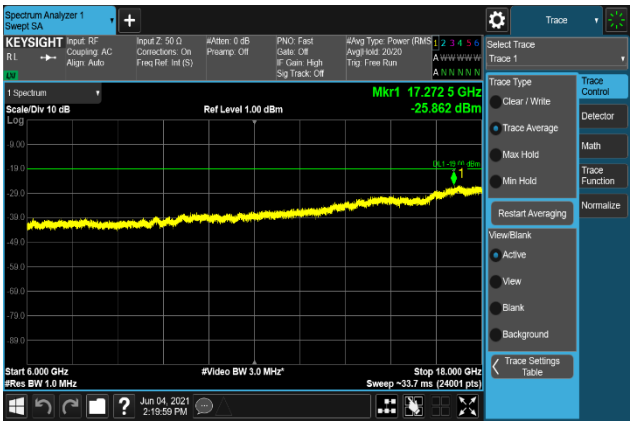
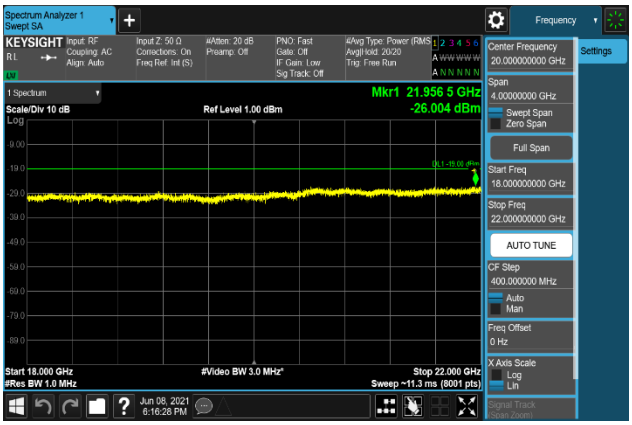
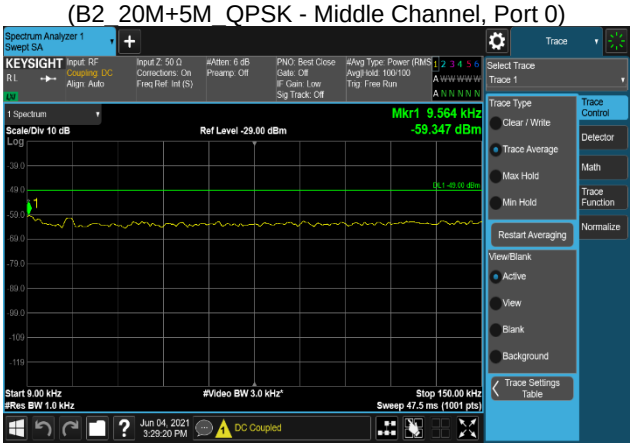


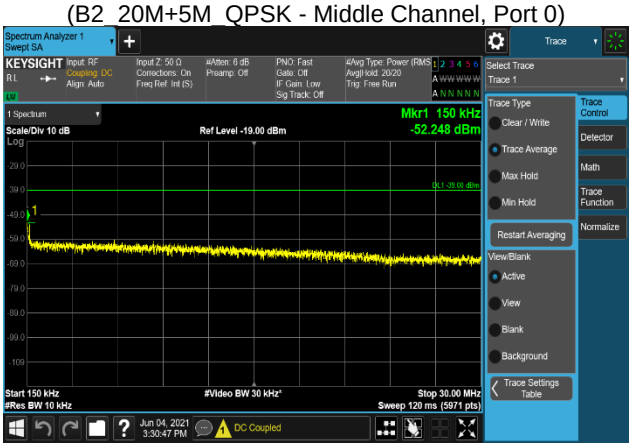
Plot 7-525. Conducted Spurious Emission Plot
6 GHz to 18 GHz
(B2_20M+5M_QPSK - Middle Channel, Port 0)



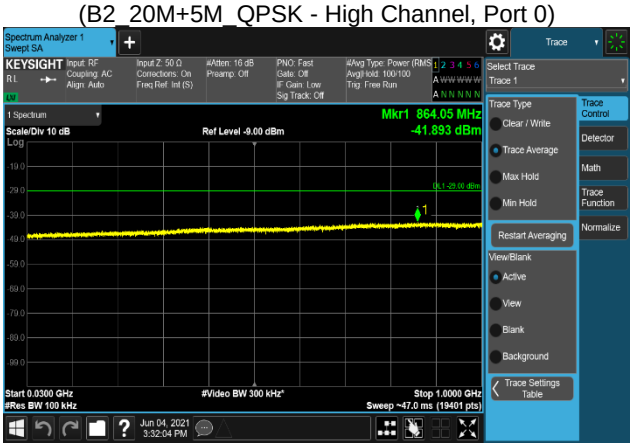
Plot 7-526. Conducted Spurious Emission Plot
18 GHz to 22 GHz
(B2_20M+5M_QPSK - Middle Channel, Port 0)



