

Annex I



This test report annex is electronically signed and valid without handwritten signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

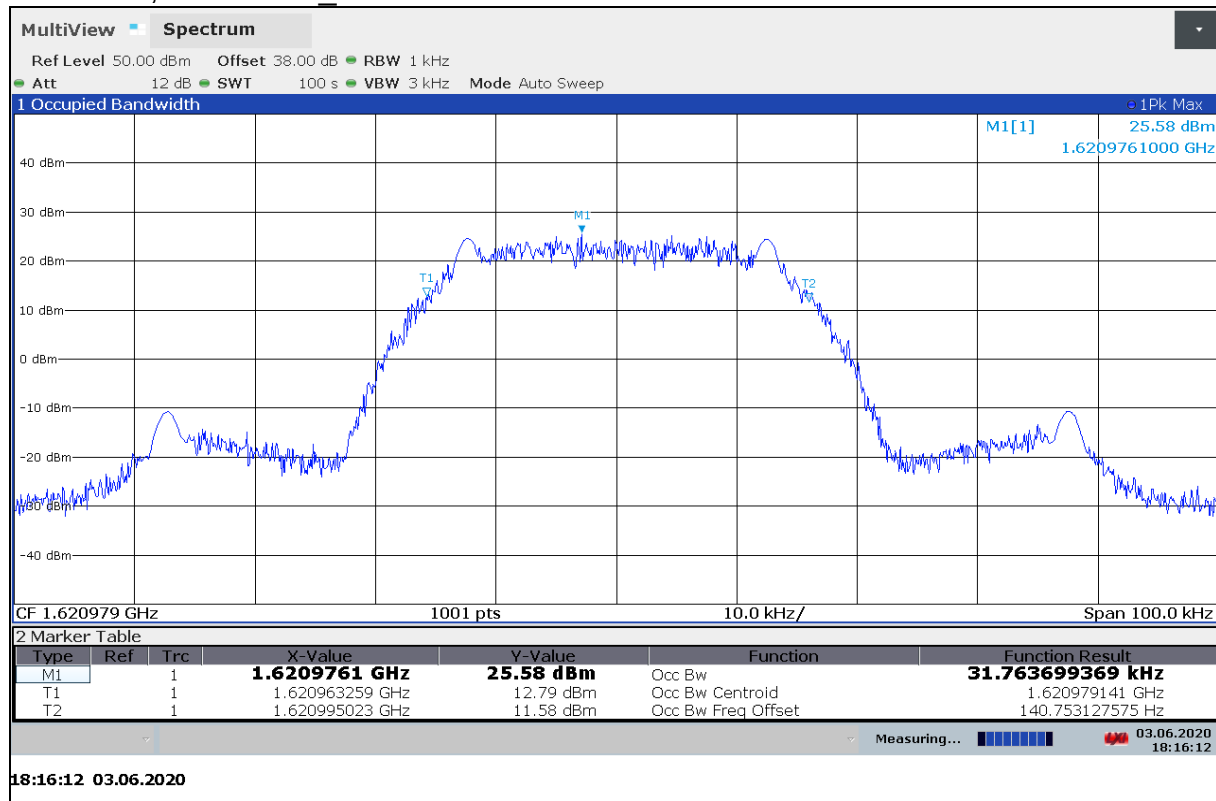
Test report annex authorized:



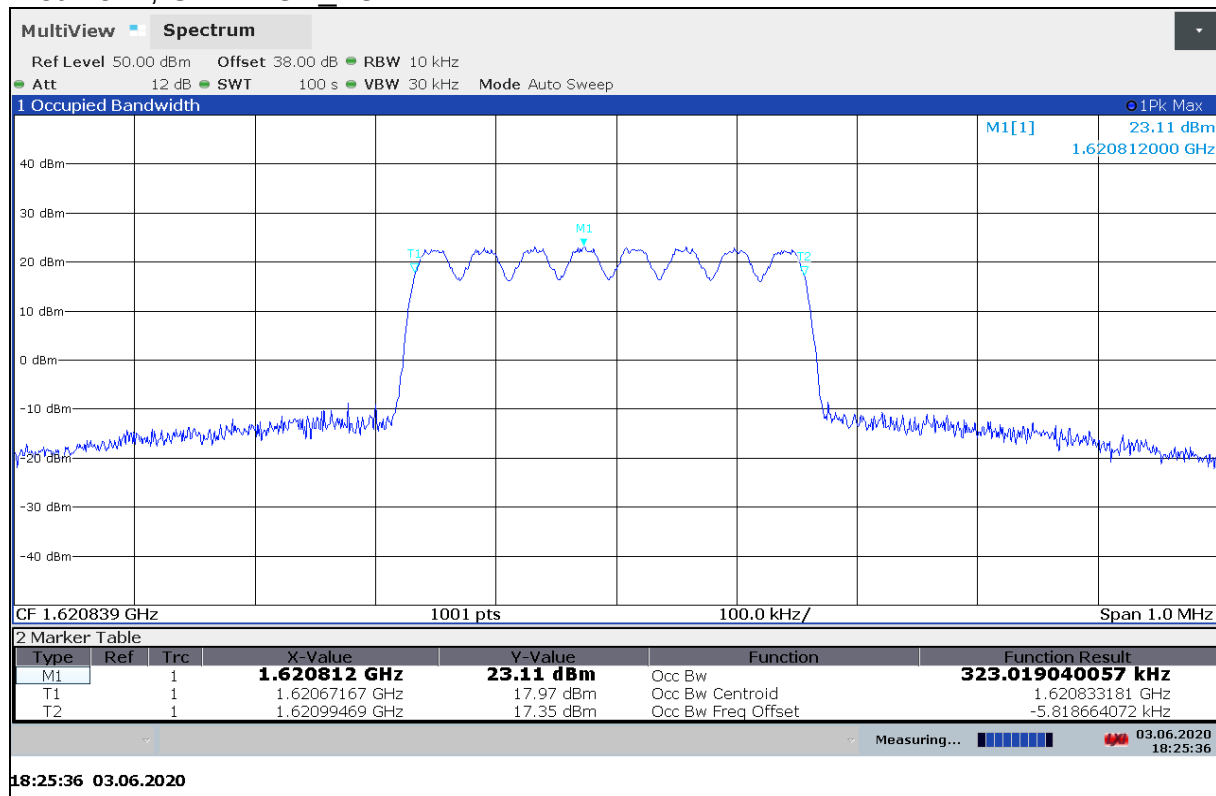
cn=Meheza Walla, o=CTC advanced
GmbH, ou=WAL-200806,
email=meheza.walla@ctcadvanced.c
om, c=DE
2020.08.07 16:20:41 +02'00'

Meheza Walla
Lab Manager
Radio Communications & EMC

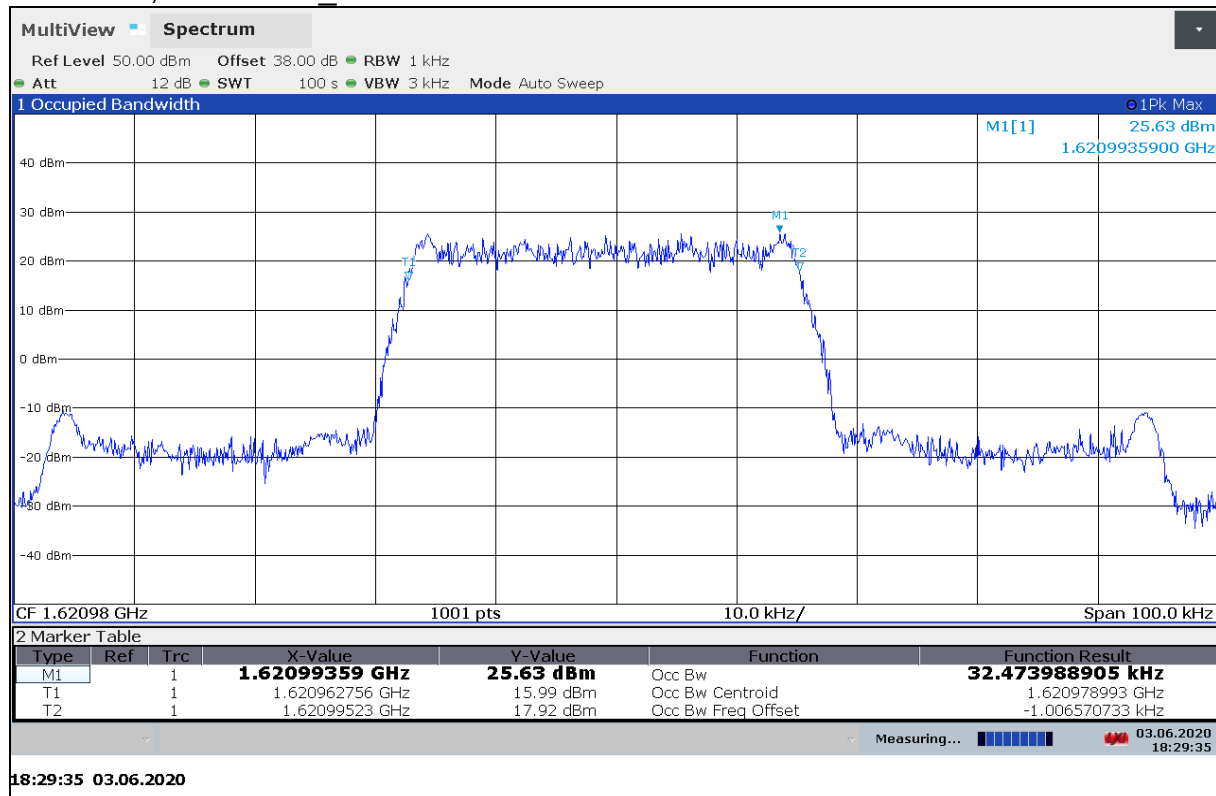
Plot No. 1, OBW TCH_B1



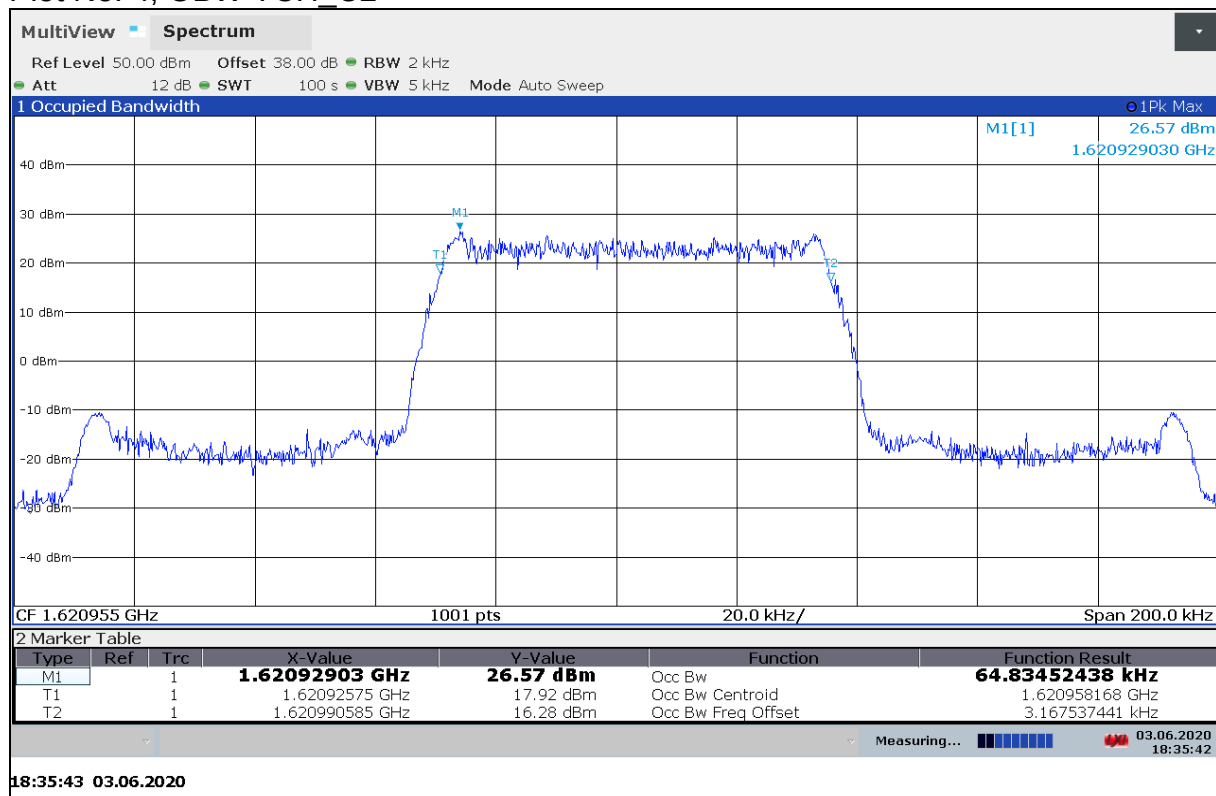
Plot No. 2, OBW TCH_B8



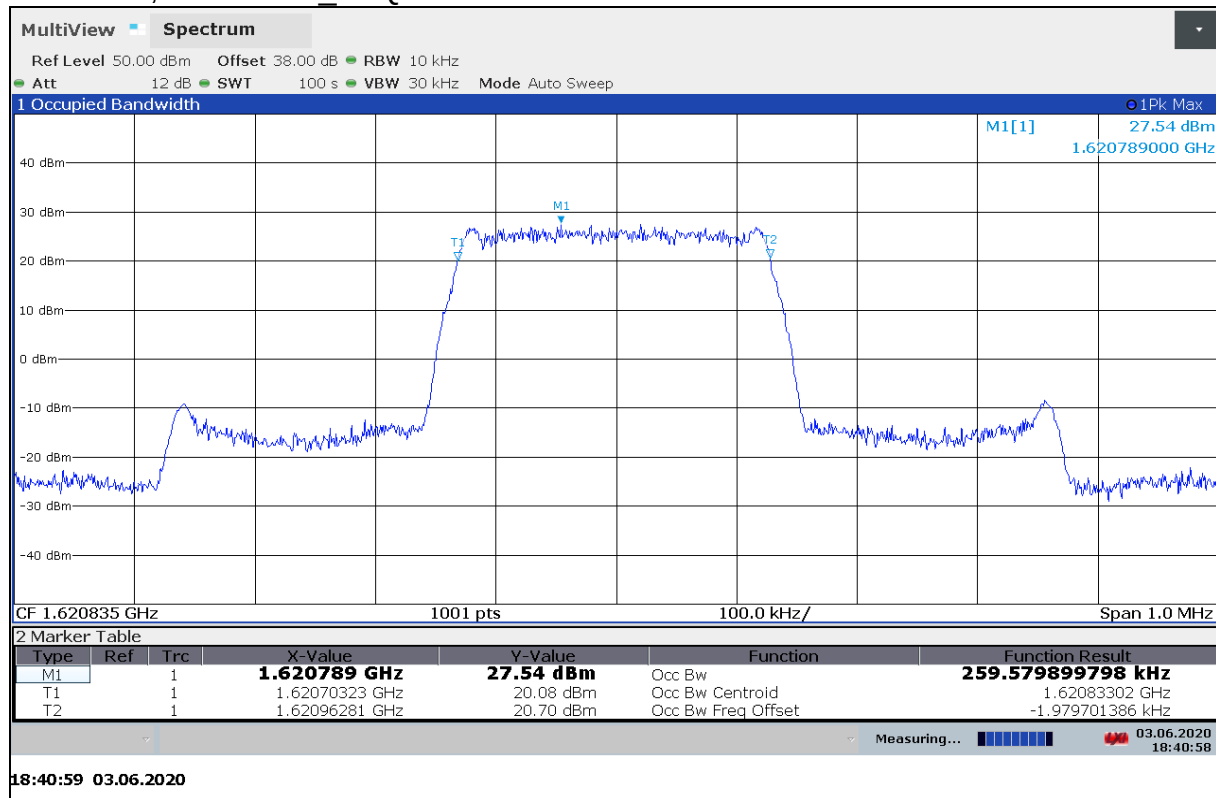
Plot No. 3, OBW TCH_C1



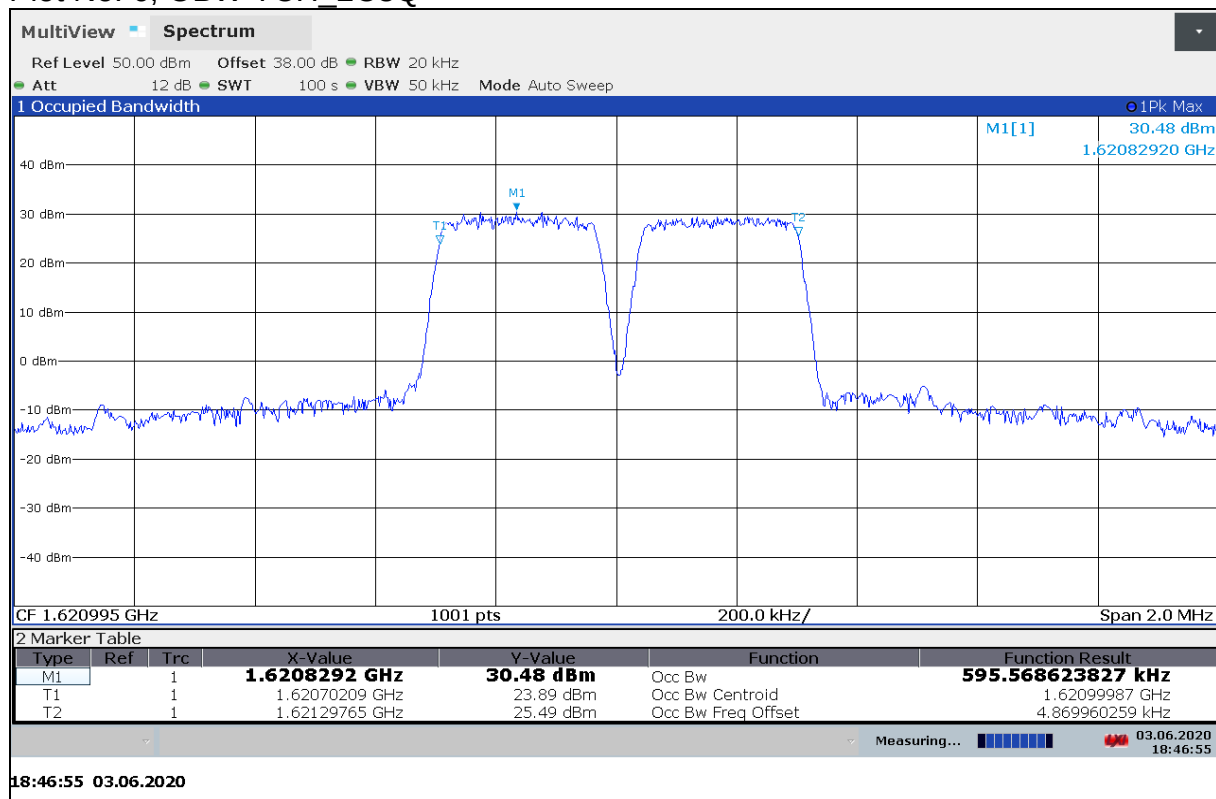
Plot No. 4, OBW TCH_C2



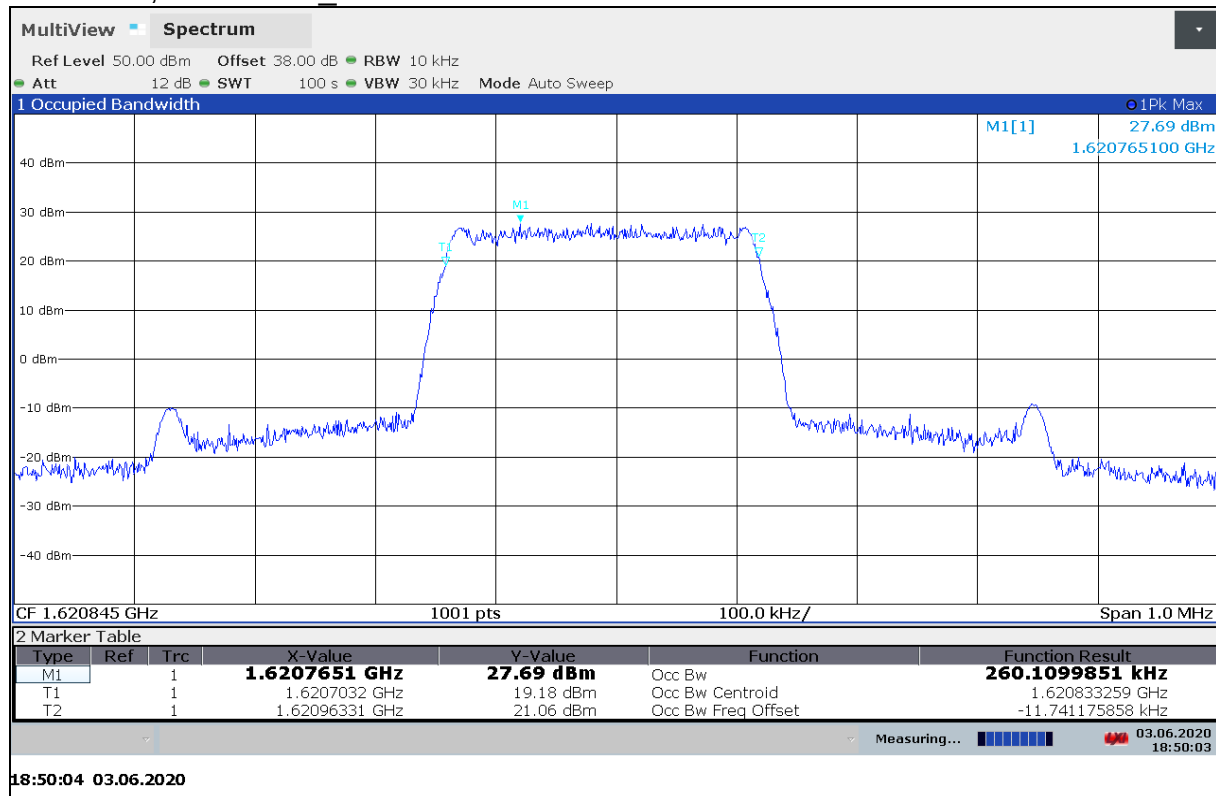
Plot No. 5, OBW TCH_C8Q



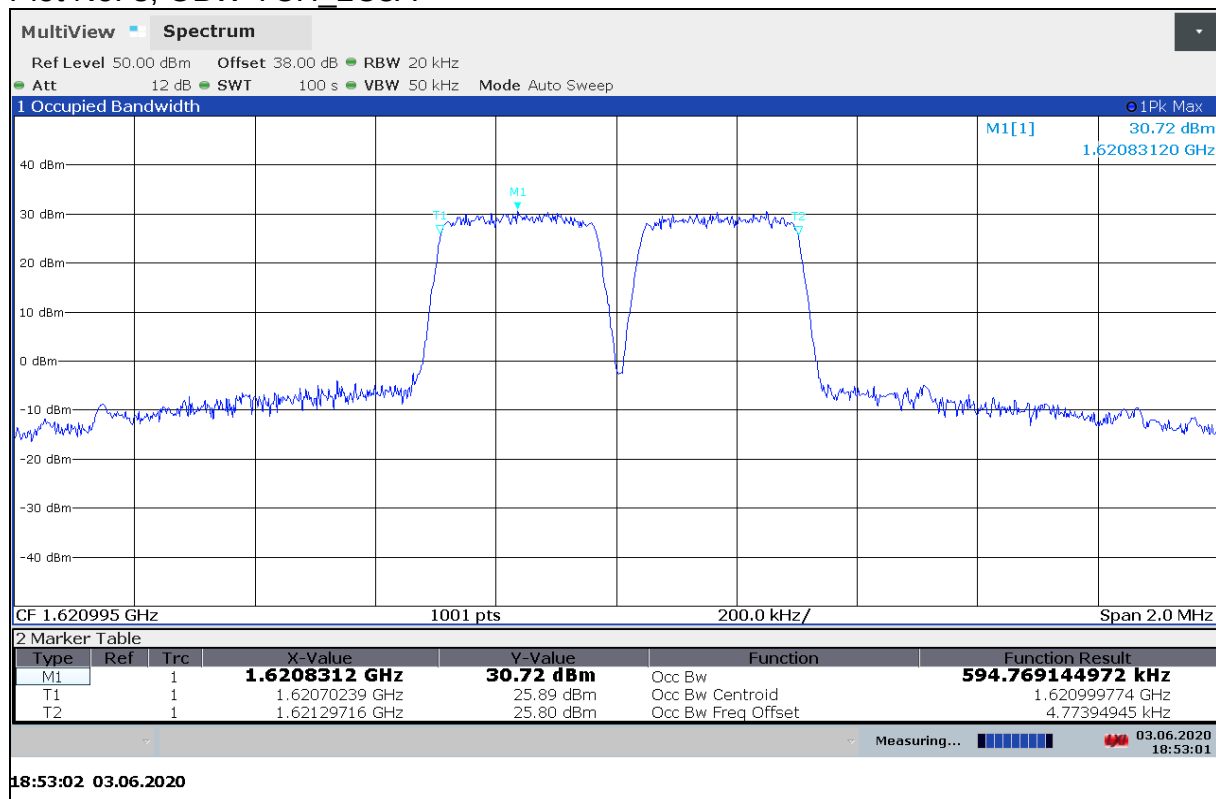
Plot No. 6, OBW TCH_2C8Q



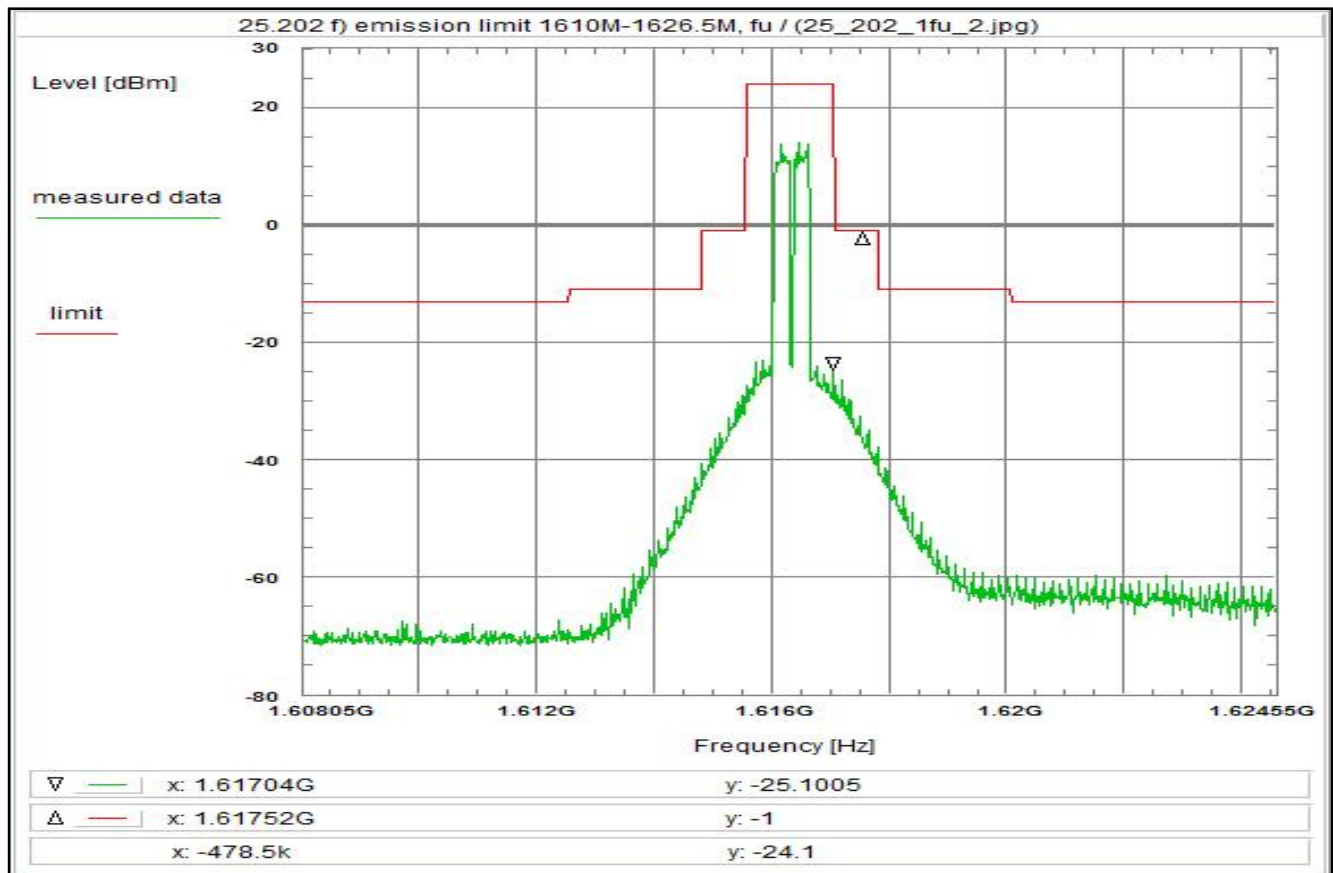
Plot No. 7, OBW TCH_C8A



Plot No. 8, OBW TCH_2C8A



Plot No. 9



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier at the lower edge of the band (fu)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fl

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 13:10:58
 Location: CTC advanced GmbH, Laboratory RC-SYS
 Temperature: 22 °C
 Humidity: 55 %
 Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.60805 GHz
 Stop frequency: 1.62455 GHz
 Center frequency: 1.6163 GHz
 Frequency span: 16.5 MHz
 Resolution-BW: 10 kHz
 Video-BW: 1 kHz
 Input attenuation: 12 dB
 Trace-Mode: Max-Hold
 Detector-Mode: AVG

Correction:

