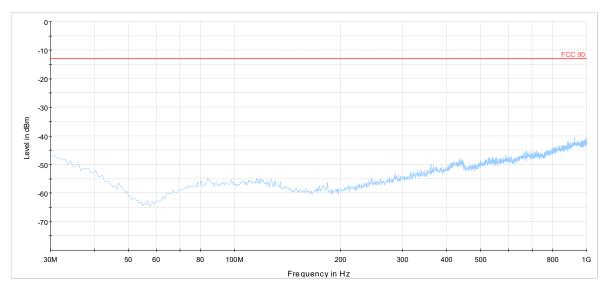
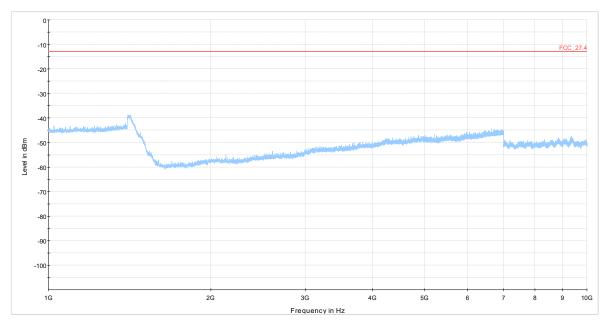


Frequency Band = Band 806 - 809 MHz, Direction = RF uplink (S01_AA01)



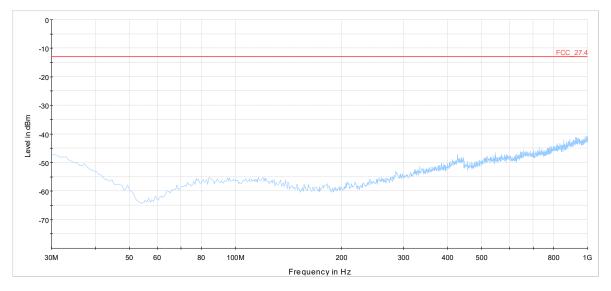
30 MHz - 1 GHz



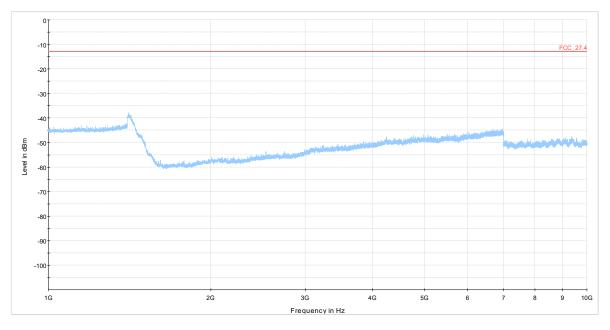
1 GHz - 10 GHz



Frequency Band = Band 854 - 862 MHz, Direction = RF downlink (S01_AA01)



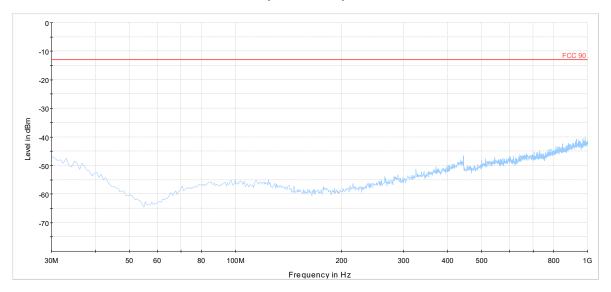
30 MHz - 1 GHz



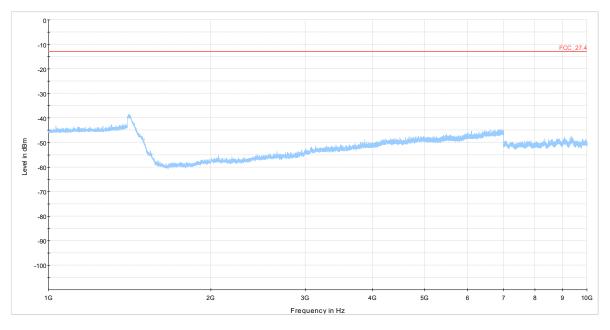
1 GHz - 10 GHz



Frequency Band = Band 809 - 817 MHz, Direction = RF uplink (S01_AA01)



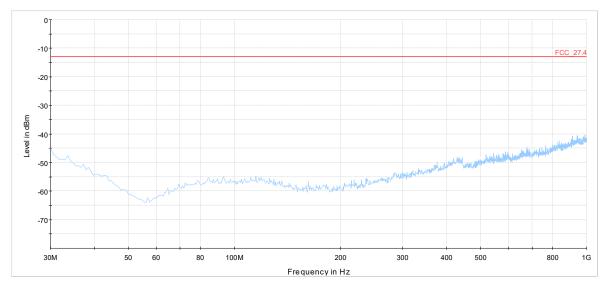
30 MHz - 1 GHz



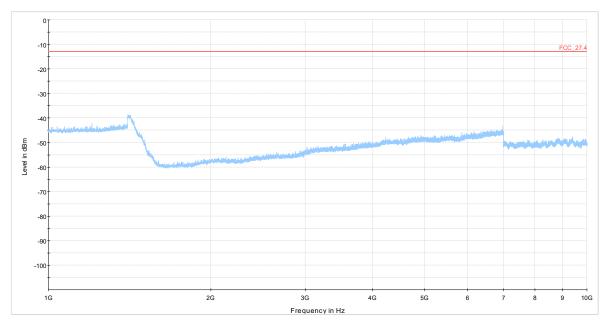
1 GHz - 10 GHz



Frequency Band = Band 862 - 869 MHz, Direction = RF downlink (S01_AA01)



