

Annex 1: Measurement diagrams to
TEST REPORT
 No.: 16-1-0130001T07b-C2

According to:

FCC Regulations

Part 15.205
 Part 15.209
 Part 15.407

ISED-Regulations

RSS-Gen, Issue 4
 RSS-247, Issue 2

for

Prodrive Technologies BV

Carrier Controller Master – CCM

FCC ID: Y2ICCMUL

ISED: 9389A-CCMUL

PMN: CCM-IO-ETH, UL

HVIN: 64533








Laboratory Accreditation and Listings			
  <p>Deutsche Akkreditierungsstelle D-PL-12047-01-01 D-PL-12047-01-03 D PL 12047 01 04</p>	 <p>MRA US-EU 0003</p>	 <p>Industry Canada Reg. No.: 3462D-2 Reg. No.: 3462D-3</p>	 <p>Voluntary Controls for Electromagnetic Emissions Reg. No.: R-2666 C-2914, T-1967, G-301</p>
 <p>AUTHORIZED RF LABORATORY</p>	 <p>Authorized Test Lab Lab Code: 20011130-00</p>		
accredited according to DIN EN ISO/IEC 17025			
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1. Measurement diagrams

1.1. Conducted emissions on AC-Power lines

1.01

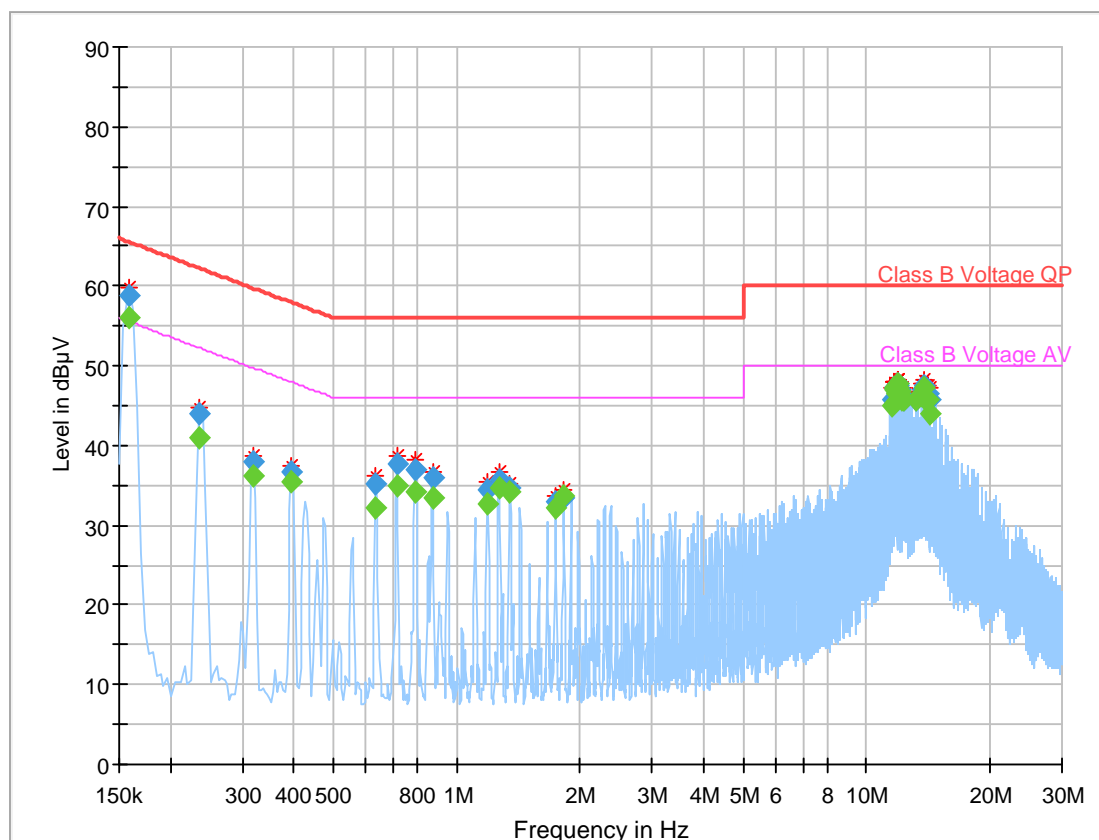
Common Information

Test Description:	Conducted Voltage Measurement Class B
Test Site & Location:	Conducted Emission, CETECOM GmbH Essen
Test Software:	R&S EMC32 v9.15
Test Specification:	FCC 15.107, FCC 15.207
Operating Mode:	WLAN 5GHz
Measured on line:	N/L1
Diagram details:	Shows the peak values as a sum of measured ports in maxhold mode
Environmental Conditions:	Humidity: 42%rH; Temperature: 20°C
Operator:	Mar

EUT Information

Manufacturer:	Prodrive Technologies B.V.
Model:	Carrier Control Master + Carrier Control Slave
Type:	CCM-IO-ETH + CCL, UL
HW version:	6752-1500-0103 + 6752-1600-1500
SW version:	CPU: 6752-1400-2608, uC: 6752-1400-2912
Serial Number:	1uC: 67528-08-858-1400-611 +2912 18-1 0-A02-FW3
Connected Interfaces:	Motor, Antenna, LAN cablePower
Supply:	100VDC
Comments:	with Eupen Radiated cable antenna

Full Spectrum



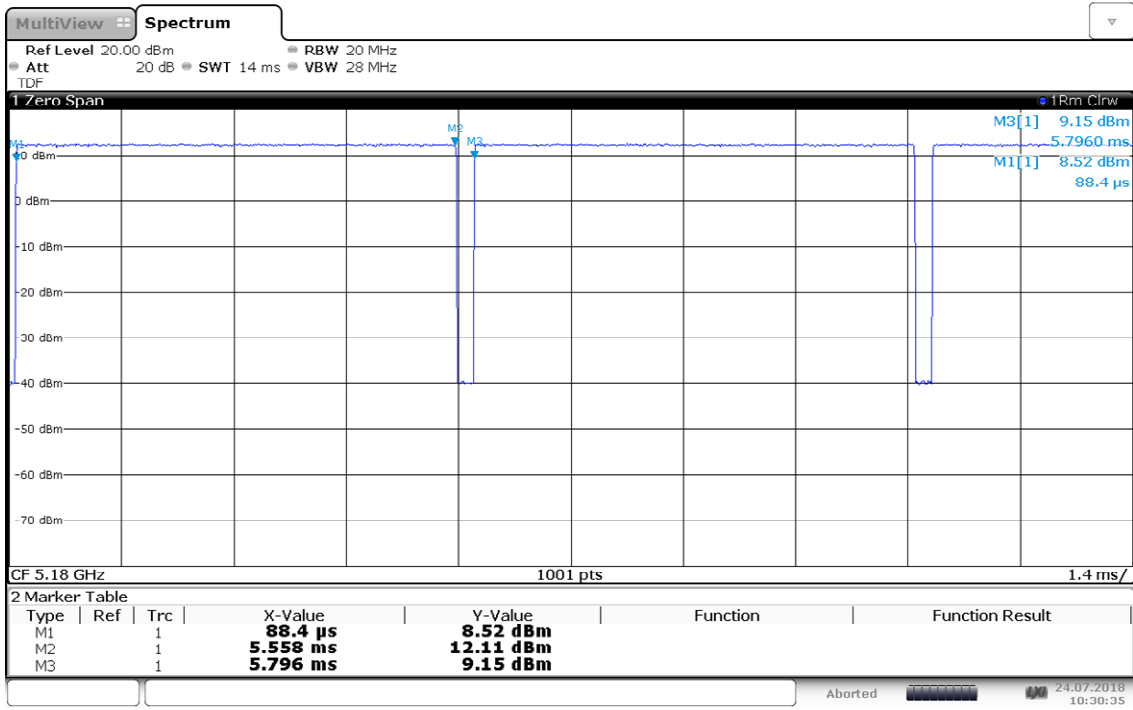
Final Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)
0.157813	---	55.03	55.58
0.157813	58.94	---	65.58
0.235938	---	41.09	52.24
0.235938	44.05	---	62.24
0.317969	---	36.27	49.76
0.317969	37.93	---	59.76
0.396094	36.63	---	57.93
0.396094	---	35.53	47.93
0.634375	35.17	---	56.00
0.634375	---	32.09	46.00
0.712500	37.74	---	56.00
0.712500	---	35.02	46.00
0.794531	---	34.13	46.00
0.794531	37.07	---	56.00
0.872656	---	33.37	46.00
0.872656	35.83	---	56.00
1.189063	---	32.57	46.00
1.189063	34.47	---	56.00
1.267188	35.80	---	56.00
1.267188	---	34.61	46.00
1.345313	---	34.25	46.00
1.345313	34.64	---	56.00
1.743750	32.84	---	56.00
1.743750	---	32.13	46.00
1.821875	---	33.62	46.00
1.821875	33.53	---	56.00
11.521094	---	44.94	50.00
11.521094	45.80	---	60.00
11.599219	---	47.03	50.00
11.599219	47.17	---	60.00
11.677344	47.23	---	60.00
11.677344	---	47.32	50.00
11.755469	46.88	---	60.00
11.755469	---	46.60	50.00
11.837500	---	46.95	50.00
11.837500	47.09	---	60.00
11.915625	---	47.72	50.00
11.915625	47.73	---	60.00
11.993750	---	47.15	50.00
11.993750	47.49	---	60.00
12.075781	---	46.88	50.00
12.075781	46.98	---	60.00
12.232031	46.24	---	60.00
12.232031	---	45.86	50.00
12.314063	45.75	---	60.00
12.314063	---	45.64	50.00
13.267188	---	45.74	50.00
13.267188	45.85	---	60.00
13.661719	---	46.37	50.00
13.661719	47.02	---	60.00
13.743750	---	47.38	50.00
13.743750	47.50	---	60.00
13.821875	---	46.09	50.00
13.821875	46.21	---	60.00
14.138281	---	45.81	50.00
14.138281	46.57	---	60.00
14.216406	45.79	---	60.00
14.216406	---	43.98	50.00

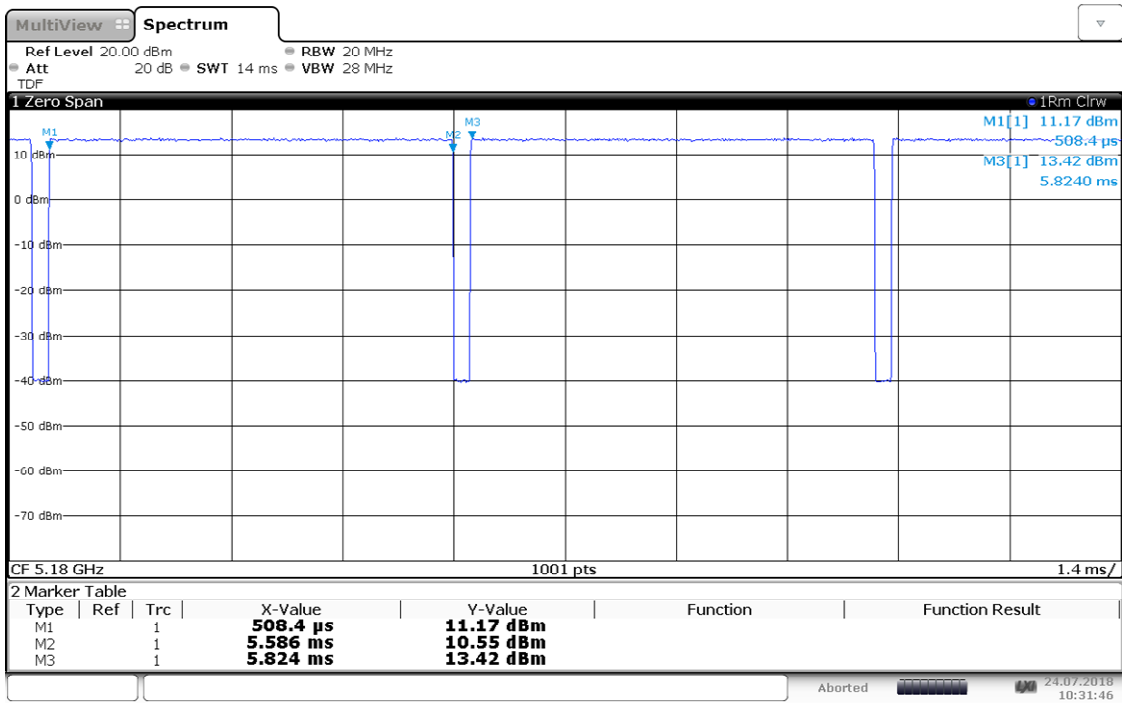
Final Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)
0.157813	---	56.03	55.58
0.157813	58.94	---	65.58
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0.235938	44.05	---	62.24
0.317969	---	36.27	49.76
0.317969	37.93	---	59.76
0.396094	36.63	---	57.93
0.396094	---	35.53	47.93
0.634375	35.17	---	56.00
0.634375	---	32.09	46.00
0.712500	37.74	---	56.00
0.712500	---	35.02	46.00
0.794531	---	34.13	46.00
0.794531	37.07	---	56.00
0.872656	---	33.37	46.00
0.872656	35.83	---	56.00
1.189063	---	32.57	46.00
1.189063	34.47	---	56.00
1.267188	35.80	---	56.00
1.267188	---	34.61	46.00
1.345313	---	34.25	46.00
1.345313	34.64	---	56.00
1.743750	32.84	---	56.00
1.743750	---	32.13	46.00
1.821875	---	33.62	46.00
1.821875	33.53	---	56.00
11.521094	---	44.94	50.00
11.521094	45.80	---	60.00
11.599219	---	47.03	50.00
11.599219	47.17	---	60.00
11.677344	47.23	---	60.00
11.677344	---	47.32	50.00
11.755469	46.88	---	60.00
11.755469	---	46.60	50.00
11.837500	---	46.95	50.00
11.837500	47.09	---	60.00
11.915625	---	47.72	50.00
11.915625	47.73	---	60.00
11.993750	---	47.15	50.00
11.993750	47.49	---	60.00
12.075781	---	46.88	50.00
12.075781	46.98	---	60.00
12.232031	46.24	---	60.00
12.232031	---	45.86	50.00
12.314063	45.75	---	60.00
12.314063	---	45.64	50.00
13.267188	---	45.74	50.00
13.267188	45.85	---	60.00
13.661719	---	46.37	50.00
13.661719	47.02	---	60.00
13.743750	---	47.38	50.00
13.743750	47.50	---	60.00
13.821875	---	46.09	50.00
13.821875	46.21	---	60.00
14.138281	---	45.81	50.00
14.138281	46.57	---	60.00
14.216406	45.79	---	60.00
14.216406	---	43.98	50.00

1.2. Duty Cycle



DC_36_a-mode_6Mbit



DC_36_n-mode_20M_MCS0

1.3. Radiated magnetic field measurements below 30 MHz

2.01_ CCM-IO-ETH-WLA-TX-aMode-BW20MHz-6Mbit-Ch36-19.5dBm

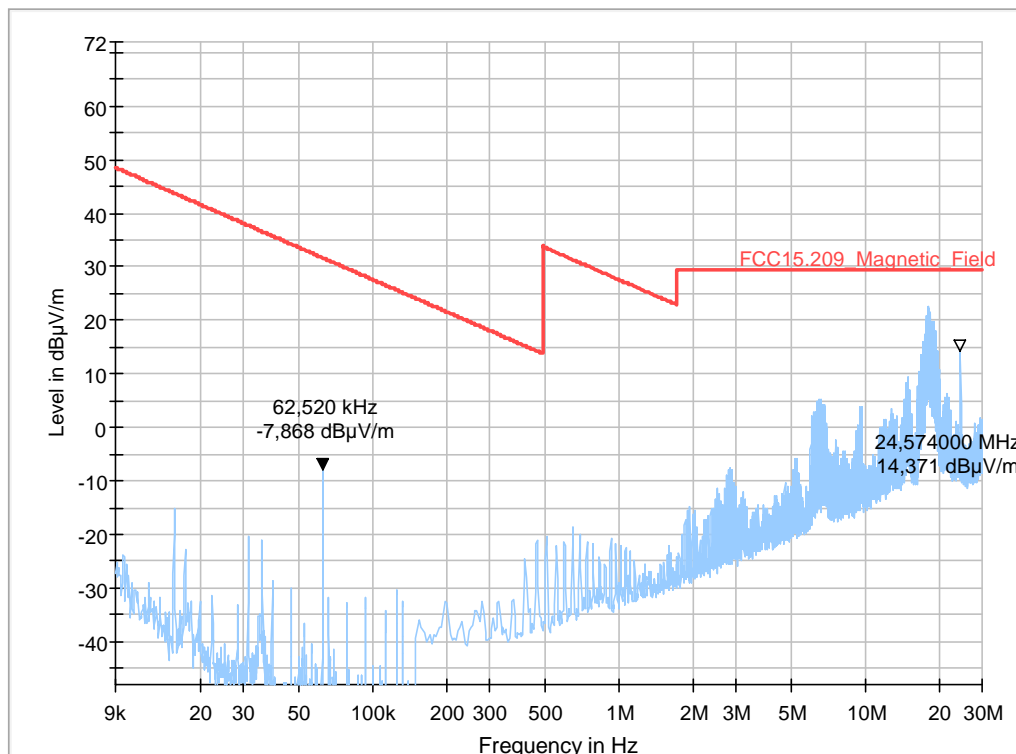
Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site and distance	Ref.-Nr.441, Semi Anechoic Room (SAR) with 3m measurement distance
Version of Testsoftware	EMC32 V9.25.0
Distance Correction	used accord. table, pls see test report
Rec Antenna	height = _1_m , polarisation according to pre-scan results
Used filter	bypass
Test specification	FCC 15.209 Class B; RSS-Gen. Issue 4
Operator	DLe
Operating mode	TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-1-Ch 36 (5180 MHz)- PWR+19.5 dBm
Operating conditions	Humidity: 48%rH; Temperature: 20°C
Comment	DC 100V
Comment	Radiated cable antenna Laying

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



2.01_ CCM-IO-ETH-TX-aMode-BW20MHz-6Mbit-Ch36-19.5dBm

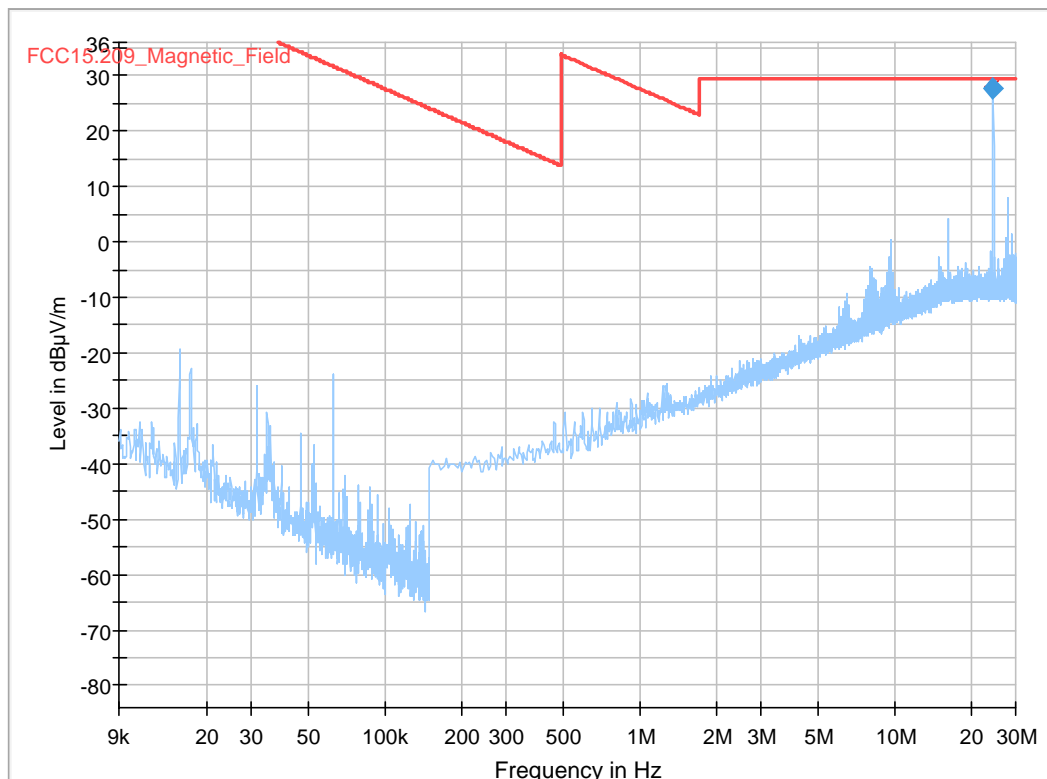
Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site and distance	Ref.-Nr.441, Semi Anechoic Room (SAR) with 3m measurement distance
Version of Testsoftware	EMC32 V9.25.0
Distance Correction	used accord. table, pls see test report
Rec Antenna	height = _1_m , polarisation according to pre-scan results
Used filter	bypass
Test specification	FCC 15.209 Class B; RSS-Gen. Issue 4
Operator	DLe
Operating mode	TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-1-Ch 36 (5180 MHz)- PWR+19.5 dBm
Operating conditions	Humidity: 48%rH; Temperature: 20°C
Comment	DC 100V
Comment	Radiated cable antenna used standing

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



2.02_ CCM-IO-ETH-TX-nMode-BW20MHz-MCS0-Ch56-19.5dBm

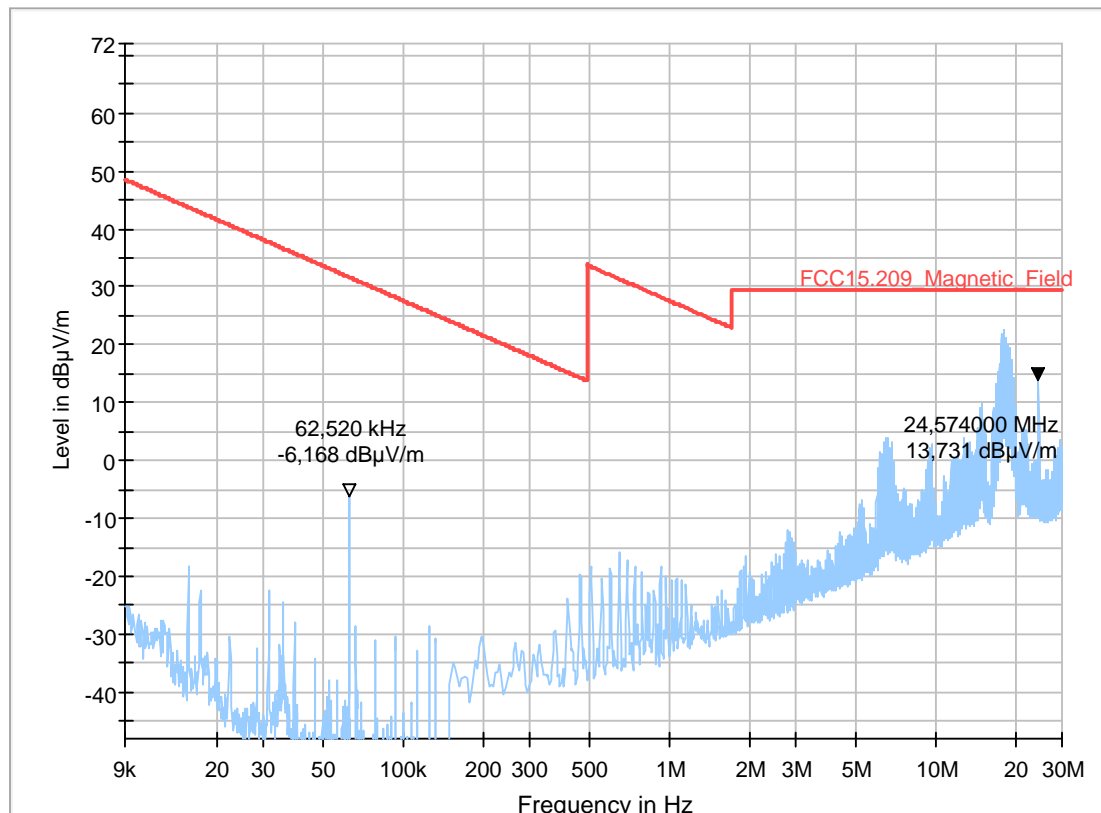
Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site and distance	Ref.-Nr.441, Semi Anechoic Room (SAR) with 3m measurement distance
Version of Testsoftware	EMC32 V9.25.0
Used filter	bypass
Test specification	FCC 15.209 Class B; RSS-Gen. Issue 4
Operator	DLe
Operating mode	TX-n Mode-B.W. 20 MHz-MCS0- U-NII-2A-Ch 56 (5280 MHz)- PWR+19.5 dBm
Operating conditions	Humidity: 48%rH; Temperature: 20°C
Comment	DC 100V
Comment	Radiated cable antenna used Laying

