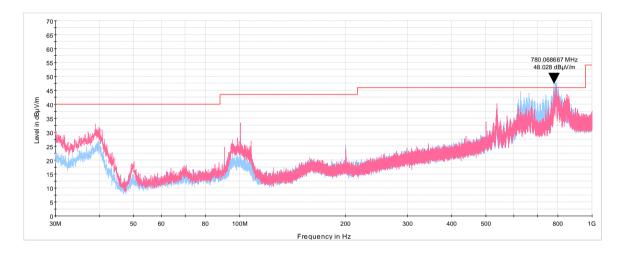


| Test specification: | FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz | | | |
|---------------------|--|------------------------|---------------|--|
| Test procedure: | ANSI C63.10, Sections 9.9, 9 | .12 | | |
| Test mode: | Compliance | Verdict: | | |
| Date(s): | 17-Mar-22 | Verdict: PASS | | |
| Temperature: 10 °C | Relative Humidity: 48 % | Air Pressure: 1020 hPa | Power: 48 VDC | |
| Remarks: | | | | |

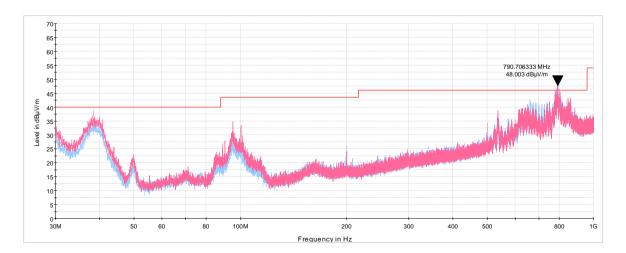
Plot 7.3.5 Radiated emission measurements from 30 to 1000 MHz at mid frequency

| TEST SITE: | Semi anechoic chamber |
|-----------------------|-------------------------|
| TEST DISTANCE: | 3 m |
| ANTENNA POLARIZATION: | Vertical and Horizontal |
| EUT POSITION: | Typical |



Plot 7.3.6 Radiated emission measurements from 30 to 1000 MHz at high frequency

TEST SITE: TEST DISTANCE: ANTENNA POLARIZATION: EUT POSITION: Semi anechoic chamber 3 m Vertical and Horizontal Typical



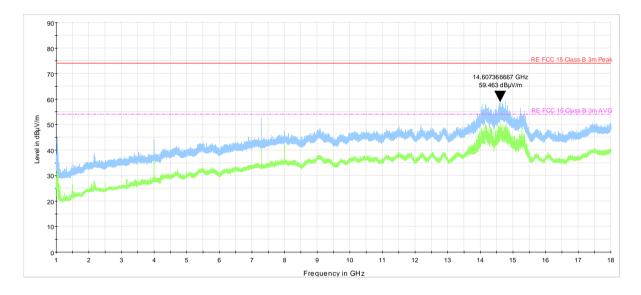


| Test specification: | FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz | | | | |
|---------------------|--|---------------------------------|---------------|--|--|
| Test procedure: | ANSI C63.10, Sections 9.9, 9. | ANSI C63.10, Sections 9.9, 9.12 | | | |
| Test mode: | Compliance | Verdict: PASS | | | |
| Date(s): | 17-Mar-22 | | | | |
| Temperature: 10 °C | Relative Humidity: 48 % | Air Pressure: 1020 hPa | Power: 48 VDC | | |
| Remarks: | | | | | |

Plot 7.3.7 Radiated emission measurements from 1 to 18 MHz at low frequency

TEST SITE: TEST DISTANCE: ANTENNA POLARIZATION: EUT POSITION:

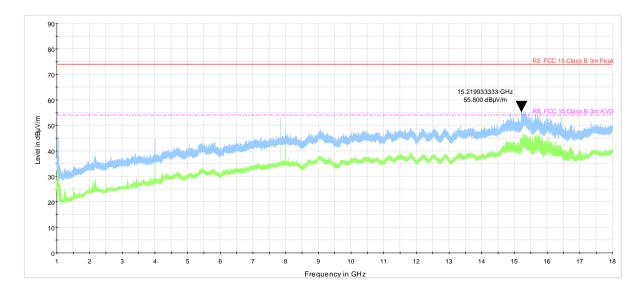
Semi anechoic chamber 3 m Vertical and Horizontal Typical



Plot 7.3.8 Radiated emission measurements from 1 to 18 MHz at mid frequency TEST SITE: Semi anechoic chamber

| IEST SHE: | Se |
|-----------------------|-----|
| TEST DISTANCE: | 3 ו |
| ANTENNA POLARIZATION: | Ve |
| EUT POSITION: | Ту |

3 m Vertical and Horizontal Typical



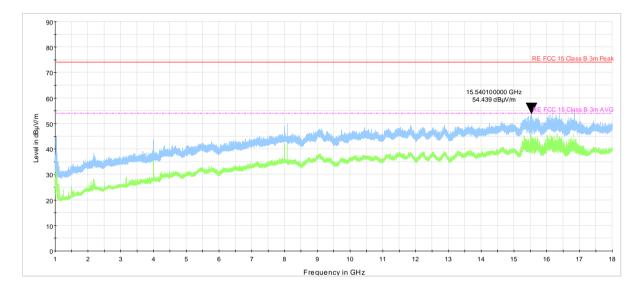


| Test specification: | FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz | | | |
|---------------------|--|------------------------|---------------|--|
| Test procedure: | ANSI C63.10, Sections 9.9, 9. | 12 | | |
| Test mode: | Compliance | Verdict: | | |
| Date(s): | 17-Mar-22 | Verdict: PASS | | |
| Temperature: 10 °C | Relative Humidity: 48 % | Air Pressure: 1020 hPa | Power: 48 VDC | |
| Remarks: | | | | |

Plot 7.3.9 Radiated emission measurements from 1 to 18 MHz at high frequency

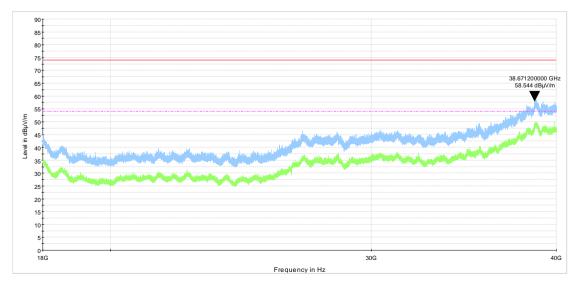
TEST SITE:STEST DISTANCE:3ANTENNA POLARIZATION:VEUT POSITION:T

Semi anechoic chamber 3 m Vertical and Horizontal Typical



Plot 7.3.10 Radiated emission measurements from 18 to 40 GHz at low frequency

| TEST SITE: | Semi anechoic chamber |
|-----------------------|-------------------------|
| TEST DISTANCE: | 3 m |
| ANTENNA POLARIZATION: | Vertical and Horizontal |
| EUT POSITION: | Typical |