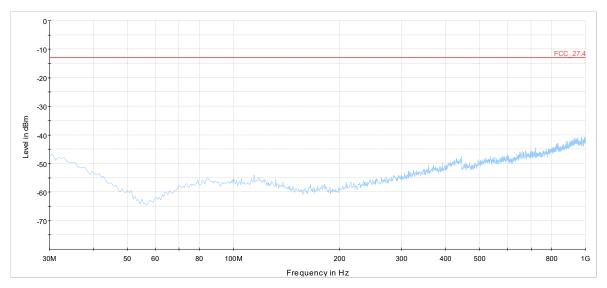
30 MHz - 1 GHz



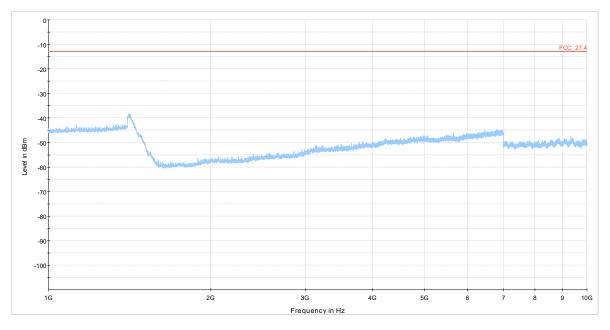
1 GHz - 10 GHz



Frequency Band = Band 817 - 824 MHz, Direction = RF uplink (S01_AA01)



30 MHz - 1 GHz



1 GHz - 10 GHz

4.7.5 TEST EQUIPMENT USED

- Radiated Emissions



5 TEST EQUIPMENT

1 R&S TS8997 EN300328/301893/FCC cond. Test Lab

Ref.No.	Device Name	Description	Manufacturer	Serial Number	Last Calibration	Calibration Due
1.1	SMB100A	Signal Generator 9 kHz - 6 GHz	Rohde & Schwarz 107695 2		2017-07	2020-07
1.2	MFS	Rubidium Frequency Standard	Datum-Beverly	5489/001	2018-07	2020-07
1.3	1515 / 93459		Weinschel Associates	LN673		
1.4	FSV30	Signal Analyser 10 Hz - 30 GHz	Rohde & Schwarz	103005	2018-04	2020-04
1.5	Fluke 177	Digital Multimeter 03 (Multimeter)	Fluke Europe B.V.	86670383	2018-04	2020-04
1.6	VT 4002	Climatic Chamber	Vötsch	58566002150010	2018-04	2020-04
1.7	A8455-4	4 Way Power Divider (SMA)		-		
1.8	Opus10 THI (8152.00)	, ,	Lufft Mess- und Regeltechnik GmbH	7482	2019-06	2021-06
1.9	SMBV100A	Vector Signal Generator 9 kHz - 6 GHz	Rohde & Schwarz	259291	2016-10	2019-10
1.10	OSP120	Switching Unit with integrated power meter	Rohde & Schwarz	101158	2018-05	2021-05

2 Radiated Emissions Lab to perform radiated emission tests

Ref.No.	Device Name	Description	escription Manufacturer Serial Numbe		Last	Calibration	
					Calibration	Due	
2.1	NRV-Z1	Sensor Head A	Rohde & Schwarz	827753/005	2018-07	2019-07	
					2019-08	2020-08	
2.2	MFS	Rubidium	Datum GmbH	002	2018-10	2020-10	
		Frequency					
		Normal MFS					
2.3	Opus10 TPR	ThermoAirpres	Lufft Mess- und	13936	2017-04	2019-04	
	(8253.00)	sure	Regeltechnik GmbH				
		Datalogger 13					
		(Environ)					
2.4	ESW44	EMI Test	Rohde & Schwarz	101603	2018-05	2019-05	
		Receiver					
2.5	Anechoic	10.38 x 6.38 x	Frankonia	none	2018-06	2020-06	
	Chamber	6.00 m³					
2.6	HL 562	Ultralog new	Rohde & Schwarz	830547/003	2018-07	2021-07	
		biconicals					
2.7	5HC2700/12750	High Pass	Trilithic	9942012			
	-1.5-KK	Filter					