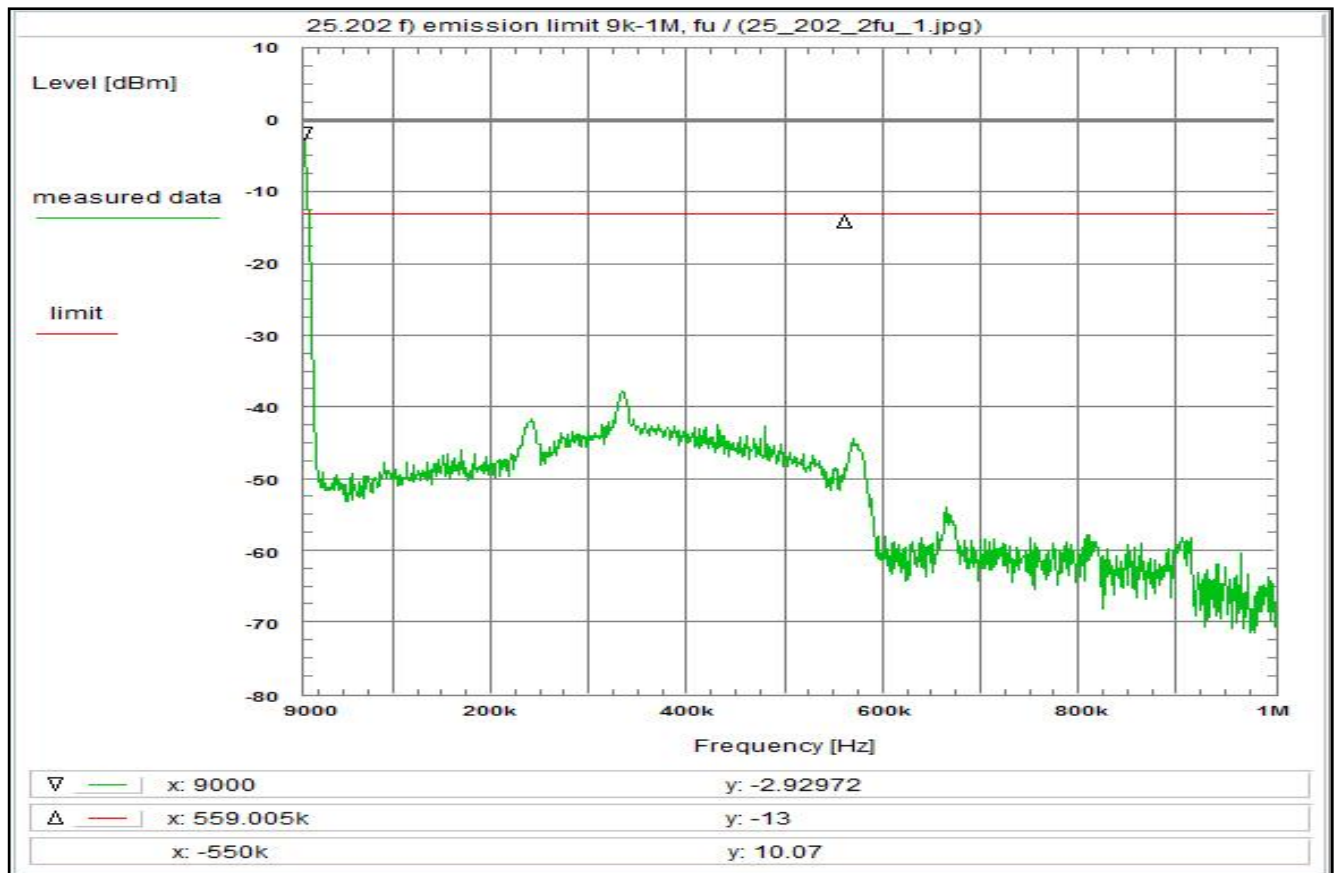
Directional coupler + 0.0 dB
 Coaxial cable + 0.0 dB
 DUT-Antenna (on-axis) + 10.4 dB
 Test antenna + 0.0 dB
 BW correction factor (10k -> 4k) - 4.0 dB
 Atten. between HPA and feedhorn + 0.0 dB
 (U005 + POWER SPLITTER) + 37.5 dB
 TOTAL CORRECTION: + 43.9 dB

Remarks:

Carrier-on state / Carrier at the lower edge of the band (fu)

RMS detector

Plot No. 10



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier at the lower edge of the band (fu)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated
 below the mean output power of the transmitter
 in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fl-fm-fh, valid for all modulations

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 13:57:50

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 9 kHz

Stop frequency: 1 MHz

Center frequency: 504.5 kHz

Frequency span: 991 kHz

Resolution-BW: 10 kHz

Video-BW: 100 kHz

Input attenuation: 0 dB

Trace-Mode: Max-Hold

Detector-Mode: Pos Peak

Correction:

Directional coupler + 0.0 dB

Coaxial cable + 0.0 dB

DUT-Antenna (on-axis) + 10.4 dB

Test antenna + 0.0 dB

BW correction factor (10k -> 4k) - 4.0 dB

Atten. between HPA and feedhorn + 0.0 dB

(U005 + POWER SPLITTER) + 37.0 dB

TOTAL CORRECTION: + 43.4 dB

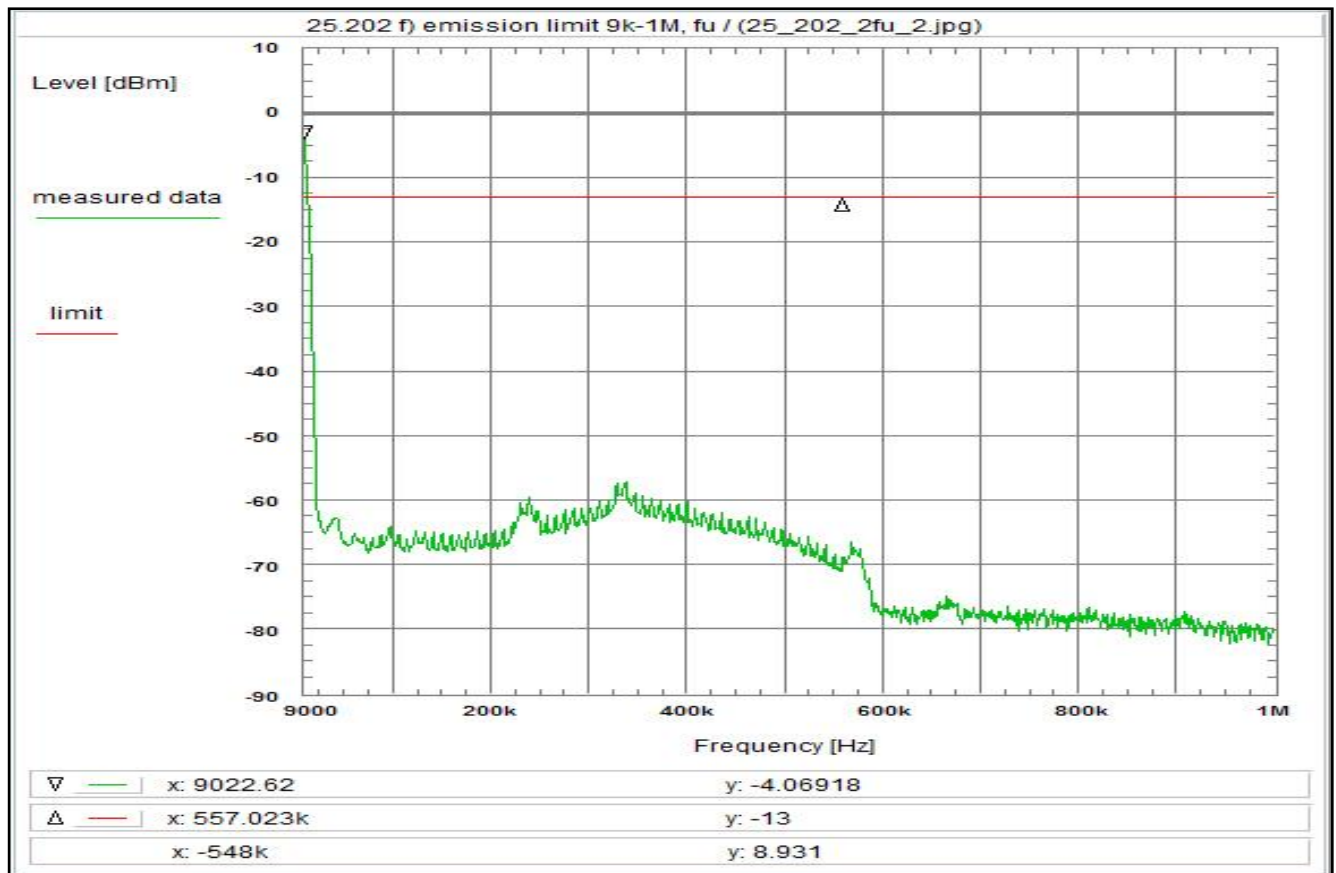
Remarks:

Carrier-on state / Carrier at the lower edge of the band (fu)

Peak detector

Rather left the plot, shows the zero line of the PXA

Plot No. 11



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier at the lower edge of the band (fu)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated
 below the mean output power of the transmitter
 in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fl-fm-fh, valid for all modulations

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 14:00:37

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 9 kHz

Stop frequency: 1 MHz

Center frequency: 504.5 kHz

Frequency span: 991 kHz

Resolution-BW: 10 kHz

Video-BW: 1 kHz

Input attenuation: 0 dB

Trace-Mode: Max-Hold

Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB

Coaxial cable + 0.0 dB

DUT-Antenna (on-axis) + 10.4 dBi

Test antenna + 0.0 dB

BW correction factor (10k -> 4k) - 4.0 dB

Atten. between HPA and feedhorn + 0.0 dB

(U005 + POWER SPLITTER) + 37.0 dB

TOTAL CORRECTION: + 43.4 dB

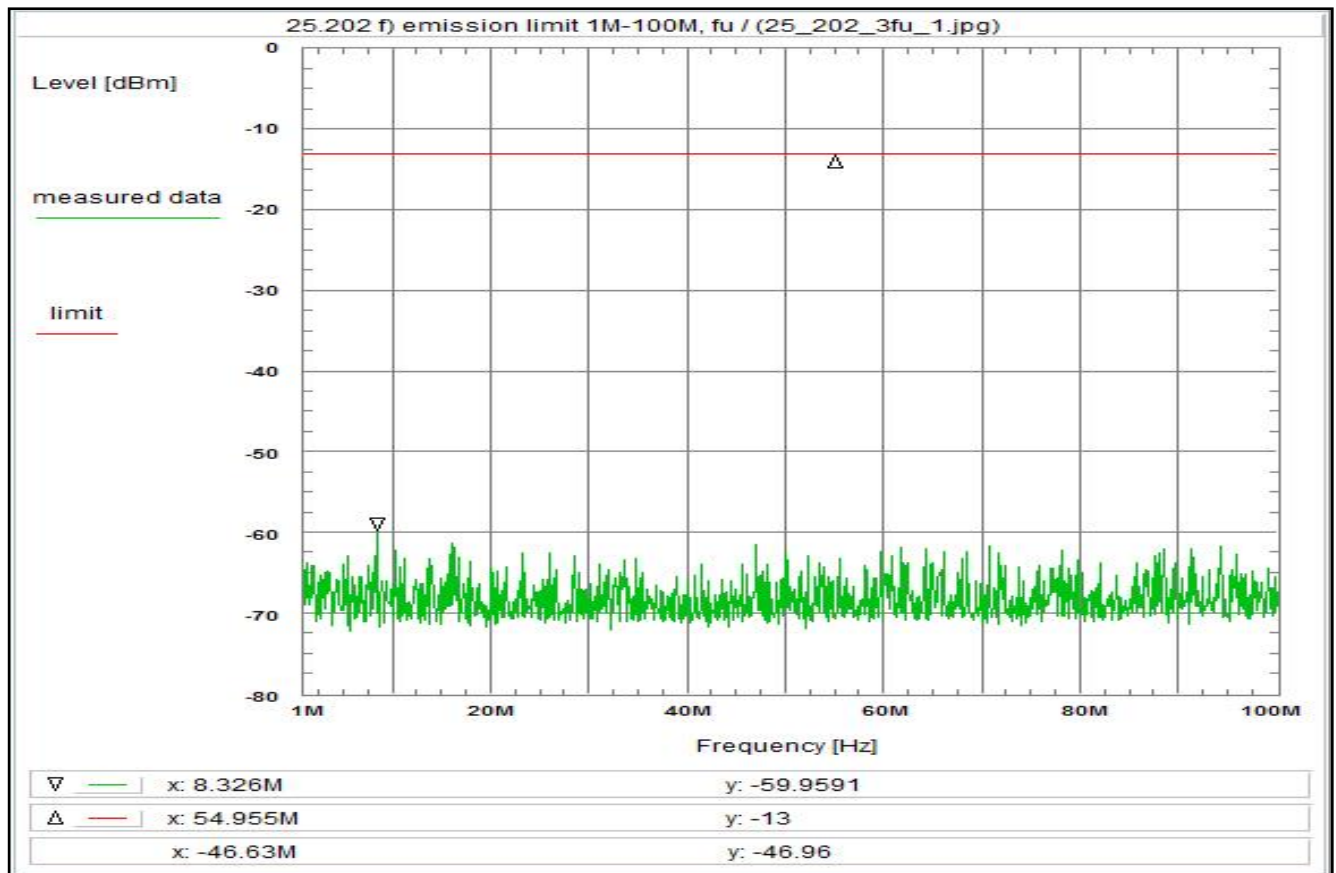
Remarks:

Carrier-on state / Carrier at the lower edge of the band (fu)

RMS detector

Rather left the plot, shows the zero line of the PXA

Plot No. 12



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier at the lower edge of the band (fu)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fl-fm-fh, valid for all modulations

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 13:51:11

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1 MHz

Stop frequency: 100 MHz

Center frequency: 50.5 MHz

Frequency span: 99 MHz

Resolution-BW: 10 kHz

Video-BW: 100 kHz

Input attenuation: 0 dB

Trace-Mode: Max-Hold

Detector-Mode: Pos Peak

Correction:

Directional coupler + 0.0 dB

Coaxial cable + 0.0 dB

DUT-Antenna (on-axis) + 10.4 dBi

Test antenna + 0.0 dB

BW correction factor (10k -> 4k) - 4.0 dB

Atten. between HPA and feedhorn + 0.0 dB

(U005 + POWER SPLITTER) + 37.0 dB

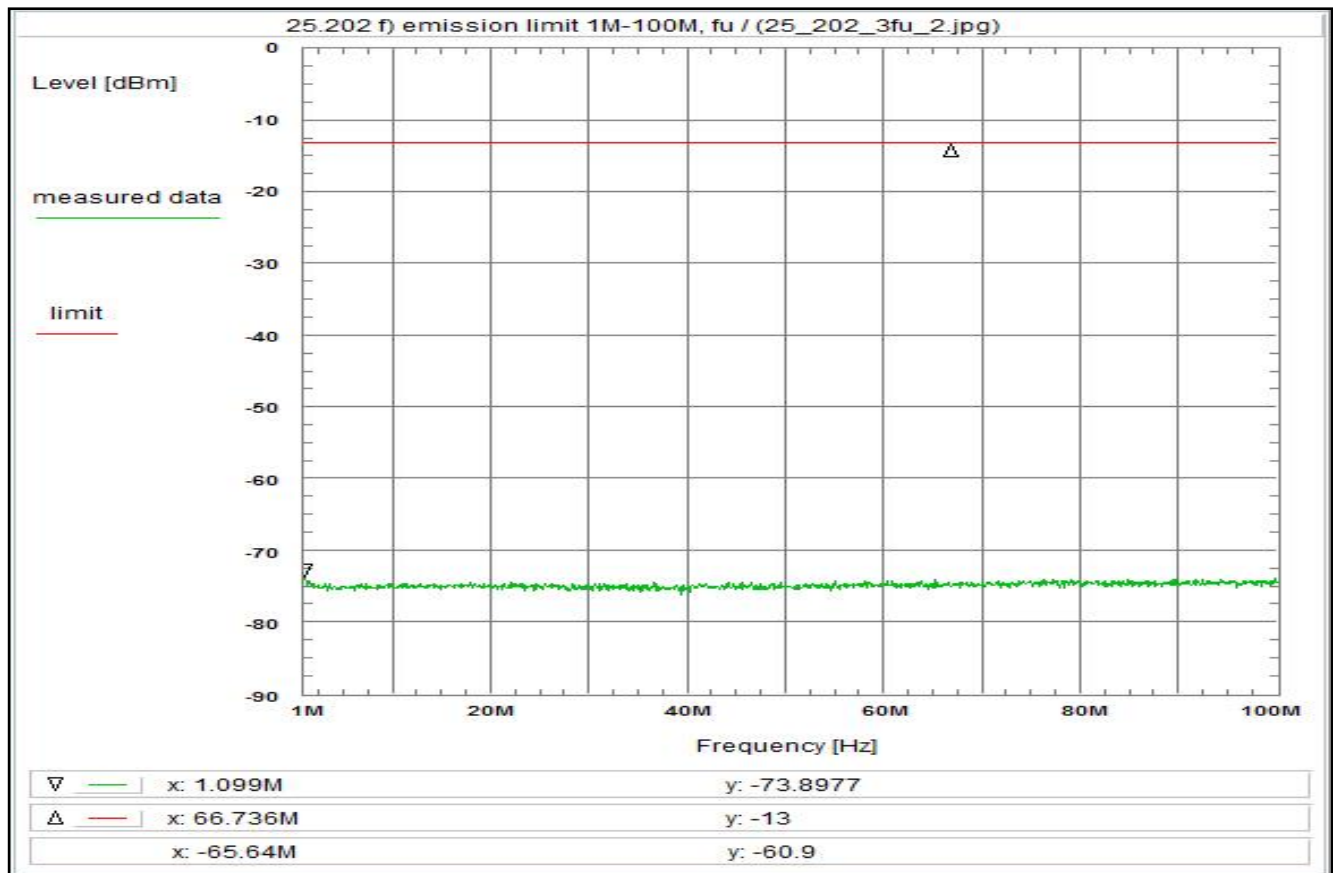
TOTAL CORRECTION: + 43.4 dB

Remarks:

Carrier-on state / Carrier at the lower edge of the band (fu)

Peak detector

Plot No. 13



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier at the lower edge of the band (fu)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fl-fm-fh, valid for all modulations

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 13:53:43

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1 MHz

Stop frequency: 100 MHz

Center frequency: 50.5 MHz

Frequency span: 99 MHz

Resolution-BW: 10 kHz

Video-BW: 1 kHz

Input attenuation: 0 dB

Trace-Mode: Max-Hold

Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB

Coaxial cable + 0.0 dB

DUT-Antenna (on-axis) + 10.4 dBi

Test antenna + 0.0 dB

BW correction factor (10k -> 4k) - 4.0 dB

Atten. between HPA and feedhorn + 0.0 dB

(U005 + POWER SPLITTER) + 37.0 dB

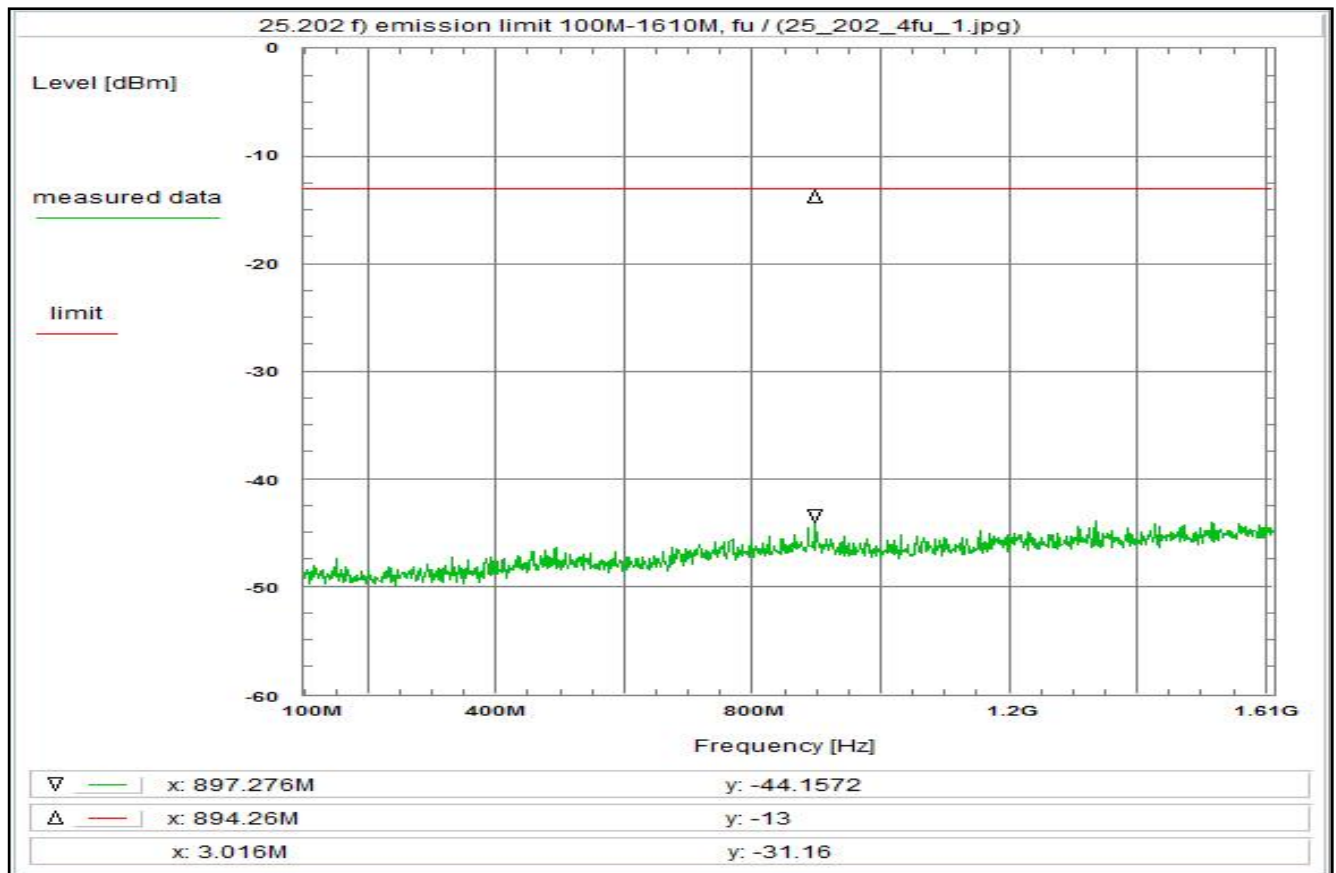
TOTAL CORRECTION: + 43.4 dB

Remarks:

Carrier-on state / Carrier at the lower edge of the band (fu)

RMS detector

Plot No. 14



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier at the lower edge of the band (fu)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fl

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 13:14:58

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 100 MHz

Stop frequency: 1.61 GHz

Center frequency: 855 MHz

Frequency span: 1.51 GHz

Resolution-BW: 10 kHz

Video-BW: 100 kHz

Input attenuation: 12 dB

Trace-Mode: Max-Hold

Detector-Mode: Pos Peak

Correction:

Directional coupler + 0.0 dB

Coaxial cable + 0.0 dB

DUT-Antenna (on-axis) + 10.4 dBi

Test antenna + 0.0 dB

BW correction factor (10k -> 4k) - 4.0 dB

Atten. between HPA and feedhorn + 0.0 dB

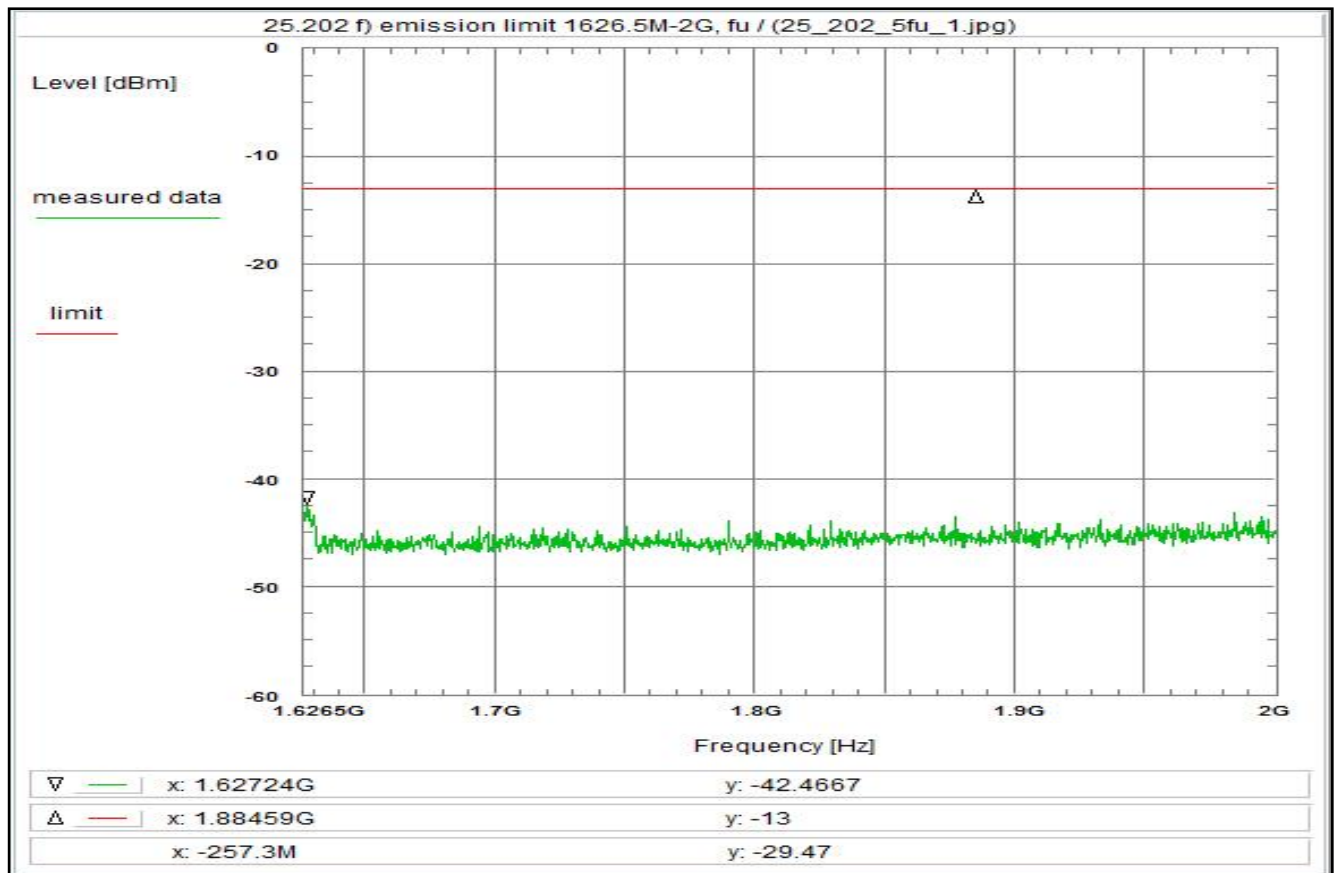
(U005 + POWER SPLITTER) + 37.0 dB

TOTAL CORRECTION: + 43.4 dB

Remarks:

Carrier-on state / Carrier at the lower edge of the band (fu)

Plot No. 15



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier at the lower edge of the band (fu)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fl

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 13:16:40

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.6265 GHz

Stop frequency: 2 GHz

Center frequency: 1.81325 GHz

Frequency span: 373.5 MHz

Resolution-BW: 10 kHz

Video-BW: 100 kHz

Input attenuation: 12 dB

Trace-Mode: Max-Hold

Detector-Mode: Pos Peak

Correction:

Directional coupler + 0.0 dB

Coaxial cable + 0.0 dB

DUT-Antenna (on-axis) + 10.4 dBi

Test antenna + 0.0 dB

BW correction factor (10k -> 4k) - 4.0 dB

Atten. between HPA and feedhorn + 0.0 dB

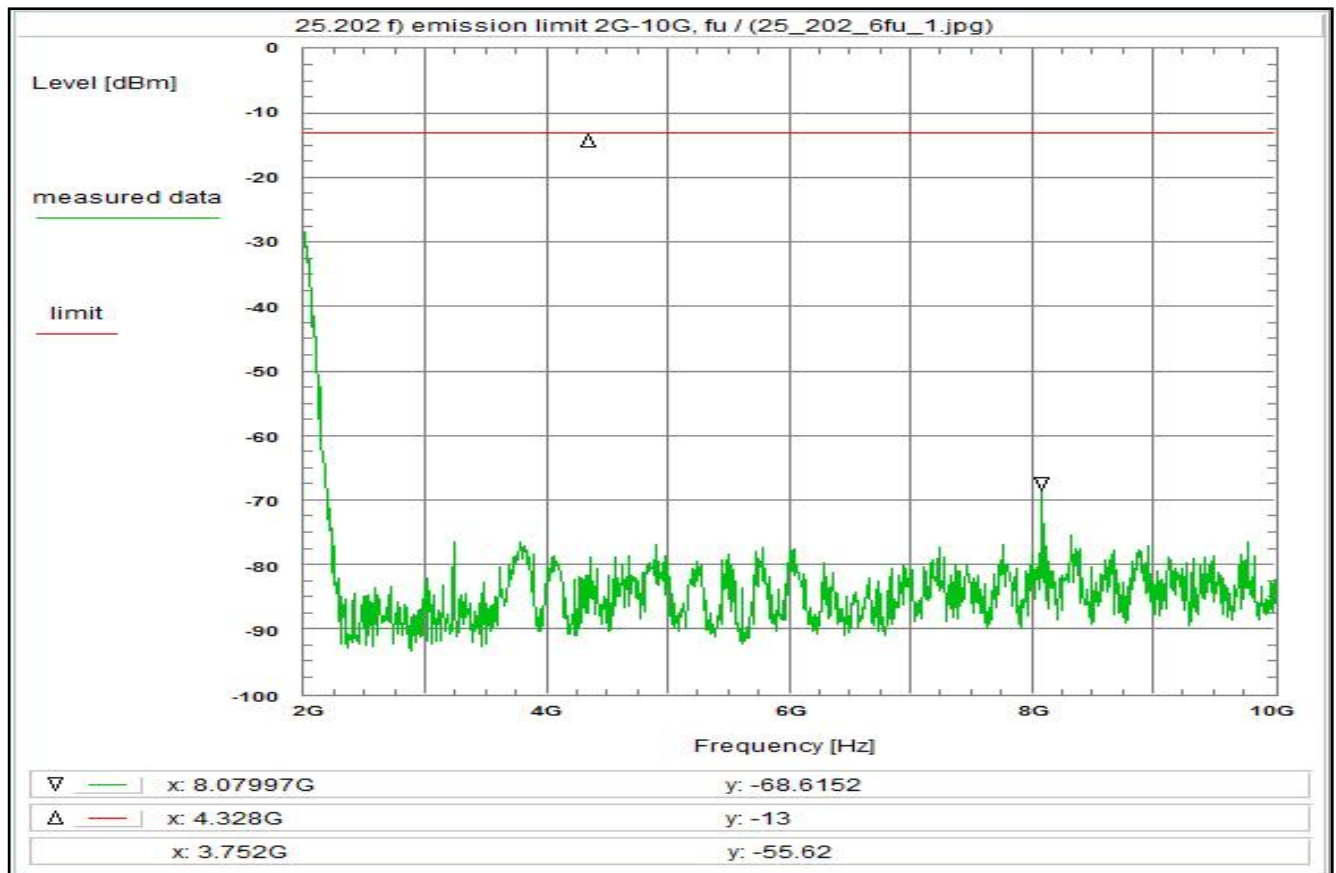
(U005 + POWER SPLITTER) + 37.7 dB

TOTAL CORRECTION: + 44.1 dB

Remarks:

Carrier-on state / Carrier at the lower edge of the band (fu)

Plot No. 16



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier at the lower edge of the band (fu)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Mode TCH_2C8A, fl

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001

Remark:

Test result: Test passed

Environment condition:

Date & Time: Wed 10/Jun/2020 15:27:59
 Location: CTC advanced GmbH, Laboratory RC-SYS
 Temperature: 22 °C
 Humidity: 55 %
 Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 2 GHz
 Stop frequency: 10 GHz
 Center frequency: 6 GHz
 Frequency span: 8 GHz
 Resolution-BW: 100 kHz
 Video-BW: 1 MHz
 Input attenuation: 0 dB
 Trace-Mode: Max-Hold
 Detector-Mode: Pos Peak

Correction:

Directional coupler + 0.0 dB
 Coaxial cable (C220) + 1.7 dB
 DUT-Antenna (on-axis) + 10.4 dBi
 Test antenna + 0.0 dB
 BW correction factor (100k -> 4k) - 14.0 dB
 Atten. between HPA and feedhorn + 0.0 dB
 (FHPF) + 12.5 dB
 TOTAL CORRECTION: + 10.6 dB