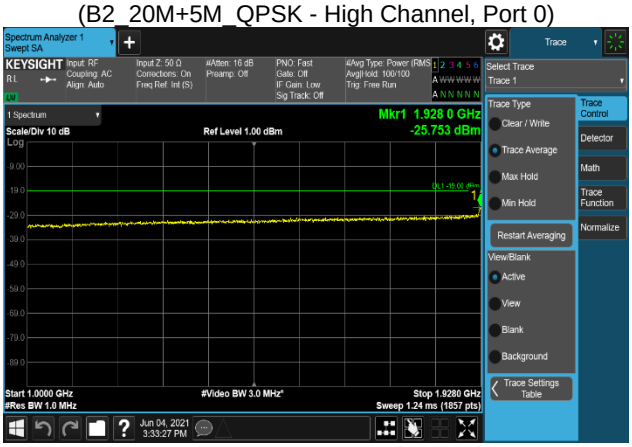
Plot 7-527. Conducted Spurious Emission Plot
9 kHz to 150 kHz
(B2_20M+5M_QPSK - High Channel, Port 0)



Plot 7-528. Conducted Spurious Emission Plot
150 kHz to 30 MHz
(B2_20M+5M_QPSK - High Channel, Port 0)

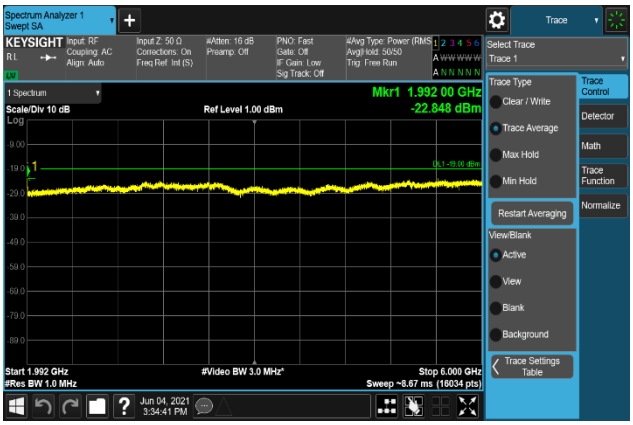


Plot 7-529. Conducted Spurious Emission Plot
30 MHz to 1 GHz
(B2_20M+5M_QPSK - High Channel, Port 0)

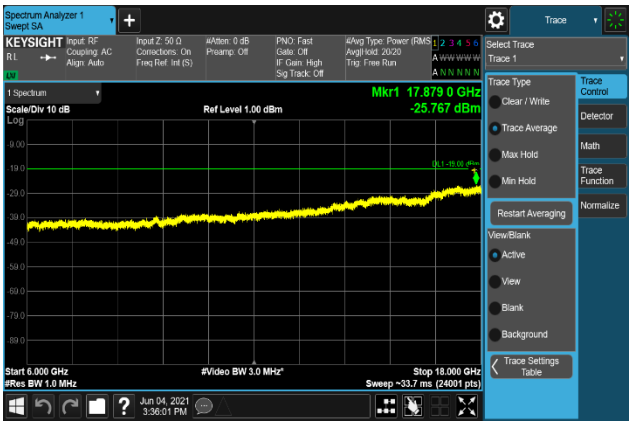


Plot 7-530. Conducted Spurious Emission Plot
1 GHz to 1.928 GHz
(B2_20M+5M_QPSK - High Channel, Port 0)

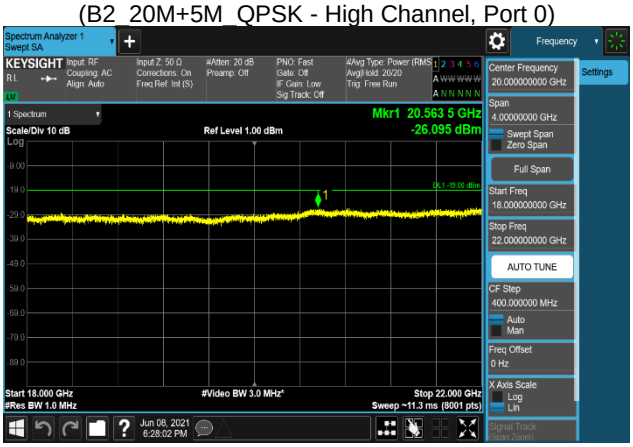
© 2021 PCTEST PK-QP-16-14 Rev.01
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



Plot 7-531. Conducted Spurious Emission Plot
1.992 GHz to 6 GHz
(B2_20M+5M_QPSK - High Channel, Port 0)



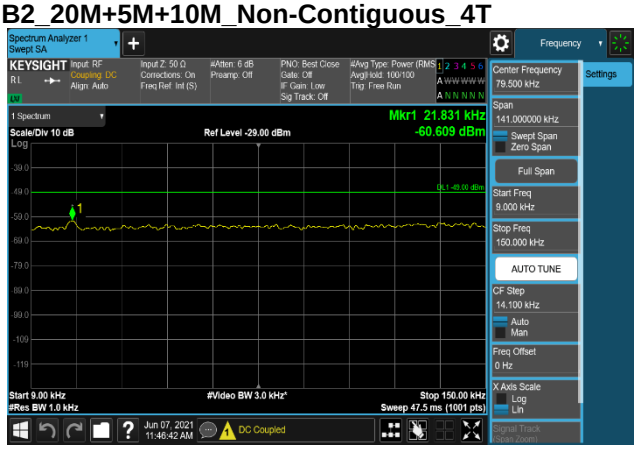
Plot 7-532. Conducted Spurious Emission Plot
6 GHz to 18 GHz
(B2_20M+5M_QPSK - High Channel, Port 0)