TEST REPORT REFERENCE: MDE_BVNBG_1904_FCC01 Page 244 of 253



Ref.No.	Device Name	Description	Manufacturer	Serial Number	Last Calibration	Calibration Due
	ASP 1.2/1.8-10 kg	Antenna Mast	Maturo GmbH	-		
2.9		8.80m x 4.60m x 4.05m (I x w x h)	Albatross Projects	P26971-647-001- PRB	2018-06	2020-06
2.10	Fluke 177	Digital Multimeter 03 (Multimeter)	Fluke Europe B.V.	86670383	2018-04	2020-04
	JS4-18002600- 32-5P	Amplifier 18 GHz - 26 GHz	Miteq	849785		
2.12	FSW 43	Spectrum Analyser	Rohde & Schwarz	103779	2019-02	2021-02
2.13	3160-09	Standard Gain / Pyramidal Horn Antenna 26.5 GHz	EMCO Elektronic GmbH	00083069		
	8SS	High Pass Filter	Wainwright	09		
2.15	4HC1600/12750 -1.5-KK	High Pass Filter	Trilithic	9942011		
2.16	Chroma 6404	AC Power Source	Chroma ATE INC.	64040001304		
	JS4-00102600- 42-5A	Broadband Amplifier 30 MHz - 26 GHz	Miteq	619368		
2.18	TT 1.5 WI		Maturo GmbH	-		
	HL 562 Ultralog	Logper. Antenna	Rohde & Schwarz	100609	2019-05	2022-05
2.20	3160-10	Standard Gain / Pyramidal Horn Antenna 40 GHz	EMCO Elektronic GmbH	00086675		
2.21	5HC3500/18000 -1.2-KK		Trilithic	200035008		
2.22	Opus10 THI (8152.00)	ThermoHygro	Lufft Mess- und Regeltechnik GmbH	12482	2019-06	2021-06
	ESR 7	Spectrum Analyser	Rohde & Schwarz	101424	2019-01	2020-01
	JS4-00101800- 35-5P	Broadband Amplifier 30 MHz - 18 GHz	Miteq	896037		
	AS 620 P	Antenna mast		620/37		
	Tilt device Maturo (Rohacell)	Antrieb TD1.5- 10kg		TD1.5- 10kg/024/37907 09		
2.27	PAS 2.5 - 10 kg	Antenna Mast	Maturo GmbH	-		
	AM 4.0	Antenna mast		AM4.0/180/1192 0513		
2.29	HF 907	Double-ridged horn	Rohde & Schwarz	102444	2018-07	2021-07



3 FCC Conducted Base Station / Repeater EN300328/301893/FCC cond. Test Lab

Ref.No.	Device Name	Description	Manufacturer	Serial Number	Last Calibration	Calibration Due
3.1		Signal Analyser 10 Hz - 40 GHz	Rohde & Schwarz	100886	2018-10	2019-10
3.2	ESR7	Test Receiver/ Analyser	Rohde & Schwarz	101099	2018-10	2019-10
3.3		Vector Signal Generator 9 kHz - 6 GHz	Rohde & Schwarz	255975	2017-08	2019-08
3.4	-	Signal Generator	Rohde & Schwarz	831389/062	2018-10	2021-10
3.5	_	Signal Generator	Rohde & Schwarz	831389/063	2018-10	2021-10

The calibration interval is the time interval between "Last Calibration" and "Calibration Due"

TEST REPORT REFERENCE: MDE_BVNBG_1904_FCC01



6 ANTENNA FACTORS, CABLE LOSS AND SAMPLE CALCULATIONS

This chapter contains the antenna factors with their corresponding path loss of the used measurement path for all antennas as well as the insertion loss of the LISN.

6.1 LISN R&S ESH3-Z5 (150 KHZ - 30 MHZ)

Frequency	Corr.
MHz	dB
0.15	10.1
5	10.3
7	10.5
10	10.5
12	10.7
14	10.7
16	10.8
18	10.9
20	10.9
22	11.1
24	11.1
26	11.2
28	11.2
30	11.3

LISN insertion loss ESH3- Z5	cable loss (incl. 10 dB atten- uator)
dB	dB
0.1	10.0
0.1	10.2
0.2	10.3
0.2	10.3
0.3	10.4
0.3	10.4
0.4	10.4
0.4	10.5
0.4	10.5
0.5	10.6
0.5	10.6
0.5	10.7
0.5	10.7
0.5	10.8

Sample calculation

 U_{LISN} (dB μ V) = U (dB μ V) + Corr. (dB)

U = Receiver reading

LISN Insertion loss = Voltage Division Factor of LISN

Corr. = sum of single correction factors of used LISN, cables, switch units (if used)

Linear interpolation will be used for frequencies in between the values in the table.



6.2 ANTENNA R&S HFH2-Z2 (9 KHZ - 30 MHZ)

	1	
F=====================================	AF	Co
Frequency	HFH-Z2)	Corr.
MHz	dB (1/m)	dB
0.009	20.50	-79.6
0.01	20.45	-79.6
0.015	20.37	-79.6
0.02	20.36	-79.6
0.025	20.38	-79.6
0.03	20.32	-79.6
0.05	20.35	-79.6
0.08	20.30	-79.6
0.1	20.20	-79.6
0.2	20.17	-79.6
0.3	20.14	-79.6
0.49	20.12	-79.6
0.490001	20.12	-39.6
0.5	20.11	-39.6
0.8	20.10	-39.6
1	20.09	-39.6
2	20.08	-39.6
3	20.06	-39.6
4	20.05	-39.5
5	20.05	-39.5
6	20.02	-39.5
8	19.95	-39.5
10	19.83	-39.4
12	19.71	-39.4
14	19.54	-39.4
16	19.53	-39.3
18	19.50	-39.3
20	19.57	-39.3
22	19.61	-39.3
24	19.61	-39.3
26	19.54	-39.3
28	19.46	-39.2
30	19.73	-39.1
30	19.73	J 9.1