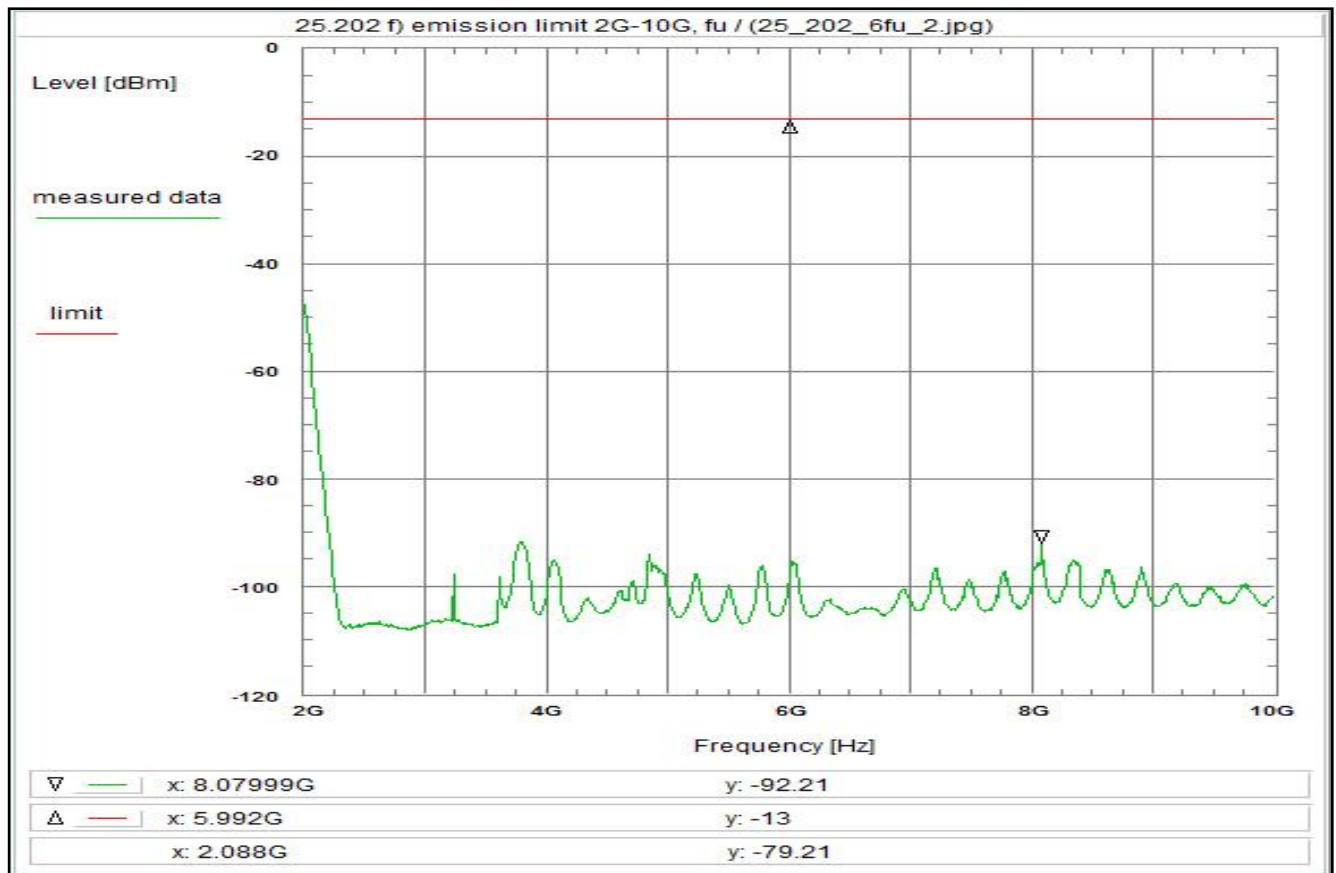
Remarks:

Carrier-on state / Carrier at the lower edge of the band (fu)

Peak Detector

Rather left the plot show the behaviour of the HPF

Plot No. 17



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier at the lower edge of the band (fu)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Mode TCH_2C8A, fl

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001

Remark:

Test result: Test passed

Environment condition:

Date & Time: Wed 10/Jun/2020 15:31:10

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 2 GHz

Stop frequency: 10 GHz

Center frequency: 6 GHz

Frequency span: 8 GHz

Resolution-BW: 100 kHz

Video-BW: 10 kHz

Input attenuation: 0 dB

Trace-Mode: Max-Hold

Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB

Coaxial cable (C220) + 1.7 dB

DUT-Antenna (on-axis) + 10.4 dBi

Test antenna + 0.0 dB

BW correction factor (100k -> 4k) - 14.0 dB

Atten. between HPA and feedhorn + 0.0 dB

(FHPF) + 12.5 dB

TOTAL CORRECTION: + 10.6 dB

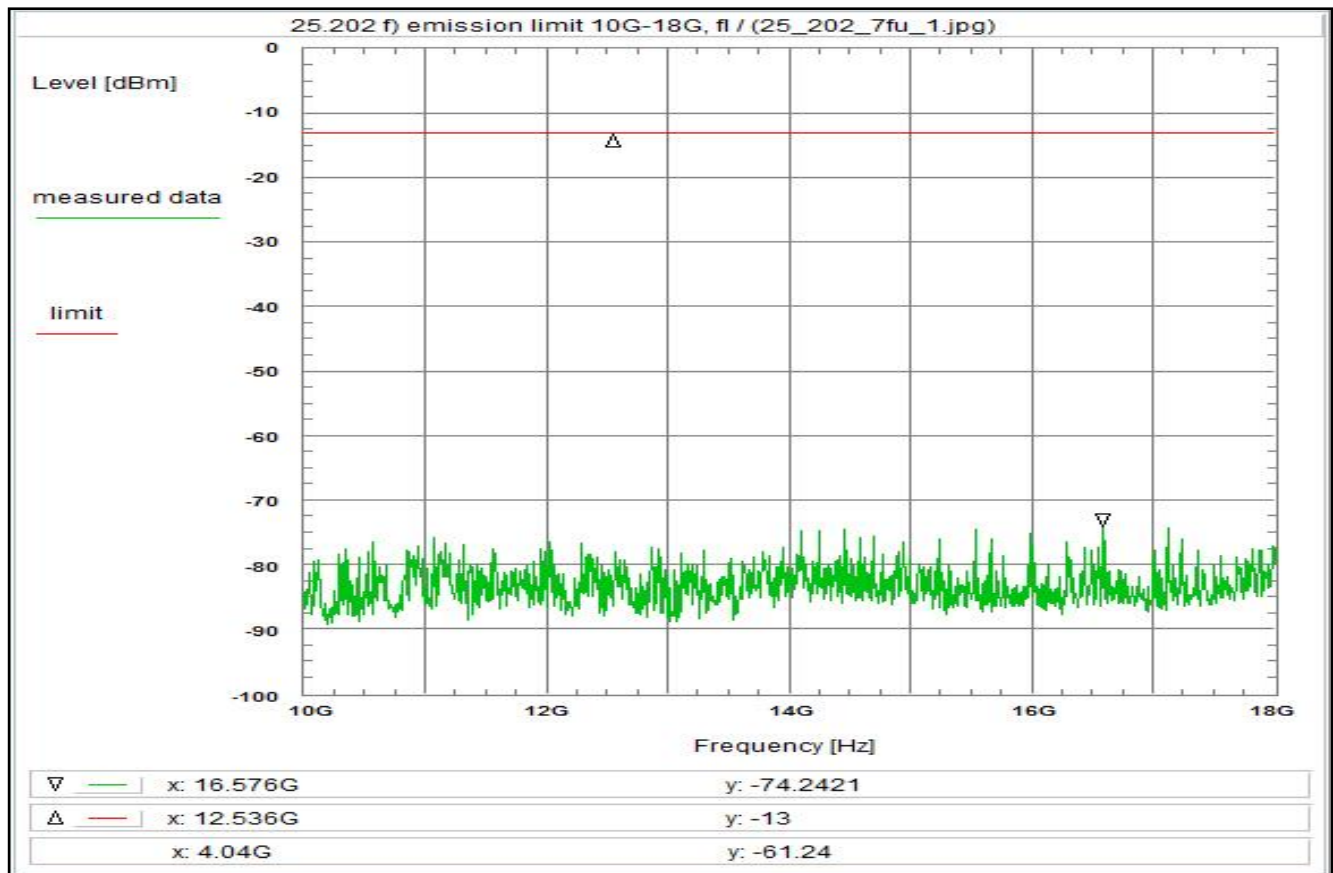
Remarks:

Carrier-on state / Carrier at the lower edge of the band (fu)

RMS Detector

Rather left the plot show the behaviour of the HPF

Plot No. 18



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier at the lower edge of the band (fl)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated
 below the mean output power of the transmitter
 in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Mode TCH_2C8A, fl

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001

Remark:

Test result: Test passed

Environment condition:

Date & Time: Wed 10/Jun/2020 16:08:43
 Location: CTC advanced GmbH, Laboratory RC-SYS
 Temperature: 22 °C
 Humidity: 55 %
 Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 10 GHz
 Stop frequency: 18 GHz
 Center frequency: 14 GHz
 Frequency span: 8 GHz
 Resolution-BW: 100 kHz
 Video-BW: 1 MHz
 Input attenuation: 0 dB
 Trace-Mode: Max-Hold
 Detector-Mode: Pos Peak

Correction:

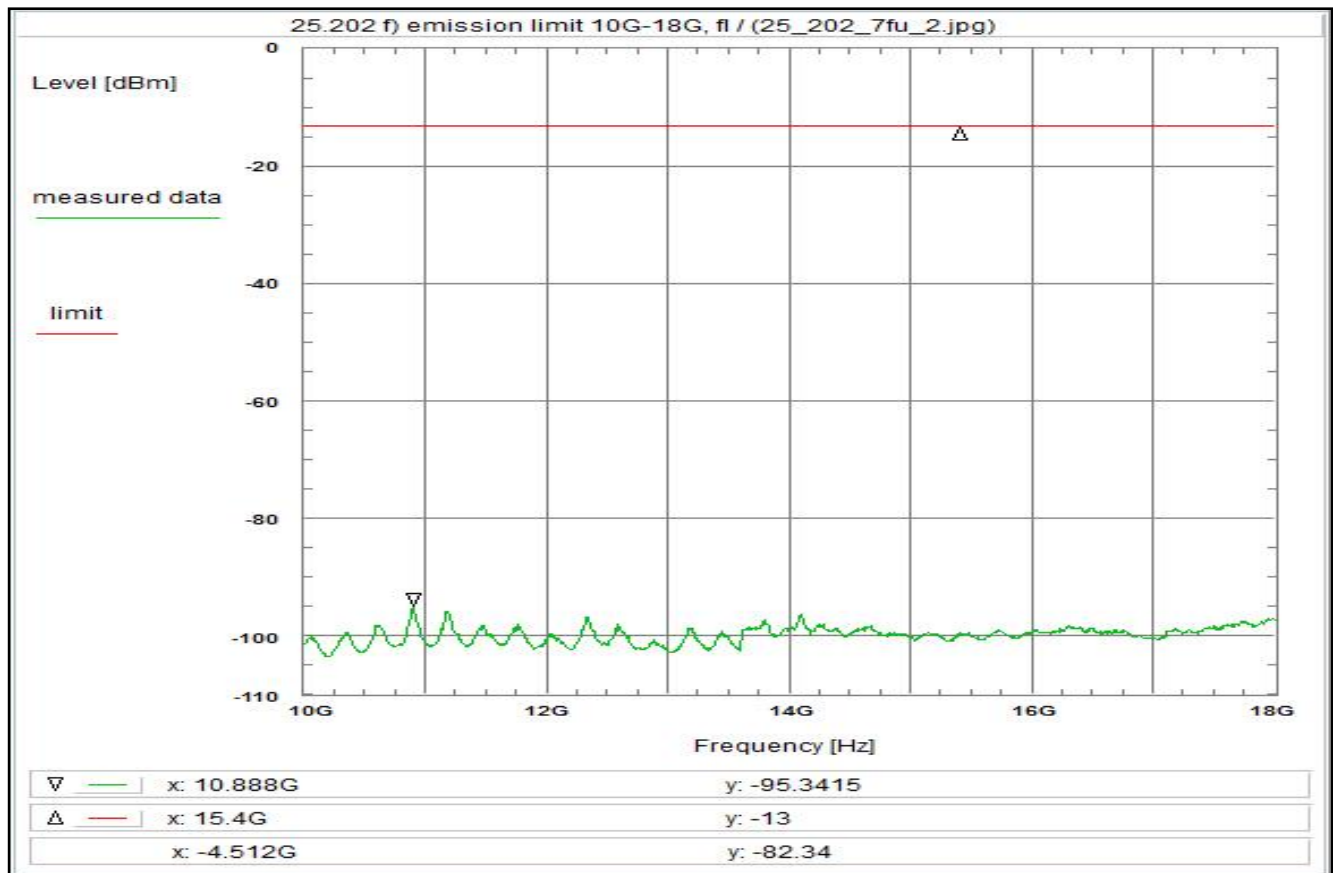
Directional coupler + 0.0 dB
 Coaxial cable (C220) + 2.7 dB
 DUT-Antenna (on-axis) + 10.4 dBi
 Test antenna + 0.0 dB
 BW correction factor (100k -> 4k) - 14.0 dB
 Atten. between HPA and feedhorn + 0.0 dB
 (FHPF) + 12.5 dB
 TOTAL CORRECTION: + 11.6 dB

Remarks:

Carrier-on state / Carrier at the lower edge of the band (fu)

Peak Detector

Plot No. 19



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier at the lower edge of the band (fl)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Mode TCH_2C8A, fl

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001

Remark:

Test result: Test passed

Environment condition:

Date & Time: Wed 10/Jun/2020 16:11:10

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 10 GHz

Stop frequency: 18 GHz

Center frequency: 14 GHz

Frequency span: 8 GHz

Resolution-BW: 100 kHz

Video-BW: 10 kHz

Input attenuation: 0 dB

Trace-Mode: Max-Hold

Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB

Coaxial cable (C220) + 2.7 dB

DUT-Antenna (on-axis) + 10.4 dBi

Test antenna + 0.0 dB

BW correction factor (100k -> 4k) - 14.0 dB

Atten. between HPA and feedhorn + 0.0 dB

(FHPF) + 12.5 dB

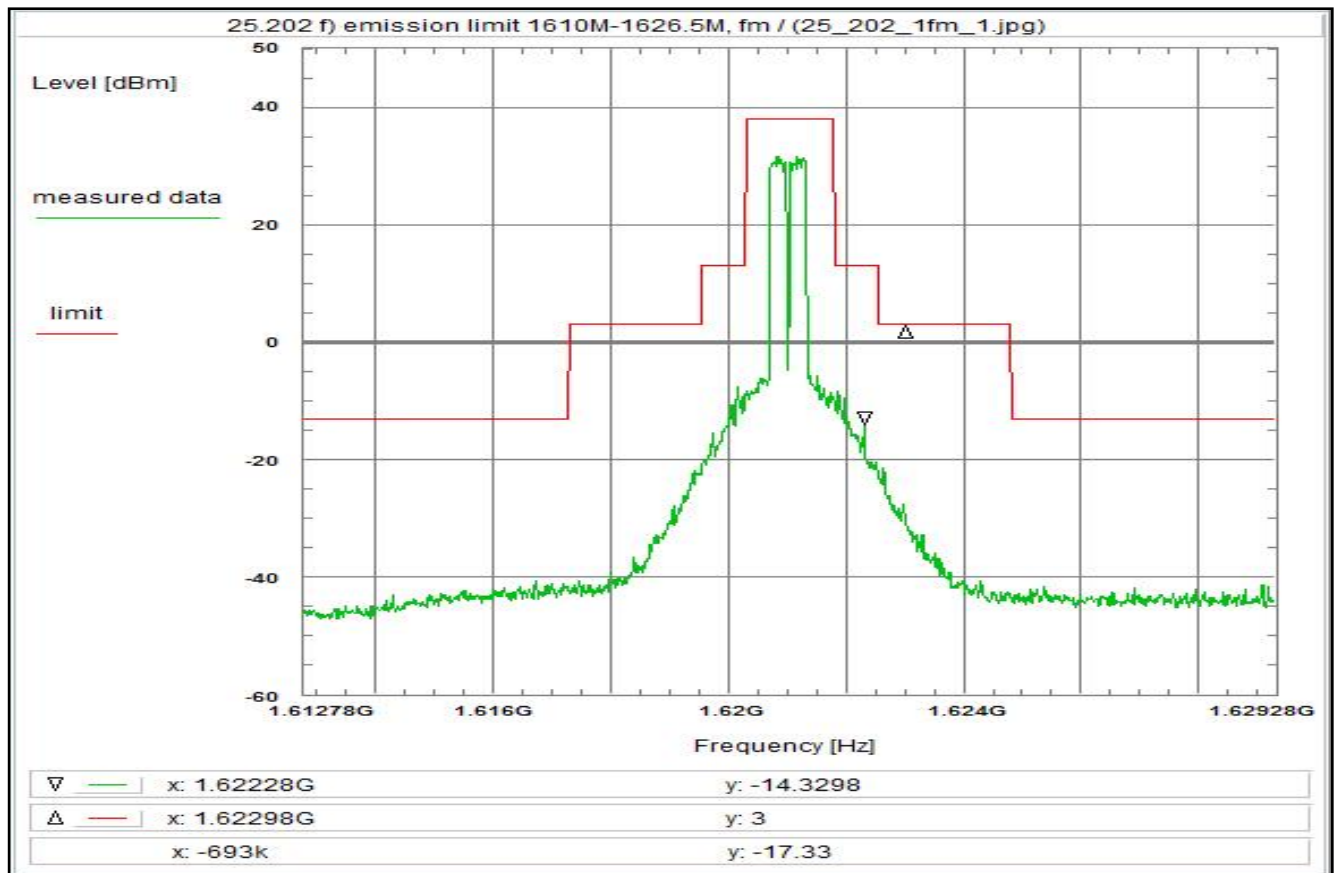
TOTAL CORRECTION: + 11.6 dB

Remarks:

Carrier-on state / Carrier at the lower edge of the band (fu)

RMS Detector

Plot No. 20



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier in the middle of the band (fm)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fm

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 14:03:58

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.61278 GHz

Stop frequency: 1.62928 GHz

Center frequency: 1.62103 GHz

Frequency span: 16.5 MHz

Resolution-BW: 10 kHz

Video-BW: 100 kHz

Input attenuation: 12 dB

Trace-Mode: Max-Hold

Detector-Mode: Pos Peak

Correction:

Directional coupler + 0.0 dB

Coaxial cable + 0.0 dB

DUT-Antenna (on-axis) + 10.4 dBi

Test antenna + 0.0 dB

BW correction factor (10k -> 4k) - 4.0 dB

Atten. between HPA and feedhorn + 0.0 dB

(U005 + POWER SPLITTER) + 37.5 dB

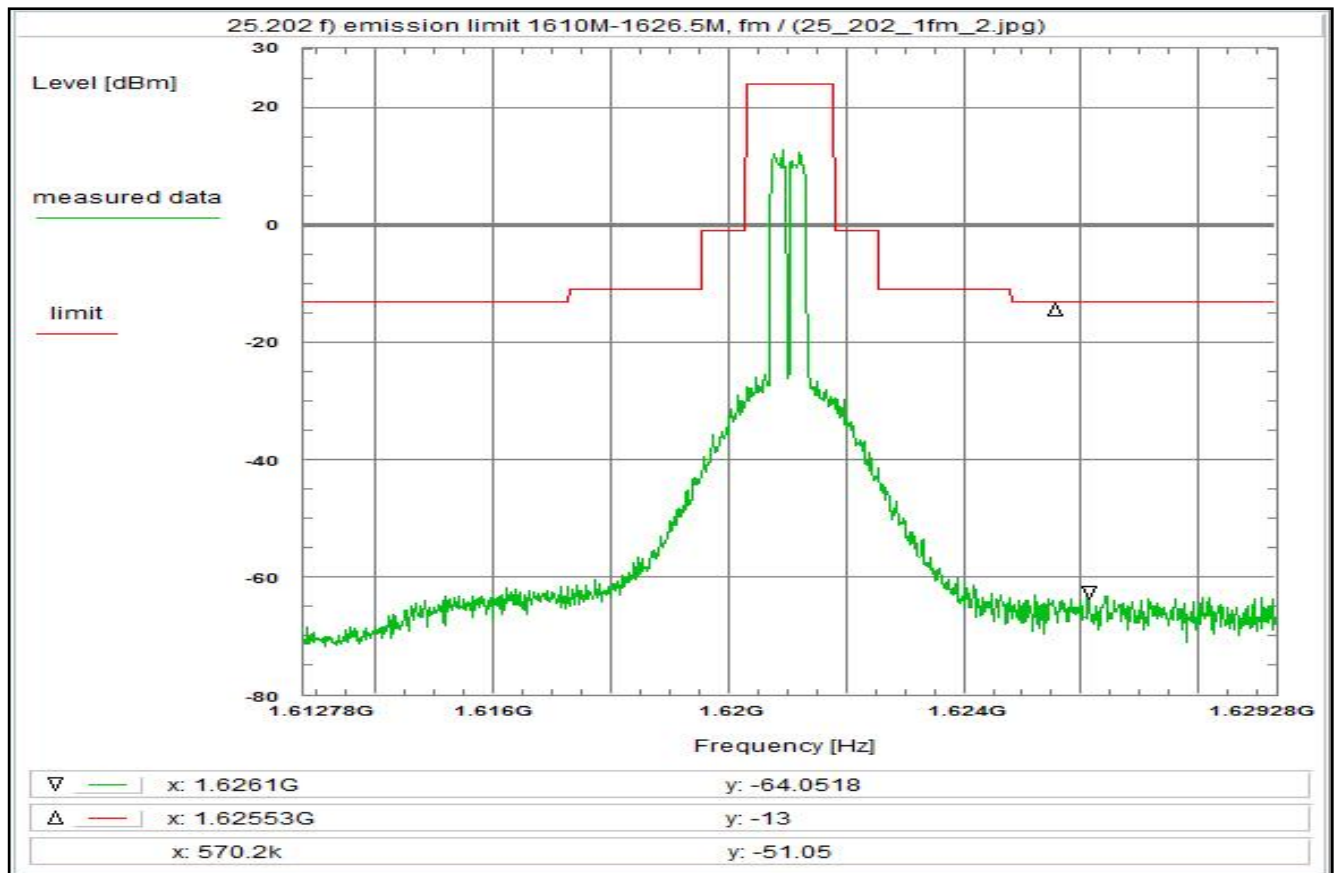
TOTAL CORRECTION: + 43.9 dB

Remarks:

Carrier-on state / Carrier in the middle of the band (fm)

Peak detector

Plot No. 21



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier in the middle of the band (fm)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fm

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 14:07:29

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.61278 GHz

Stop frequency: 1.62928 GHz

Center frequency: 1.62103 GHz

Frequency span: 16.5 MHz

Resolution-BW: 10 kHz

Video-BW: 1 kHz

Input attenuation: 12 dB

Trace-Mode: Max-Hold

Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB

Coaxial cable + 0.0 dB

DUT-Antenna (on-axis) + 10.4 dBi

Test antenna + 0.0 dB

BW correction factor (10k -> 4k) - 4.0 dB

Atten. between HPA and feedhorn + 0.0 dB

(U005 + POWER SPLITTER) + 37.5 dB

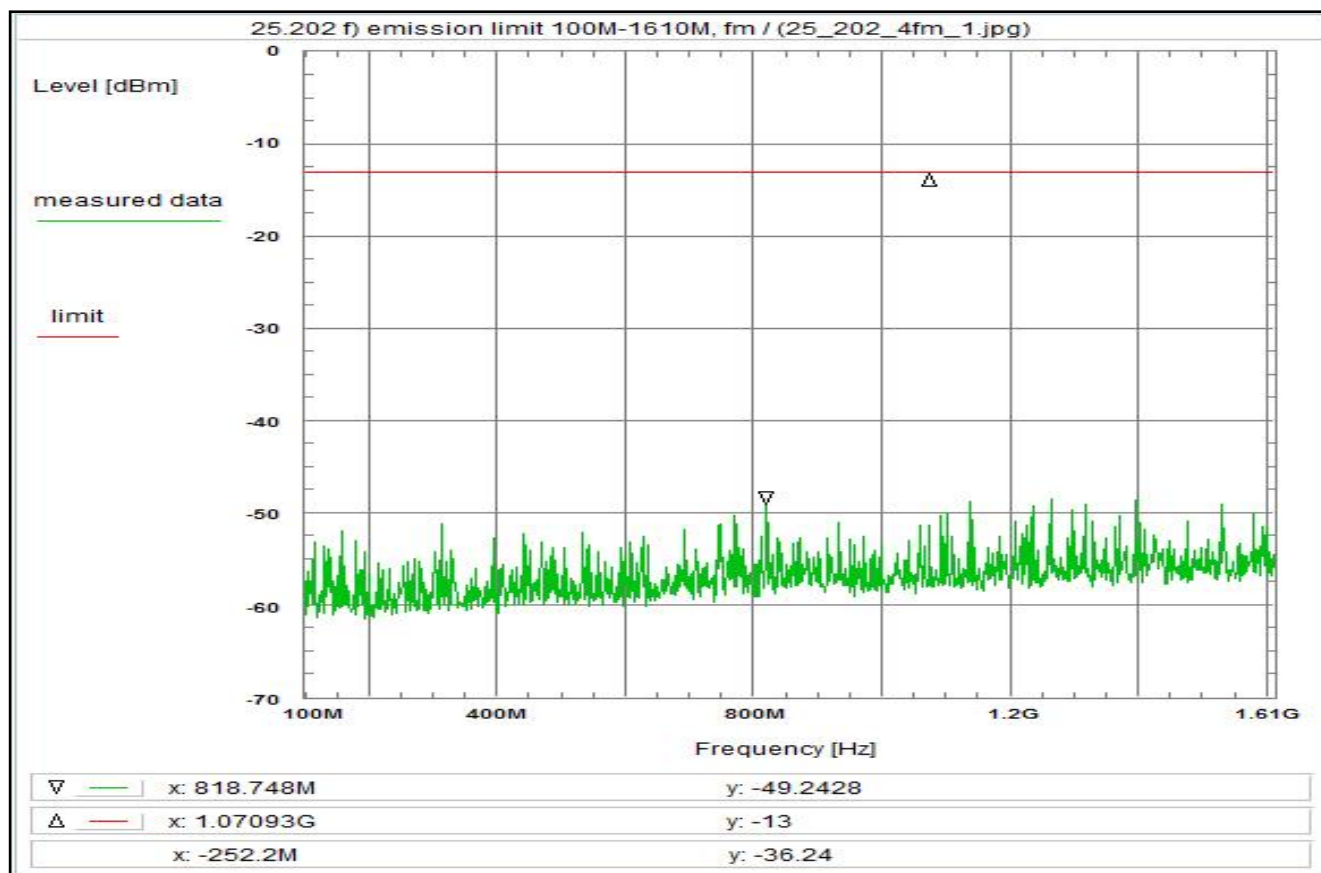
TOTAL CORRECTION: + 43.9 dB

Remarks:

Carrier-on state / Carrier in the middle of the band (fm)

RMS detector

Plot No. 22



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier in the middle of the band (fm)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated
 below the mean output power of the transmitter
 in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fm

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 14:10:38
 Location: CTC advanced GmbH, Laboratory RC-SYS
 Temperature: 22 °C
 Humidity: 55 %
 Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 100 MHz
 Stop frequency: 1.61 GHz
 Center frequency: 855 MHz
 Frequency span: 1.51 GHz
 Resolution-BW: 10 kHz
 Video-BW: 10 kHz
 Input attenuation: 12 dB
 Trace-Mode: Clear Write
 Detector-Mode: Pos Peak

Correction:

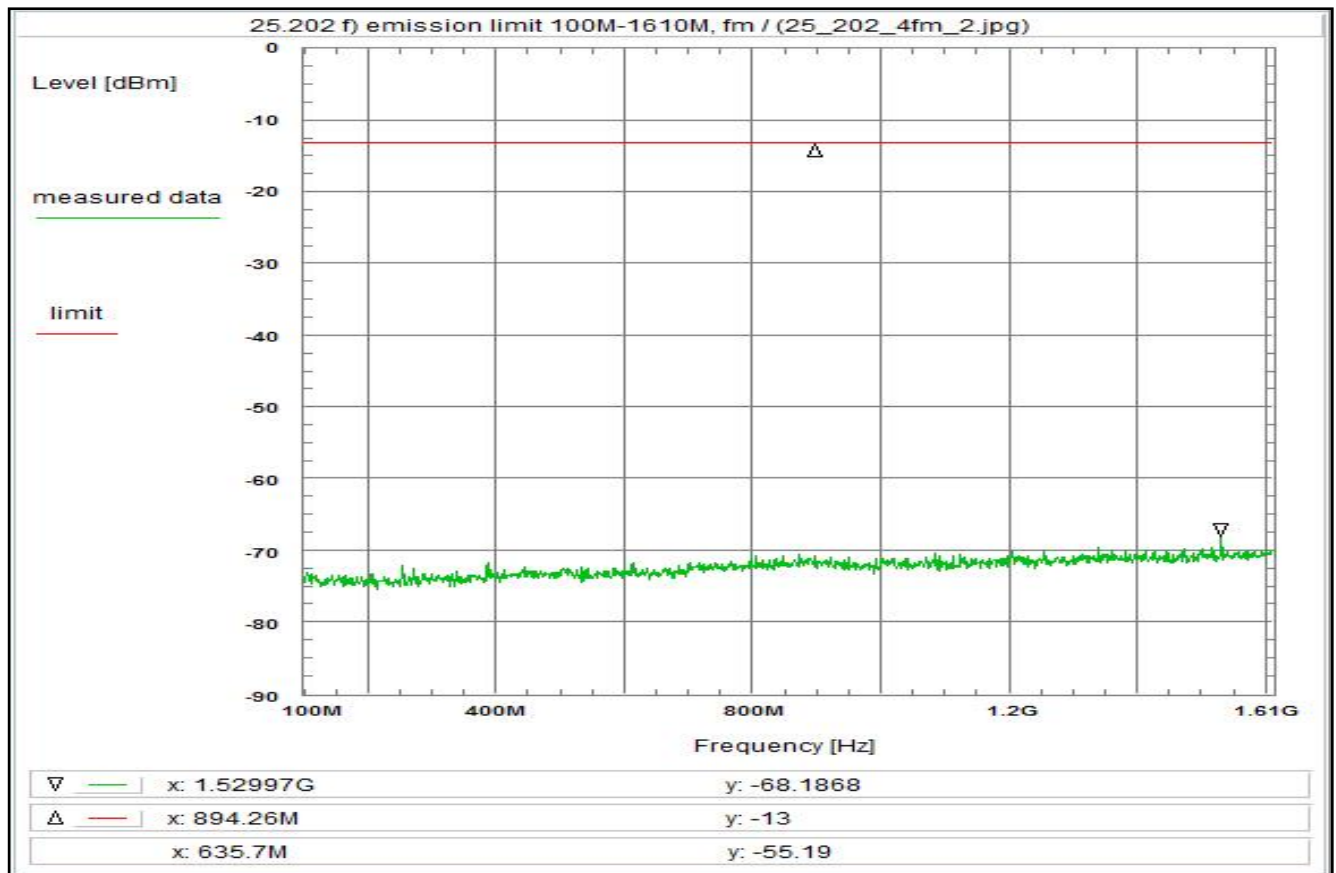
Directional coupler + 0.0 dB
 Coaxial cable + 0.0 dB
 DUT-Antenna (on-axis) + 10.4 dBi
 Test antenna + 0.0 dB
 BW correction factor (10k -> 4k) - 4.0 dB
 Atten. between HPA and feedhorn + 0.0 dB
 (U005 + POWER SPLITTER) + 37.0 dB
 TOTAL CORRECTION: + 43.4 dB