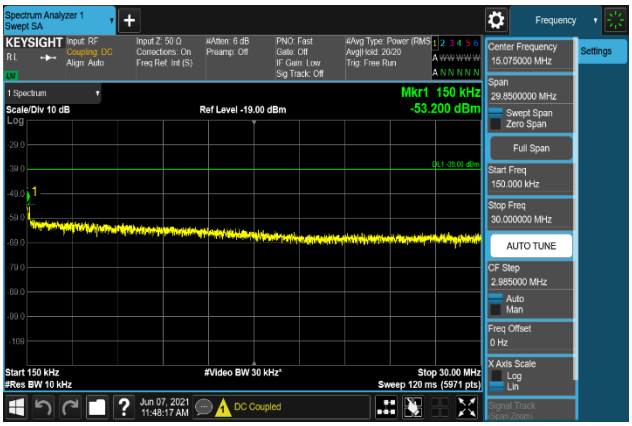
Plot 7-533. Conducted Spurious Emission Plot
18 GHz to 22 GHz
(B2_20M+5M_QPSK - High Channel, Port 0)

© 2021 PCTEST PK-QP-16-14 Rev.01
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

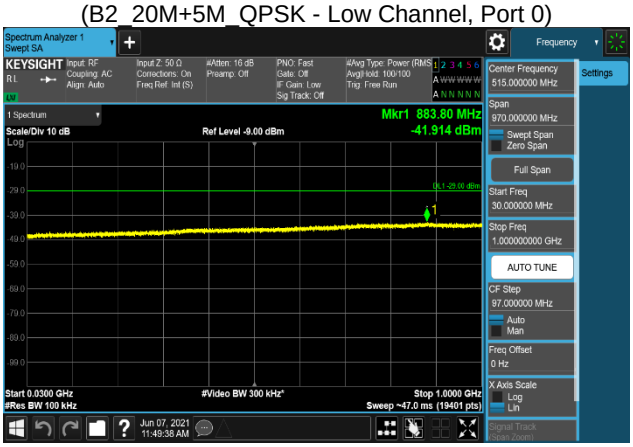
- B2_20M+5M+10M_Non-Contiguous_4T



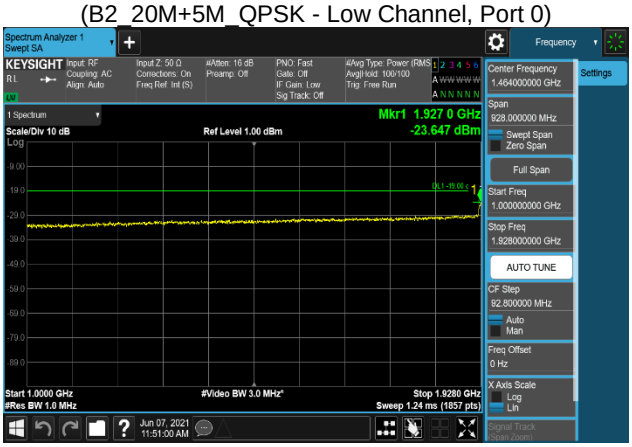
Plot 7-534. Conducted Spurious Emission Plot
9 kHz to 150 kHz
(B2_20M+5M_QPSK - Low Channel, Port 0)



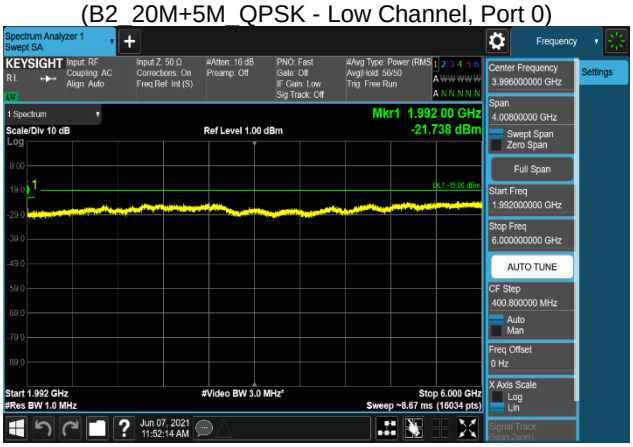
Plot 7-535. Conducted Spurious Emission Plot
150 kHz to 30 MHz
(B2_20M+5M_QPSK - Low Channel, Port 0)