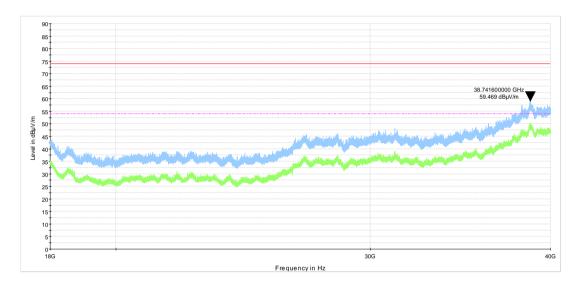




| Test specification: | FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz | | | |
|---------------------|--|------------------------|---------------|--|
| Test procedure: | ANSI C63.10, Sections 9.9, 9.12 | | | |
| Test mode: | Compliance | Verdict: | DASS | |
| Date(s): | 17-Mar-22 | Verdict: PASS | | |
| Temperature: 10 °C | Relative Humidity: 48 % | Air Pressure: 1020 hPa | Power: 48 VDC | |
| Remarks: | | | | |

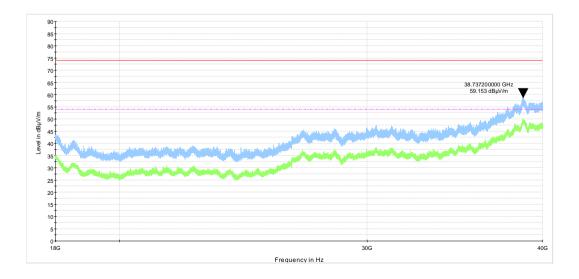
Plot 7.3.11 Radiated emission measurements from 18 to 40 GHz at mid frequency

| TEST SITE: | Semi anechoic chamber |
|-----------------------|-------------------------|
| TEST DISTANCE: | 3 m |
| ANTENNA POLARIZATION: | Vertical and Horizontal |
| EUT POSITION: | Typical |



Plot 7.3.12 Radiated emission measurements from 18 to 40 GHz at high frequency

| TEST SITE: | Semi anechoic chamber | - | - | - |
|-----------------------|-------------------------|---|---|---|
| TEST DISTANCE: | 3 m | | | |
| ANTENNA POLARIZATION: | Vertical and Horizontal | | | |
| EUT POSITION: | Typical | | | |





| Test specification: | FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz | | | |
|---------------------|--|------------------------|---------------|--|
| Test procedure: | ANSI C63.10, Sections 9.9, 9. | 12 | | |
| Test mode: | Compliance | Verdict: | PASS | |
| Date(s): | 17-Mar-22 | verdict: PASS | | |
| Temperature: 10 °C | Relative Humidity: 48 % | Air Pressure: 1020 hPa | Power: 48 VDC | |
| Remarks: | | | | |

7.4 Out of band radiated emissions above 40 GHz up to 200 GHz

7.4.1 General

This test was performed to measure radiated spurious emissions from the EUT. Specification test limits are given in Table 7.4.1.

| Frequency, GHz | Power density at 3 m distance pW/cm ² | Distance, m | Field strength dB(μV/m)*, peak | Field strength dB(μV/m)*, average |
|-------------------|--|----------------|--------------------------------------|---|
| 40 – 220 | 90.0 | 3.0 | 105.30 | 85.30 |
| 90 - 110 | 90.0 | 0.50 | 120.90** | 100.90** |
| 110 - 140 | 90.0 | 0.05 | 140.90** | 120.90** |
| 140 - 200 | 90.0 | 0.01 | 154.80** | 134.80** |

Table 7.4.1 Radiated spurious emission test limits

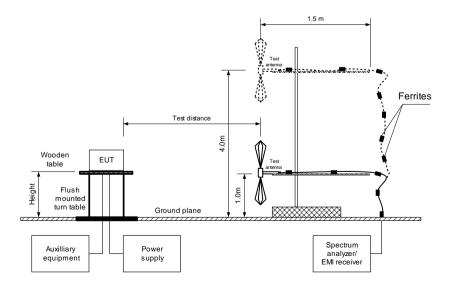
* - Field strength was calculated per equation (26) of ANSI C63.10-2013 section 9 as follows: E=sqrt(PDx377), where PD is the power density at the distance specified by the limit in W/m², E- field strength in V/m.

**- The limit for other test distance was calculated using the inverse distance extrapolation factor as follows: $Lim_{s2} = Lim_{s1} + 20 \log (S_1/S_2)$, where S_1 and S_2 – standard defined and test distance respectively in meters.

7.4.2 Test procedure for spurious emission field strength measurements

- 7.4.2.1 The EUT was set up as shown in Figure 7.4.1, energized and the performance check was conducted.
- **7.4.2.2** The specified frequency range was investigated with antenna connected to spectrum analyzer/ EMI receiver. To find maximum radiation the turntable was rotated 3600, the measuring antenna height was changed from 1 to 4 m, its polarization was switched from vertical to horizontal.
- 7.4.2.3 The test results are given in Table 7.4.2 and shown in the associated plots.

Figure 7.4.1 Radiated emissions above 40 GHz test set up





| Test specification: | FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz | | | |
|---------------------|--|------------------------|---------------|--|
| Test procedure: | ANSI C63.10, Sections 9.9, 9. | 12 | | |
| Test mode: | Compliance | Verdict: | | |
| Date(s): | 17-Mar-22 | Verdict: PASS | | |
| Temperature: 10 °C | Relative Humidity: 48 % | Air Pressure: 1020 hPa | Power: 48 VDC | |
| Remarks: | | | | |

Table 7.4.2 Out of band radiated emissions test results

| Frequency, MHz | Polariz. | Height, | degrees* | Measured, | Limit, | Margin, | Measured, | Limit, | Margin, | ۷ |
|-------------------|----------|---------|----------|------------------|------------|-----------|---------------|---------------|-----------|---|
| Frequency | Anter | nna | Azimuth. | Peak field stren | ngth(VBW=3 | MHz) | Average field | l strength(VB | W=10 kHz) | |
| | | | | | Standard | Gain Hor | n 24dB (140-: | 220 GHz) | | |
| | | | | | Standard | Gain Hor | n 24dB (90-1- | 40 GHz) | | |
| | | | | | Standard | Gain Hor | n 24dB (75-1 | 10 GHz) | | |
| | | | | | Standard | Gain Hor | n 24dB (50-7 | 5 GHz) | | |
| TEST ANT | ENNA TY | PE: | | | Standard | Gain Hor | n 24dB (40-6 | 0 GHz) | | |
| VIDEO BAI | NDWIDTH | l: | | | ≥ Resolut | ion bandv | vidth | | | |
| RESOLUT | ION BANE | WIDTH: | | | 1000 kHz | | | | | |
| INVESTIG | ATED FRE | EQUENC | Y RANGE: | | 40 – 200 | GHz | | | | |
| TRANSMIT | TER OUT | PUT PO | WER: | | Maximum | 1 | | | | |
| MODULAT | ION: | | | | 16QAM | , | | | | |
| EUT POSI | TION: | | | | Typical (\ | /ertical) | | | | |
| TEST DIST | ANCE: | | | | 0.05 - 3 n | า | | | | |
| | | | | | | | | | | |