Remarks:

Carrier-on state / Carrier in the middle of the band (fm)

Peak detector

Plot No. 23



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier in the middle of the band (fm)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fm

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 14:14:44
 Location: CTC advanced GmbH, Laboratory RC-SYS
 Temperature: 22 °C
 Humidity: 55 %
 Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 100 MHz
 Stop frequency: 1.61 GHz
 Center frequency: 855 MHz
 Frequency span: 1.51 GHz
 Resolution-BW: 10 kHz
 Video-BW: 1 kHz
 Input attenuation: 12 dB
 Trace-Mode: Clear Write
 Detector-Mode: AVG

Correction:

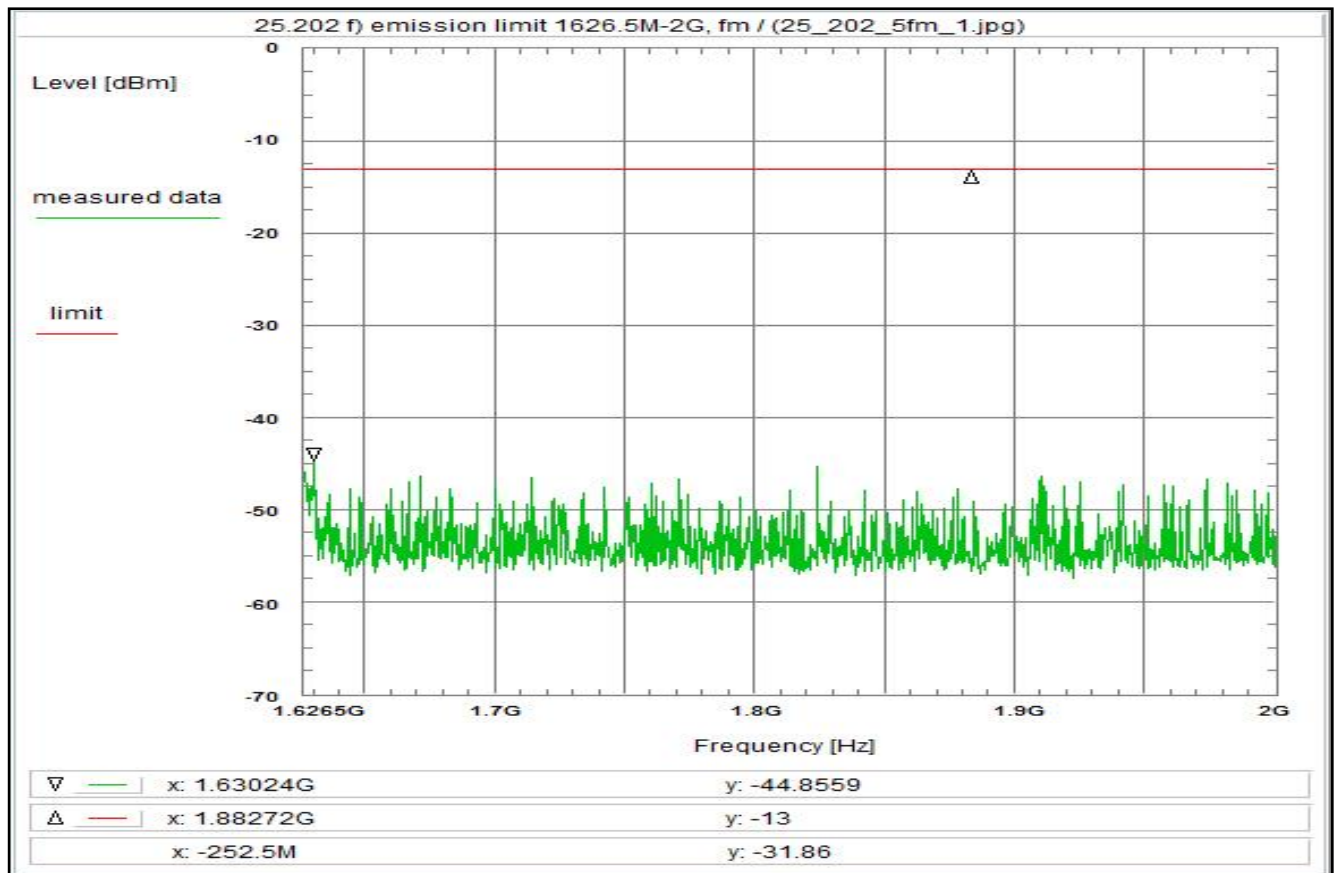
Directional coupler + 0.0 dB
 Coaxial cable + 0.0 dB
 DUT-Antenna (on-axis) + 10.4 dBi
 Test antenna + 0.0 dB
 BW correction factor (10k -> 4k) - 4.0 dB
 Atten. between HPA and feedhorn + 0.0 dB
 (U005 + POWER SPLITTER) + 37.0 dB
 TOTAL CORRECTION: + 43.4 dB

Remarks:

Carrier-on state / Carrier in the middle of the band (fm)

RMS detector

Plot No. 24



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier in the middle of the band (fm)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fm

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 14:18:09
 Location: CTC advanced GmbH, Laboratory RC-SYS
 Temperature: 22 °C
 Humidity: 55 %
 Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.6265 GHz
 Stop frequency: 2 GHz
 Center frequency: 1.81325 GHz
 Frequency span: 373.5 MHz
 Resolution-BW: 10 kHz
 Video-BW: 100 kHz
 Input attenuation: 12 dB
 Trace-Mode: Max-Hold
 Detector-Mode: Pos Peak

Correction:

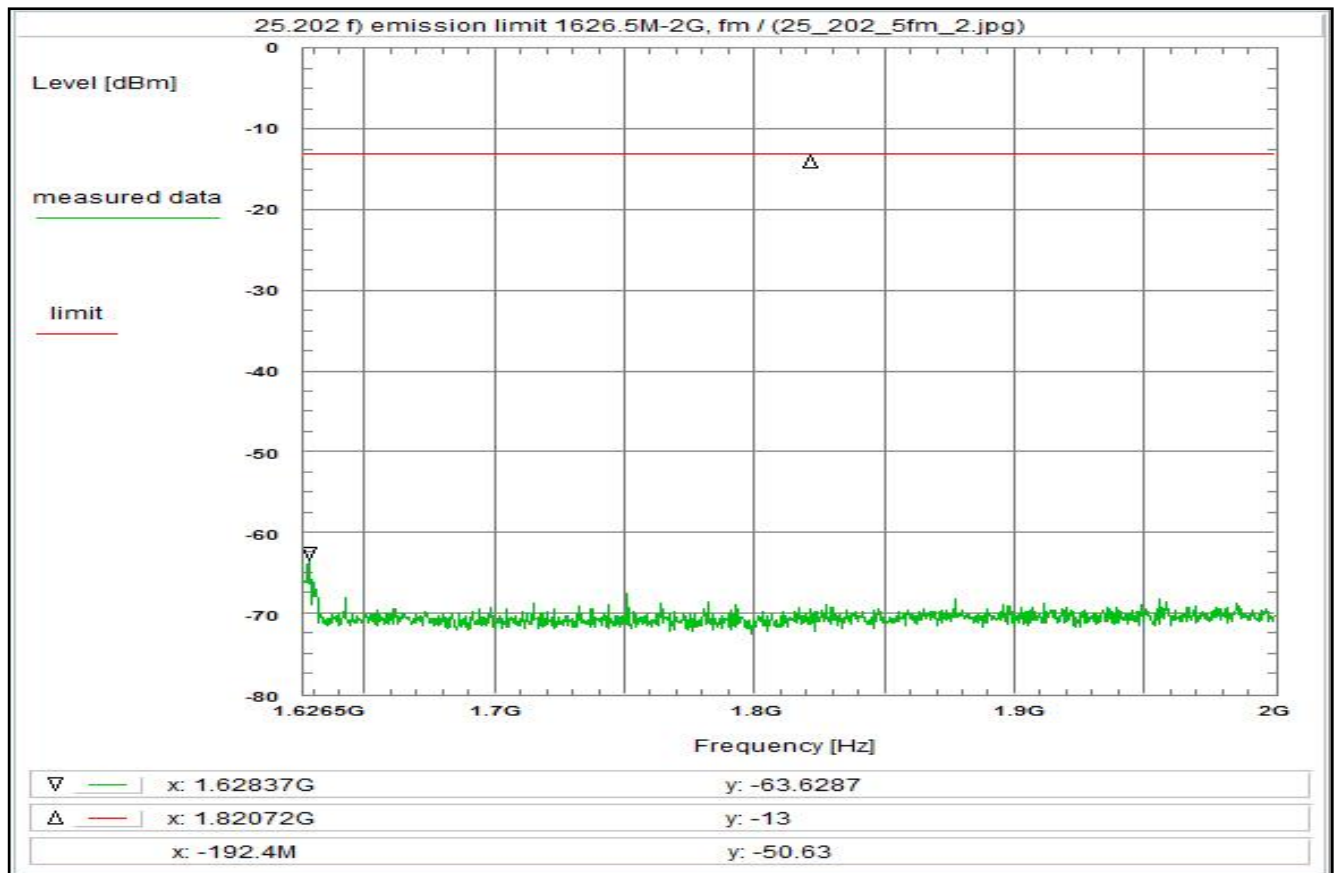
Directional coupler + 0.0 dB
 Coaxial cable + 0.0 dB
 DUT-Antenna (on-axis) + 10.4 dBi
 Test antenna + 0.0 dB
 BW correction factor (10k -> 4k) - 4.0 dB
 Atten. between HPA and feedhorn + 0.0 dB
 (U005 + POWER SPLITTER) + 37.7 dB
 TOTAL CORRECTION: + 44.1 dB

Remarks:

Carrier-on state / Carrier in the middle of the band (fm)

Peak detector

Plot No. 25



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier in the middle of the band (fm)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fm

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 14:20:29

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.6265 GHz

Stop frequency: 2 GHz

Center frequency: 1.81325 GHz

Frequency span: 373.5 MHz

Resolution-BW: 10 kHz

Video-BW: 1 kHz

Input attenuation: 12 dB

Trace-Mode: Max-Hold

Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB

Coaxial cable + 0.0 dB

DUT-Antenna (on-axis) + 10.4 dBi

Test antenna + 0.0 dB

BW correction factor (10k -> 4k) - 4.0 dB

Atten. between HPA and feedhorn + 0.0 dB

(U005 + POWER SPLITTER) + 37.7 dB

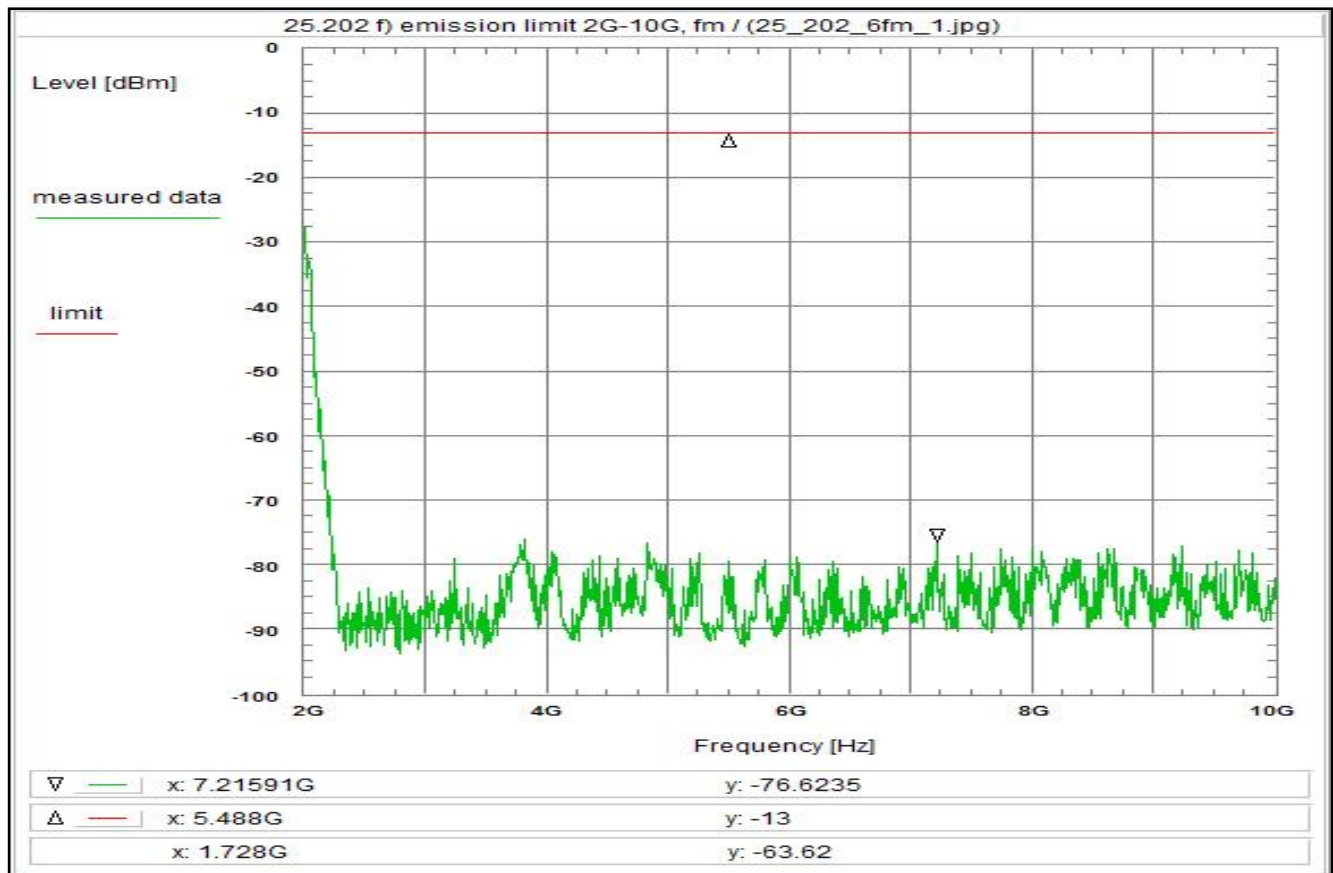
TOTAL CORRECTION: + 44.1 dB

Remarks:

Carrier-on state / Carrier in the middle of the band (fm)

RMS detector

Plot No. 26



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier in the middle of the band (fm)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Mode TCH_2C8A, fm

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001

Remark:

Test result: Test passed

Environment condition:

Date & Time: Wed 10/Jun/2020 15:37:25
 Location: CTC advanced GmbH, Laboratory RC-SYS
 Temperature: 22 °C
 Humidity: 55 %
 Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 2 GHz
 Stop frequency: 10 GHz
 Center frequency: 6 GHz
 Frequency span: 8 GHz
 Resolution-BW: 100 kHz
 Video-BW: 1 MHz
 Input attenuation: 0 dB
 Trace-Mode: Max-Hold
 Detector-Mode: Pos Peak

Correction:

Directional coupler + 0.0 dB
 Coaxial cable (C220) + 1.7 dB
 DUT-Antenna (on-axis) + 10.4 dBi
 Test antenna + 0.0 dB
 BW correction factor (100k -> 4k) - 14.0 dB
 Atten. between HPA and feedhorn + 0.0 dB
 (FHPF) + 12.5 dB
 TOTAL CORRECTION: + 10.6 dB

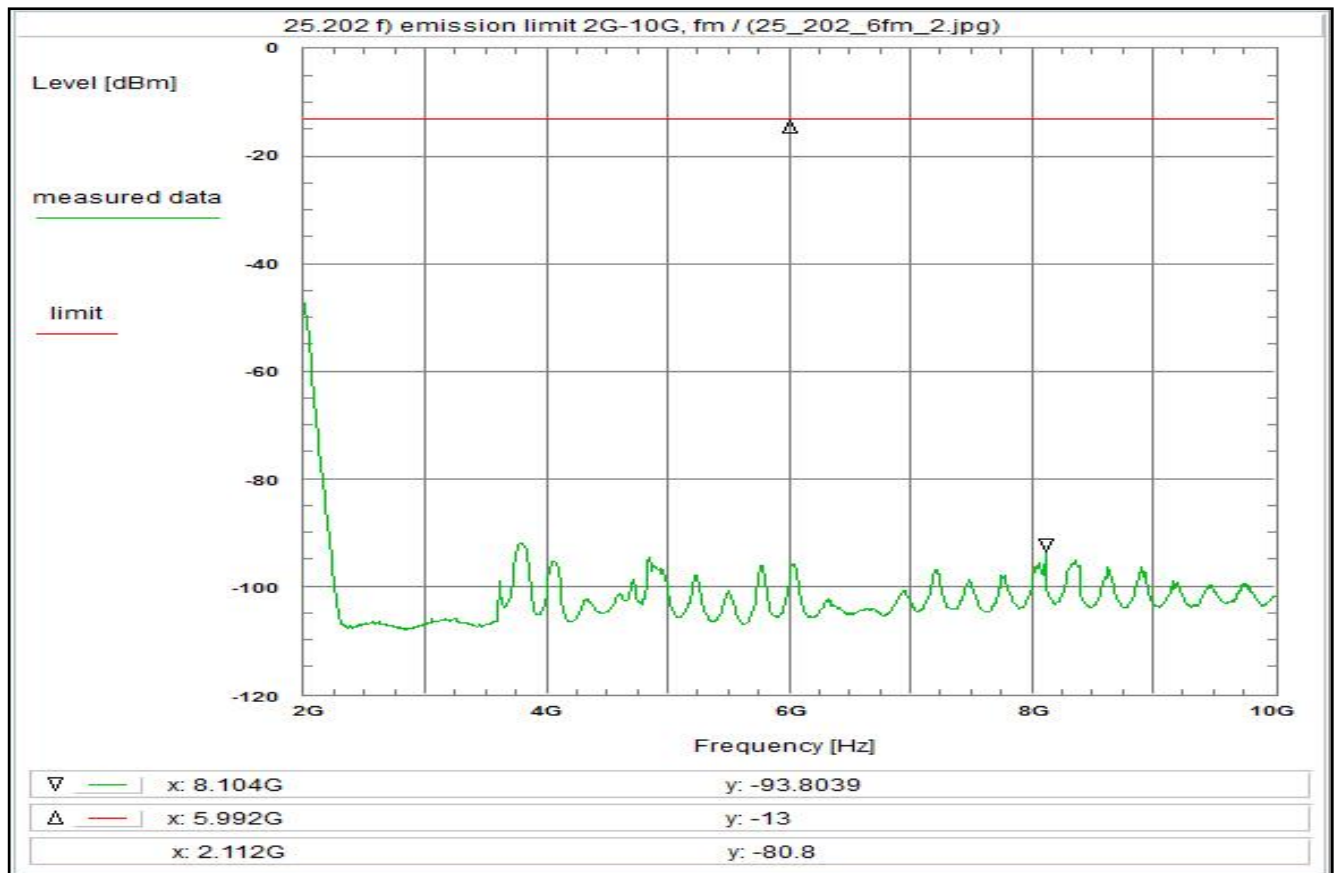
Remarks:

Carrier-on state / Carrier in the middle of the band (fm)

Peak Detector

Rather left the plot show the behaviour of the HPF

Plot No. 27



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier in the middle of the band (fm)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Mode TCH_2C8A, fm

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001

Remark:

Test result: Test passed

Environment condition:

Date & Time: Wed 10/Jun/2020 15:40:09

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 2 GHz

Stop frequency: 10 GHz

Center frequency: 6 GHz

Frequency span: 8 GHz

Resolution-BW: 100 kHz

Video-BW: 10 kHz

Input attenuation: 0 dB

Trace-Mode: Max-Hold

Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB

Coaxial cable (C220) + 1.7 dB

DUT-Antenna (on-axis) + 10.4 dBi

Test antenna + 0.0 dB

BW correction factor (100k -> 4k) - 14.0 dB

Atten. between HPA and feedhorn + 0.0 dB

(FHPF) + 12.5 dB

TOTAL CORRECTION: + 10.6 dB

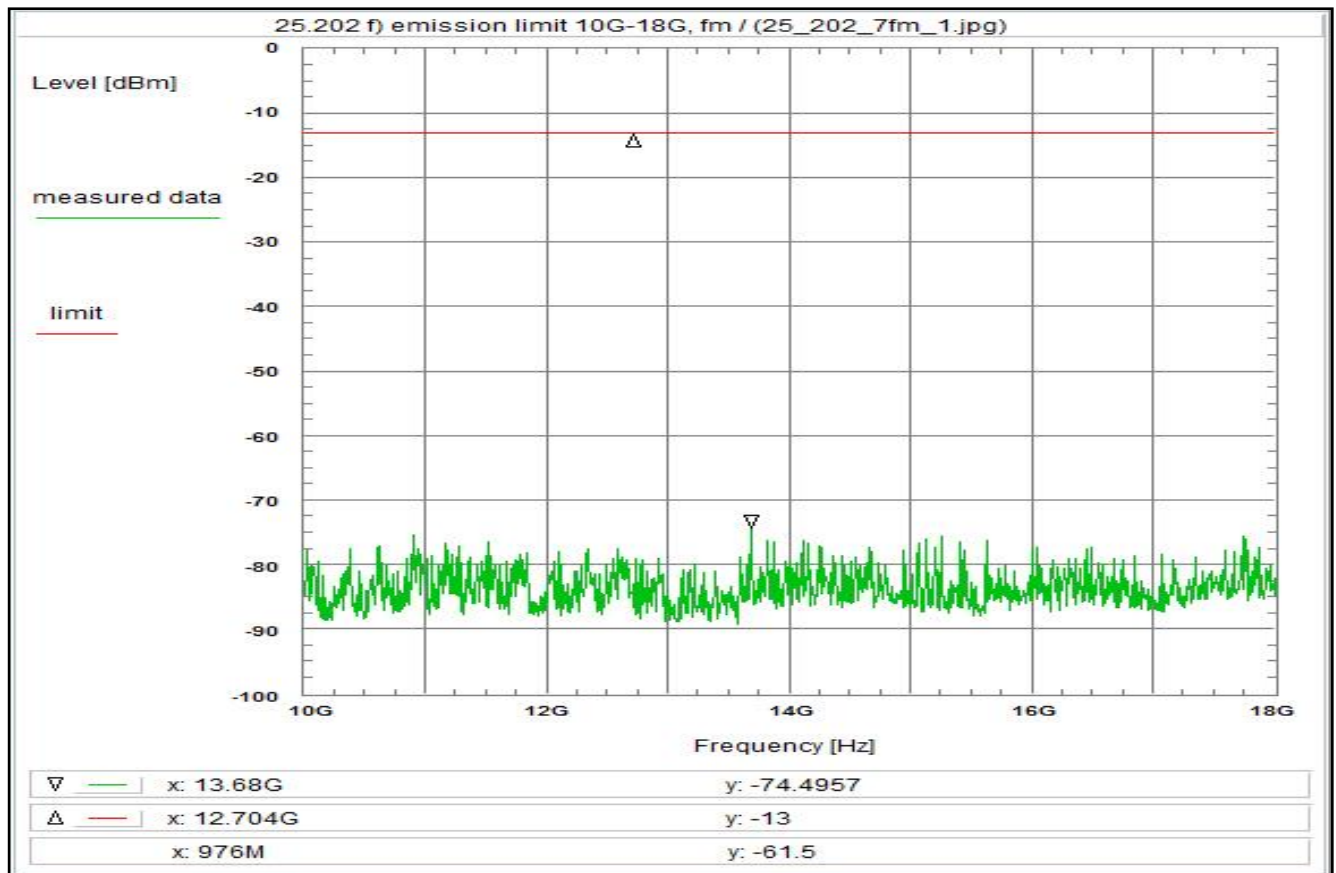
Remarks:

Carrier-on state / Carrier in the middle of the band (fm)

RMS Detector

Rather left the plot show the behaviour of the HPF

Plot No. 28



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier in the middle of the band (fm)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Mode TCH_2C8A, fm

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001

Remark:

Test result: Test passed

Environment condition:

Date & Time: Wed 10/Jun/2020 16:01:59
 Location: CTC advanced GmbH, Laboratory RC-SYS
 Temperature: 22 °C
 Humidity: 55 %
 Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 10 GHz
 Stop frequency: 18 GHz
 Center frequency: 14 GHz
 Frequency span: 8 GHz
 Resolution-BW: 100 kHz
 Video-BW: 1 MHz
 Input attenuation: 0 dB
 Trace-Mode: Max-Hold
 Detector-Mode: Pos Peak

Correction:

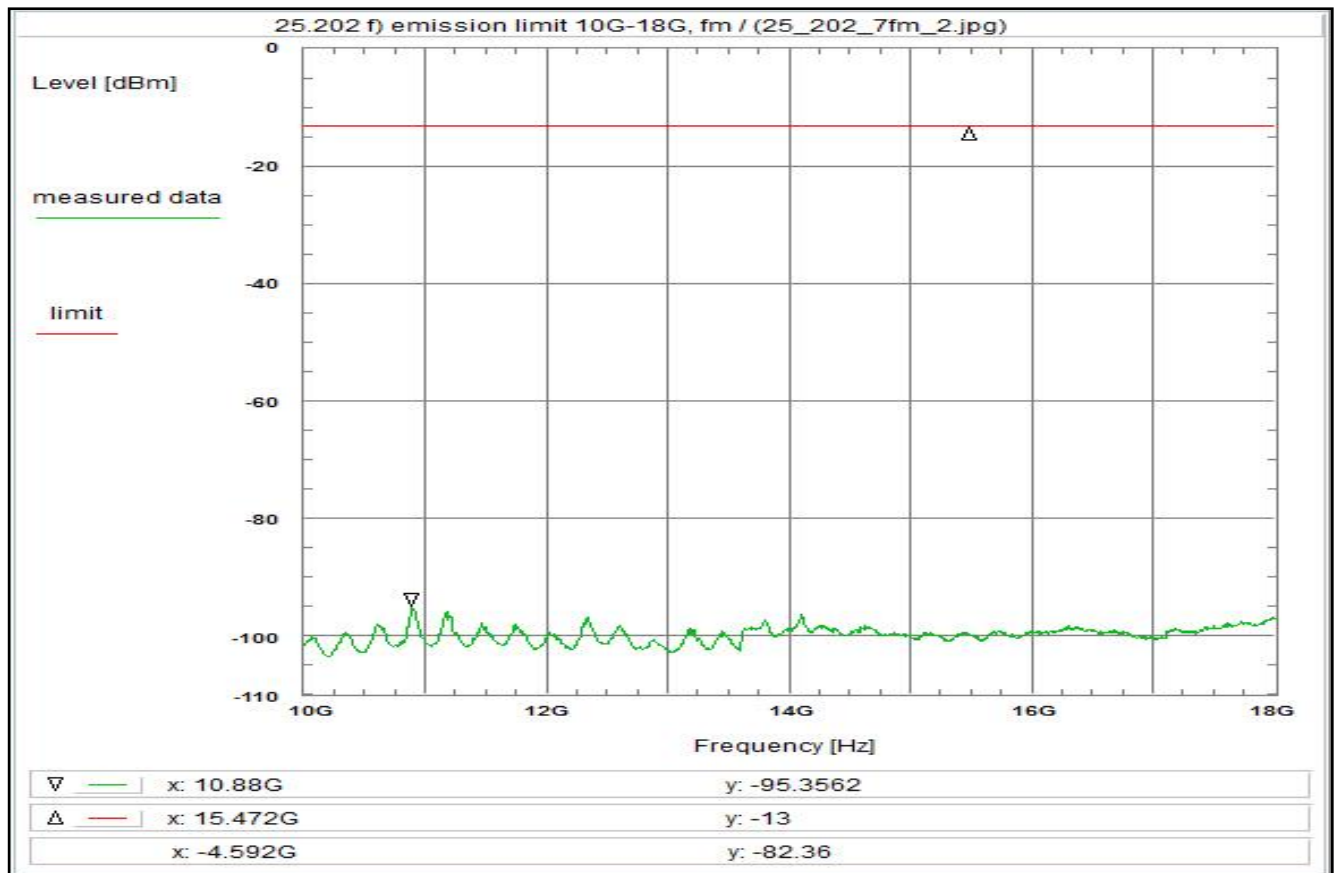
Directional coupler + 0.0 dB
 Coaxial cable (C220) + 2.7 dB
 DUT-Antenna (on-axis) + 10.4 dBi
 Test antenna + 0.0 dB
 BW correction factor (100k -> 4k) - 14.0 dB
 Atten. between HPA and feedhorn + 0.0 dB
 (FHPF) + 12.5 dB
 TOTAL CORRECTION: + 11.6 dB

Remarks:

Carrier-on state / Carrier in the middle of the band (fm)

Peak Detector

Plot No. 29



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier in the middle of the band (fm)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Mode TCH_2C8A, fm

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001

Remark:

Test result: Test passed

Environment condition:

Date & Time: Wed 10/Jun/2020 16:04:36

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 10 GHz

Stop frequency: 18 GHz

Center frequency: 14 GHz

Frequency span: 8 GHz

Resolution-BW: 100 kHz

Video-BW: 10 kHz

Input attenuation: 0 dB

Trace-Mode: Max-Hold

Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB

Coaxial cable (C220) + 2.7 dB

DUT-Antenna (on-axis) + 10.4 dBi

Test antenna + 0.0 dB

BW correction factor (100k -> 4k) - 14.0 dB

Atten. between HPA and feedhorn + 0.0 dB

(FHPF) + 12.5 dB

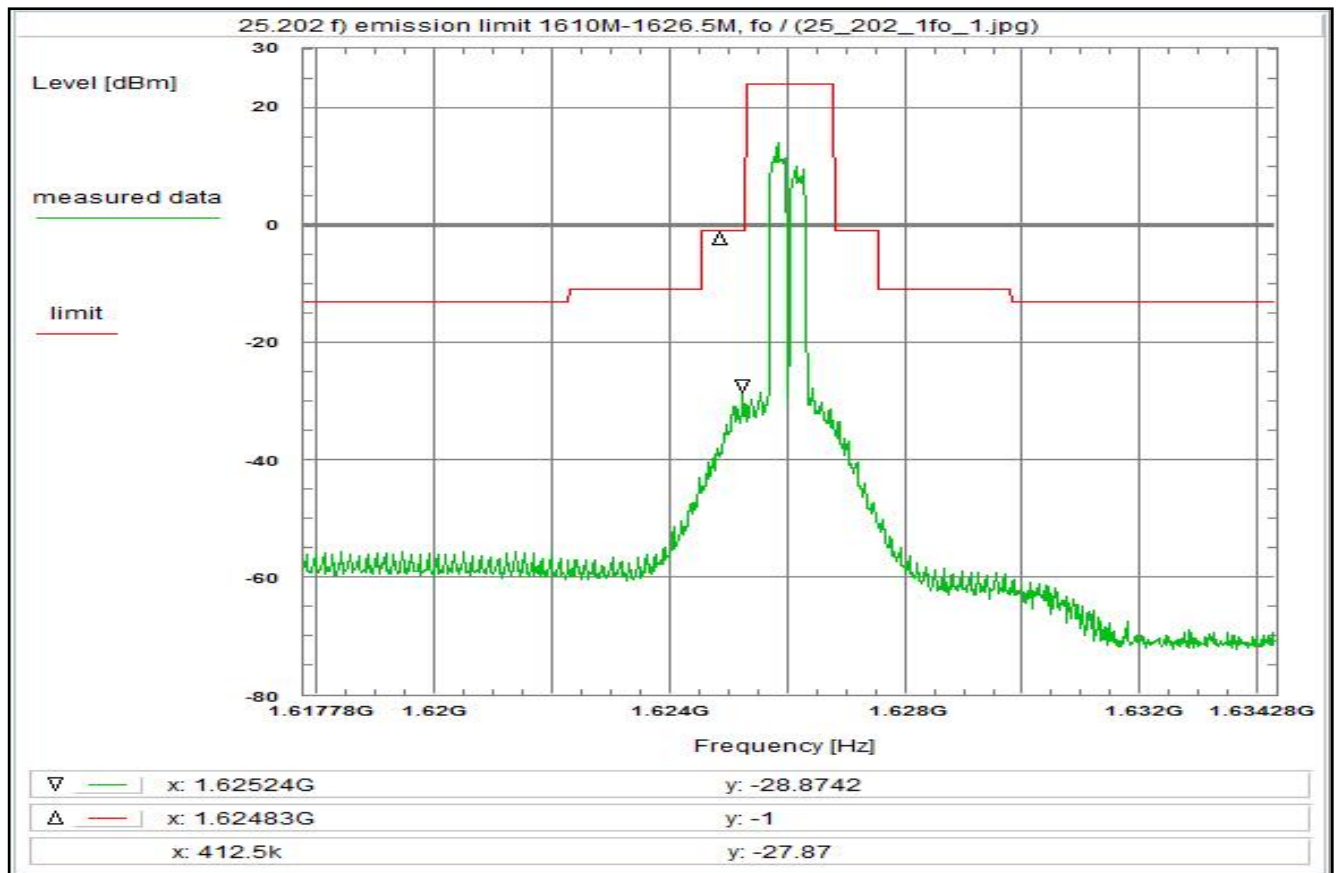
TOTAL CORRECTION: + 11.6 dB

Remarks:

Carrier-on state / Carrier in the middle of the band (fm)

RMS Detector

Plot No. 30



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the upper edge of the band (fh)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43+10\log(P_{max})\text{dBc/4kHz} = -43\text{ dBW}$

The mean power of emissions shall be attenuated
below the mean output power of the transmitter
in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fh

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 15:25:46

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.61778 GHz

Stop frequency: 1.63428 GHz

Center frequency: 1.62603 GHz

Frequency span: 16.5 MHz

Resolution-BW: 10 kHz

Video-BW: 1 kHz

Input attenuation: 12 dB

Trace-Mode: Max-Hold

Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB

Coaxial cable + 0.0 dB

DUT-Antenna (on-axis) + 10.4 dB

Test antenna + 0.0 dB

BW correction factor (10k -> 4k) - 4.0 dB

Atten. between HPA and feedhorn + 0.0 dB

(U005 + POWER SPLITTER) + 37.6 dB

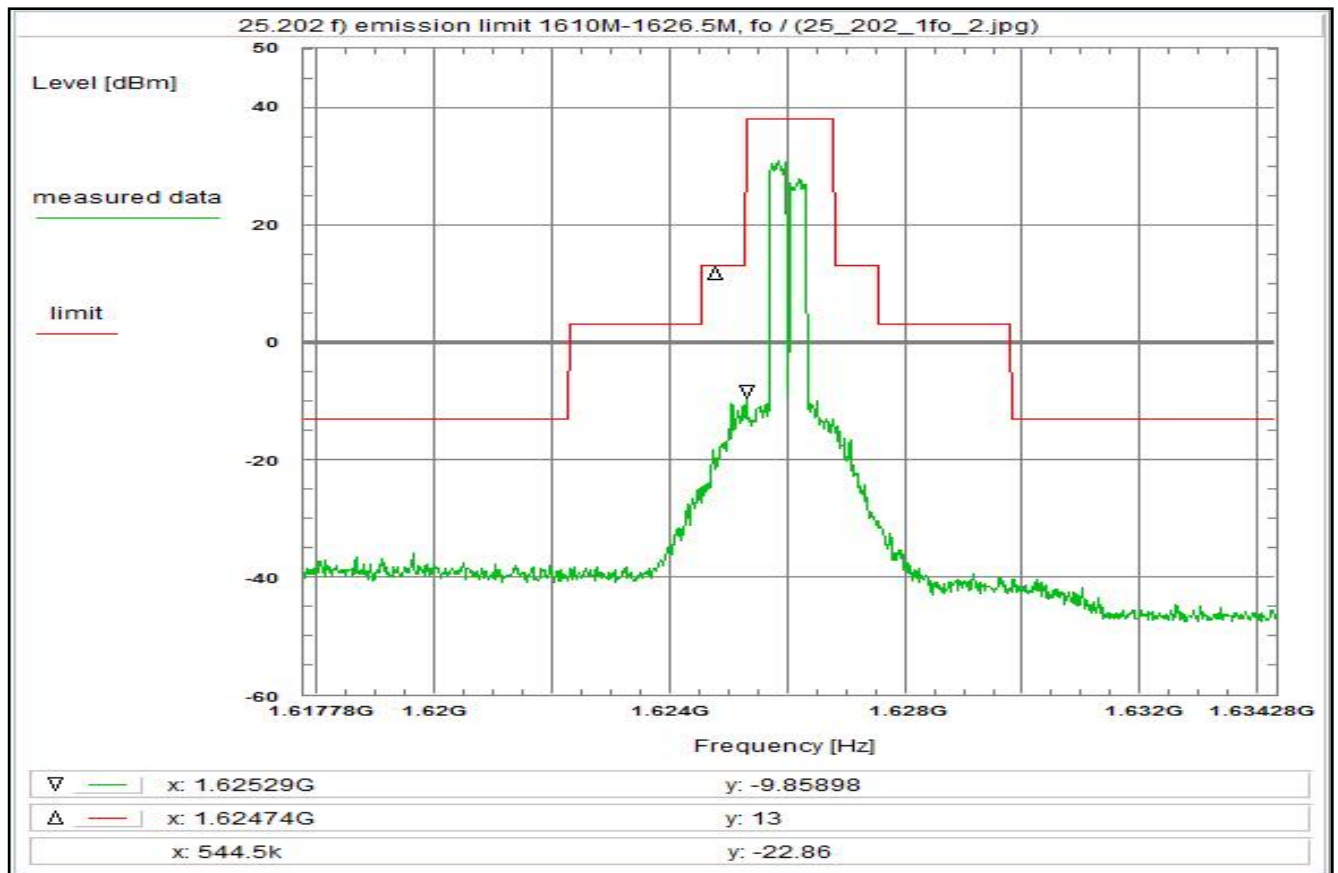
TOTAL CORRECTION: + 44.0 dB

Remarks:

Carrier-on state / Carrier at the upper edge of the band (fo)

RMS detector

Plot No. 31



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the upper edge of the band (fo)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43+10\log(P_{max})\text{dBc}/4\text{kHz} = -43\text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fh

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 15:29:30

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.61778 GHz

Stop frequency: 1.63428 GHz

Center frequency: 1.62603 GHz

Frequency span: 16.5 MHz

Resolution-BW: 10 kHz

Video-BW: 100 kHz

Input attenuation: 12 dB

Trace-Mode: Max-Hold

Detector-Mode: Pos Peak

Correction:

Directional coupler + 0.0 dB

Coaxial cable + 0.0 dB

DUT-Antenna (on-axis) + 10.4 dBi

Test antenna + 0.0 dB

BW correction factor (10k -> 4k) - 4.0 dB

Atten. between HPA and feedhorn + 0.0 dB

(U005 + POWER SPLITTER) + 37.6 dB

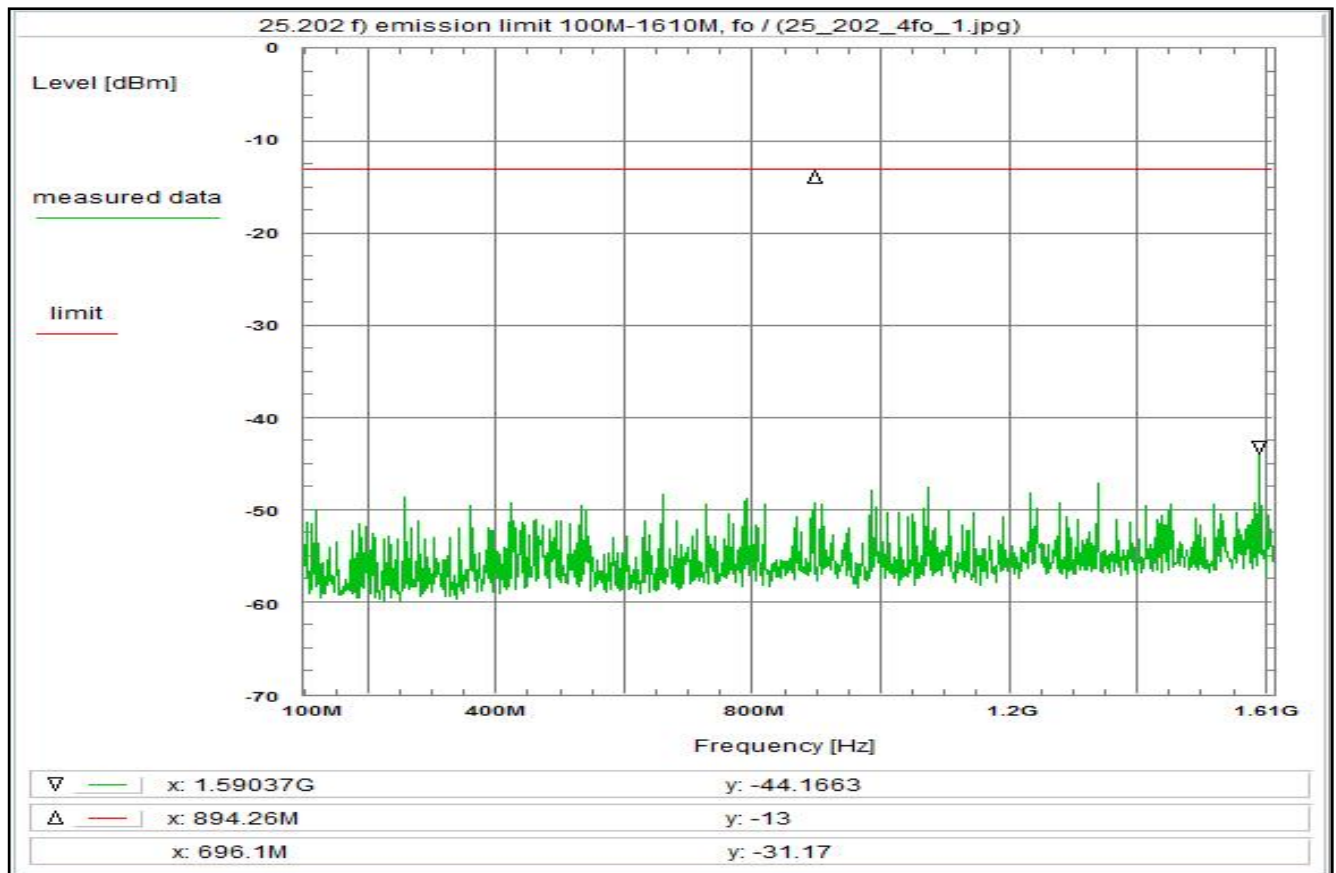
TOTAL CORRECTION: + 44.0 dB

Remarks:

Carrier-on state / Carrier at the upper edge of the band (fo)

RMS detector

Plot No. 32



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier at the upper edge of the band (fh)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fh

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 15:32:17

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 100 MHz

Stop frequency: 1.61 GHz

Center frequency: 855 MHz

Frequency span: 1.51 GHz

Resolution-BW: 10 kHz

Video-BW: 100 kHz

Input attenuation: 12 dB

Trace-Mode: Max-Hold

Detector-Mode: Pos Peak

Correction:

Directional coupler + 0.0 dB

Coaxial cable + 0.0 dB

DUT-Antenna (on-axis) + 10.4 dBi

Test antenna + 0.0 dB

BW correction factor (10k -> 4k) - 4.0 dB

Atten. between HPA and feedhorn + 0.0 dB

(U005 + POWER SPLITTER) + 37.0 dB

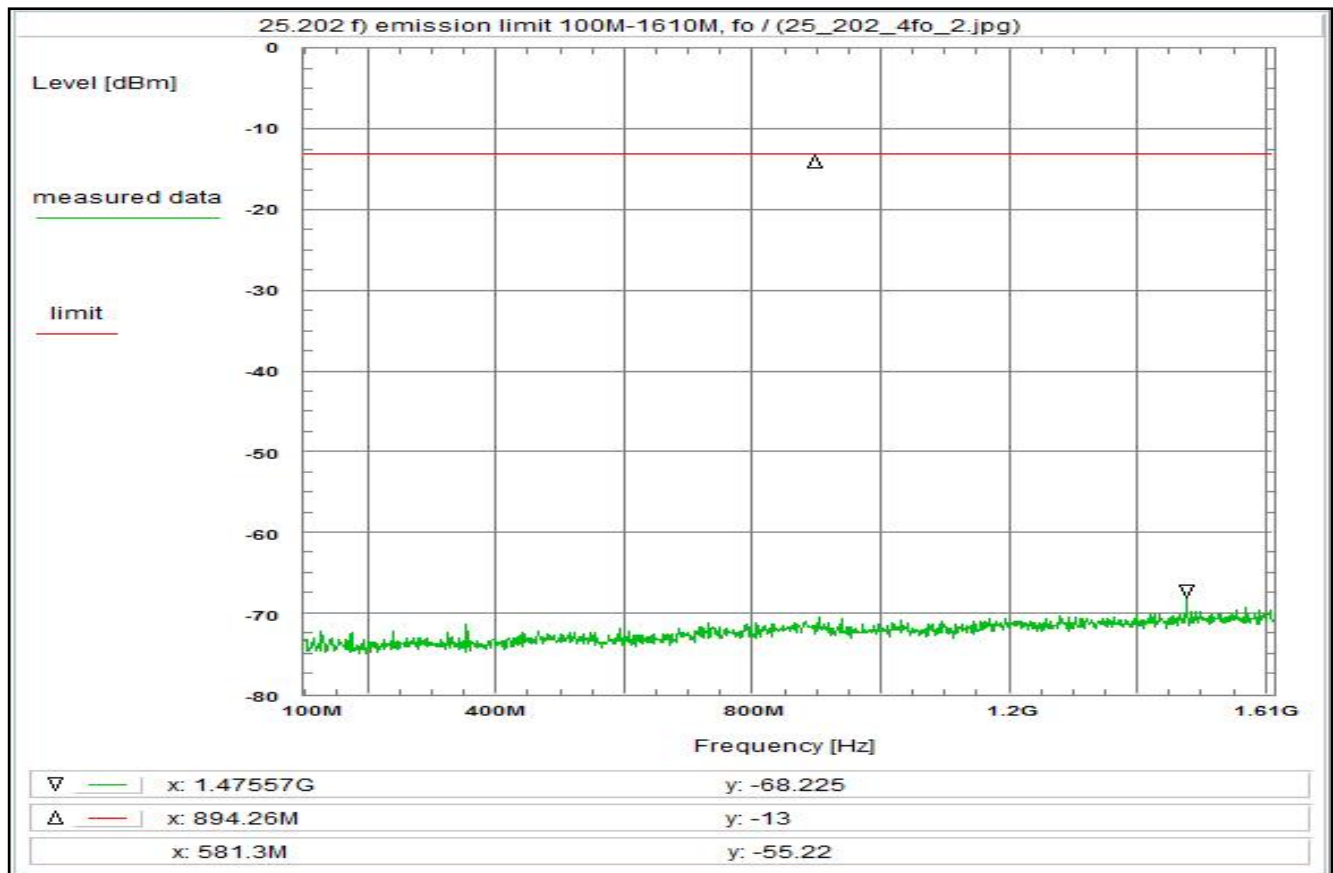
TOTAL CORRECTION: + 43.4 dB

Remarks:

Carrier-on state / Carrier at the upper edge of the band (fo)

Peak detector

Plot No. 33



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier at the upper edge of the band (fh)

Limit:Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated
 below the mean output power of the transmitter
 in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fh

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passedEnvironment condition:

Date & Time: Mon 08/Jun/2020 15:35:40

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 100 MHz

Stop frequency: 1.61 GHz

Center frequency: 855 MHz

Frequency span: 1.51 GHz

Resolution-BW: 10 kHz

Video-BW: 1 kHz

Input attenuation: 12 dB

Trace-Mode: Max-Hold

Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB

Coaxial cable + 0.0 dB

DUT-Antenna (on-axis) + 10.4 dBi

Test antenna + 0.0 dB

BW correction factor (10k -> 4k) - 4.0 dB

Atten. between HPA and feedhorn + 0.0 dB

(U005 + POWER SPLITTER) + 37.0 dB

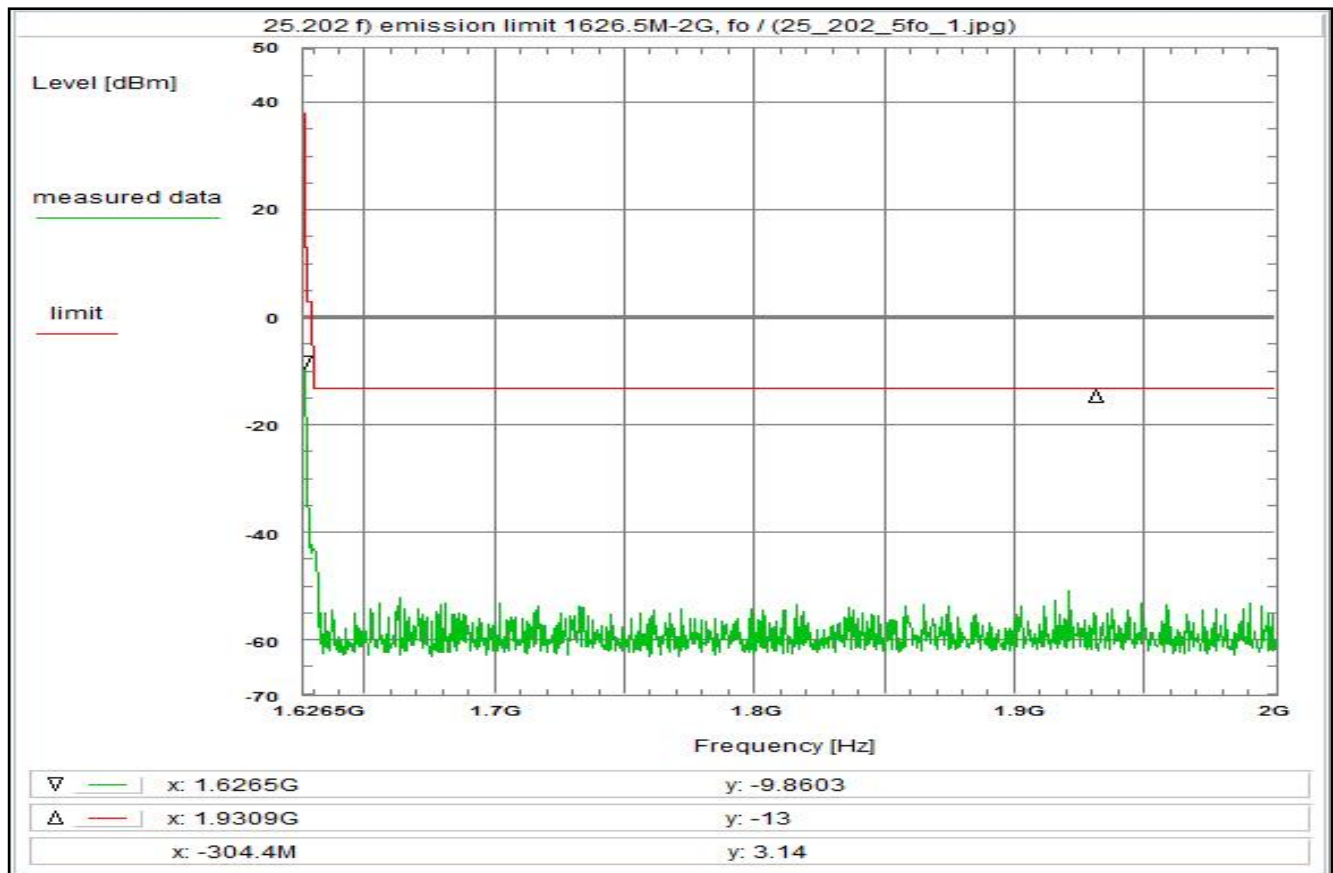
TOTAL CORRECTION: + 43.4 dB

Remarks:

Carrier-on state / Carrier at the upper edge of the band (fo)

RMS detector

Plot No. 34



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier at the upper edge of the band (fo)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fh

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 15:41:52
 Location: CTC advanced GmbH, Laboratory RC-SYS
 Temperature: 22 °C
 Humidity: 55 %
 Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.6265 GHz
 Stop frequency: 2 GHz
 Center frequency: 1.81325 GHz
 Frequency span: 373.5 MHz
 Resolution-BW: 10 kHz
 Video-BW: 100 kHz
 Input attenuation: 6 dB
 Trace-Mode: Max-Hold
 Detector-Mode: Pos Peak

Correction:

Directional coupler	+ 0.0 dB
Coaxial cable	+ 0.0 dB
DUT-Antenna (on-axis)	+ 10.4 dBi
Test antenna	+ 0.0 dB
BW correction factor (10k -> 4k)	- 4.0 dB
Atten. between HPA and feedhorn	+ 0.0 dB
(U005 + POWER SPLITTER)	+ 37.7 dB
TOTAL CORRECTION:	+ 44.1 dB

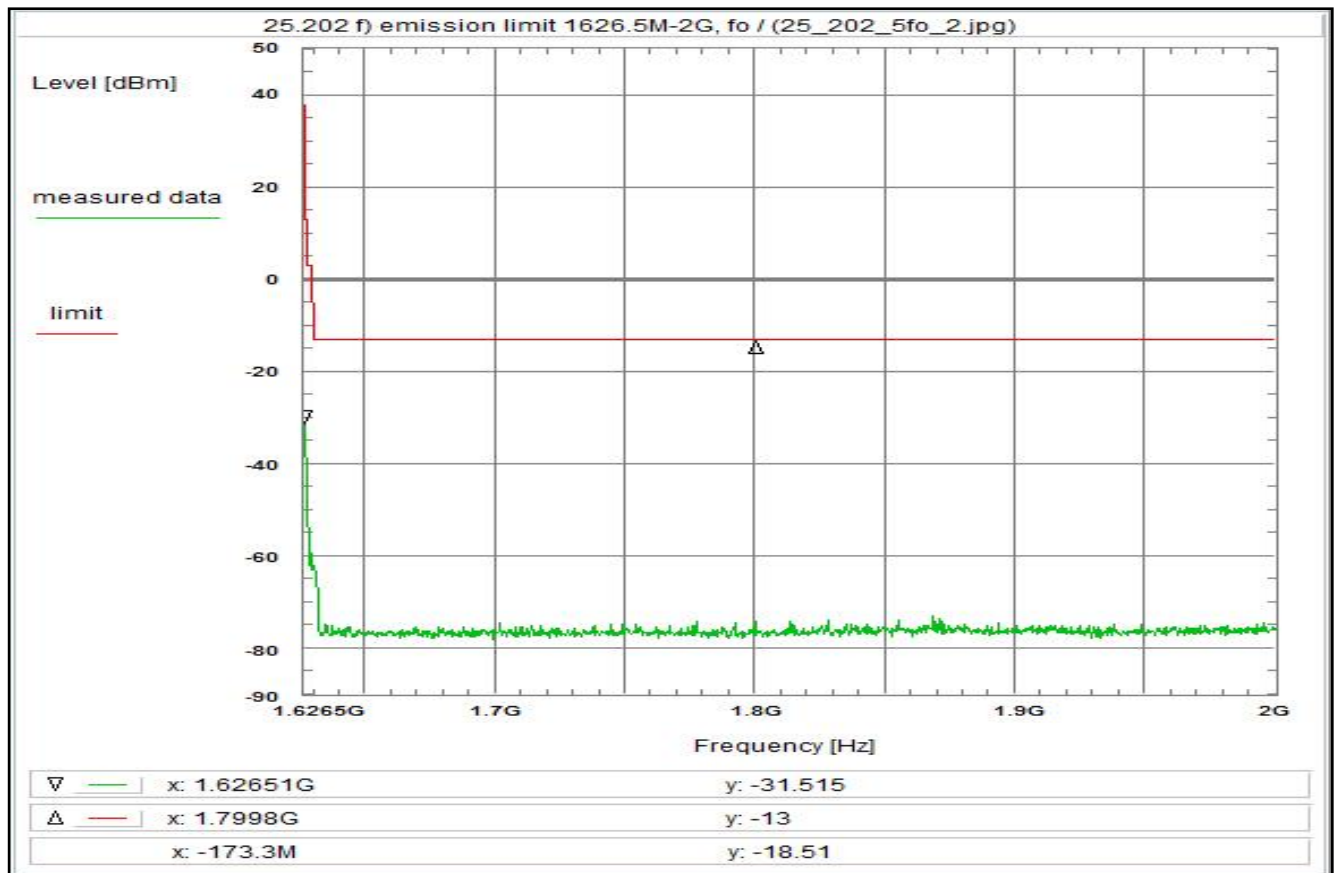
Remarks:

Carrier-on state / Carrier at the upper edge of the band (fo)

Peak detector

Marker shows the wanted signal

Plot No. 35



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier at the upper edge of the band (fh)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fh

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 15:45:11

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.6265 GHz

Stop frequency: 2 GHz

Center frequency: 1.81325 GHz

Frequency span: 373.5 MHz

Resolution-BW: 10 kHz

Video-BW: 1 kHz

Input attenuation: 6 dB

Trace-Mode: Max-Hold

Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB

Coaxial cable + 0.0 dB

DUT-Antenna (on-axis) + 10.4 dBi

Test antenna + 0.0 dB

BW correction factor (10k -> 4k) - 4.0 dB

Atten. between HPA and feedhorn + 0.0 dB

(U005 + POWER SPLITTER) + 37.7 dB

TOTAL CORRECTION: + 44.1 dB

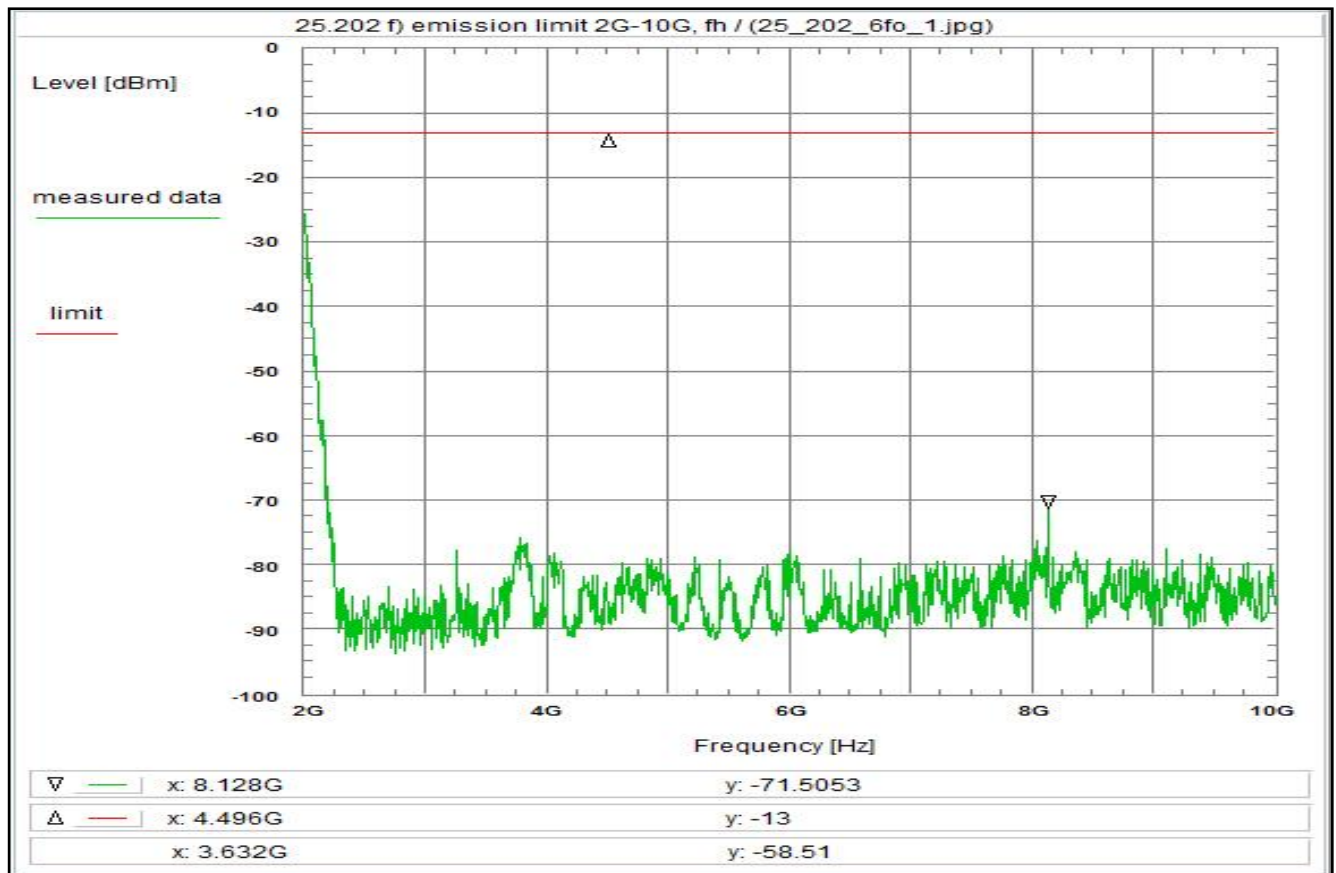
Remarks:

Carrier-on state / Carrier at the upper edge of the band (fo)

RMS detector

Marker shows the wanted signal

Plot No. 36



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier at the upper edge of the band (fh)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Mode TCH_2C8A, fh

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001

Remark:

Test result: Test passed

Environment condition:

Date & Time: Wed 10/Jun/2020 15:45:50
 Location: CTC advanced GmbH, Laboratory RC-SYS
 Temperature: 22 °C
 Humidity: 55 %
 Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 2 GHz
 Stop frequency: 10 GHz
 Center frequency: 6 GHz
 Frequency span: 8 GHz
 Resolution-BW: 100 kHz
 Video-BW: 1 MHz
 Input attenuation: 0 dB
 Trace-Mode: Max-Hold
 Detector-Mode: Pos Peak

Correction:

Directional coupler + 0.0 dB
 Coaxial cable (C220) + 1.7 dB
 DUT-Antenna (on-axis) + 10.4 dBi
 Test antenna + 0.0 dB
 BW correction factor (100k -> 4k) - 14.0 dB
 Atten. between HPA and feedhorn + 0.0 dB
 (FHPF) + 12.5 dB
 TOTAL CORRECTION: + 10.6 dB