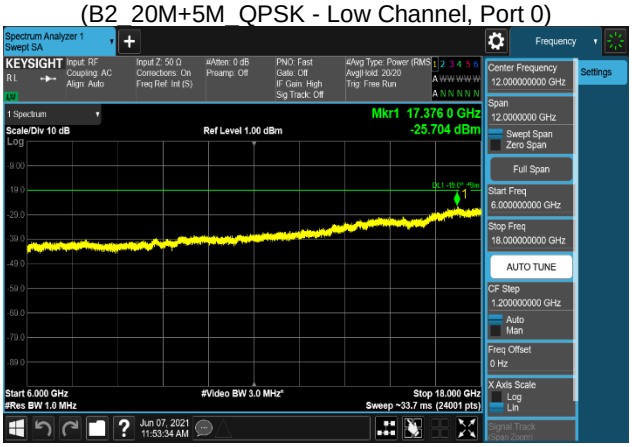
Plot 7-536. Conducted Spurious Emission Plot
30 MHz to 1 GHz
(B2_20M+5M_QPSK - Low Channel, Port 0)



Plot 7-537. Conducted Spurious Emission Plot
1 GHz to 1.928 GHz
(B2_20M+5M_QPSK - Low Channel, Port 0)

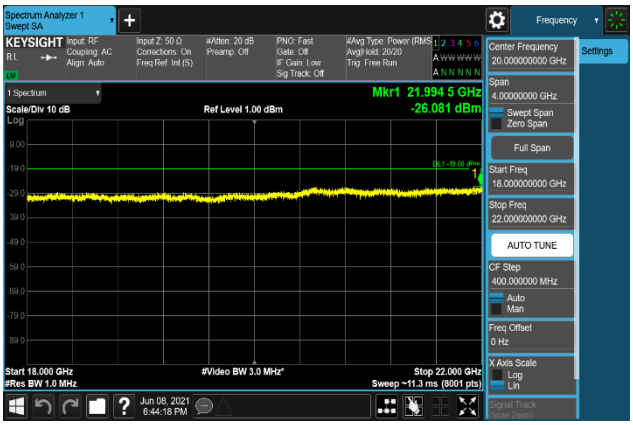


Plot 7-538. Conducted Spurious Emission Plot
1.992 GHz to 6 GHz
(B2_20M+5M_QPSK - Low Channel, Port 0)



Plot 7-539. Conducted Spurious Emission Plot
6 GHz to 18 GHz
(B2_20M+5M_QPSK - Low Channel, Port 0)

© 2021 PCTEST PK-QP-16-14 Rev.01
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



Plot 7-540. Conducted Spurious Emission Plot
18 GHz to 22 GHz
(B2_20M+5M_QPSK - Low Channel, Port 0)

© 2021 PCTEST PK-QP-16-14 Rev.01
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

7.8 Radiated spurious emission

Test Overview

Radiated spurious emissions measurements are performed using the field strength method described in ANSI C63.26-2015 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizonally polarized broadband tri-log antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas.

Test Procedure Used

ANSI C63.26 - Section 5.5.3.2

Test Setting

1. Start frequency was set to 30 MHz and stop frequency was set to at least 10 * the fundamental frequency
2. RBW = 100 kHz for emissions below 1 GHz and 1 MHz for emissions above 1GHz
3. VBW ≥ 3 x RBW
4. No. of sweep points ≥ 2 x span / RBW
5. Detector = Peak for the pre-scan, (In cases where the level is within 2 dB of the limit, the final measurement is taken using RMS detector.)
6. Trace mode = Max Hold (In cases where the level is within 2 dB of the limit, the final measurement is taken using triggering/gating and trace averaging.)
7. The trace was allowed to stabilize.

Limit

The power of any emission outside of the authorized operating frequency range cannot exceed -13 dBm.
The limit for the 1 GHz to 8 GHz frequency range was adjusted to -23 dBm to correct for a spectrum analyzer RBW of 1 MHz versus required RBW of 100 kHz [i.e.: -23 dBm = -13 dBm -10log(1 MHz/100 kHz)].

© 2021 PCTEST PK-QP-16-14 Rev.01
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