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



2.02_ CCM-IO-ETH-GHz-TX-nMode-BW20MHz-MCS0-Ch56-19.5dBm

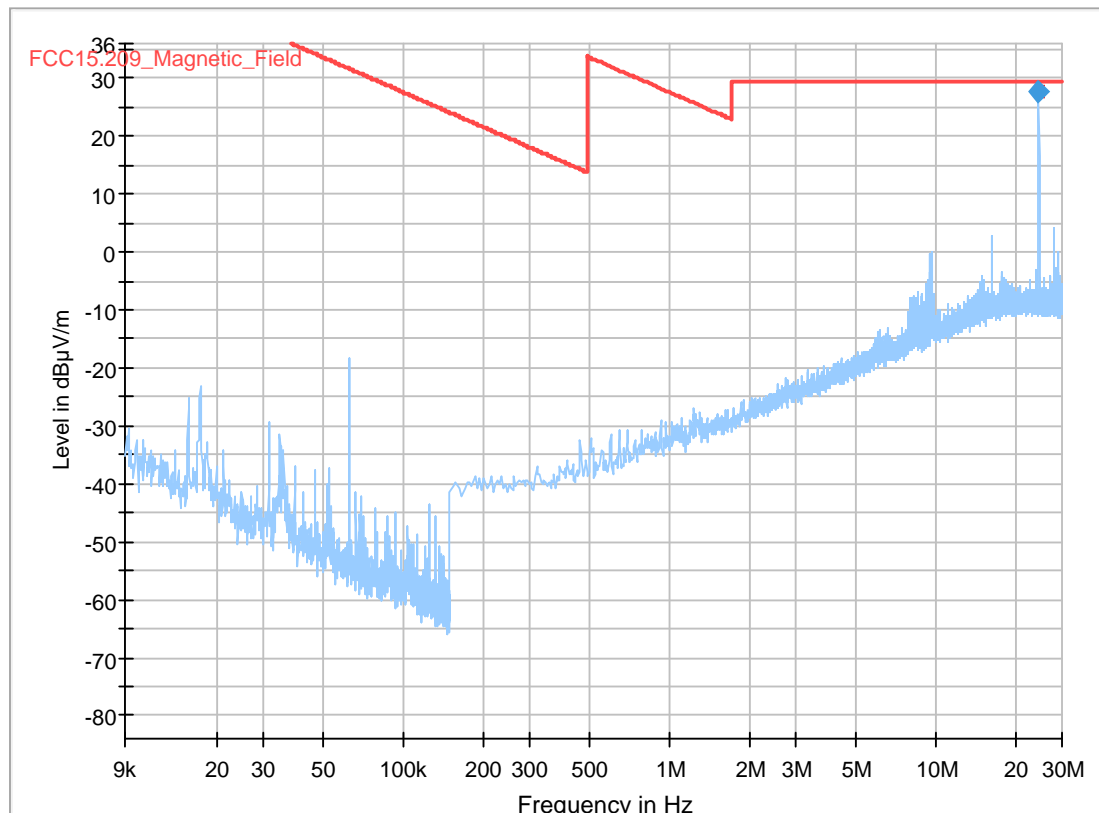
Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site and distance	Ref.-Nr.441, Semi Anechoic Room (SAR) with 3m measurement distance
Version of Testsoftware	EMC32 V9.25.0
Used filter	bypass
Test specification	FCC 15.209 Class B; RSS-Gen. Issue 4
Operator	DLe
Operating mode	TX-n Mode-B.W. 20 MHz-MCS0- U-NII-2A-Ch 56 (5280 MHz)- PWR+19.5 dBm
Operating conditions	Humidity: 48%rH; Temperature: 20°C
Comment	DC 100V
Comment	Radiated cable antenna used Standing

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



2.03_ CCM-IO-ETH-TX-aMode-BW20MHz-6Mbit-Ch116-19.5dBm

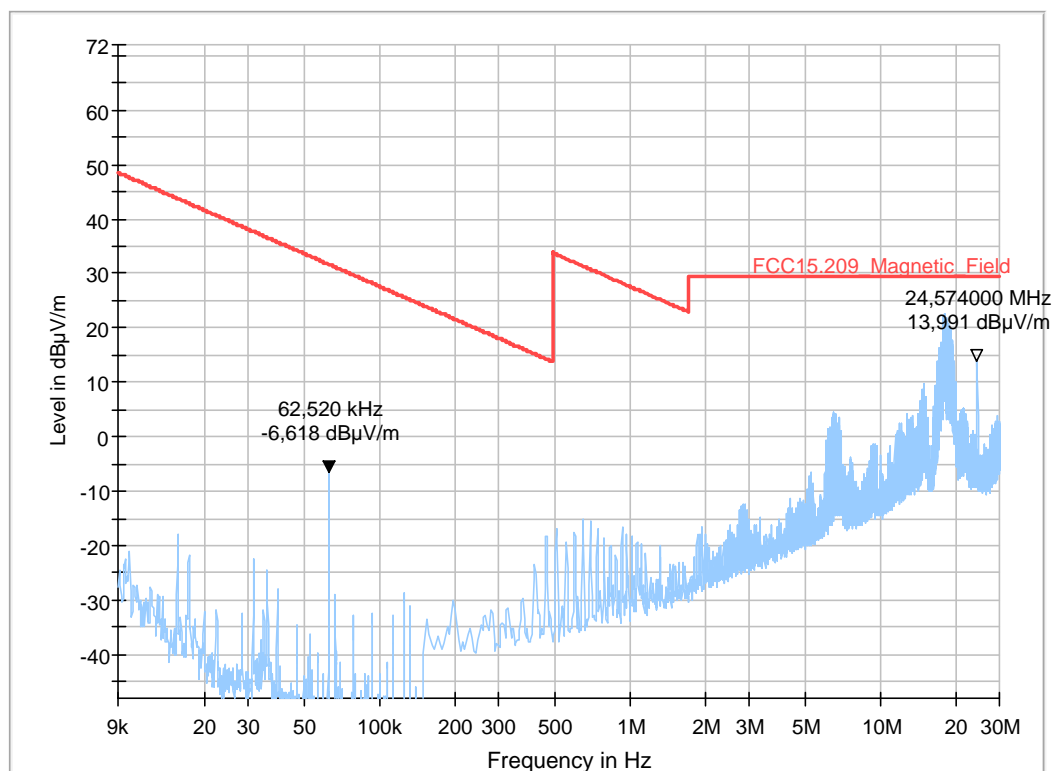
Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site and distance	Ref.-Nr.441, Semi Anechoic Room (SAR) with 3m measurement distance
Version of Testsoftware	EMC32 V9.25.0
Used filter	bypass
Test specification	FCC 15.209 Class B; RSS-Gen. Issue 4
Operator	DLe
Operating mode	Continuous TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-2C-Ch 116 (5580 MHz)-PWR+19.5 dBm
Operating conditions	Humidity: 48%RH; Temperature: 20°C
Comment	DC 100V
Comment	Radiated cable antenna used Laying

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



2.03_CCM-IO-ETH-GHz-TX-aMode-BW20MHz-6Mbit-Ch116-19.5dBm

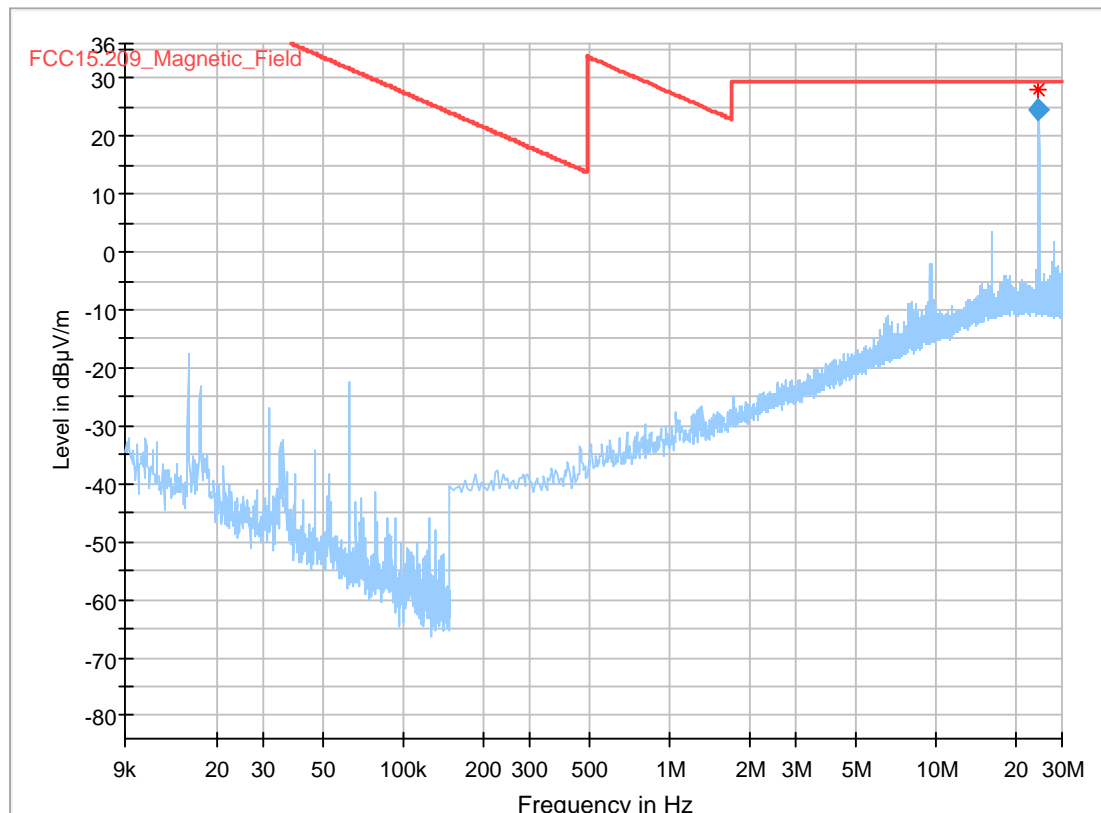
Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site and distance	Ref.-Nr.441, Semi Anechoic Room (SAR) with 3m measurement distance
Version of Testsoftware	EMC32 V9.25.0
Used filter	bypass
Test specification	FCC 15.209 Class B; RSS-Gen. Issue 4
Operator	DLe
Operating mode	TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-2C-Ch 116 (5580 MHz)- PWR+19.5 dBm
Operating conditions	Humidity: 48%rH; Temperature: 20°C
Comment	DC 100V
Comment	Radiated cable antenna used Standing

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



1.4. Radiated electric field measurement 30 MHz to 1 GHz

3.01_ CCM-IO-ETH-TX-aMode-BW20MHz-6Mbit-Ch36-19.5dBm

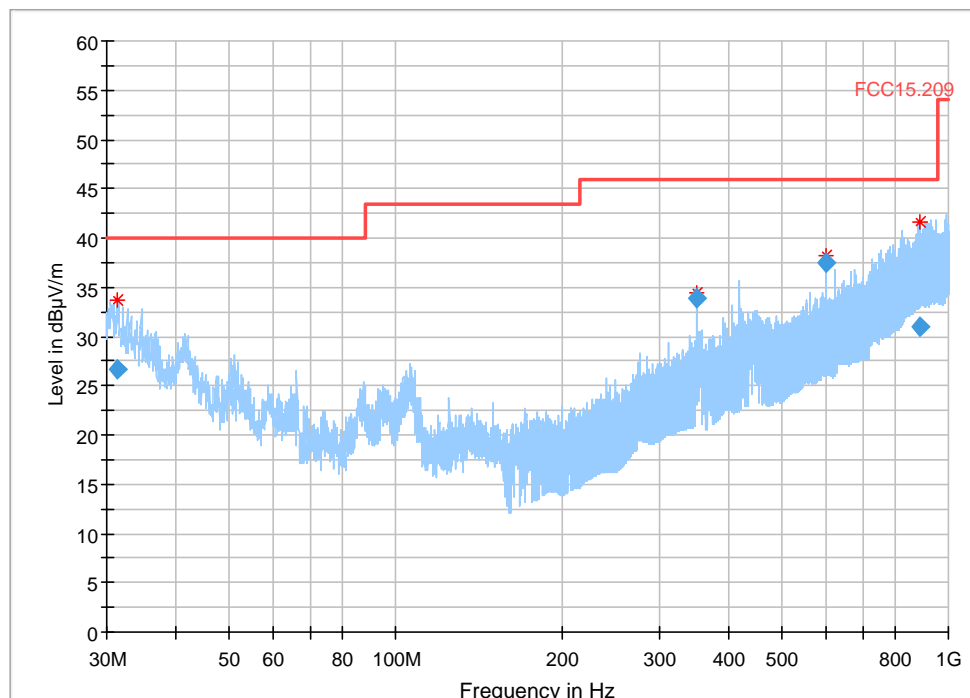
Common Information

Test description:	Electric Field Strength Measurement
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC32 V9.25.0
Test specification.:	FCC 15.209; RSS-Gen: Issue 3
Operator:	HEI
Operating conditions:	TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-1-Ch 36 (5180 MHz)- PWR+19.5 dBm
Power during tests:	100 V DC
DUT:	LAYING

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
31.432000	26.58	40.00	13.42	1000.0	120.000	178.0	H	98.0	0.0	20.9
349.992000	33.79	46.00	12.21	1000.0	120.000	141.0	V	125.0	0.0	16.6
599.988000	37.41	46.00	8.59	1000.0	120.000	105.0	V	90.0	0.0	22.0
889.276000	30.98	46.00	15.02	1000.0	120.000	335.0	V	53.0	0.0	26.6

3.01_ CCM-IO-ETH-TX-aMode-B.W20MHz-6Mbit-Ch36-19.5dBm

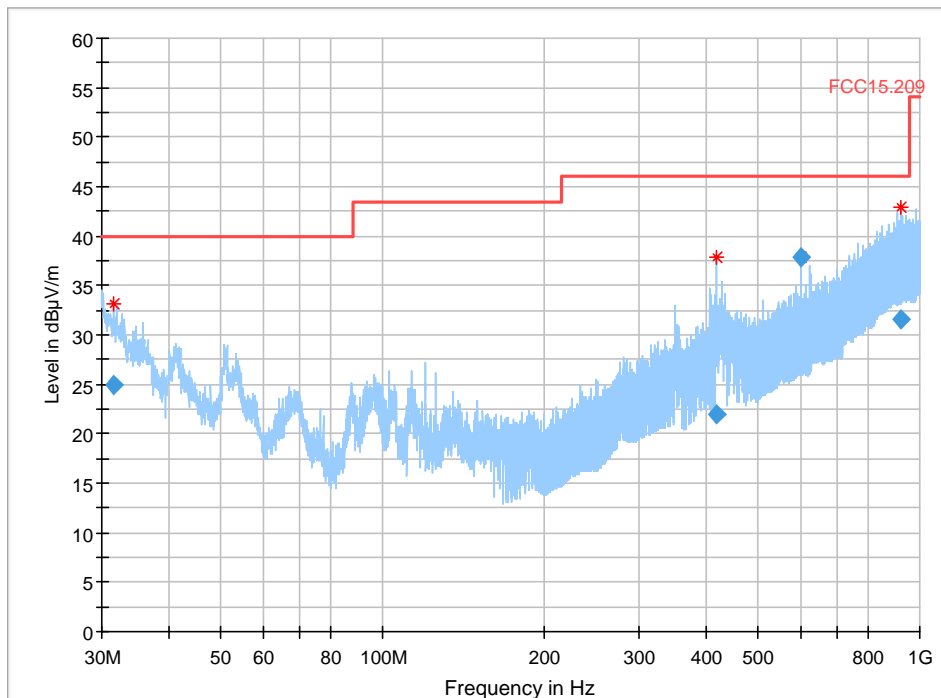
Common Information

Test description:	Electric Field Strength Measurement
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC32 V9.25.0
Test specification.:	FCC 15.209; RSS-Gen: Issue 3
Operator:	HEI
Operating conditions:	TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-1-Ch 36 (5180 MHz)- PWR+19.5 dBm
Power during tests:	100 V DC
DUT:	EUT Standing

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
31.608000	24.88	40.00	15.12	1000.0	120.000	203.0	H	40.0	0.0	20.8
419.024000	21.94	46.00	24.06	1000.0	120.000	347.0	V	114.0	0.0	18.8
599.988000	37.93	46.00	8.07	1000.0	120.000	105.0	H	215.0	0.0	22.0
925.364000	31.64	46.00	14.36	1000.0	120.000	237.0	H	73.0	0.0	27.1

3.02_ CCM-IO-ETH-TX-nMode-BW20MHz-MCS0-Ch52-19.5dBm

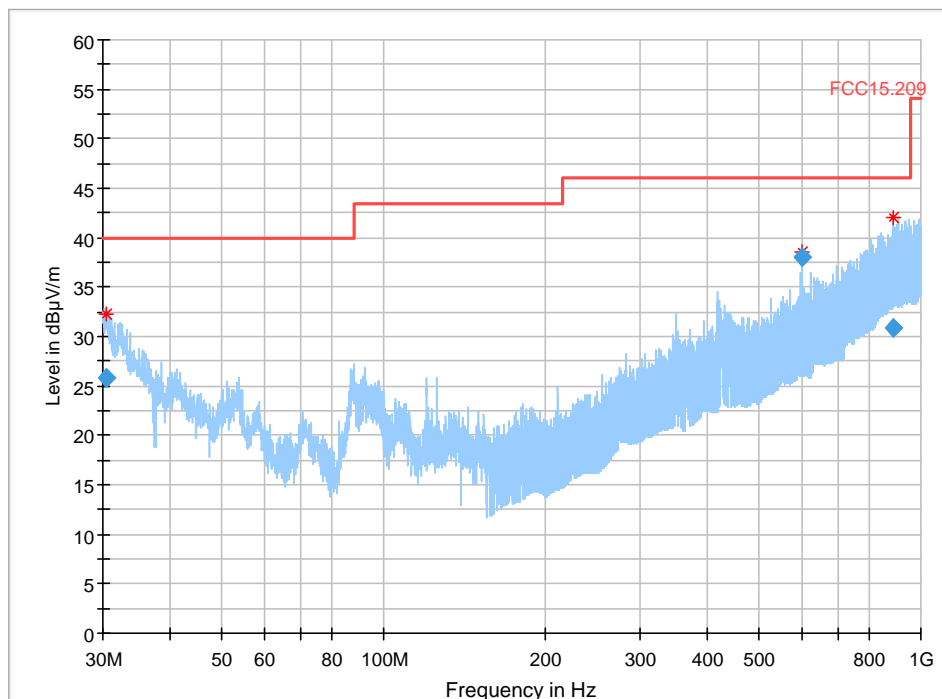
Common Information

Test description:	Electric Field Strength Measurement
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC32 V9.25.0
Test specification.:	FCC 15.209; RSS-Gen: Issue 3
Operator:	HEI
Operating conditions:	Continuous TX-n Mode-B.W. 20 MHz-MCS0- U-NII-2A-Ch 52 (5260 MHz)-PWR+19.5 dBm
Power during tests:	100 V DC
DUT:	LAYING

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
30.416000	25.78	40.00	14.22	1000.0	120.000	125.0	V	262.0	0.0	21.3
599.988000	38.01	46.00	7.99	1000.0	120.000	105.0	V	88.0	0.0	22.0
887.596000	30.85	46.00	15.15	1000.0	120.000	360.0	V	180.0	0.0	26.6

3.02_ CCM-IO-ETH-TX-nMode-BW20MHz-MCS0-Ch52-19.5dBm

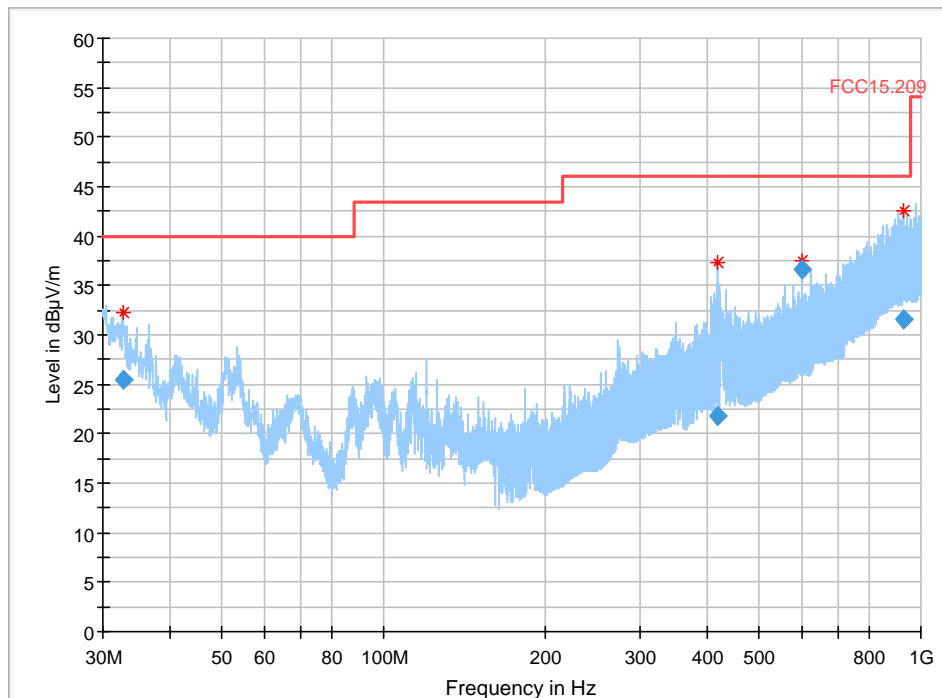
Common Information

Test description:	Electric Field Strength Measurement
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC32 V9.25.0
Test specification.:	FCC 15.209; RSS-Gen: Issue 3
Operator:	HEI
Operating conditions:	TX-n Mode-B.W. 20 MHz-MCS0- U-NII-2A-Ch 52 (5260 MHz)- PWR+19.5 dBm
Power during tests:	100 V DC
DUT:	EUT Standing

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr (dB)
32.712000	25.46	40.00	14.54	1000.0	120.000	126.0	V	16.0	0.0	20.3
419.072000	21.78	46.00	24.22	1000.0	120.000	360.0	V	90.0	0.0	18.8
599.988000	36.57	46.00	9.43	1000.0	120.000	173.0	H	219.0	0.0	22.0
926.176000	31.57	46.00	14.43	1000.0	120.000	203.0	H	11.0	0.0	27.0

