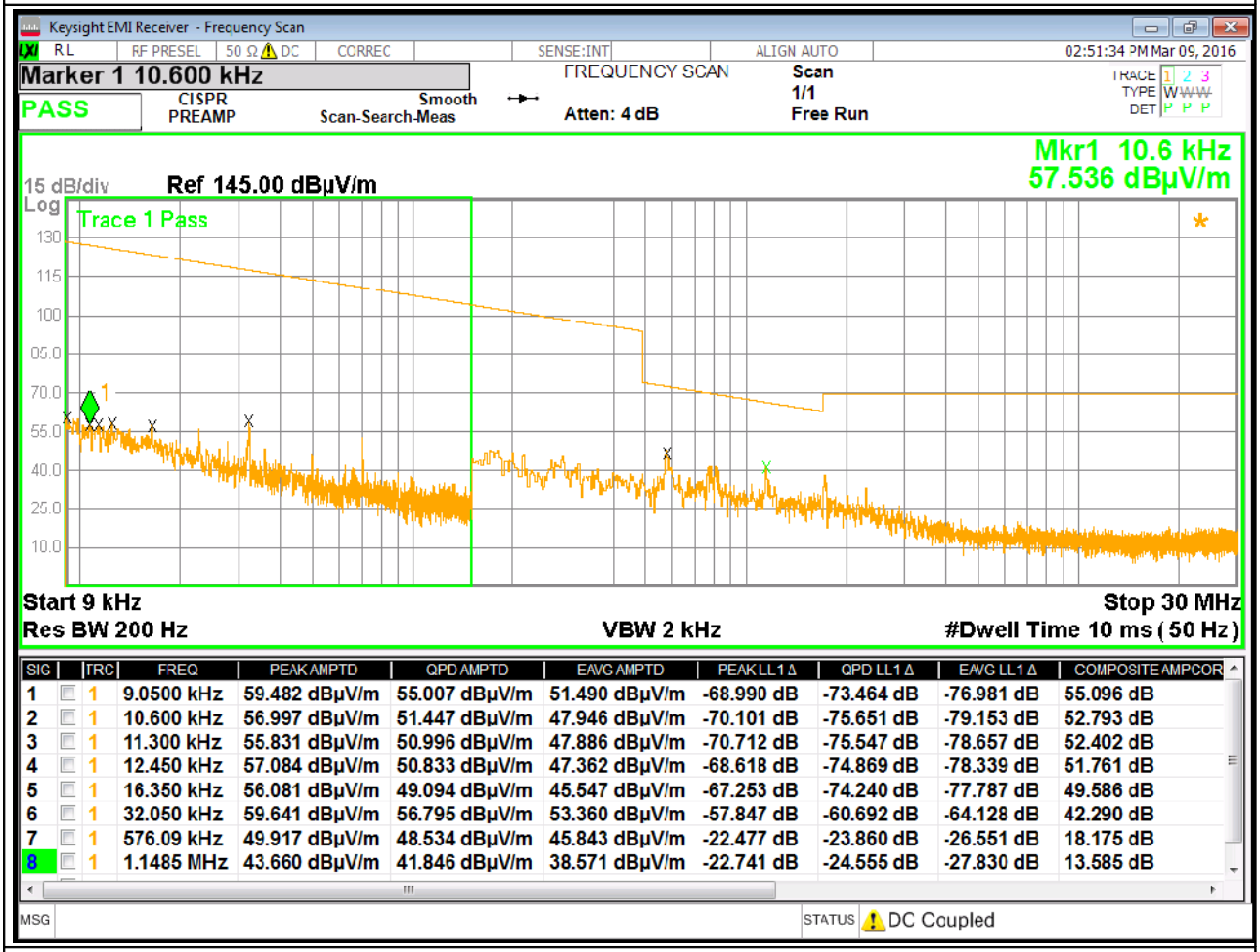


Fig. 4.23

POL Orthogonal
MA: 150 cm
TT: 0°
EUT mode: Modulation type 1

Record of the measurement of radiated emissions (PK)
Maximum disturbance determined in the frequency range 0.009 – 30 MHz, Pol. Orthogonal.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)



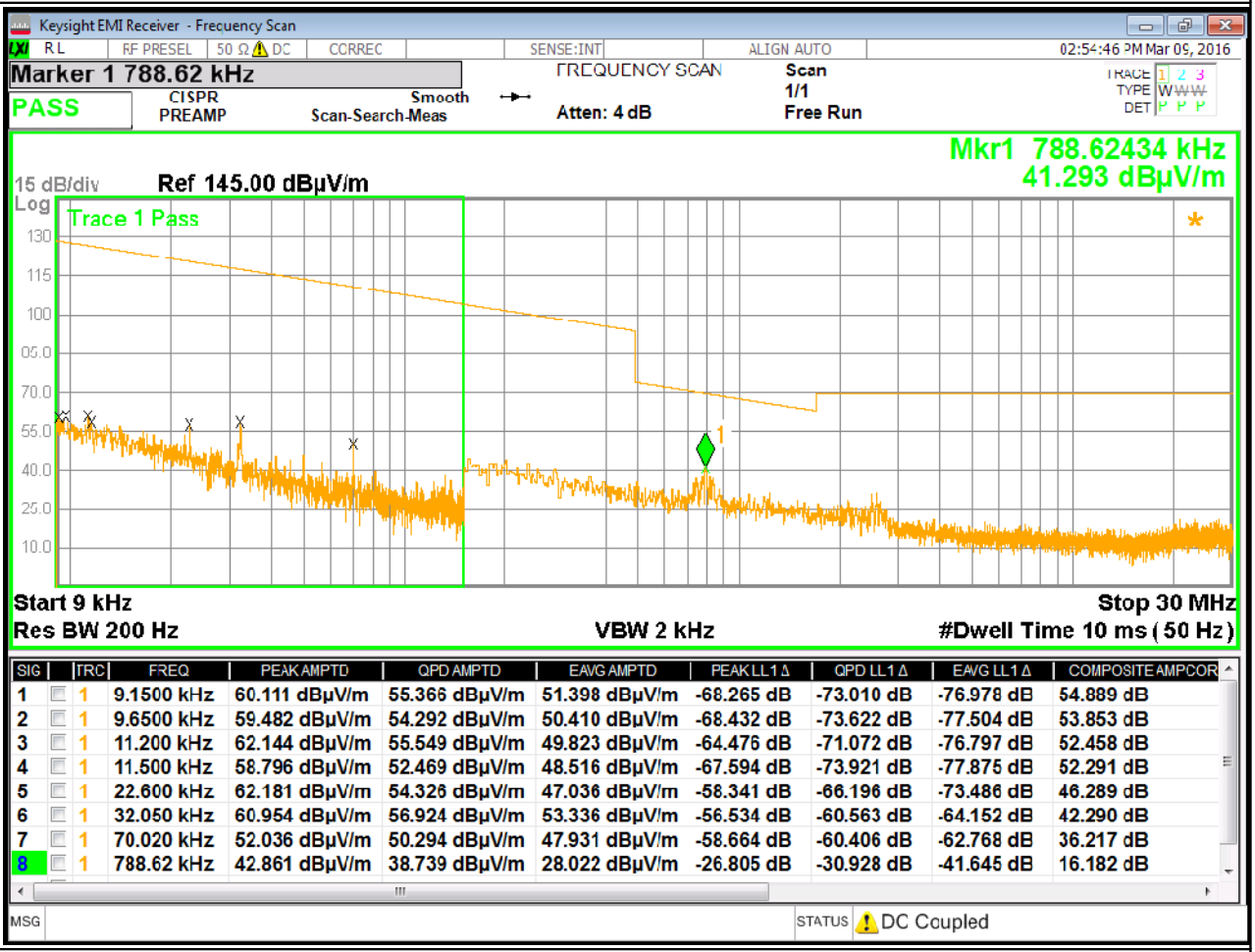
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL1 Δ	COMPOSITE AMPCOR
1	1	9.0500 kHz	59.482 dBµV/m	55.007 dBµV/m	51.490 dBµV/m	-68.990 dB	-73.464 dB	-76.981 dB	55.096 dB
2	1	10.600 kHz	56.997 dBµV/m	51.447 dBµV/m	47.946 dBµV/m	-70.101 dB	-75.651 dB	-79.153 dB	52.793 dB
3	1	11.300 kHz	55.831 dBµV/m	50.996 dBµV/m	47.886 dBµV/m	-70.712 dB	-75.547 dB	-78.657 dB	52.402 dB
4	1	12.450 kHz	57.084 dBµV/m	50.833 dBµV/m	47.362 dBµV/m	-68.618 dB	-74.869 dB	-78.339 dB	51.761 dB
5	1	16.350 kHz	56.081 dBµV/m	49.094 dBµV/m	45.547 dBµV/m	-67.253 dB	-74.240 dB	-77.787 dB	49.586 dB
6	1	32.050 kHz	59.641 dBµV/m	56.795 dBµV/m	53.360 dBµV/m	-57.847 dB	-60.692 dB	-64.128 dB	42.290 dB
7	1	576.09 kHz	49.917 dBµV/m	48.534 dBµV/m	45.843 dBµV/m	-22.477 dB	-23.860 dB	-26.551 dB	18.175 dB
8	1	1.1485 MHz	43.660 dBµV/m	41.846 dBµV/m	38.571 dBµV/m	-22.741 dB	-24.555 dB	-27.830 dB	13.585 dB

Fig. 4.24

POL Parallel
MA: 150 cm
TT: 0°
EUT mode: Modulation type 2

Record of the measurement of radiated emissions (PK)
Maximum disturbance determined in the frequency range 0.009 – 30 MHz, Pol. Parallel.

Job Number	FCC-16547
Test Name	Radiated Emissions
EUT Name	CAEN RFID s.r.l. - R4301P ION (UHF)



SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL1 Δ	COMPOSITE AMPCOR
1	1	9.1500 kHz	60.111 dBµV/m	55.366 dBµV/m	51.398 dBµV/m	-68.265 dB	-73.010 dB	-76.978 dB	54.889 dB
2	1	9.6500 kHz	59.482 dBµV/m	54.292 dBµV/m	50.410 dBµV/m	-68.432 dB	-73.622 dB	-77.504 dB	53.853 dB
3	1	11.200 kHz	62.144 dBµV/m	55.549 dBµV/m	49.823 dBµV/m	-64.476 dB	-71.072 dB	-76.797 dB	52.458 dB
4	1	11.500 kHz	58.796 dBµV/m	52.469 dBµV/m	48.516 dBµV/m	-67.594 dB	-73.921 dB	-77.875 dB	52.291 dB
5	1	22.600 kHz	62.181 dBµV/m	54.326 dBµV/m	47.036 dBµV/m	-58.341 dB	-66.196 dB	-73.486 dB	46.289 dB
6	1	32.050 kHz	60.954 dBµV/m	56.924 dBµV/m	53.336 dBµV/m	-56.534 dB	-60.563 dB	-64.152 dB	42.290 dB
7	1	70.020 kHz	52.036 dBµV/m	50.294 dBµV/m	47.931 dBµV/m	-58.664 dB	-60.406 dB	-62.768 dB	36.217 dB
8	1	788.62 kHz	42.861 dBµV/m	38.739 dBµV/m	28.022 dBµV/m	-26.805 dB	-30.928 dB	-41.645 dB	16.182 dB

Fig. 4.25

POL Orthogonal
MA: 150 cm
TT: 0°
EUT mode: Modulation type 2

Record of the measurement of radiated emissions (PK)
Maximum disturbance determined in the frequency range 0.009 – 30 MHz, Pol. Orthogonal.

5. POWER LINES CONDUCTED EMISSIONS

Equipment shall meet the limits below when using a CISPR16 quasi-peak and average detector receivers.

FCC 15.207

FREQUENCY RANGE (MHz)	*QUASI-PEAK LIMIT* [dB (µV)]	*AVERAGE LIMIT* [dB (µV)]
0.15 – 0.50	66 – 56(*)	56 – 46(*)
0.50 – 5	56	46
5 – 30	60	50

(*) *Limit decreasing linearly with logarithm of frequency*

Test Equipment

EQUIPMENT	MANUFACTURER	MODEL	CAL. DUE
MXE EMI Receiver	Agilent/Keysight	N9038A	01/2017
Screened Room	GSD	CSC01	01/2017
LISN	GSD	GSDA01	01/2017
LISN	COMTEST	---	01/2017

Test procedure: CE22R01

The EUT power cable was connected to a LISN and the monitored output of the LISN was connected to a spectrum analyzer by a transient limiter. The conducted emissions from 150 kHz to 30 MHz were monitored and compared to the specification limits

Test method

Test method was in accordance with the reference standard.

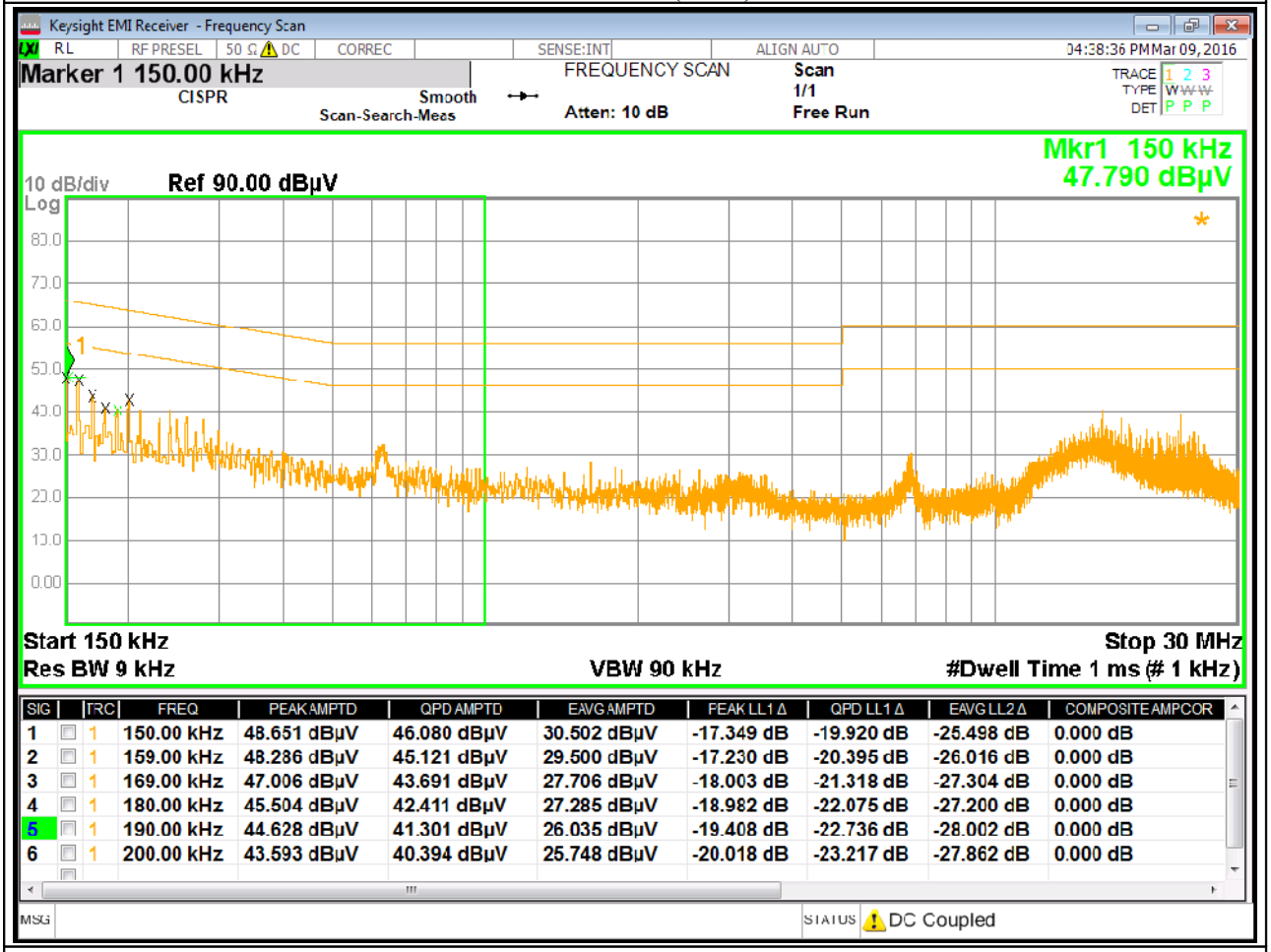
EUT modes of operations were tested in order to achieve the maximum level of emission.

Results

Equipment complied with the test specification limits.

Graphics in following figures show some registrations of the frequency spectrum of the conducted emissions.

Job Number	FCC-16547
Test Name	Power line Conducted Emissions FCC 15.207
EUT Name	R4301P ION (UHF)



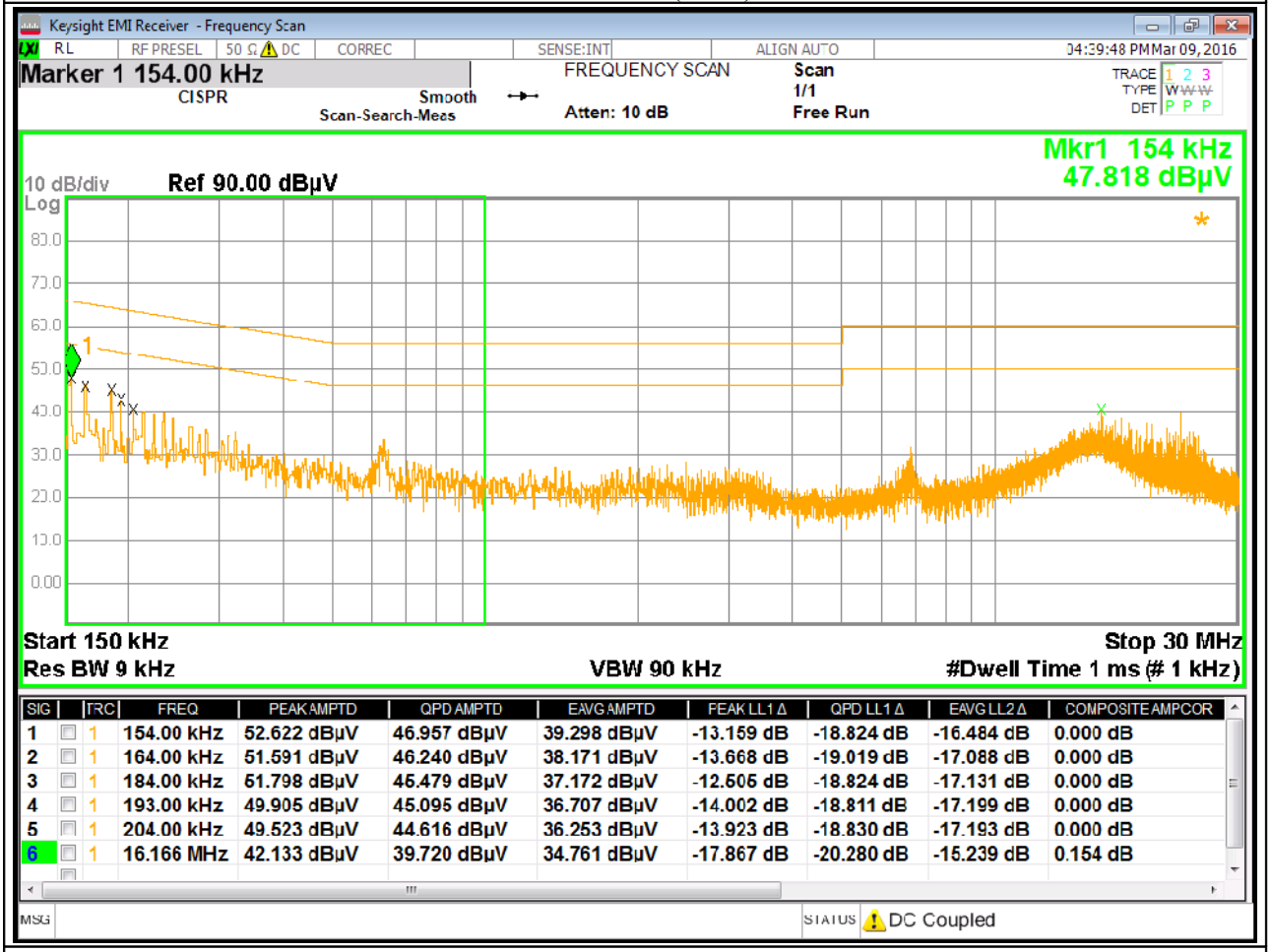
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	150.00 kHz	48.651 dBµV	46.080 dBµV	30.502 dBµV	-17.349 dB	-19.920 dB	-25.498 dB	0.000 dB
2	1	159.00 kHz	48.286 dBµV	45.121 dBµV	29.500 dBµV	-17.230 dB	-20.395 dB	-26.016 dB	0.000 dB
3	1	169.00 kHz	47.006 dBµV	43.691 dBµV	27.706 dBµV	-18.003 dB	-21.318 dB	-27.304 dB	0.000 dB
4	1	180.00 kHz	45.504 dBµV	42.411 dBµV	27.285 dBµV	-18.982 dB	-22.075 dB	-27.200 dB	0.000 dB
5	1	190.00 kHz	44.628 dBµV	41.301 dBµV	26.035 dBµV	-19.408 dB	-22.736 dB	-28.002 dB	0.000 dB
6	1	200.00 kHz	43.593 dBµV	40.394 dBµV	25.748 dBµV	-20.018 dB	-23.217 dB	-27.862 dB	0.000 dB

Fig. 5.1

Phase 1 *of EUT*
EUT mode: Standby
Auxiliary apparatus: Laptop whit power supply linked

B Band (0.15 – 30 MHz)

Job Number	FCC-16547
Test Name	Power line Conducted Emissions FCC 15.207
EUT Name	R4301P ION (UHF)



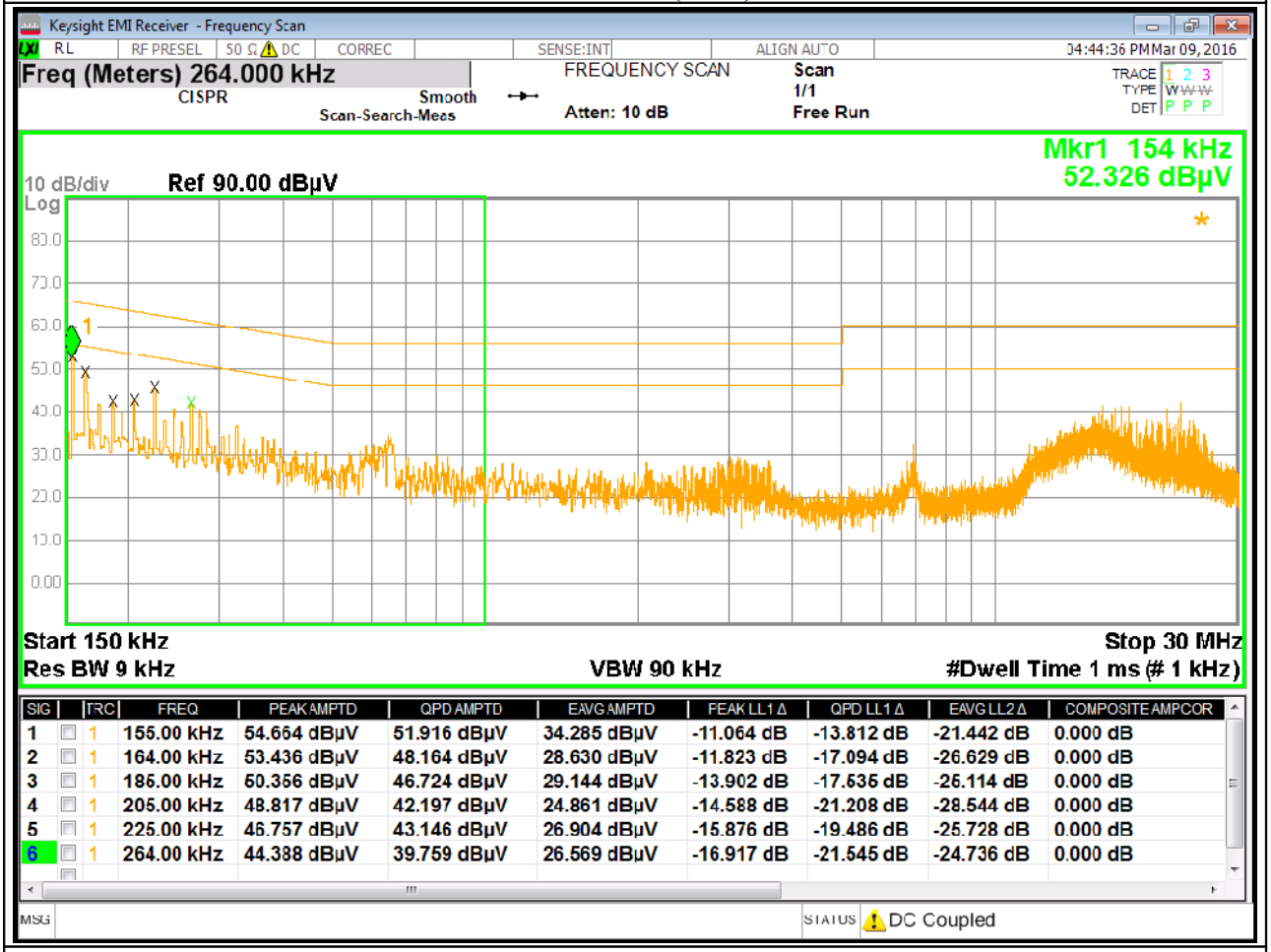
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	154.00 kHz	52.622 dBµV	46.957 dBµV	39.298 dBµV	-13.159 dB	-18.824 dB	-16.484 dB	0.000 dB
2	1	164.00 kHz	51.591 dBµV	46.240 dBµV	38.171 dBµV	-13.668 dB	-19.019 dB	-17.088 dB	0.000 dB
3	1	184.00 kHz	51.798 dBµV	45.479 dBµV	37.172 dBµV	-12.505 dB	-18.824 dB	-17.131 dB	0.000 dB
4	1	193.00 kHz	49.905 dBµV	45.095 dBµV	36.707 dBµV	-14.002 dB	-18.811 dB	-17.199 dB	0.000 dB
5	1	204.00 kHz	49.523 dBµV	44.616 dBµV	36.253 dBµV	-13.923 dB	-18.830 dB	-17.193 dB	0.000 dB
6	1	16.166 MHz	42.133 dBµV	39.720 dBµV	34.761 dBµV	-17.867 dB	-20.280 dB	-15.239 dB	0.154 dB

Fig. 5.2

Phase 2 *of EUT*
EUT mode: Standby
Auxiliary apparatus: Laptop whit power supply linked

B Band (0.15 – 30 MHz)

Job Number	FCC-16547
Test Name	Power line Conducted Emissions FCC 15.207
EUT Name	R4301P ION (UHF)



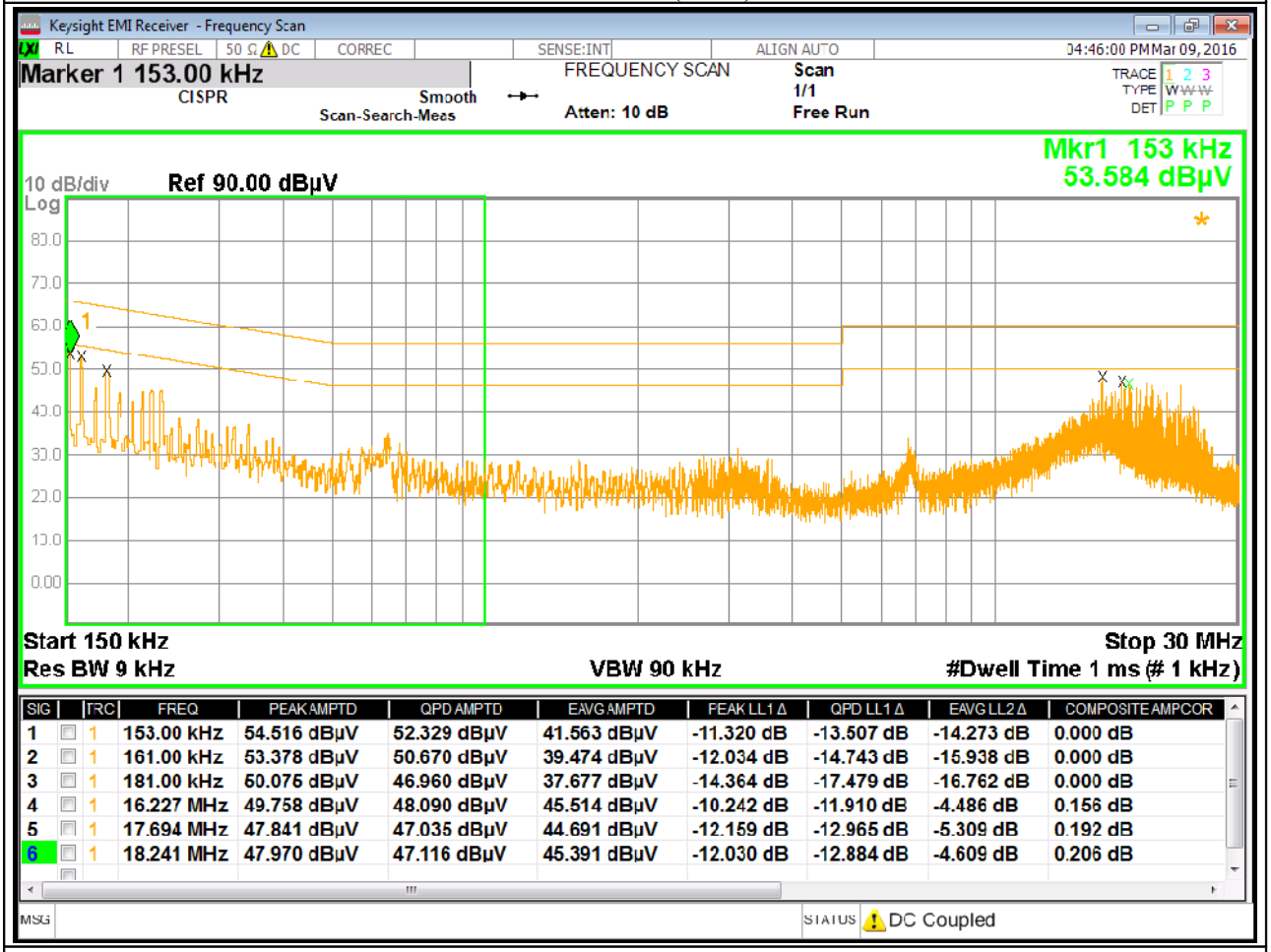
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	155.00 kHz	54.664 dBµV	51.916 dBµV	34.285 dBµV	-11.064 dB	-13.812 dB	-21.442 dB	0.000 dB
2	1	164.00 kHz	53.436 dBµV	48.164 dBµV	28.630 dBµV	-11.823 dB	-17.094 dB	-26.629 dB	0.000 dB
3	1	186.00 kHz	50.356 dBµV	46.724 dBµV	29.144 dBµV	-13.902 dB	-17.536 dB	-26.114 dB	0.000 dB
4	1	205.00 kHz	48.817 dBµV	42.197 dBµV	24.861 dBµV	-14.588 dB	-21.208 dB	-28.544 dB	0.000 dB
5	1	225.00 kHz	46.757 dBµV	43.146 dBµV	26.904 dBµV	-15.876 dB	-19.486 dB	-25.728 dB	0.000 dB
6	1	264.00 kHz	44.388 dBµV	39.759 dBµV	26.569 dBµV	-16.917 dB	-21.545 dB	-24.736 dB	0.000 dB

Fig. 5.3

Phase 1 *of EUT*
EUT mode: Modulation type 1
Auxiliary apparatus: Laptop whit power supply linked

B Band (0.15 – 30 MHz)

Job Number	FCC-16547
Test Name	Power line Conducted Emissions FCC 15.207
EUT Name	R4301P ION (UHF)



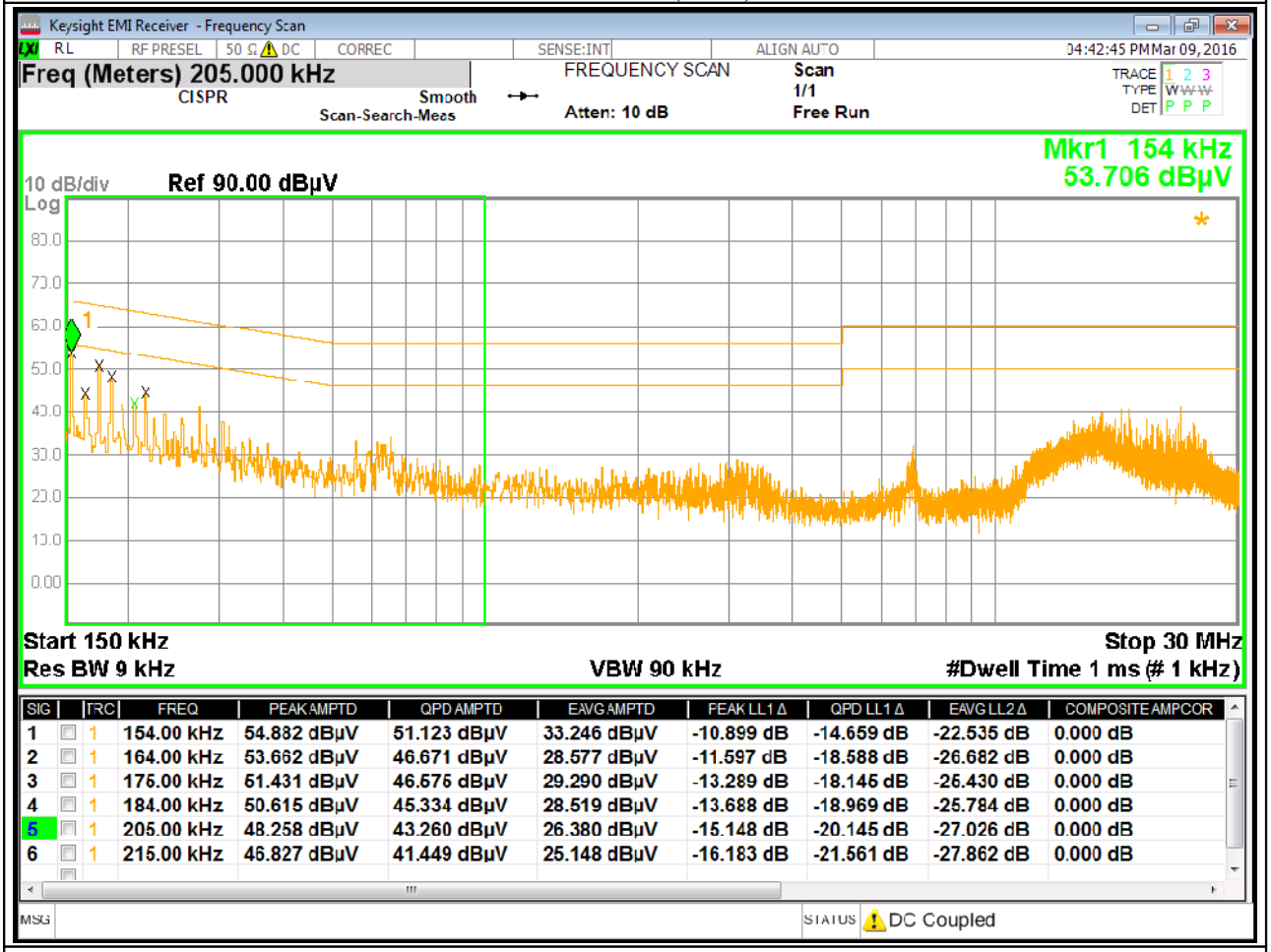
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	153.00 kHz	54.516 dBµV	52.329 dBµV	41.563 dBµV	-11.320 dB	-13.507 dB	-14.273 dB	0.000 dB
2	1	161.00 kHz	53.378 dBµV	50.670 dBµV	39.474 dBµV	-12.034 dB	-14.743 dB	-15.938 dB	0.000 dB
3	1	181.00 kHz	50.075 dBµV	46.960 dBµV	37.677 dBµV	-14.364 dB	-17.479 dB	-16.762 dB	0.000 dB
4	1	16.227 MHz	49.758 dBµV	48.090 dBµV	45.514 dBµV	-10.242 dB	-11.910 dB	-4.486 dB	0.156 dB
5	1	17.694 MHz	47.841 dBµV	47.035 dBµV	44.691 dBµV	-12.159 dB	-12.965 dB	-5.309 dB	0.192 dB
6	1	18.241 MHz	47.970 dBµV	47.116 dBµV	45.391 dBµV	-12.030 dB	-12.884 dB	-4.609 dB	0.206 dB