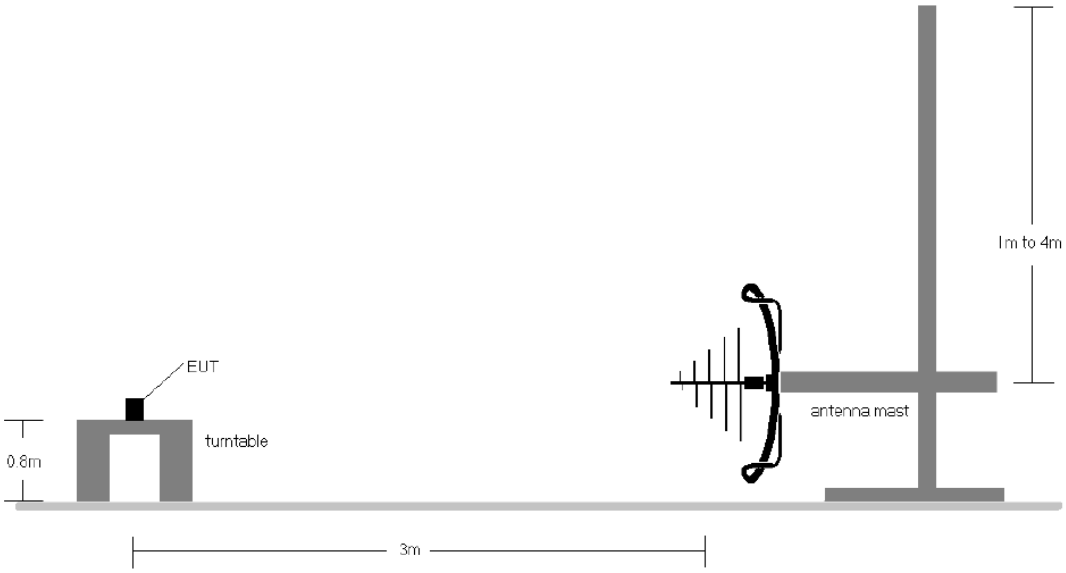


Figure 7-7. Test Instrument & Measurement Setup < 1 GHz

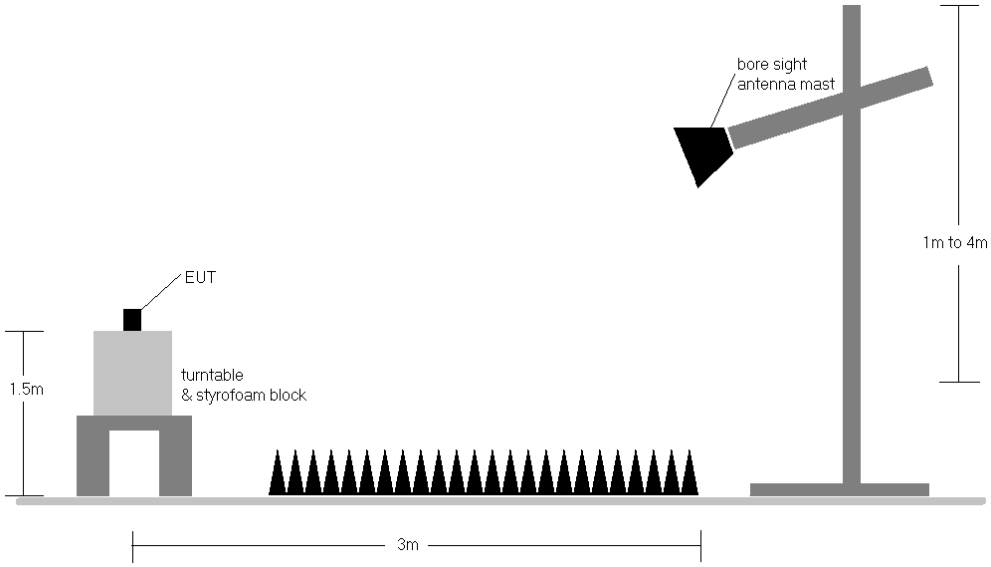


Figure 7-8. Test Instrument & Measurement Setup > 1 GHz

© 2021 PCTEST PK-QP-16-14 Rev.01
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Test Notes

1. The average EIRP reported below is calculated per 5.2.7 of ANSI C63.26-2015 which states:

   The measured e.i.r.p is converted to E-field in V/m. Then the distance correction is applied before converted back to calculated e.i.r.p.as explained in KDB 971168 D01 D01 v03r01.

Effective Isotropic Radiated Power Sample Calculation

Field Strength [dBμV/m] = Measured Value [dBm] + AFCL [dB/m] + 107

= -80.41 dBm + (18.37 dBm + 1.92 dBm) + 107 = 46.88 dBμV/m

= 10^(46.88/20)/1000000 = 0.0002208 V/m

e.i.r.p. [dBm] = E[dB μV/m] + 20 $\log_{10}$(d[m]) + 104.8

= 46.88 + (20*log(3)) – 104.8

= -48.38 dBm e.i.r.p.

*AFCL (dB/m) contains measurement antenna factor(dB/m) and cable loss(dB) as below:

Frequency [MHz]	Antenna Factor (dB/m)	Cable loss [dB]	AFCL (dB/m)
127.82	21.78	0.92	22.70
911.68	22.62	2.57	25.19
12165.06	39.42	-23.85	15.58
17980.75	47.73	-21.84	25.89

Table 7-71. Adopted AFCL value in the calculation

2. The EUT was tested in both horizontal and vertical antenna polarizations and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, channel bandwidth configurations shown in the tables below.