3.03_ CCM-IO-ETH-TX-aMode-BW20MHz-6Mbit-Ch116-19.5dBm

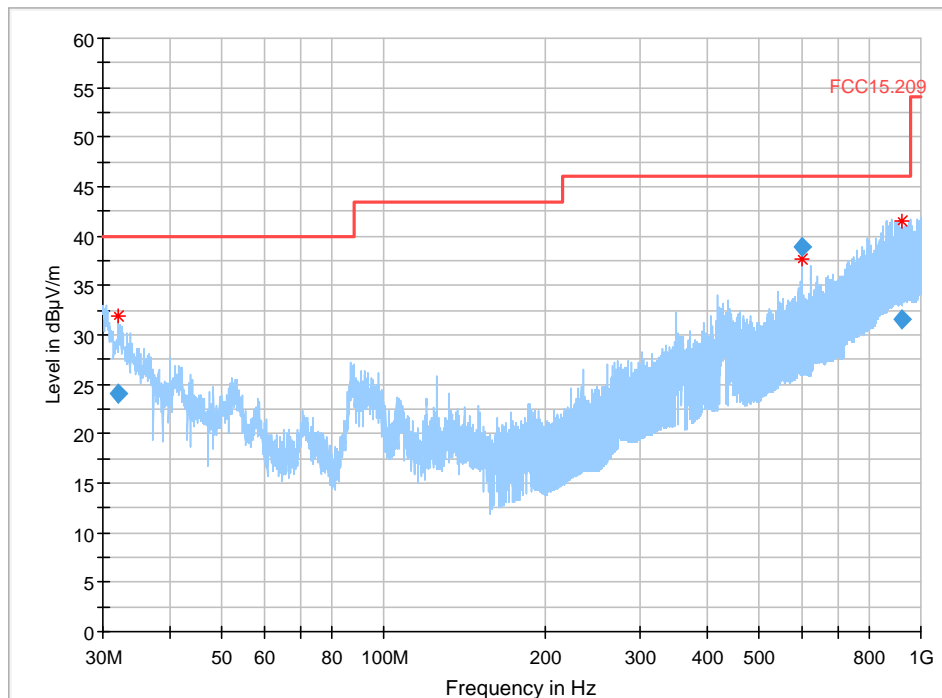
Common Information

Test description:	Electric Field Strength Measurement
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC32 V9.25.0
Test specification.:	FCC 15.209; RSS-Gen: Issue 3
Operator:	HEI
Operating conditions:	TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-2C-Ch 116 (5580 MHz)- PWR+19.5 dBm
Power during tests:	100 V DC
DUT:	LAYING

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
32.084000	24.01	40.00	15.99	1000.0	120.000	121.0	V	194.0	0.0	20.6
599.988000	38.98	46.00	7.02	1000.0	120.000	109.0	V	233.0	0.0	22.0
924.128000	31.58	46.00	14.42	1000.0	120.000	360.0	V	136.0	0.0	27.1

3.03_CCM-IO-ETH-TX-aMode-B.W20MHz-6Mbit-Ch116-19.5dBm

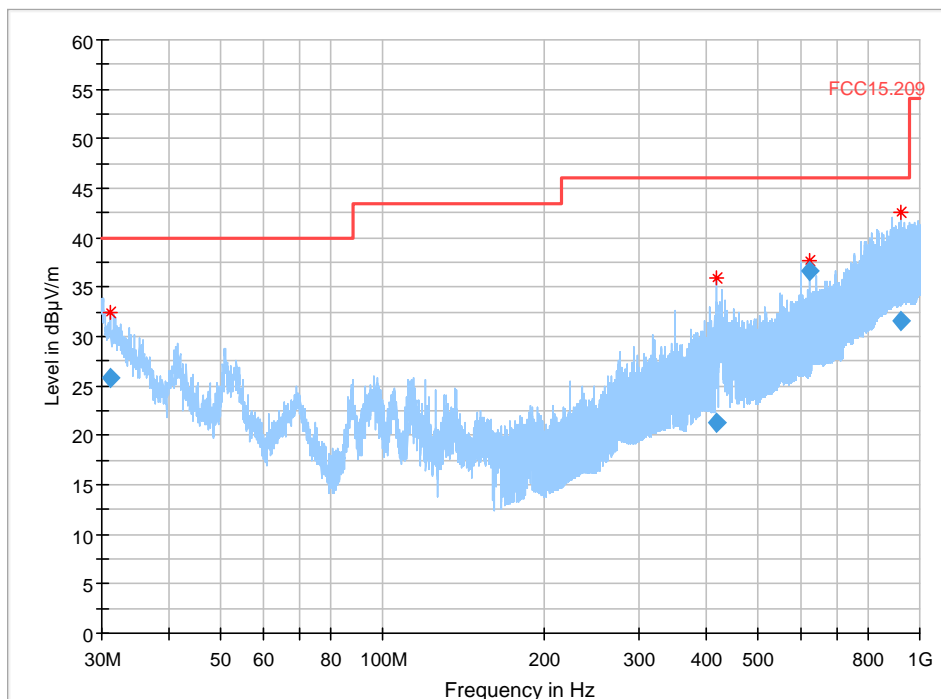
Common Information

Test description:	Electric Field Strength Measurement
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC32 V9.25.0
Test specification.:	FCC 15.209; RSS-Gen: Issue 3
Operator:	HEI
Operating conditions:	Continuous TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-2C-Ch 116 (5580 MHz)-PWR+19.5 dBm
Power during tests:	100 V DC
DUT:	EUT Standing

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
31.128000	25.74	40.00	14.26	1000.0	120.000	253.0	H	19.0	0.0	21.0
419.076000	21.23	46.00	24.77	1000.0	120.000	350.0	V	256.0	0.0	18.8
622.484000	36.71	46.00	9.29	1000.0	120.000	109.0	H	121.0	0.0	22.0
922.976000	31.52	46.00	14.48	1000.0	120.000	301.0	H	310.0	0.0	27.1

1.5. Radiated electric field measurement 1GHz to 7 GHz

4.01_ CCM-IO-ETH-TX-aMode-B.W20MHz-6Mbit-Ch36-19.5dBm-

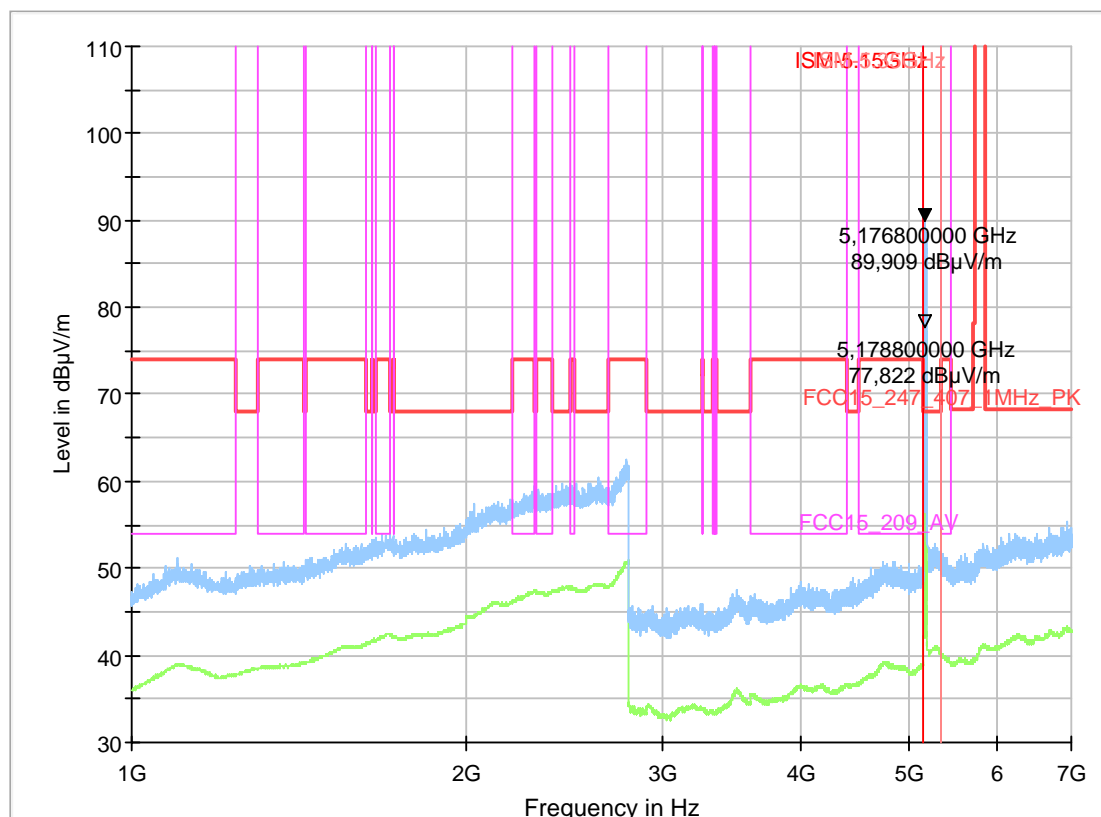
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-1-Ch 36 (5180 MHz)- PWR+19.5 dBm
Environmental Conditions:	Humidity: 40%rH; Temperature: 20°C
Operator Name:	LKu
Comment:	Radiated cable antenna Laying

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



4.01_ CCM-IO-ETH-TX-aMode-B.W20MHz-6Mbit-Ch36-19.5dBm

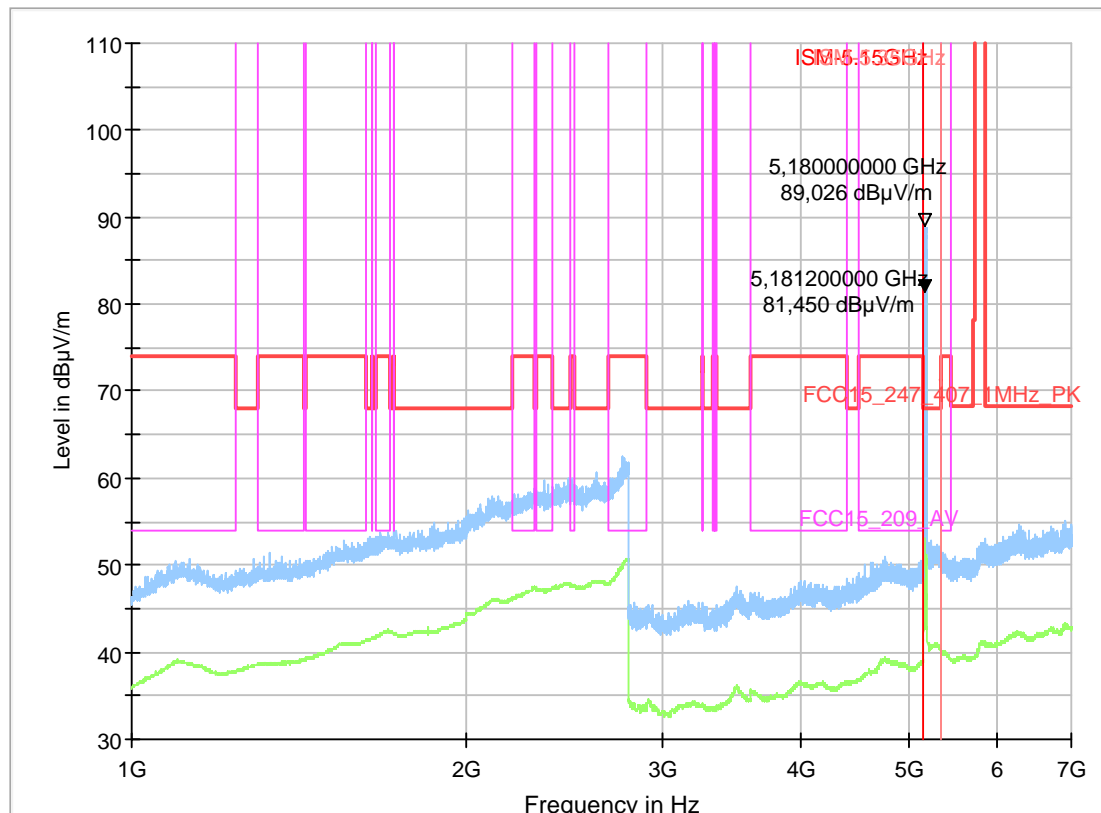
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-1-Ch 36 (5180 MHz)- PWR+19.5 dBm
Environmental Conditions:	Humidity: 40%rH; Temperature: 20°C
Operator Name:	HEI
Comment:	Radiated cable antenna Standing

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



4.02_ CCM-IO-ETH-nMode-20MHz-MCS0-Ch56-19.5dBm

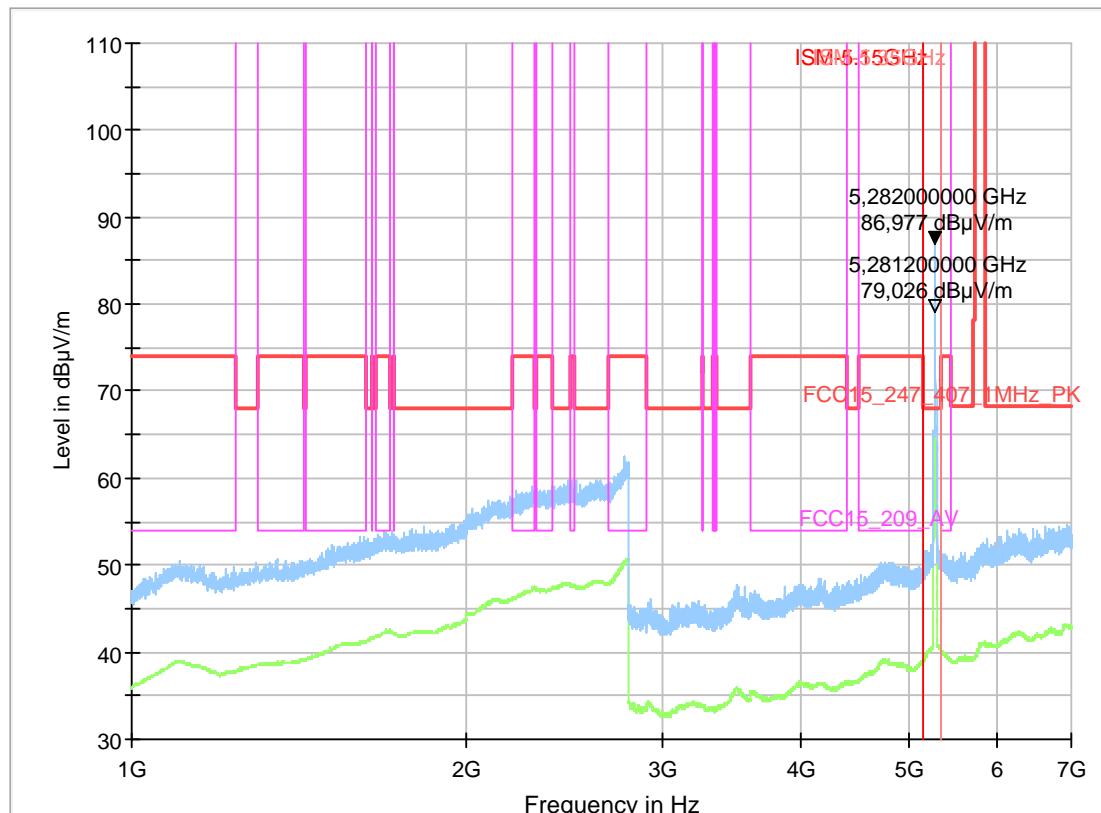
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	TX-n Mode-B.W. 20 MHz-MCS0- U-NII-2A-Ch 56 (5280 MHz)- PWR+19.5 dBm
Environmental Conditions:	Humidity: 40%rH; Temperature: 20°C
Operator Name:	HEI/ LKu
Comment:	Radiated cable antenna Laying

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



4.02_ CCM-IO-ETH-TX-nMode-B.W20MHz-MCS0-Ch56-19.5dBm

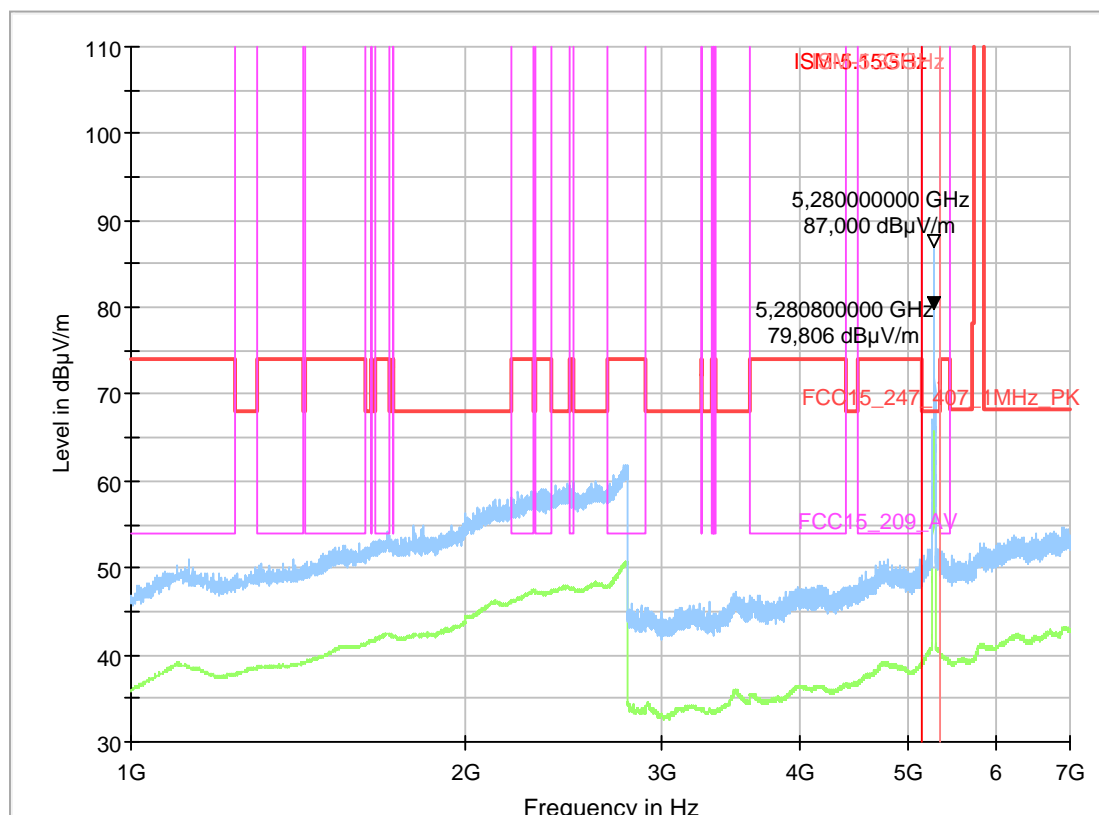
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	TX-n Mode-B.W. 20 MHz-MCS0- U-NII-2A-Ch 56 (5280 MHz)- PWR+19.5 dBm
Environmental Conditions:	Humidity: 40%rH; Temperature: 20°C
Operator Name:	HEI
Comment:	Radiated cable antenna Standing

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



4.03_ CCM-IO-ETH-TX-aMode-B.W20MHz-6Mbit-Ch116-19.5dBm

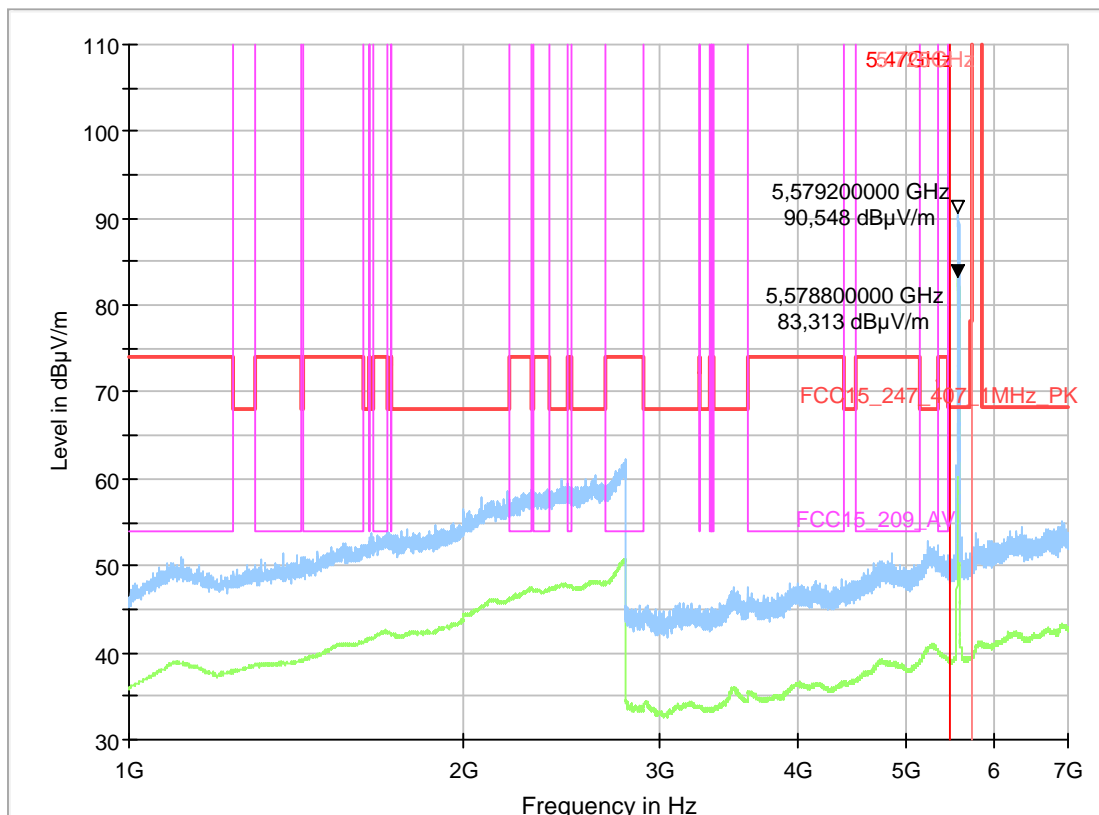
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-2C-Ch 116 (5580 MHz)- PWR+19.5 dBm
Environmental Conditions:	Humidity: 40%rH; Temperature: 20°C
Operator Name:	HEI
Comment:	Radiated cable antenna Laying

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



4.03_CCM-IO-ETH-TX-aMode-B.W20MHz-6Mbit-Ch116-19.5dBm

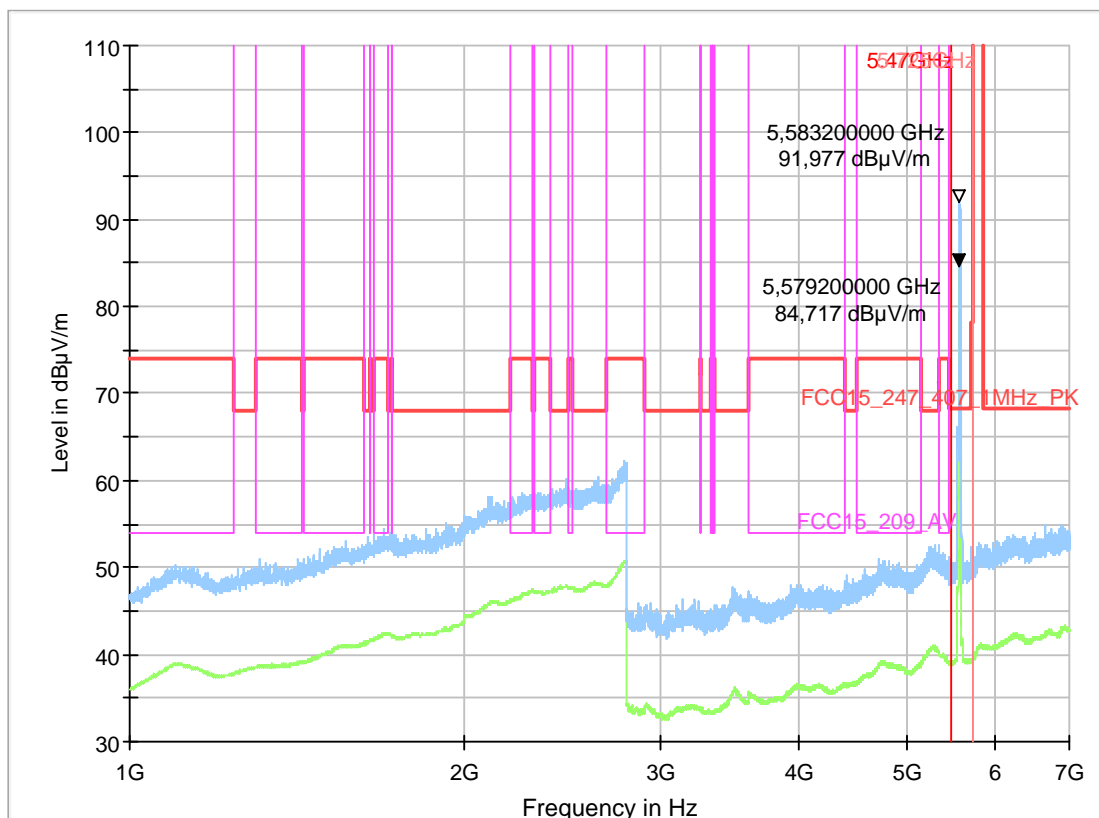
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-2C-Ch 116 (5580 MHz)- PWR+19.5 dBm
Environmental Conditions:	Humidity: 40%rH; Temperature: 20°C
Operator Name:	HEI
Comment:	Radiated cable antenna Standing