/ IXI IZ 3	0 11112)					
cable loss 1 (inside chamber)	cable loss 2 (outside chamber)	cable loss 3 (switch unit)	cable loss 4 (to receiver)	distance corr. (-40 dB/ decade)	d _{Limit} (meas. distance (limit)	d _{used} (meas. distance (used)
dB	dB	dB	dB	dB	m	m
0.1	0.1	0.1	0.1	-80	300	3
0.1	0.1	0.1	0.1	-80	300	3
0.1	0.1	0.1	0.1	-80	300	3
0.1	0.1	0.1	0.1	-80	300	3
0.1	0.1	0.1	0.1	-80	300	3
0.1	0.1	0.1	0.1	-80	300	3
0.1	0.1	0.1	0.1	-80	300	3
0.1	0.1	0.1	0.1	-80	300	3
0.1	0.1	0.1	0.1	-80	300	3
0.1	0.1	0.1	0.1	-80	300	3
0.1	0.1	0.1	0.1	-80	300	3
0.1	0.1	0.1	0.1	-80	300	3
0.1	0.1	0.1	0.1	-40	30	3
0.1	0.1	0.1	0.1	-40	30	3
0.1	0.1	0.1	0.1	-40	30	3
0.1	0.1	0.1	0.1	-40	30	3
0.1	0.1	0.1	0.1	-40	30	3
0.1	0.1	0.1	0.1	-40	30	3
0.2	0.1	0.1	0.1	-40	30	3
0.2	0.1	0.1	0.1	-40	30	3
0.2	0.1	0.1	0.1	-40	30	3
0.2	0.1	0.1	0.1	-40	30	3
0.2	0.1	0.2	0.1	-40	30	3
0.2	0.1	0.2	0.1	-40	30	3
0.2	0.1	0.2	0.1	-40	30	3
0.3	0.1	0.2	0.1	-40	30	3
0.3	0.1	0.2	0.1	-40	30	3
0.3	0.1	0.2	0.1	-40	30	3
0.3	0.1	0.2	0.1	-40	30	3
0.3	0.1	0.2	0.1	-40	30	3
0.3	0.1	0.2	0.1	-40	30	3
0.3	0.1	0.3	0.1	-40	30	3
0.4	0.1	0.3	0.1	-40	30	3

Sample calculation

E (dB μ V/m) = U (dB μ V) + AF (dB 1/m) + Corr. (dB)

U = Receiver reading

AF = Antenna factor

Corr. = sum of single correction factors of used cables, switch unit, distance correction, amplifier (if applicable) distance correction = -40 * LOG (d_{Limit} / d_{used})

Linear interpolation will be used for frequencies in between the values in the table.

Table shows an extract of values



6.3 ANTENNA R&S HL562 (30 MHZ - 1 GHZ)

$d_{Limit} = 3 m$		1
Frequency	AF R&S HL562	Corr.
MHz	dB (1/m)	dB
30	18.6	0.6
50	6.0	0.9
100	9.7	1.2
150	7.9	1.6
200	7.6	1.9
250	9.5	2.1
300	11.0	2.3
350	12.4	2.6
400	13.6	2.9
450	14.7	3.1
500	15.6	3.2
550	16.3	3.5
600	17.2	3.5
650	18.1	3.6
700	18.5	3.6
750	19.1	4.1
800	19.6	4.1
850	20.1	4.4
900	20.8	4.7
950	21.1	4.8
1000	21.6	4.9

_			T	•		
cable	cable	cable	cable	distance	d_{Limit}	d_{used}
loss 1	loss 2	loss 3	loss 4	corr.	(meas.	(meas.
(inside	(outside	(switch	(to	(-20 dB/	distance	distance
chamber)	chamber)	unit)	receiver)	decade)	(limit)	(used)
dB	dB	dB	dB	dB	m	m
0.29	0.04	0.23	0.02	0.0	3	3
0.39	0.09	0.32	0.08	0.0	3	3
0.56	0.14	0.47	0.08	0.0	3	3
0.73	0.20	0.59	0.12	0.0	3	3
0.84	0.21	0.70	0.11	0.0	3	3
0.98	0.24	0.80	0.13	0.0	3	3
1.04	0.26	0.89	0.15	0.0	3	3
1.18	0.31	0.96	0.13	0.0	3	3
1.28	0.35	1.03	0.19	0.0	3	3
1.39	0.38	1.11	0.22	0.0	3	3
1.44	0.39	1.20	0.19	0.0	3	3
1.55	0.46	1.24	0.23	0.0	3	3
1.59	0.43	1.29	0.23	0.0	3	
1.67	0.34	1.35	0.22	0.0	3	3
1.67	0.42	1.41	0.15	0.0	3	3
1.87	0.54	1.46	0.25	0.0	3	3
1.90	0.46	1.51	0.25	0.0	3	3
1.99	0.60	1.56	0.27	0.0	3	3
2.14	0.60	1.63	0.29	0.0	3	3
2.22	0.60	1.66	0.33	0.0	3	3
2.23	0.61	1.71	0.30	0.0	3	3