| Frequency, MHz | Polariz. | Height, m | Azimuth, degrees* | Measured, dB(μV/m) | Limit, dB(µV/m) | Margin, dB** | Measured, dB(μV/m) | Limit, dB(µV/m) | Margin, dB** | Verdict | |
|------------------------|-----------|--------------|----------------------|-----------------------|--------------------|-----------------|-----------------------|--------------------|-----------------|---------|--|
| Low carrier frequency | | | | | | | | | | | |
| 109171.7 | Vert | 1.5 | 0 | 104.63 | 120.9 | -16.27 | 95.78 | 100.9 | -5.12 | Pass | |
| Mid carrie | r frequen | су | | | | | | | | | |
| 108156.7 | Vert | 1.5 | 0 | 103.69 | 120.9 | -17.21 | 95.93 | 100.9 | -4.97 | Pass | |
| High carrier frequency | | | | | | | | | | | |
| 109224.3 | Vert | 1.5 | 0 | 104.04 | 120.9 | -16.86 | 95.76 | 100.9 | -5.14 | Pass | |
| | | | | | | | | | | | |

*- EUT front panel refer to 0 degrees position of turntable. **- Margin = Measured emission - specification limit.

Reference numbers of test equipment used

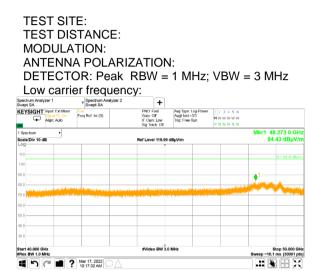
| HL 5376 | HL 771 | HL 3291 | HL 5380 | HL 0770 | HL 3290 | HL 4483 | HL 3294 |
|---------|---------|---------|---------|---------|---------|---------|---------|
| HL 3235 | HL 4023 | HL 3434 | HL 3536 | HL 0747 | HL 3306 | HL 772 | |

Full description is given in Appendix A.



| Test specification: | fication: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz | | | | | | | | |
|---------------------|--|------------------------|---------------|--|--|--|--|--|--|
| Test procedure: | ANSI C63.10, Sections 9.9, 9. | 12 | | | | | | | |
| Test mode: | Compliance | Verdict: | PASS | | | | | | |
| Date(s): | 17-Mar-22 | veraici. | PASS | | | | | | |
| Temperature: 10 °C | Relative Humidity: 48 % | Air Pressure: 1020 hPa | Power: 48 VDC | | | | | | |
| Remarks: | | | | | | | | | |

Plot 7.4.1 Spurious emission measurements in 40 – 50 GHz range

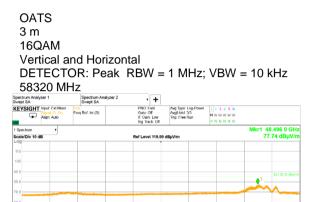


Mid carrier frequency:

| Spectrum Analy Swept SA | | Spectrum Ana Swept SA | lyzer 2 | + | | | | |
|-------------------------------|--|-----------------------------|---------|--|---|---|----------|-------------------------------------|
| | Input: Ext Mixer Signal ID: On Align: Auto | Corr Freq Ref. Int (S) | | PND: Fast Gale: Off IF Gain: Low Sig Track: Off | Avg Type: Log-Pr Avg[Hold.>3/3 Trig: Free Run | Wer 1 2 3 4 5 6 M W W W W W P N N N N N | | |
| Spectrum cale/Div 10 d | • | | | Ref Level 119.99 | | | | 48.108 7 GH 78.98 dBµV/r |
| .0g | | | | Ker Lever 113.31 | appy | | | 0.00 0000 |
| 110 | | | | | | | | DL 1 105 30 (By/V) |
| 100 | | | | | | | | |
| 10. D | | _ | | | | | - 1 | |
| 10.0 | | | | a start a start a start a | and a second second | ujuk keton obmorranska | •1 | والمترافية وأفته |
| 0.0 | | | | - | | and state the second | | |
| IO.D | | | | | | | | _ |
| i0.0 | | | | | | | | |
| 10.0 | | _ | | | | | | |
| 10.0 | | | | | | | | |
| tart 40.000 G Res BW 1.0 M | | | | #Video BW 3. | 0 MHz | | Sweep ~1 | Stop 50.000 GH 0.1 ms (30001 pts |
| 4 7 | ۹ 🔳 ? | Mar 17, 2022 10:22:18 AM | | | | | | |

High carrier frequency:

| Spectrum Analy Swept SA | /zer 1 | Spectrum Analy Swept SA | | + | | | |
|---------------------------------|--|-----------------------------|--|----------|--|---|--------------------------------|
| KEYSIGHT | Input: Ext Mixer Signal ID: On Align: Auto | Corr Freq Ref. Int (S) | PND: Fi Gate: O IF Cein: Sig Trac | F Low | Awg Type: Log-Power Awg Hold >3/3 Trig: Free Run | 1 2 3 4 5 6 M W W W W W P N N N N N | |
| 1 Sportrum Scale/Div 10 d | r IB | | Ref Level | 119.99 d | BµV/m | | .957 3 GH .50 dBµV/n |
| _og | | | | Ť | | | |
| 110 | | | | | | | DL1 105 30 (Fy/V) |
| 100 | | | | | | | |
| 30.0 | | | | | | | |
| 30.0 | | | | | | ↓1 | |
| 70.0 | | | | li de la | | | |
| | | | | | | | |
| 10.D | | | | | | | |
| 50.0 | | | | | | | |
| 40.0 | | | | | | | |
| 30.0 | | | | | | | |
| Start 40.000 G #Res BW 1.0 M | | | #Video | BW 3.0 | MHz | | top 50.000 GH ms (30001 pts |
| 4 n | ମ 🔳 ? | Mar 17, 2022 10:23:25 AM | Δ | | | | 88× |





0.0

| 62640 | MHZ |
|-------|-----|
| | Y |

| Spectrum Anal Swept SA | lyzer 1 | Spectrum Analyzer 2 Swept SA | • + | | | | |
|------------------------------|---------|---------------------------------|---|--|---|------------|------------------|
| KEYSIGHT | | Corr Freq Rof: Int (S) | PND: Fast Gale: Off IF Cein: Low Sig Track: Off | Avg Type: Log-Power Avg[Hold: 3/3 Trig: Free Run | 1 2 3 4 5 6 M W W W W W P N N N N N | | |
| Spectrum | • | | | | | | 4.565 0 GH |
| Scale/Div 10 | dB | | Ref Level 119.99 | dBµV/m | | 70 | .59 dBµV/n |
| | | | The second se | | | | |
| 110 | | | | | | | |
| 100 | | | | | | | |
| 10.D | | | | | | | |
| 10.0 | | | | | | | DL1 85.30 dByWin |
| 10.0 | | | ▲1 | | | | |
| 70.0 | | | | | | | |
| 10.D | | | | | | | |
| 50.0 | | | | | | | |
| 40.0 | | | | | | | |
| | | | | | | | |
| 30.0 | | | | | | | |
| Start 40.000 G Res BW 1.0 | | | #Video BW 10 | kHz | | Sweep ~780 | Stop 50.000 GH |
| 1 5 | < | Mar 17, 2022 | | | | | |
| | | 10:21:41 AM | | | | | 2 |