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



1.6. Radiated electric field measurement 7GHz to 18 GHz

4.01a_ CCM-IO-ETH-TX-aMode-BW20MHz-6Mbit-Ch36-19.5dBm

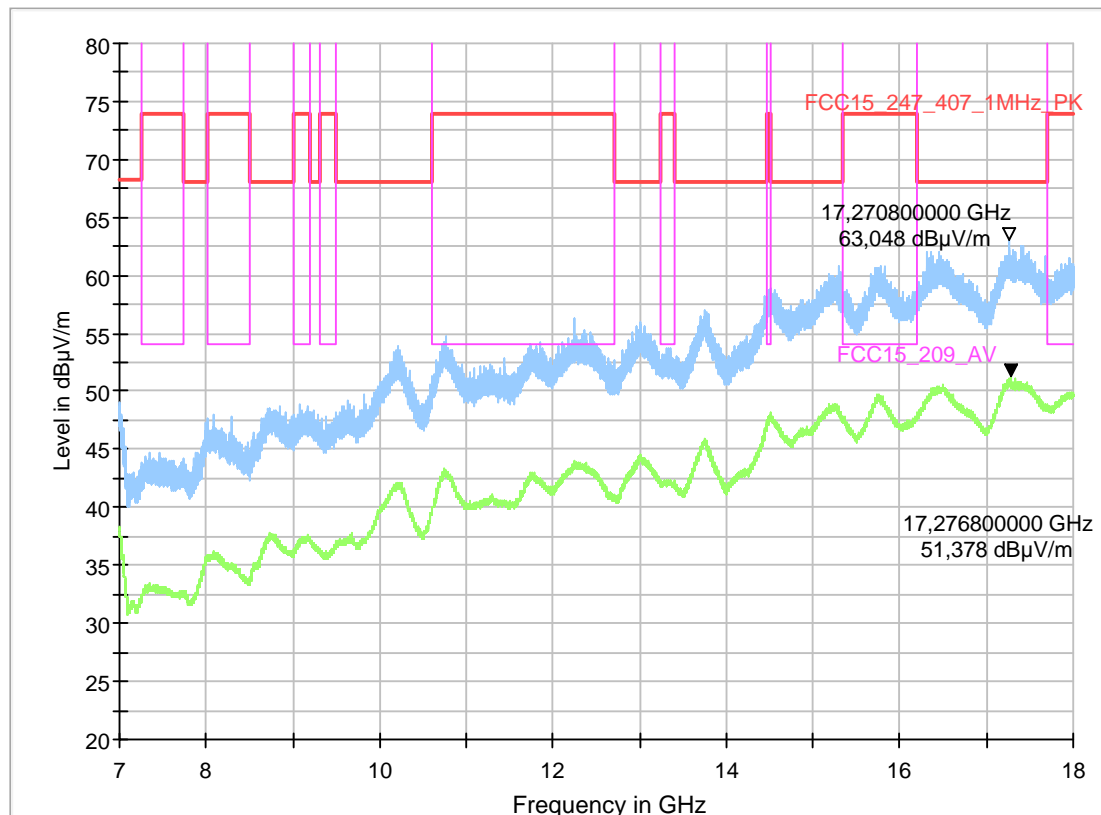
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-1-Ch 36 (5180 MHz)- PWR+19.5 dBm
Operator Name:	HEI
Comment:	Stap Antenna Laying

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



4.01a_ CCM-IO-ETH-TX-aMode-BW20MHz-6Mbit-Ch36-19.5dBm-

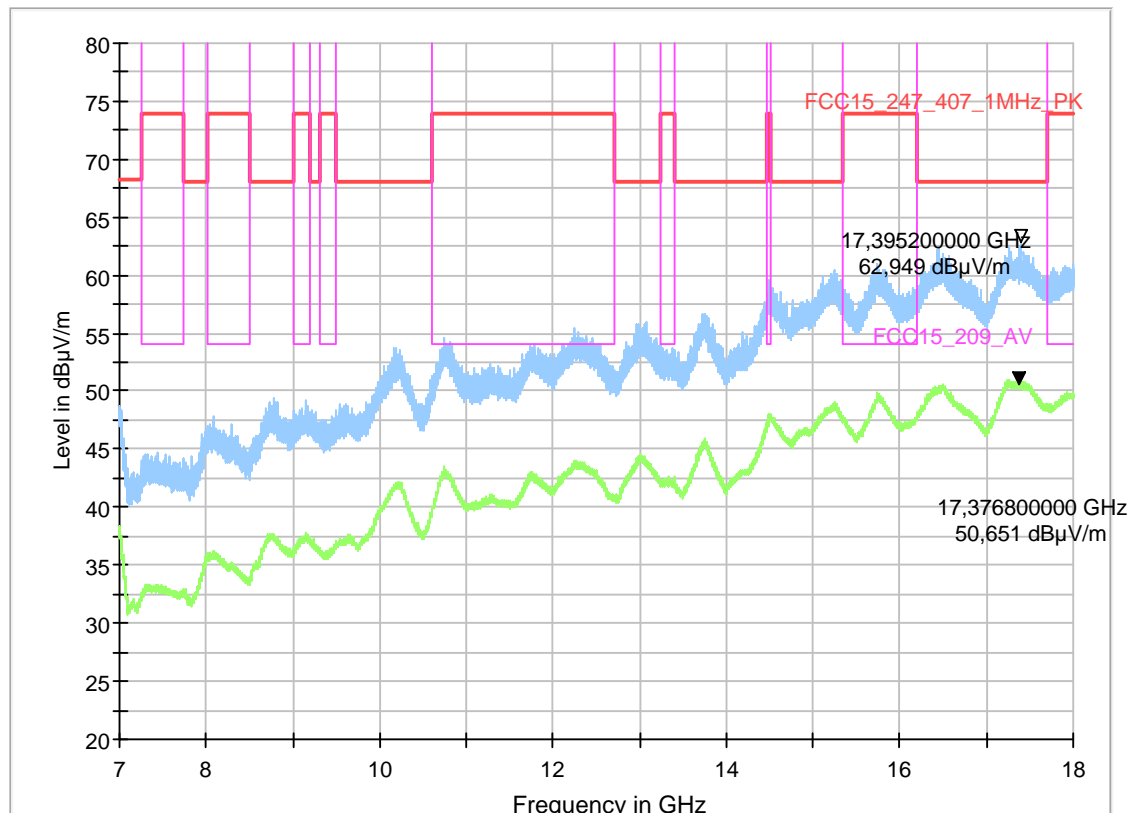
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-1-Ch 36 (5180 MHz)- PWR+19.5 dBm
Environmental Conditions:	Humidity: 40%rH; Temperature: 20°C
Operator Name:	HEI
Comment:	Stap Antenna Standing

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



4.02a_ CCM-IO-ETH-TX-nMode-BW20MHz-MCS0-Ch56-19.5dBm

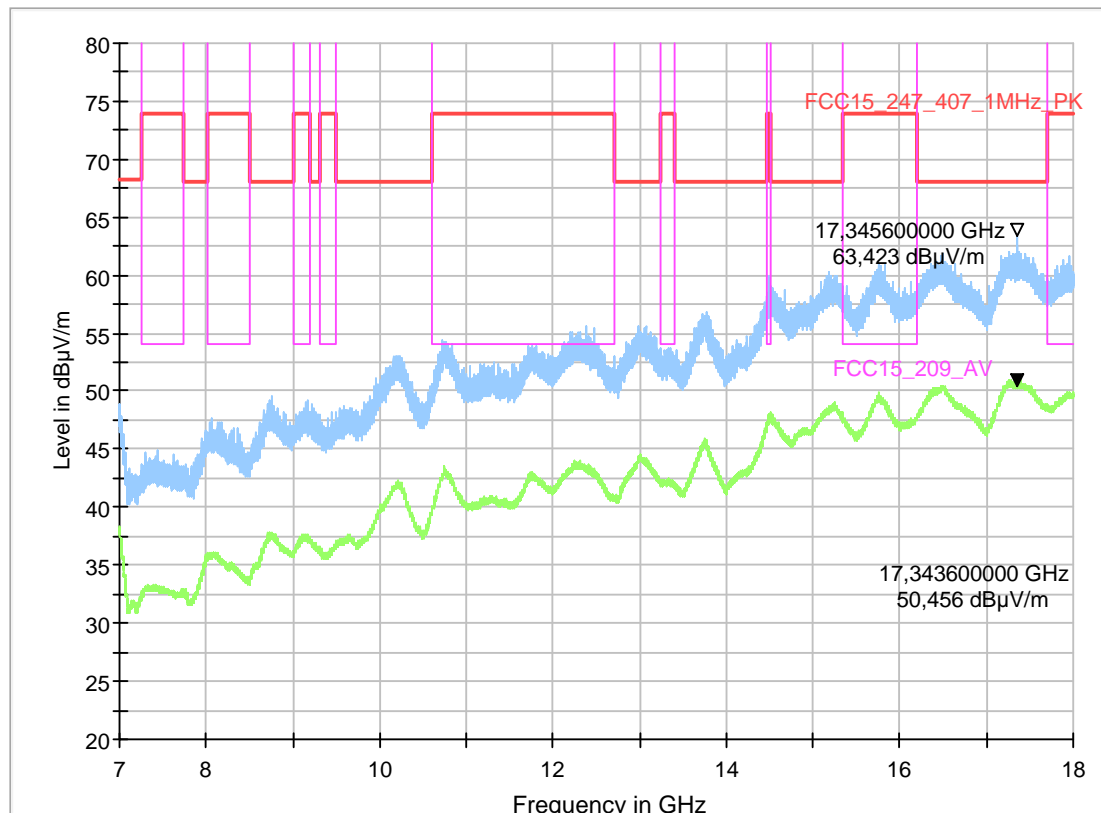
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	TX-n Mode-B.W. 20 MHz-MCS0- U-NII-2A-Ch 56 (5280 MHz)- PWR+19.5 dBm
Environmental Conditions:	Humidity: 40%rH; Temperature: 20°C
Operator Name:	HEI
Comment:	Stap Antenna Laying

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



4.02a_ CCM-IO-ETH-TX-nMode-B.W20MHz-MCS0-Ch56-19.5dBm

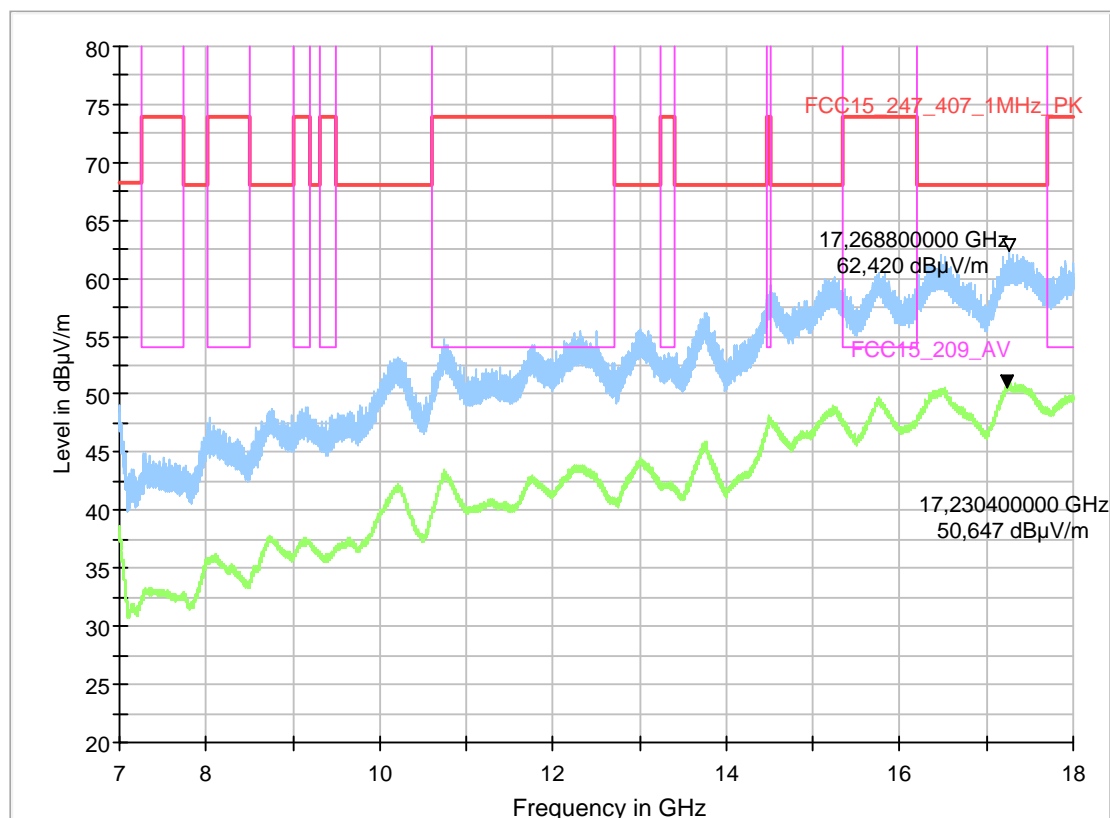
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	TX-n Mode-B.W. 20 MHz-MCS0- U-NII-2A-Ch 56 (5280 MHz)- PWR+19.5 dBm
Environmental Conditions:	Humidity: 40%rH; Temperature: 20°C
Operator Name:	HEI
Comment:	Stap Antenna Standing

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



4.03a_ CCM-IO-ETH-TX-aMode-B.W20MHz-6Mbit-Ch116-19.5dBm

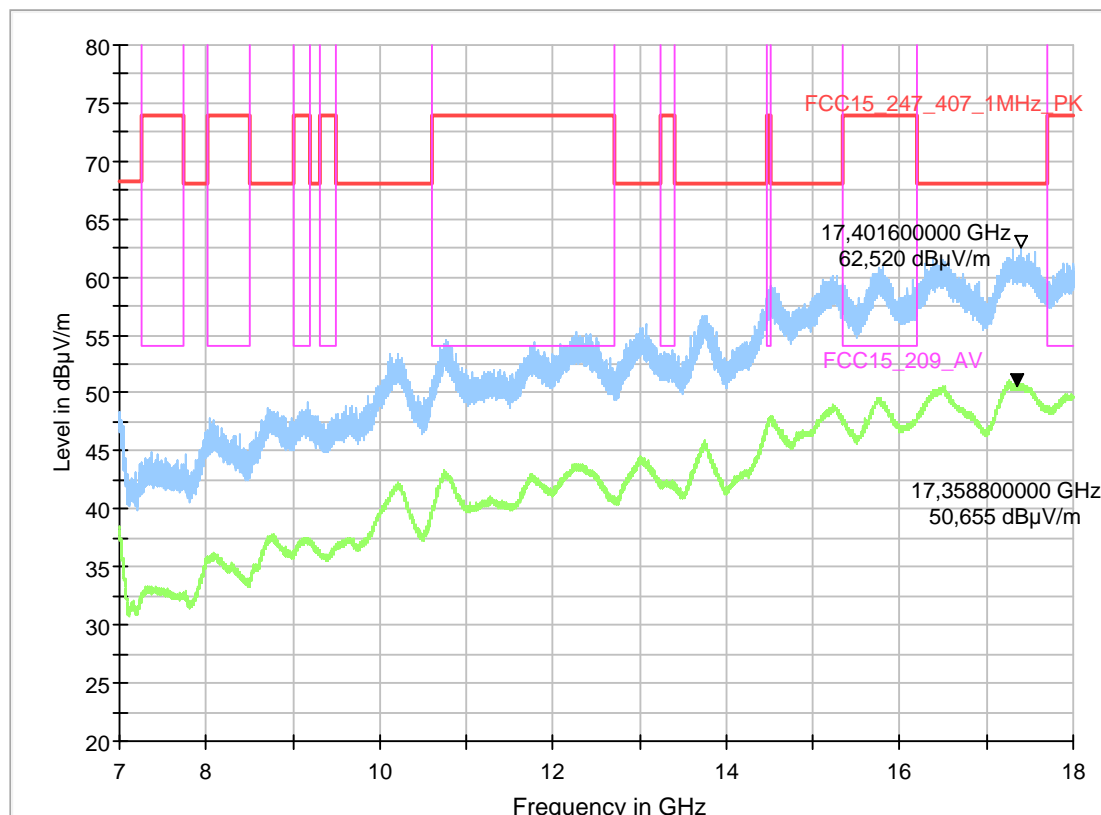
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-2C-Ch 116 (5580 MHz)- PWR+19.5 dBm
Environmental Conditions:	Humidity: 40%rH; Temperature: 20°C
Operator Name:	HEI
Comment:	Stap Antenna Laying

EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum



4.03a_ CCM-IO-ETH-TX-aMode-BW20MHz-6Mbit-Ch116-19.5dBm

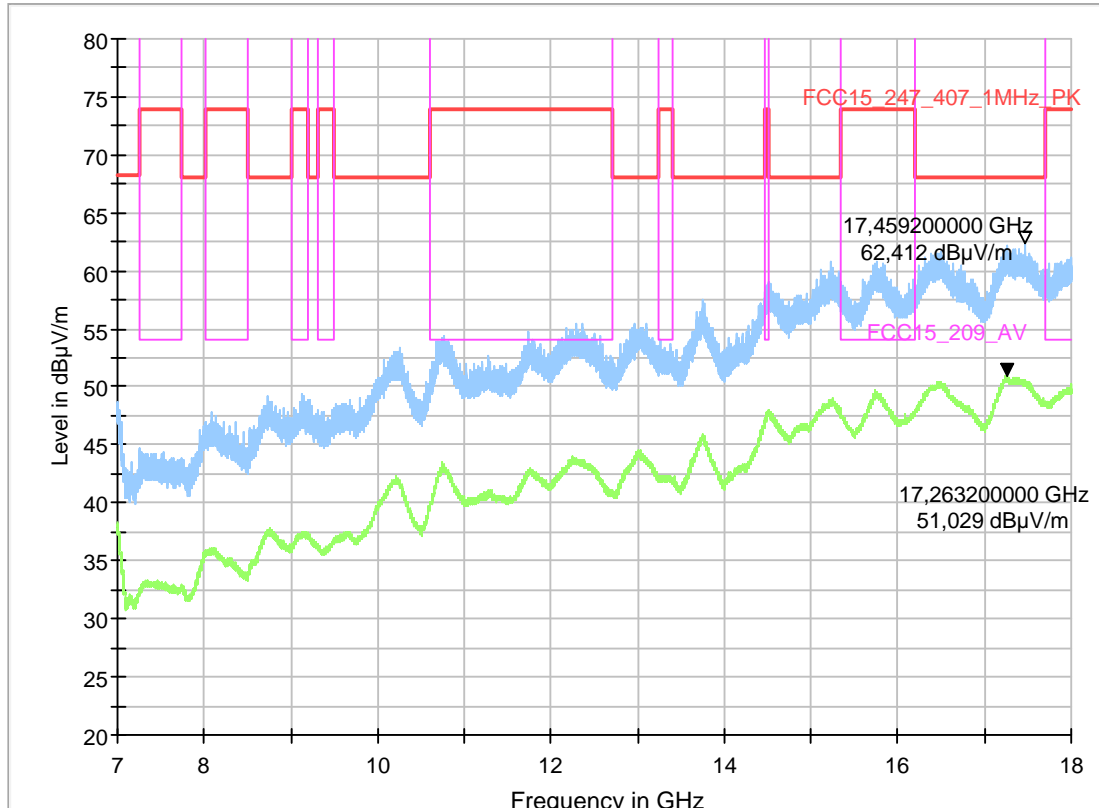
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-2C-Ch 116 (5580 MHz)- PWR+19.5 dBm
Environmental Conditions:	Humidity: 40%rH; Temperature: 20°C
Operator Name:	HEI
Comment:	Stap Antenna Standing

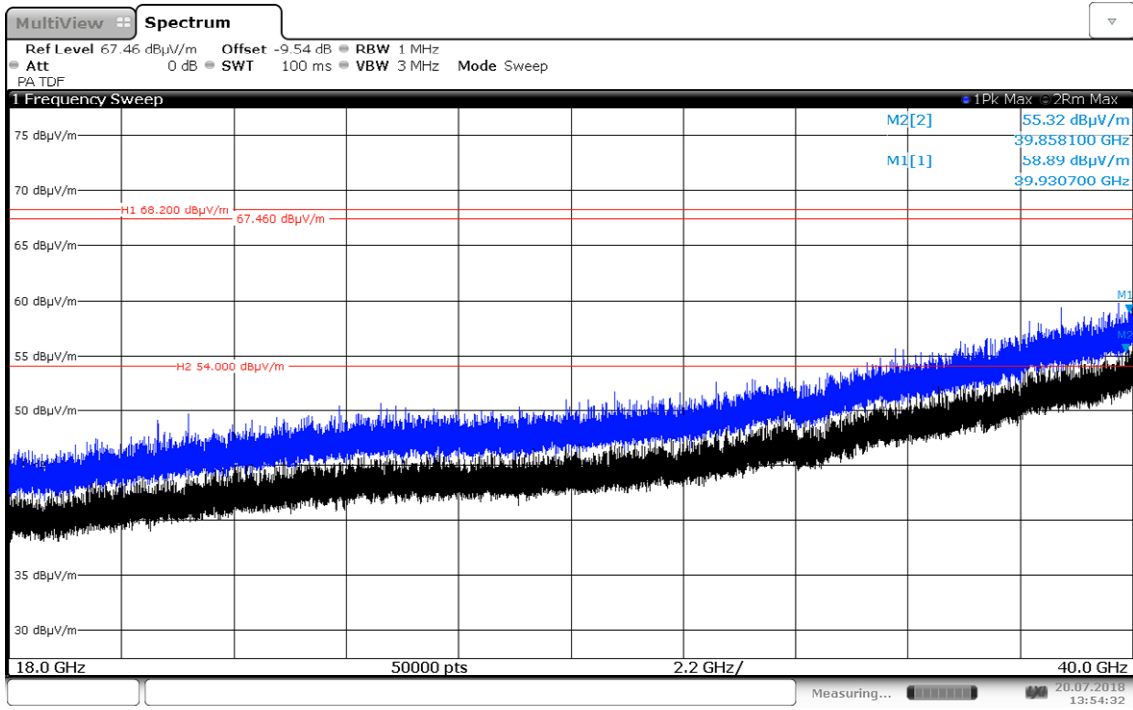
EUT Information

Manufacturer:	Prodrive B.V.
Model:	CCM-IO-ETH ,UL
Type:	MASTER
EUT:(Master)	CCM-IO-ETH, UL (Master)
HW version:	same as PN
SW version:	2014.11-R07
SN:	17-16-008-092
PN:	6752-1600-1400
BG Article No.:	64533
Connected Interfaces:	CCM-IO-ETH, UL (Master) connected with CCS-IO, UL (Slave) (PN:6752-1601-4200 SN:17-13-003-328)+ CrossBelt Motor 35 Kg (Model:80ZWX-15.0505-A 1.8N.m 4244RPM)-
Master / Slave Power Supply:	100V DC 10A (Using External Power Supply XANTREX Type: XFR150-18)
Motor Power Supply:	100 V DC (from Master 100 V RMS 7.5 ARMS 3 Phase)