 $(d_{Limit} = 10 m)$

(GLIIIII - TO III	• /								
30	18.6	-9.9	0.29	0.04	0.23	0.02	-10.5	10	3
50	6.0	-9.6	0.39	0.09	0.32	0.08	-10.5	10	3
100	9.7	-9.2	0.56	0.14	0.47	0.08	-10.5	10	3
150	7.9	-8.8	0.73	0.20	0.59	0.12	-10.5	10	3
200	7.6	-8.6	0.84	0.21	0.70	0.11	-10.5	10	3
250	9.5	-8.3	0.98	0.24	0.80	0.13	-10.5	10	3
300	11.0	-8.1	1.04	0.26	0.89	0.15	-10.5	10	3
350	12.4	-7.9	1.18	0.31	0.96	0.13	-10.5	10	3
400	13.6	-7.6	1.28	0.35	1.03	0.19	-10.5	10	3
450	14.7	-7.4	1.39	0.38	1.11	0.22	-10.5	10	3
500	15.6	-7.2	1.44	0.39	1.20	0.19	-10.5	10	3
550	16.3	-7.0	1.55	0.46	1.24	0.23	-10.5	10	3
600	17.2	-6.9	1.59	0.43	1.29	0.23	-10.5	10	3
650	18.1	-6.9	1.67	0.34	1.35	0.22	-10.5	10	3
700	18.5	-6.8	1.67	0.42	1.41	0.15	-10.5	10	3
750	19.1	-6.3	1.87	0.54	1.46	0.25	-10.5	10	3
800	19.6	-6.3	1.90	0.46	1.51	0.25	-10.5	10	3
850	20.1	-6.0	1.99	0.60	1.56	0.27	-10.5	10	3
900	20.8	-5.8	2.14	0.60	1.63	0.29	-10.5	10	3
950	21.1	-5.6	2.22	0.60	1.66	0.33	-10.5	10	3
1000	21.6	-5.6	2.23	0.61	1.71	0.30	-10.5	10	3

Sample calculation

E (dB μ V/m) = U (dB μ V) + AF (dB 1/m) + Corr. (dB)

U = Receiver reading

AF = Antenna factor

Corr. = sum of single correction factors of used cables, switch unit, distance correction, amplifier (if applicable) distance correction = $-20 * LOG (d_{Limit}/ d_{used})$

Linear interpolation will be used for frequencies in between the values in the table.

Tables show an extract of values.



6.4 ANTENNA R&S HF907 (1 GHZ - 18 GHZ)

	AF	
Frequency	R&S HF907	Corr.
MHz	dB (1/m)	dB
1000	24.4	-19.4
2000	28.5	-17.4
3000	31.0	-16.1
4000	33.1	-14.7
5000	34.4	-13.7
6000	34.7	-12.7
7000	35.6	-11.0

		cable		
cable		loss 3		
loss 1		(switch		
(relay +	cable	unit,		
cable	loss 2	atten-	cable	
inside	(outside	uator &	loss 4 (to	
chamber)	chamber)	pre-amp)	receiver)	
dB	dB	dB	dB	
0.99	0.31	-21.51	0.79	
1.44	0.44	-20.63	1.38	
1.87	0.53	-19.85	1.33	
2.41	0.67	-19.13	1.31	
2.78	0.86	-18.71	1.40	
2.74	0.90	-17.83	1.47	
2.82	0.86	-16.19	1.46	

Frequency	AF R&S HF907	Corr.
MHz	dB (1/m)	dB
3000	31.0	-23.4
4000	33.1	-23.3
5000	34.4	-21.7
6000	34.7	-21.2
7000	35.6	-19.8

cable loss 1 (relay inside chamber)	cable loss 2 (inside chamber)	cable loss 3 (outside chamber)	cable loss 4 (switch unit, atten- uator &	cable loss 5 (to receiver)	used for FCC 15,247
dB	dB	dB	pre-amp) dB	dB	13.247
0.47	1.87	0.53	-27.58	1.33	
	_				
0.56	2.41	0.67	-28.23	1.31	
0.61	2.78	0.86	-27.35	1.40	
0.58	2.74	0.90	-26.89	1.47	
0.66	2.82	0.86	-25.58	1.46	

Frequency	AF R&S HF907	Corr.
MHz	dB (1/m)	dB
7000	35.6	-57.3
8000	36.3	-56.3
9000	37.1	-55.3
10000	37.5	-56.2
11000	37.5	-55.3
12000	37.6	-53.7
13000	38.2	-53.5
14000	39.9	-56.3
15000	40.9	-54.1
16000	41.3	-54.1
17000	42.8	-54.4
18000	44.2	-54.7

cable					
loss 1	cable	cable	cable	cable	cable
(relay	loss 2	loss 3	loss 4	loss 5	loss 6
inside	(High	(pre-	(inside	(outside	(to
chamber)	Pass)	amp)	chamber)	chamber)	receiver)
dB	dB	dB	dB	dB	dB
0.56	1.28	-62.72	2.66	0.94	1.46
0.69	0.71	-61.49	2.84	1.00	1.53
0.68	0.65	-60.80	3.06	1.09	1.60
0.70	0.54	-61.91	3.28	1.20	1.67
0.80	0.61	-61.40	3.43	1.27	1.70
0.84	0.42	-59.70	3.53	1.26	1.73
0.83	0.44	-59.81	3.75	1.32	1.83
0.91	0.53	-63.03	3.91	1.40	1.77
0.98	0.54	-61.05	4.02	1.44	1.83
1.23	0.49	-61.51	4.17	1.51	1.85
1.36	0.76	-62.36	4.34	1.53	2.00
1.70	0.53	-62.88	4.41	1.55	1.91

Sample calculation

E (dB μ V/m) = U (dB μ V) + AF (dB 1/m) + Corr. (dB)

U = Receiver reading

AF = Antenna factor

Corr. = sum of single correction factors of used cables, switch unit, distance correction, amplifier (if applicable) Linear interpolation will be used for frequencies in between the values in the table.