Fig. 5.4

Phase 2 *of EUT*
EUT mode: Modulation type 1
Auxiliary apparatus: Laptop whit power supply linked

B Band (0.15 – 30 MHz)

Job Number	FCC-16547
Test Name	Power line Conducted Emissions FCC 15.207
EUT Name	R4301P ION (UHF)



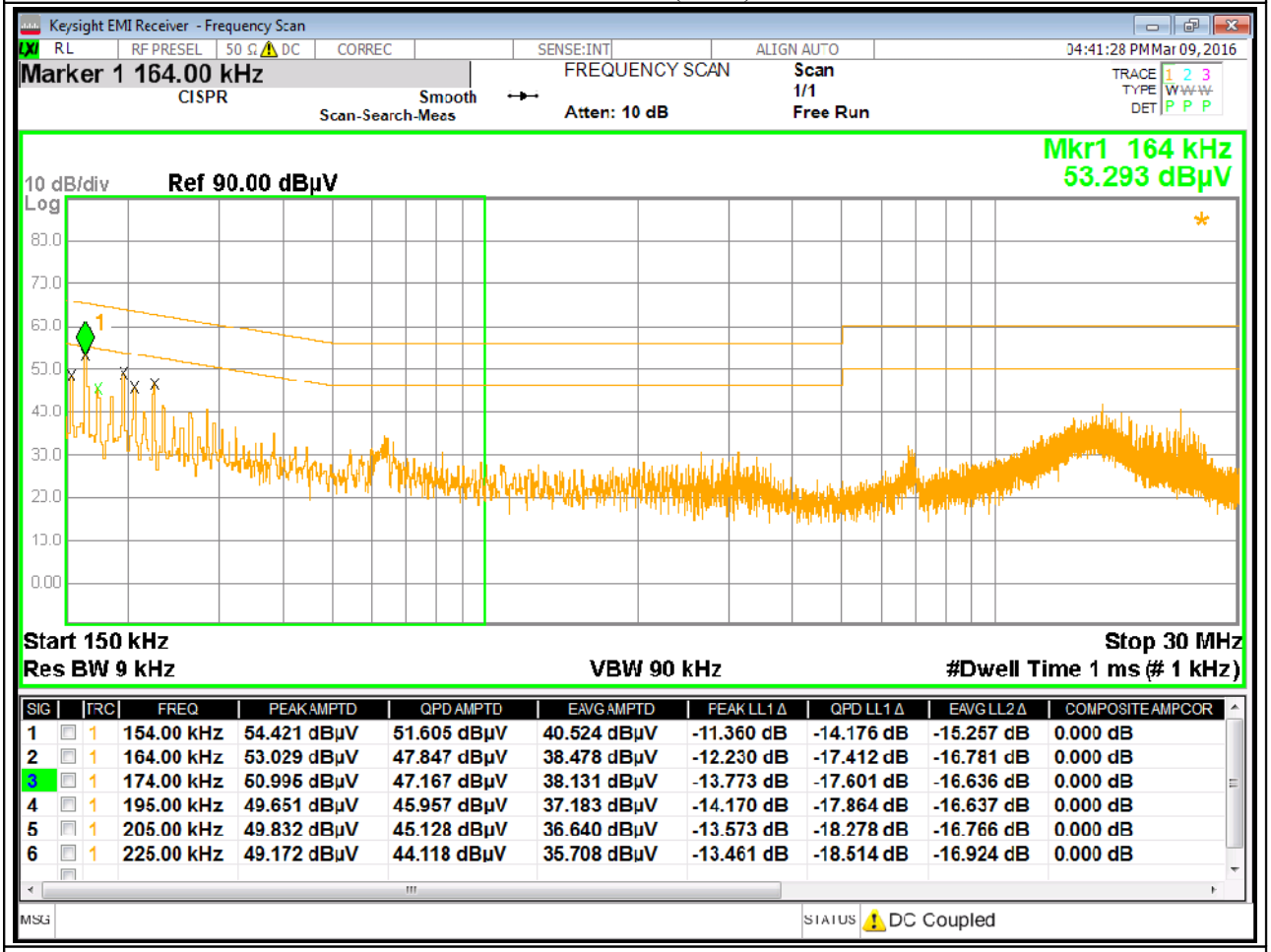
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	154.00 kHz	54.882 dBµV	51.123 dBµV	33.246 dBµV	-10.899 dB	-14.659 dB	-22.535 dB	0.000 dB
2	1	164.00 kHz	53.662 dBµV	46.671 dBµV	28.577 dBµV	-11.597 dB	-18.588 dB	-26.682 dB	0.000 dB
3	1	176.00 kHz	51.431 dBµV	46.575 dBµV	29.290 dBµV	-13.289 dB	-18.145 dB	-26.430 dB	0.000 dB
4	1	184.00 kHz	50.615 dBµV	45.334 dBµV	28.519 dBµV	-13.688 dB	-18.969 dB	-25.784 dB	0.000 dB
5	1	205.00 kHz	48.258 dBµV	43.260 dBµV	26.380 dBµV	-15.148 dB	-20.145 dB	-27.026 dB	0.000 dB
6	1	215.00 kHz	46.827 dBµV	41.449 dBµV	25.148 dBµV	-16.183 dB	-21.561 dB	-27.862 dB	0.000 dB

Fig. 5.5

Phase 1 *of EUT*
EUT mode: Modulation type 2
Auxiliary apparatus: Laptop whit power supply linked

B Band (0.15 – 30 MHz)

Job Number	FCC-16547
Test Name	Power line Conducted Emissions FCC 15.207
EUT Name	R4301P ION (UHF)



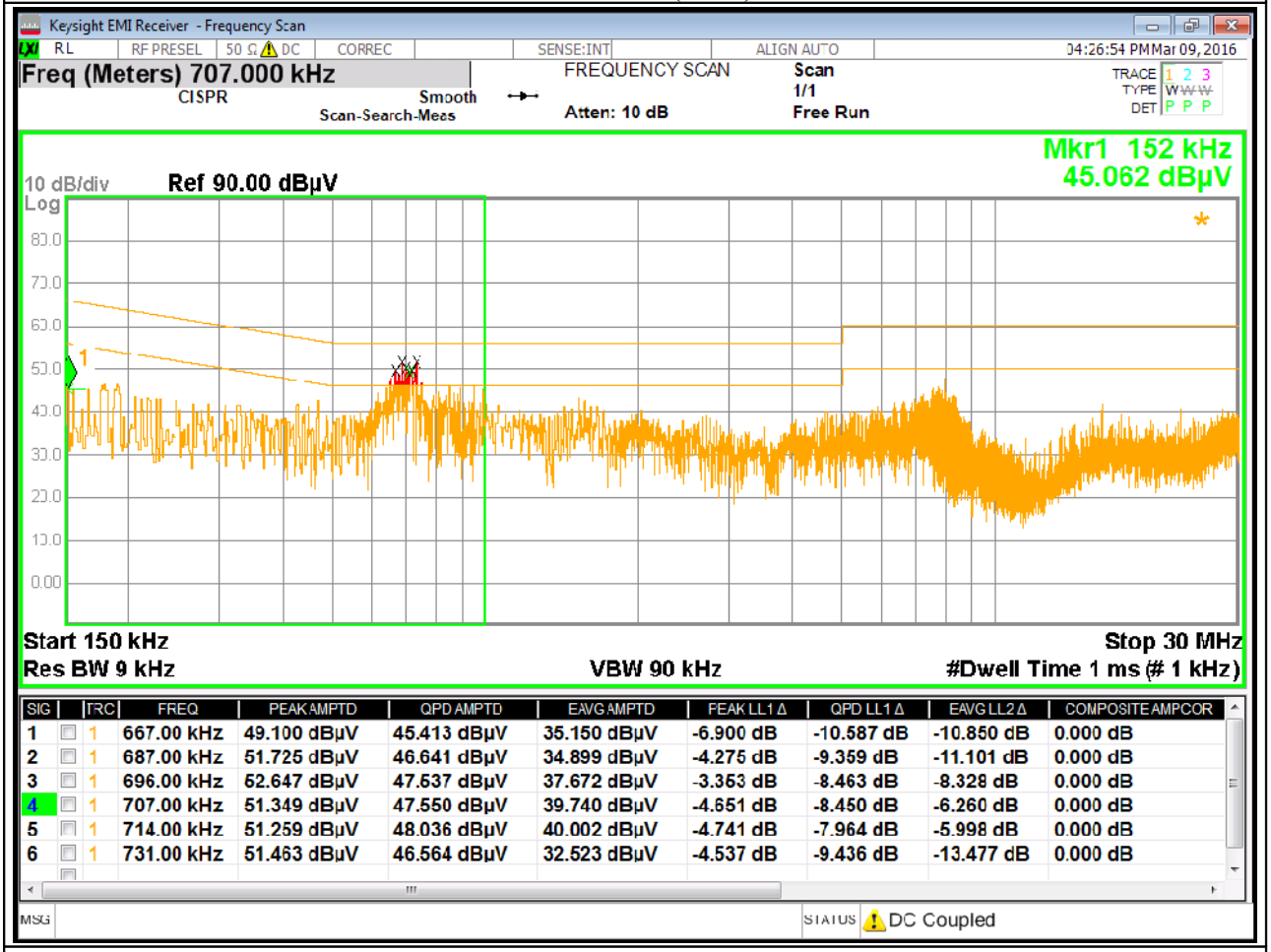
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	154.00 kHz	54.421 dBµV	51.605 dBµV	40.524 dBµV	-11.360 dB	-14.176 dB	-15.257 dB	0.000 dB
2	1	164.00 kHz	53.029 dBµV	47.847 dBµV	38.478 dBµV	-12.230 dB	-17.412 dB	-16.781 dB	0.000 dB
3	1	174.00 kHz	50.996 dBµV	47.167 dBµV	38.131 dBµV	-13.773 dB	-17.601 dB	-16.636 dB	0.000 dB
4	1	195.00 kHz	49.651 dBµV	45.957 dBµV	37.183 dBµV	-14.170 dB	-17.864 dB	-16.637 dB	0.000 dB
5	1	205.00 kHz	49.832 dBµV	45.128 dBµV	36.640 dBµV	-13.573 dB	-18.278 dB	-16.766 dB	0.000 dB
6	1	225.00 kHz	49.172 dBµV	44.118 dBµV	35.708 dBµV	-13.461 dB	-18.514 dB	-16.924 dB	0.000 dB

Fig. 5.6

Phase 2 *of EUT*
EUT mode: Modulation type 2
Auxiliary apparatus: Laptop whit power supply linked

B Band (0.15 – 30 MHz)

Job Number	FCC-16547
Test Name	Power line Conducted Emissions FCC 15.207
EUT Name	R4301P ION (UHF)



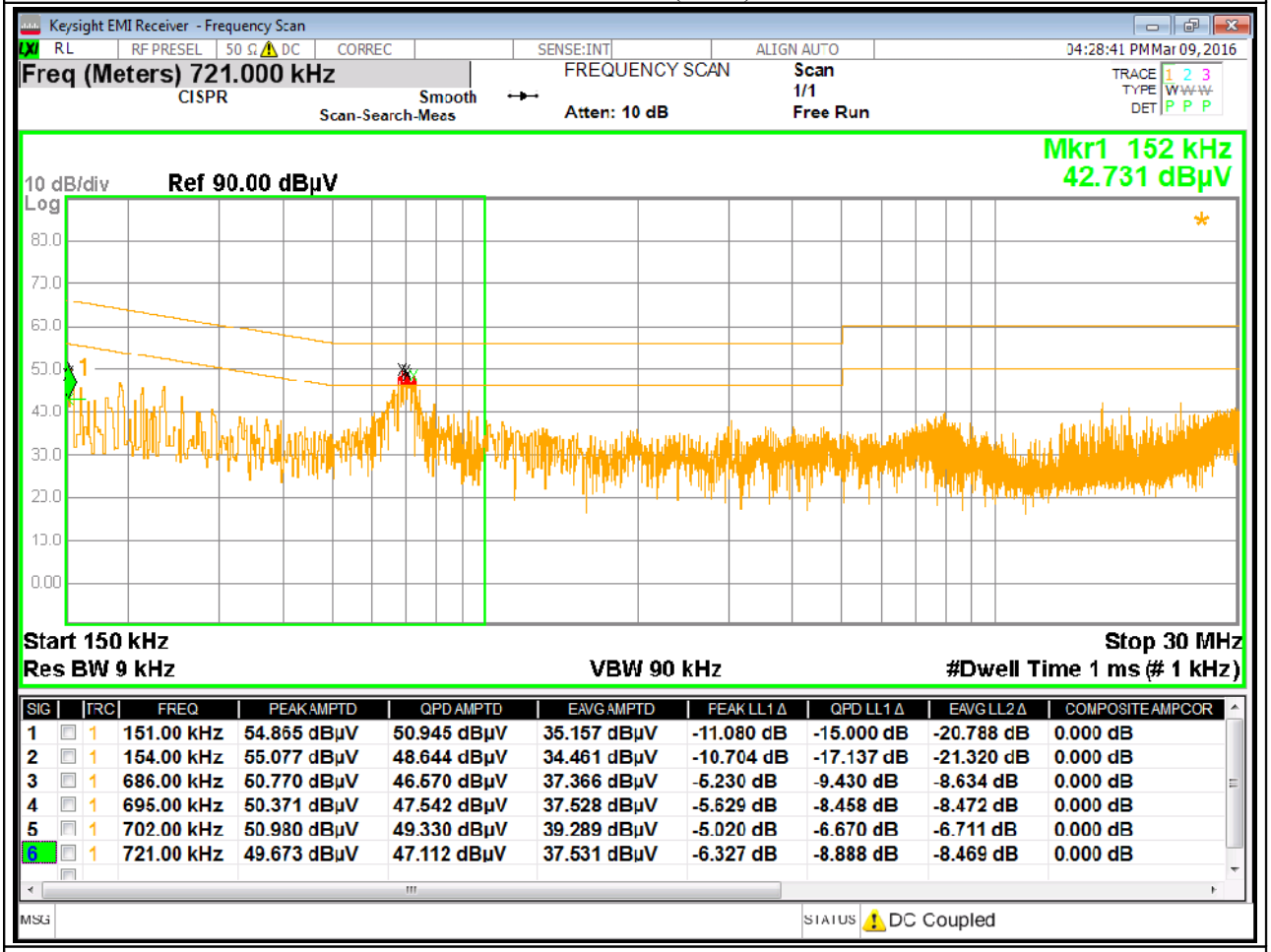
SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	667.00 kHz	49.100 dBµV	45.413 dBµV	35.150 dBµV	-6.900 dB	-10.587 dB	-10.850 dB	0.000 dB
2	1	687.00 kHz	51.725 dBµV	46.641 dBµV	34.899 dBµV	-4.275 dB	-9.359 dB	-11.101 dB	0.000 dB
3	1	696.00 kHz	52.647 dBµV	47.537 dBµV	37.672 dBµV	-3.353 dB	-8.463 dB	-8.328 dB	0.000 dB
4	1	707.00 kHz	51.349 dBµV	47.550 dBµV	39.740 dBµV	-4.651 dB	-8.450 dB	-6.260 dB	0.000 dB
5	1	714.00 kHz	51.259 dBµV	48.036 dBµV	40.002 dBµV	-4.741 dB	-7.964 dB	-5.998 dB	0.000 dB
6	1	731.00 kHz	51.463 dBµV	46.564 dBµV	32.523 dBµV	-4.537 dB	-9.436 dB	-13.477 dB	0.000 dB

Fig. 5.7

Phase 1 *of auxiliary apparatus (worst case)*
EUT mode: Standby
Auxiliary apparatus: Laptop whit power supply linked

B Band (0.15 – 30 MHz)

Job Number	FCC-16547
Test Name	Power line Conducted Emissions FCC 15.207
EUT Name	R4301P ION (UHF)



SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	151.00 kHz	54.865 dBµV	50.945 dBµV	35.157 dBµV	-11.080 dB	-15.000 dB	-20.788 dB	0.000 dB
2	1	154.00 kHz	55.077 dBµV	48.644 dBµV	34.461 dBµV	-10.704 dB	-17.137 dB	-21.320 dB	0.000 dB
3	1	686.00 kHz	50.770 dBµV	46.670 dBµV	37.366 dBµV	-5.230 dB	-9.430 dB	-8.634 dB	0.000 dB
4	1	695.00 kHz	50.371 dBµV	47.542 dBµV	37.528 dBµV	-5.629 dB	-8.458 dB	-8.472 dB	0.000 dB
5	1	702.00 kHz	50.980 dBµV	49.330 dBµV	39.289 dBµV	-5.020 dB	-6.670 dB	-6.711 dB	0.000 dB
6	1	721.00 kHz	49.673 dBµV	47.112 dBµV	37.531 dBµV	-6.327 dB	-8.888 dB	-8.469 dB	0.000 dB

Fig. 5.8

Phase 2 *of auxiliary apparatus (worst case)*
EUT mode: Standby
Auxiliary apparatus: Laptop whit power supply linked

B Band (0.15 – 30 MHz)

Job Number	FCC-16547
Test Name	Power line Conducted Emissions FCC 15.207
EUT Name	R4301P ION (UHF)

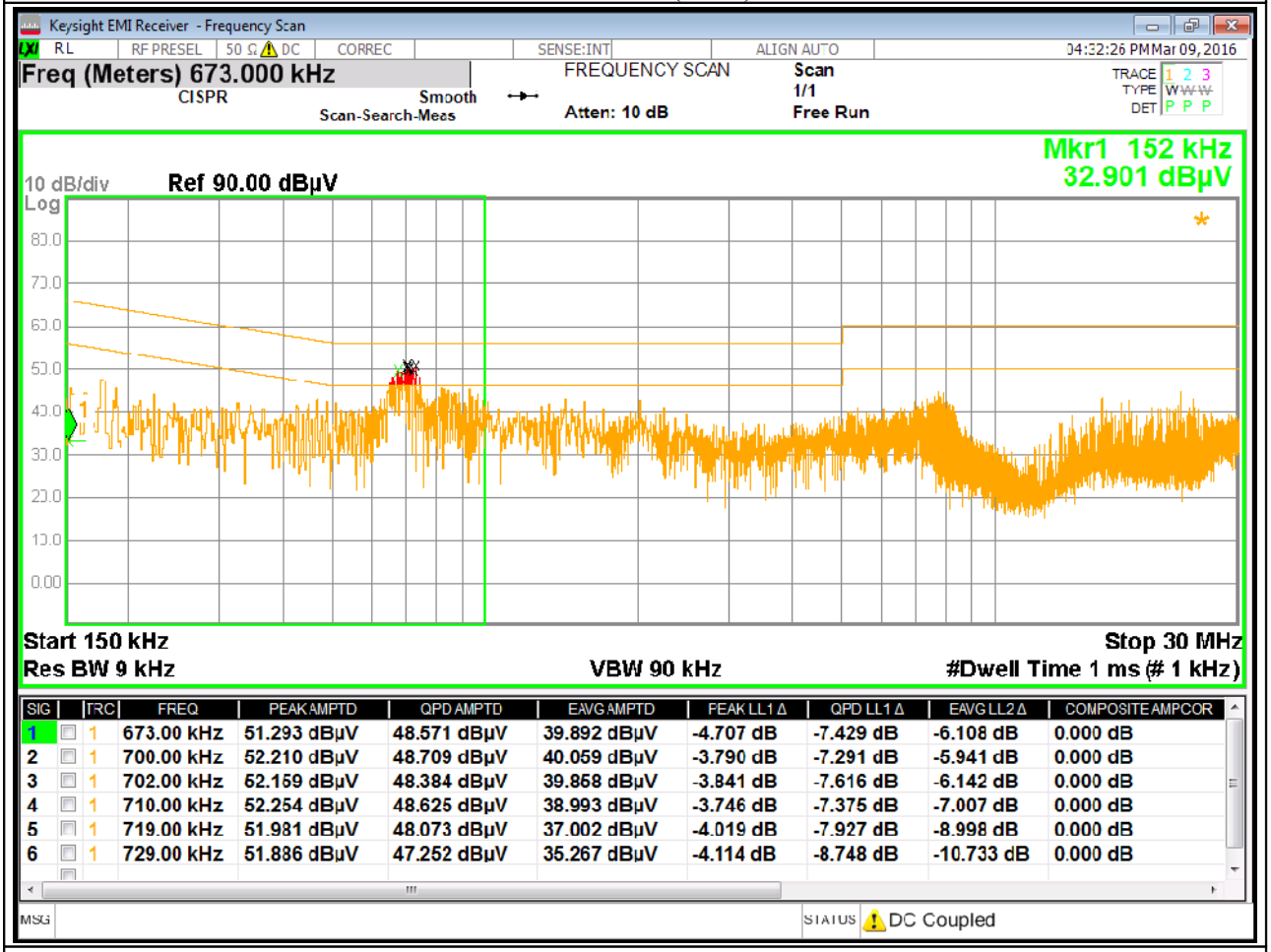


Fig. 5.9

Phase 1 *of auxiliary apparatus (worst case)*
EUT mode: Modulation type 1
Auxiliary apparatus: Laptop whit power supply linked

B Band (0.15 – 30 MHz)

Job Number	FCC-16547
Test Name	Power line Conducted Emissions FCC 15.207
EUT Name	R4301P ION (UHF)

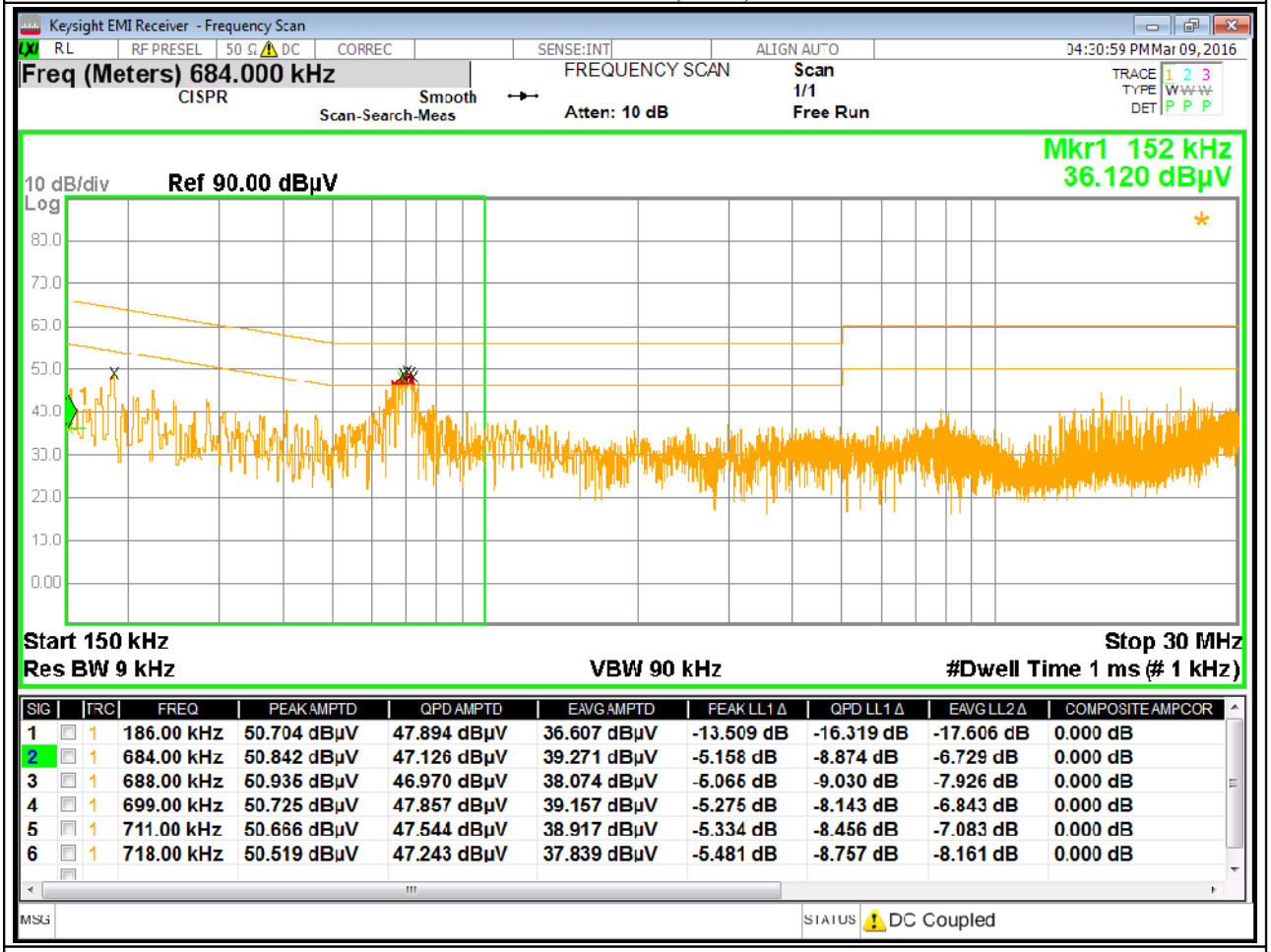


Fig. 5.10

Phase 2 *of auxiliary apparatus (worst case)*
EUT mode: Modulation type 1
Auxiliary apparatus: Laptop whit power supply linked

B Band (0.15 – 30 MHz)

Job Number	FCC-16547
Test Name	Power line Conducted Emissions FCC 15.207
EUT Name	R4301P ION (UHF)

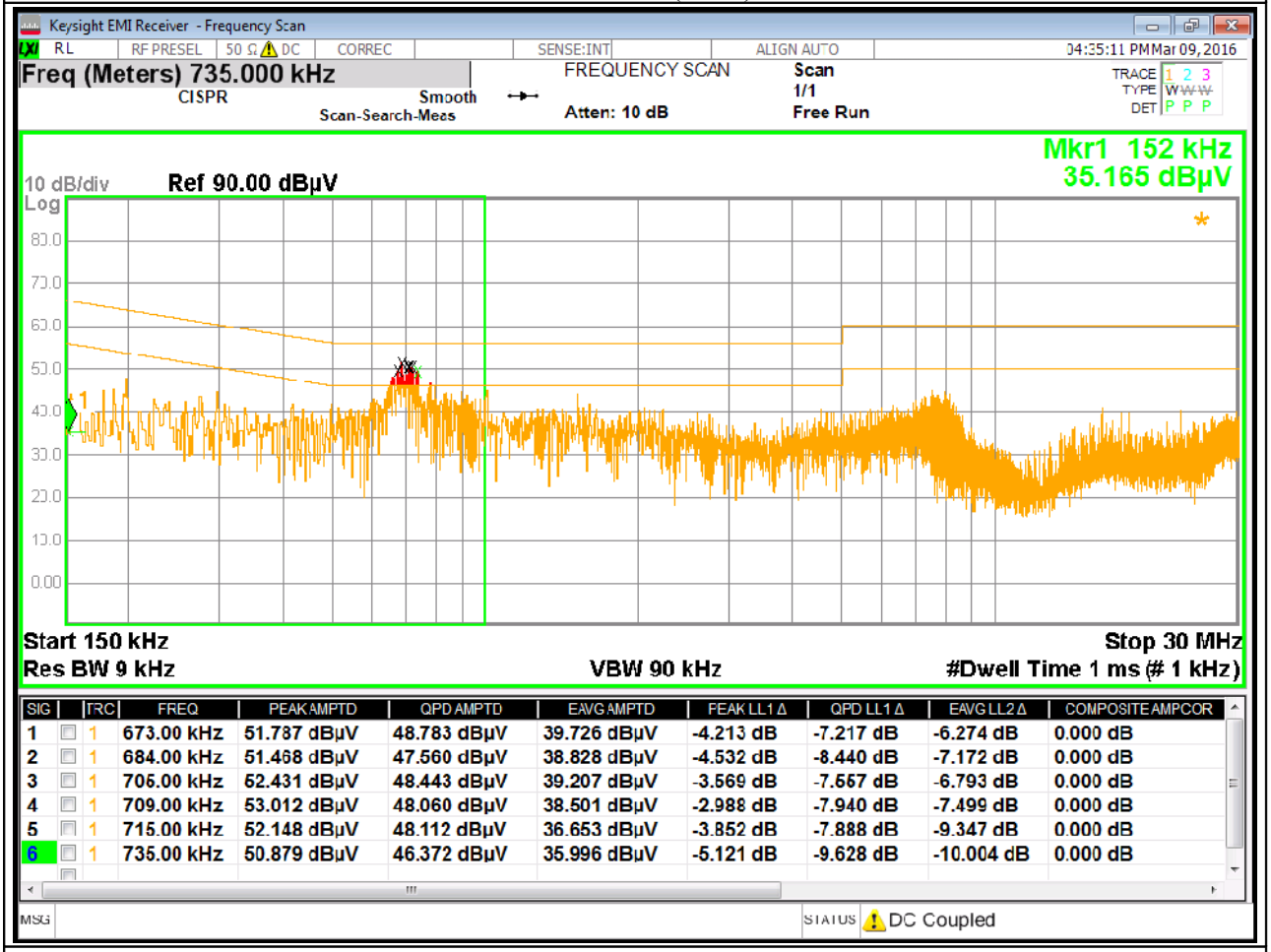
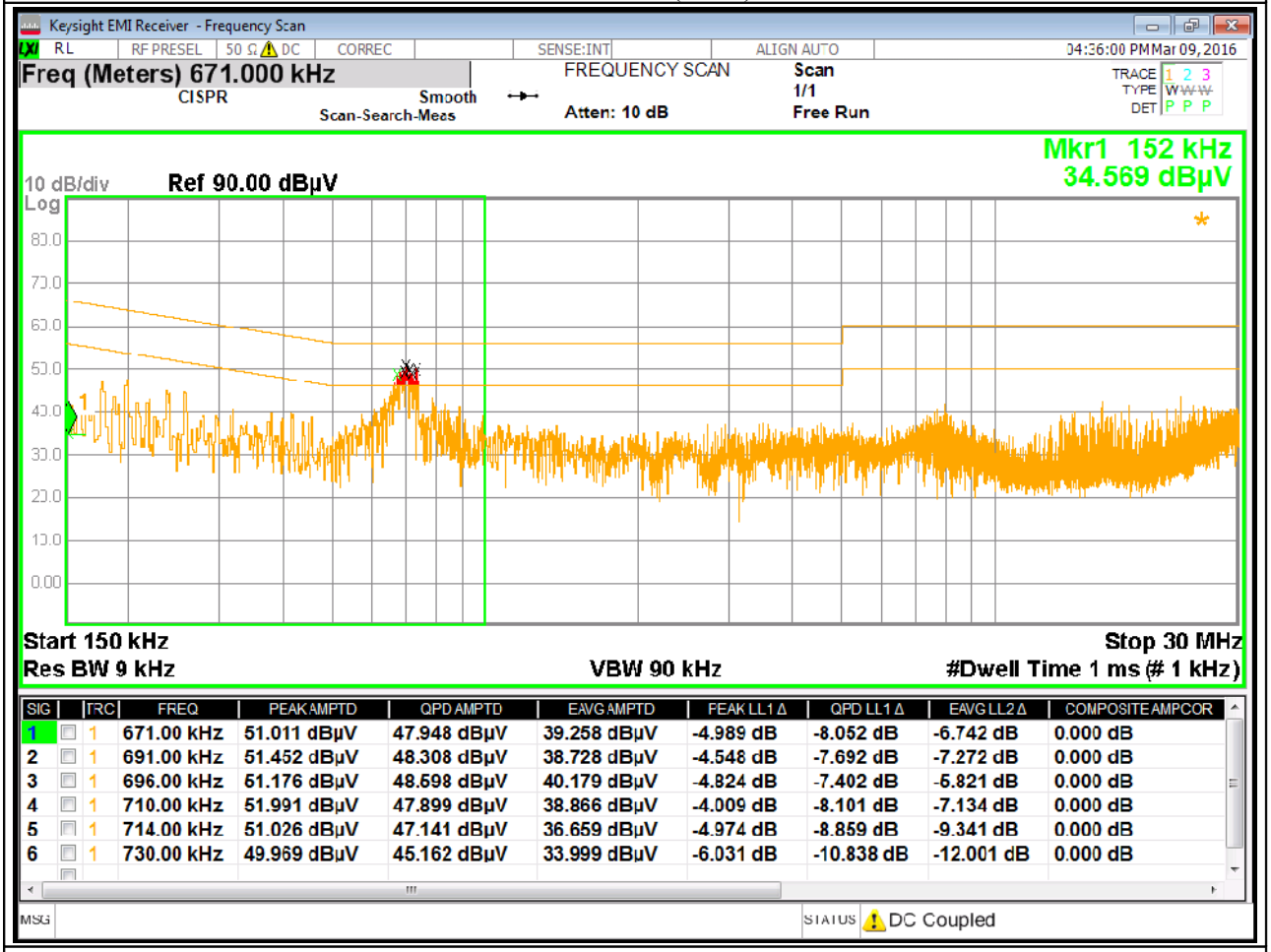


Fig. 5.11

Phase 1 *of auxiliary apparatus (worst case)*
EUT mode: Modulation type 2
Auxiliary apparatus: Laptop whit power supply linked

B Band (0.15 – 30 MHz)

Job Number	FCC-16547
Test Name	Power line Conducted Emissions FCC 15.207
EUT Name	R4301P ION (UHF)



SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	671.00 kHz	51.011 dBµV	47.948 dBµV	39.258 dBµV	-4.989 dB	-8.052 dB	-6.742 dB	0.000 dB
2	1	691.00 kHz	51.452 dBµV	48.308 dBµV	38.728 dBµV	-4.548 dB	-7.692 dB	-7.272 dB	0.000 dB
3	1	696.00 kHz	51.176 dBµV	48.598 dBµV	40.179 dBµV	-4.824 dB	-7.402 dB	-5.821 dB	0.000 dB
4	1	710.00 kHz	51.991 dBµV	47.899 dBµV	38.866 dBµV	-4.009 dB	-8.101 dB	-7.134 dB	0.000 dB
5	1	714.00 kHz	51.026 dBµV	47.141 dBµV	36.659 dBµV	-4.974 dB	-8.859 dB	-9.341 dB	0.000 dB
6	1	730.00 kHz	49.969 dBµV	45.162 dBµV	33.999 dBµV	-6.031 dB	-10.838 dB	-12.001 dB	0.000 dB

Fig. 5.12

Phase 2 *of auxiliary apparatus (worst case)*
EUT mode: Modulation type 2
Auxiliary apparatus: Laptop whit power supply linked

B Band (0.15 – 30 MHz)

6. Conducted Operation within the Band 902 - 928 MHz

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

6.1. Number of Hopping Channel

For frequency hopping systems operating in the 902 – 928 MHz band:

- if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies;
- if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies.