Full Spectrum

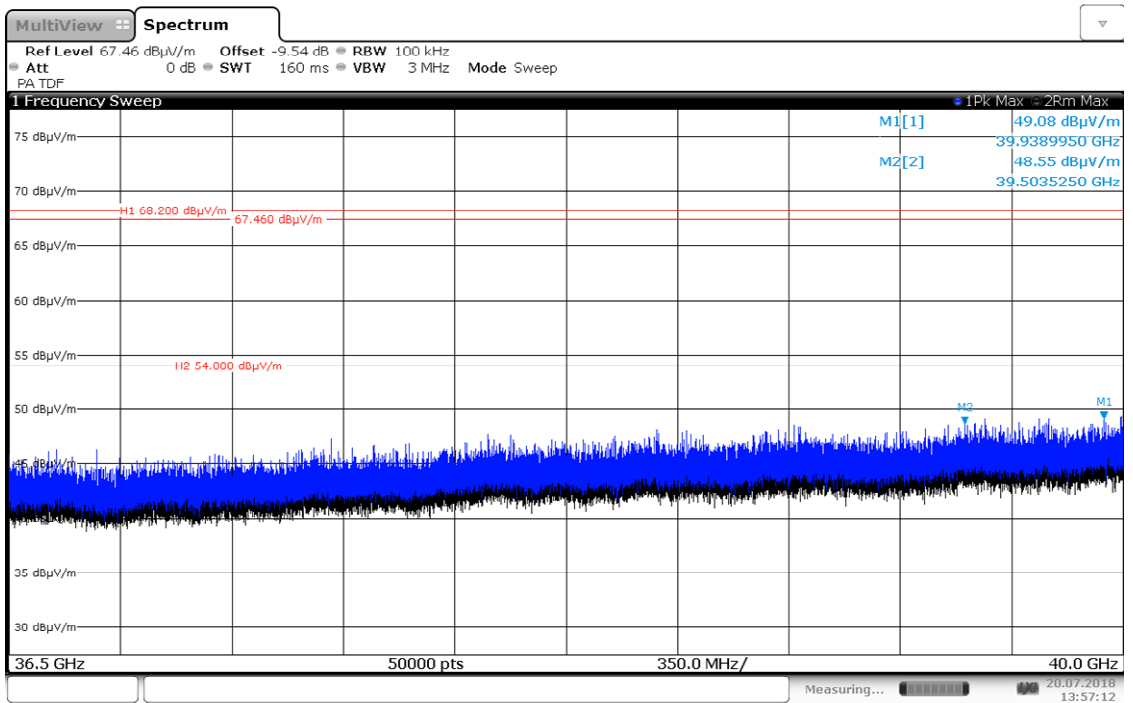


1.7. Radiated electric field measurement 18GHz to 40 GHz



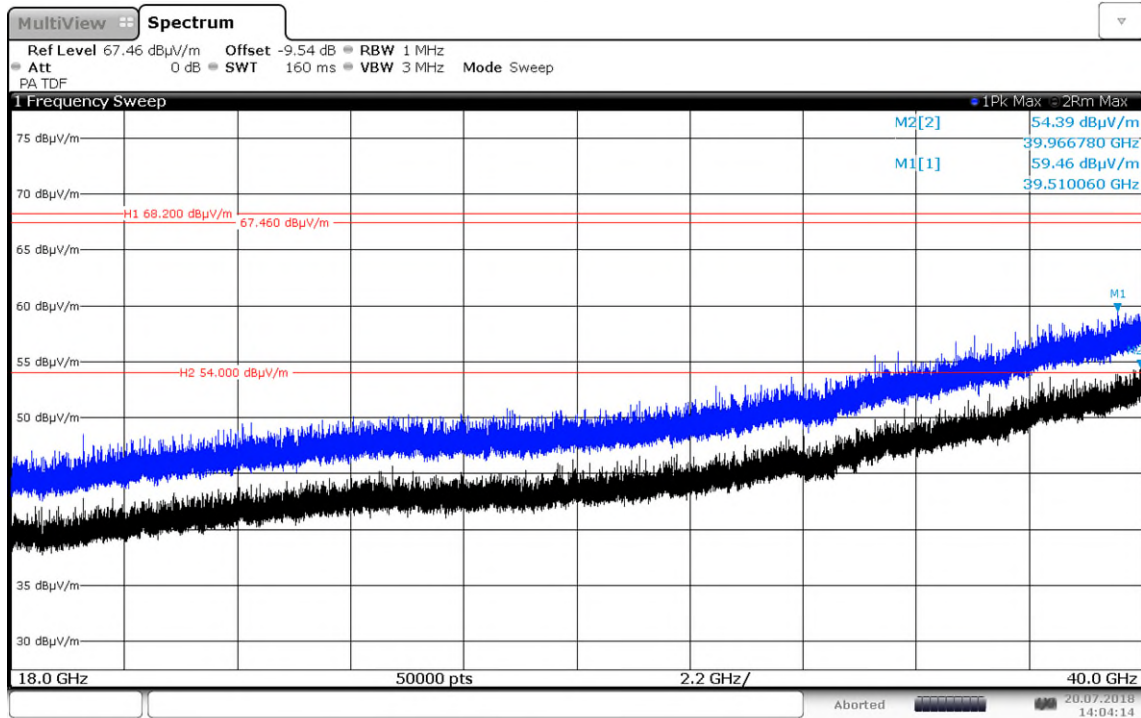
13:54:32 20.07.2018

4.01b_ CCM-IO-ETH-WLAN5 GHz-TX-aMode-B.W20MHz-6Mbit-Ch36-19.5dBm



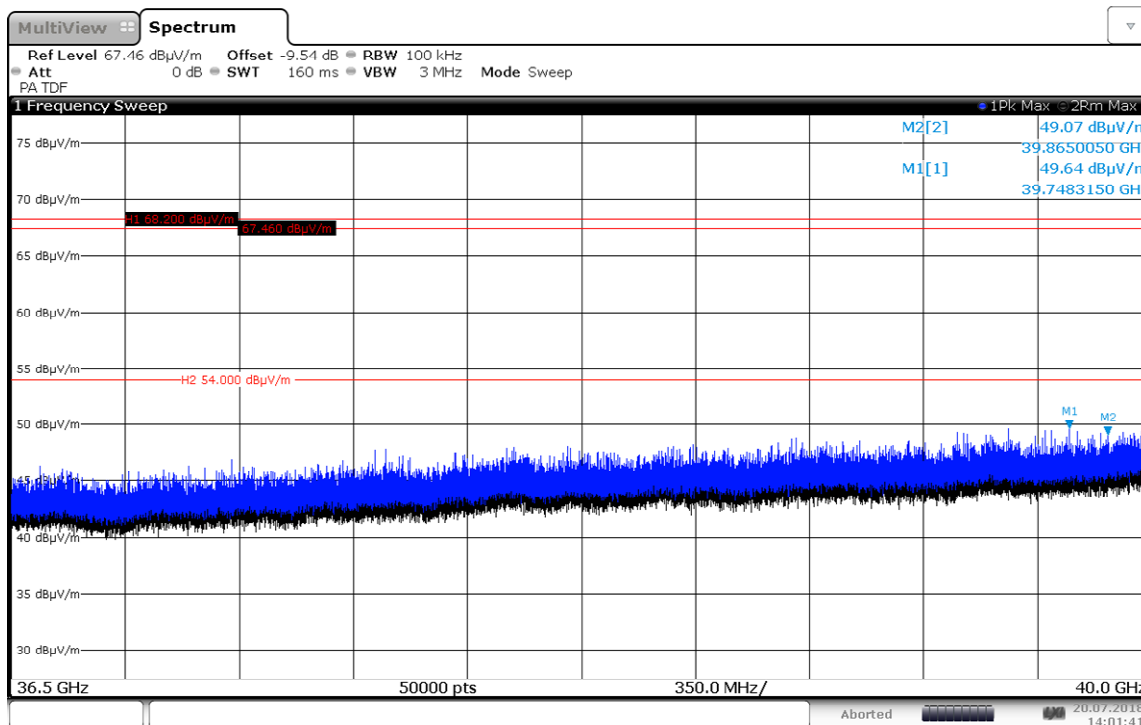
13:57:12 20.07.2018

4.01b_ CCM-IO-ETH-WLAN5 GHz-TX-aMode-B.W20MHz-6Mbit-Ch36-19.5dBm_100kHz



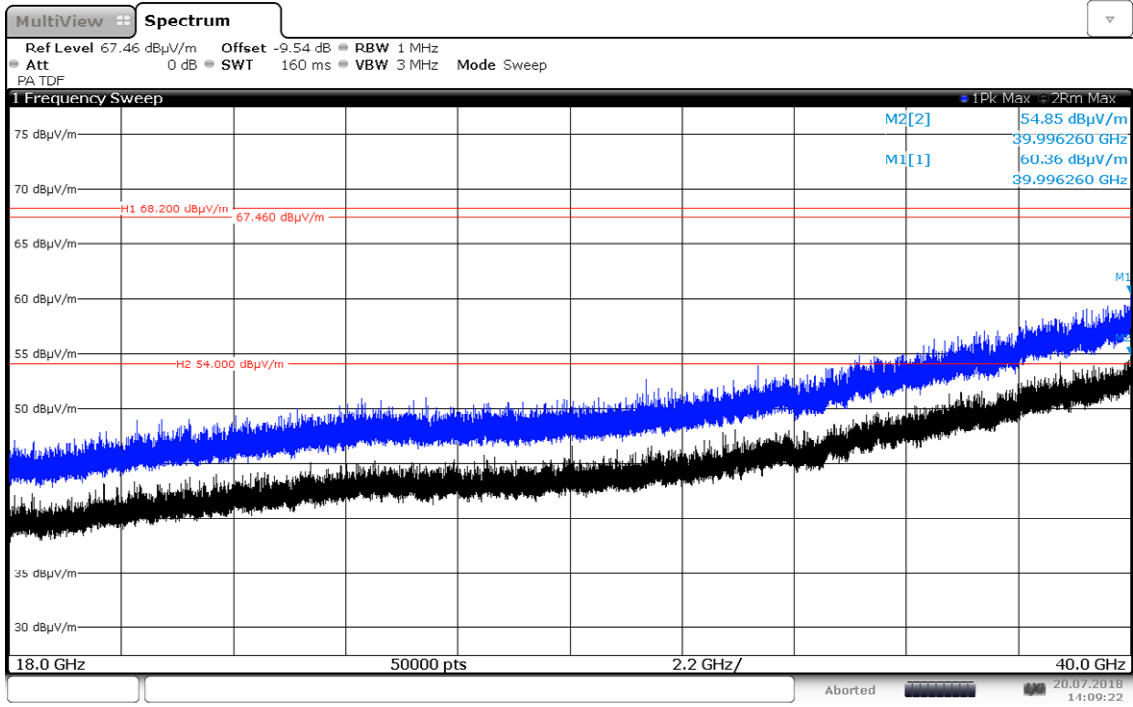
14:04:14 20.07.2018

4.02b_ CCM-IO-ETH-WLAN5 GHz-TX-nMode-B.W20MHz-MCS0-Ch56-19.5dBm



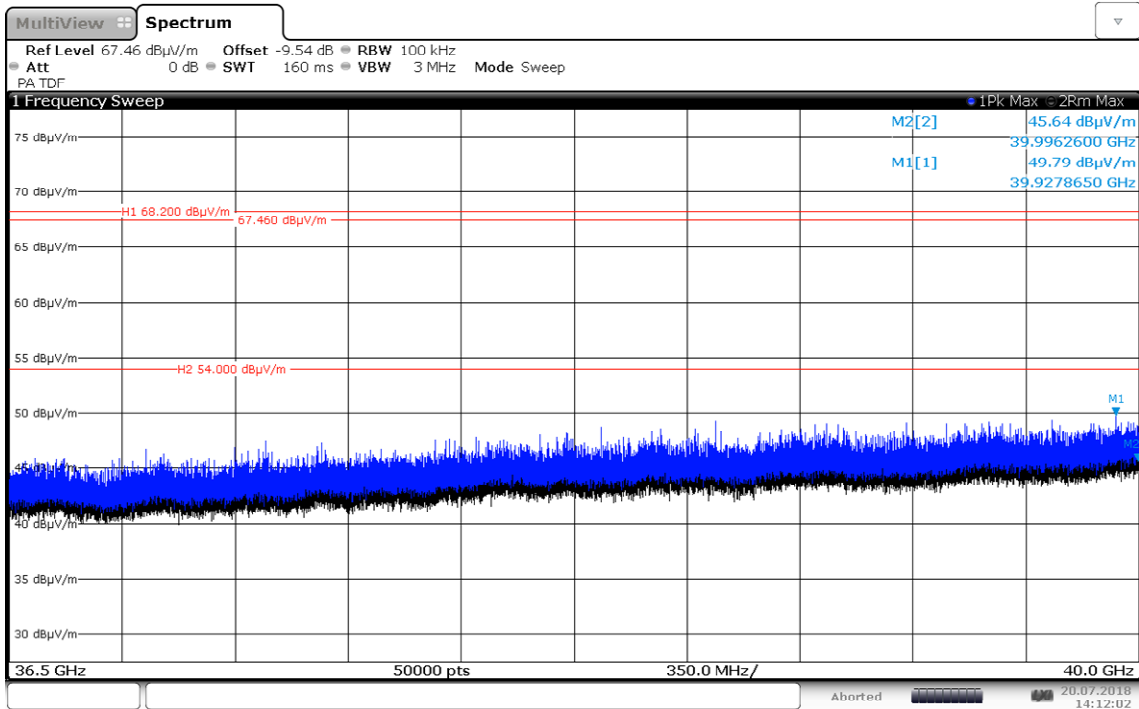
14:01:41 20.07.2018

4.02b_ CCM-IO-ETH-WLAN5 GHz-TX-nMode-B.W20MHz-MCS0-Ch56-19.5dBm_100kHz



14:09:22 20.07.2018

4.03b_ CCM-IO-ETH-WLAN5 GHz-TX-aMode-B.W20MHz-6Mbit-Ch116-19.5dBm



14:12:02 20.07.2018

4.03b_ CCM-IO-ETH-WLAN5 GHz-TX-aMode-B.W20MHz-6Mbit-Ch116-19.5dBm_100kHz

1.8. Radiated Band Edge measurement

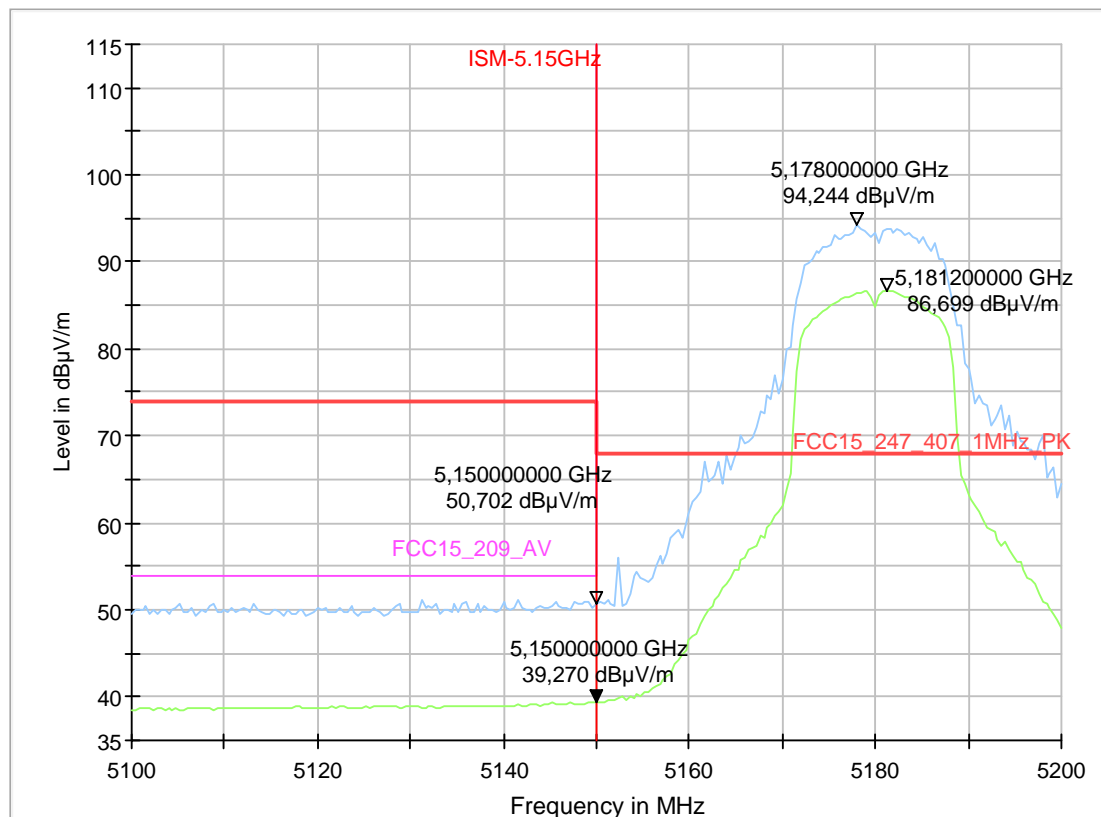
1.8.1. a-mode

9.01_ BE Low-CCM-IO-ETH-TX-aMode-20MHz-6Mbit-Ch36-19.5dBm

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-1-Ch 36 (5180 MHz)-PWR+19.5dBm
Operator Name:	LKu
Environmental Conditions:	Humidity: 40%rH; Temperature: 20°C
Comments	EUT Laying

Full Spectrum

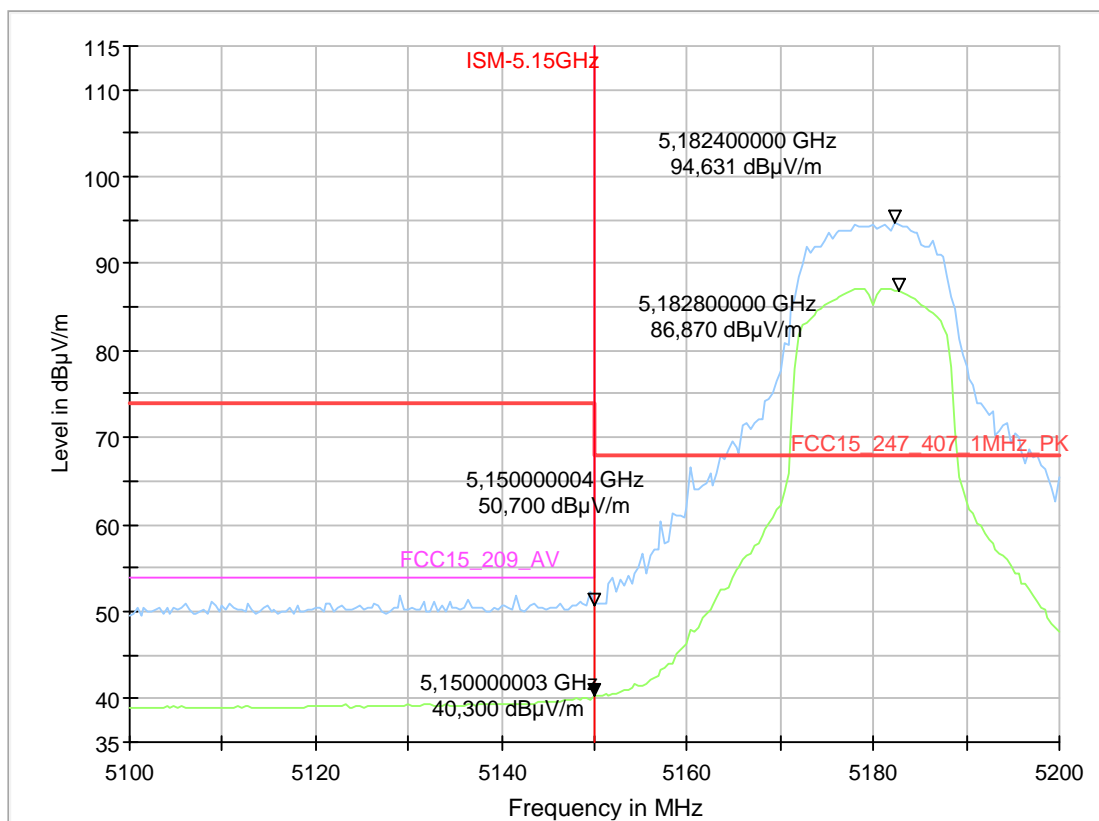


9.01_BE Low-CCM-IO-ETH-TX-aMode-20MHz-6Mbit-Ch36-19.5dBm

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-1-Ch 36 (5180 MHz)-PWR+19.5dBm
Environmental Conditions:	Humidity: 40%rH; Temperature: 20°C
Operator Name:	HEI
Comment:	Stab Antenna Standing

Full Spectrum

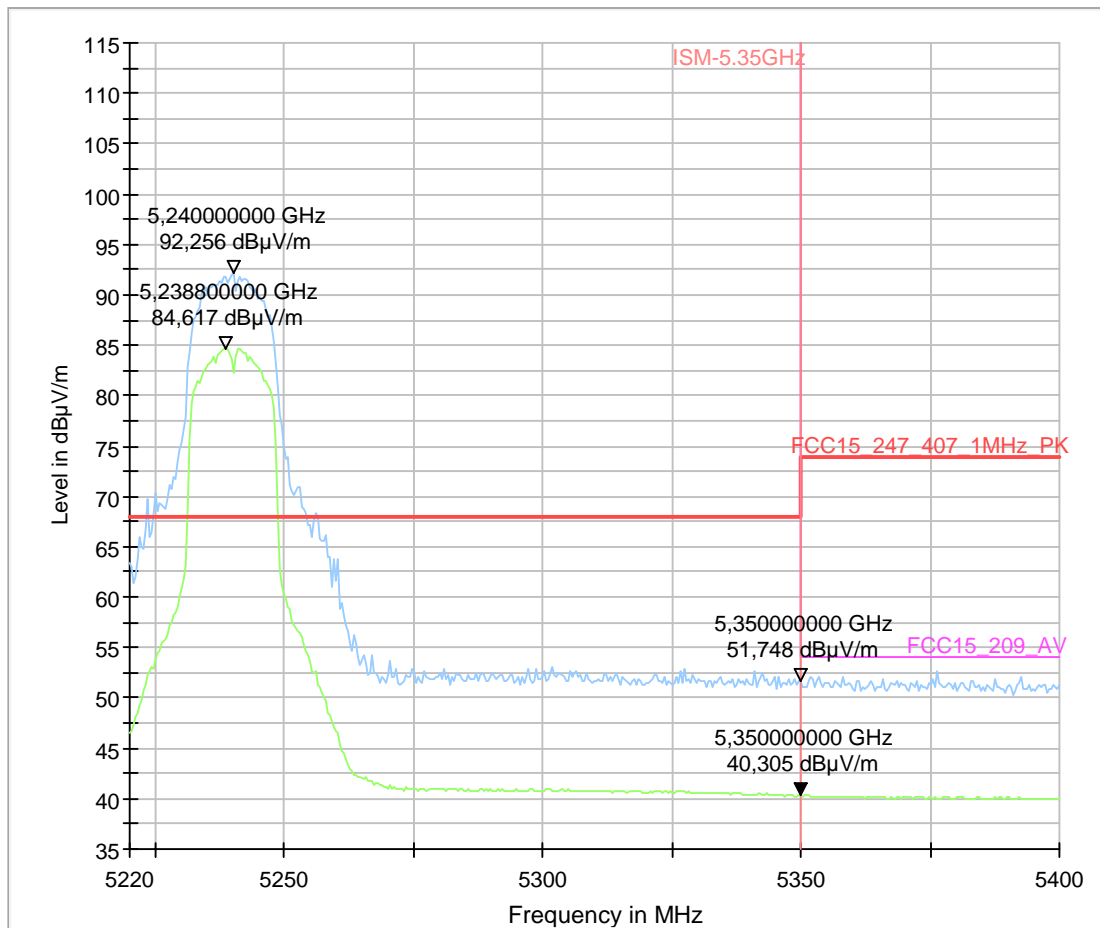


9.02_ BE High-CCM-IO-ETH-TX-aMode-20MHz-6Mbit-Ch48-19.5dBm

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-1-Ch 48 (5240 MHz)-PWR+19.5dBm
Operator Name:	LKu
Environmental Conditions:	Humidity: 40%rH; Temperature: 20°C
Comments	Stab Antenne Laying