#Video BW 10 kHz

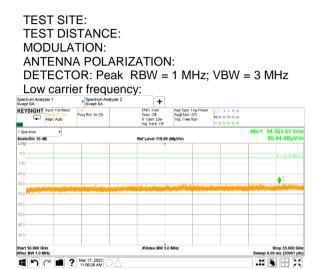
| Spectrum Analy Swept SA | | Spectrum Ana Swept SA | lyzer 2 | · ·] | + | | | | |
|---------------------------------|--|------------------------------|---------|--|----------|--|---|----|----------------------------------|
| 0 | Input: Ext Mixer Signal ID: On Align: Auto | Corr Freq Ref. Int (S) | | PND: Fa Gale: Of IF Cain: Sig Track | Low | Avg Type: Log-Power Avg[Hold >3/3 Trig: Free Run | 1 2 3 4 5 6 M W W W W W P N N N N N | | |
| 1 Spectrum | , | | | | | | | | 6.594 0 GH |
| Scale/Div 10 d | B | | | Ref Level | 119.99 d | BµV/m | | 71 | .64 dBµV/r |
| Log | | | | | | | | | |
| 110 | | | | | | | | | |
| 100 | | | | | | | | | |
| 90.D | | | | | | | | | DL1 85.30 dBy// |
| 80.0 | - | | | | | | 1 | | |
| 70.0 | | and the second second second | | | | | | | |
| 60.D | | | | | _ | | | | |
| 50.0 | | | | | | | | | |
| 40.0 | | | | | | | | | |
| 30.0 | | | | | | | | | |
| Start 40.000 GI Res BW 1.0 N | | | | #Video | BW 10 P | iHz | | | Stop 50.000 GH 0 ms (30001 pt |
| 4) | ₼∎? | Mar 17, 2022 10:24:01 AM | DΔ | | | | | | |

Sweep 390 ms (30001 pts)



| Test specification: | fication: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz | | | | | | | | |
|---------------------|--|------------------------|---------------|--|--|--|--|--|--|
| Test procedure: | ANSI C63.10, Sections 9.9, 9. | 12 | | | | | | | |
| Test mode: | Compliance | Verdict: | PASS | | | | | | |
| Date(s): | 17-Mar-22 | veraici. | PASS | | | | | | |
| Temperature: 10 °C | Relative Humidity: 48 % | Air Pressure: 1020 hPa | Power: 48 VDC | | | | | | |
| Remarks: | | | | | | | | | |

Plot 7.4.2 Spurious emission measurements in 50 - 55 GHz range



Mid carrier frequency:

| Spectrum Analyzer 1 Swept SA | Spectrum Analyzer 2 Swept SA | + | | | | |
|---|------------------------------------|---|--|----------------------------|--------------|---|
| KEYSIGHT Input: Ext Mox Signal ID: On Align: Auto | er Corr Freq Rof. Int (S) | PND: Fast Gale: Off IF Gein: Low Sig Track: Off | Avg Type: Log-Power Avg(Hold >3/3 Trig: Free Run | 123456 MWWWWW PNNNNN | | |
| Spectrum • | | | | | Mkr1 | 51.486 00 GH |
| Scale/Div 10 dB | | Ref Level 119.99 di | 3μV/m | | | 82.10 dBµV/n |
| 110 | | | | | | |
| | | | | | - | DL1 105 30 (By/W |
| 100 | | | | | | |
| 10.D | 1 | | | | | |
| 0.0 | Internal and Descent of the owner, | A STATE OF THE OWNER WATER OF THE OWNER OF | and the second stands to | والانتجاز والمالية | a subserve | In the second |
| 70.0 | | and the second of the first state of the first state of the | and the local division of the local division | hathe an increased | a sa matiata | the state of the state of the state |
| | | | | | | |
| 50 D | | | | | | |
| | | | | | | |
| 50.0 | | | | | | |
| 40.0 | | | | | | |
| 40.0 | | | | | | |
| 60 D 50 D 40 0 30 D Start 50.000 GHz FRes BW 1.0 MHz | | #Video BW 3.0 F | IHz | | Sweep | Stop 55.000 GH 6.00 ms (30001 pts |

High carrier frequency:

| Spectrum Analyzer Swept SA | 1 | Spectrum Ana Swept SA | lyzer 2 | | + | | | | | | |
|-------------------------------|--|-----------------------------|--------------------|---|-------------|---|--------------|---|-----------|----------|------------------------------|
| | ut: Ext Mixer nal ID: On n: Auto | Corr Freq Ref. Int (S) | | PND: F Gale: C IF Gain Sig Tra | er Low | Avg Type: I Avg[Hold + Trig: Free F | 3/3 | 1 2 3 4 5 6 M W W W W W P N N N N N | | | |
| 1 Spectrum | • | | | | | | | | Mkr1 | | 181 50 GH 10 dBµV/r |
| cale/Div 10 dB | | | | Ref Leve | 119.99 | 3BµV/m | | | | 03. | |
| 110 | | | | | | | | | | | DI 1 105 30 (EV/V) |
| 100 | | | | | | | | | | | |
| 10.D | | | | | | | | | <u>_1</u> | | |
| 80.0 | ور عال المحاد الع | and the later of the other | a and the second | a support | a na ha si | ngalar ikiyo ni kila | apprentite | a se al la para de cara de sera | | din la c | a all the sector |
| /0.0 | wiekza wede | in other states | uninent orta ittik | ahi data bista parte | de principa | Mayer Market Ballance | enter anna a | al fold side of the state of the state | | | |
| 50.D | | | | | | | | | | | |
| 50.0 | | | | | | | | | | | |
| 10.0 | | | | | | | | | | | |
| 30.0 | | | | | | | | | | | |
| Start 50.000 GHz | | | | #Vide | BW 3.0 | MHz | | | Sweet | | op 55.000 GH ns (30001 pt |
| 4 50 | ∎ ? | Mar 17, 2022 10:25:36 AM | DA | | | | | | 1.1 | 1 | |

OATS 3 m 16QAM Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz 58320 MHz Spectrum Analyzer 1 Swept SA KEYSIGHT Input Ext More Signal ID. On Algn: Auto Spectrum Swept SA 1 2 3 4 5 6 M W W W W V Corr Freq Ref. Int (S) Avg Avg Trig 54.803 33 GH 72.88 dBµV/ • rum Div 10 dB Ref Level 119.99 dBµ 0.0