The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

Measurement

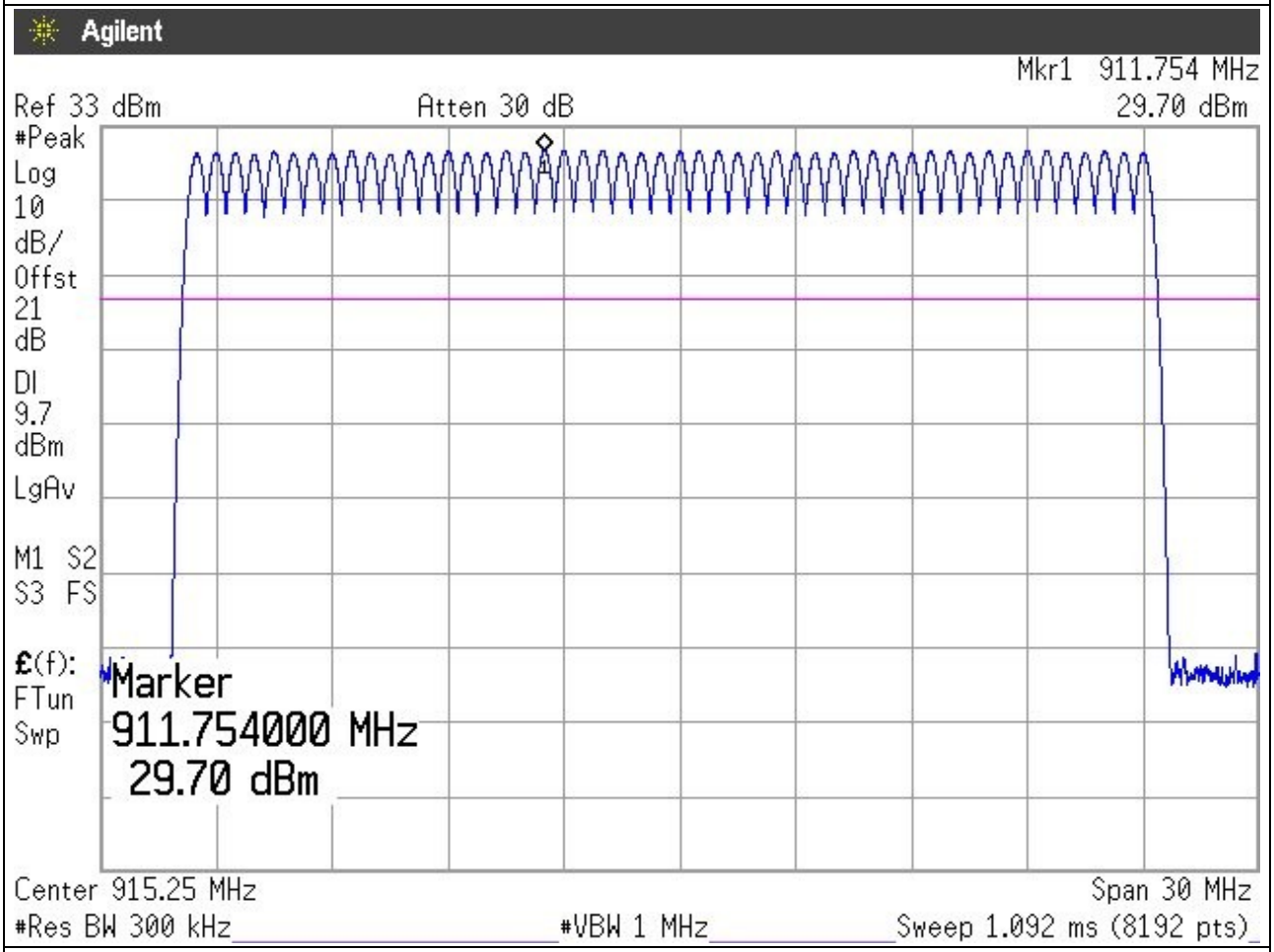


Fig. 6.1
Modulation Type: PR_ASK_M4_TX40RX250

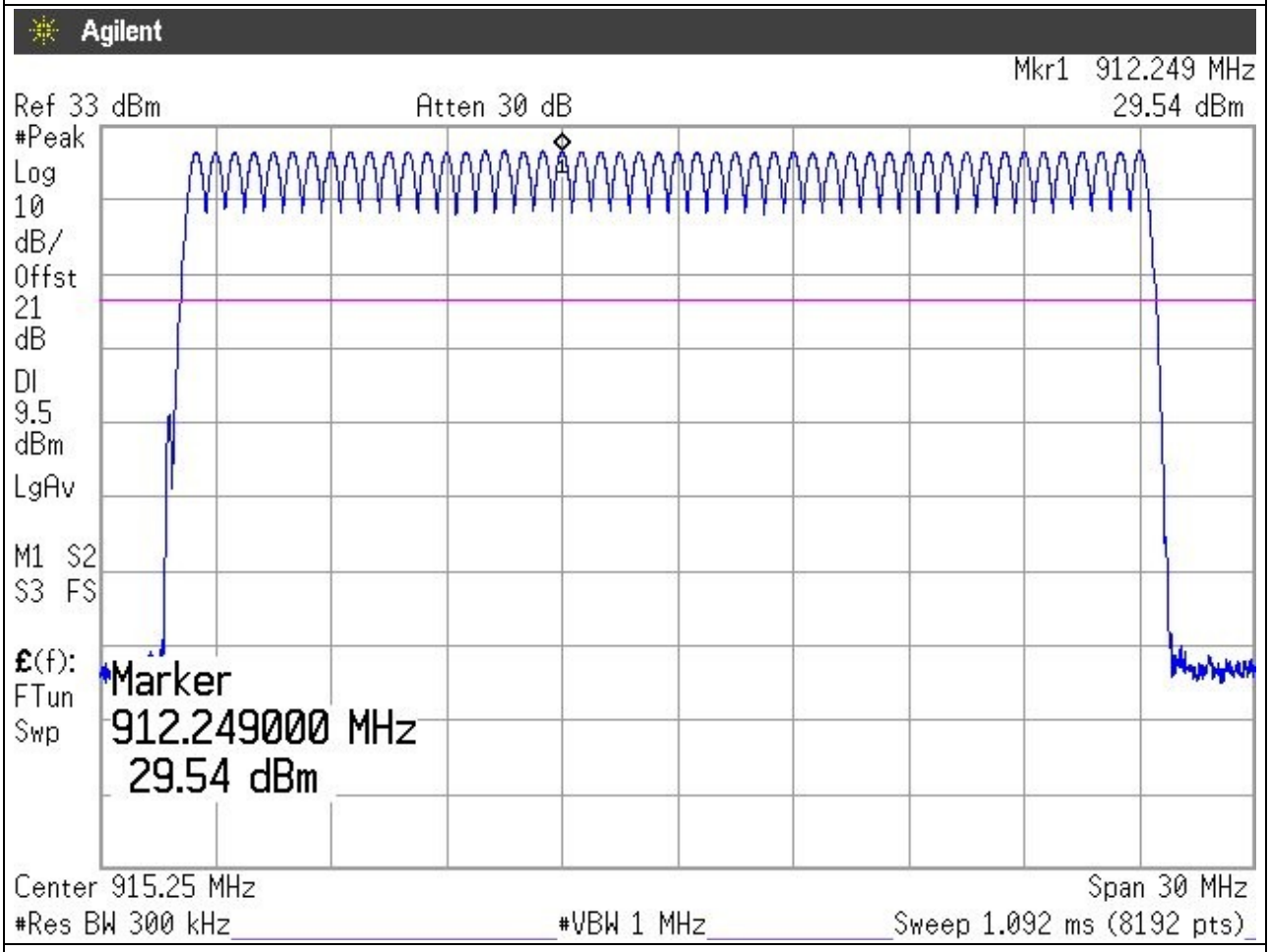


Fig. 6.2
Modulation Type: DSB_ASK_FM0_TX160RX400

6.2. *Carrier Frequency Separation*

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

Measurement

The following figures show the acquired graphics.

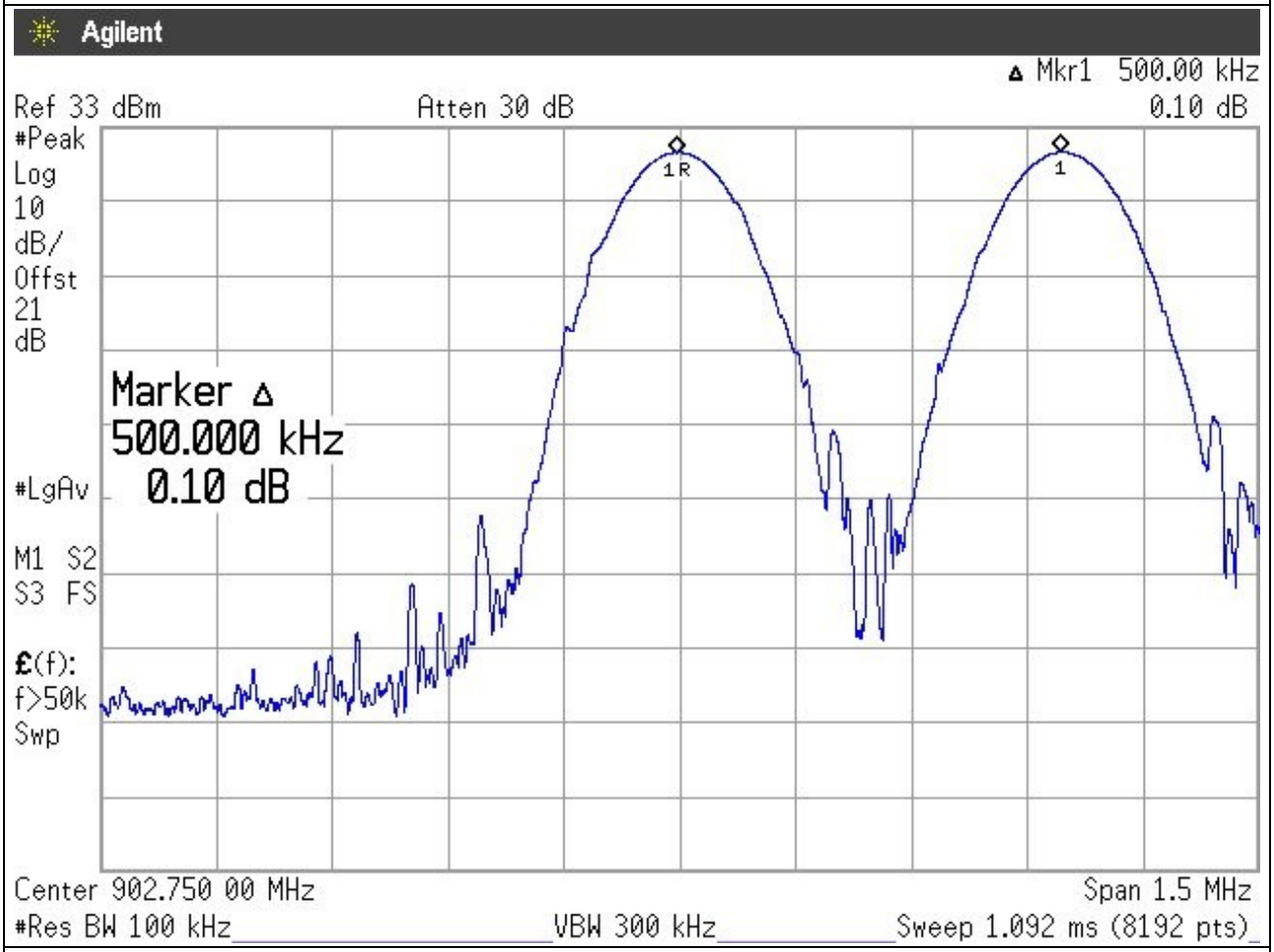


Fig. 6.3
Modulation Type 1; Channels: 0 to 1; Maxhold

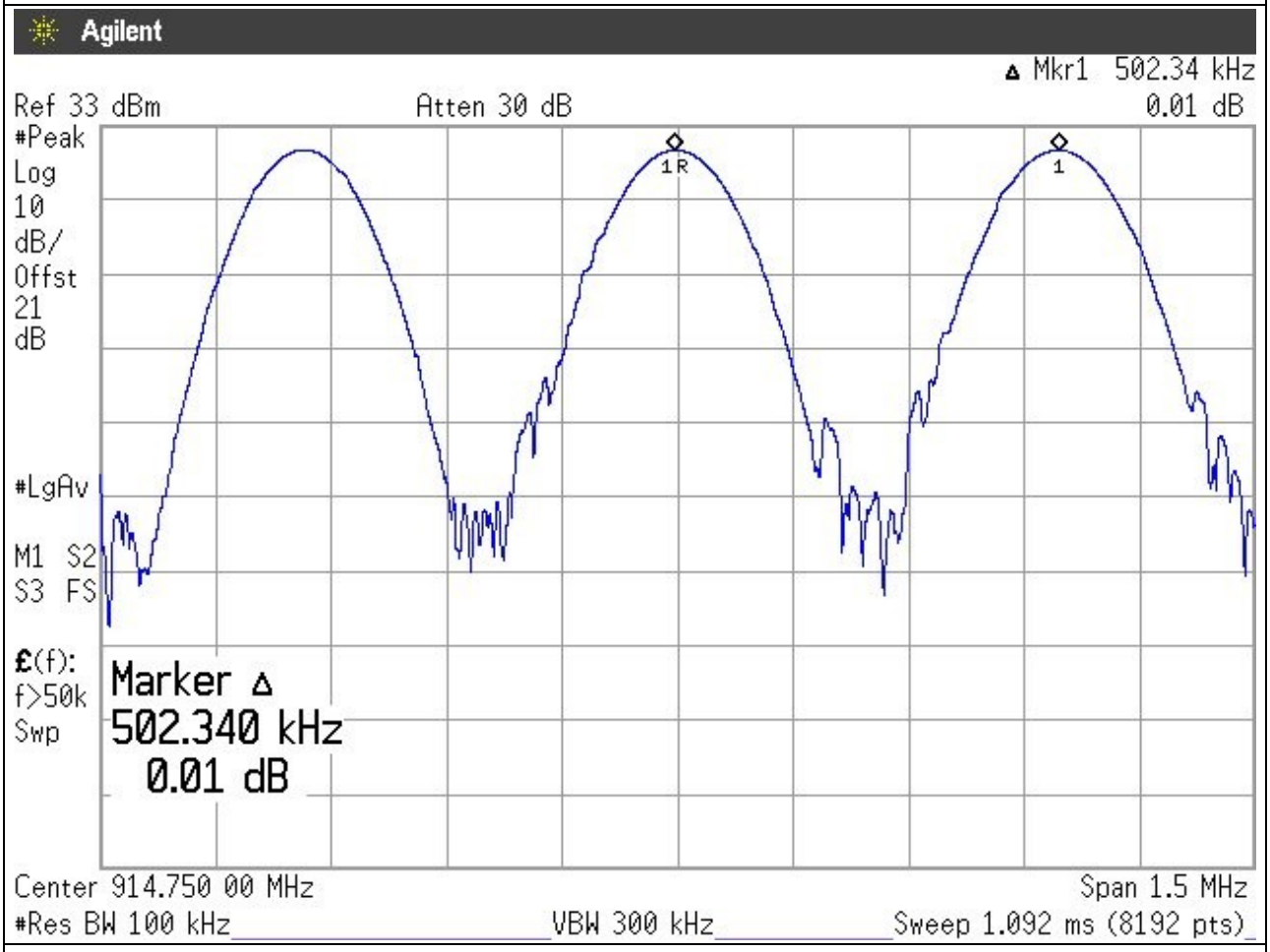


Fig. 6.4
Modulation Type 1; Channels: 24 to 25; Maxhold

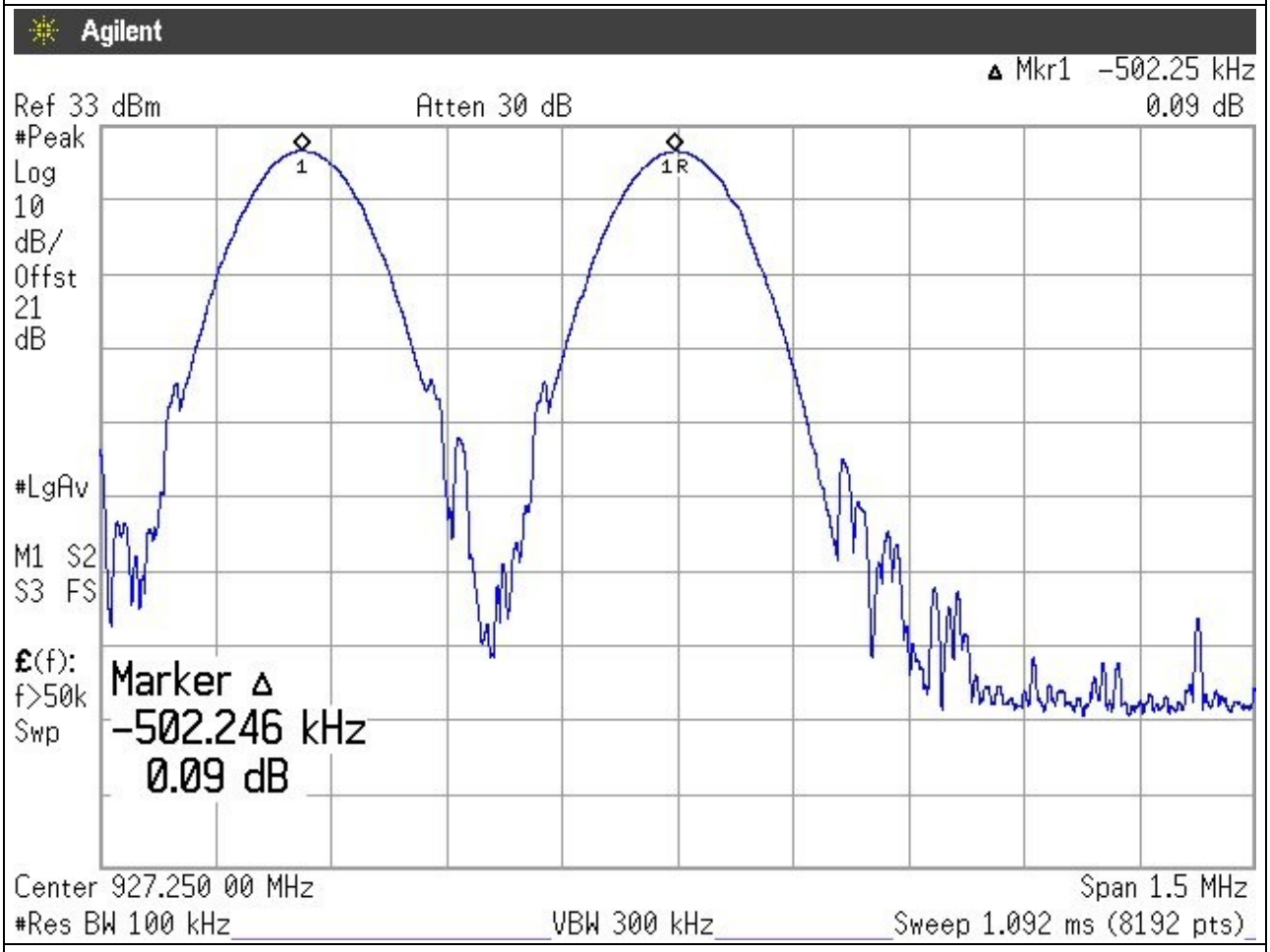


Fig. 6.5
Modulation Type 1; Channels: 49 to 48; Maxhold.

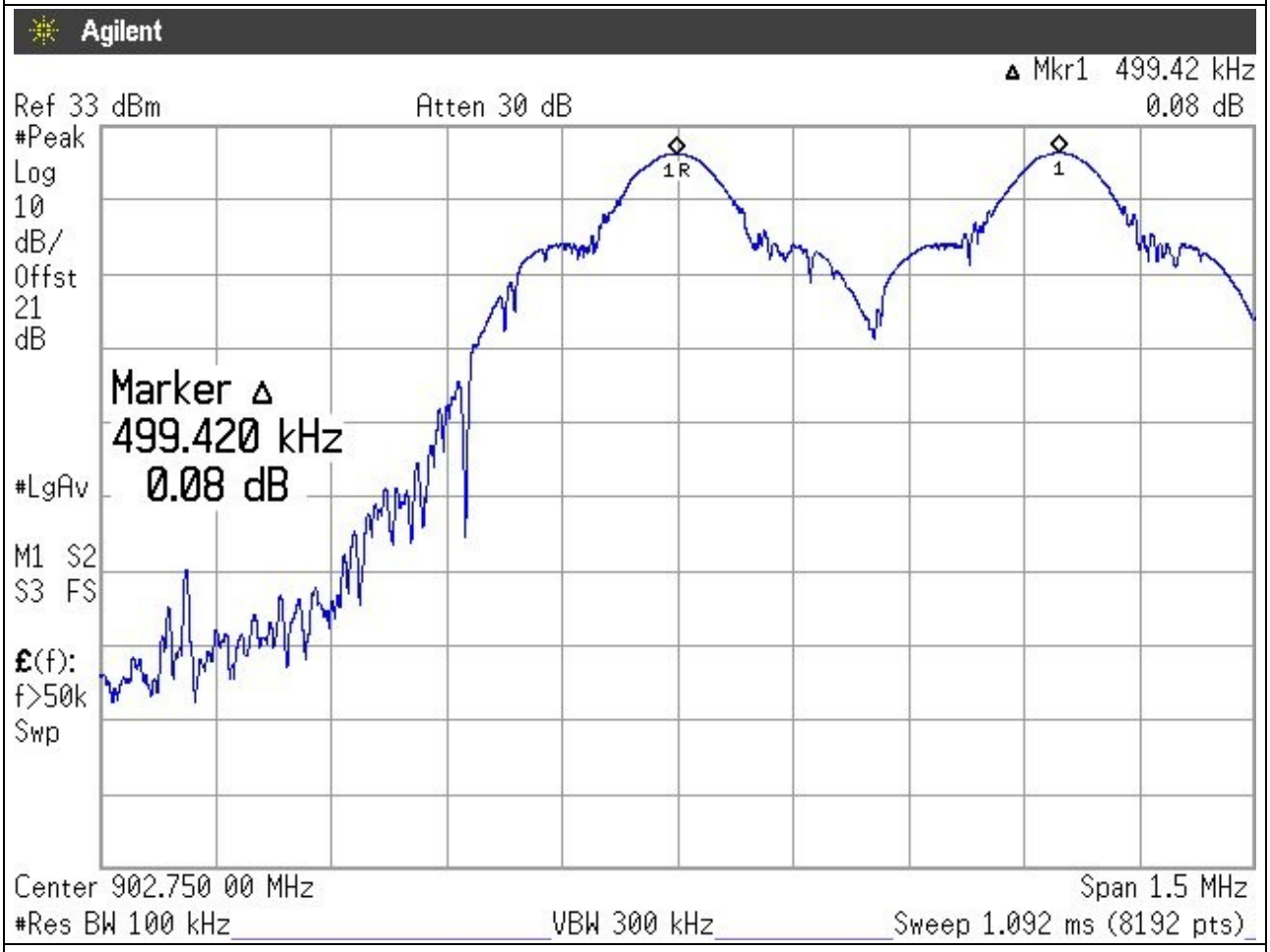


Fig. 6.6
Modulation Type 2, Channels: 0 to 1; Maxhold.

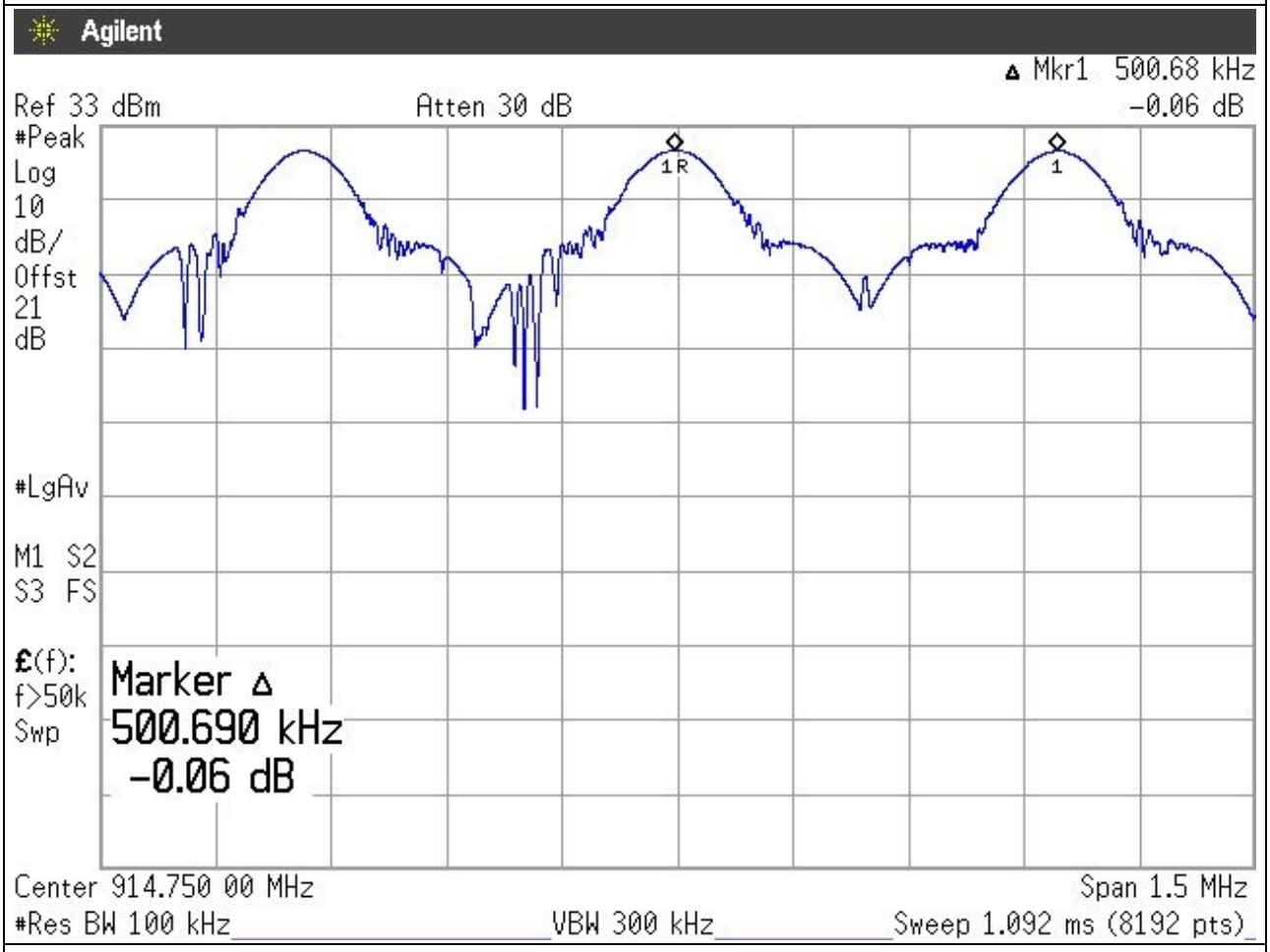


Fig. 6.7
Modulation Type 2; Channels: 24 to 25; Maxhold.

Fig. 6.8
Modulation Type 2, Channels: 49 to 48; Maxhold.

6.3. TIME OF OCCUPANCY

Measurements

Channel	Dwell Time (ms)	Nr. of Transmission for channel (average)	Modulation	Time of Occupancy (ms)
0	39.6	8 (in 20 s)	Type 1	316.8 (in 20 s)
24	34.3	8 (in 20 s)	Type 1	274.4 (in 20 s)
49	39.2	8 (in 20 s)	Type 1	313.6 (in 20 s)
0	11.1	13 (in 20 s)	Type 2	144.3 (in 20 s)
24	11.1	13 (in 20 s)	Type 2	144.3 (in 20 s)
49	12.4	13 (in 20 s)	Type 2	161.2 (in 20 s)

The following figures show the acquired graphics.