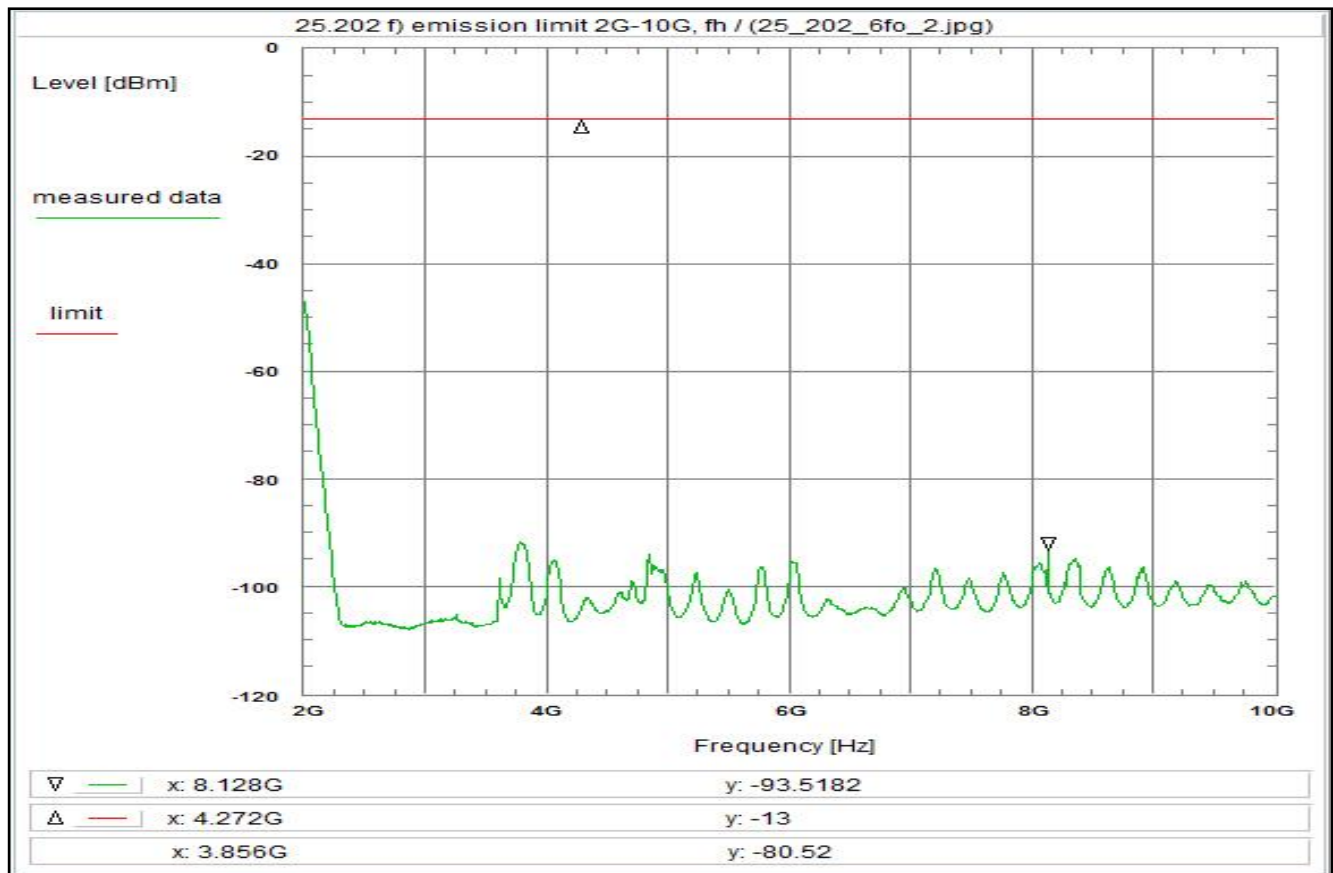
Remarks:

Carrier-on state / Carrier at the upper edge of the band (fo)

Peak Detector

Rather left the plot show the behaviour of the HPF

Plot No. 37



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier at the upper edge of the band (fh)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Mode TCH_2C8A, fh

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001

Remark:

Test result: Test passed

Environment condition:

Date & Time: Wed 10/Jun/2020 15:51:26
 Location: CTC advanced GmbH, Laboratory RC-SYS
 Temperature: 22 °C
 Humidity: 55 %
 Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 2 GHz
 Stop frequency: 10 GHz
 Center frequency: 6 GHz
 Frequency span: 8 GHz
 Resolution-BW: 100 kHz
 Video-BW: 10 kHz
 Input attenuation: 0 dB
 Trace-Mode: Max-Hold
 Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB
 Coaxial cable (C220) + 1.7 dB
 DUT-Antenna (on-axis) + 10.4 dBi
 Test antenna + 0.0 dB
 BW correction factor (100k -> 4k) - 14.0 dB
 Atten. between HPA and feedhorn + 0.0 dB
 (FHPF) + 12.5 dB
 TOTAL CORRECTION: + 10.6 dB

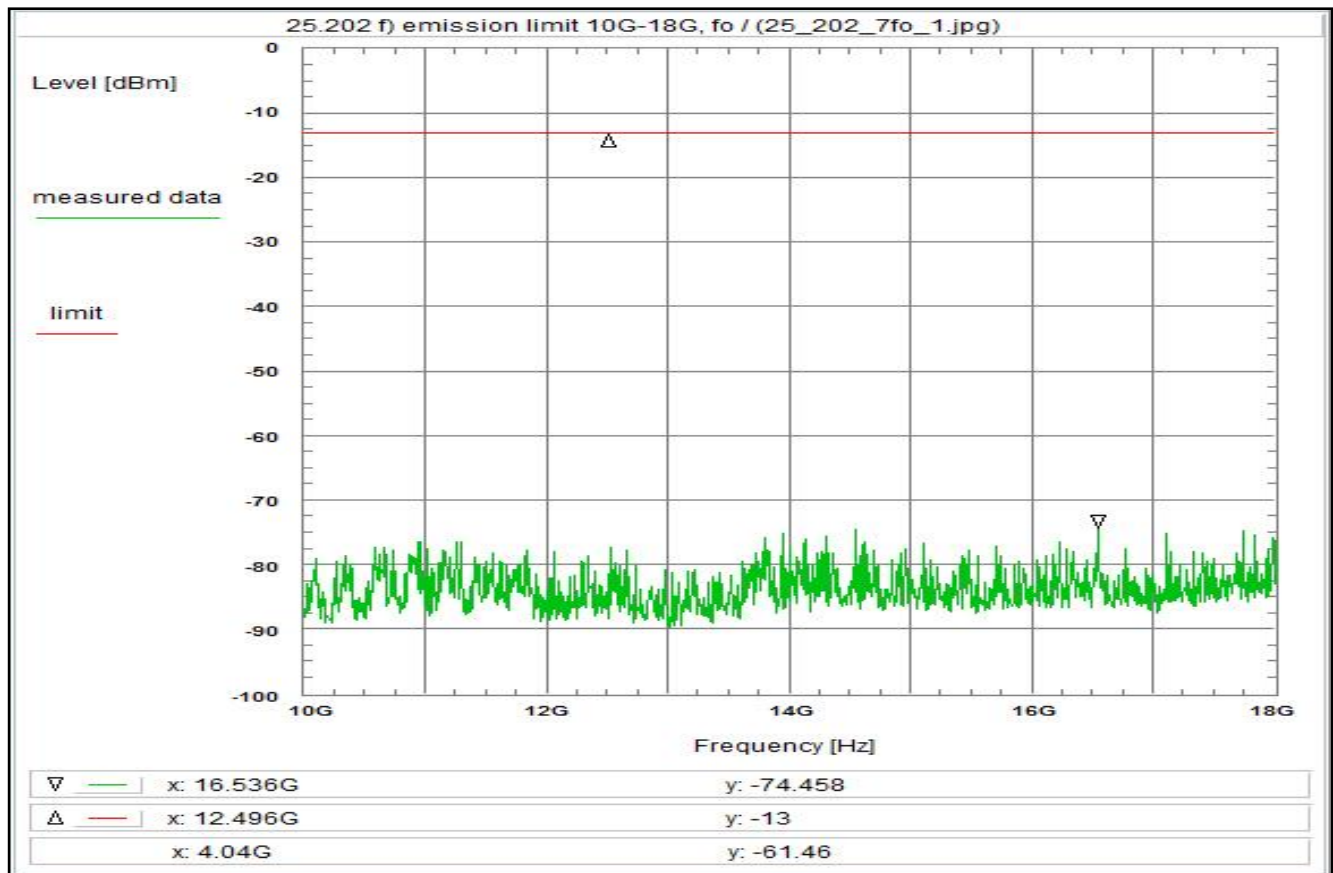
Remarks:

Carrier-on state / Carrier at the upper edge of the band (fo)

RMS Detector

Rather left the plot show the behaviour of the HPF

Plot No. 38



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier at the upper edge of the band (fo)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Mode TCH_2C8A, fh

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001

Remark:

Test result: Test passed

Environment condition:

Date & Time: Wed 10/Jun/2020 15:55:20
 Location: CTC advanced GmbH, Laboratory RC-SYS
 Temperature: 22 °C
 Humidity: 55 %
 Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 10 GHz
 Stop frequency: 18 GHz
 Center frequency: 14 GHz
 Frequency span: 8 GHz
 Resolution-BW: 100 kHz
 Video-BW: 1 MHz
 Input attenuation: 0 dB
 Trace-Mode: Max-Hold
 Detector-Mode: Pos Peak

Correction:

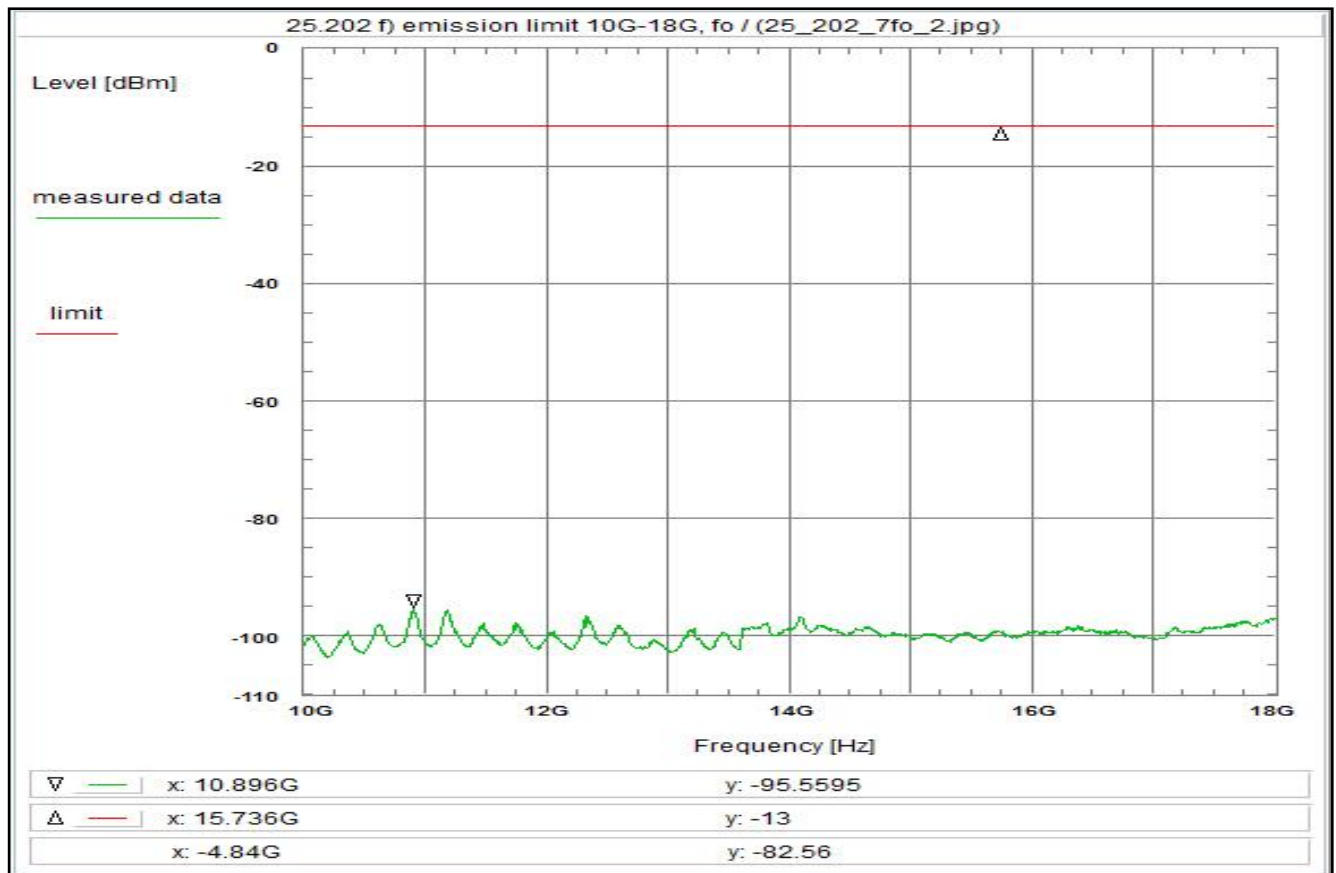
Directional coupler + 0.0 dB
 Coaxial cable (C220) + 2.7 dB
 DUT-Antenna (on-axis) + 10.4 dBi
 Test antenna + 0.0 dB
 BW correction factor (100k -> 4k) - 14.0 dB
 Atten. between HPA and feedhorn + 0.0 dB
 (FHPF) + 12.5 dB
 TOTAL CORRECTION: + 11.6 dB

Remarks:

Carrier-on state / Carrier at the upper edge of the band (fo)

Peak Detector

Plot No. 39



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
 Emission limitations
 Modulated rf-carrier at the upper edge of the band (fo)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz

100-250% of assigned bw: -35dBc/4kHz

> 250% of assigned bw: $-43 + 10 \log(P_{max}) \text{ dBc/4kHz} = -43 \text{ dBW}$

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Mode TCH_2C8A, fh

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001

Remark:

Test result: Test passed

Environment condition:

Date & Time: Wed 10/Jun/2020 15:58:21

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 10 GHz

Stop frequency: 18 GHz

Center frequency: 14 GHz

Frequency span: 8 GHz

Resolution-BW: 100 kHz

Video-BW: 10 kHz

Input attenuation: 0 dB

Trace-Mode: Max-Hold

Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB

Coaxial cable (C220) + 2.7 dB

DUT-Antenna (on-axis) + 10.4 dBi

Test antenna + 0.0 dB

BW correction factor (100k -> 4k) - 14.0 dB

Atten. between HPA and feedhorn + 0.0 dB

(FHPF) + 12.5 dB

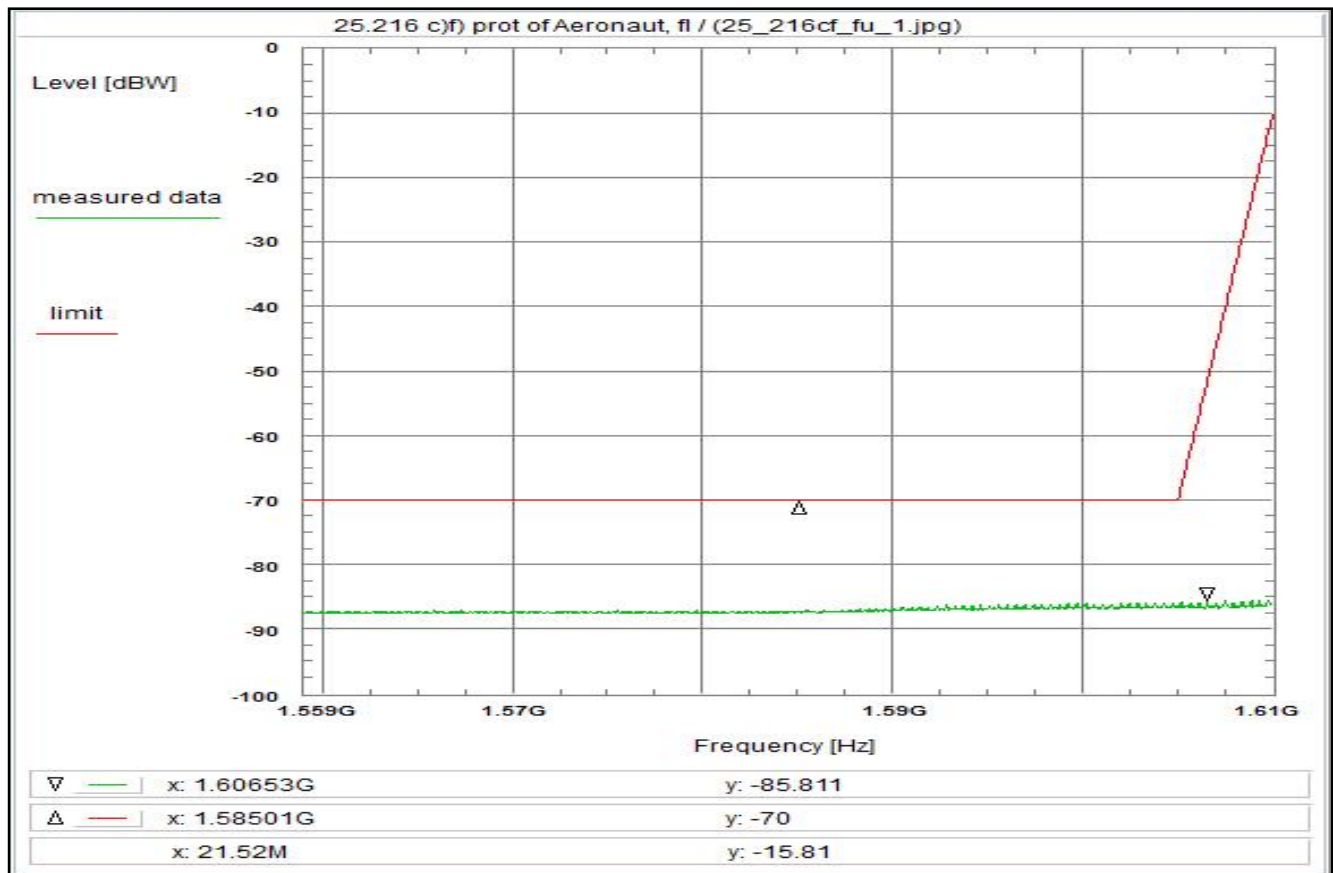
TOTAL CORRECTION: + 11.6 dB

Remarks:

Carrier-on state / Carrier at the upper edge of the band (fo)

RMS Detector

Plot No. 40



Subclause: 25.216 g) Limits on emissions from mobile earth stations for protection of aeronautical radionavigation-satellite service
 Carrier-on state, modulated carrier at the lower edge of the band (fu)
 Conducted measurement at the antenna-connector

Limit:

Limit according to 25.216 g):

1559.0 - 1605.0MHz: -70dBW/1MHz

1605.0 - 1610MHz: -70 to -10dBW/1MHz (linear interpolated)

The EIRP, averaged over any two-millisecond active transmission interval from the MESS in the carrier-on state shall not exceed the limits above.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fl

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 16:08:21

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.559 GHz

Stop frequency: 1.61 GHz

Center frequency: 1.5845 GHz

Frequency span: 51 MHz

Resolution-BW: 1 MHz

Video-BW: 100 kHz

Input attenuation: 2 dB

Trace-Mode: Clear Write

Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB

Coaxial cable + 0.0 dB

DUT-Antenna (on-axis) + 10.4 dBi

Test antenna + 0.0 dB

BW correction factor + 0.0 dB

Atten. between HPA and feedhorn + 0.0 dB

(U005 + POWER SPLITTER) + 37.5 dB

TOTAL CORRECTION: + 47.9 dB

Remarks:

Carrier-on state / Carrier at the lower edge of the band (fu)

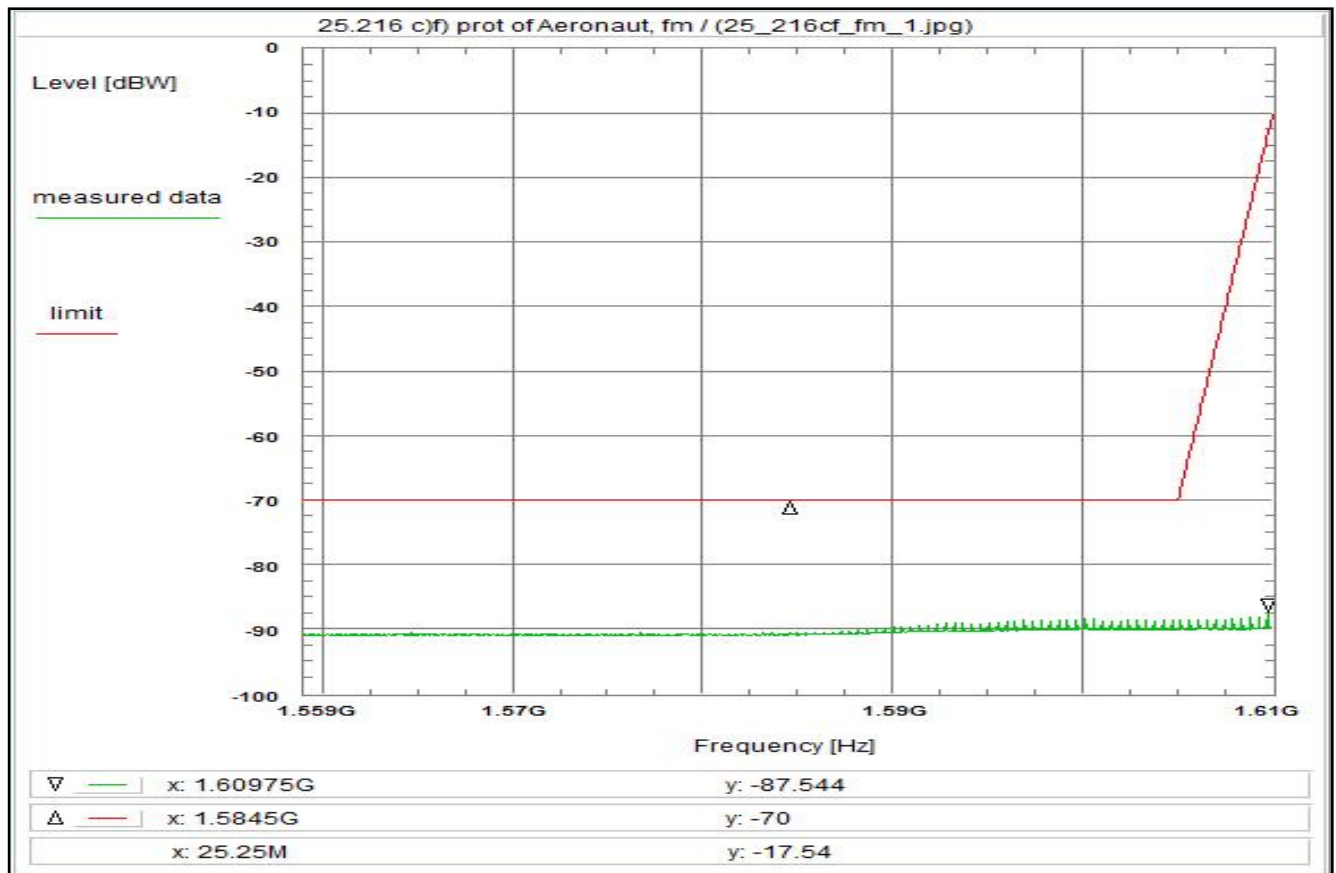
Measurement with 1 MHz resolution/video filter and RMS Detector.

For EIRP calculation:

'worst-case' = maximum antenna gain

RMS detector

Plot No. 41



Subclause: 25.216 g) Limits on emissions from mobile earth stations for protection of aeronautical radionavigation-satellite service
Carrier-on state, modulated carrier in the middle of the band (fm)
Conducted measurement at the antenna-connector

Limit:

Limit according to 25.216 g):

1559.0 - 1605.0MHz: -70dBW/1MHz

1605.0 - 1610MHz: -70 to -10dBW/1MHz (linear interpolated)

The EIRP, averaged over any two-millisecond active transmission interval from the MESS in the carrier-on state shall not exceed the limits above.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fm

Test setup:

see test report chapter 6.2:

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 16:04:57

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.559 GHz

Stop frequency: 1.61 GHz

Center frequency: 1.5845 GHz

Frequency span: 51 MHz

Resolution-BW: 1 MHz

Video-BW: 100 kHz

Input attenuation: 0 dB

Trace-Mode: Max-Hold

Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB

Coaxial cable + 0.0 dB

DUT-Antenna (on-axis) + 10.4 dBi

Test antenna + 0.0 dB

BW correction factor + 0.0 dB

Atten. between HPA and feedhorn + 0.0 dB

(U005 + POWER SPLITTER) + 37.5 dB

TOTAL CORRECTION: + 47.9 dB

Remarks:

Carrier-on state / Carrier in the middle of the band (fm)

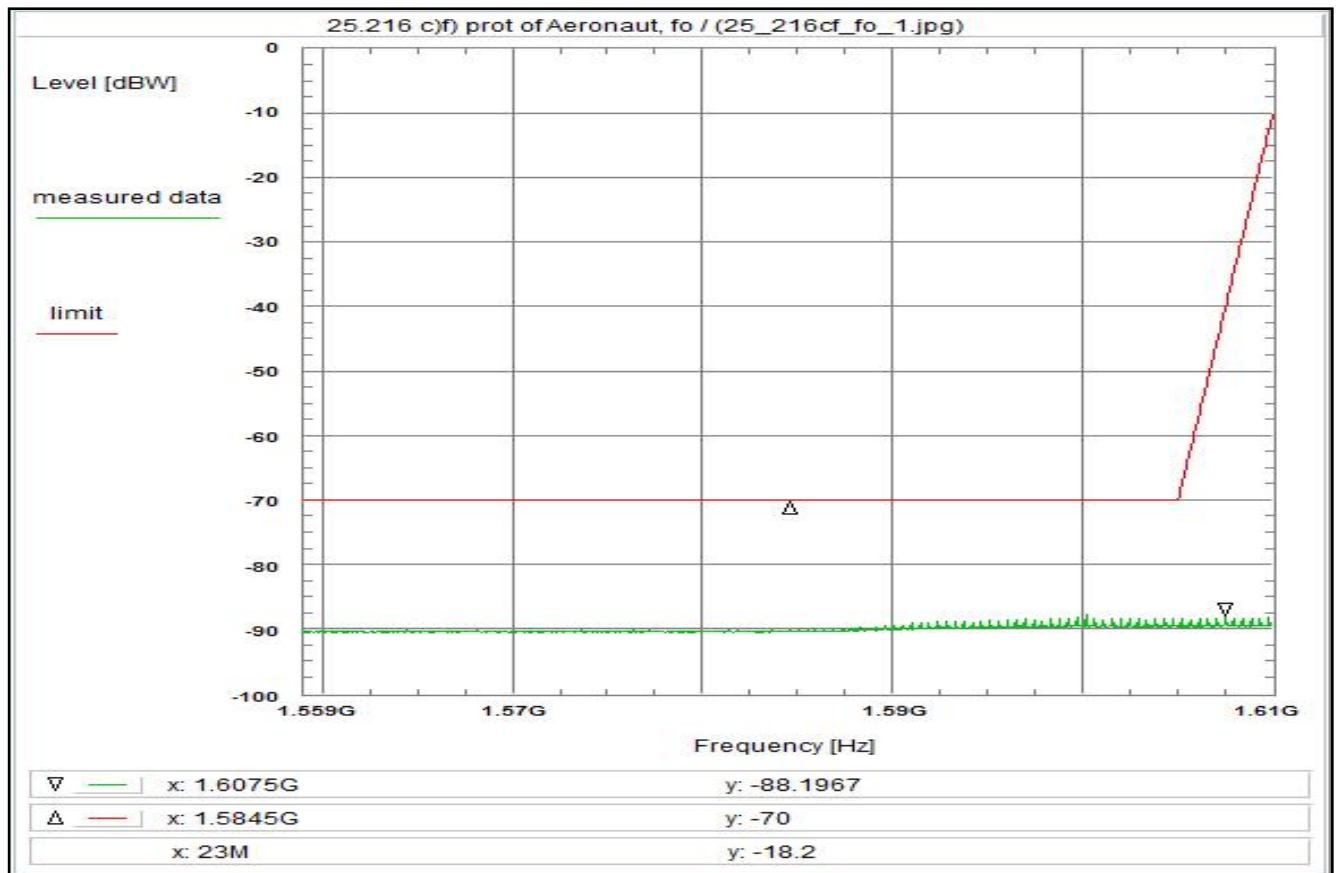
Measurement with 1 MHz resolution/video filter and RMS Detector.

For EIRP calculation:

'worst-case' = maximum antenna gain

RMS detector

Plot No. 42



Subclause: 25.216 g) Limits on emissions from mobile earth stations for protection of aeronautical radionavigation-satellite service
 Carrier-on state, modulated carrier at the upper edge of the band (fo)
 Conducted measurement at the antenna-connector

Limit:

Limit according to 25.216 g):

1559.0 - 1605.0MHz: -70dBW/1MHz

1605.0 - 1610MHz: -70 to -10dBW/1MHz (linear interpolated)

The EIRP, averaged over any two-millisecond active transmission interval from the MESs in the carrier-on state shall not exceed the limits above.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fh

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 16:02:17

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.559 GHz

Stop frequency: 1.61 GHz

Center frequency: 1.5845 GHz

Frequency span: 51 MHz

Resolution-BW: 1 MHz

Video-BW: 100 kHz

Input attenuation: 0 dB

Trace-Mode: Max-Hold

Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB

Coaxial cable + 0.0 dB

DUT-Antenna (on-axis) + 10.4 dBi

Test antenna + 0.0 dB

BW correction factor + 0.0 dB

Atten. between HPA and feedhorn + 0.0 dB

(U005 + POWER SPLITTER) + 37.5 dB

TOTAL CORRECTION: + 47.9 dB

Remarks:

Carrier-on state / Carrier at the upper edge of the band (fo)

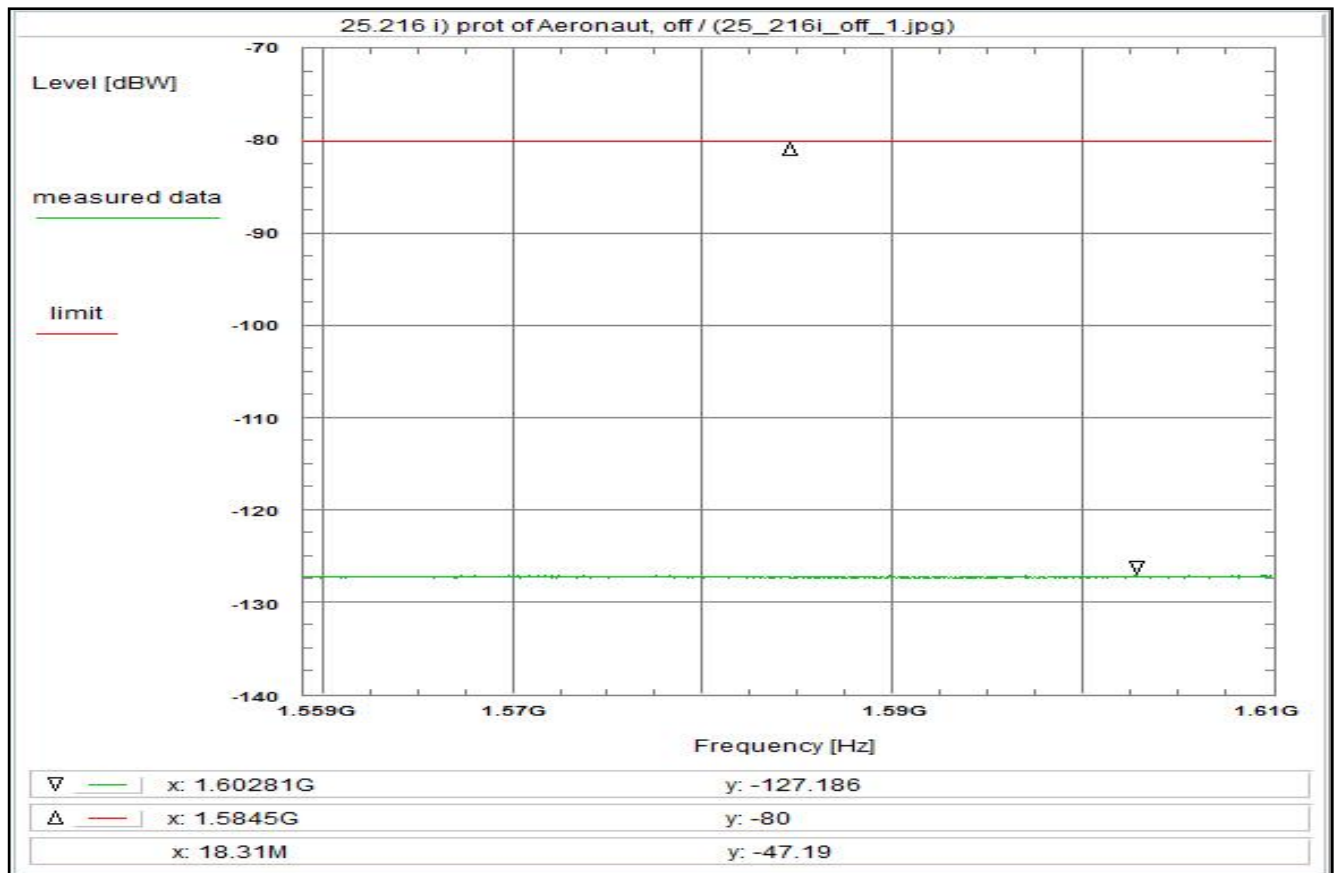
Measurement with 1 MHz resolution/video filter and RMS Detector.