#Video BW 10 kHz

62640 MHz

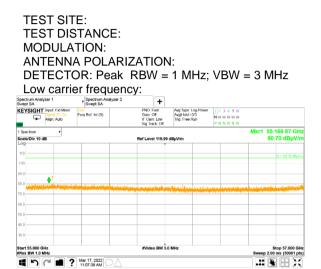
| Spectrum Analyzer 1 Swept SA | Spectrum Analyzer 2 Swept SA | • + | | | | |
|---|---------------------------------|--|--|---|---|-----------------------------------|
| KEYSIGHT Input: Ext Mixer Signal ID: On Align: Auto | Corr Freq Rof. Int (S) | PND: Fast Gale: Off IF Gain: Low Sig Track: Off | Avg Type: Log-Power Avg[Hold >3/3 Trig: Free Run | 1 2 3 4 5 6 M W W W W W P N N N N N | | |
| 1 Spectrum 🔹 | | | | | | .090 17 GH |
| Scale/Div 10 dB | | Ref Level 119.99 | dBµV/m | | 7 | 5.52 dBµV/r |
| 110 | | | | | | |
| 100 | | | | | | |
| 30.D | | | | | | DL1 65.30 dBy/W |
| 70.0 | | | | | | |
| 10.0 | | | | | | |
| 50.0 | | | | | | |
| 10.0 | | | | | | |
| 30.0 | | | | | | |
| Start 50.000 GHz Res BW 1.0 MHz | 1 | #Video BW 10 |) kHz | | | Stop 55.000 GH 0 ms (30001 pts |
| | Mar 17, 2022 | | | | | |

| Spectrum Analy Swept SA | yzer 1 | Spectrum Ana Swept SA | lyzer 2 | • + | | | | | |
|---------------------------------|--|-----------------------------|---------|--|--|---|------|----------------------------|------------------|
| 0 | Input: Ext Mixer Signal ID: On Align: Auto | Corr Freq Ref. Int (S) | | PND: Fast Gale: Off IF Gain: Low Sig Track: Off | Awg Type: Log Awg[Hold.>3/3 Trig: Free Run | 1 2 3 4 5 6 M W W W W W P N N N N N | | | |
| 1 Spectrum Scale/Div 10 d | | | | ef Level 119.9 | 0 dBub/im | | Mkr1 | 54.081 17 76.12 dB | |
| Log | 10 | | | | ваврулі | | | 70.12 00 | . |
| 110 | | | | | | | | | |
| 100 | | | | | | | | | |
| 40.D | | | | | | | | DL1 85.30 | d cDy/m |
| 70.0 | | | | | | | | - | |
| (0.0 | | | | | | | | | |
| 10.0 | | _ | | | | | | | |
| 50.0 | | | | | | | | | |
| 10.0 | | | | | | | | | |
| 30.0 | | | | | | | | | |
| Start 50.000 GI Res BW 1.0 N | | | | #Video BW | 10 kHz | | Swee | Stop 55.0 p 390 ms (300 | 00 GH 101 pt: |
| 4 N | ମ∎? | Mar 17, 2022 10:25:04 AM | DΔ | | | | | | X |



| Test specification: | FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz | | | | | | |
|---------------------|--|------------------------|---------------|--|--|--|--|
| Test procedure: | ANSI C63.10, Sections 9.9, 9.1 | 2 | | | | | |
| Test mode: | Compliance | Verdict: | PASS | | | | |
| Date(s): | 17-Mar-22 | verdict. | PASS | | | | |
| Temperature: 10 °C | Relative Humidity: 48 % | Air Pressure: 1020 hPa | Power: 48 VDC | | | | |
| Remarks: | | | | | | | |

Plot 7.4.3 Spurious emission measurements in 55 - 57 GHz range

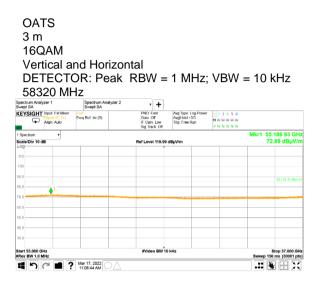


Mid carrier frequency:

| Spectrum Analy Swept SA | | Swept SA | | + | | | |
|---------------------------------|--|---------------------------|--|--------------------------|---|----------|---------------------|
| Keysight T | Input: Ext Mixer Signal ID: On Align: Auto | Corr Freq Ref. Int (S) | PND: Fas Gale. Off IF Gein: L Sig Track | Avg(Hold w Trig: Free | 1 2 3 4 5 6 M W W W W W P N N N N N | | |
| Spectrum | • | | | | | | 5.192 87 GH |
| Scale/Div 10 d | В | | Ref Level 1 | 19.99 dBµV/m | | 8 | 0.54 dBµV/n |
| 110 | | | | | | | |
| | | | | | | | DL1 100 30 ((B)///) |
| 100 | | | | | | | |
| 10.D | - 1 | | | | | | |
| 30.0 | | | | | | | |
| 70.0 | and search for | | | | م المراجع من المربع من المربع الم من المربع من مربع من مربع المربع ا | | |
| | | | | | | | |
| 10.D | | | | | | | |
| 50.0 | | | | | | | |
| 10.0 | | | | | | | |
| 30.0 | | | | | | | |
| Start 55.000 Gi Res BW 1.0 M | | | #Video E | W 3.0 MHz | | Sweep 2. | Stop 57.000 GH |
| 4 5 | ମ∎? | Mar 17, 2022 | Δ | | | | |

High carrier frequency:

| Spectrum Analy Swept SA | zer 1 | Spectrum Ana Swept SA | ilyzer 2 | | + | | | | | | |
|----------------------------|--|-----------------------------|----------|---|---------------|---|------------|---|-------------|-------|-------------------|
| KEYSIGHT | Input: Ext Mixer Signal ID: On Align: Auto | Corr Freq Rof: Int (S) | | PND: Fa Gate. Off IF Gain: Sig Trade | low | Avg Type: L Avg[Hold × Trig: Free F | 3/3 | 1 2 3 4 5 6 M W W W W W P N N N N N | | | |
| Spectrum | • | | | | | | | | Mkr1 | | 61 80 GH |
| Scale/Div 10 d | B | | | Ref Level | 119.99 | ∃BµV/m | | | | 81. | 13 dBµV/r |
| 110 | | | | | | | | | | | DI 1 105 30 (By/W |
| 100 | | | | | | | | | | | 0.1 105 SU (Byw |
| i0.0 | | | | | | | | | | | |
| | . ∳ ¹ . | | | | | | | | | | |
| | al est al de la contra | | | in altheory | in the second | | No. of Lot | | NAME | dilas | an in colition |
| | | | | | | | | | | | |
| 50.D | | | | | | | | | | | |
| 50.0 | | | | | - | | | | | | |
| 10.0 | | | | _ | - | | | | | | |
| 30 D | | | | | | | | | | | |
| Start 55.000 GH | | | | #Video | BW 3.0 | MHz | | | Sweet | | op 57.000 GH |
| 4 50 | | Mar 17, 2022 11:10:44 AM | | | | | | | 1.1 | | |