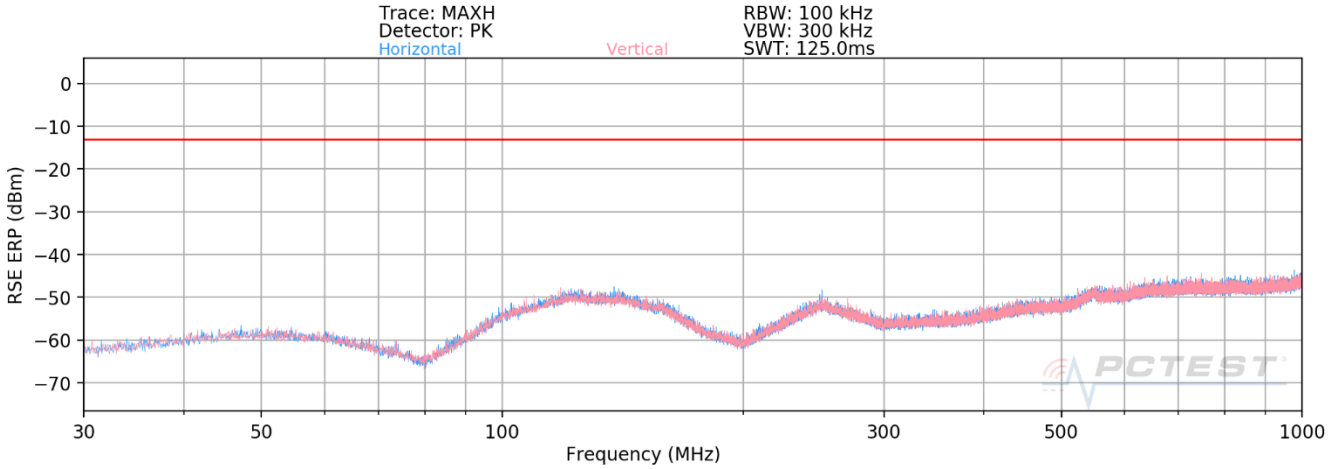
3. The spectrum is measured from 9 kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.

4. Emissions below 18 GHz were measured at a 3 meter test distance while emissions above 18 GHz were measured at a 1 meter test distance with the application of a distance correction factor.

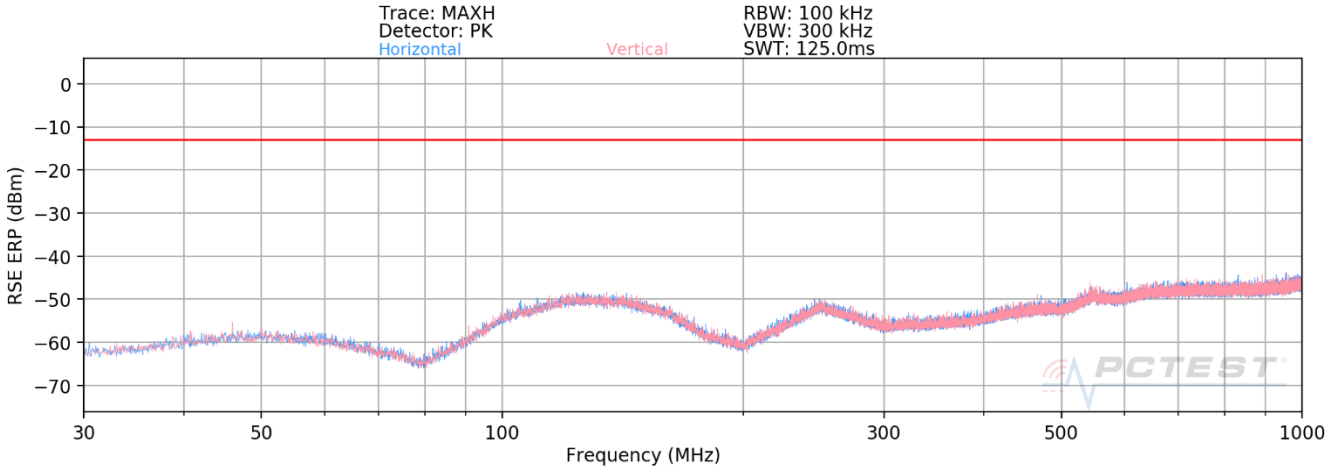
5. Spurious emissions were measured with all EUT antennas transmitting simultaneously.

6. The "-" shown in the following RSE tables are used to denote a noise floor measurement.

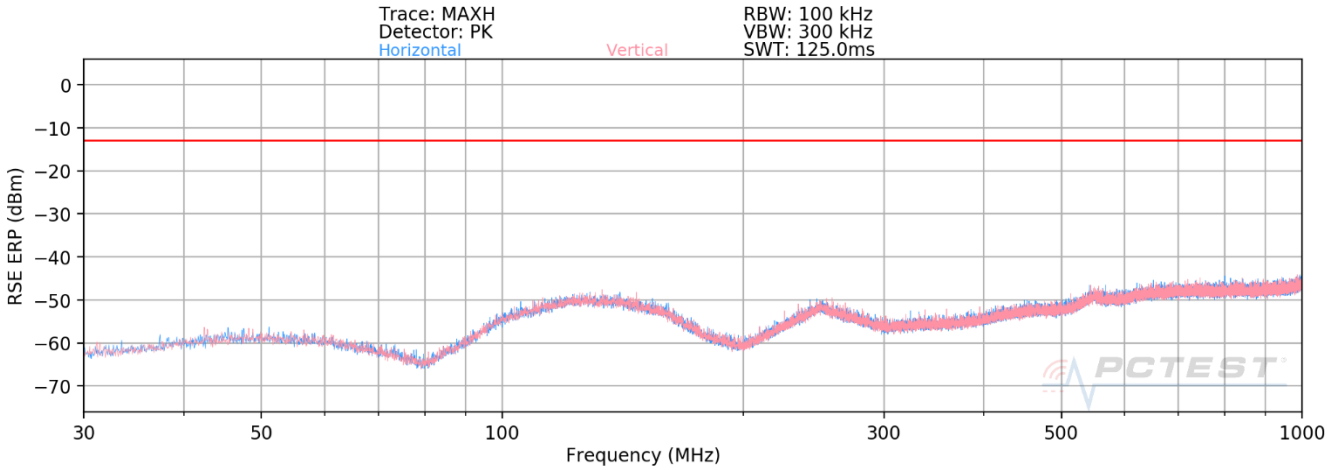
© 2021 PCTEST PK-QP-16-14 Rev.01
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