Tables show an extract of values.



6.5 ANTENNA EMCO 3160-09 (18 GHZ - 26.5 GHZ)

	AF EMCO	
Frequency	3160-09	Corr.
MHz	dB (1/m)	dB
18000	40.2	-23.5
18500	40.2	-23.2
19000	40.2	-22.0
19500	40.3	-21.3
20000	40.3	-20.3
20500	40.3	-19.9
21000	40.3	-19.1
21500	40.3	-19.1
22000	40.3	-18.7
22500	40.4	-19.0
23000	40.4	-19.5
23500	40.4	-19.3
24000	40.4	-19.8
24500	40.4	-19.5
25000	40.4	-19.3
25500	40.5	-20.4
26000	40.5	-21.3
26500	40.5	-21.1

cable loss 1 (inside chamber) cable loss 2 (pre-damber) cable loss 3 (switch chamber) cable loss 4 (switch chamber) cable loss 5 (to chamber) cable loss 4 (switch chamber) cable loss 5 (to chamber) cable loss 6 (to chamber) <th>10 0112</th> <th>20.5 0</th> <th>,</th> <th></th> <th></th>	10 0112	20.5 0	,		
(inside chamber) (pre-amp) (inside chamber) (switch unit) (to receiver) dB dB dB dB dB 0.72 -35.85 6.20 2.81 2.65 0.69 -35.71 6.46 2.76 2.59 0.76 -35.44 6.69 3.15 2.79 0.74 -35.07 7.04 3.11 2.91 0.72 -34.49 7.30 3.07 3.05 0.78 -34.46 7.48 3.12 3.15 0.87 -34.07 7.61 3.20 3.33 0.90 -33.96 7.47 3.28 3.19 0.89 -33.57 7.34 3.35 3.28 0.87 -33.66 7.06 3.75 2.94 0.88 -33.75 6.92 3.77 2.70 0.90 -33.35 6.99 3.52 2.66 0.88 -33.99 6.88 3.88 2.58 0.91 -33	cable	cable	cable	cable	cable
chamber) amp) chamber) unit) receiver) dB dB dB dB dB 0.72 -35.85 6.20 2.81 2.65 0.69 -35.71 6.46 2.76 2.59 0.76 -35.44 6.69 3.15 2.79 0.74 -35.07 7.04 3.11 2.91 0.72 -34.49 7.30 3.07 3.05 0.78 -34.46 7.48 3.12 3.15 0.87 -34.07 7.61 3.20 3.33 0.90 -33.96 7.47 3.28 3.19 0.89 -33.57 7.34 3.35 3.28 0.87 -33.66 7.06 3.75 2.94 0.88 -33.75 6.92 3.77 2.70 0.90 -33.35 6.99 3.52 2.66 0.88 -33.99 6.88 3.88 2.58 0.91 -33.89 7.01	loss 1	loss 2	loss 3	loss 4	loss 5
dB dB dB dB dB 0.72 -35.85 6.20 2.81 2.65 0.69 -35.71 6.46 2.76 2.59 0.76 -35.44 6.69 3.15 2.79 0.74 -35.07 7.04 3.11 2.91 0.72 -34.49 7.30 3.07 3.05 0.78 -34.46 7.48 3.12 3.15 0.87 -34.07 7.61 3.20 3.33 0.90 -33.96 7.47 3.28 3.19 0.89 -33.57 7.34 3.35 3.28 0.87 -33.66 7.06 3.75 2.94 0.88 -33.75 6.92 3.77 2.70 0.90 -33.35 6.99 3.52 2.66 0.88 -33.99 6.88 3.88 2.58 0.91 -33.89 7.01 3.93 2.51 0.89 -34.07 6.90 3.	(inside	(pre-	(inside	(switch	(to
0.72 -35.85 6.20 2.81 2.65 0.69 -35.71 6.46 2.76 2.59 0.76 -35.44 6.69 3.15 2.79 0.74 -35.07 7.04 3.11 2.91 0.72 -34.49 7.30 3.07 3.05 0.78 -34.46 7.48 3.12 3.15 0.87 -34.07 7.61 3.20 3.33 0.90 -33.96 7.47 3.28 3.19 0.89 -33.57 7.34 3.35 3.28 0.87 -33.66 7.06 3.75 2.94 0.88 -33.75 6.92 3.77 2.70 0.90 -33.35 6.99 3.52 2.66 0.88 -33.99 6.88 3.88 2.58 0.91 -33.89 7.01 3.93 2.51 0.89 -34.07 6.90 3.66 2.22 0.86 -35.11 7.02	chamber)	amp)	chamber)	unit)	receiver)
0.69 -35.71 6.46 2.76 2.59 0.76 -35.44 6.69 3.15 2.79 0.74 -35.07 7.04 3.11 2.91 0.72 -34.49 7.30 3.07 3.05 0.78 -34.46 7.48 3.12 3.15 0.87 -34.07 7.61 3.20 3.33 0.90 -33.96 7.47 3.28 3.19 0.89 -33.57 7.34 3.35 3.28 0.87 -33.66 7.06 3.75 2.94 0.88 -33.75 6.92 3.77 2.70 0.90 -33.35 6.99 3.52 2.66 0.88 -33.99 6.88 3.88 2.58 0.91 -33.89 7.01 3.93 2.51 0.89 -34.07 6.90 3.66 2.22 0.86 -35.11 7.02 3.69 2.28	dB	dB	dB	dB	dB
0.76 -35.44 6.69 3.15 2.79 0.74 -35.07 7.04 3.11 2.91 0.72 -34.49 7.30 3.07 3.05 0.78 -34.46 7.48 3.12 3.15 0.87 -34.07 7.61 3.20 3.33 0.90 -33.96 7.47 3.28 3.19 0.89 -33.57 7.34 3.35 3.28 0.87 -33.66 7.06 3.75 2.94 0.88 -33.75 6.92 3.77 2.70 0.90 -33.35 6.99 3.52 2.66 0.88 -33.99 6.88 3.88 2.58 0.91 -33.89 7.01 3.93 2.51 0.89 -34.07 6.90 3.66 2.22 0.86 -35.11 7.02 3.69 2.28	0.72	-35.85	6.20	2.81	2.65