62640 MHz

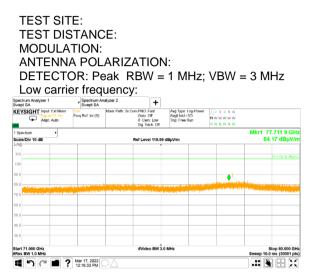
| Spectrum Analy Swept SA | | Spectrum Analyz Swept SA | | | | | |
|---------------------------------|--|-----------------------------|--|--|---|----------|------------------------------------|
| | Input: Ext Mixer Signal ID: On Align: Auto | Corr Freq Ref. Int (S) | PND: Fast Gale: Off IF Cein: Low Sig Track: Off | Avg Type: Log-Power Avg(Hold.>3/3 Trig: Free Run | 1 2 3 4 5 6 M W W W W W P N N N N N | | |
| 1 Spectrum | • | | | | | | 5.177 40 GH |
| Scale/Div 10 d | IB | | Ref Level 119.9 | 9 dBµV/m | | 73 | 3.23 dBµV/r |
| Log | | | , | | | | |
| 110 | | | | | | - | |
| 100 | | | | | | | |
| 90.D | | | | | | | DL1 65.30 dByW |
| 80.0 | 6 1 | | | | | | |
| 70.0 | | | | | | | |
| 60.D | | | | | | | |
| 50.0 | | | | | | | |
| 40.0 | | | | | | | |
| 30.0 | | | | | | | |
| Start 55.000 G #Res BW 1.0 M | | 1 | #Video BW | 10 kHz | | Sweep 15 | Stop 57.000 GH 56 ms (30001 pts |
| 4 5 | ് 🔳 ? | Mar 17, 2022 | Δ | | | | |

| Spectrum Analy Swept SA | zer 1 | Spectrum Analyzer 2 Swept SA | · + | | | | |
|---------------------------------|--|---------------------------------|--|--|---|---------|-----------------|
| KEYSIGHT | Input: Ext Mixer Signal ID: On Align: Auto | Corr Freq Rof. Int (S) | PND: Fast Gate: Off IF Gain: Low Sig Track: Off | Avg Type: Log-Power Avg[Hold >3/3 Trig: Free Run | 1 2 3 4 5 6 M W W W W W P N N N N N | | |
| 1 Spectrum | • | | | | | | 5.110 60 GH |
| Scale/Div 10 d | B | | Ref Level 119.99 | dBµV/m | | . 7 | 74.62 dBµV/r |
| 110 | | | | | _ | | |
| 100 | | | | | | | |
| 30.0 | | | | | | | DL1 65.30 dBy// |
| 70.0 | 1 | | | | | | |
| 50.D | | | | | | | |
| 50.0 | | | | | | | |
| 10.0 | | | | | | | |
| 30.0 | | | | | | | |
| Start 55.000 GI Res BW 1.0 N | | 1 | #Video BW 1 | 0 kHz | | Sweep 1 | Stop 57.000 GH |
| 4 h | r 🔳 ? | Mar 17, 2022 | | | | | |



| Test specification: | FCC Section 15.255(d)(3) above 40 GHz | | | | | | | |
|---------------------|--|------------------------|---------------|--|--|--|--|--|
| Test procedure: | ANSI C63.10, Sections 9.9, 9 | .12 | | | | | | |
| Test mode: | Compliance | Verdict: | PASS | | | | | |
| Date(s): | 17-Mar-22 | verdict. | PASS | | | | | |
| Temperature: 10 °C | Relative Humidity: 48 % | Air Pressure: 1020 hPa | Power: 48 VDC | | | | | |
| Remarks: | | | | | | | | |

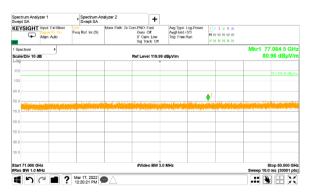
Plot 7.4.4 Spurious emission measurements in 71 - 80 GHz range

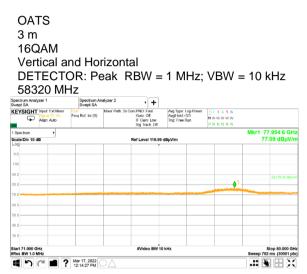


Mid carrier frequency:

| Spectrum Ana Swept SA | ilyzer 1 | Spectrum A Swept SA | nalyzer 2 | + | | | | |
|---------------------------|--|--|--|--------------|---|---|--------------------------|-------------------------------------|
| KEYSIGH | T Input: Ext Mixer Signal ID, On Align: Auto | Corr Freq Ref. Int (S) | | | Avg Type: Log-Po Avg[Hold.>3/3 Trig: Free Run | wer 1 2 3 4 5 6 M W W W W W P N N N N N | | |
| 1 Spectrum | | | | | | | Mkr1 | 79.919 6 GH |
| Scale/Div 10 | dB | | Ref Lev | el 119.99 | dBµV/m | | | 12.10 dBµV/n |
| _og | | | | | | | | |
| 110 | | | | | | | | DL1 105 30 dBy/Vi |
| 100 | | | | | | | | |
| 10.D | | | | | | | | |
| 30.0 | | | la ner versten steller så her segarad ve | | | | | |
| 20.0 | and a statement of the second | ter and in pass of the field in giving a | u daining kanan, ina ang an | and splatfit | in the department of the second | dia di Mala di mandala dell'Aste | and a state of the state | and the state of the last |
| | | | | | | | | |
| 10.0 | | | | - | | | | |
| 50.0 | | | | | | | | |
| 10.0 | | | | | | | _ | |
| 10.0 | | | | | | | | |
| tart 71.000 Res BW 1.0 | | | #Vide | o BW 3.0 |) MHz | | Sweep 1 | Stop 80.000 GH 0.0 ms (30001 pts |
| 4 N | ۹ 🖬 ? | Mar 17, 2022 12:18:08 PM | PΔ | | | | | |

High carrier frequency:

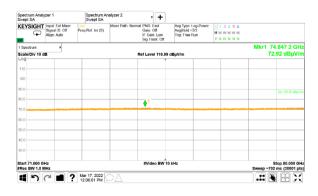




62640 MHz

Spectrum Analyzer 1 Spectrum Analyzer 2 +

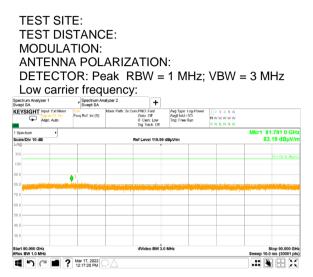
| Align: Auto | | IF Gain: Low Sig Track: Off | Trig: Free Run | PNNNN | |
|------------------------------------|--------------------------------------|--------------------------------|----------------|-------|--|
| Spectrum • | | | | | Mkr1 79.679 0 GH |
| Scale/Div 10 dB | | Ref Level 119.99 | dBµV/m | | 72.71 dBµV/r |
| .0g | | | | | |
| 110 | | | | | |
| 100 | | | | | |
| | | | | | |
| 30.D | | | | | DL1 65.30 x8v/m |
| 10.0 | | | | | |
| | | | | | ● ¹ |
| 70.0 | | | | | |
| 10.D | | | | | |
| 50.0 | | | | | |
| 0.0 | | | | | |
| 10.0 | | | | | |
| 30.0 | | | | | |
| | | | | | |
| Start 71.000 GHz Res BW 1.0 MHz | 1 | #Video BW 10 | kHz | | Stop 80.000 GH Sweep ~702 ms (30001 pts |
| | ? Mar 17, 2022 12:07:52 PM | ~ ^ | | | |





| Test specification: | FCC Section 15.255(d)(3) above 40 GHz | | | | | | | |
|---------------------|--|------------------------|---------------|--|--|--|--|--|
| Test procedure: | ANSI C63.10, Sections 9.9, 9 | .12 | | | | | | |
| Test mode: | Compliance | Verdict: | PASS | | | | | |
| Date(s): | 17-Mar-22 | verdict. | PASS | | | | | |
| Temperature: 10 °C | Relative Humidity: 48 % | Air Pressure: 1020 hPa | Power: 48 VDC | | | | | |
| Remarks: | | | | | | | | |