Plot 7-541. Radiated spurious emission_30 MHz to 1000 MHz (B2_5M + B66_15M+10M+10M_Non-Contiguous – Middle Channel_4T)



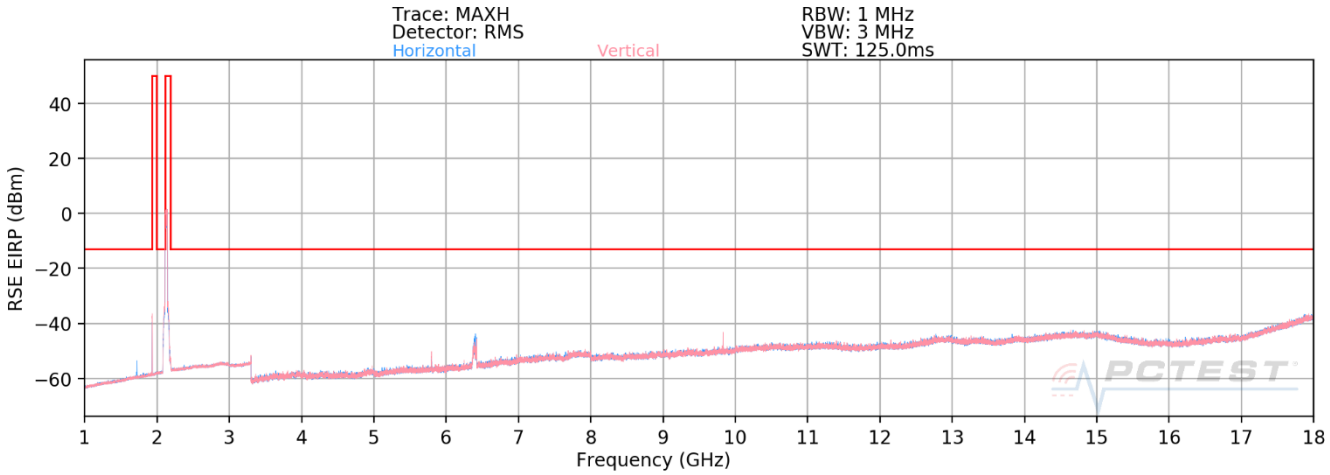
Plot 7-542. Radiated spurious emission_30 MHz to 1000 MHz (B2_5M + B66_20M+5M+10M_Non-Contiguous – Middle Channel_4T)



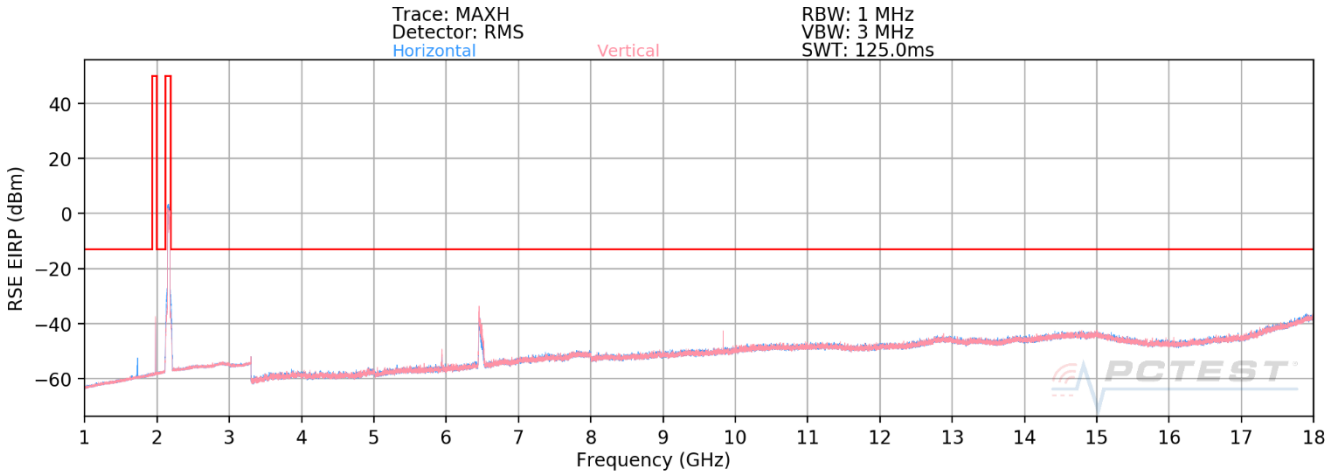
Plot 7-543. Radiated spurious emission_30 MHz to 1000 MHz (B2_20M + B66_20M_Non-Contiguous – Middle Channel_4T)