0.74 -35.07 7.04 3.11 2.91 0.72 -34.49 7.30 3.07 3.05 0.78 -34.46 7.48 3.12 3.15 0.87 -34.07 7.61 3.20 3.33 0.90 -33.96 7.47 3.28 3.19 0.89 -33.57 7.34 3.35 3.28 0.87 -33.66 7.06 3.75 2.94 0.88 -33.75 6.92 3.77 2.70 0.90 -33.35 6.99 3.52 2.66 0.88 -33.99 6.88 3.88 2.58 0.91 -33.89 7.01 3.93 2.51 0.89 -34.07 6.90 3.66 2.22 0.86 -35.11 7.02 3.69 2.28	0.69	-35.71	6.46	2.76	2.59
0.72 -34.49 7.30 3.07 3.05 0.78 -34.46 7.48 3.12 3.15 0.87 -34.07 7.61 3.20 3.33 0.90 -33.96 7.47 3.28 3.19 0.89 -33.57 7.34 3.35 3.28 0.87 -33.66 7.06 3.75 2.94 0.88 -33.75 6.92 3.77 2.70 0.90 -33.35 6.99 3.52 2.66 0.88 -33.99 6.88 3.88 2.58 0.91 -33.89 7.01 3.93 2.51 0.88 -33.00 6.72 3.96 2.14 0.89 -34.07 6.90 3.66 2.22 0.86 -35.11 7.02 3.69 2.28	0.76	-35.44	6.69	3.15	2.79
0.78 -34.46 7.48 3.12 3.15 0.87 -34.07 7.61 3.20 3.33 0.90 -33.96 7.47 3.28 3.19 0.89 -33.57 7.34 3.35 3.28 0.87 -33.66 7.06 3.75 2.94 0.88 -33.75 6.92 3.77 2.70 0.90 -33.35 6.99 3.52 2.66 0.88 -33.99 6.88 3.88 2.58 0.91 -33.89 7.01 3.93 2.51 0.88 -33.00 6.72 3.96 2.14 0.89 -34.07 6.90 3.66 2.22 0.86 -35.11 7.02 3.69 2.28	0.74	-35.07	7.04	3.11	2.91
0.87 -34.07 7.61 3.20 3.33 0.90 -33.96 7.47 3.28 3.19 0.89 -33.57 7.34 3.35 3.28 0.87 -33.66 7.06 3.75 2.94 0.88 -33.75 6.92 3.77 2.70 0.90 -33.35 6.99 3.52 2.66 0.88 -33.99 6.88 3.88 2.58 0.91 -33.89 7.01 3.93 2.51 0.88 -33.00 6.72 3.96 2.14 0.89 -34.07 6.90 3.66 2.22 0.86 -35.11 7.02 3.69 2.28	0.72	-34.49	7.30	3.07	3.05
0.90 -33.96 7.47 3.28 3.19 0.89 -33.57 7.34 3.35 3.28 0.87 -33.66 7.06 3.75 2.94 0.88 -33.75 6.92 3.77 2.70 0.90 -33.35 6.99 3.52 2.66 0.88 -33.99 6.88 3.88 2.58 0.91 -33.89 7.01 3.93 2.51 0.88 -33.00 6.72 3.96 2.14 0.89 -34.07 6.90 3.66 2.22 0.86 -35.11 7.02 3.69 2.28	0.78	-34.46	7.48	3.12	3.15
0.89 -33.57 7.34 3.35 3.28 0.87 -33.66 7.06 3.75 2.94 0.88 -33.75 6.92 3.77 2.70 0.90 -33.35 6.99 3.52 2.66 0.88 -33.99 6.88 3.88 2.58 0.91 -33.89 7.01 3.93 2.51 0.88 -33.00 6.72 3.96 2.14 0.89 -34.07 6.90 3.66 2.22 0.86 -35.11 7.02 3.69 2.28	0.87	-34.07	7.61	3.20	3.33
0.87 -33.66 7.06 3.75 2.94 0.88 -33.75 6.92 3.77 2.70 0.90 -33.35 6.99 3.52 2.66 0.88 -33.99 6.88 3.88 2.58 0.91 -33.89 7.01 3.93 2.51 0.88 -33.00 6.72 3.96 2.14 0.89 -34.07 6.90 3.66 2.22 0.86 -35.11 7.02 3.69 2.28	0.90	-33.96	7.47	3.28	3.19
0.88 -33.75 6.92 3.77 2.70 0.90 -33.35 6.99 3.52 2.66 0.88 -33.99 6.88 3.88 2.58 0.91 -33.89 7.01 3.93 2.51 0.88 -33.00 6.72 3.96 2.14 0.89 -34.07 6.90 3.66 2.22 0.86 -35.11 7.02 3.69 2.28	0.89	-33.57	7.34	3.35	3.28
0.90 -33.35 6.99 3.52 2.66 0.88 -33.99 6.88 3.88 2.58 0.91 -33.89 7.01 3.93 2.51 0.88 -33.00 6.72 3.96 2.14 0.89 -34.07 6.90 3.66 2.22 0.86 -35.11 7.02 3.69 2.28	0.87	-33.66	7.06	3.75	2.94
0.88 -33.99 6.88 3.88 2.58 0.91 -33.89 7.01 3.93 2.51 0.88 -33.00 6.72 3.96 2.14 0.89 -34.07 6.90 3.66 2.22 0.86 -35.11 7.02 3.69 2.28	0.88	-33.75	6.92	3.77	2.70
0.91 -33.89 7.01 3.93 2.51 0.88 -33.00 6.72 3.96 2.14 0.89 -34.07 6.90 3.66 2.22 0.86 -35.11 7.02 3.69 2.28	0.90	-33.35	6.99	3.52	2.66
0.88 -33.00 6.72 3.96 2.14 0.89 -34.07 6.90 3.66 2.22 0.86 -35.11 7.02 3.69 2.28	0.88	-33.99	6.88	3.88	2.58
0.89 -34.07 6.90 3.66 2.22 0.86 -35.11 7.02 3.69 2.28	0.91	-33.89	7.01	3.93	2.51
0.86 -35.11 7.02 3.69 2.28	0.88	-33.00	6.72	3.96	2.14
	0.89	-34.07	6.90	3.66	2.22
0.00 25.20 7.15 2.01 2.26	0.86	-35.11	7.02	3.69	2.28
0.90 -33.20 7.15 3.91 2.36	0.90	-35.20	7.15	3.91	2.36