For EIRP calculation:

'worst-case' = maximum antenna gain

RMS detector

Plot No. 43



Subclause: 25.216 i) Limits on emissions from mobile earth stations for protection of aeronautical radionavigation-satellite service

Carrier-off state, conducted measurement at the antenna-connector

Limit:

Limit according to 25.216 i): -80dBW/1MHz

The EIRP, averaged over any two-millisecond active transmission interval from the MESSs in the carrier-off state shall not exceed the limit above.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 2, see test report chapter 5.2

TX off

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, C220, R001

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 16:42:50
 Location: CTC advanced GmbH, Laboratory RC-SYS
 Temperature: 22 °C
 Humidity: 55 %
 Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.559 GHz
 Stop frequency: 1.61 GHz
 Center frequency: 1.5845 GHz
 Frequency span: 51 MHz
 Resolution-BW: 1 MHz
 Video-BW: 100 kHz
 Input attenuation: 0 dB
 Trace-Mode: Max-Hold
 Detector-Mode: AVG

Correction:

Directional coupler	+ 0.0 dB
Coaxial cable (C220)	+ 0.9 dB
DUT-Antenna (on-axis)	+ 10.4 dBi
Test antenna	+ 0.0 dB
BW correction factor	+ 0.0 dB
Atten. between HPA and feedhorn	+ 0.0 dB
Freefield attenuation	+ 0.0 dB
TOTAL CORRECTION:	+ 11.3 dB

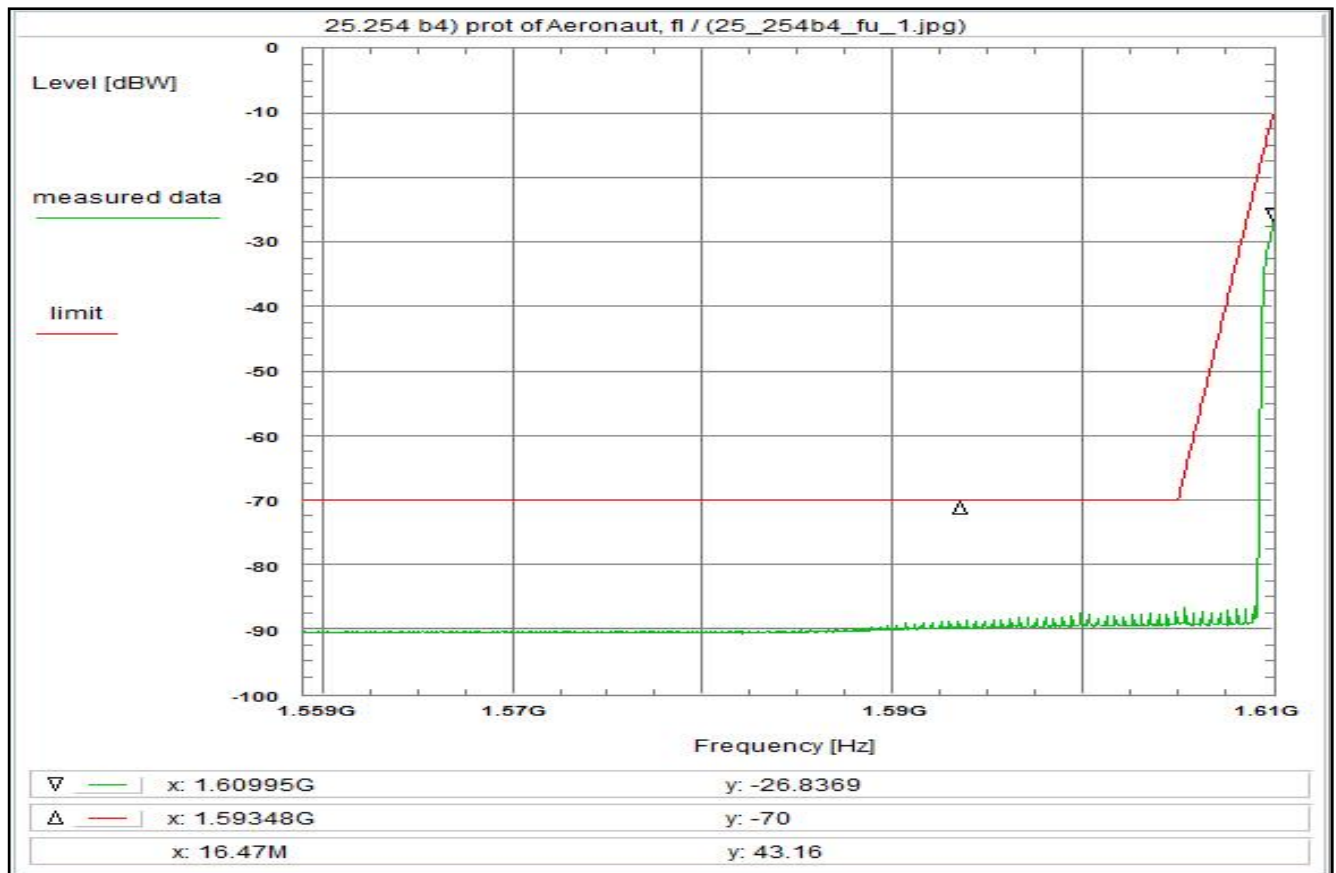
Remarks:

Carrier-off state.
 Measurement with 1 MHz resolution filter and RMS Detector.

For EIRP calculation:

'worst-case' = maximum antenna gain

Plot No. 44



Subclause: 25.254 b4) Special requirements for ancillary terrestrial components operating in the 1610-1626.5 MHz / 1525-1559 MHz bands

Carrier-on state, modulated carrier at the lower edge of the band (fu)
 Conducted measurement at the antenna-connector

Limit:

Limit according to 25.254 b4):

1559.0 - 1605.0MHz: -70dBW/1MHz

1605.0 - 1610MHz: -70 to -10dBW/1MHz (linear interpolated)

The EIRP, averaged over any two-millisecond active transmission interval from the MESS in the carrier-on state shall not exceed the limits above.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fl

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 16:26:32
 Location: CTC advanced GmbH, Laboratory RC-SYS
 Temperature: 22 °C
 Humidity: 55 %
 Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.559 GHz
 Stop frequency: 1.61 GHz
 Center frequency: 1.5845 GHz
 Frequency span: 51 MHz
 Resolution-BW: 1 MHz
 Video-BW: 100 kHz
 Input attenuation: 0 dB
 Trace-Mode: Max-Hold
 Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB
 Coaxial cable + 0.0 dB
 DUT-Antenna (on-axis) + 10.4 dBi
 Test antenna + 0.0 dB
 BW correction factor + 0.0 dB
 Atten. between HPA and feedhorn + 0.0 dB
 (U005 + POWER SPLITTER) + 37.5 dB
 TOTAL CORRECTION: + 47.9 dB

Remarks:

Carrier-on state / Carrier at the lower edge of the band (fu)
 Measurement with 1 MHz resolution/video filter and RMS Detector.

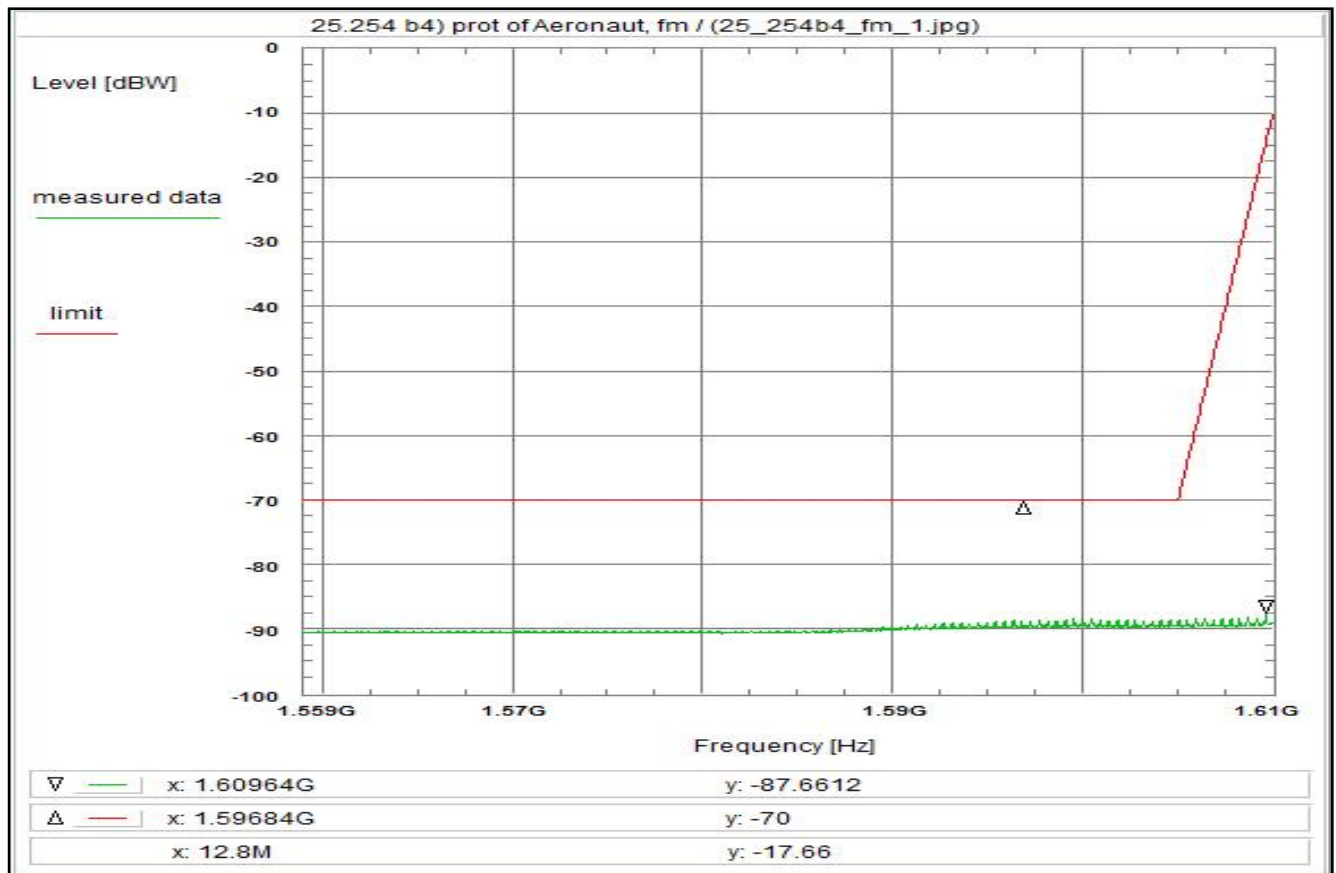
For EIRP calculation:

'worst-case' = maximum antenna gain

RMS detector

Marker shows the wanted signal

Plot No. 45



Subclause: 25.254 b4) Special requirements for ancillary terrestrial components operating in the 1610-1626.5 MHz / 1525-1559 MHz bands

Carrier-on state, modulated carrier in the middle of the band (fm)
Conducted measurement at the antenna-connector

Limit:

Limit according to 25.254 b4):

1559.0 - 1605.0MHz: -70dBW/1MHz

1605.0 - 1610MHz: -70 to -10dBW/1MHz (linear interpolated)

The EIRP, averaged over any two-millisecond active transmission interval from the MESs in the carrier-on state shall not exceed the limits above.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fm

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 16:29:41

Location: CTC advanced GmbH, Laboratory RC-SYS

Temperature: 22 °C

Humidity: 55 %

Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.559 GHz

Stop frequency: 1.61 GHz

Center frequency: 1.5845 GHz

Frequency span: 51 MHz

Resolution-BW: 1 MHz

Video-BW: 100 kHz

Input attenuation: 0 dB

Trace-Mode: Max-Hold

Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB

Coaxial cable + 0.0 dB

DUT-Antenna (on-axis) + 10.4 dBi

Test antenna + 0.0 dB

BW correction factor + 0.0 dB

Atten. between HPA and feedhorn + 0.0 dB

(U005 + POWER SPLITTER) + 37.5 dB

TOTAL CORRECTION: + 47.9 dB

Remarks:

Carrier-on state / Carrier in the middle of the band (fm)

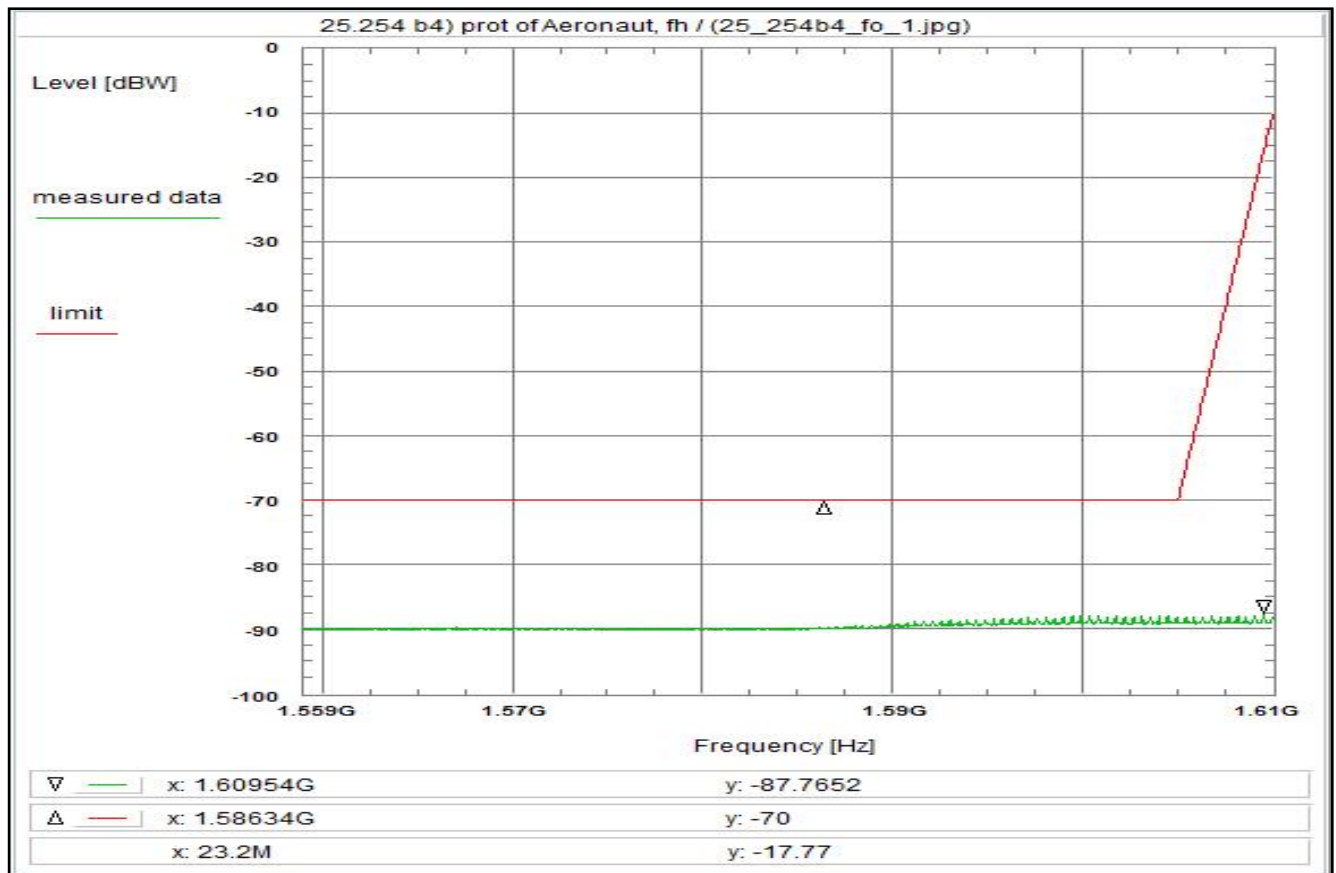
Measurement with 1 MHz resolution/video filter and RMS Detector.

For EIRP calculation:

'worst-case' = maximum antenna gain

RMS detector

Plot No. 46



Subclause: 25.254 b4) Special requirements for ancillary terrestrial components operating in the 1610-1626.5 MHz / 1525-1559 MHz bands

Carrier-on state, modulated carrier at the upper edge of the band (fo)
 Conducted measurement at the antenna-connector

Limit:

Limit according to 25.254 b4):

1559.0 - 1605.0MHz: -70dBW/1MHz

1605.0 - 1610MHz: -70 to -10dBW/1MHz (linear interpolated)

The EIRP, averaged over any two-millisecond active transmission interval from the MESs in the carrier-on state shall not exceed the limits above.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2
 Modulation TCH_2C8A, fh

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 16:32:27
 Location: CTC advanced GmbH, Laboratory RC-SYS
 Temperature: 22 °C
 Humidity: 55 %
 Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.559 GHz
 Stop frequency: 1.61 GHz
 Center frequency: 1.5845 GHz
 Frequency span: 51 MHz
 Resolution-BW: 1 MHz
 Video-BW: 100 kHz
 Input attenuation: 0 dB
 Trace-Mode: Max-Hold
 Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB
 Coaxial cable + 0.0 dB
 DUT-Antenna (on-axis) + 10.4 dBi
 Test antenna + 0.0 dB
 BW correction factor + 0.0 dB
 Atten. between HPA and feedhorn + 0.0 dB
 (U005 + POWER SPLITTER) + 37.5 dB
 TOTAL CORRECTION: + 47.9 dB

Remarks:

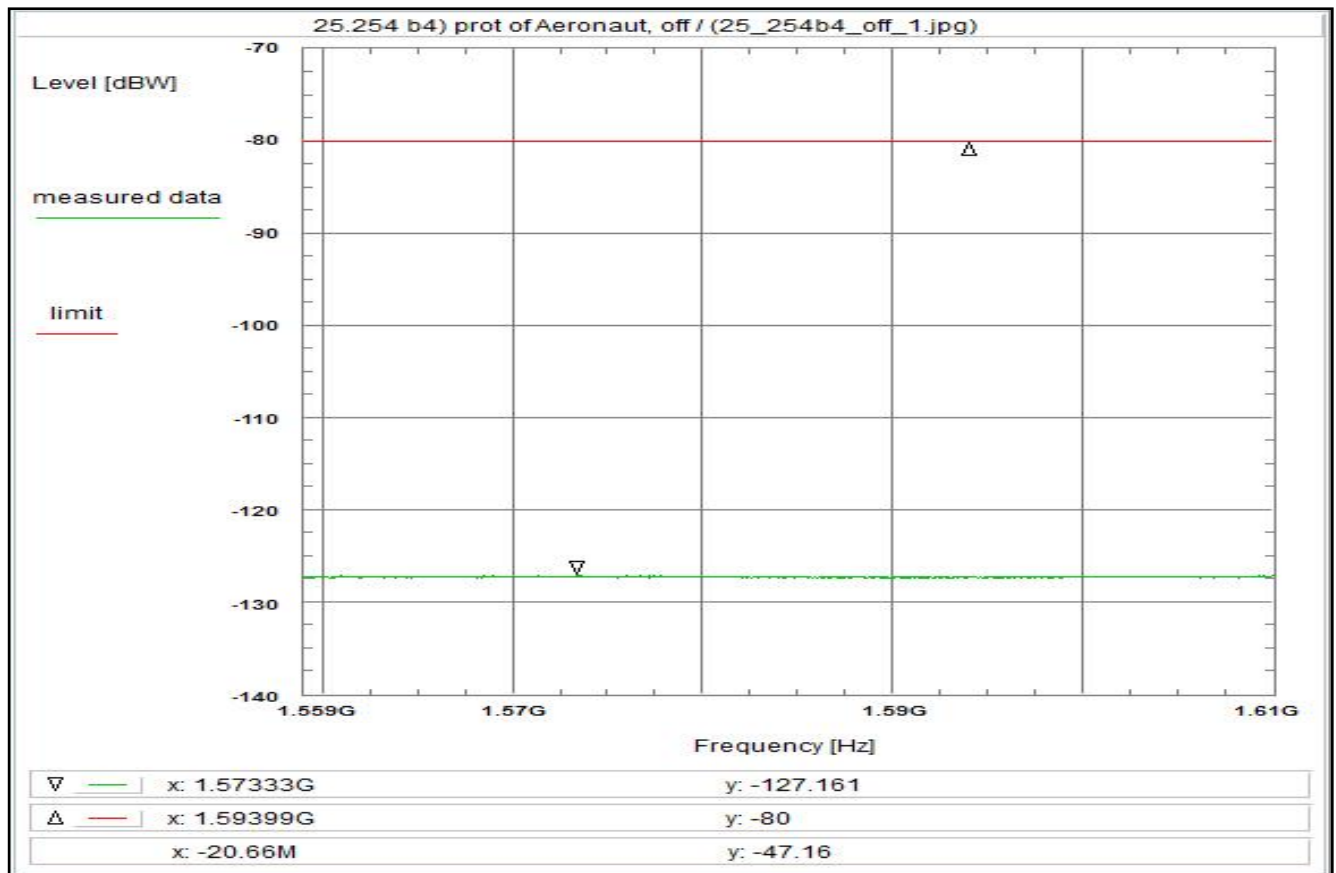
Carrier-on state / Carrier at the upper edge of the band (fo)
 Measurement with 1 MHz resolution/video filter and RMS Detector.

For EIRP calculation:

'worst-case' = maximum antenna gain

RMS detector

Plot No. 47



Subclause: 25.254 b4) Special requirements for ancillary terrestrial components operating in the 1610-1626.5 MHz / 1525-1559 MHz bands
 Carrier-off state, conducted measurement at the antenna-connector

Limit:
 Limit according to 25.254 b4): -80dBW/1MHz

The EIRP, averaged over any two-millisecond active transmission interval from the MESS in the carrier-off state shall not exceed the limit above.

Test results:
 see plot (an explicit table was not generated)

Operating condition of DUT:
 operating condition 2, see test report chapter 5.2
 TX off

Test setup:
 see test report chapter 6.2

Test equipment:
 see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 16:46:34
 Location: CTC advanced GmbH, Laboratory RC-SYS
 Temperature: 22 °C
 Humidity: 55 %
 Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.559 GHz
 Stop frequency: 1.61 GHz
 Center frequency: 1.5845 GHz
 Frequency span: 51 MHz
 Resolution-BW: 1 MHz
 Video-BW: 100 kHz
 Input attenuation: 0 dB
 Trace-Mode: Max-Hold
 Detector-Mode: AVG

Correction:

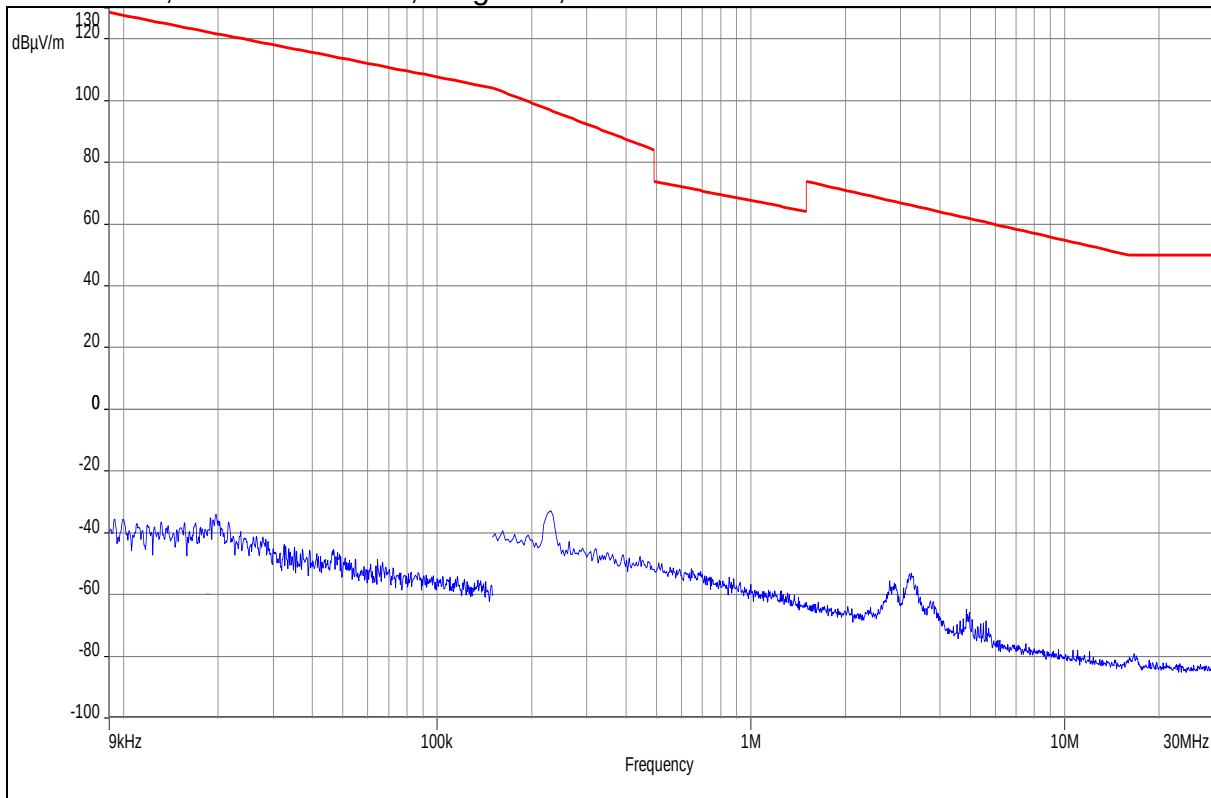
Directional coupler	+ 0.0 dB
Coaxial cable (C220)	+ 0.9 dB
DUT-Antenna (on-axis)	+ 10.4 dBi
Test antenna	+ 0.0 dB
BW correction factor	+ 0.0 dB
Atten. between HPA and feedhorn	+ 0.0 dB
Freefield attenuation	+ 0.0 dB
TOTAL CORRECTION:	+ 11.3 dB

Remarks:

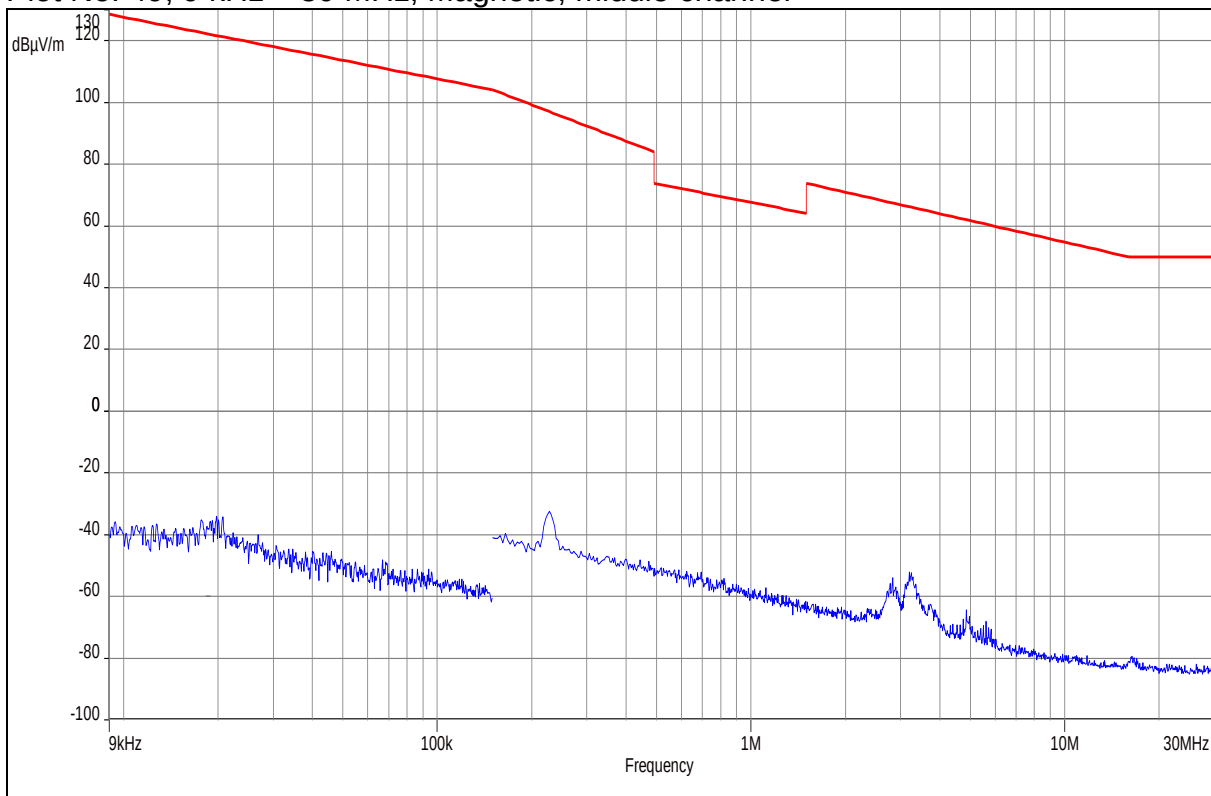
Carrier-off state.
 Measurement with 1 MHz resolution filter and RMS Detector.