Time of transmission

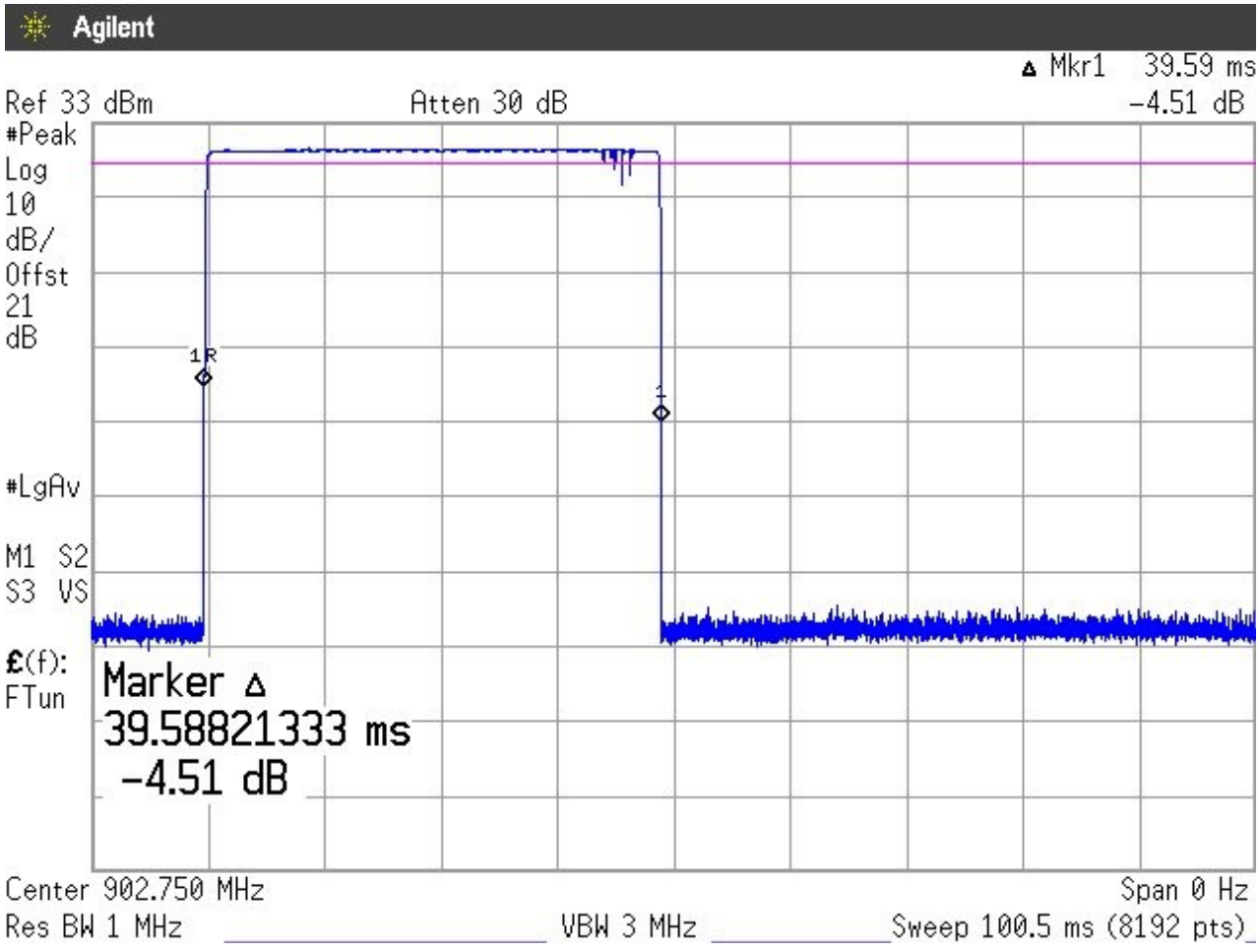


Fig. 6.9
Channel: 0 (Maxhold)
Modulation Type: PR_ASK_M4_TX40RX250

Nr. of Transmission for channel

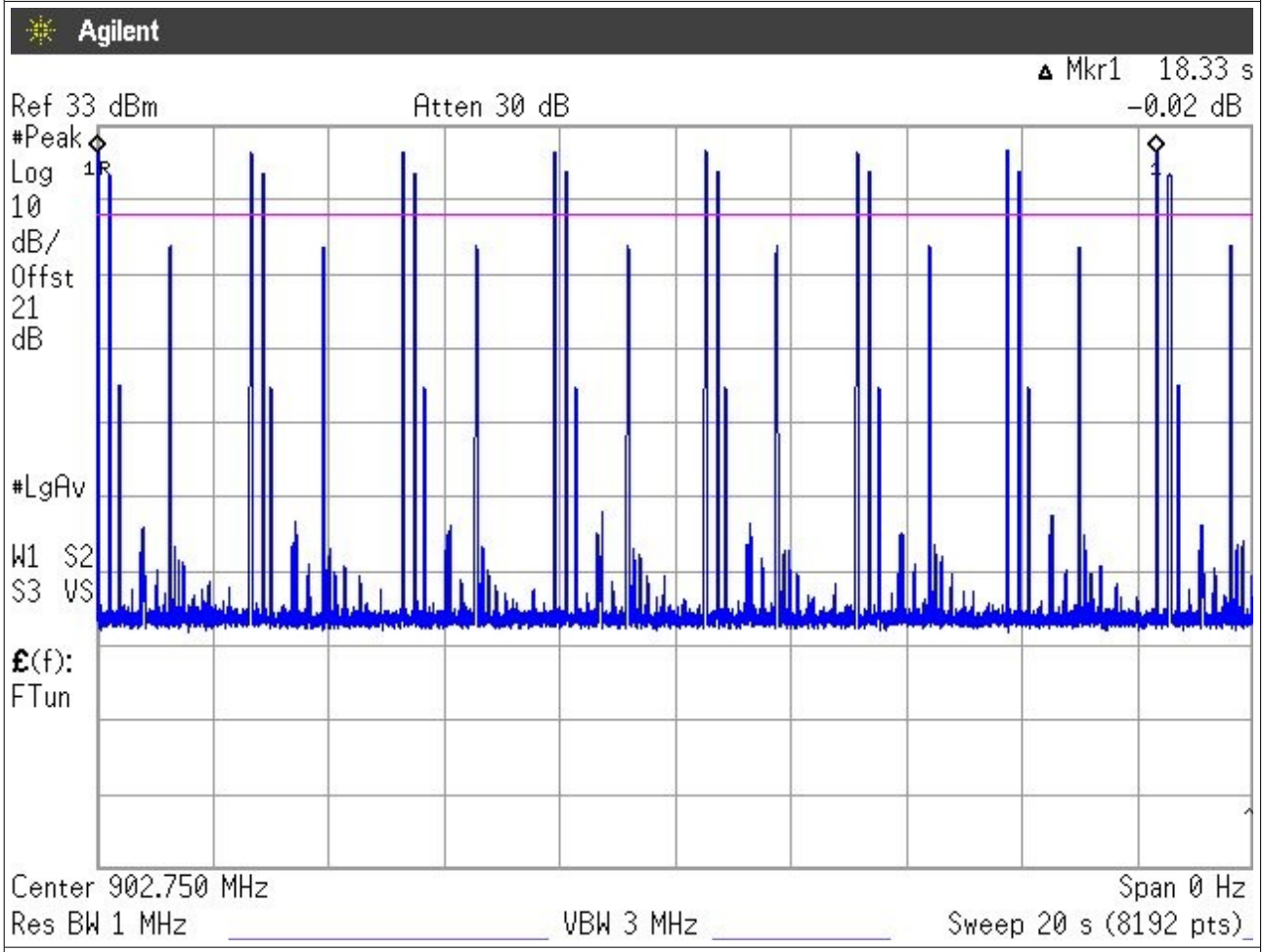


Fig. 6.10
Channel: 0
Modulation Type: PR_ASK_M4_TX40RX250

Time of transmission

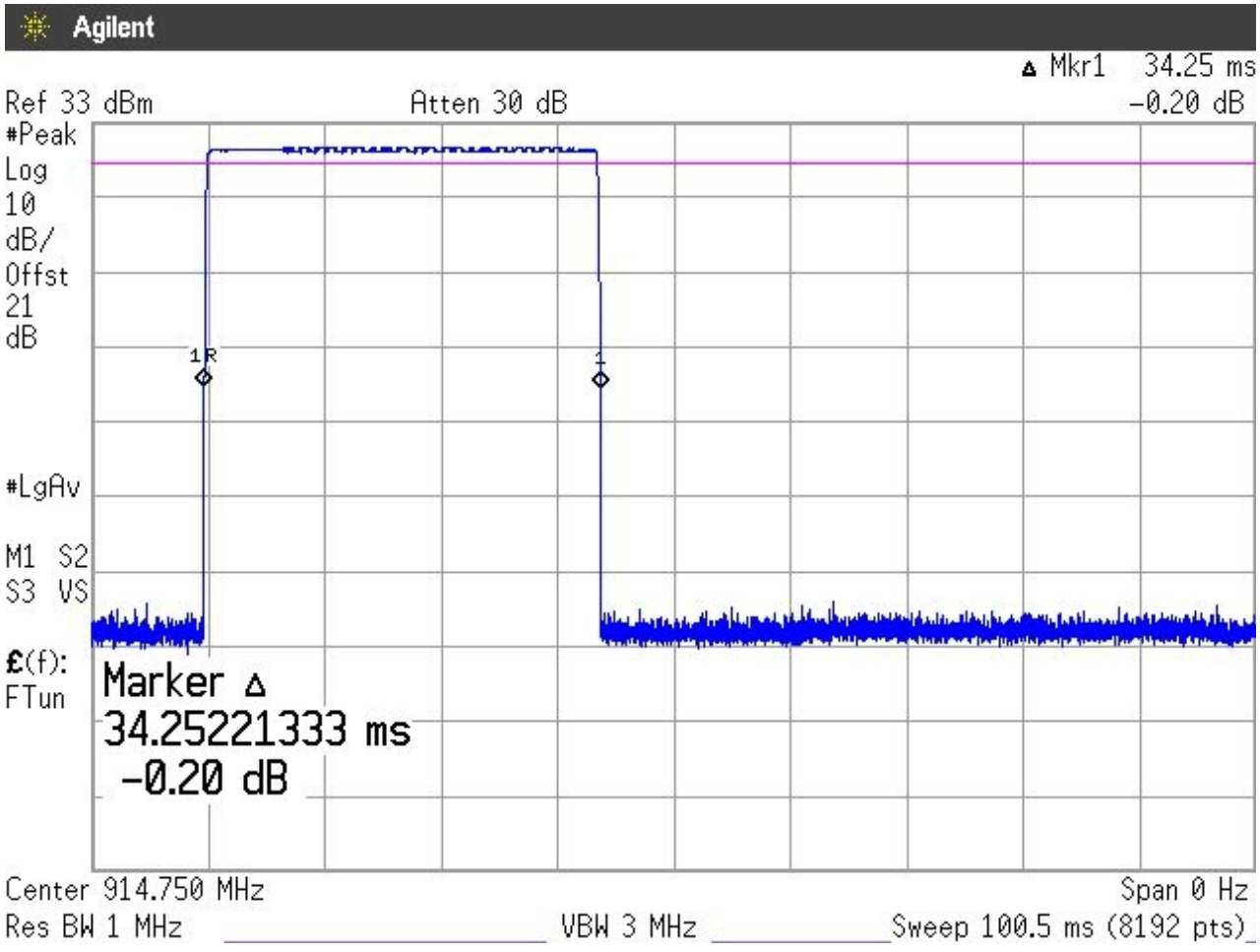


Fig. 6.11
Channel: 24 (Maxhold)
Modulation Type: PR_ASK_M4_TX40RX250

Nr. of Transmission for channel

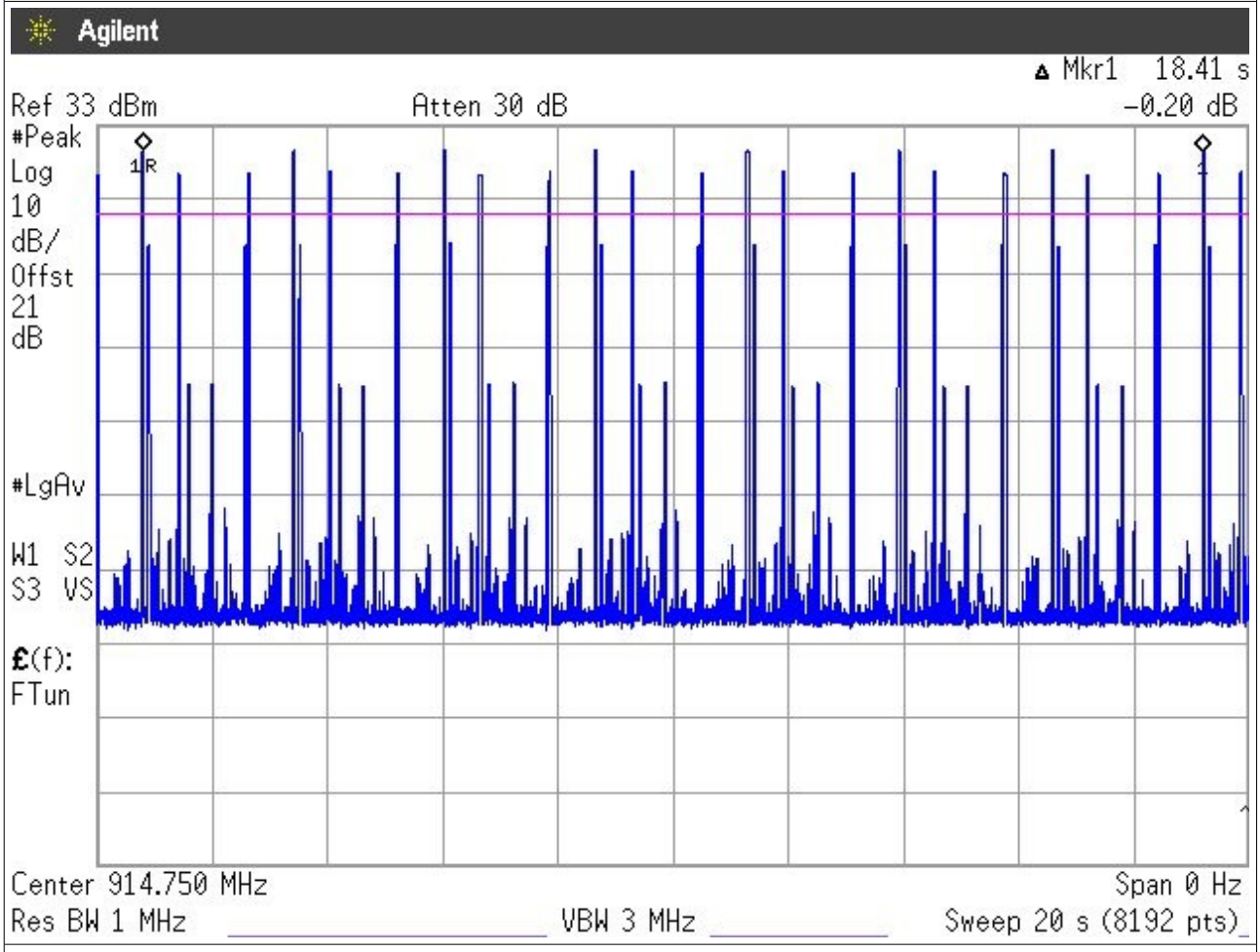


Fig. 6.12
Channel: 24
Modulation Type: PR_ASK_M4_TX40RX250

Time of transmission

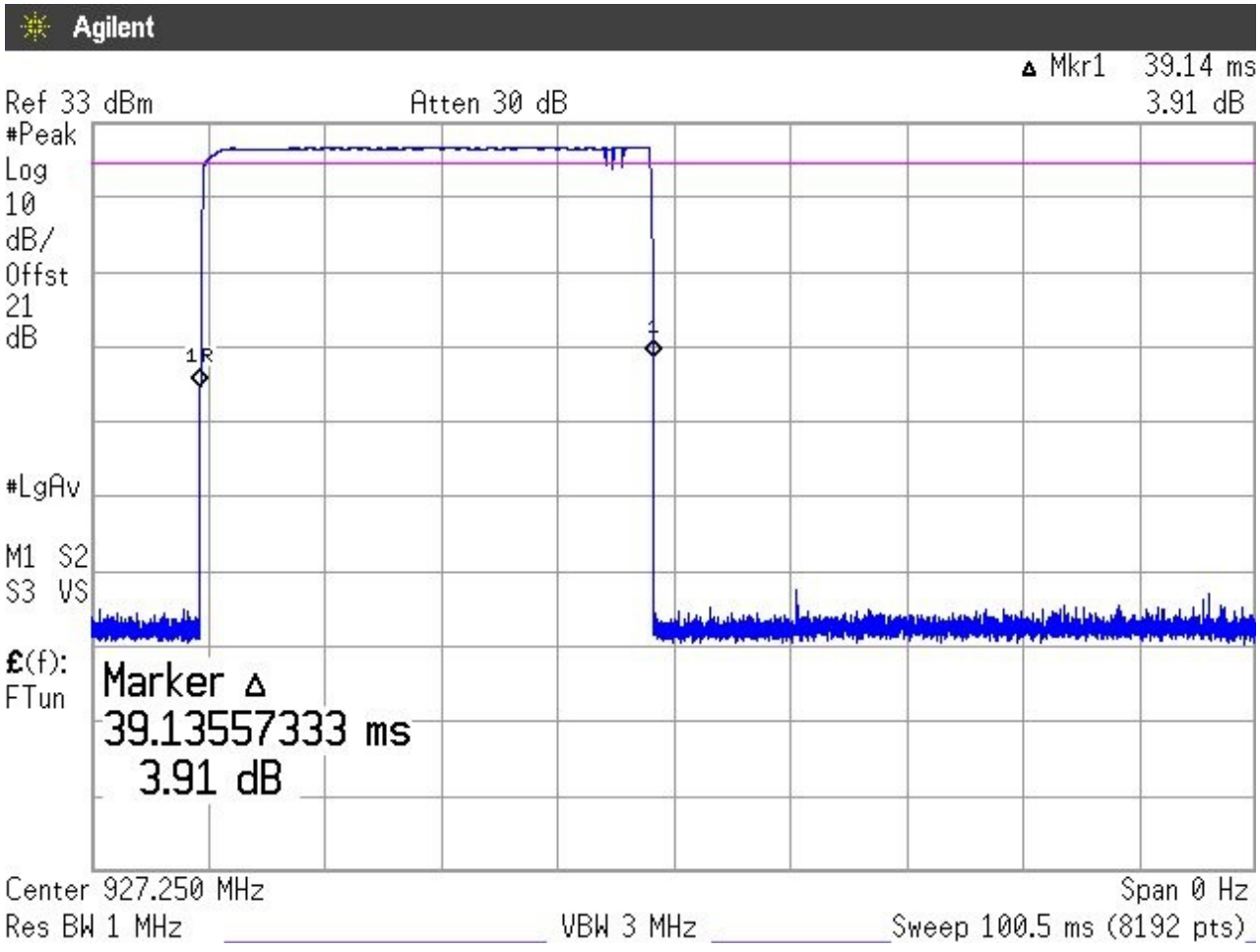


Fig. 6.13
Channel: 49 (Maxhold)
Modulation Type: PR_ASK_M4_TX40RX250

Nr. of Transmission for channel

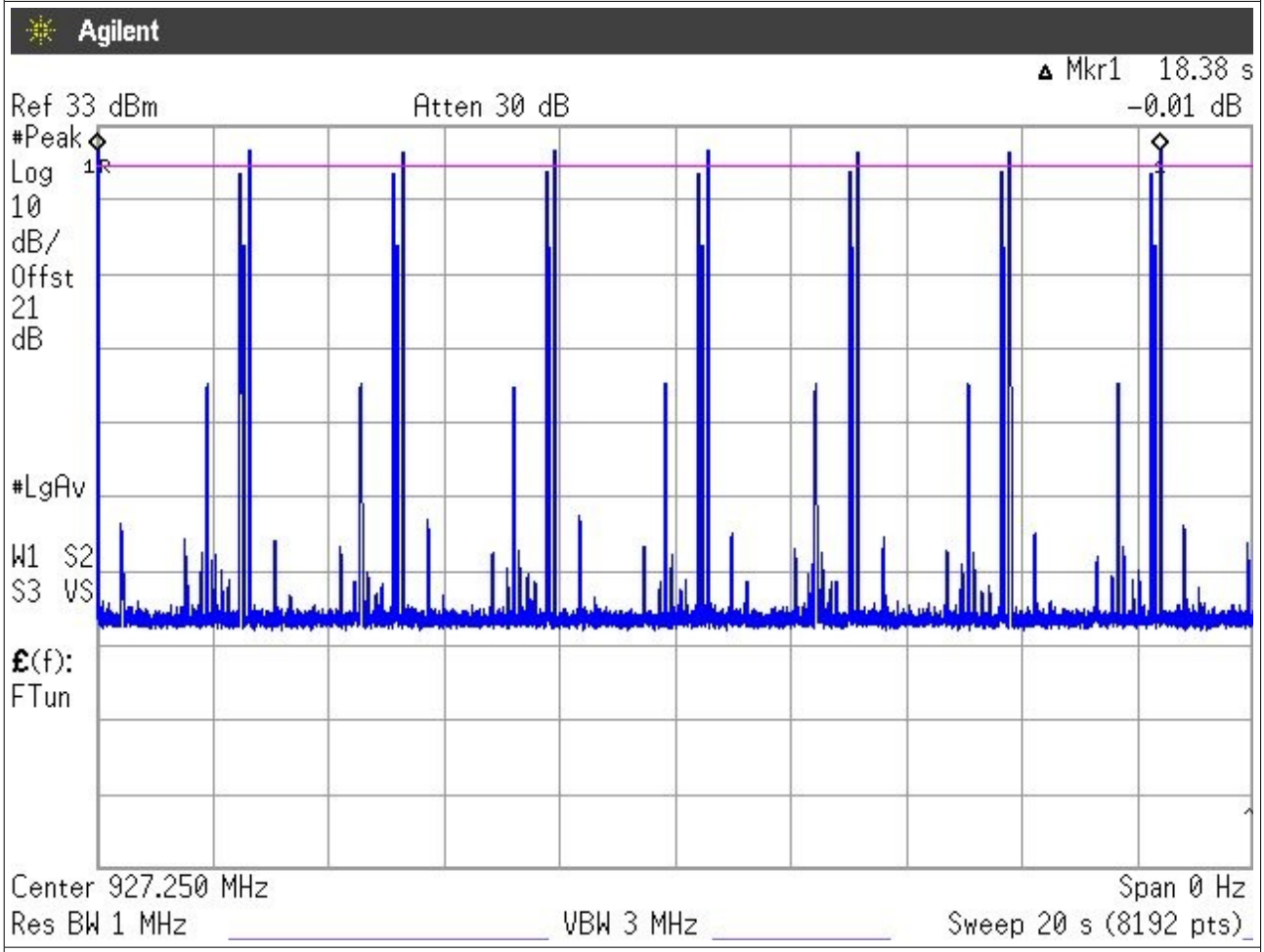


Fig. 6.14
Channel: 49
Modulation Type: PR_ASK_M4_TX40RX250

Time of transmission

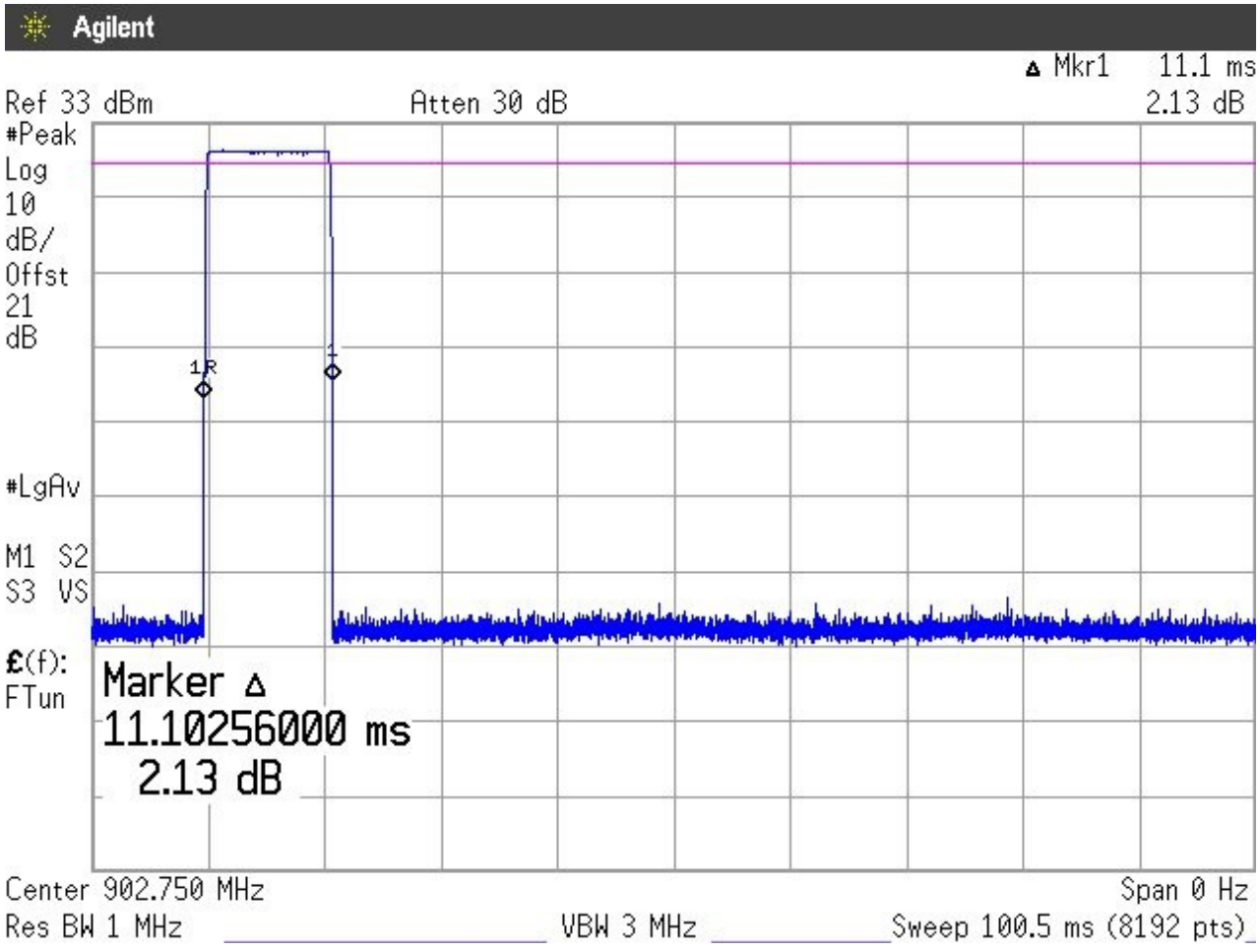


Fig. 6.15
Channel: 0 (maxhold)
Modulation Type: DSB_ASK_FM0_TX160RX400

Nr. of Transmission for channel

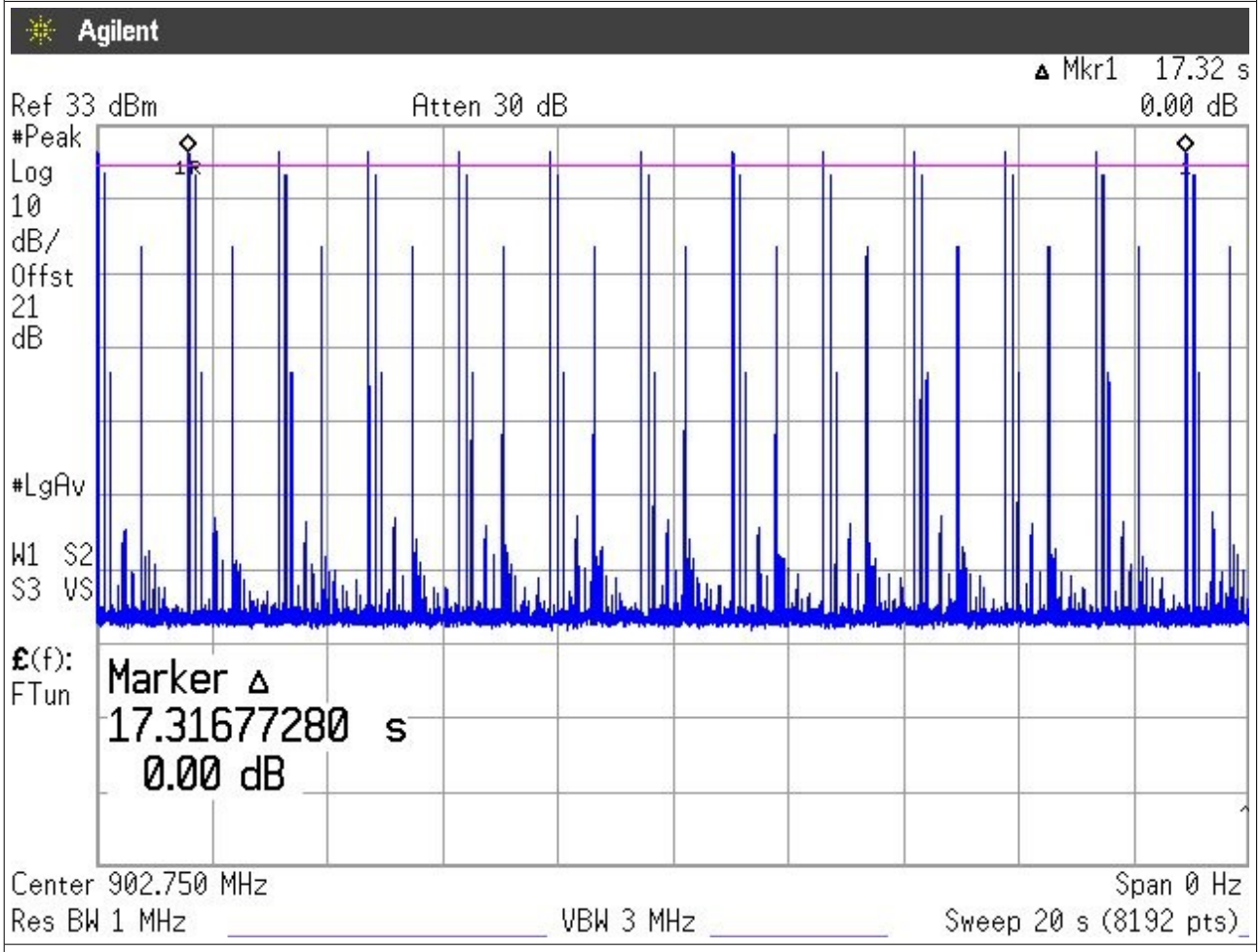


Fig. 6.16
Channel: 0
Modulation Type: DSB_ASK_FM0_TX160RX400

Time of transmission

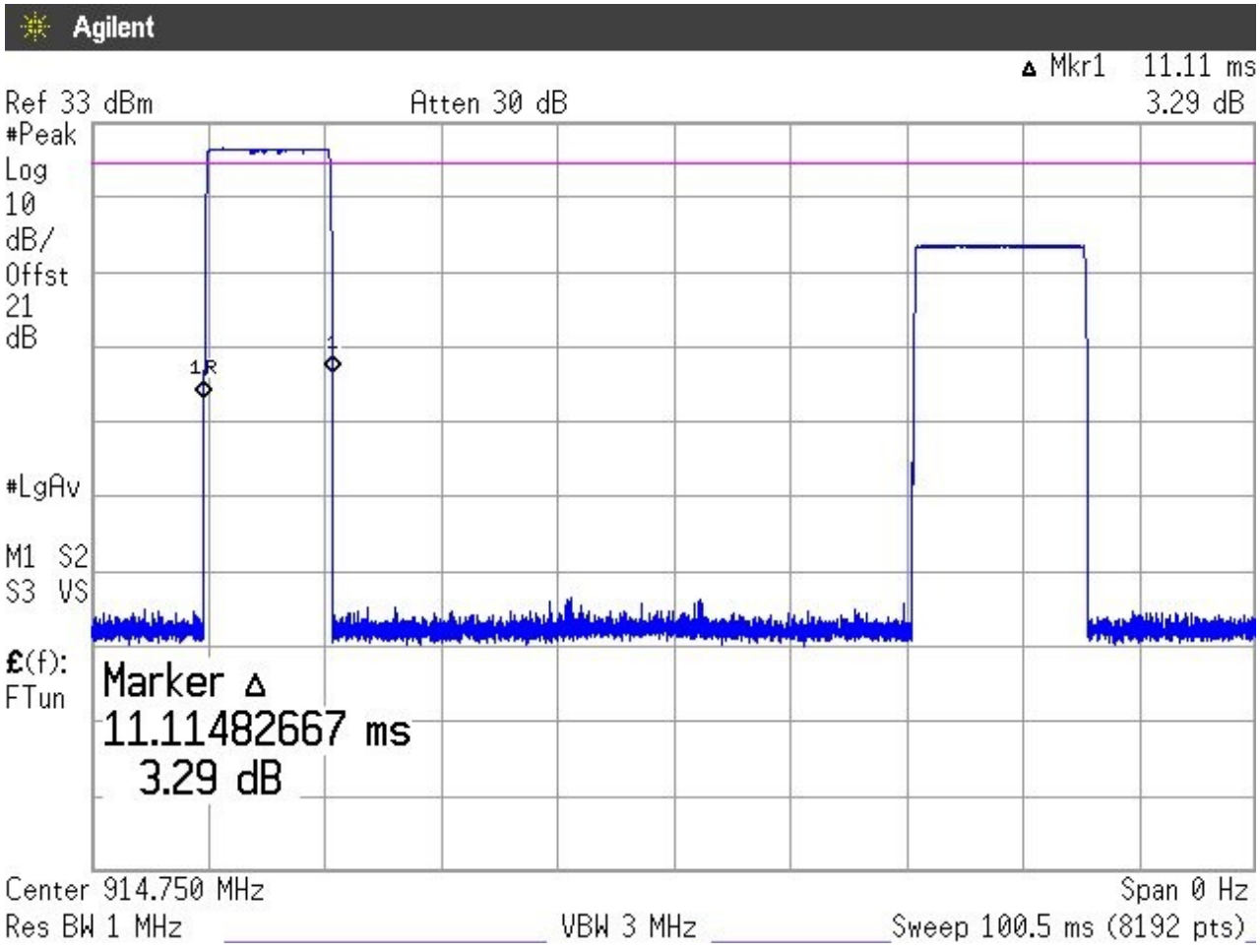


Fig. 6.17
Channel: 24 (maxhold)
Modulation Type: DSB_ASK_FM0_TX160RX400

Nr. of Transmission for channel

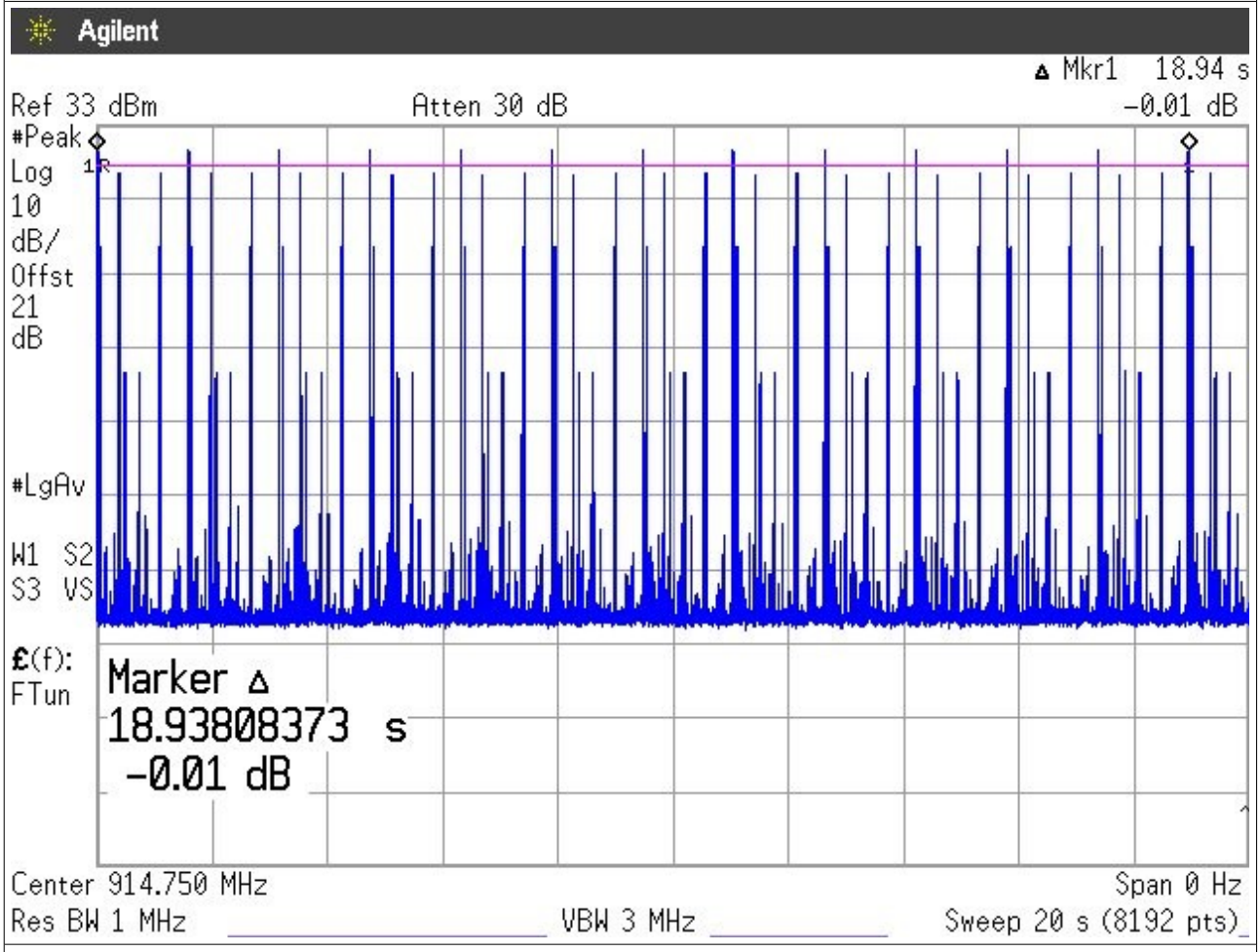


Fig. 6.18
Channel: 24
Modulation Type: DSB_ASK_FM0_TX160RX400

Time of transmission

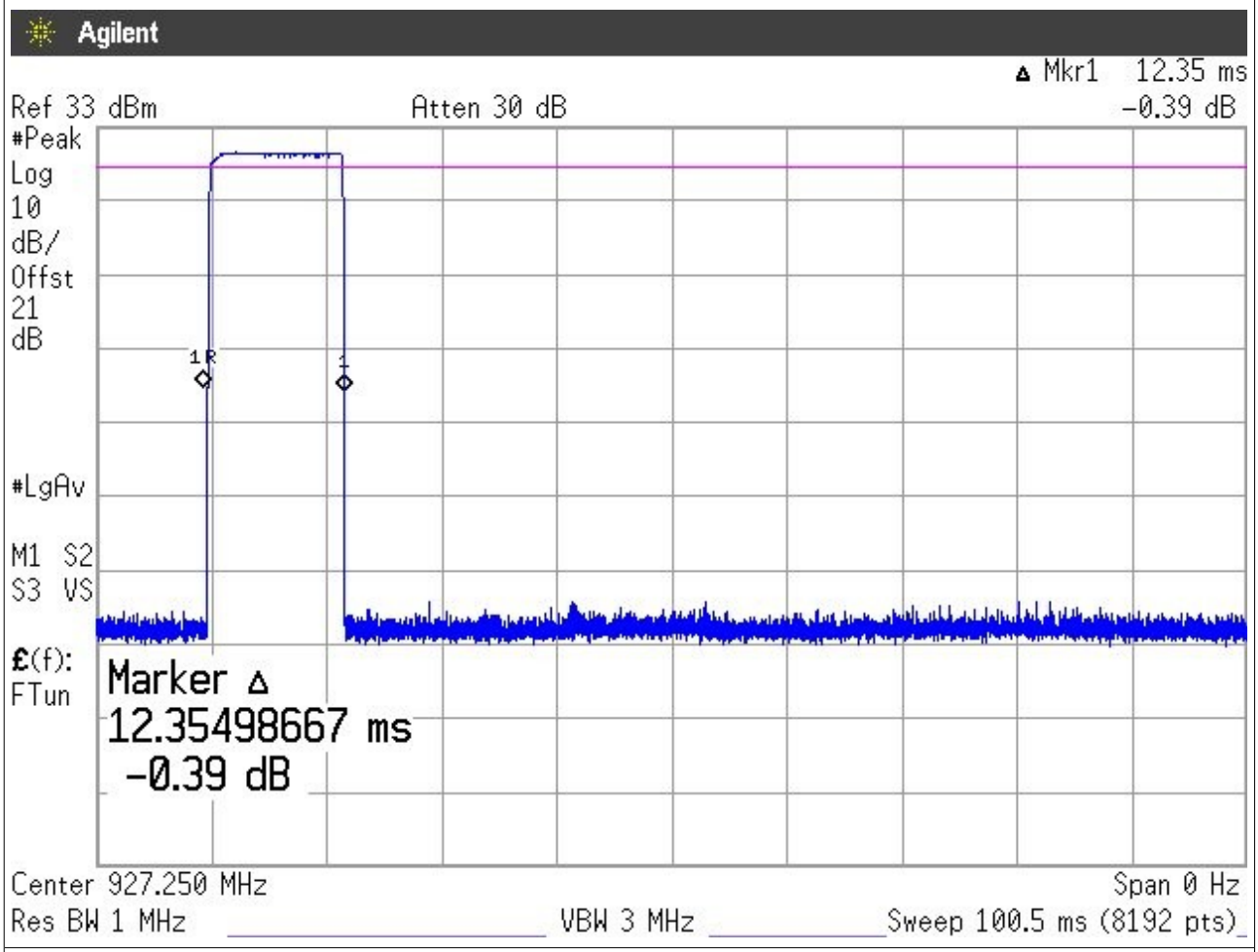


Fig. 6.19
Channel: 49 (maxhold)
Modulation Type: DSB_ASK_FM0_TX160RX400

Nr. of Transmission for channel

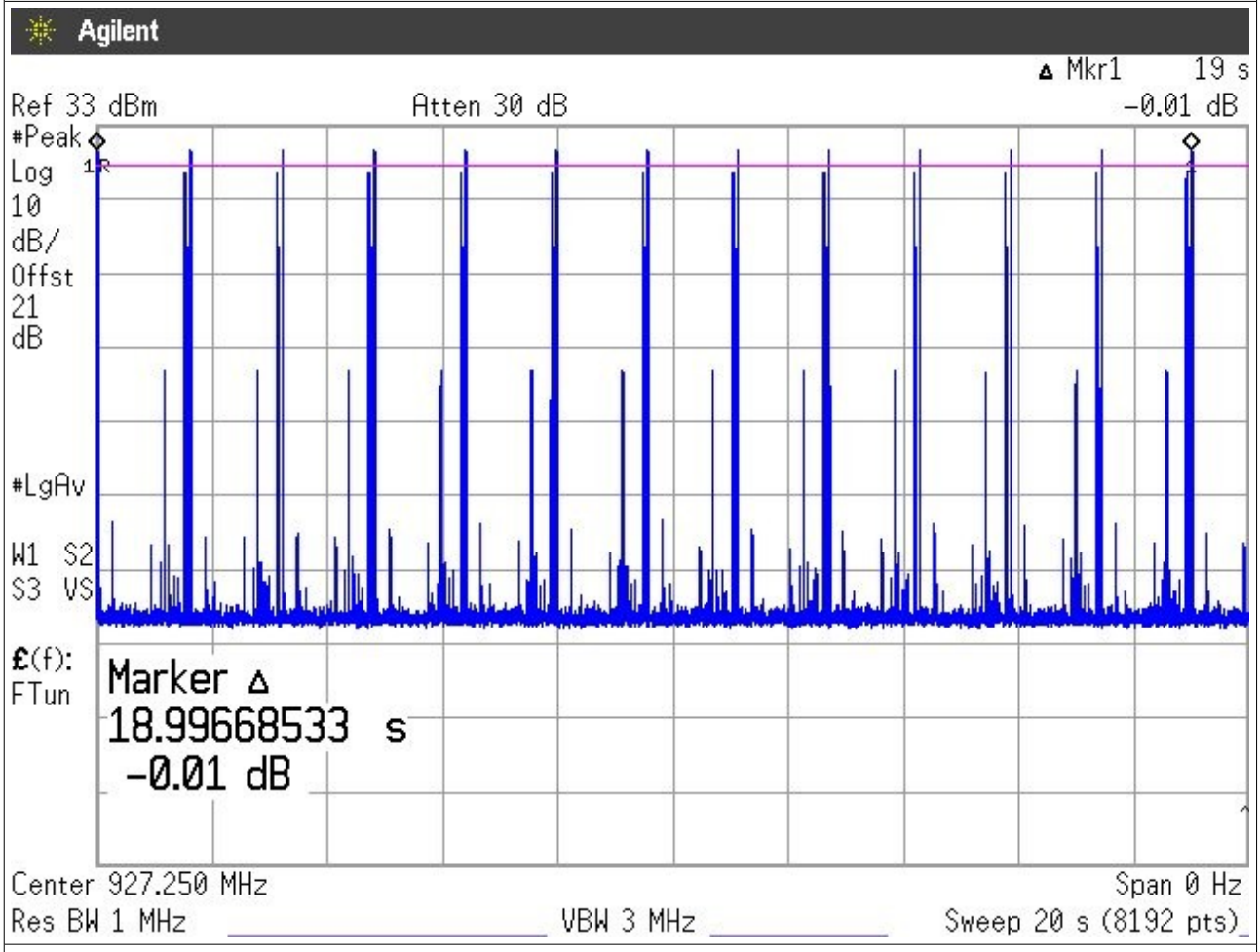


Fig. 6.20
Channel: 49
Modulation Type: DSB_ASK_FM0_TX160RX400

6.4. 20 dB Bandwidth

Measurements

Modulation: Type 1

Channel	Frequency [MHz]	Bandwidth
0	902.74918	53.9
24	915.74980	53.5
49	927.24966	53.7

Modulation: Type 2

Channel	Frequency [MHz]	Bandwidth [kHz]
0	902.75014	33.0
24	915.74977	32.5
49	927.24965	32.3

The following figures show the acquired graphics.