Full Spectrum

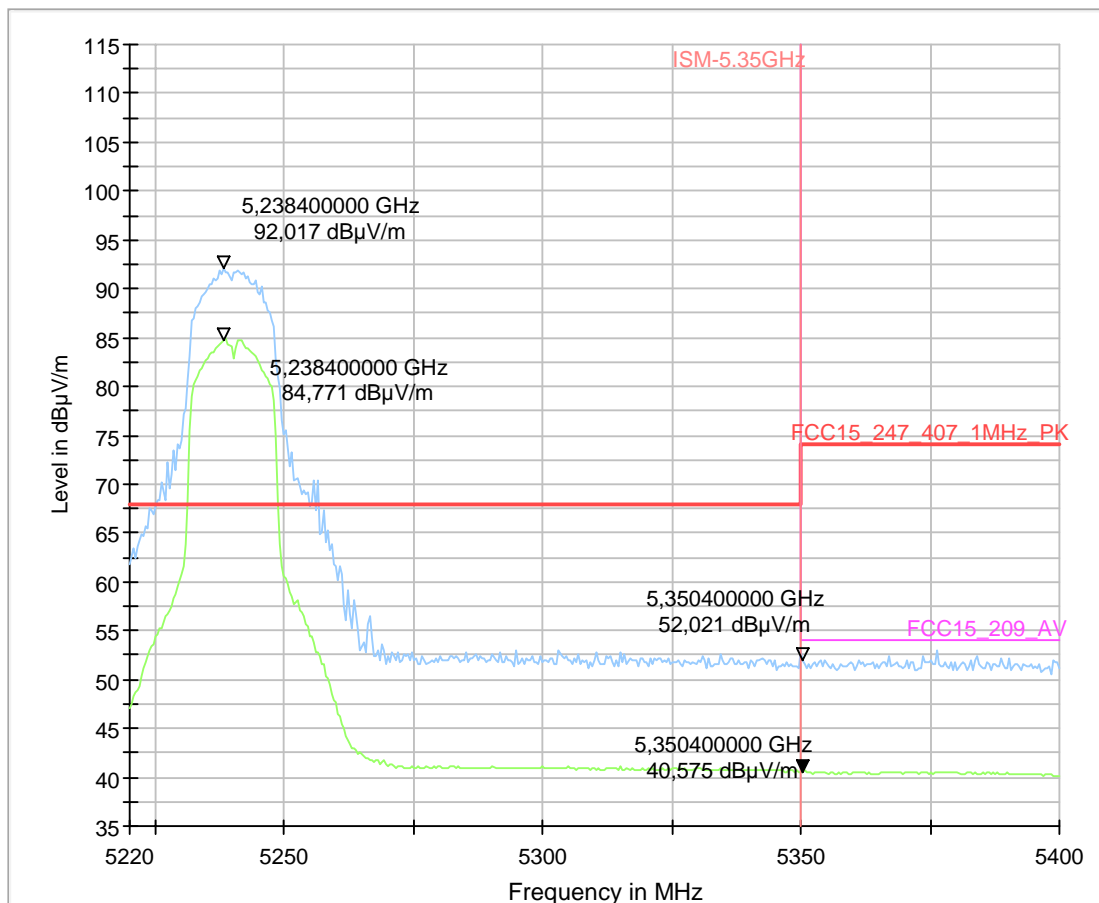


9.02_ BE High-CCM-IO-ETH-TX-aMode-20MHz-6Mbit-Ch48-19.5dBm

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-1-Ch 48 (5240 MHz)- PWR+19.5dBm
Operator Name:	HEI
Environmental Conditions:	Humidity: 40%rH; Temperature: 20°C
Comment:	Stab Antenna Standing

Full Spectrum

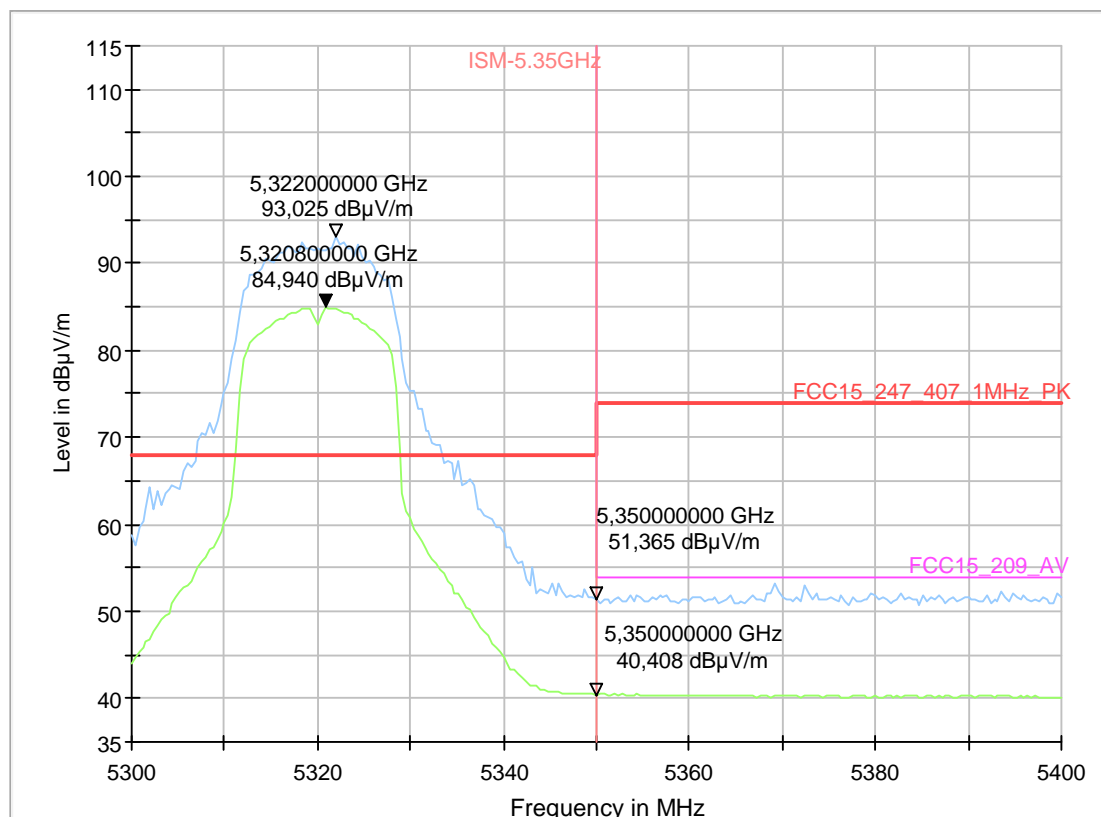


9.04_ BE High-CCM-IO-ETH-TX-aMode-20MHz-6Mbit-Ch64-19.5dBm

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-2A-Ch 64 (5320 MHz)- PWR+19.5dBm
Operator Name:	LKu
Comment:	Humidity: 40%rH; Temperature: 20°C
Comment 2:	Stab Antenna Laying

Full Spectrum

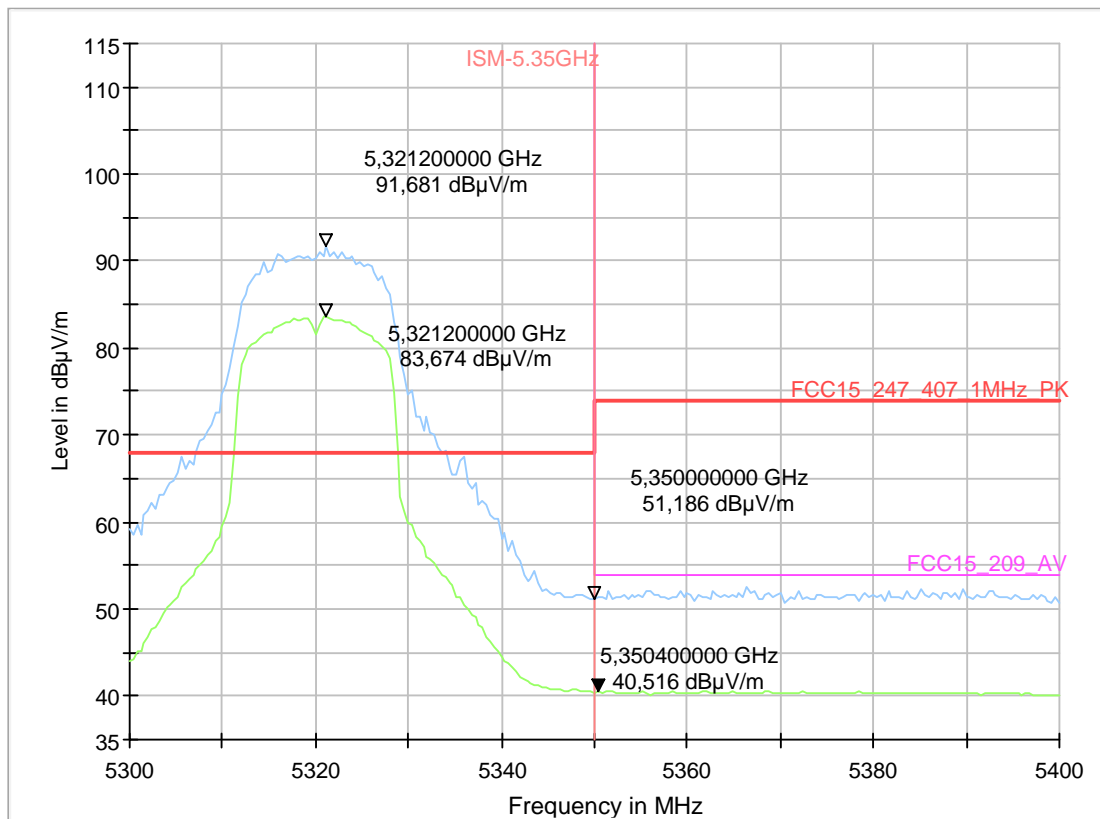


9.04_ BE High-CCM-IO-ETH-TX-aMode-20MHz-6Mbit-Ch64-19.5dBm

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-2A-Ch 64 (5320 MHz)- PWR+19.5dBm
Operator Name:	HEI
Comment:	Humidity: 40%rH; Temperature: 20°C
Comment 2:	Stab Antenna Standing

Full Spectrum

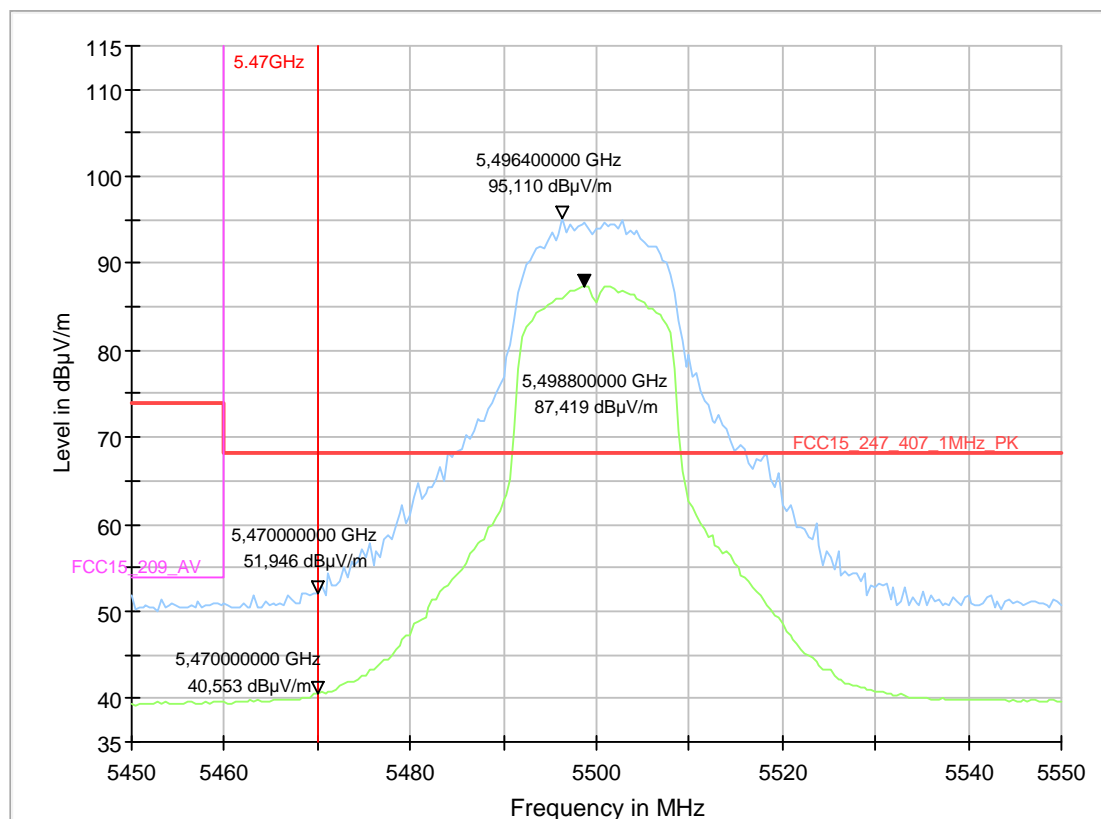


9.05_ BE Low-CCM-IO-ETH-TX-aMode-20MHz-6Mbit-Ch100-19.5dBm

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-2C-Ch 100 (5500 MHz)- PWR+19.5dBm
Operator Name:	LKu
Comment:	Humidity: 41%rH; Temperature: 21°C
Comments	Stab Antenne Laying

Full Spectrum

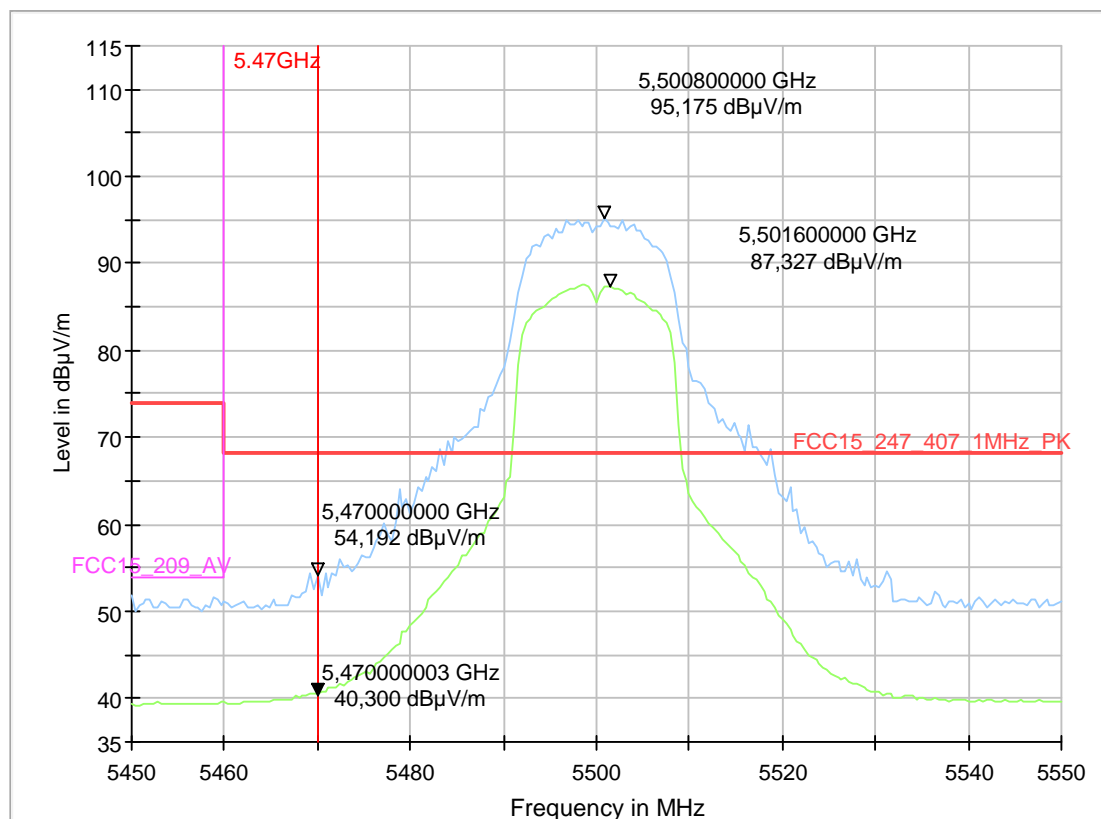


9.05_ BE Low-CCM-IO-ETH-TX-aMode-20MHz-6Mbit-Ch100-19.5dBm

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-2C-Ch 100 (5500 MHz)-PWR+19.5dBm
Operator Name:	HEI
Comment:	Humidity: 41%rH; Temperature: 21°C
Comment:	Stab Antenna Standing

Full Spectrum

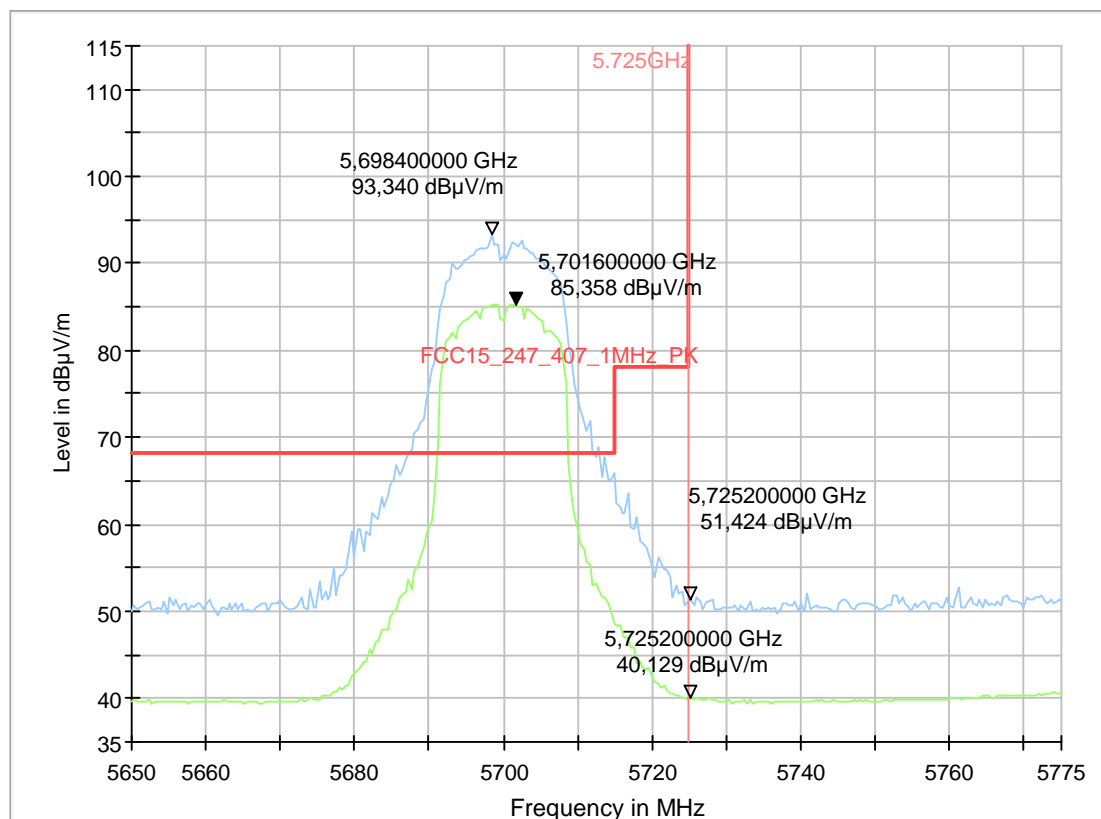


9.06_ BE High-CCM-IO-ETH-TX-aMode-20MHz-6Mbit-Ch140-19.5dBm

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-2C-Ch 140 (5700 MHz)- PWR+19.5dBm
Operator Name:	LKu
Comment:	Humidity: 41%rH; Temperature: 21°C
Comments	Stab Antenne Laying