For EIRP calculation:
 'worst-case' = maximum antenna gain

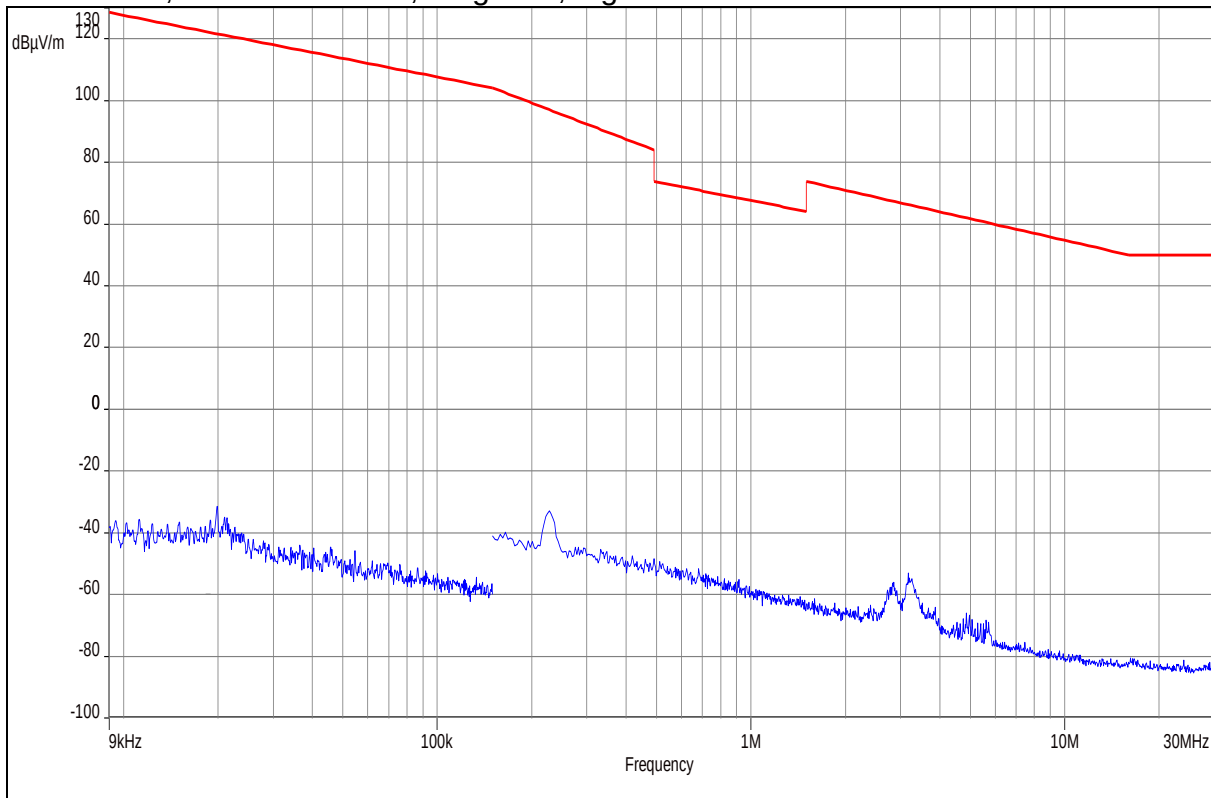
Plot No. 48, 9 kHz – 30 MHz, Magnetic, low channel



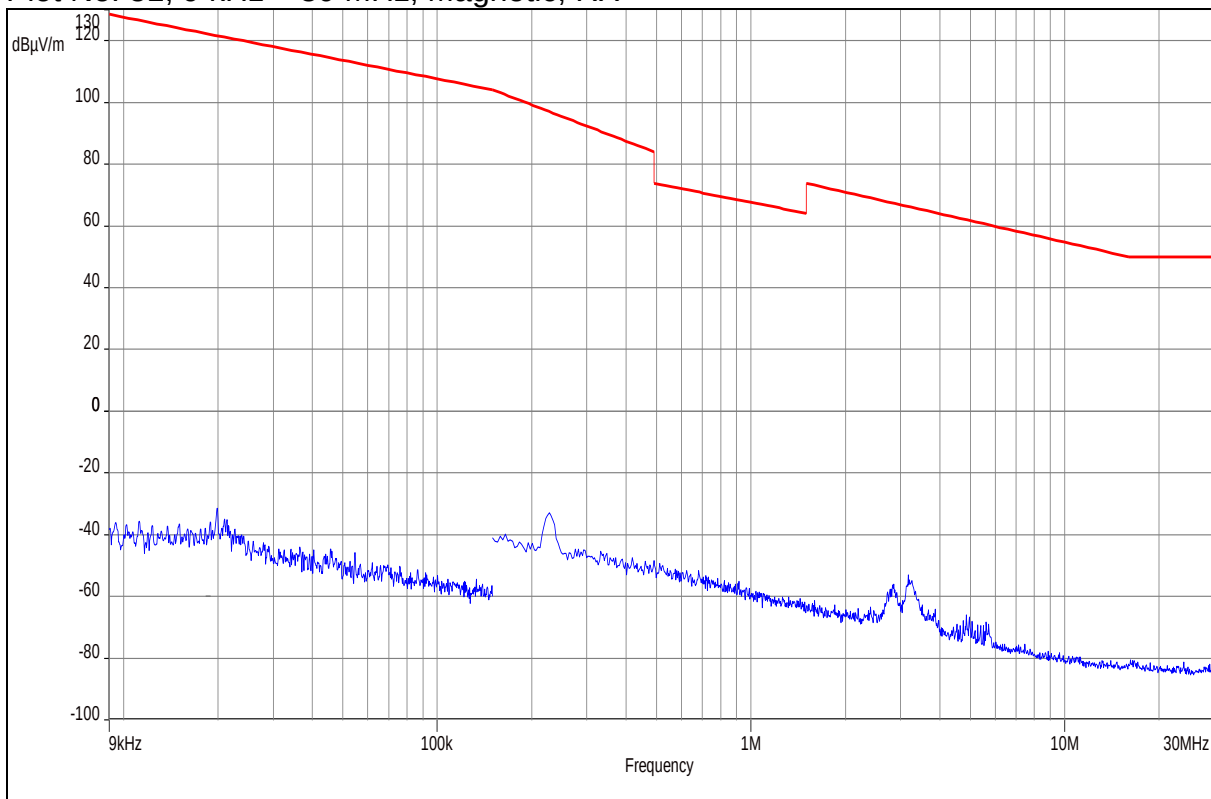
Plot No. 49, 9 kHz – 30 MHz, Magnetic, middle channel



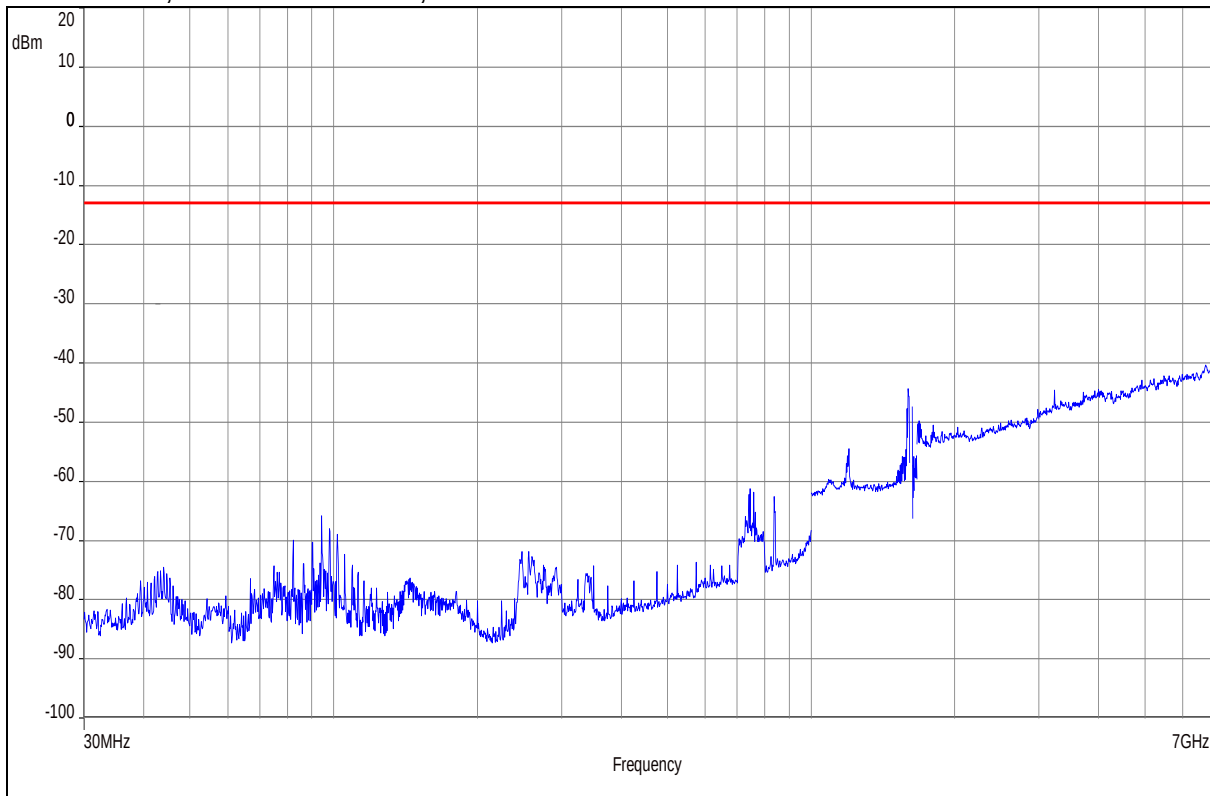
Plot No. 50, 9 kHz – 30 MHz, Magnetic, high channel



Plot No. 51, 9 kHz – 30 MHz, Magnetic, RX

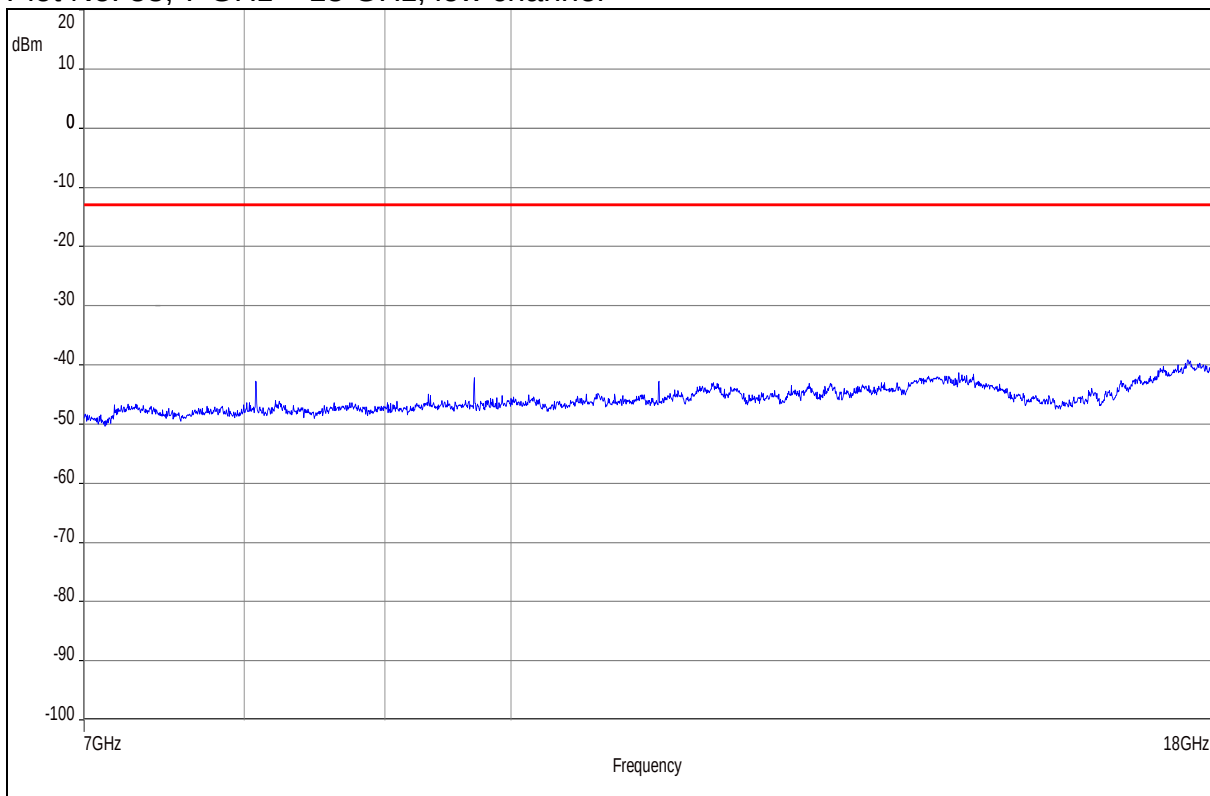


Plot No. 52, 30 MHz – 7 GHz, low channel

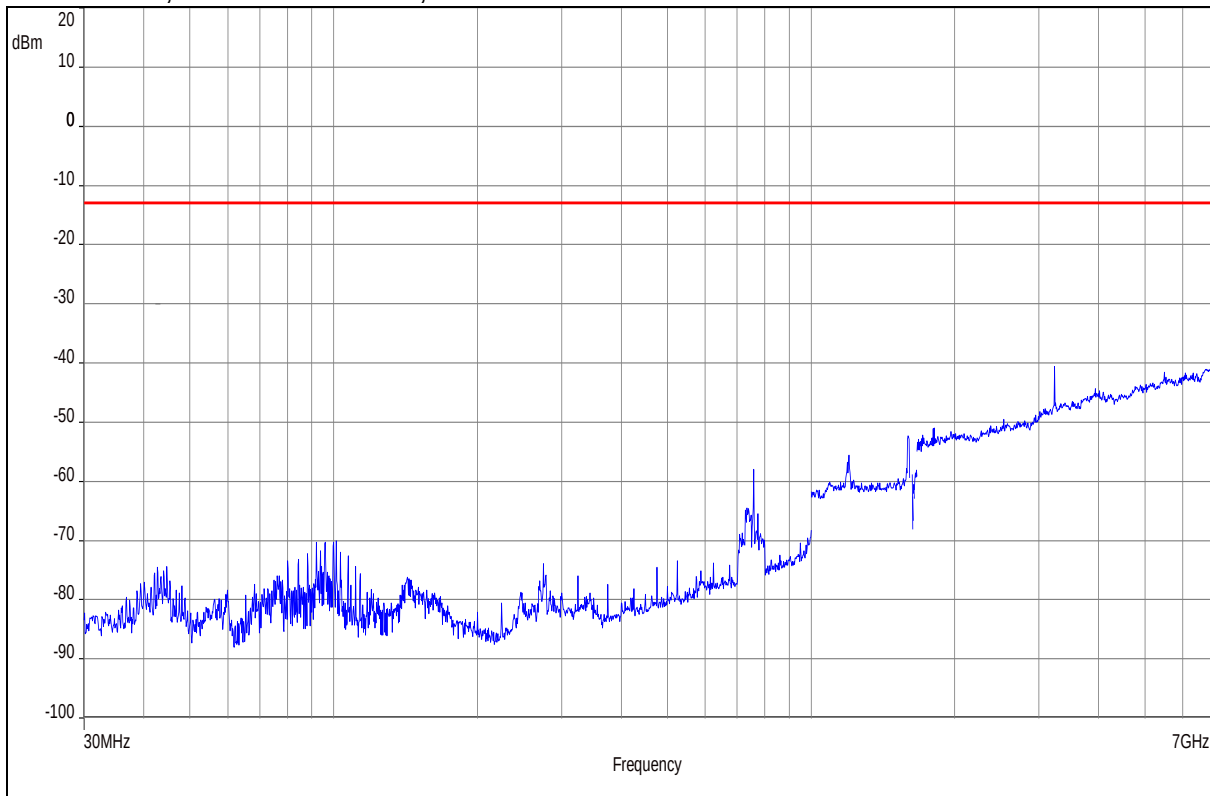


Signal notched by a rejection filter

Plot No. 53, 7 GHz – 18 GHz, low channel

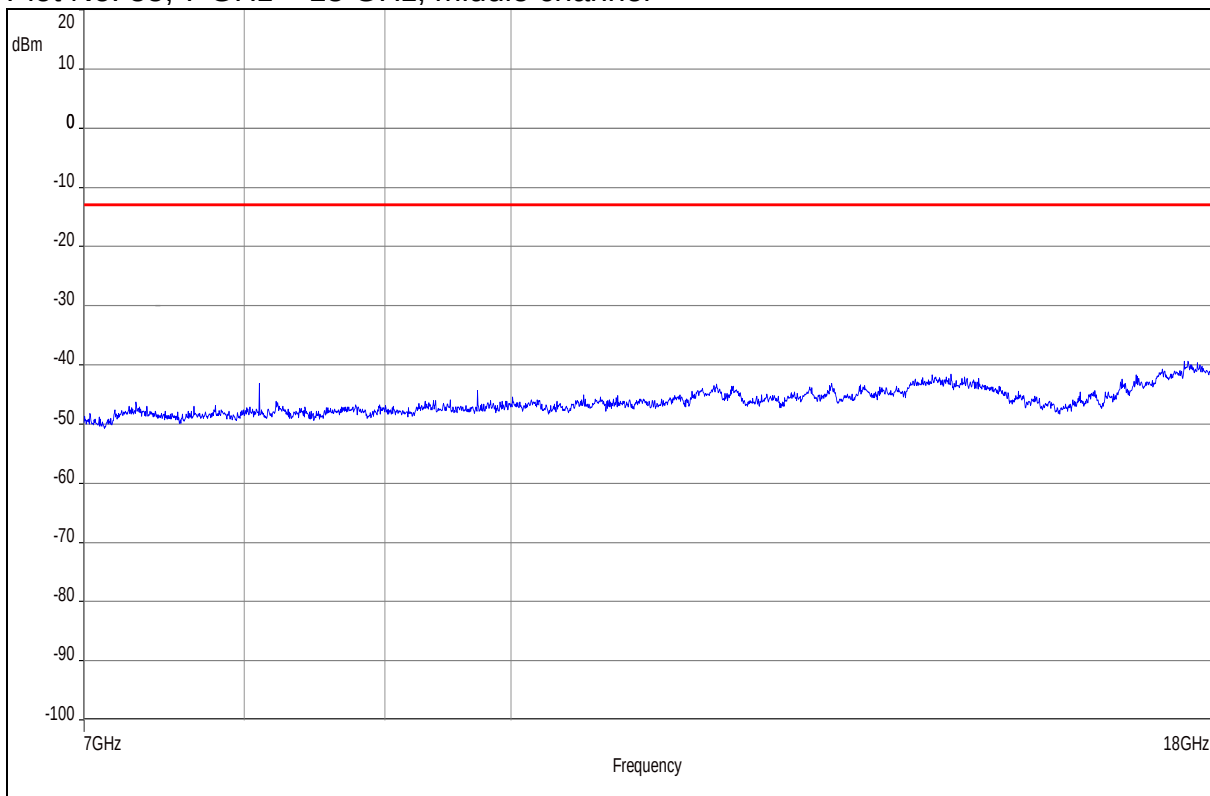


Plot No. 54, 30 MHz – 7 GHz, middle channel

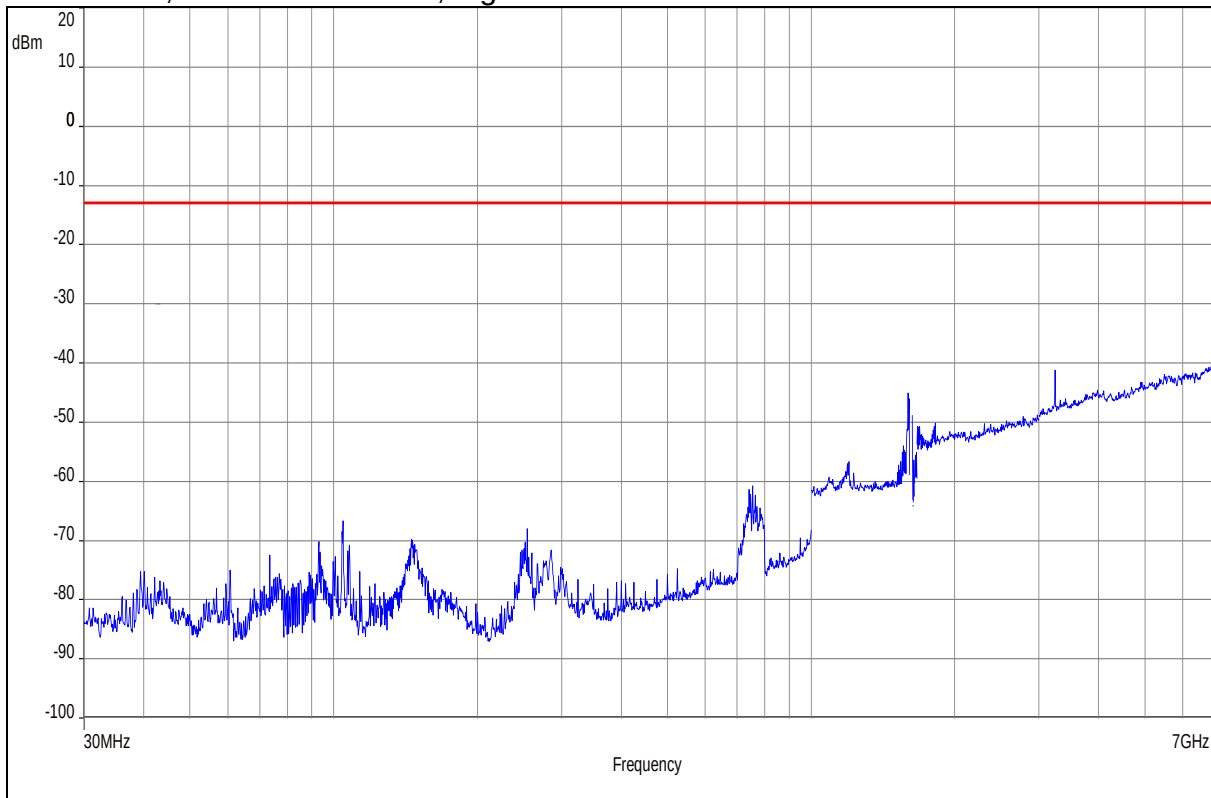


Signal notched by a rejection filter

Plot No. 55, 7 GHz – 18 GHz, middle channel

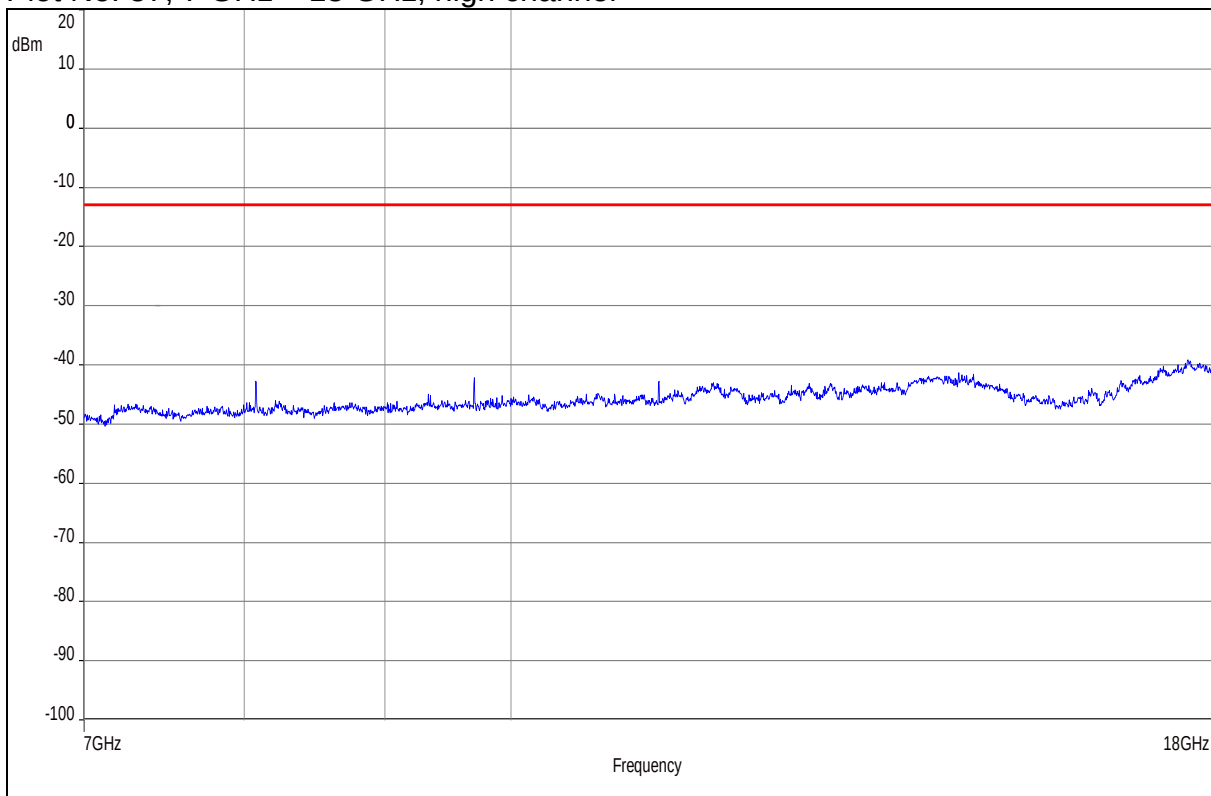


Plot No. 56, 30 MHz – 18 GHz, high channel

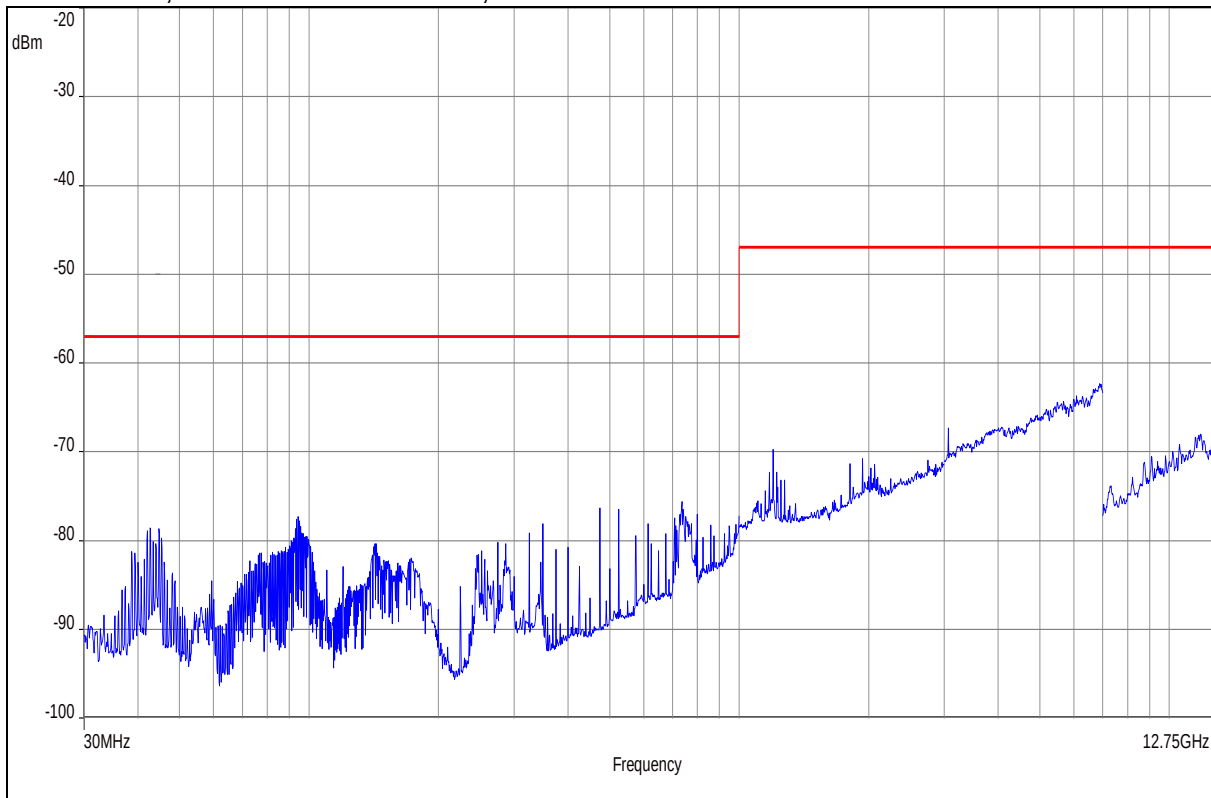


Signal notched by a rejection filter

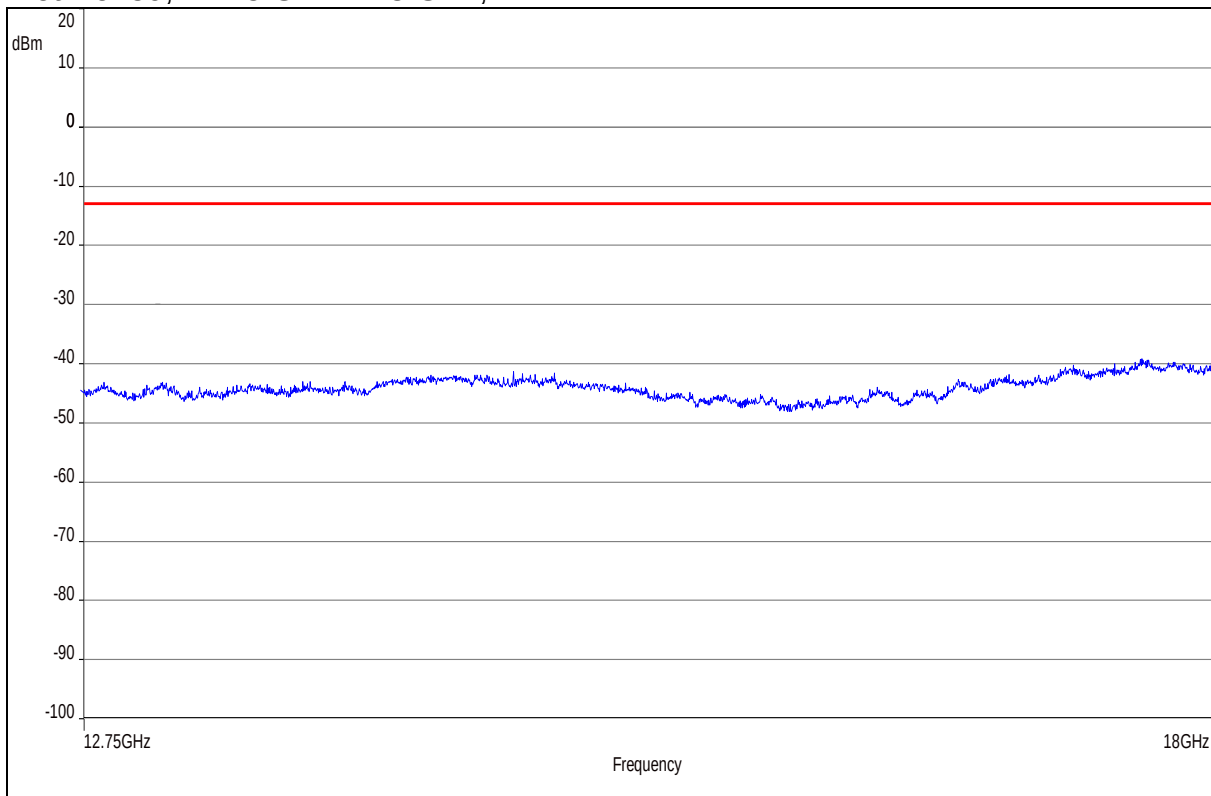
Plot No. 57, 7 GHz – 18 GHz, high channel



Plot No. 58, 30 MHz – 12.75 GHz, RX



Plot No. 59, 12.75 GHz – 18 GHz, RX



Document history

Version	Applied changes	Date of release
	Initial release - DRAFT	2020-06-30
	Editorial changes based on applicant's remarks	2020-08-07