Ch 0: Bandwidth

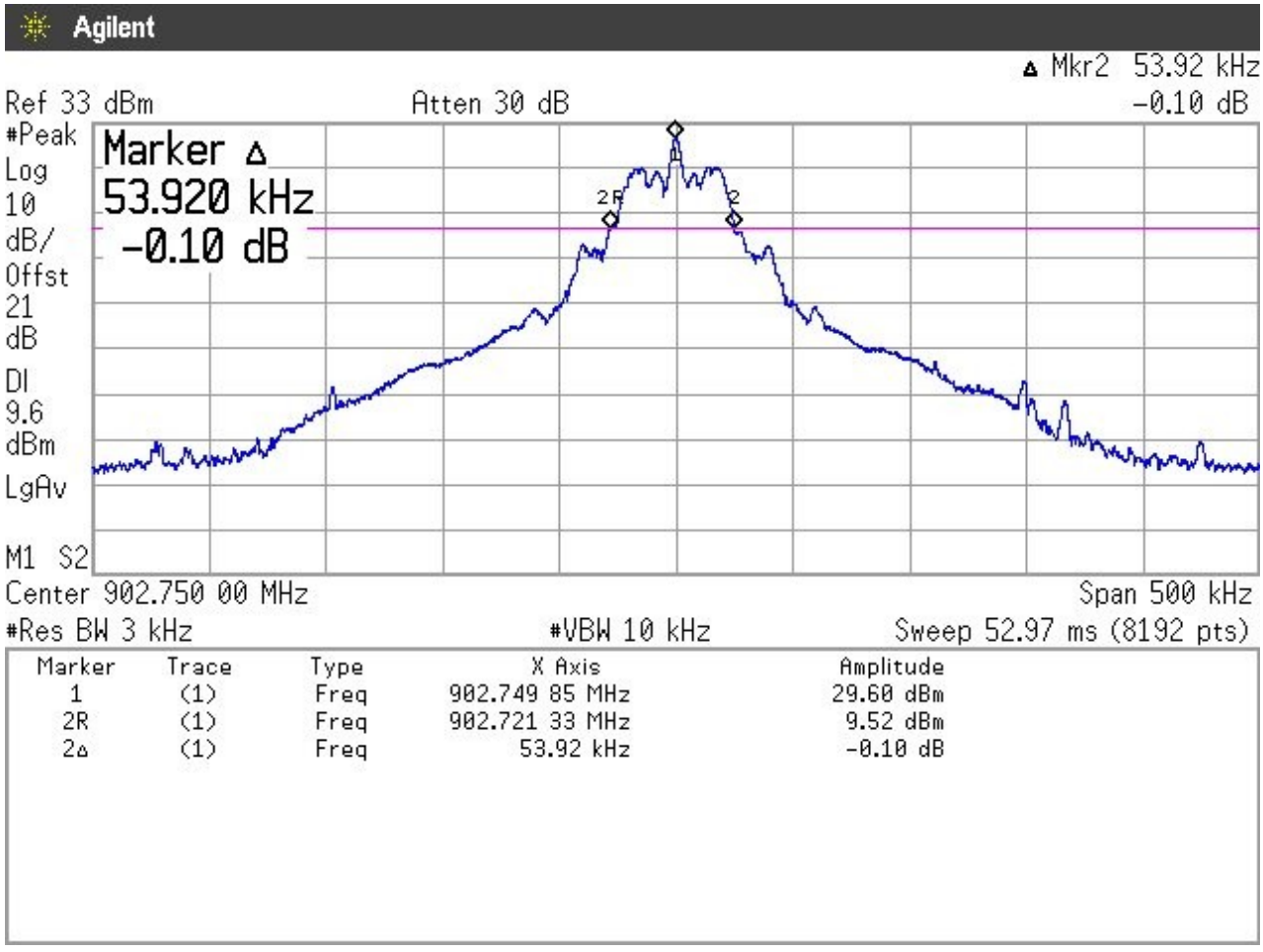


Fig. 6.21
Modulation Type: PR_ASK_M4_TX40RX250

Ch 24: Bandwidth

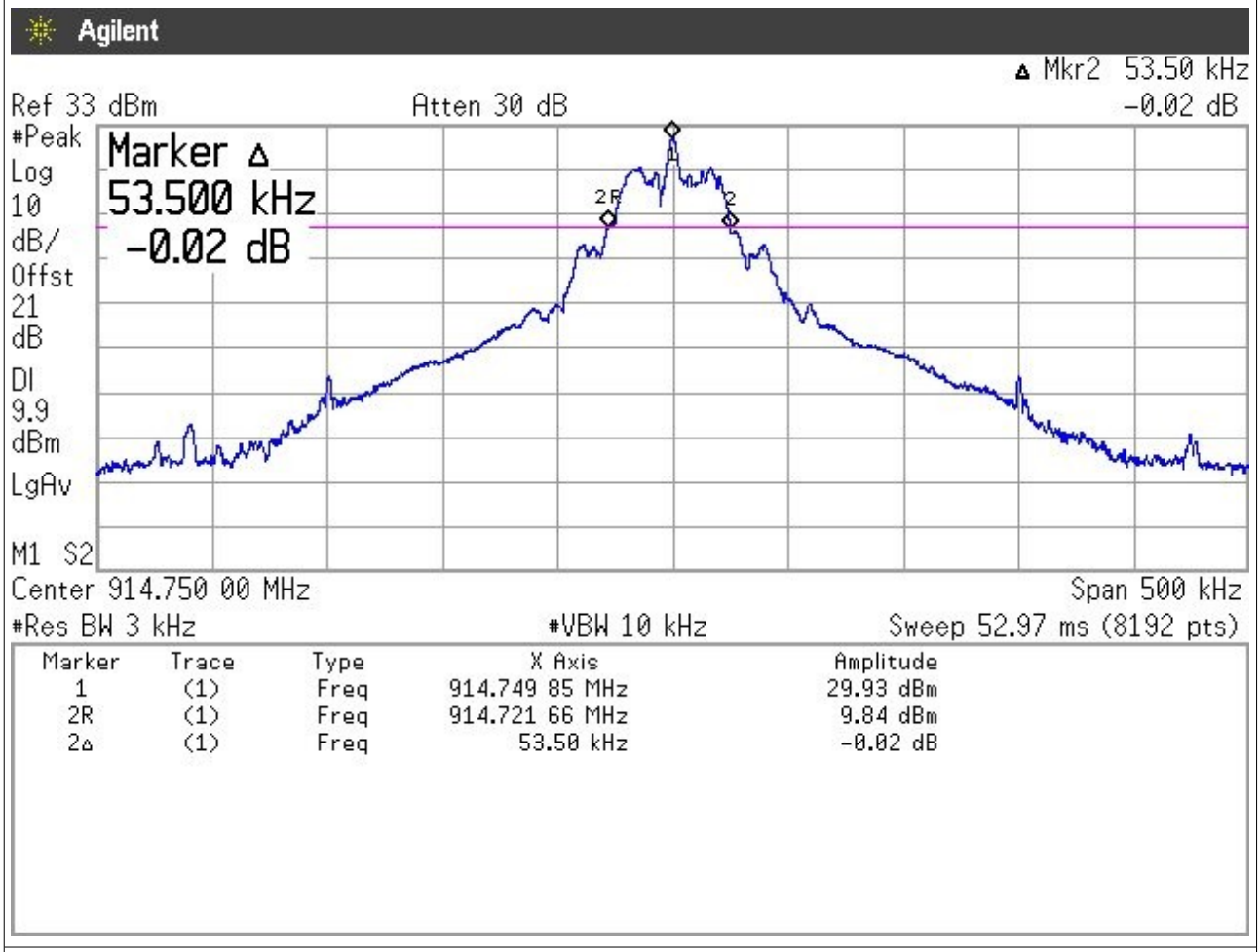


Fig. 6.22
Modulation Type: PR_ASK_M4_TX40RX250

Ch 49: Bandwidth

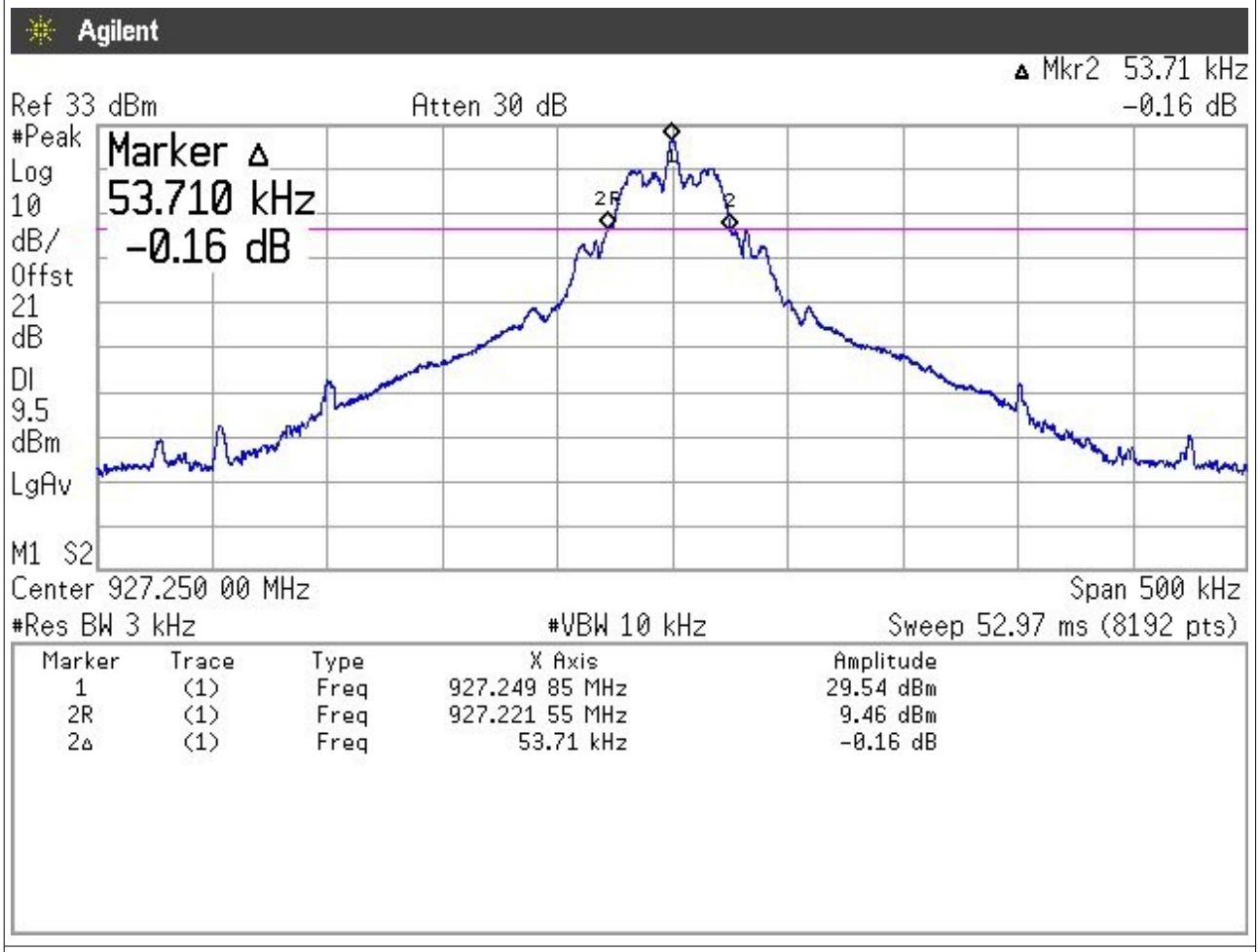


Fig. 6.23
Modulation Type: PR_ASK_M4_TX40RX250

Ch 0: Bandwidth

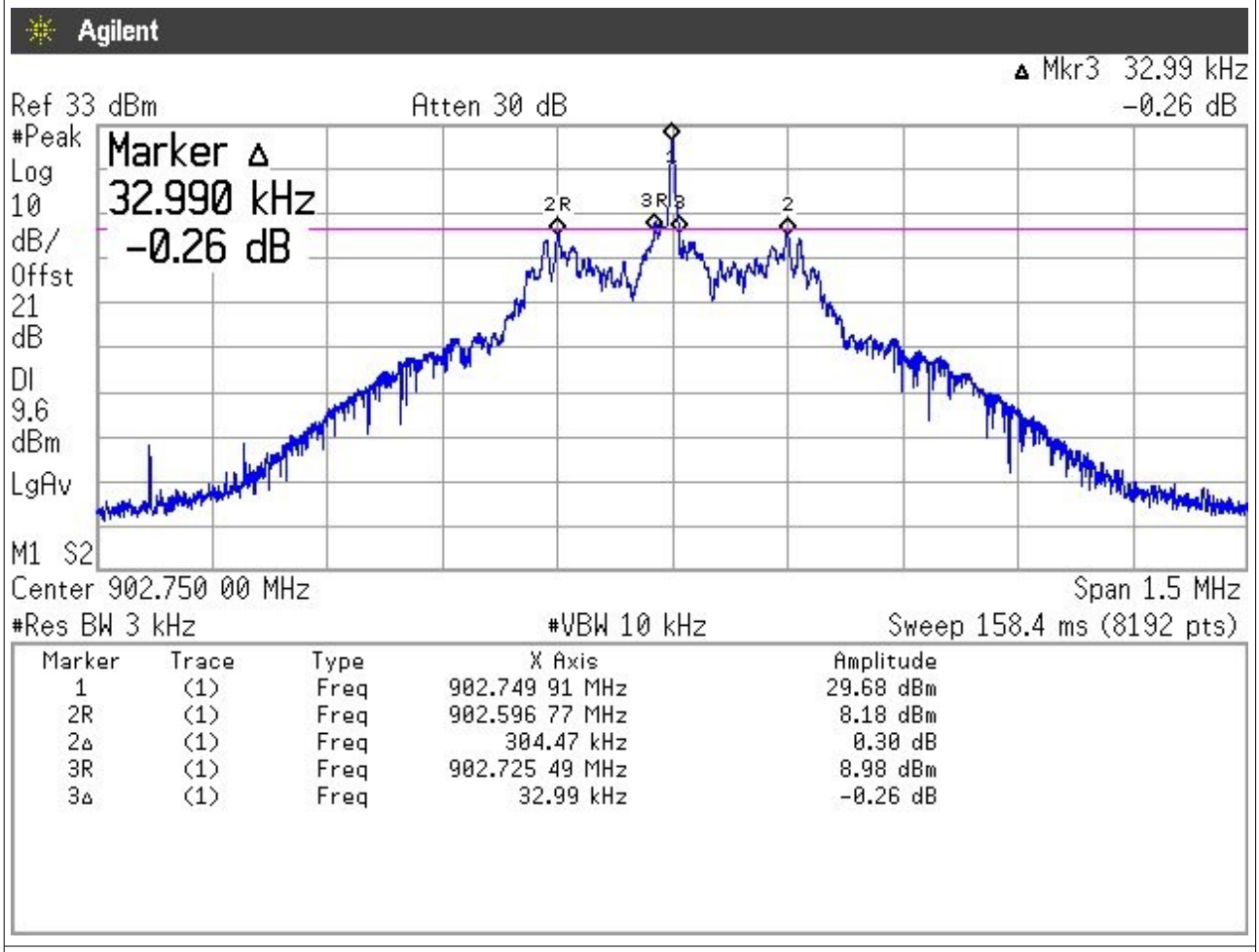


Fig. 6.24
Modulation Type: DSB_ASK_FM0_TX160RX400

Ch 24: Bandwidth

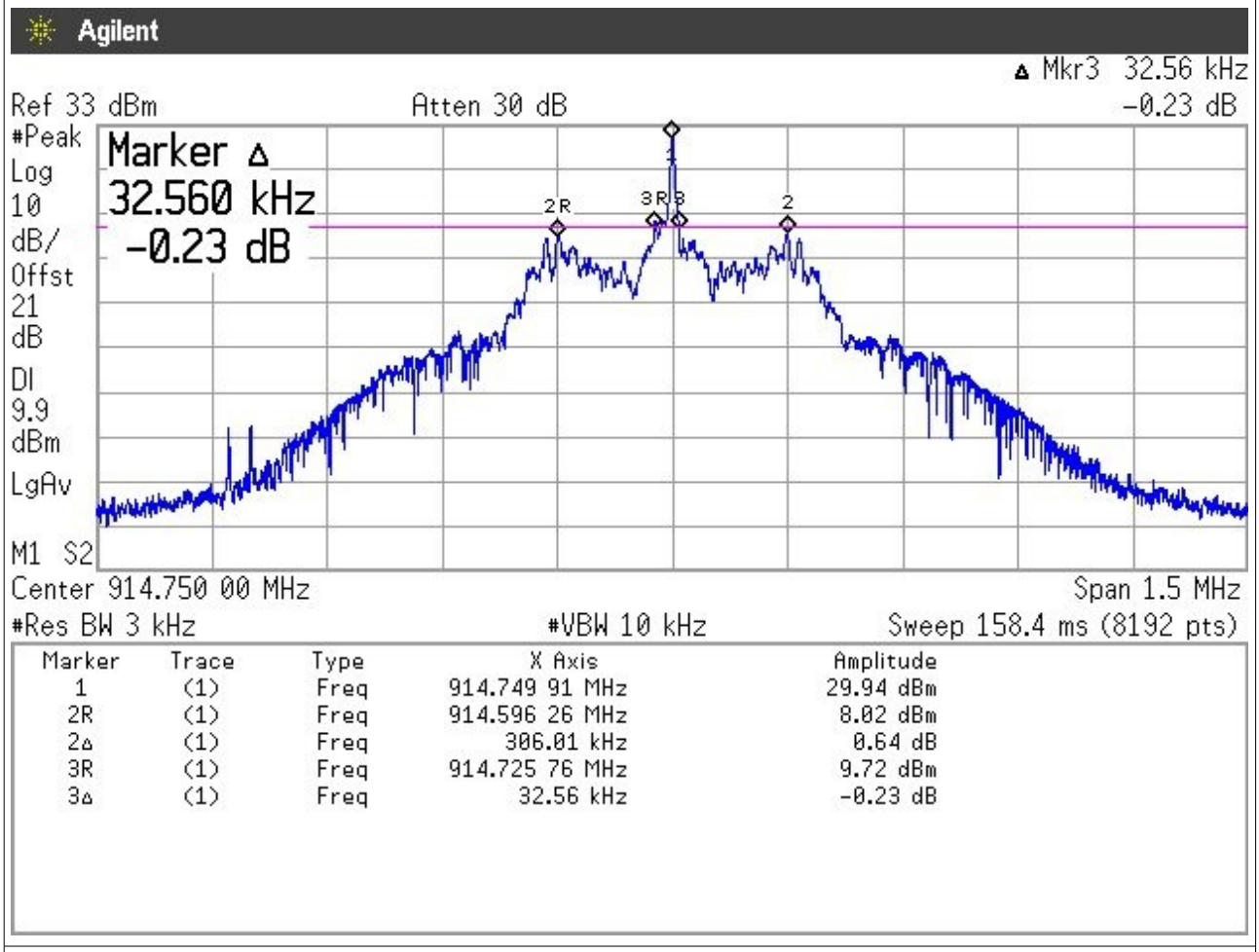


Fig. 6.25
Modulation Type: DSB_ASK_FM0_TX160RX400

Ch 49: Bandwidth

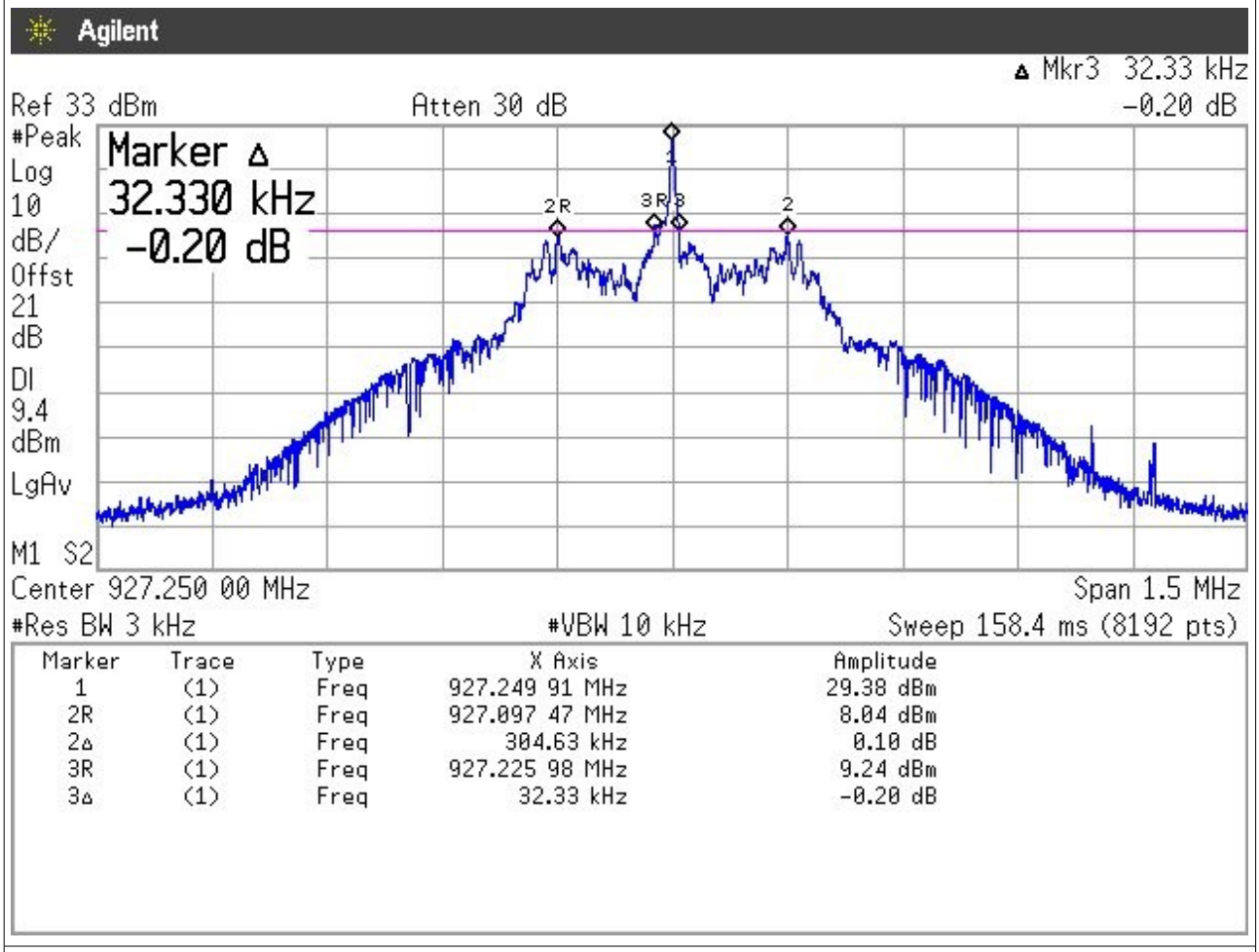


Fig. 6.26
Modulation Type: DSB_ASK_FM0_TX160RX400

6.5. *Peak Output Power*

Equipment shall meet the limits below.

Frequency range [MHz]	***Nr of Channel*** [#]	***RF power output Limit*** [dBm]
902 – 928	50	30.0 (1 W)
902 – 928	< 50	24.0 (0.25 W)

Measurement

The measured values are:

Channel	Output Power	
	Modulation type 1	Modulation type 2
0	29.7	29.6
24	29.8	29.8
49	29.7	29.4

The following figures show the acquired graphics.