Full Spectrum

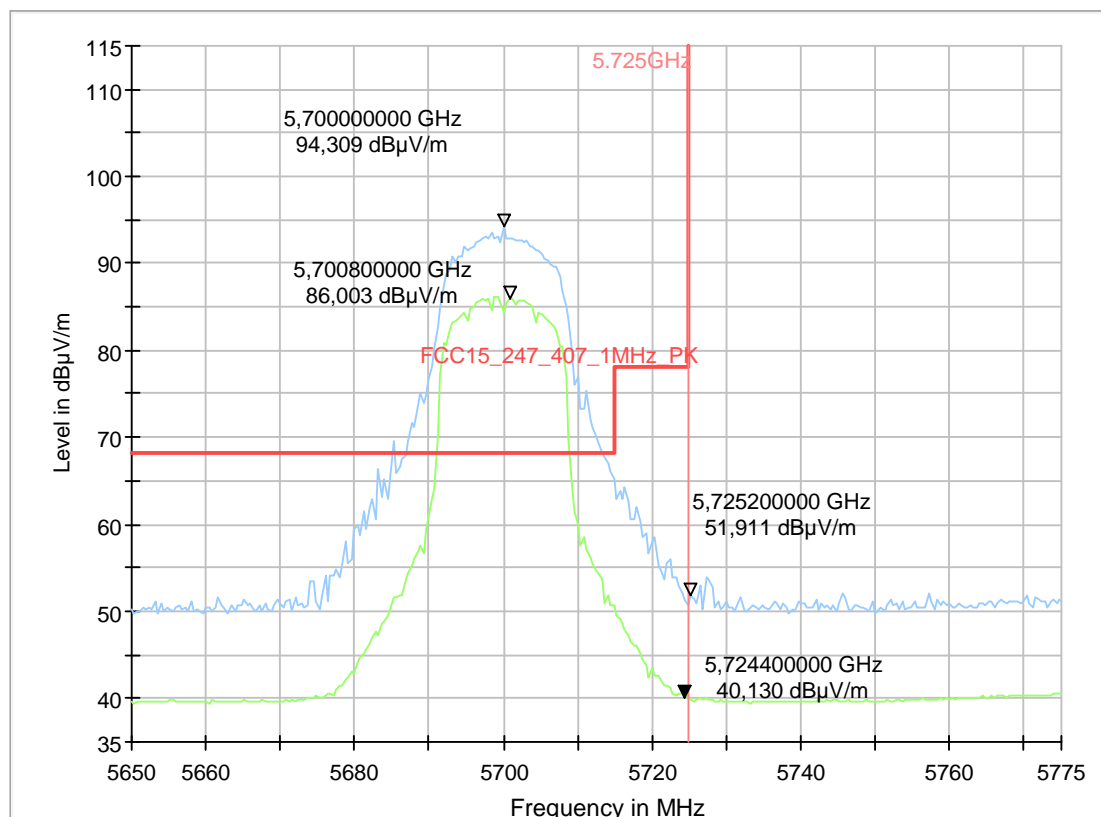


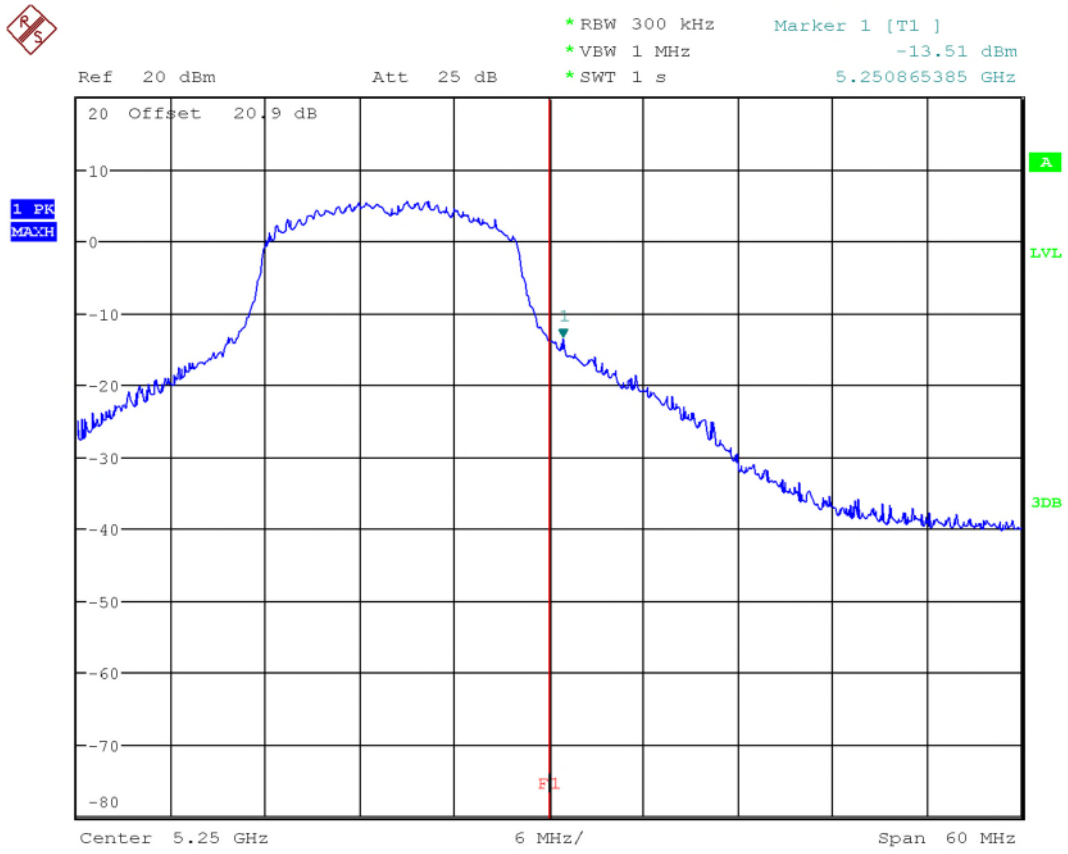
9.06_ BE High-CCM-IO-ETH-TX-aMode-20MHz-6Mbit-Ch140-19.5dBm

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-a Mode-B.W. 20 MHz-6Mbit- U-NII-2C-Ch 140 (5700 MHz)- PWR+19.5dBm
Operator Name:	HEI
Comment:	Humidity: 41%rH; Temperature: 21°C
Comment:	Stab Antenna Standing

Full Spectrum





Date: 18.SEP.2018 13:20:11

30.03_BE_26dB-aMode-20MHz-6Mbit-Ch48-19.5dBm

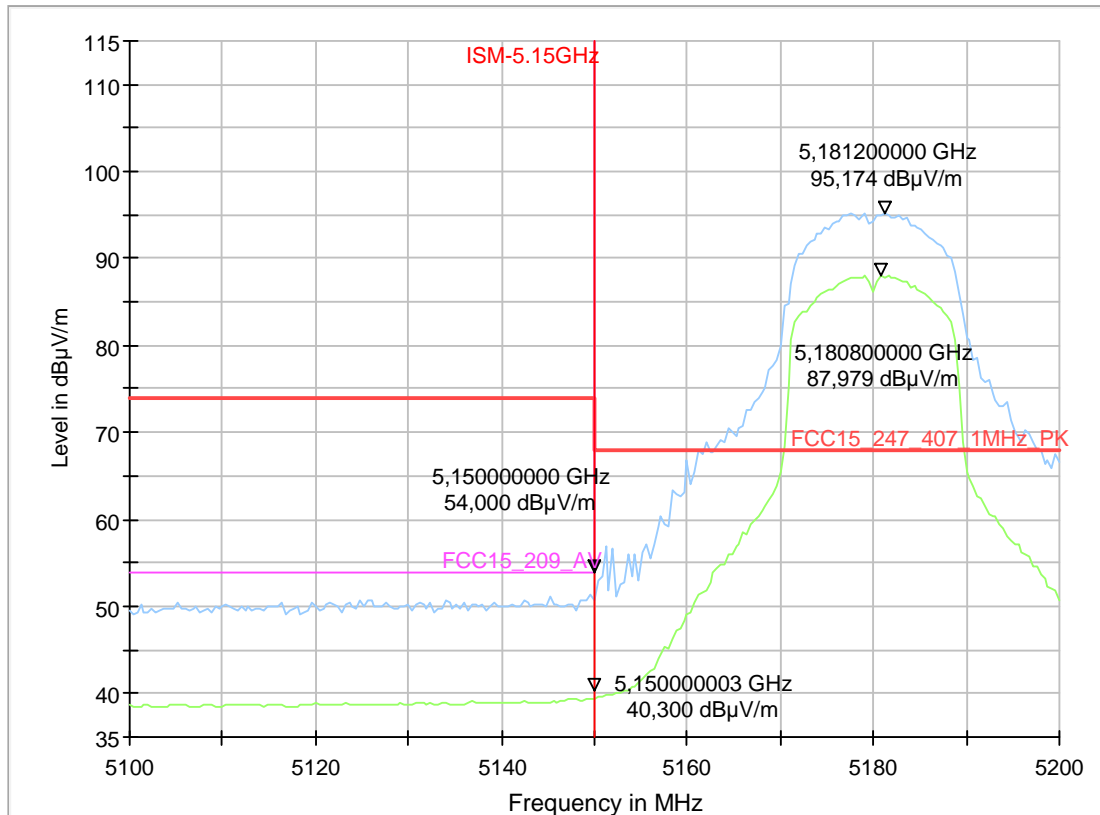
1.8.3. n-mode HT20

9.11_ BE Low-CCM-IO-ETH-TX-nMode-20MHz-MCS0-Ch36-19.5dBm

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-n Mode-B.W. 20 MHz-MCS0- U-NII-1-Ch 36 (5180 MHz)- PWR+19.5dBm
Operator Name:	LKu
Comment:	Humidity: 41%RH; Temperature: 21°C
Comments	Stab Antenne Laying

Full Spectrum

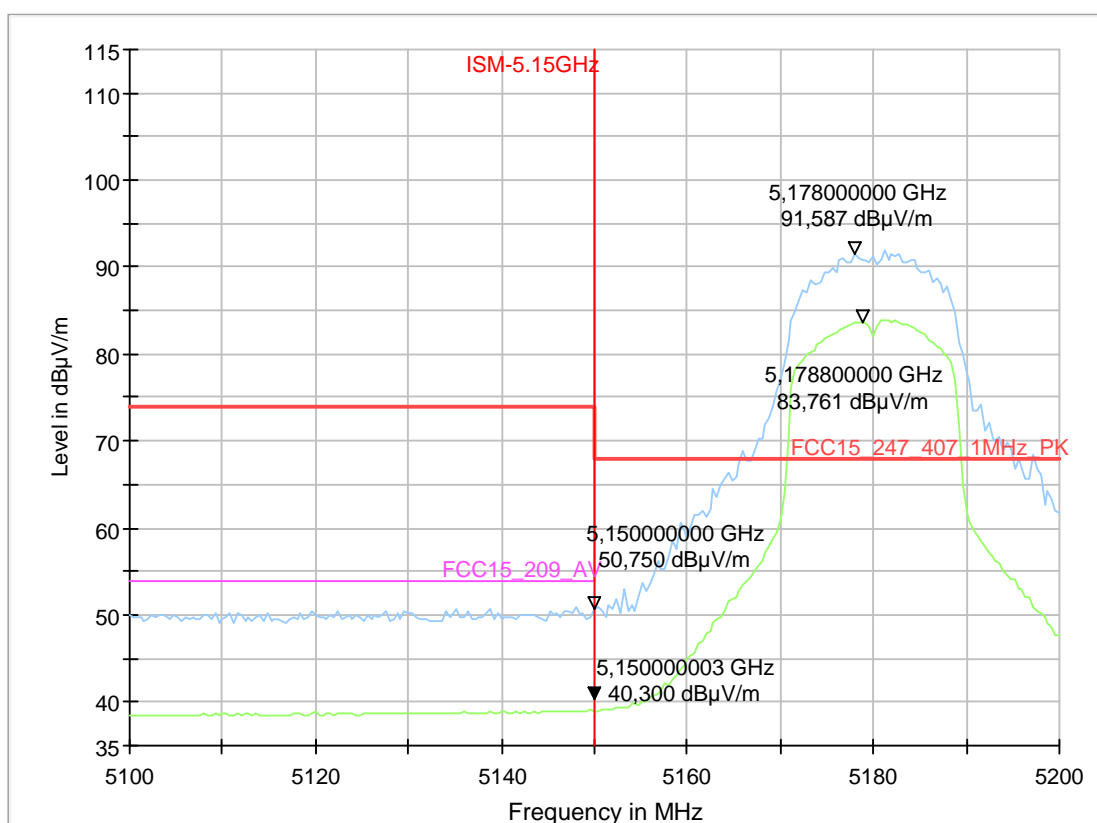


9.11_ BE Low-CCM-IO-ETH-TX-nMode-20MHz-MCS0-Ch36-19.5dBm

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-n Mode-B.W. 20 MHz-MCS0- U-NII-1-Ch 36 (5180 MHz)-PWR+19.5dBm
Operator Name:	Klv
Environment Conditions:	Humidity: 41%rH; Temperature: 21°C
Comments	Stab Antenne Standing

Full Spectrum

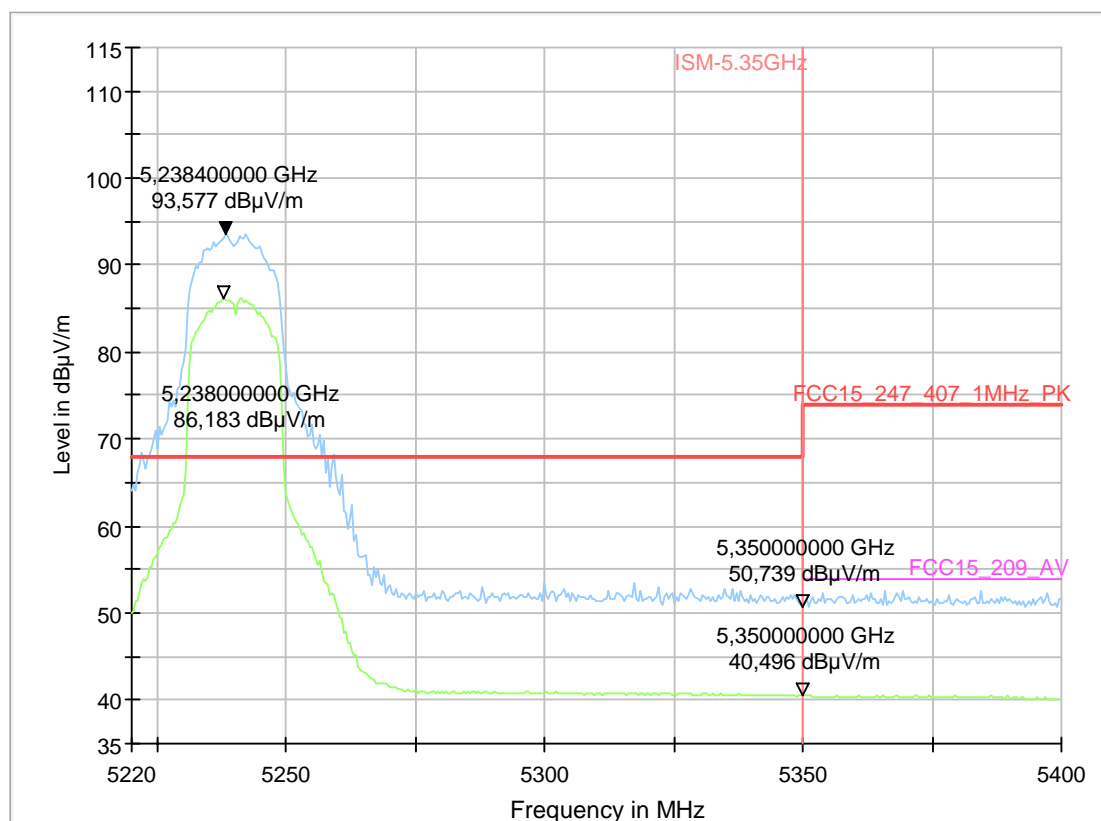


9.12_ BE High-CCM-IO-ETH-TX-nMode-20MHz-MCS0-Ch48-19.5dBm

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-n Mode-B.W. 20 MHz-MCS0- U-NII-1-Ch 48 (5240 MHz)- PWR+19.5dBm
Operator Name:	LKu
Comment:	Humidity: 41%rH; Temperature: 21°C
Comments	Stab Antenne Laying

Full Spectrum

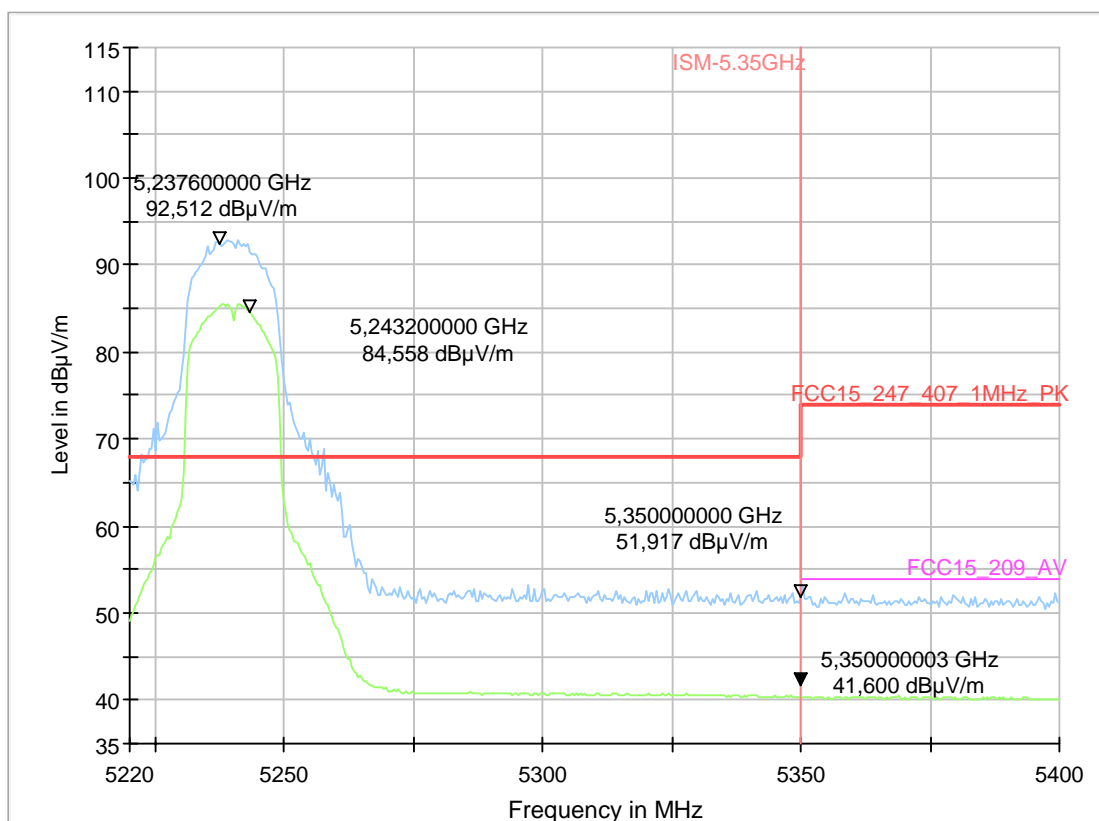


9.12_ BE High-CCM-IO-ETH-TX-nMode-20MHz-MCS0-Ch48-19.5dBm

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-n Mode-B.W. 20 MHz-MCS0- U-NII-1-Ch 48 (5240 MHz)- PWR+19.5dBm
Operator Name:	Klv
Environment Conditions:	Humidity: 41%rH; Temperature: 21°C
Comments	Stab Antenne Standing

Full Spectrum

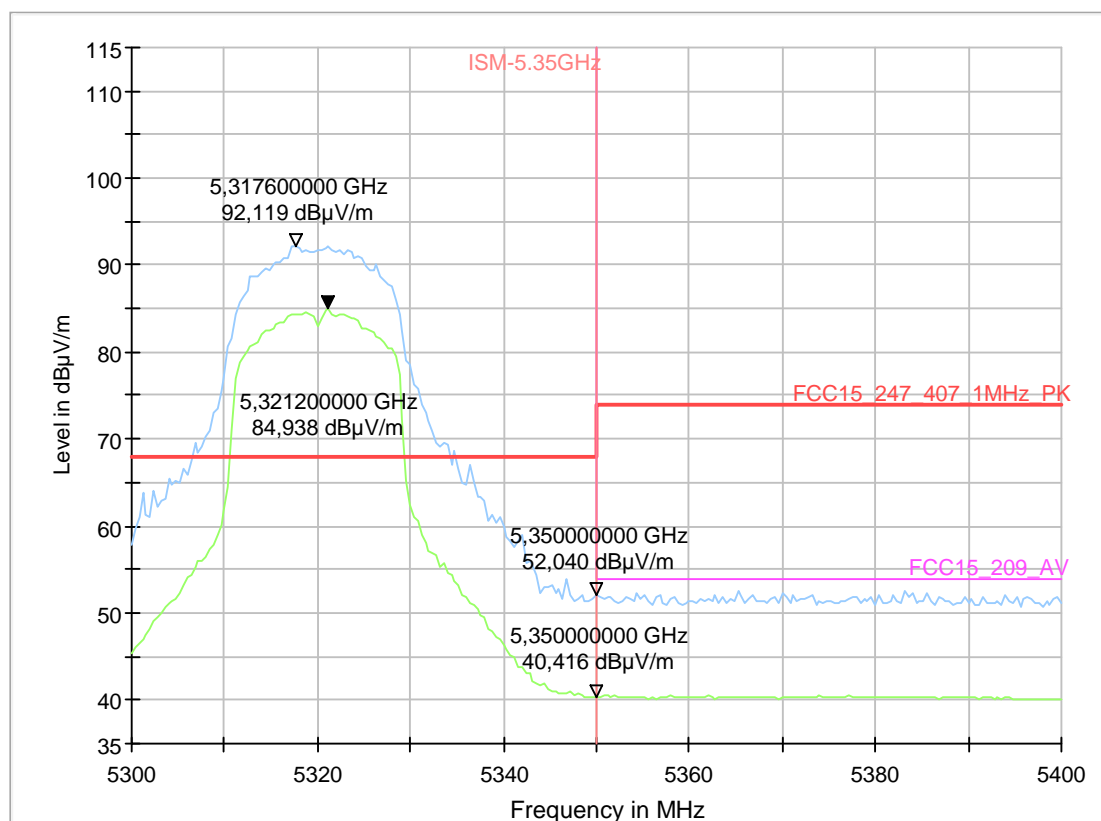


9.14_ BE High-CCM-IO-ETH-nMode-20MHz-MCS0-Ch64-19.5dBm

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-n Mode-B.W. 20 MHz-MCS0- U-NII-2A-Ch 64 (5320 MHz)-PWR+19.5dBm
Operator Name:	LKu
Comment:	Humidity: 40%rH; Temperature: 20°C
Comments	Stab Antenne Laying

Full Spectrum

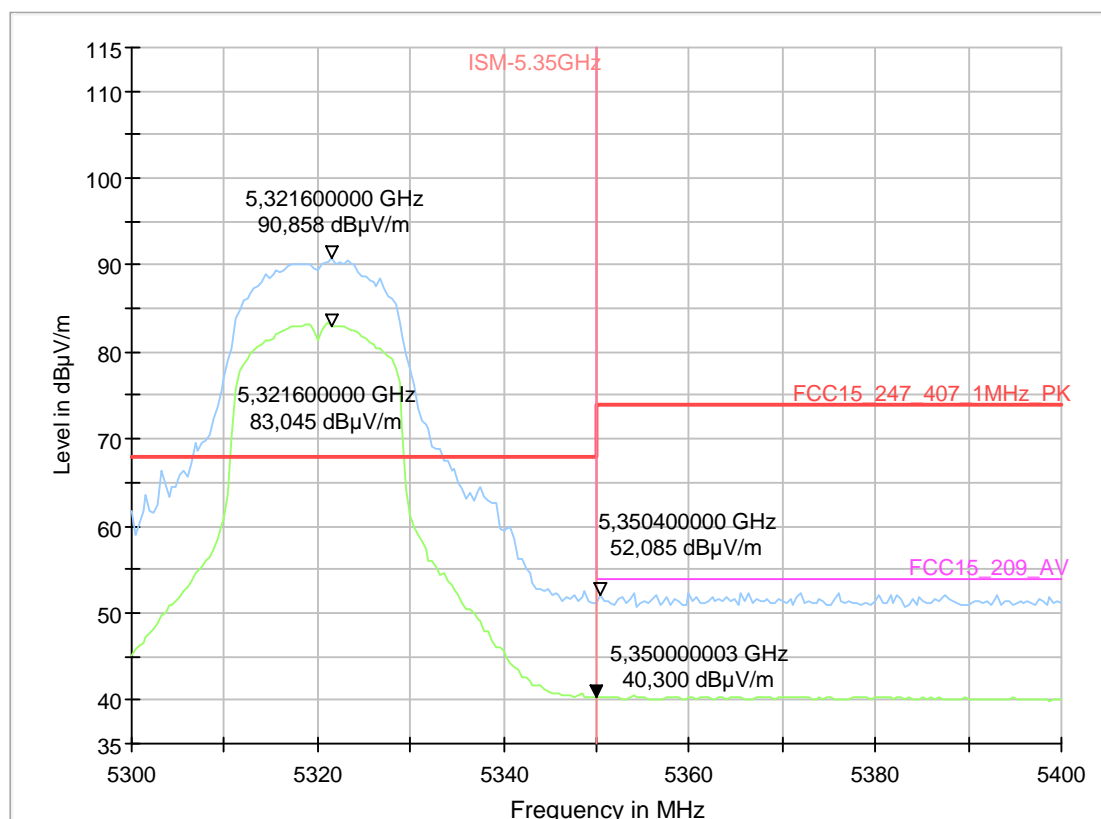


9.14_ BE High-CCM-IO-ETH-nMode-20MHz-MCS0-Ch64-19.5dBm

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-n Mode-B.W. 20 MHz-MCS0- U-NII-2A-Ch 64 (5320 MHz)-PWR+19.5dBm
Operator Name:	Klv
Environment Conditions:	Humidity: 40%rH; Temperature: 20°C
Comments	Stab Antenne Standing