Sample calculation

E (dB μ V/m) = U (dB μ V) + AF (dB 1/m) + Corr. (dB)

U = Receiver reading

AF = Antenna factor

Corr. = sum of single correction factors of used cables, switch unit, distance correction, amplifier (if applicable) Linear interpolation will be used for frequencies in between the values in the table.

Table shows an extract of values.



6.6 ANTENNA EMCO 3160-10 (26.5 GHZ - 40 GHZ)

Eroguanav	AF EMCO 3160-10	Corr.
Frequency		
GHz	dB (1/m)	dB
26.5	43.4	-11.2
27.0	43.4	-11.2
28.0	43.4	-11.1
29.0	43.5	-11.0
30.0	43.5	-10.9
31.0	43.5	-10.8
32.0	43.5	-10.7
33.0	43.6	-10.7
34.0	43.6	-10.6
35.0	43.6	-10.5
36.0	43.6	-10.4
37.0	43.7	-10.3
38.0	43.7	-10.2
39.0	43.7	-10.2
40.0	43.8	-10.1

`		,				
cable loss 1 (inside chamber)	cable loss 2 (outside chamber)	cable loss 3 (switch unit)	cable loss 4 (to receiver)	distance corr. (-20 dB/ decade)	d _{Limit} (meas. distance (limit)	d _{used} (meas. distance (used)
dB	dB	dB	dB	dB	m	m
4.4				-9.6	3	1.0
4.4				-9.6	3	1.0
4.5				-9.6	3	1.0
4.6				-9.6	3	1.0
4.7				-9.6	3	1.0
4.7				-9.6	3	1.0
4.8				-9.6	3	1.0
4.9				-9.6	3	1.0
5.0				-9.6	3	1.0
5.1				-9.6	3	1.0
5.1				-9.6	3	1.0
5.2				-9.6	3	1.0
5.3				-9.6	3	1.0
5.4	-			-9.6	3	1.0
5.5				-9.6	3	1.0

Sample calculation

E (dB μ V/m) = U (dB μ V) + AF (dB 1/m) + Corr. (dB)

U = Receiver reading

AF = Antenna factor

Corr. = sum of single correction factors of used cables, switch unit, distance correction, amplifier (if applicable)

Linear interpolation will be used for frequencies in between the values in the table.

distance correction = -20 * LOG (d_{Limit}/d_{used}) Linear interpolation will be used for frequencies in between the values in the table.

Table shows an extract of values.



7 MEASUREMENT UNCERTAINTIES

Test Case(s)	Parameter	Uncertainty
- Field strength of spurious radiation	Power	± 5.5 dB
Out-of-band rejectionOccupied BandwidthInput versus output spectrum	Power Frequency	± 2.9 dB ± 11.2 kHz
 Effective radiated power, mean output power and zone enhancer gain Peak to Average Ratio 	Power	± 2.2 dB
Out-of-band emission limitsConducted Spurious Emissions at Antenna Terminal	Power Frequency	± 2.2 dB ± 11.2 kHz

8 PHOTO REPORT

Please see separate photo report.

TEST REPORT REFERENCE: MDE_BVNBG_1904_FCC01