Plot 7.4.5 Spurious emission measurements in 80 - 90 GHz range

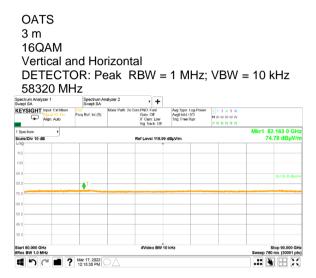


Mid carrier frequency:

| Spectrum Analy Swept SA | zer 1 | Spectrum A Swept SA | nalyzer 2 | + | | | | |
|---------------------------------|--|------------------------------|-------------------------------|------------|--|---|----------------------|--------------------------------|
| 0 | Input: Ext Mixer Signal ID: On Align: Auto | Corr Freq Ref. Int (S) | | | Awg Type: Log-Power Awg Hold >3/3 Trig: Free Run | 1 2 3 4 5 6 M W W W W W P N N N N N | | |
| 1 Spectrum | • | | | | | | Mkr1 8 | 3.577 3 GH |
| Scale/Div 10 d | в | | Ref Le | vel 119.99 | dBµV/m | | 86 | .29 dBµV/r |
| _og | | | | 1 | | | | |
| 110 | | | | | | | | DL1 105 30 dBy/V |
| 100 | | _ | | | | | | |
| 40.D | | | <u></u> 1 | | | | | |
| 80.0 BALL AND | | | ويسقيك فاعتده الافتدويتسان | | | المرباب بمرجع والمراجع | | |
| Advantation A | and the second second | and the second second second | a sulphing and a subscription | - | allowing and a second particular second | and positive seque | distanting parameter | and the second second second |
| 70.0 | | - | | _ | | | | |
| 10.D | | | | | | | | |
| 50.0 | | | | | | | | |
| 40.0 | | | | | | | | |
| 30 D | | | | | | | | |
| | | | | | | | | |
| Start 80.000 GH Res BW 1.0 M | | | #Vie | ieo BW 3.0 |) MHz | | | Stop 90.000 GH ms (30001 pt |
| | | Mar 17, 2022 12:18:47 PM | | | | | | |

High carrier frequency:

| Spectrum Analy Swept SA | /zer 1 | Spectrum Ar Swept SA | alyzer 2 | + | | | | | |
|-------------------------------|--|---------------------------|-------------------|--|--|-------------|---|------------------|----------------------------------|
| | Input: Ext Mixer Signal ID: On Align: Auto | Corr Freq Ref. Int (S) | Mixer Path: 2x Co | n.PND: Fast Gale: Off IF Gain: Low Sig Track: Off | Avg Type: L Avg[Hold +3 Trig: Free R | vā. | 1 2 3 4 5 6 M W W W W W P N N N N N | | |
| Sportrum | • | | | | | | | | 6.587 0 GH 5.10 dBuV/r |
| cale/Div 10 d | R | | | Ref Level 119.99 | dBµV/m | | | 0 | |
| 110 | | | | | | | | | DL1 105 30 (By/) |
| 00 | | | | | | | | | DCT NO SU DEPAN |
| 0.0 | | | | | | | | | |
| 0.0 | | | | | a la calebra | htelanda | dim disets | | ا باستقساب ه |
| 0.0 | Constanty Constant | and spinister solution | indeter source | فالمناد ولدف والم | sound and the state | shikiperene | Construction of the local division of | فالمتحدث والمحمد | tionin mainte |
| 0.0 | | | | | | | | | |
| 0.0 | | | | | | | | | |
| 0.0 | | | | | | | | | |
| 0.0 | | | | | | | | | |
| 0.0 | | | | | | | | | |
| tart 80.000 G Res BW 1.0 M | | | | #Video BW 3.0 | MHz | | | | Stop 90.000 GH 0 ms (30001 pt |
| 4) | ି∎ ? | Mar 17, 2022 | DA | | | | | | |



62640 MHz

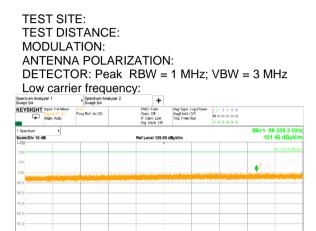
Spectrum Analyzer 1 Swept SA KEYSIGHT Input Ext Mover Signal ID. Cri Algn: Auto Spectrum / Swept SA + Fast Avg Type: Log Avg[Hold.>3/3 Trig: Free Run Corr Free Ref. Int (S) 1 2 3 4 5 6 M W W W W W P N N N N N Gale IF G r1 83.095 7 GH 79.56 dBµV/ , Spottrum cale/Div 10 dB Ref Level 119.99 dBµV/m #Video BW 10 kHz rt 80.000 GHz es BW 1.0 MHz Sweep 780 ms (30001 pts) 12:19:25 PM

| Spectrum Analy Swept SA | /zer 1 | Spectrum Ar Swept SA | alyzer 2 | • + | | | | | | | |
|--------------------------------|--|-----------------------------|----------|--|--|------|----------------------|-------|--------------|--------------------|----------------|
| _ | Input: Ext Mixer Signal ID: On Align: Auto | Corr Freq Ref. Int (S) | 16 | NO:Fast late:Off Cein:Low lig Track:Off | Awg Type: L Awg(Hold: 3 Trig: Free F | S M₩ | 3456 WWWW NNNN | | | | |
| Sportrum cale/Div 10 d | | | | Level 119.9 | | | | Mkr1 | | 975 3 5 dB | |
| _00 | в | | Ret | Level 119.9 | a ashow | | | | 70.0 | JUD | μ |
| 110 | _ | _ | | | | | | | _ | | |
| 100 | | | | | | | | | | | |
| 0.0 | | | | | | 1 | | | | OL1 85.30 | dByV |
| 0.0 | | | | | | | | | | | |
| 0.0 | | | | | | | | | | | |
| 0.0 | | | | | | | | | | | |
| 0.0 | | | | | | | | | _ | | |
| 10 D | | | | | | | | | | | |
| tart 80.000 GI Res BW 1.0 N | | 1 | | Video BW | 10 kHz | | | Sweep | Sto 780 m | p 90.00 is (300 | 30 GI 01 pi |
| 4) | ମ∎? | Mar 17, 2022 12:21:05 PM | ÐA | | | | | | | 88 | X |



| Test specification: | FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz | | | | | | | |
|---------------------|--|------------------------|---------------|--|--|--|--|--|
| Test procedure: | ANSI C63.10, Sections 9.9, 9. | 12 | | | | | | |
| Test mode: | Compliance | Verdict: | PASS | | | | | |
| Date(s): | 17-Mar-22 | verdict. | PASS | | | | | |
| Temperature: 10 °C | Relative Humidity: 48 % | Air Pressure: 1020 hPa | Power: 48 VDC | | | | | |
| Remarks: | | | | | | | | |