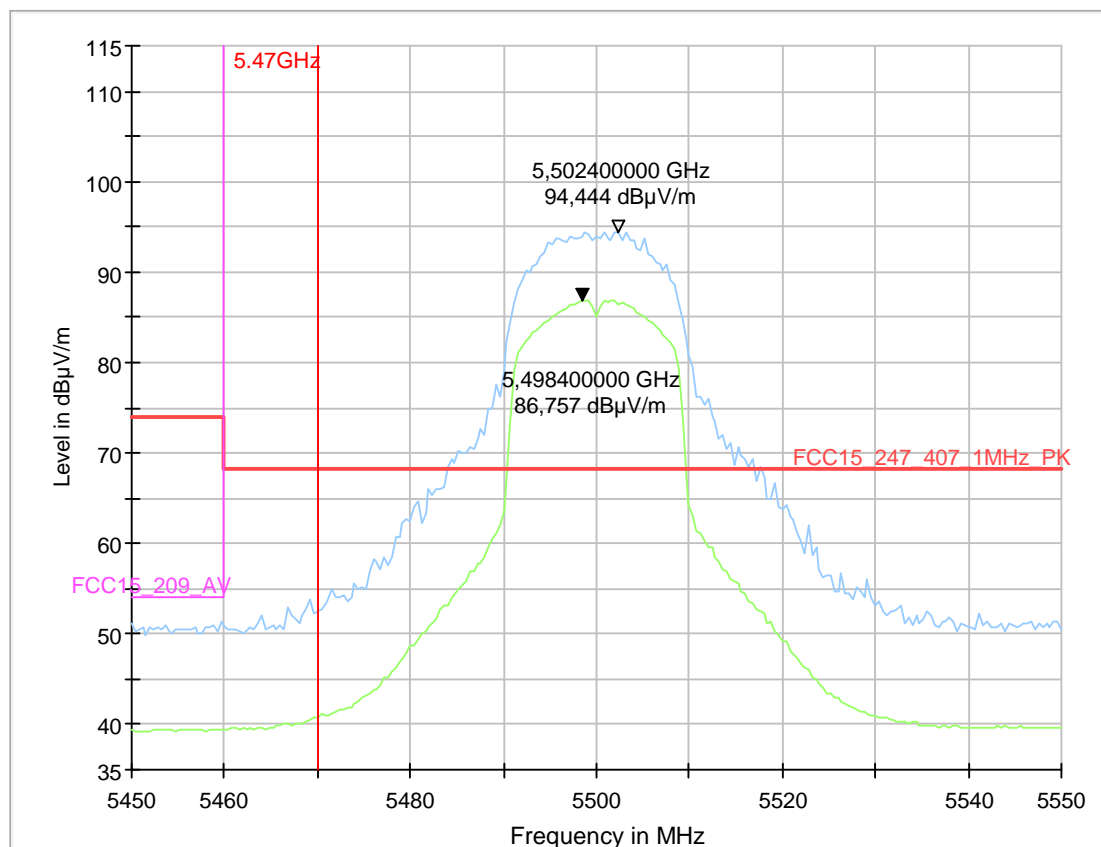
Full Spectrum



9.15_ BE Low-CCM-IO-ETH-nMode-20MHz-MCS0-Ch100-19.5dBm

Common Information

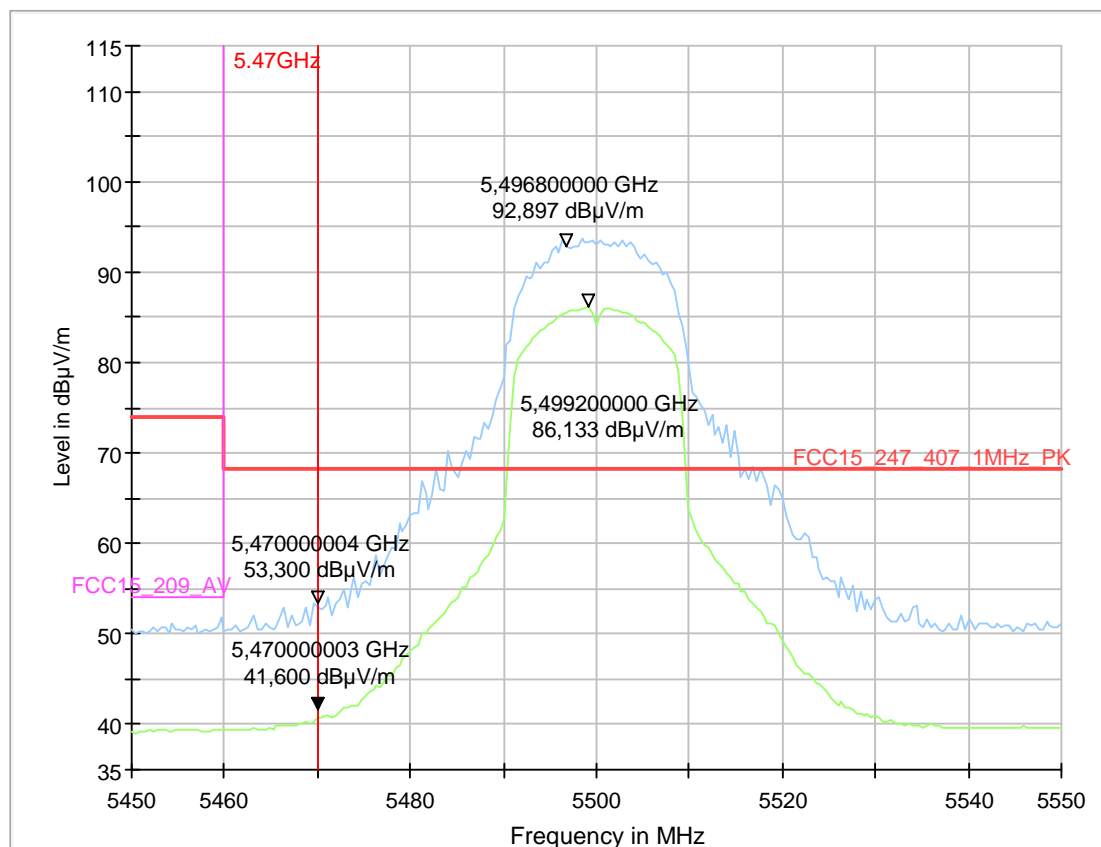
Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-n Mode-B.W. 20 MHz-MCS0- U-NII-2C-Ch 100 (5500 MHz)-PWR+19.5dBm
Operator Name:	Klv
Environment Conditions:	Humidity: 40%rH; Temperature: 20°C
Comments	Stab Antenne Laying



9.15_ BE Low-CCM-IO-ETH-nMode-20MHz-MCS0-Ch100-19.5dBm

Common Information

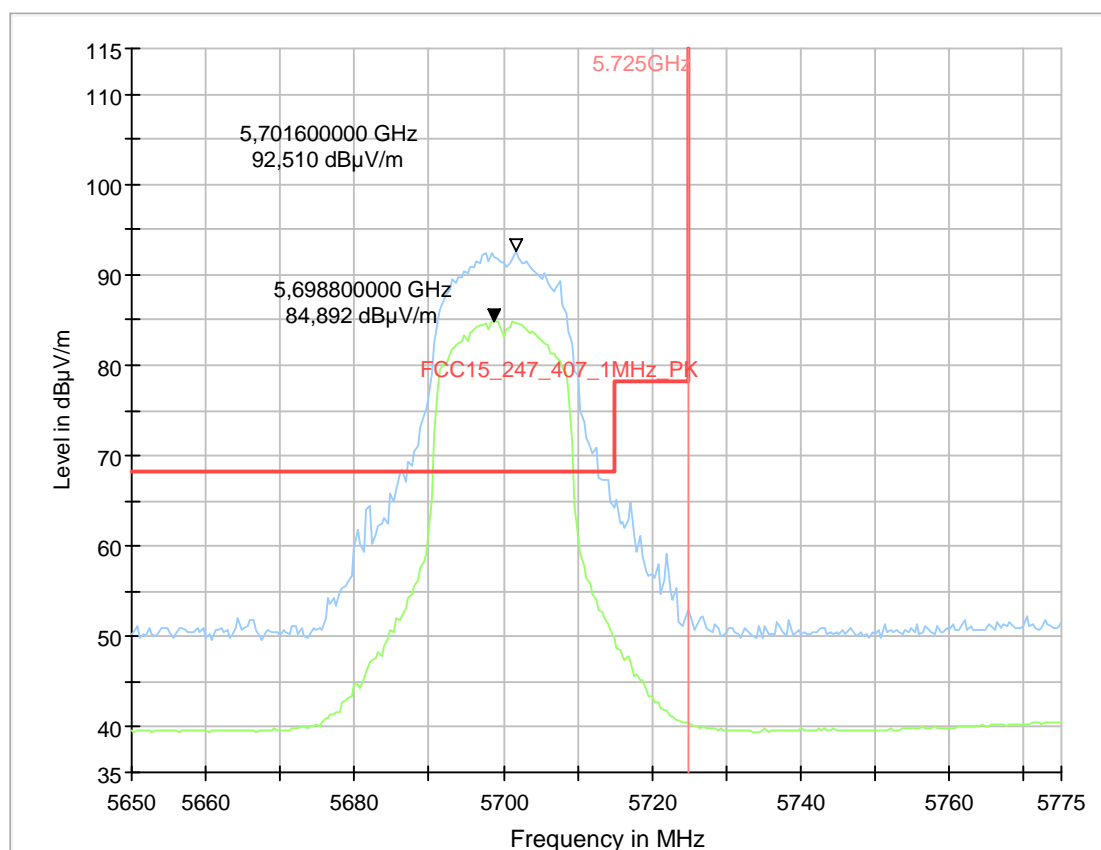
Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-n Mode-B.W. 20 MHz-MCS0- U-NII-2C-Ch 100 (5500 MHz)-PWR+19.5dBm
Operator Name:	Klv
Environment Conditions:	Humidity: 40%rH; Temperature: 20°C
Comments	Stab Antenne Laying



9.16_ BE High-CCM-IO-ETH-nMode-20MHz-MCS0-Ch140-19.5dBm

Common Information

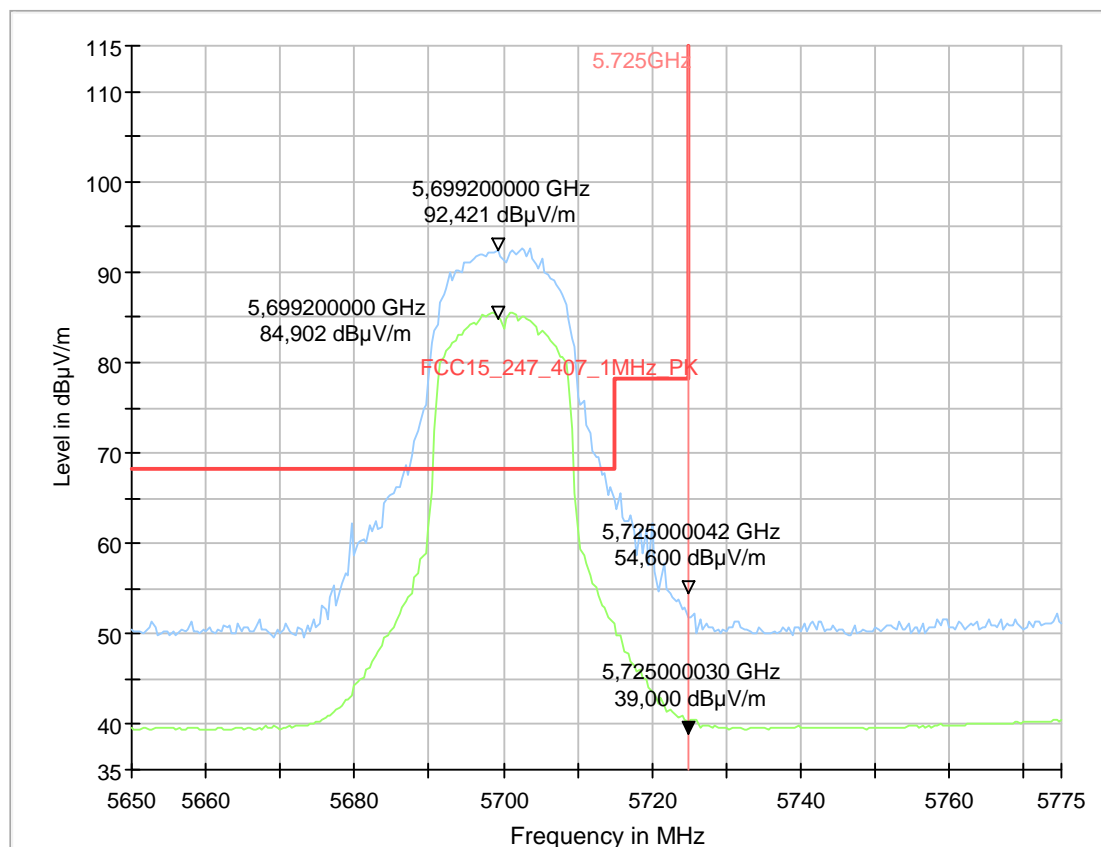
Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-n Mode-B.W. 20 MHz-MCS0- U-NII-2C-Ch 140 (5700 MHz)-PWR+19.5dBm
Operator Name:	Klv
Environment Conditions:	Humidity: 40%rH; Temperature: 20°C
Comments	Stab Antenne Laying



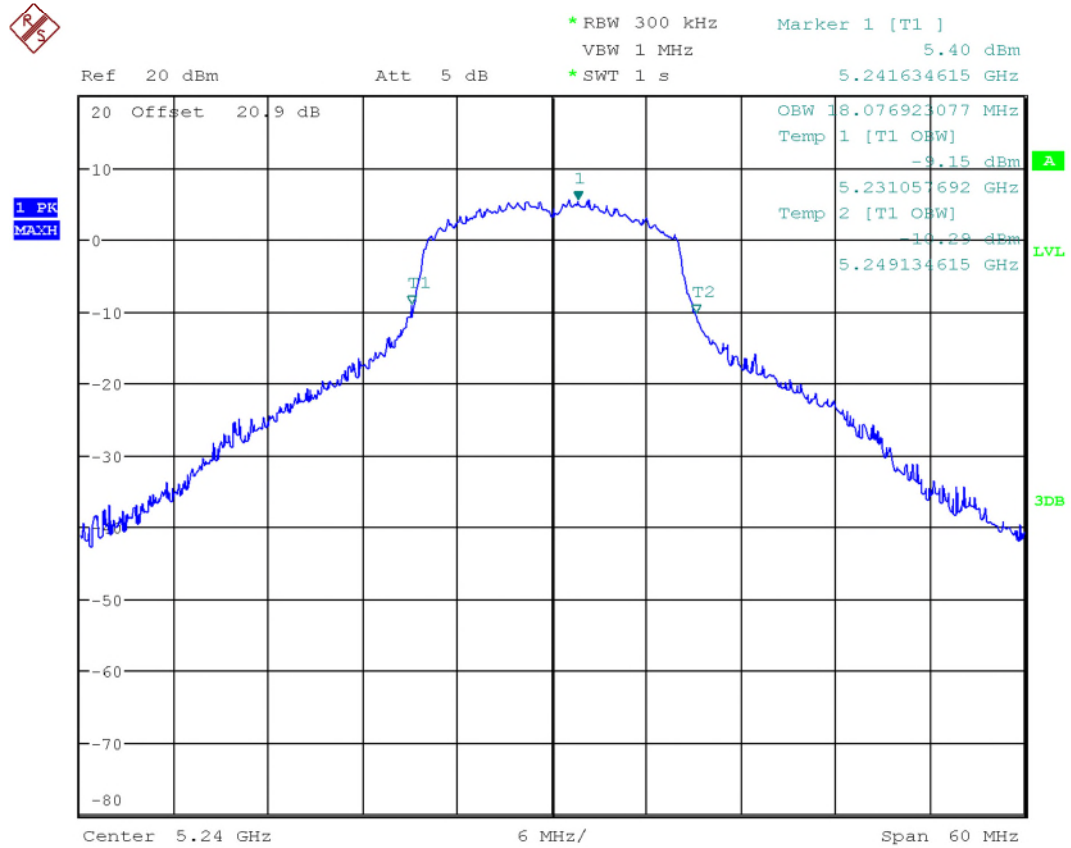
9.16 _ BE High-CCM-IO-ETH-nMode-20MHz-MCS0-Ch140-19.5dB

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-n Mode-B.W. 20 MHz-MCS0- U-NII-2C-Ch 140 (5700 MHz)-PWR+19.5dBm
Operator Name:	Klv
Environment Conditions:	Humidity: 40%rH; Temperature: 20°C
Comments	Stab Antenne Standing

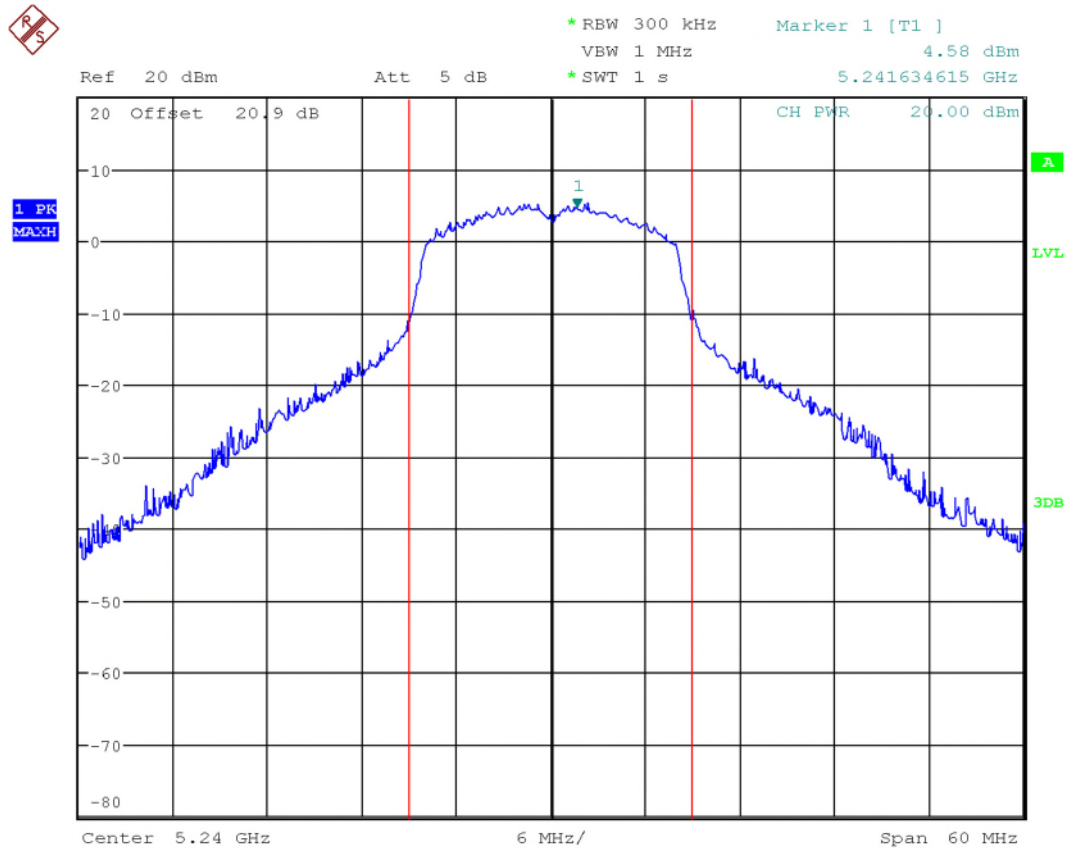


1.8.4. n-mode HT20 ISED Requirement



Date: 18.SEP.2018 14:35:05

30.11_BE_OCBW-nMode-20MHz-MCS0-Ch48-19.5dBm



Date: 18.SEP.2018 14:35:49

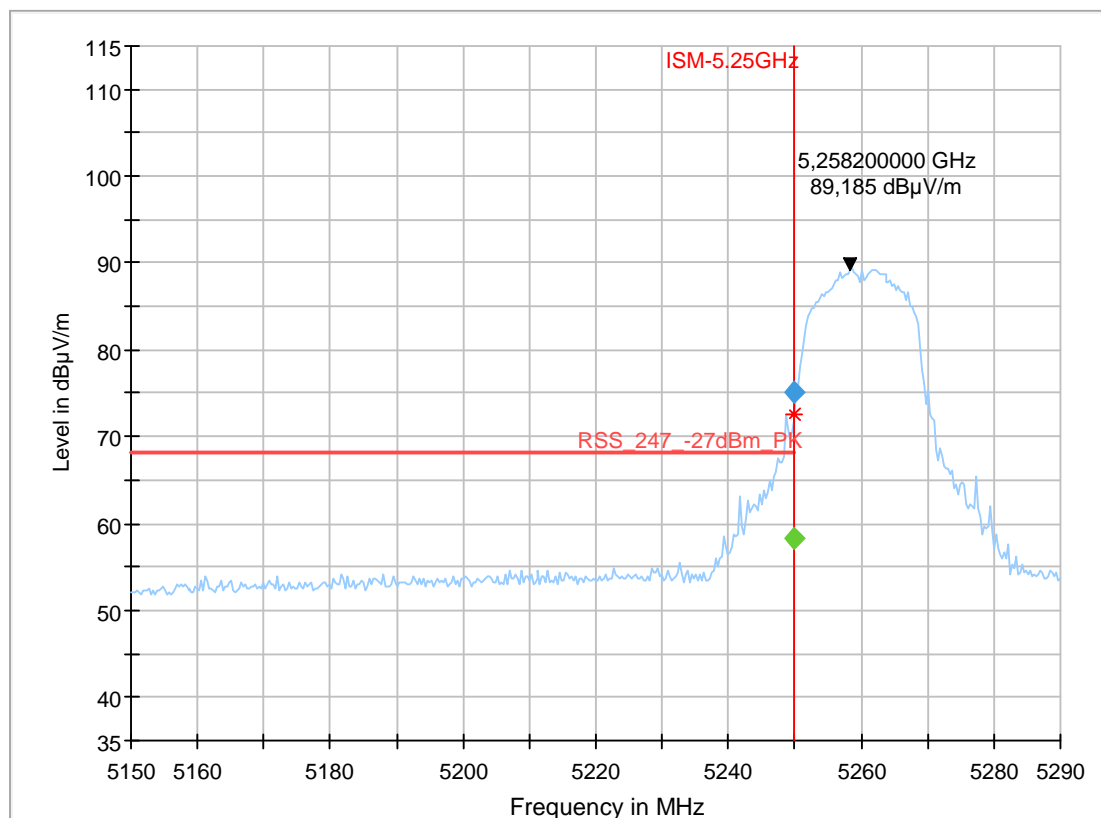
30.12_BE_CHPWR-nMode-20MHz-MCS0-Ch48-19.5dBm

9.13a_ BE Low-CCM-IO-ETH-nMode-20MHz-MCS0-Ch52-19.5dBm

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-n Mode-B.W. 20 MHz-MCS0- U-NII-2A-Ch 52 (5280 MHz)-PWR+19.5dBm
Operator Name:	Klv
Environment Conditions:	Humidity: 40%rH; Temperature: 20°C
Comments	EUT Standing

Full Spectrum



Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Limit (dBµV/m)	Margi n (dB)	Meas . Time	Bandwid th (kHz)	Heigh t (cm)	Pol	Azimut h (deg)	Elevatio n (deg)
5249.850000	---	58.29	---	---	100.0	1000.000	155.0	H	274.0	0.0
5249.850000	75.16	---	68.20	-6.96	100.0	1000.000	155.0	H	274.0	0.0

9.13b_ BE Low-CCM-IO-ETH-nMode-20MHz-MCS0-Ch52-19.5dBm

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Software Version:	#Ver
Operation mode:	Continuous TX-n Mode-B.W. 20 MHz-MCS0- U-NII-2A-Ch 52 (5280 MHz)-PWR+19.5dBm
Operator Name:	Klv
Environment Conditions:	Humidity: 40%rH; Temperature: 20°C

Full Spectrum