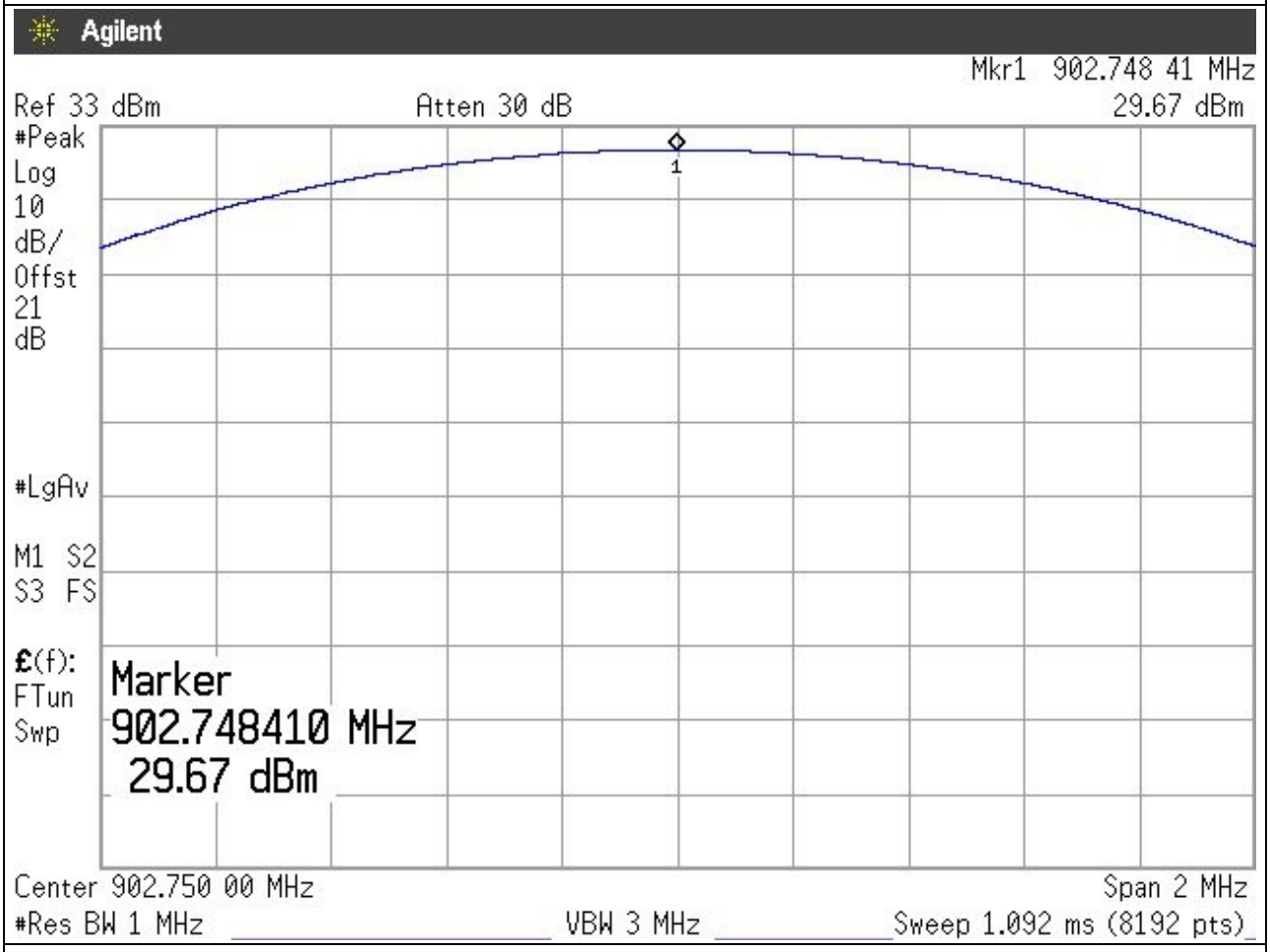


Fig. 6.27
Modulation Type 1, Channel 0, Max Hold

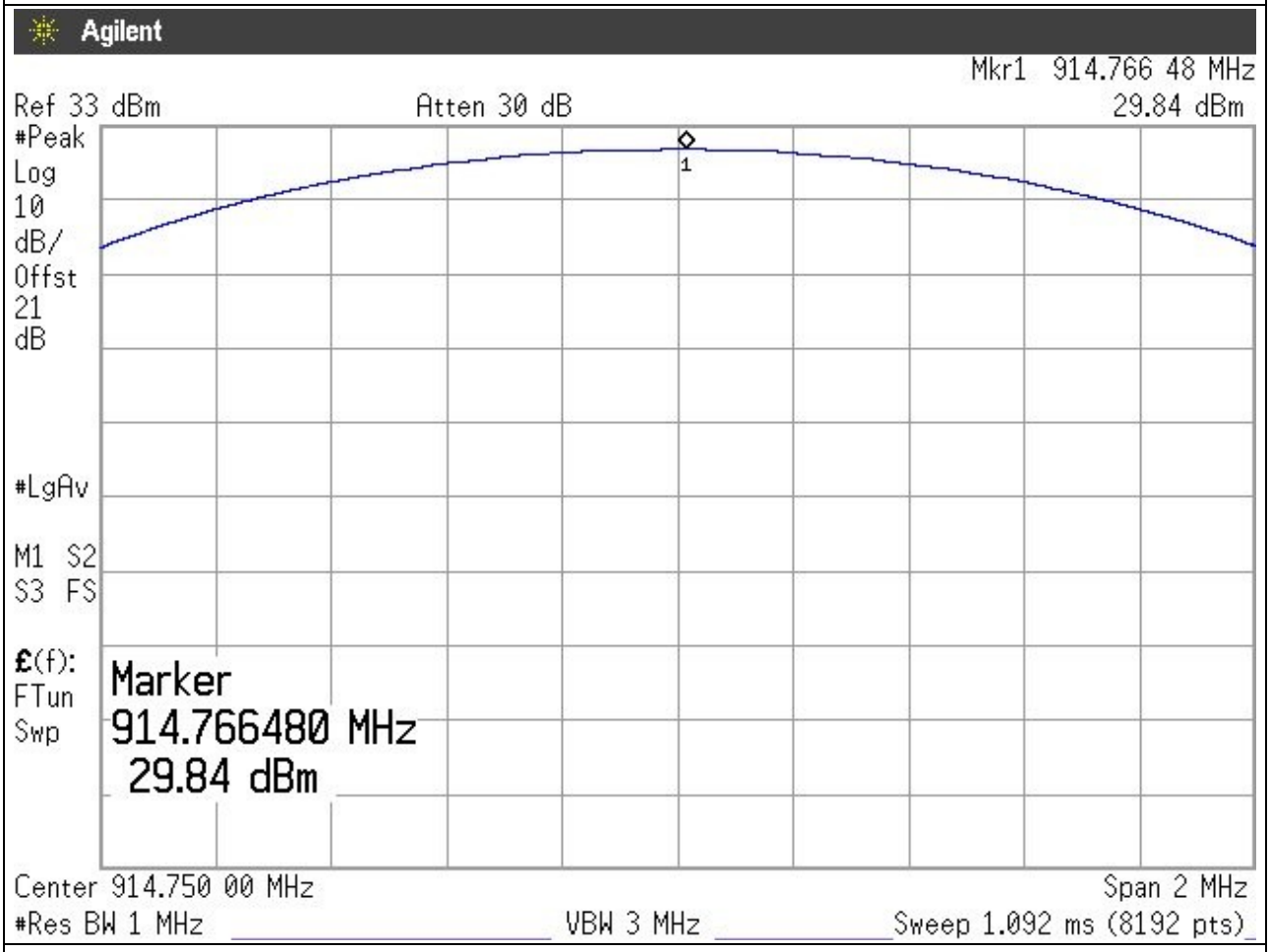


Fig. 6.28
Modulation Type 1, Channel 24, Max Hold

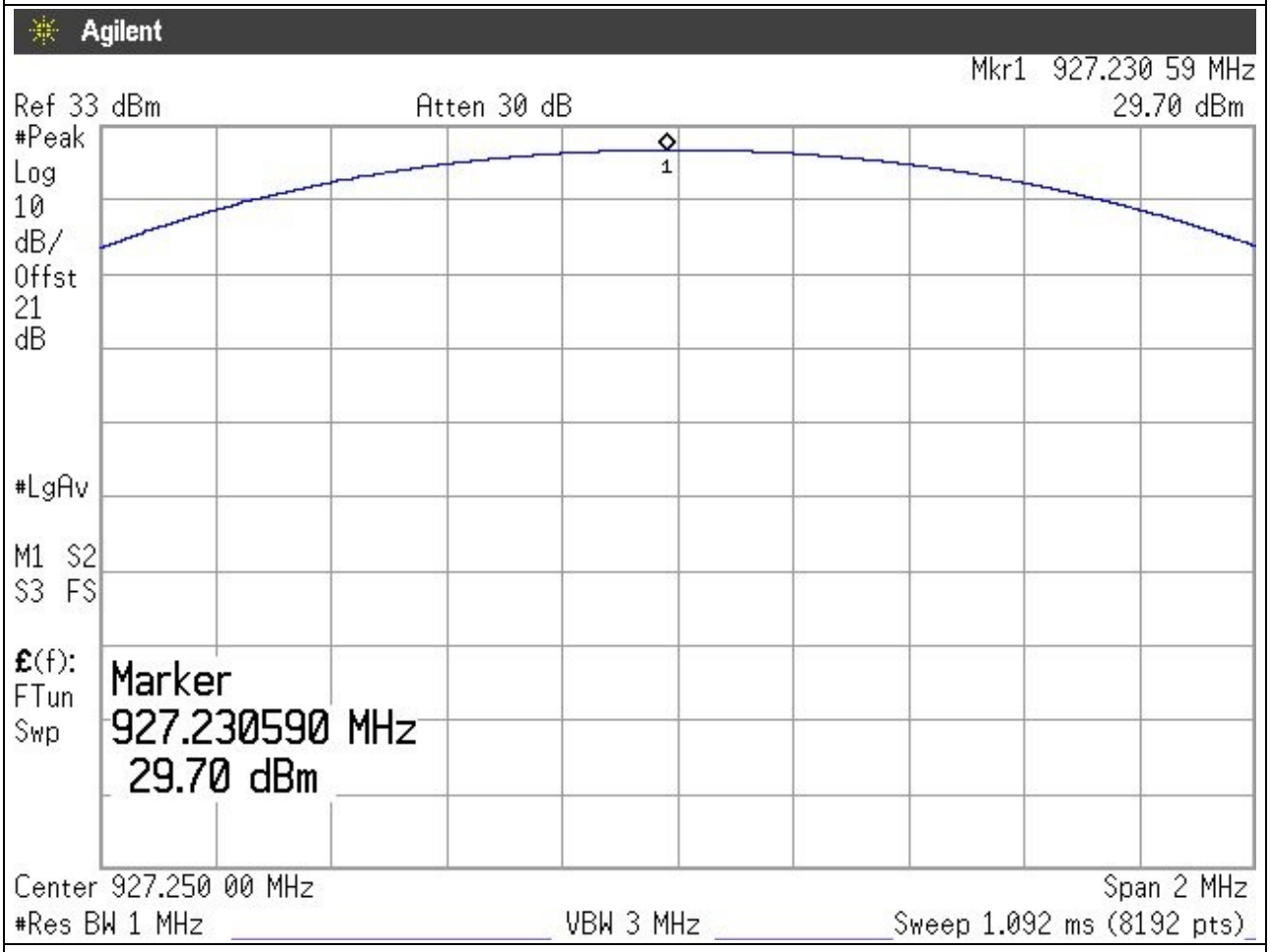


Fig. 6.29
Modulation Type 1, Channel 49

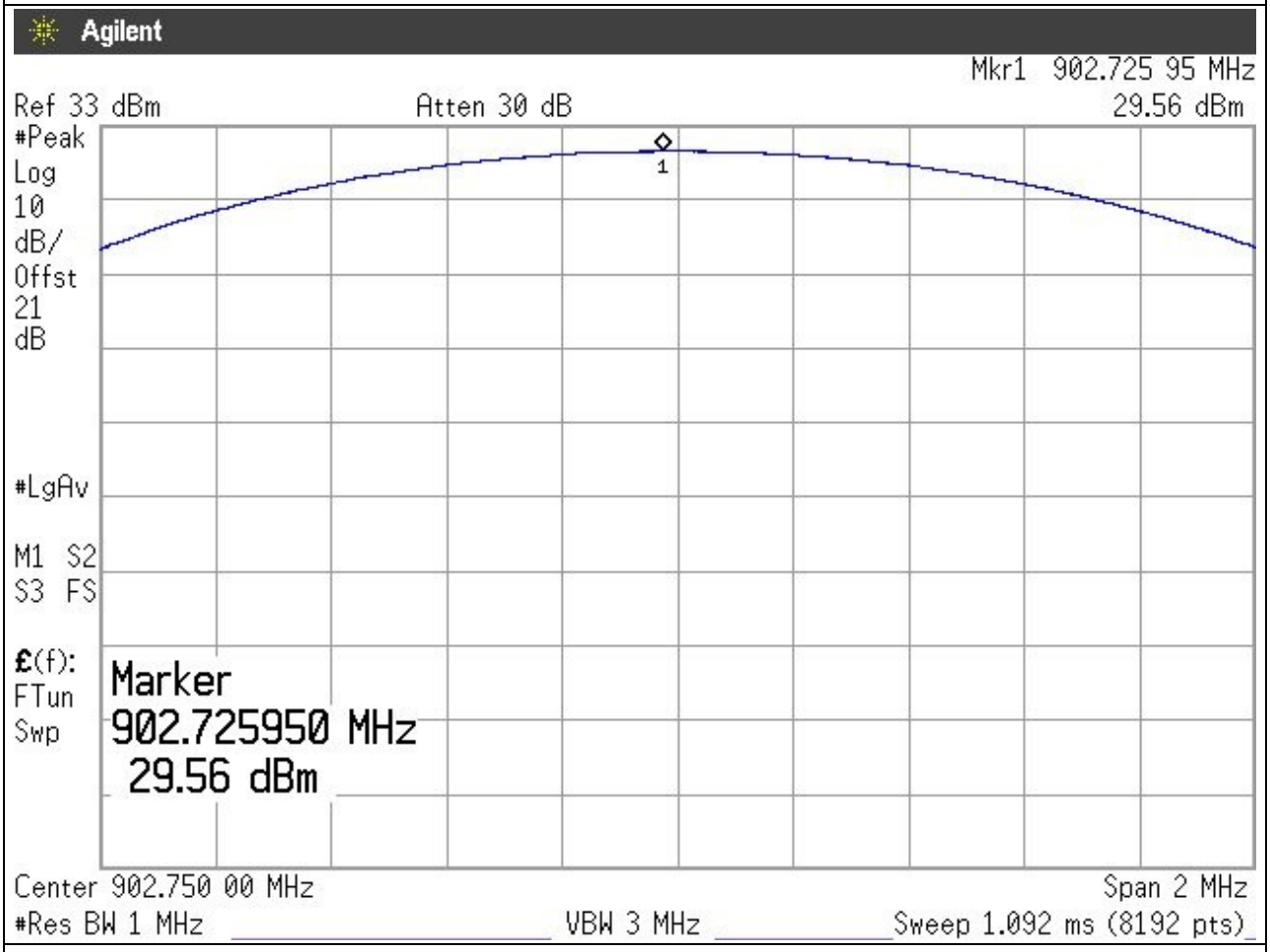


Fig. 6.30
Modulation Type 2, Channel 0, Max Hold

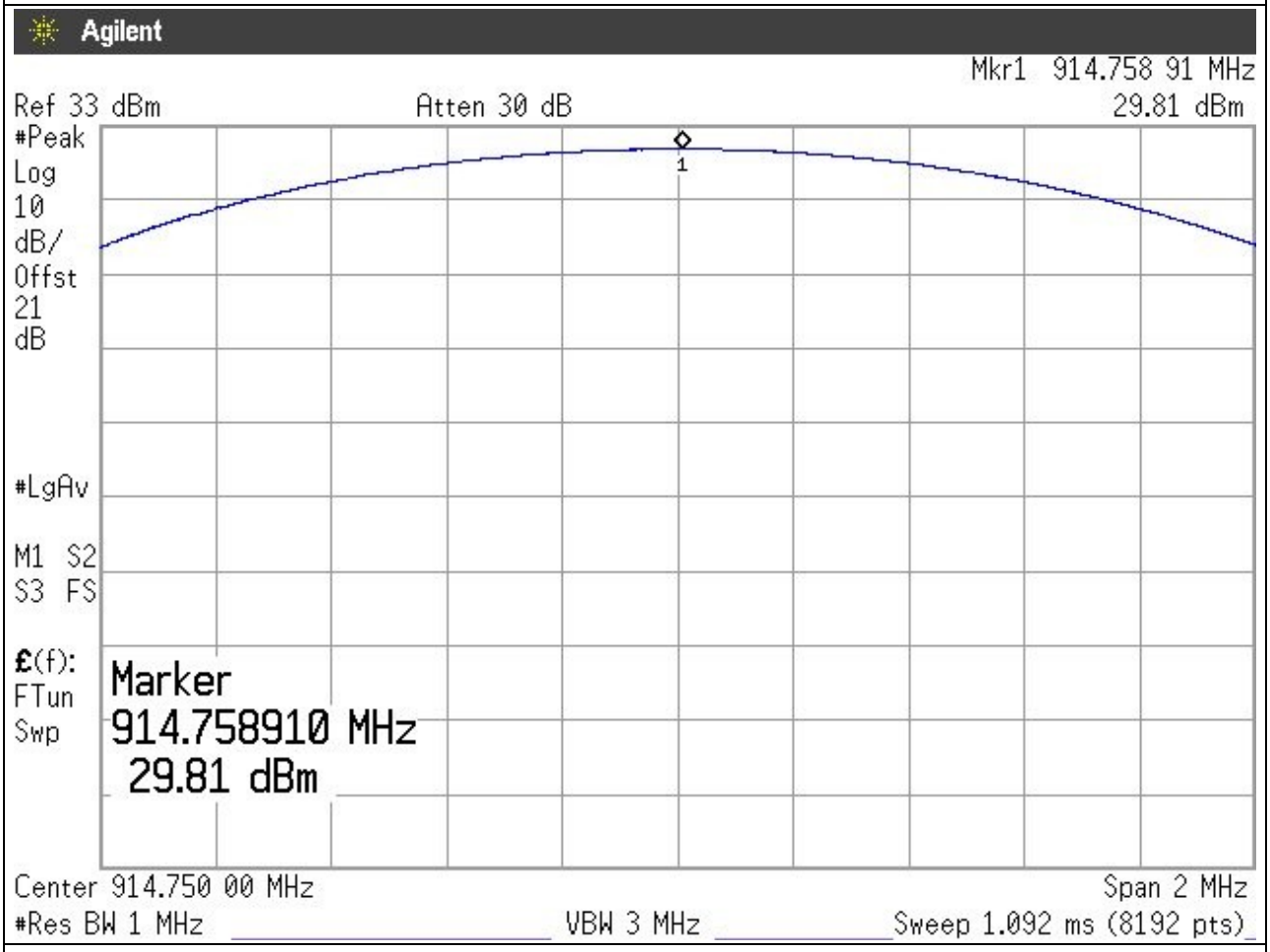


Fig. 6.31
Modulation Type 2, Channel 24, Max Hold

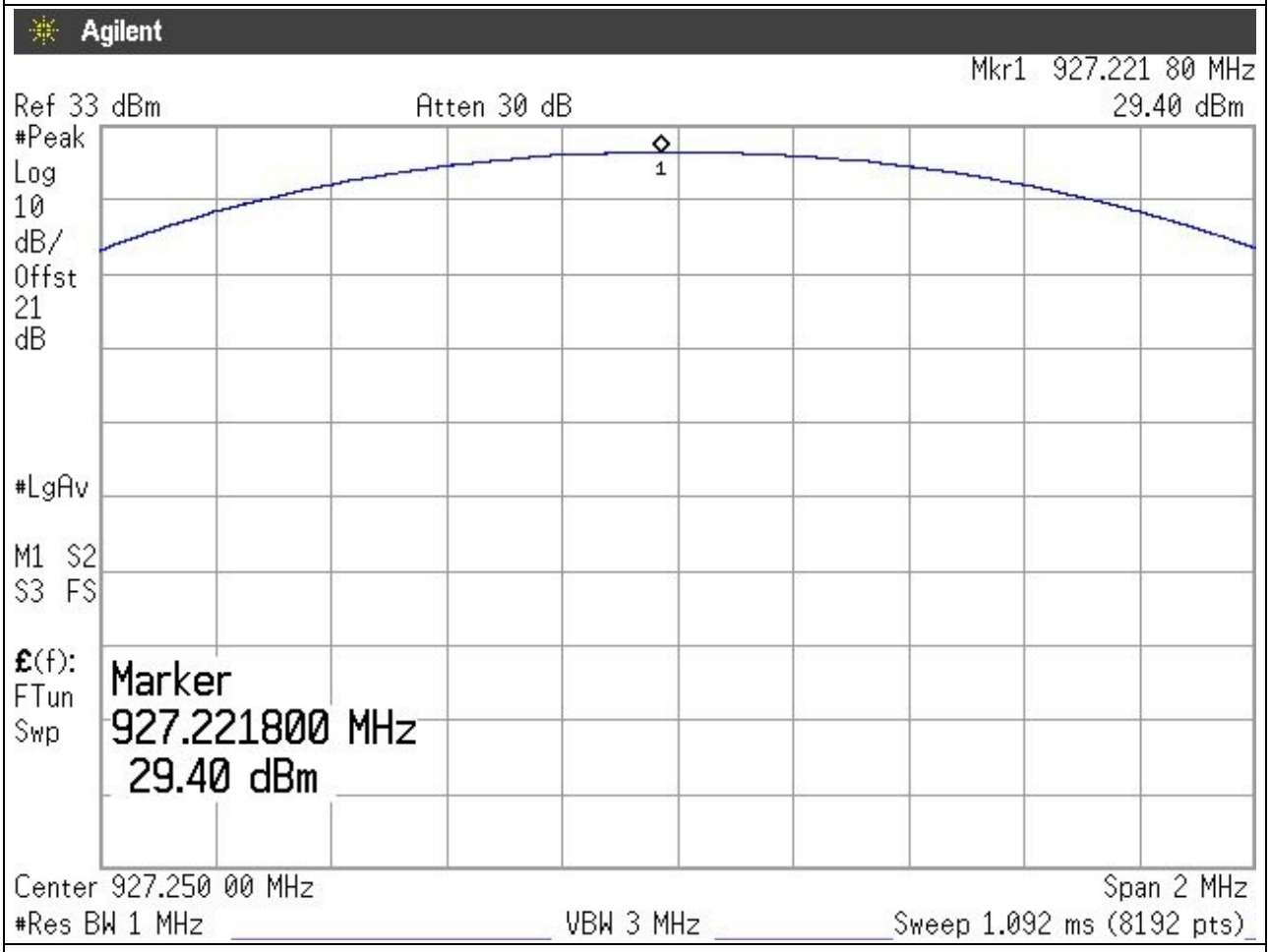


Fig. 6.32
Modulation Type 2, Channel 49, Max Hold

6.6. BAND EDGE

Emissions must be within the band 902-928 MHz.

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Measurements

The following figures show the acquired graphics.

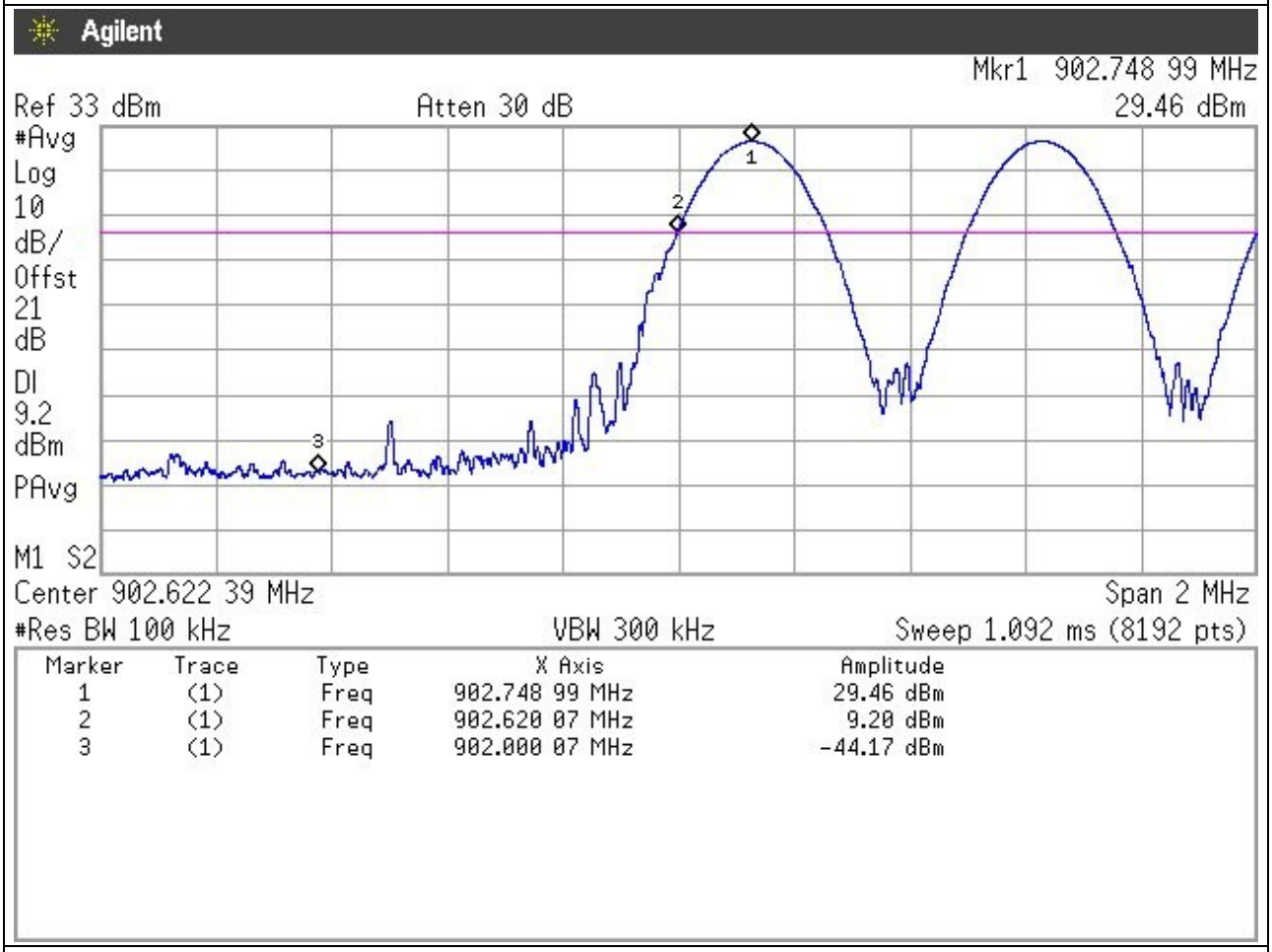


Fig. 6.33
Modulation Type: PR_ASK_M4_TX40RX250

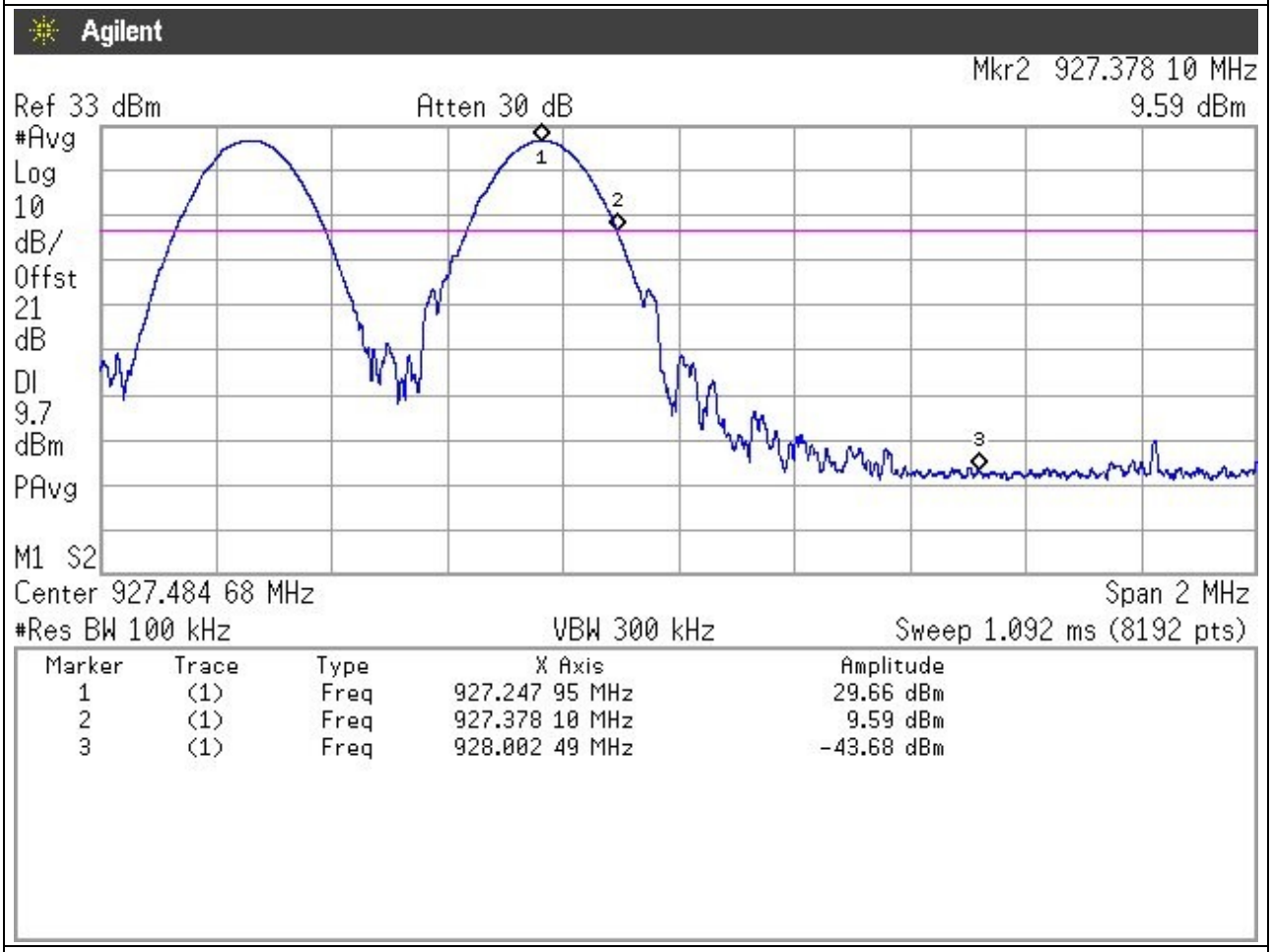


Fig. 6.34
Modulation Type: PR_ASK_M4_TX40RX250

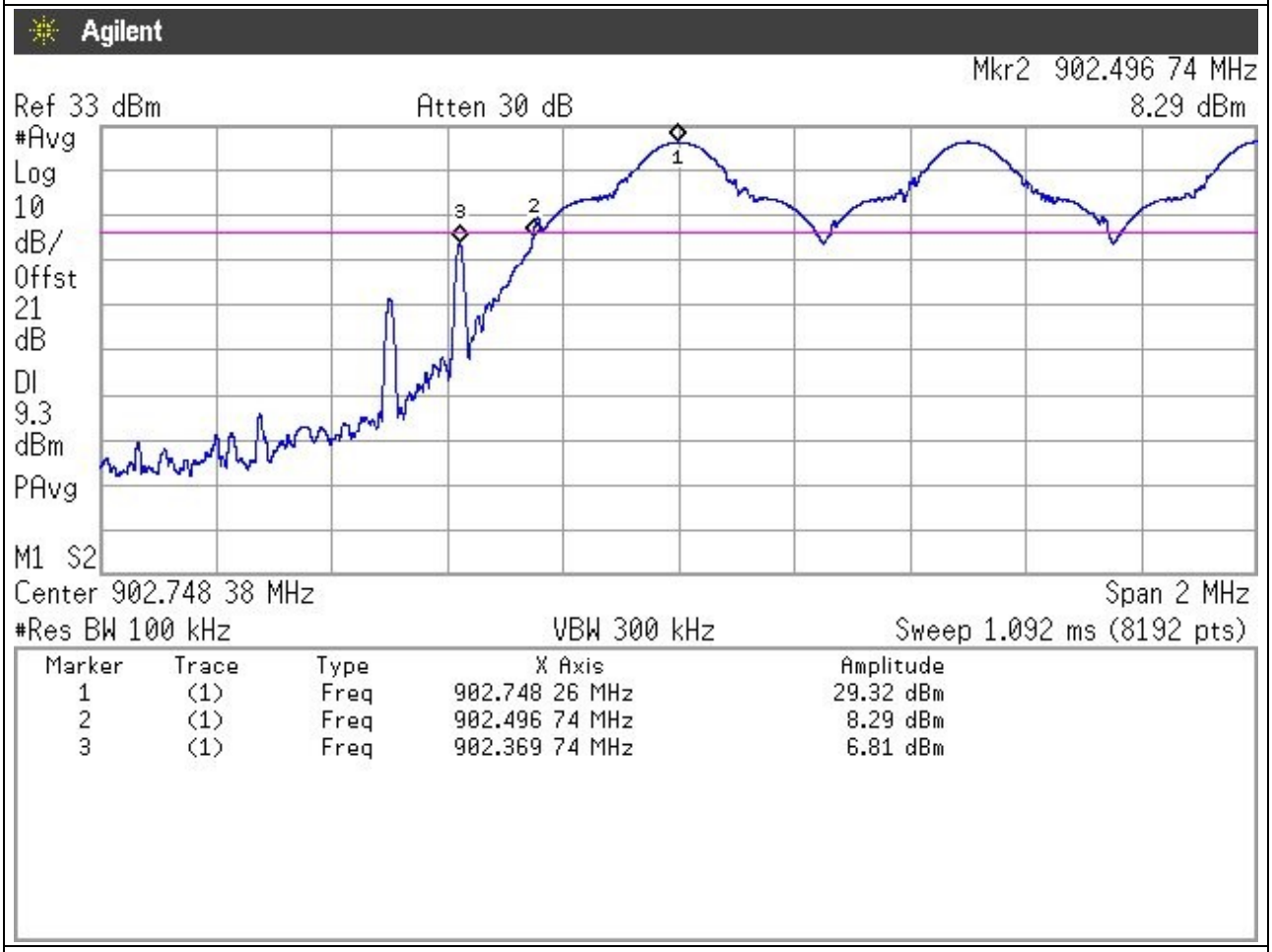


Fig. 6.35
Modulation Type: DSB_ASK_FM0_TX160RX400

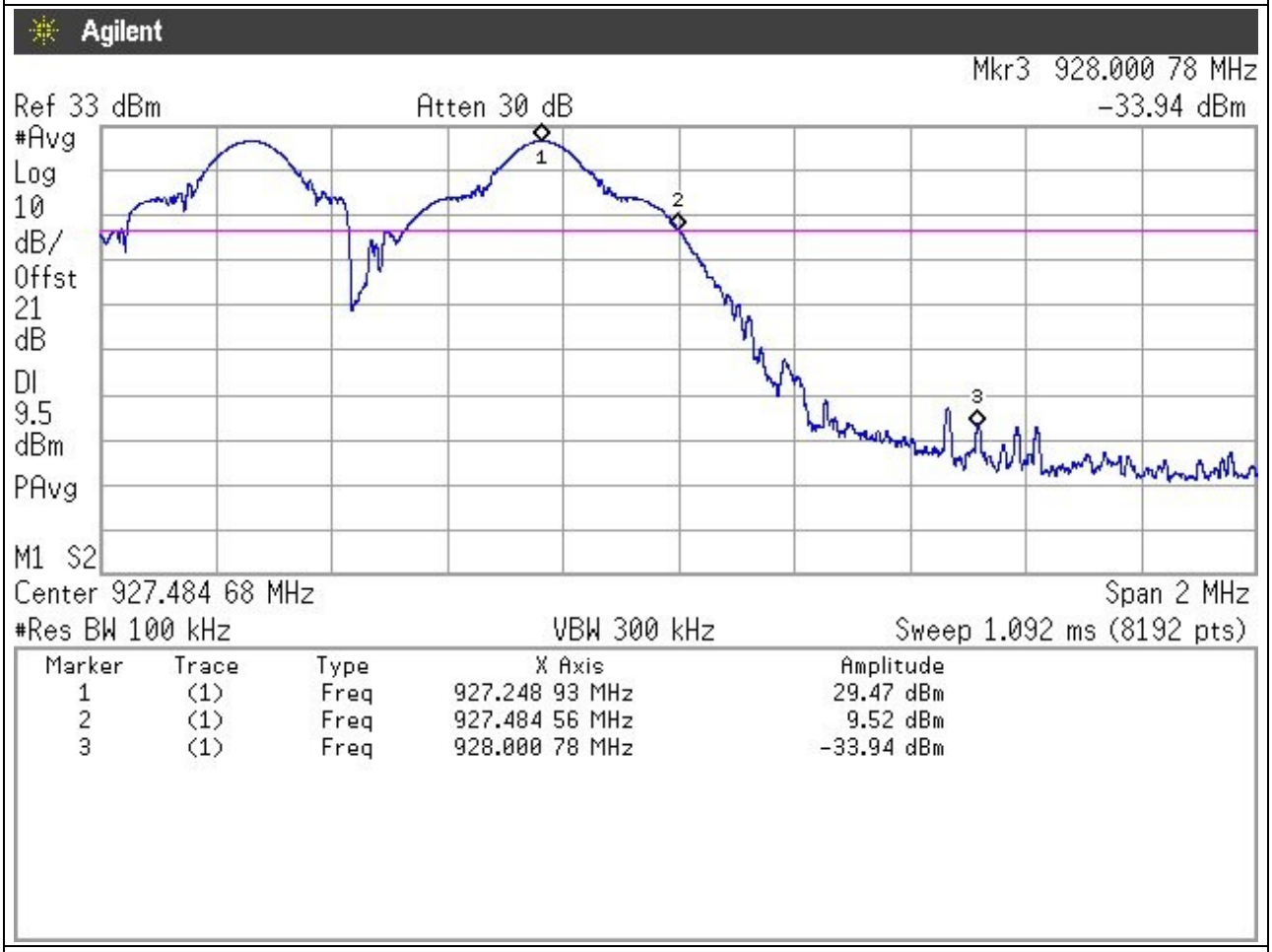


Fig. 6.36
Modulation Type: DSB_ASK_FM0_TX160RX400

6.7. SPURIOUS RF CONDUCTED EMISSIONS

Measurements

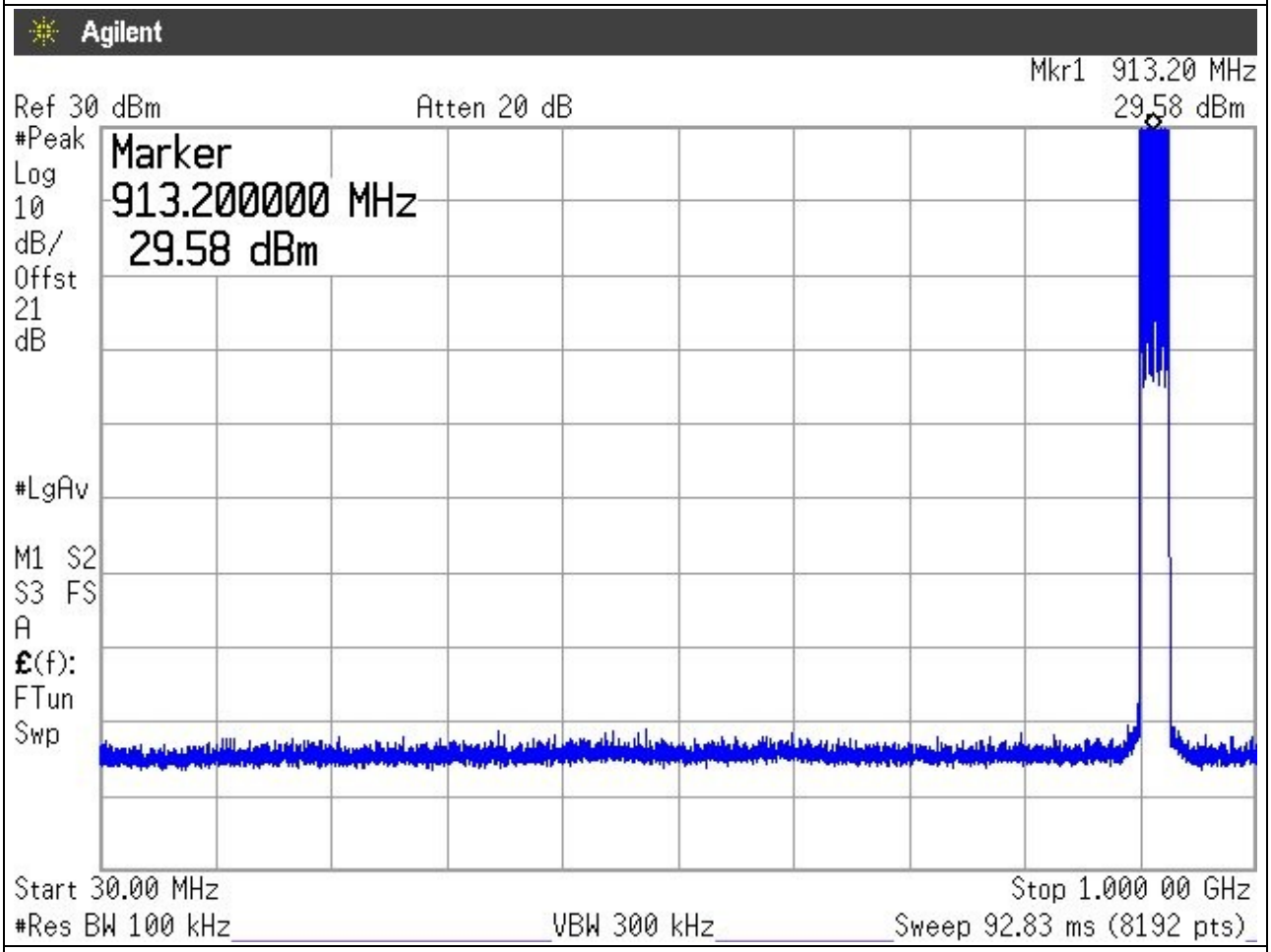


Fig. 6.37
Modulation Type 1, Range: 30 – 1000 MHz, Max Hold

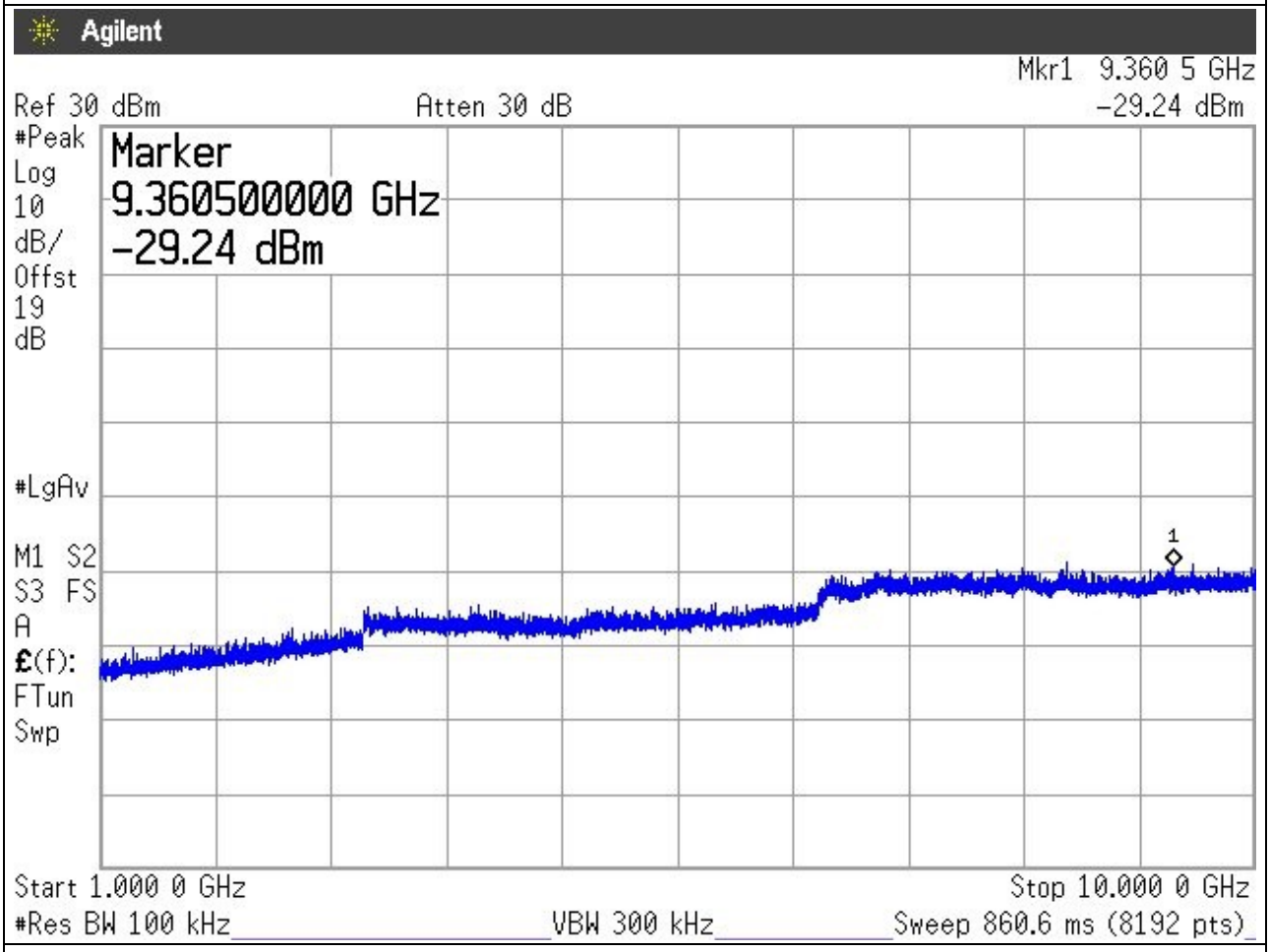


Fig. 6.38
Modulation Type 1, Range: 1 – 10 GHz, Max Hold

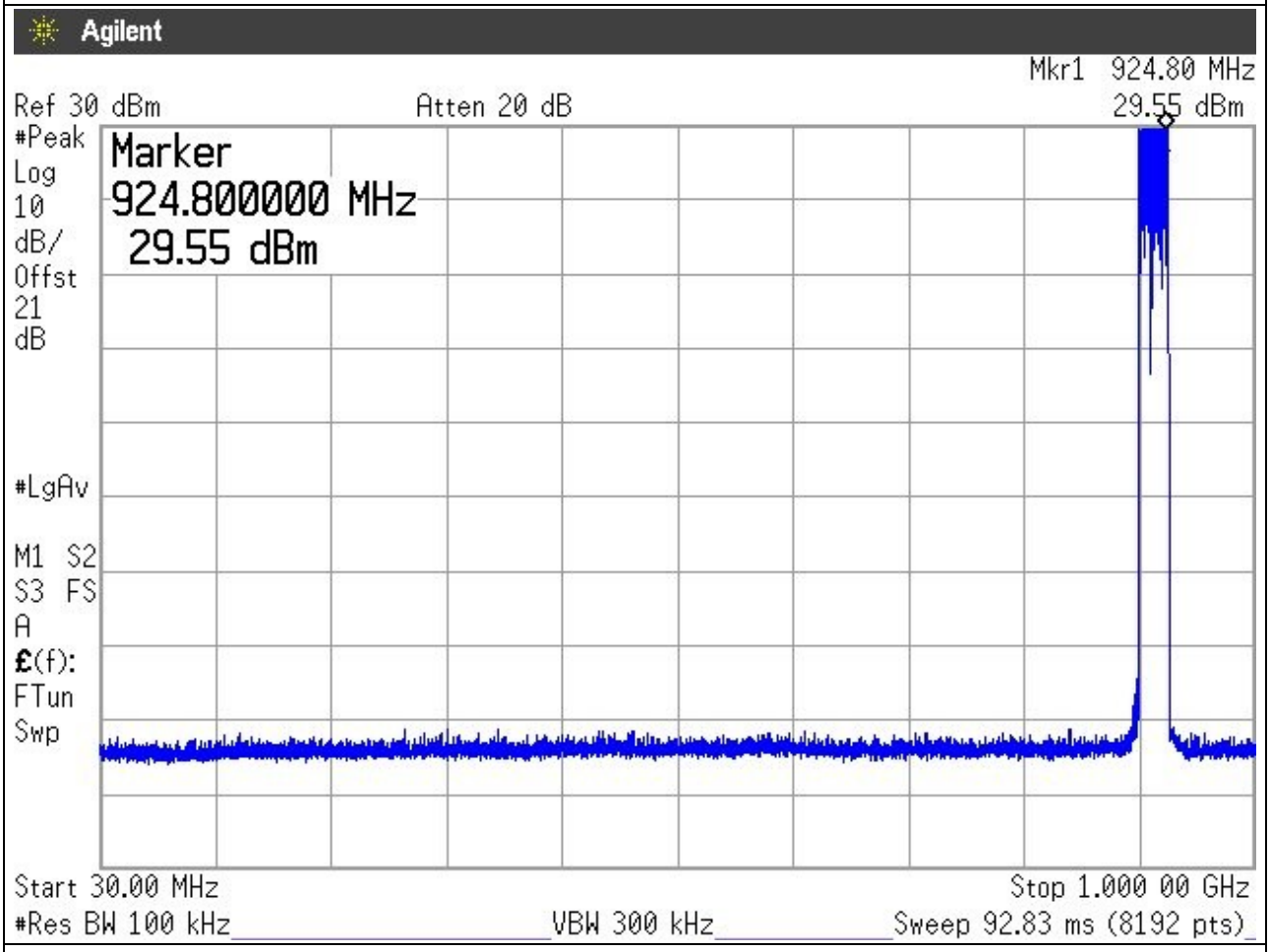


Fig. 6.39
Modulation Type 2, Range: 30 – 1000 MHz, Max Hold

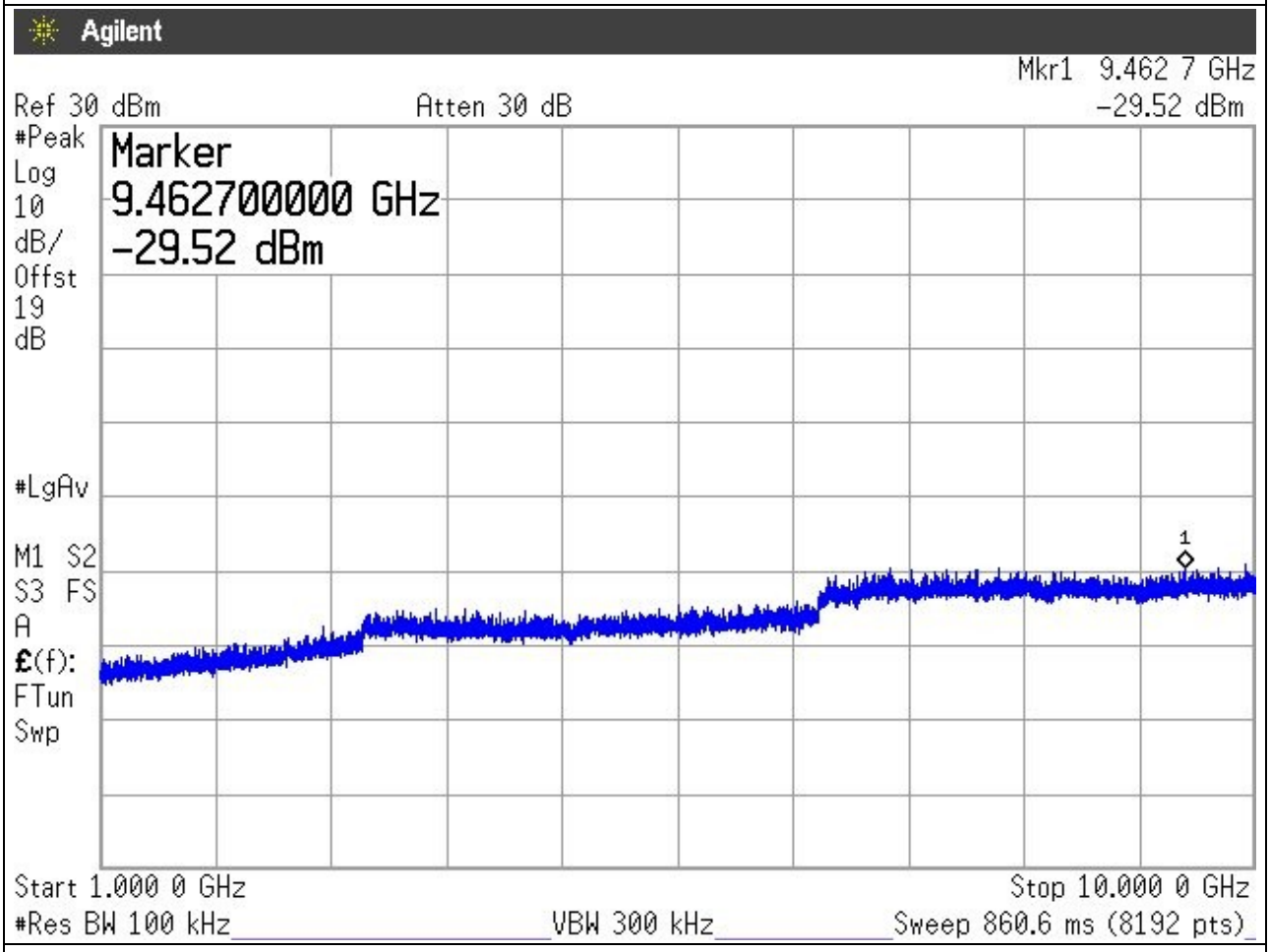


Fig. 6.40
Modulation Type 2, Range: 1 – 10 GHz, Max Hold

Test Equipment

EQUIPMENT	MANUFACTURER	MODEL	CAL. DUE
MXE EMI Receiver	Agilent/Keysight	N9038A	01/2017
Anechoic Chamber	Comtest	CSA01	01/2017
Bilog Antenna	Schaffner	CBL6112B	01/2017
Horn Antenna	EMCO	3115	01/2017
Controller	Deisel	HD100	01/2017
Turn Table	Deisel	MA240	01/2017
Attenuator	Narda	768-10	01/2017