Plot 7.4.6 Spurious emission measurements in 90 - 100 GHz range



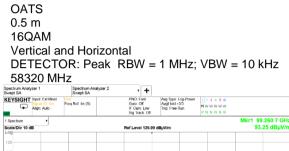
#Video BW 3.0 MHz

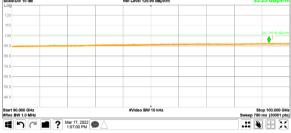
Mid carrier frequency:

| Spectrum Analy Swept SA | zer 1 | Spectrum Analys Swept SA | ter 2 | + | | | | | |
|--------------------------------|---|--------------------------------------|-----------------------|---|---|---------------|---|------------------------|----------------------------------|
| | Input: Ext Mixer Signal ID. On Align: Auto | Corr Freq Ref. Int (S) | G | ID: Fast ste: Off Gein: Low g Track: Off | Awg Type: Lo Awg(Hold.>3) Trig: Free Ru | 3 | 1 2 3 4 5 6 M W W W W W P N N N N N | | |
| Spectrum | • | | | | | | | | .737 3 GH |
| cale/Div 10 d | в | | Ref | Level 129.99 c | IBµV/m | | | 101. | 21 dBµV/n |
| 120 | | | | Ť | | | | | DL 1 120 50 cBy/Vin |
| 110 | | | | | | | A1 | | |
| 100 | and the state of the | والمتنافر والمتكرية والمحالية | | i in the second | color the state | protection of | and construction of | nalo antivisso di | any discontinue tipe o |
| 0.0 | available provide balance | ander som selver i aller i store for | Edward Artik De Maria | and a low off | ing and the star | epiletest | deal Reporting a specific to | and the address of the | <u>Tion of the official</u> |
| 10.0 | | | | | | | | | |
| '0.D | | _ | | | | | | | |
| | | | | | | | | | |
| 10.0 | | | | | | | | | |
| | | | | | | | | | |
| 50.0 | | | | | | | | | |
| 50.0 40.0 Start 90.000 G | | | | /ideo BW 3.0 | MHz | | | | op 100.000 GHz ms (30001 pts) |

High carrier frequency:

| Spectrum Analyzer 1 Swept SA | Spectrum Analyze Swept SA | 2 + | | | | |
|--|--|--|--|--|------------------------|------------------------------|
| KEYSIGHT Input Ext Mixe Signal ID. Cri Align: Auto | r Corr Freq Rof. Int (S) | PND: Fast Gale: Off IF Gain: Low Sig Track: Off | Avg Type: Log-Power Avg[Hold >3/3 Trig: Free Run | 1 2 3 4 5 6 M W W W W W P N N N N N | | |
| Scale/Div 10 dB | | Ref Level 129.9 | 9 dBuV/m | | | .646 3 GH 17 dBµV/r |
| Log | | | | | | |
| 120 | | | | | | DE1 120.00 ((By/W |
| 110 | | | | | | •1 |
| 100 | da er e blever, is aller to tel alle | and a sufficient state of the | | de la compañía de la | data a sur i site | |
| 90.0 | | | | | Table Constraint Color | |
| 10.0 | | | | | | |
| 70.0 | | | | | | |
| | | | | | | |
| 10.0 | | | | | | |
| 50.0 | | | | | | |
| 40.D | | | | | | |
| Start 90.000 GHz Res BW 1.0 MHz | | #Video BW 3 | .0 MHz | | | p 100.000 GH ns (30001 pt |
| | ? Mar 17, 2022 | 7 | | | | |





62640 MHz

Stop 100.000 GHz Sweep 10.0 ms (30001 pts)

| Spectrum Anal Swept SA | yzer 1 | Spectrum Analyzer 2 Swept SA | · | | | | |
|--------------------------------|--|---------------------------------|--|--|---|----------|------------------|
| KEYSIGHT | Input: Ext Mixer Signal ID. On Align: Auto | Corr Freq Ref. Int (S) | PND: Fast Gale: Off IF Gain: Low Sig Track: Off | Avg Type: Log-Power Avg(Hold.>3/3 Trig: Free Run | 1 2 3 4 5 6 M W W W W W P N N N N N | | |
| 1 Spectrum | , | | | | | | 9.789 0 GH |
| Scale/Div 10 c | IB | | Ref Level 129.99 | dBµV/m | | 9 | 3.14 dBµV/n |
| 120 | | | | | | | |
| 110 | | | | | | | DL1 100 90 eDy/m |
| 90.0 | | | | | | | • |
| 90.0 | | | | | | | |
| 70.D | | | | | | | |
| 50.0 | | | | | | | |
| 40.0 | | | | | | | |
| Start 90.000 G Res BW 1.0 F | | | #Video BW 10 | kHz | | Sweep 78 | Stop 100.000 GH |
| 4 5 | 례 ? | Mar 17, 2022 | | | | | |

| Spectrum Analy Swept SA | /zer 1 | Spectrum Ana Swept SA | lyzer 2 | • + | | | |
|--------------------------------|--|----------------------------|---------|---|--|---|---------------------------------|
| KEYSIGHT | Input: Ext Mixer Signal ID: On Align: Auto | Corr Freq Rof. Int (S) | ¢ | PND: Fast Sale: Off F Gain: Low Sig Track: Off | Avg Type: Log-Power Avg Hold.>3/3 Trig: Free Run | 1 2 3 4 5 6 M W W W W W P N N N N N | |
| 1 Spectrum Scale/Div 10 d | • | | Rei | Level 129.99 | dBuV/m | | 9.745 7 GH .36 dBµV/n |
| Log | - | | | | | | |
| 120 | | | | | | | |
| 110 | | | | | | | |
| 100 | | | | | | | DL1 100.90 dDy/// |
| 90.0 | | | | | | | |
| 90.0 | | | | | | | |
| 70.D | | | | | | | |
| 50.0 | | | | | | | |
| 50.0 | | | | | | | |
| 40.0 | | | | | | | |
| Start 90.000 G Res BW 1.0 M | | | | #Video BW 10 | kHz | | top 100.000 GH ms (30001 pts |
| 4 h | 례 🔳 ? | Mar 17, 2022 1:13:35 PM | | | | | |