Test procedure: CT15C01

7. RADIATED OPERATION WITHIN THE BAND 902 - 928 MHZ

7.1. SPURIOUS RADIATED EMISSIONS

Nr Harmonics	AV Level (dBµV/m)						AV Limits (dBµV/m)	Remark
	Ch 0		Ch 24		Ch 49			
	F (MHz)	(dBµV/m)	F (MHz)	(dBµV/m)	F (MHz)	(dBµV/m)		
2	1805.5	--	1830.5	--	1854.5	--	54.0	
3		--		--		--	54.0	
4		--		--		--	54.0	
5		--		--		--	54.0	
6		--		--		--	54.0	
7		--		--		--	54.0	
8		--		--		--	54.0	
9		--		--		--	54.0	
10		--		--		--	54.0	

Note: Levels below 20 dB of limits are indicated with (--).

Nr Harmonics	Peak Level (dBµV/m)						AV Limits (dBµV/m)	Remark
	Ch 0		Ch 24		Ch 49			
	F (MHz)	(dBµV/m)	F (MHz)	(dBµV/m)	F (MHz)	(dBµV/m)		
2	1805.5	--	1830.5	--	1854.5	--	74.0	
3		--		--		--	74.0	
4		--		--		--	74.0	
5		--		--		--	74.0	
6		--		--		--	74.0	
7		--		--		--	74.0	
8		--		--		--	74.0	
9		--		--		--	74.0	
10		--		--		--	74.0	

Note: Levels below 20 dB of limits are indicated with (--).

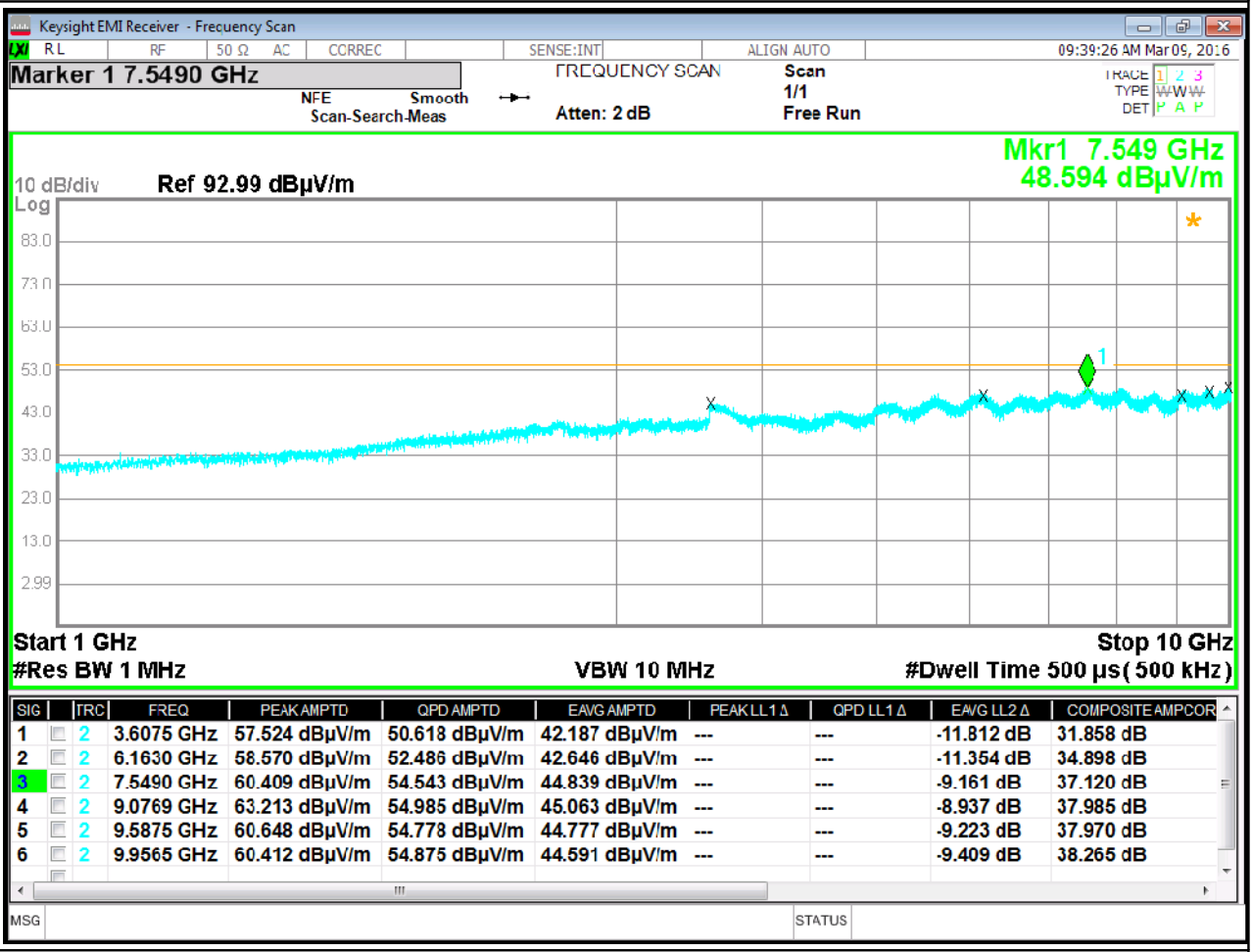
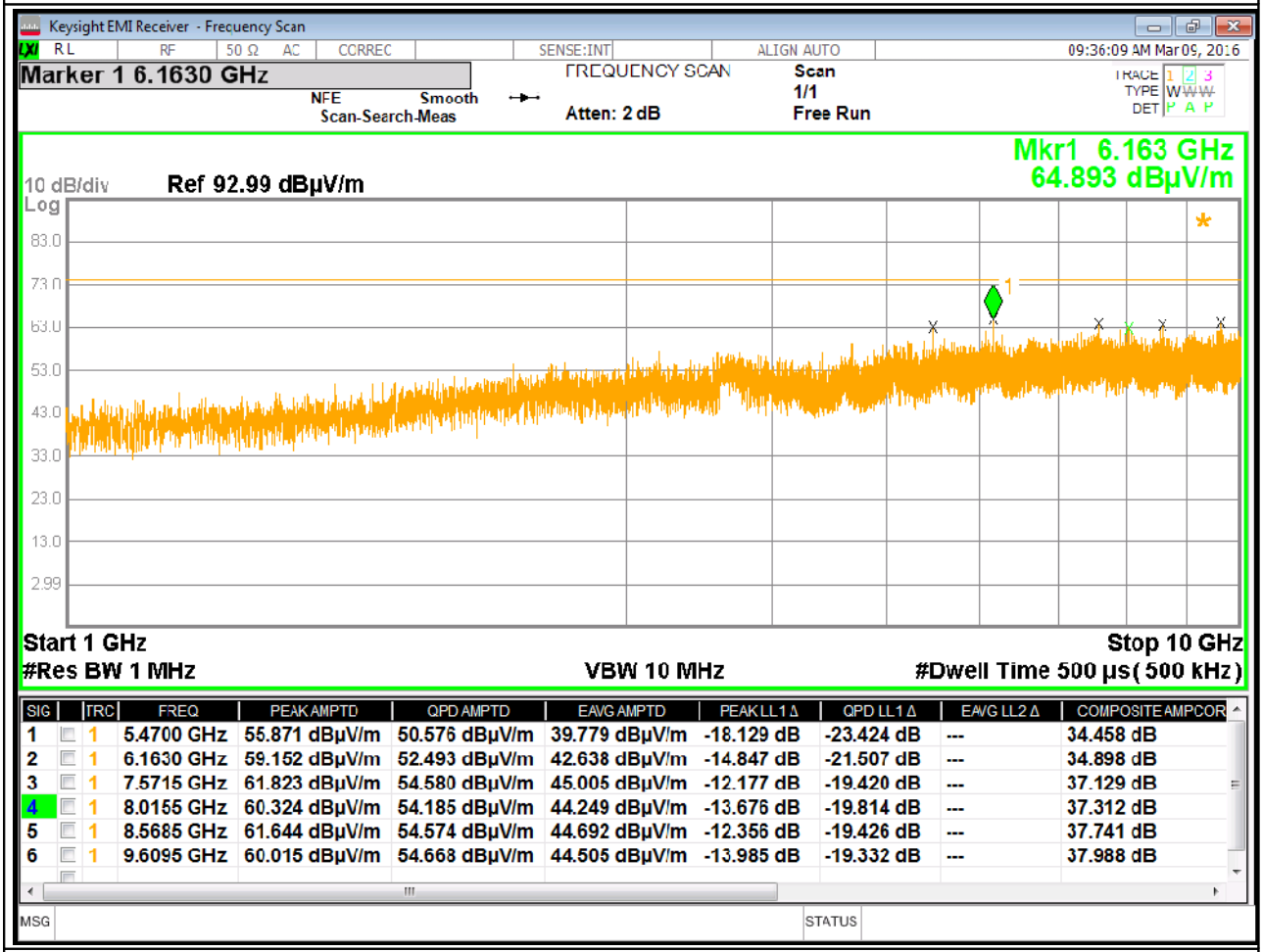


Fig. 7.1

POL V
MA: 100 cm
TT: 0°
EUT mode: Standby

Record of the measurement of radiated emissions (AVG detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. V.



SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	5.4700 GHz	55.871 dBµV/m	50.576 dBµV/m	39.779 dBµV/m	-18.129 dB	-23.424 dB	---	34.458 dB
2	1	6.1630 GHz	59.152 dBµV/m	52.493 dBµV/m	42.638 dBµV/m	-14.847 dB	-21.507 dB	---	34.898 dB
3	1	7.5715 GHz	61.823 dBµV/m	54.580 dBµV/m	45.005 dBµV/m	-12.177 dB	-19.420 dB	---	37.129 dB
4	1	8.0155 GHz	60.324 dBµV/m	54.185 dBµV/m	44.249 dBµV/m	-13.676 dB	-19.814 dB	---	37.312 dB
5	1	8.5685 GHz	61.644 dBµV/m	54.574 dBµV/m	44.692 dBµV/m	-12.356 dB	-19.426 dB	---	37.741 dB
6	1	9.6095 GHz	60.015 dBµV/m	54.668 dBµV/m	44.505 dBµV/m	-13.985 dB	-19.332 dB	---	37.988 dB

Fig. 7.2

POL V
MA: 100 cm
TT: 0°
EUT mode: Standby

Record of the measurement of radiated emissions (Peak detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. V.

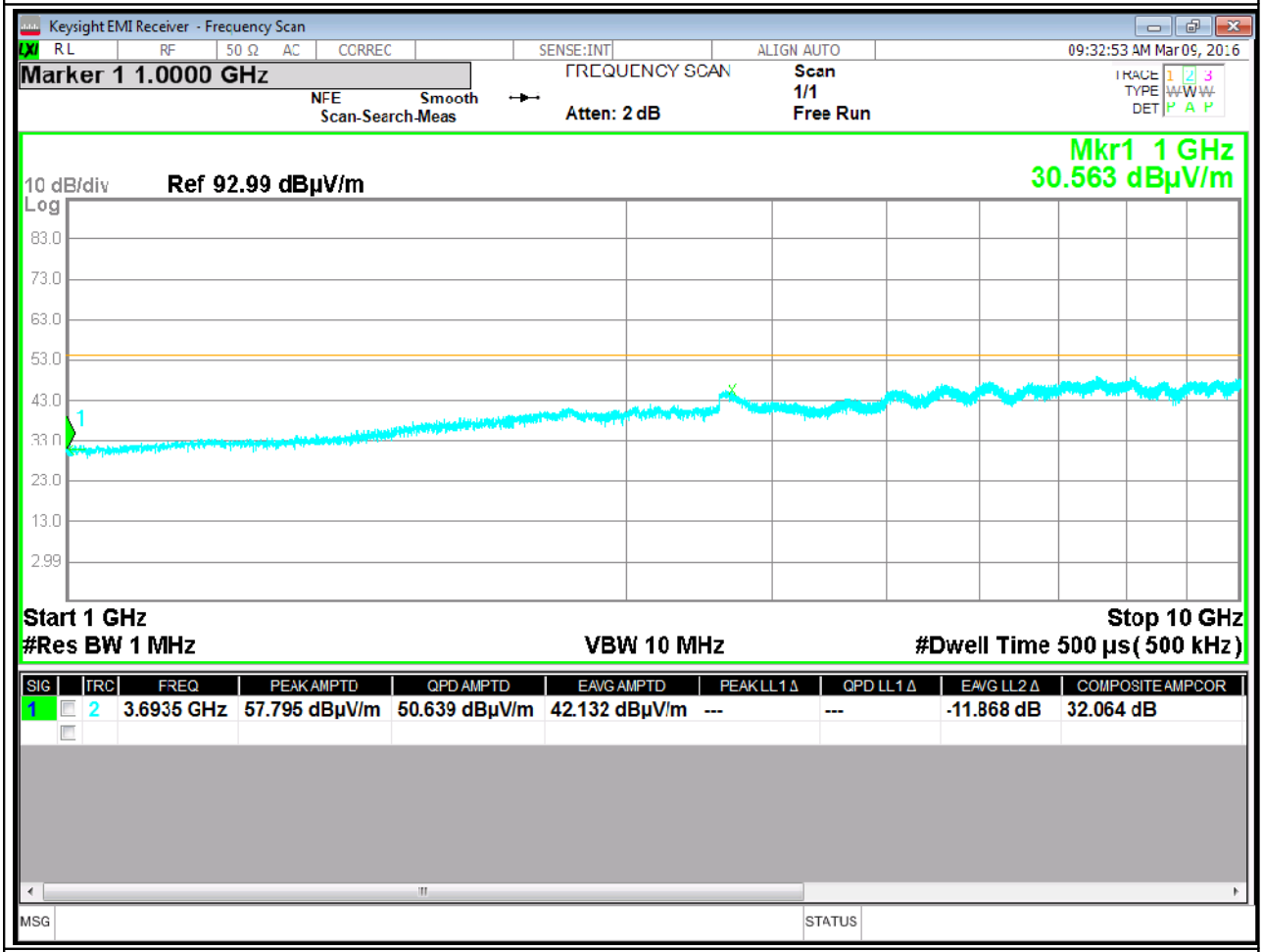


Fig. 7.3

POL H
MA: 100 cm
TT: 0°
EUT mode: Standby

Record of the measurement of radiated emissions (AVG detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. H.

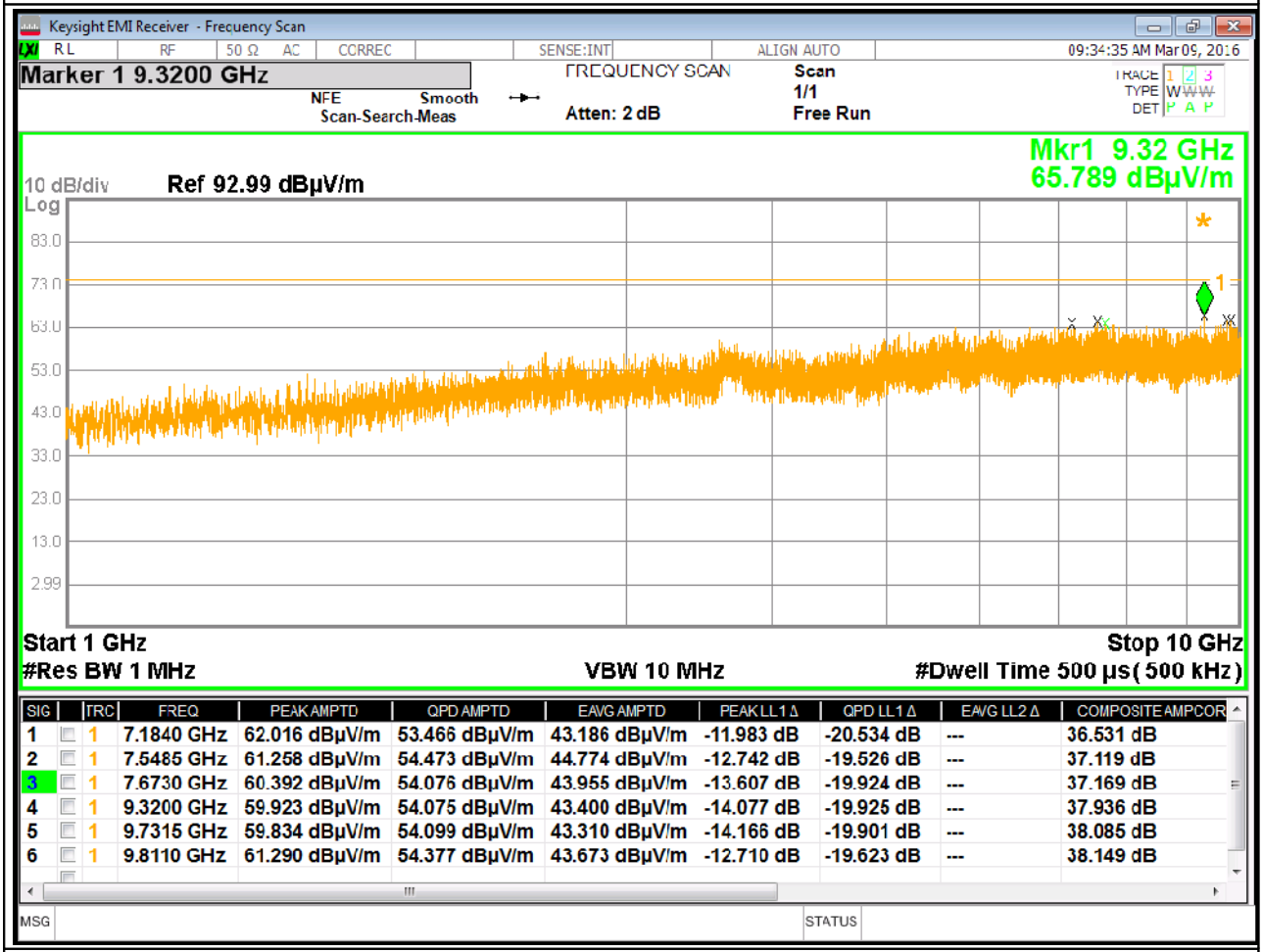


Fig. 7.4

POL H
MA: 100 cm
TT: 0°
EUT mode: Standby

Record of the measurement of radiated emissions (Peak detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. H.

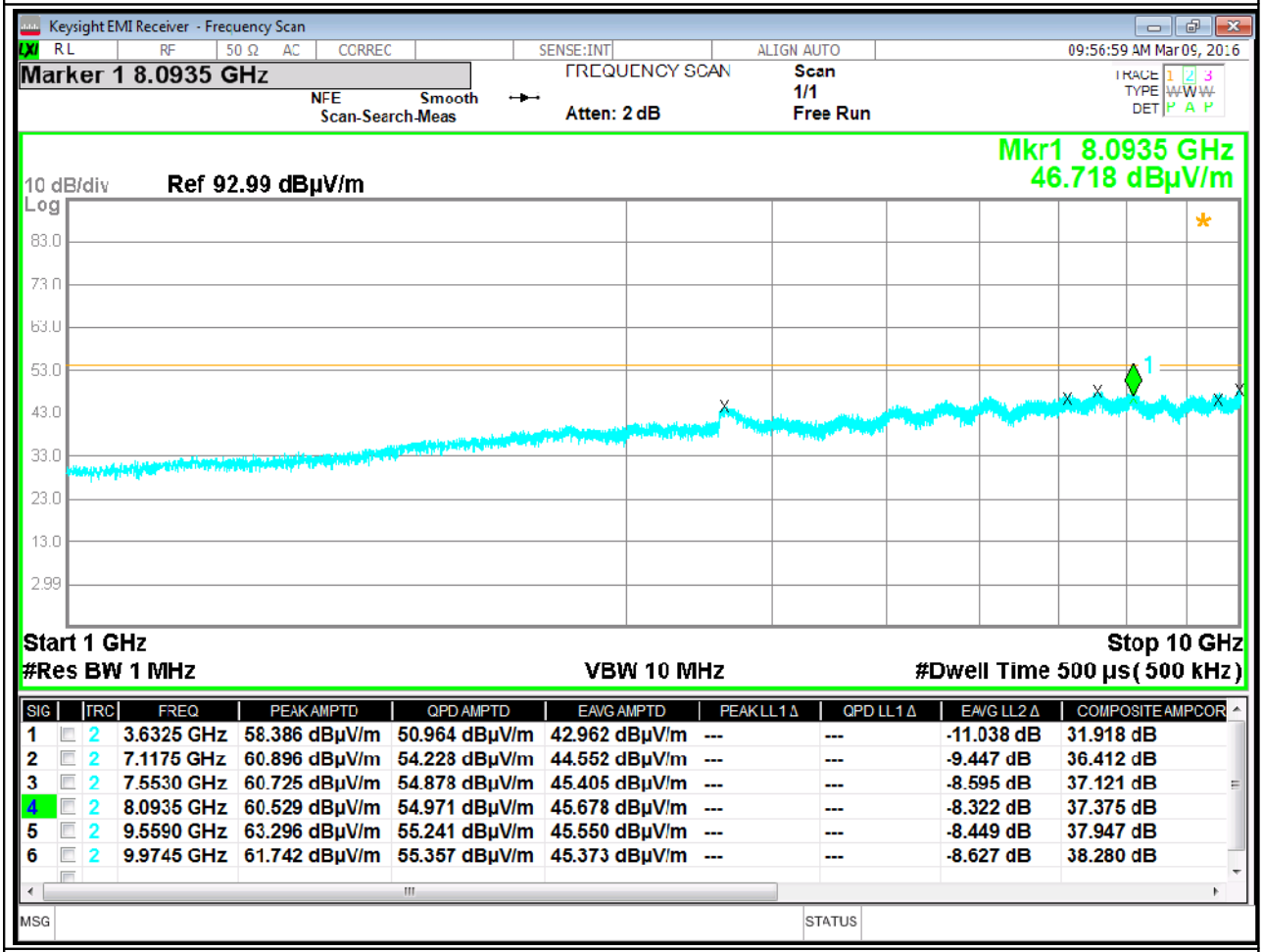
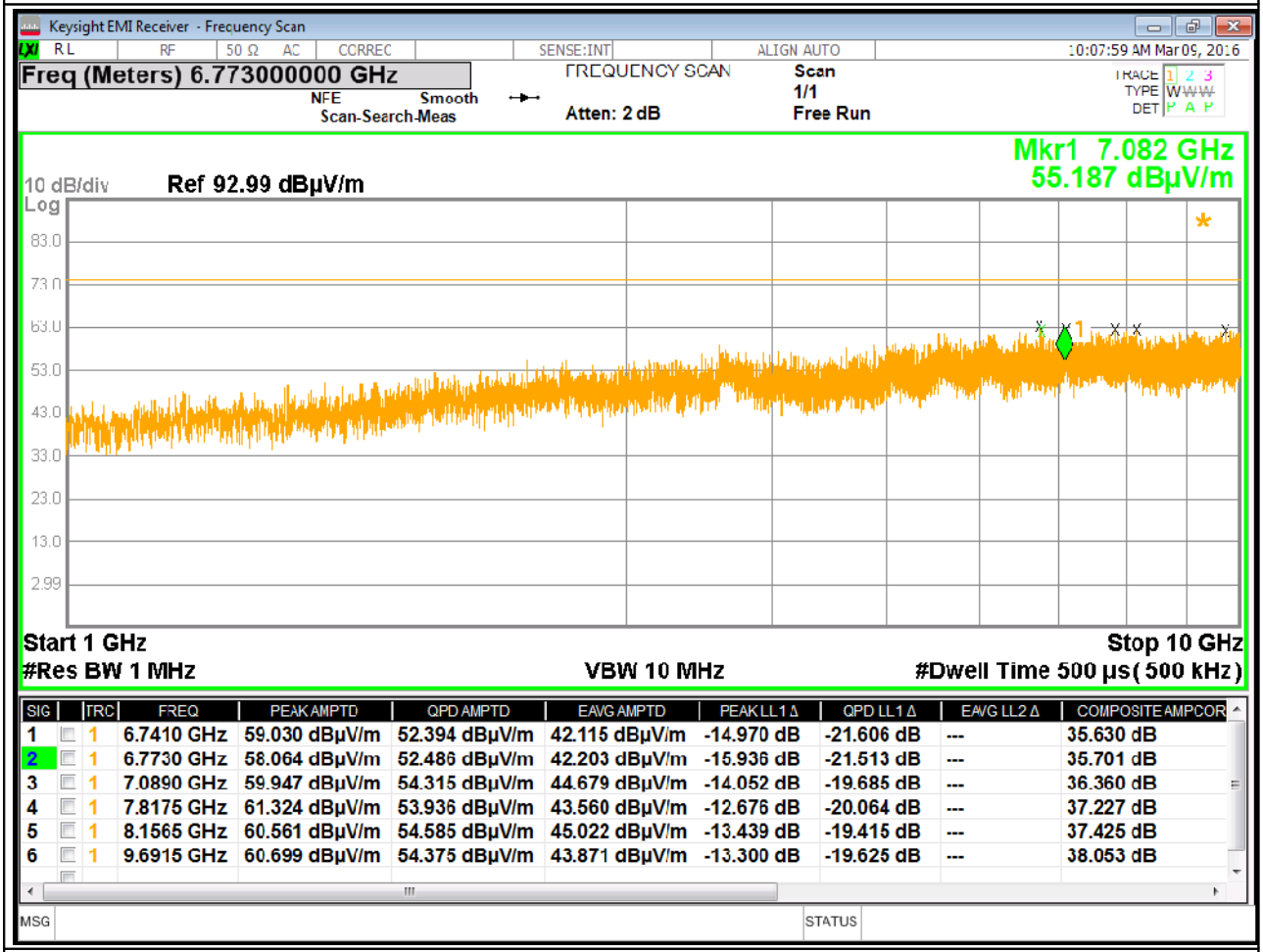


Fig. 7.5

POL V
MA: 100 cm
TT: 0°
EUT mode: Modulation type 1

Record of the measurement of radiated emissions (AVG detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. V.



SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	6.7410 GHz	59.030 dBµV/m	52.394 dBµV/m	42.115 dBµV/m	-14.970 dB	-21.606 dB	---	35.630 dB
2	1	6.7730 GHz	58.064 dBµV/m	52.486 dBµV/m	42.203 dBµV/m	-15.936 dB	-21.513 dB	---	35.701 dB
3	1	7.0890 GHz	59.947 dBµV/m	54.315 dBµV/m	44.679 dBµV/m	-14.052 dB	-19.685 dB	---	36.360 dB
4	1	7.8175 GHz	61.324 dBµV/m	53.936 dBµV/m	43.560 dBµV/m	-12.676 dB	-20.064 dB	---	37.227 dB
5	1	8.1565 GHz	60.561 dBµV/m	54.585 dBµV/m	45.022 dBµV/m	-13.439 dB	-19.415 dB	---	37.425 dB
6	1	9.6915 GHz	60.699 dBµV/m	54.375 dBµV/m	43.871 dBµV/m	-13.300 dB	-19.625 dB	---	38.053 dB

Fig. 7.6

POL V
MA: 100 cm
TT: 0°
EUT mode: Modulation type 1

Record of the measurement of radiated emissions (Peak detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. V.

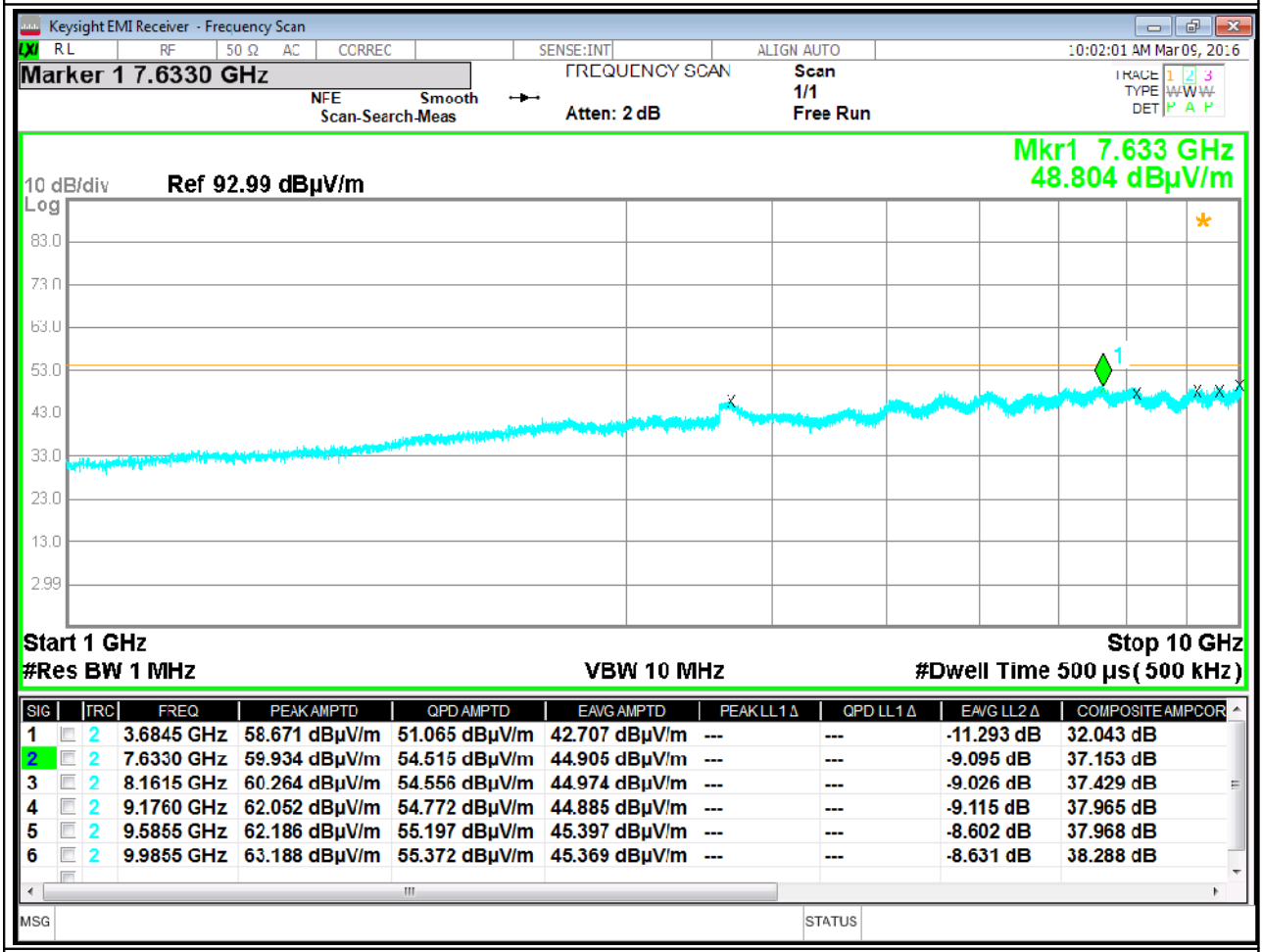


Fig. 7.7

POL H
MA: 100 cm
TT: 0°
EUT mode: Modulation type 1

Record of the measurement of radiated emissions (AVG detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. H.

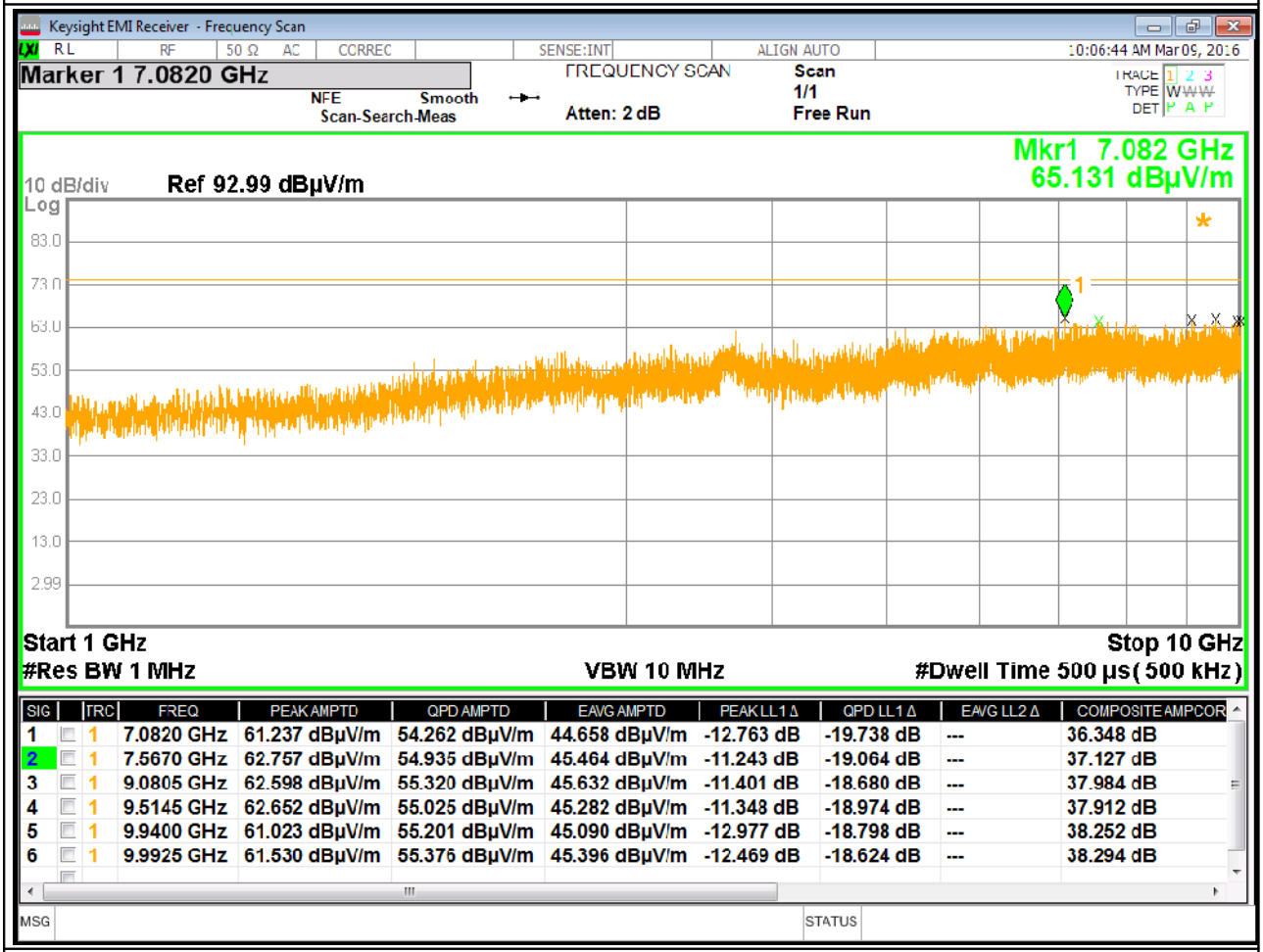


Fig. 7.8

POL H
MA: 100 cm
TT: 0°
EUT mode: Modulation type 1

Record of the measurement of radiated emissions (Peak detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. H.

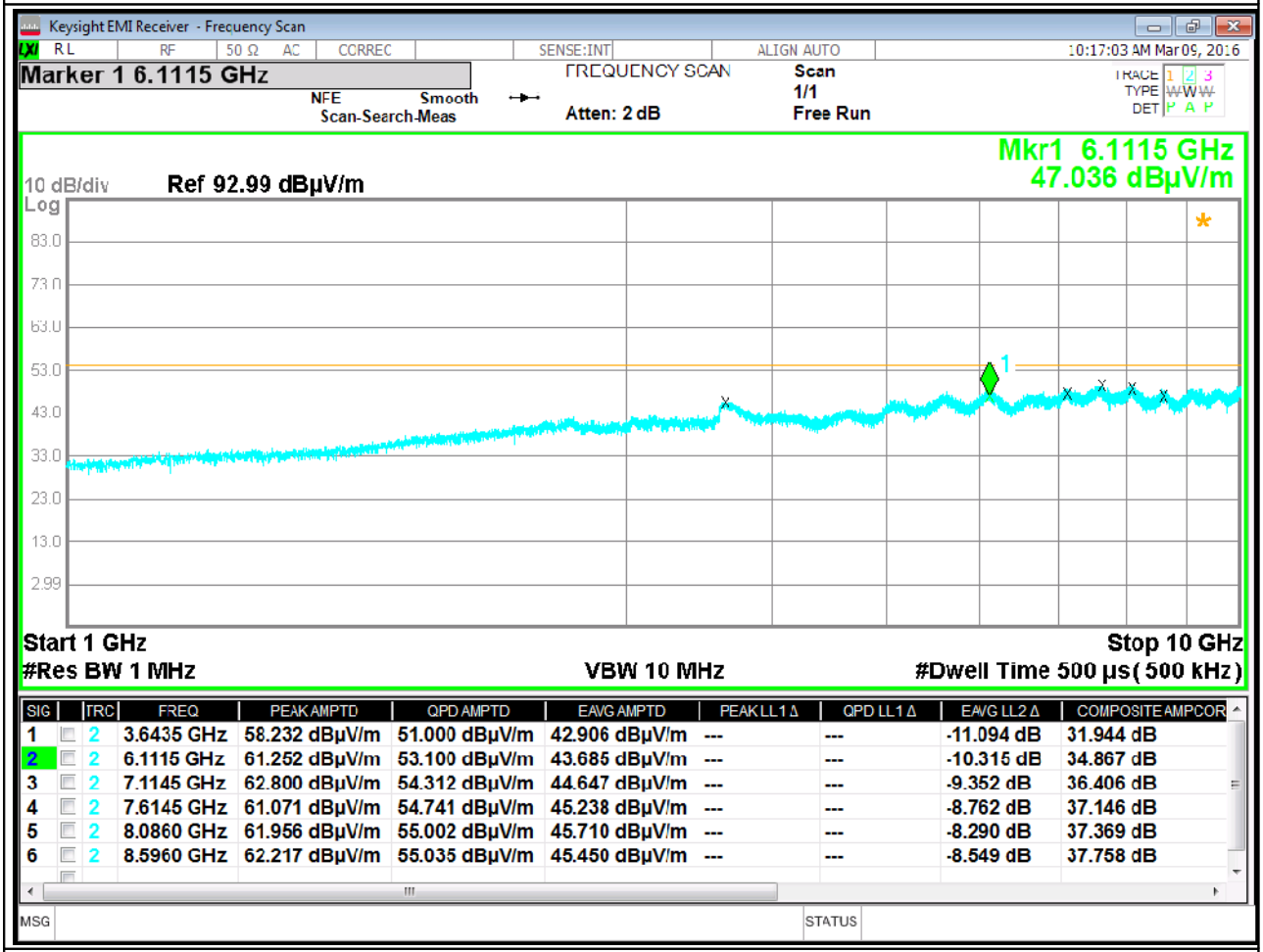


Fig. 7.9

POL V
MA: 100 cm
TT: 0°
EUT mode: Modulation type 2

Record of the measurement of radiated emissions (AVG detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. V.

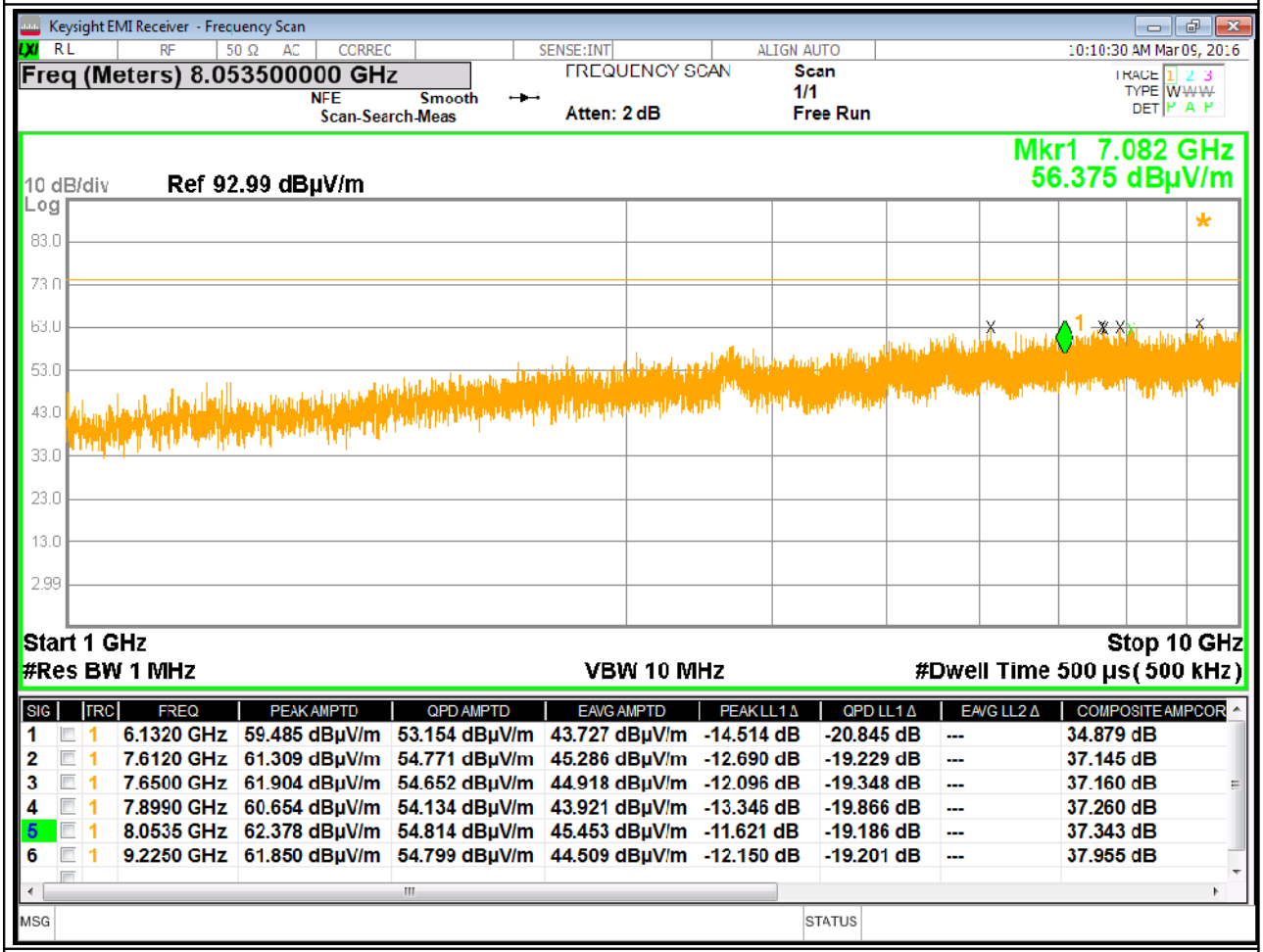


Fig. 7.10

POL V
MA: 100 cm
TT: 0°
EUT mode: Modulation type 2

Record of the measurement of radiated emissions (Peak detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. V.

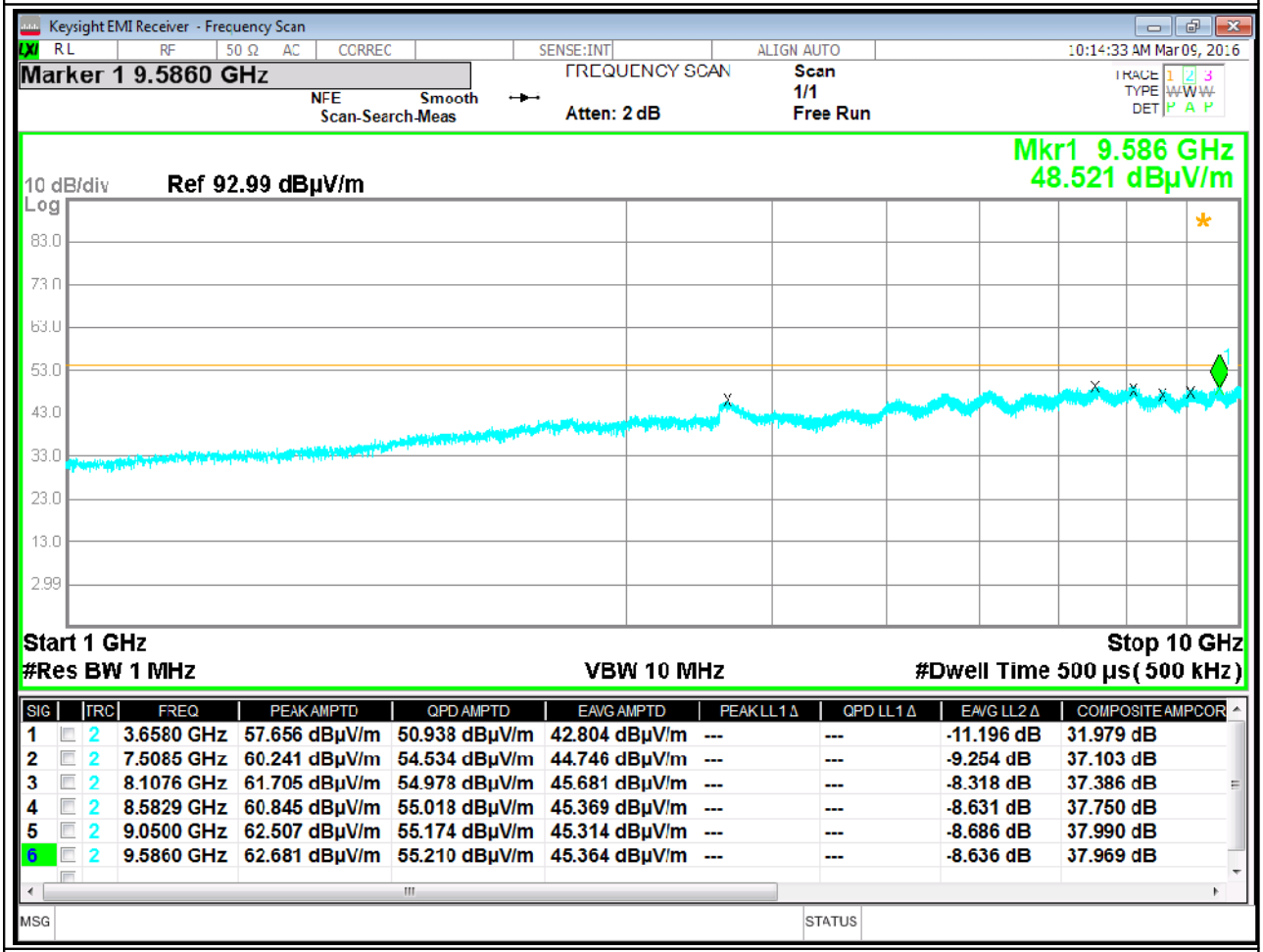
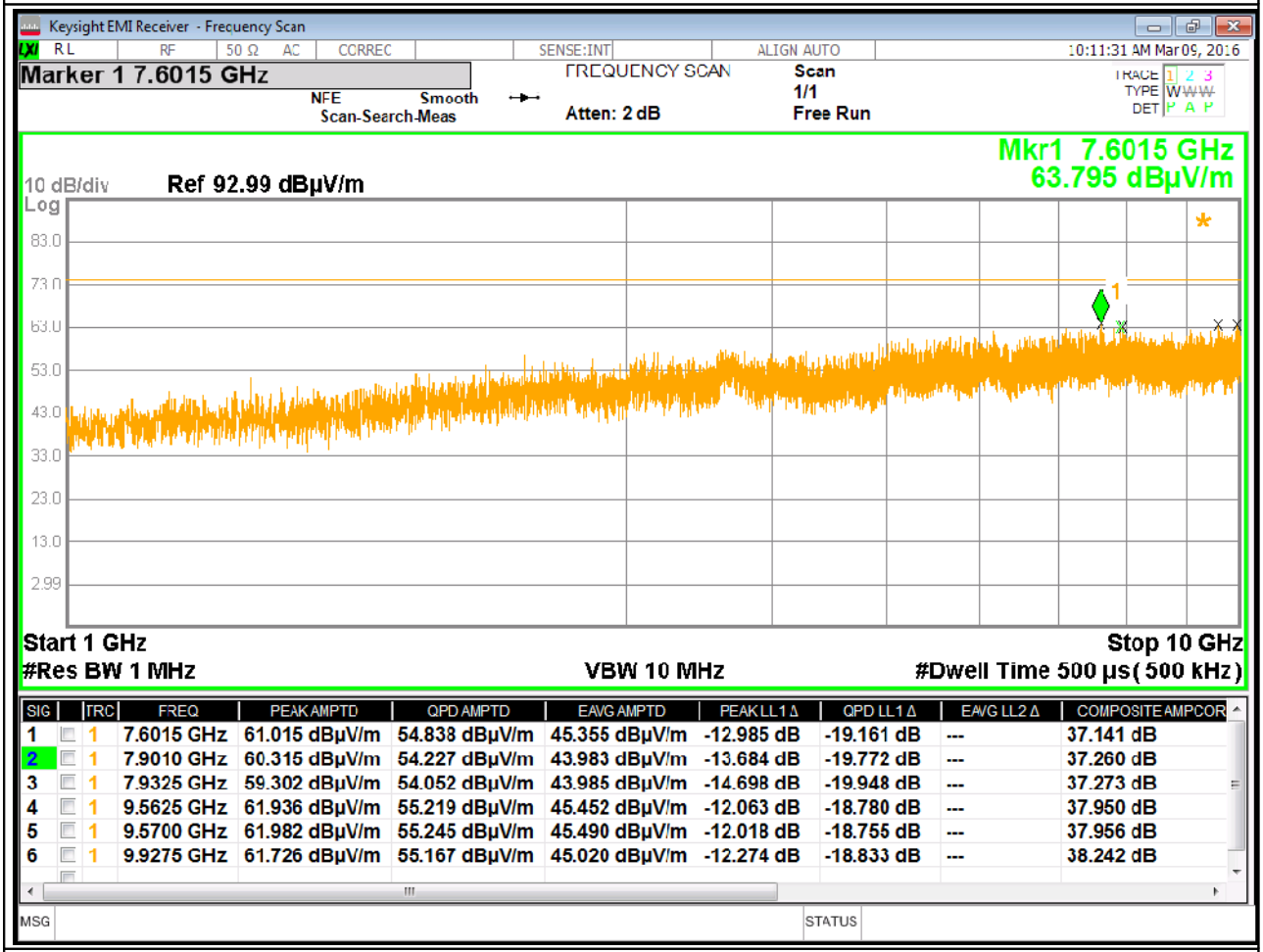


Fig. 7.11

POL H
MA: 100 cm
TT: 0°
EUT mode: Modulation type 2

Record of the measurement of radiated emissions (AVG detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. H.



SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	COMPOSITE AMPCOR
1	1	7.6015 GHz	61.015 dBµV/m	54.838 dBµV/m	45.355 dBµV/m	-12.985 dB	-19.161 dB	---	37.141 dB
2	1	7.9010 GHz	60.315 dBµV/m	54.227 dBµV/m	43.983 dBµV/m	-13.684 dB	-19.772 dB	---	37.260 dB
3	1	7.9325 GHz	59.302 dBµV/m	54.052 dBµV/m	43.985 dBµV/m	-14.698 dB	-19.948 dB	---	37.273 dB
4	1	9.5625 GHz	61.936 dBµV/m	55.219 dBµV/m	45.452 dBµV/m	-12.063 dB	-18.780 dB	---	37.950 dB
5	1	9.5700 GHz	61.982 dBµV/m	55.245 dBµV/m	45.490 dBµV/m	-12.018 dB	-18.755 dB	---	37.956 dB
6	1	9.9275 GHz	61.726 dBµV/m	55.167 dBµV/m	45.020 dBµV/m	-12.274 dB	-18.833 dB	---	38.242 dB

Fig. 7.12

POL H
MA: 100 cm
TT: 0°
EUT mode: Modulation type 2

Record of the measurement of radiated emissions (Peak detector)
Maximum disturbance determined in the frequency range 1 – 10 GHz, Pol. H.

Test Equipment

EQUIPMENT	MANUFACTURER	MODEL	CAL. DUE
EMI Receiver	Agilent	E4440	01/2017
MXE EMI Receiver	Agilent/Keysight	N9038A	01/2017
Anechoic Chamber	Comtest	CSA01	01/2017
Bilog Antenna	Schaffner	CBL6112B	01/2017
Horn Antenna	EMCO	3115	01/2017
Controller	Deisel	HD100	01/2017
Turn Table	Deisel	MA240	01/2017
LISN	GSD	NTW06	01/2017

Test procedure: CT15R01

8. PHOTO

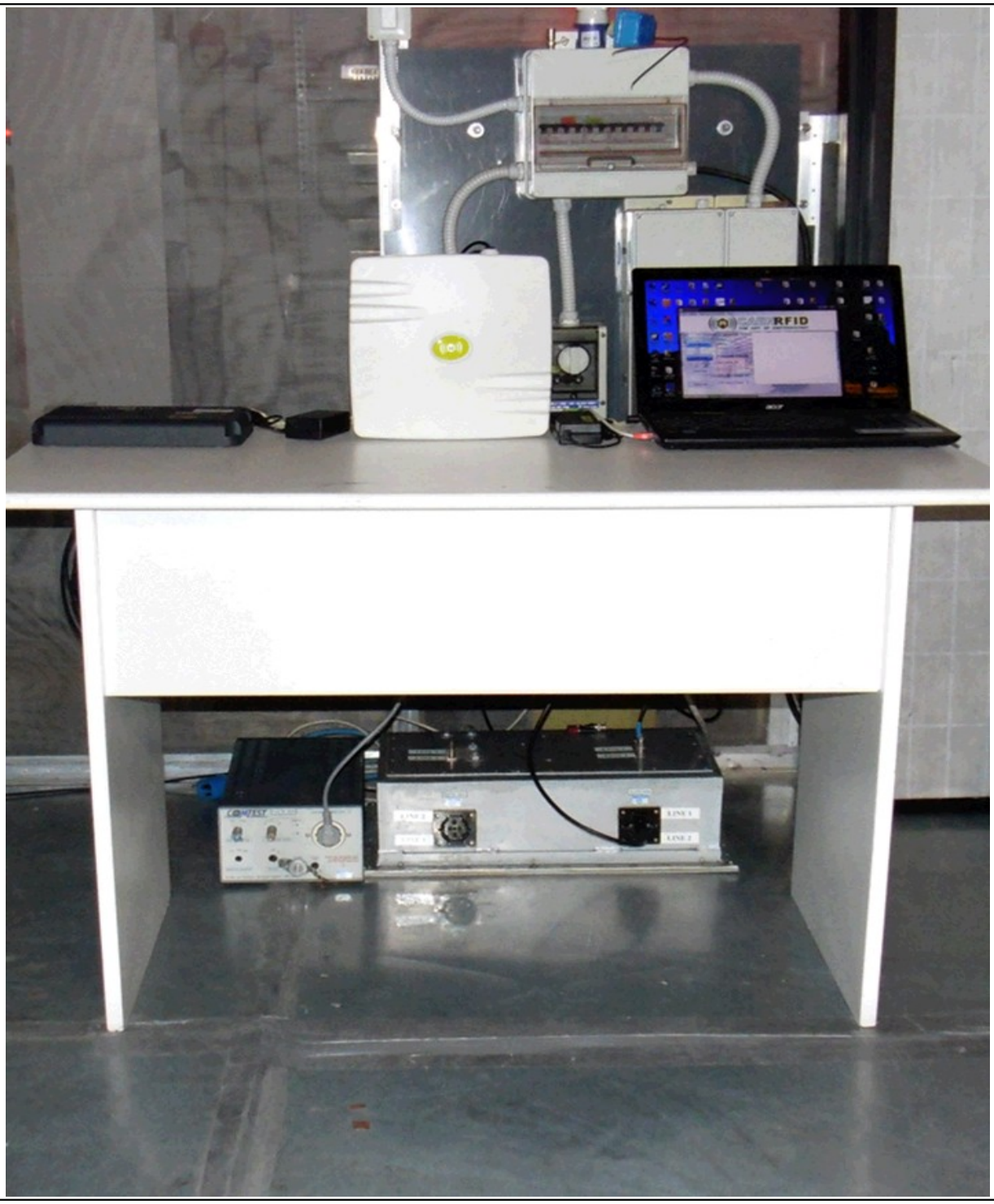


Fig. 8.1

Conducted Emissions Test Set-up

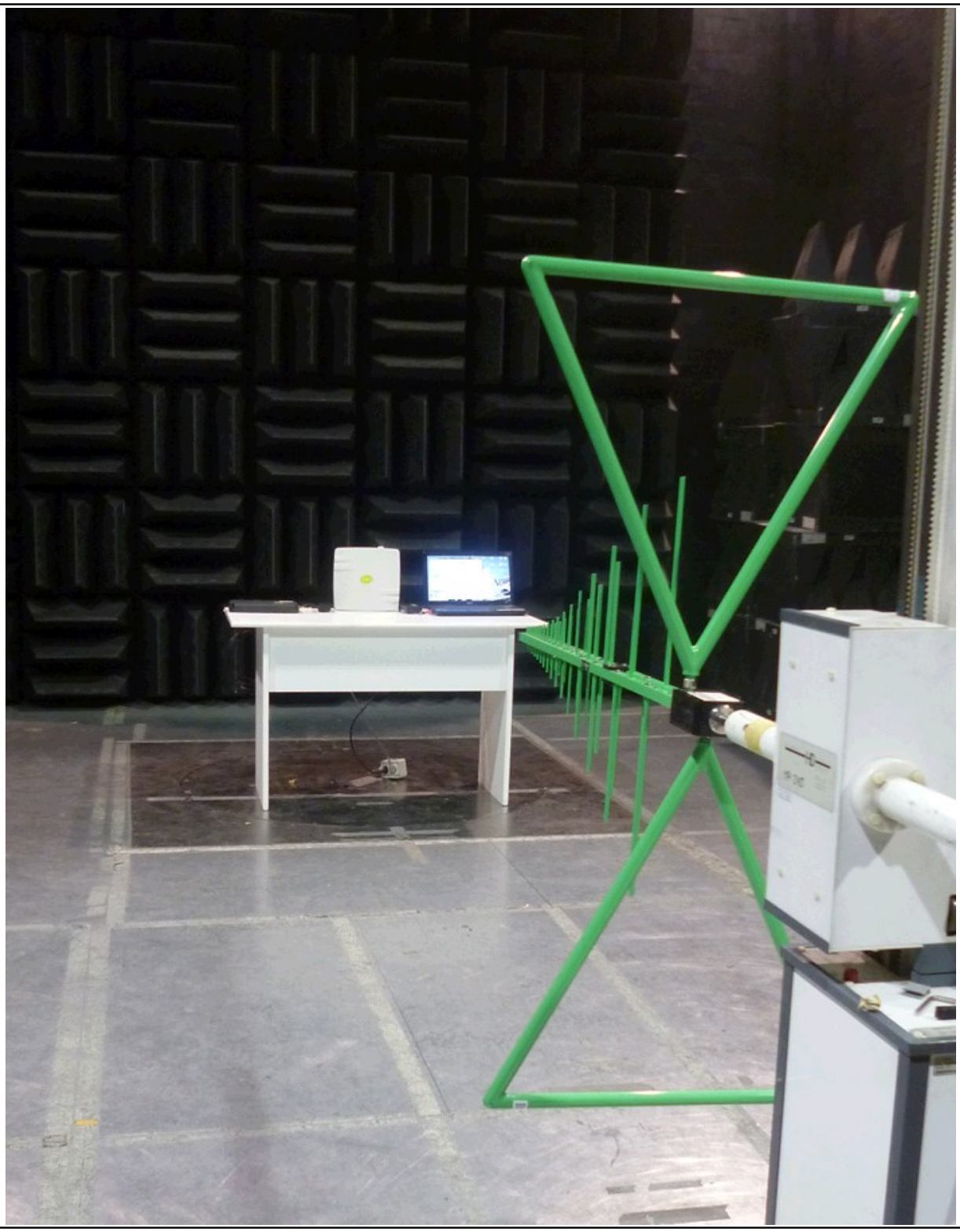


Fig. 8.2
Radiated Emissions Test Set-up
Range: 30 – 1000 MHz

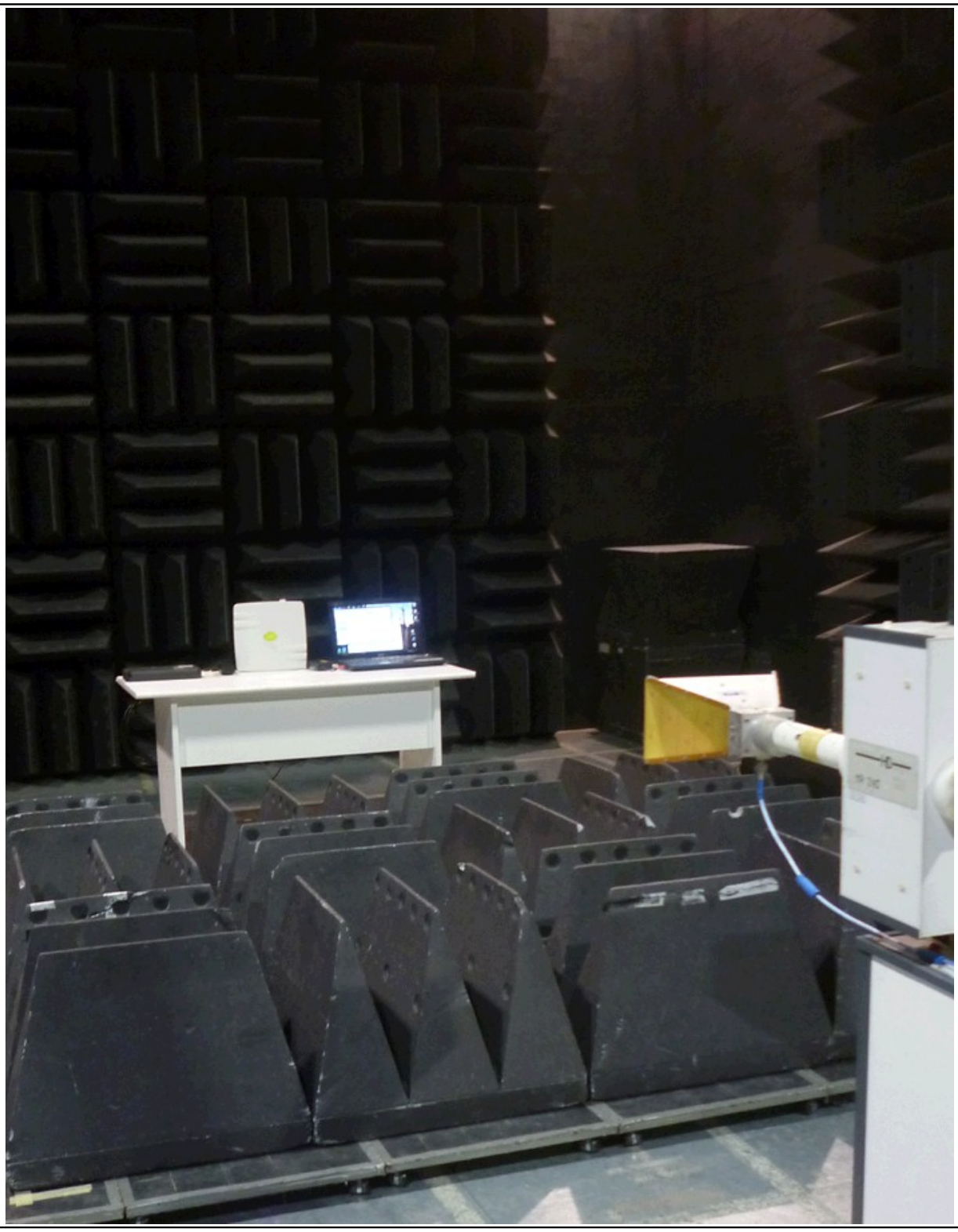


Fig. 8.3

Radiated Emissions Test Set-up
Range: 1 – 10 GHz

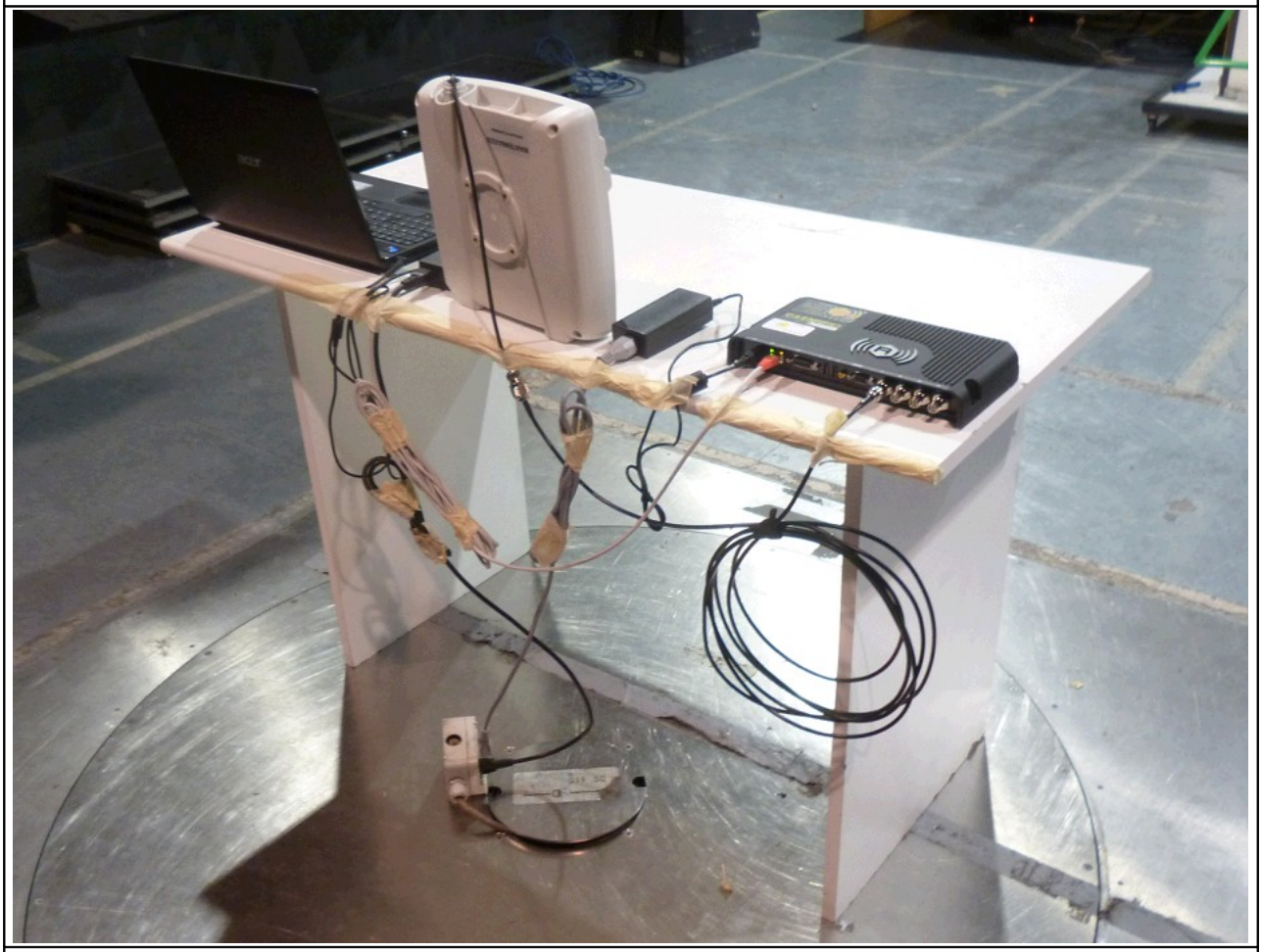


Fig. 8.4

Radiated Emissions Test Set-up

Fig. 8.5

Conducted Transmission Test Set-up