© 2021 PCTEST PK-QP-16-14 Rev.01

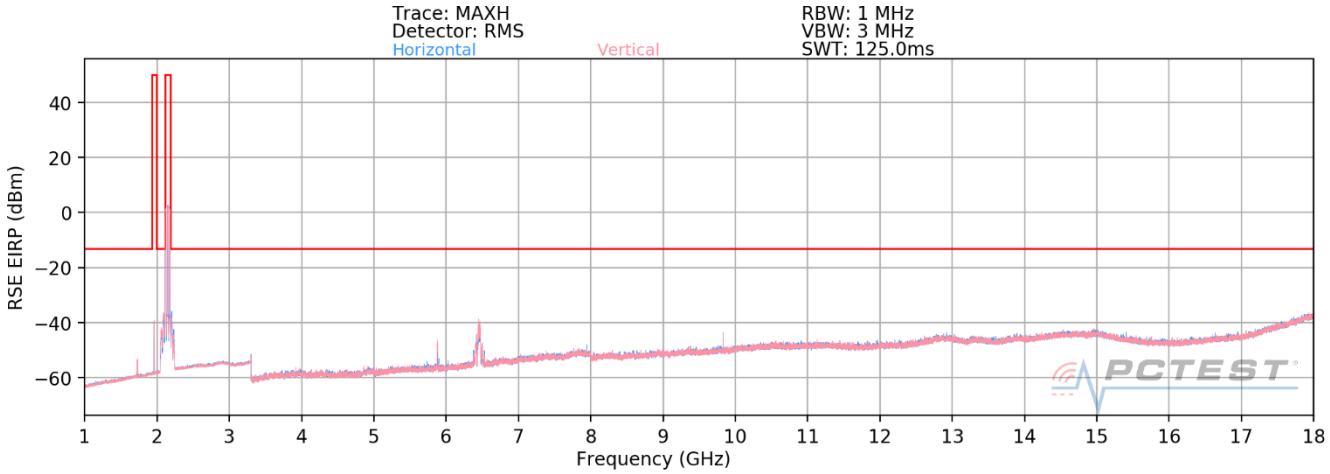
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



Plot 7-544. Radiated spurious emission_1 GHz to 18 GHz
(B2_5M + B66_15M+10M+10M_Contiguous - Low Channel_2T)

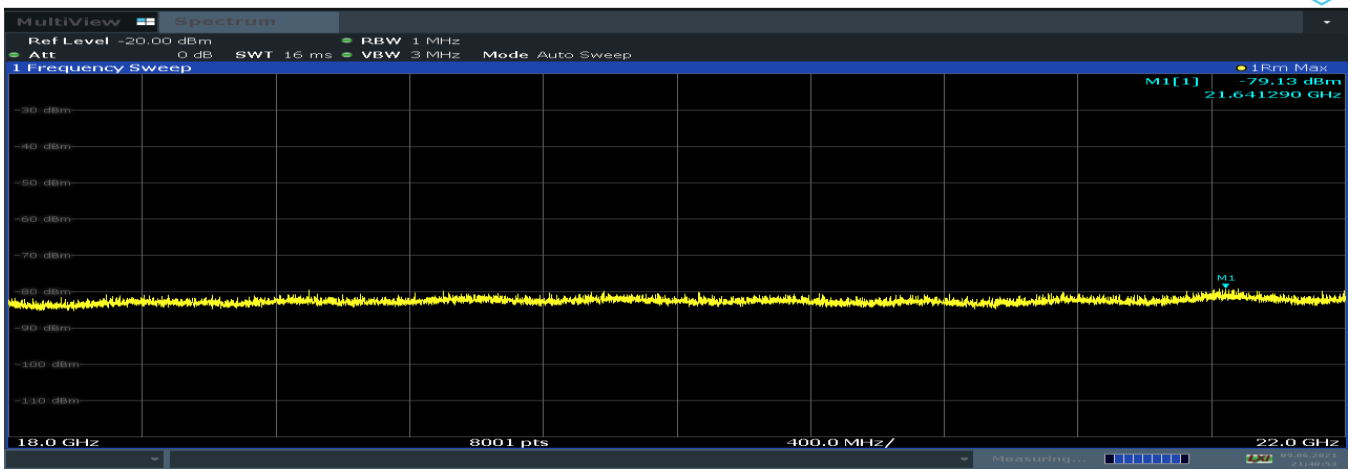


Plot 7-545. Radiated spurious emission_1 GHz to 18 GHz
(B2_5M + B66_15M+10M+10M_Contiguous - High Channel_2T)

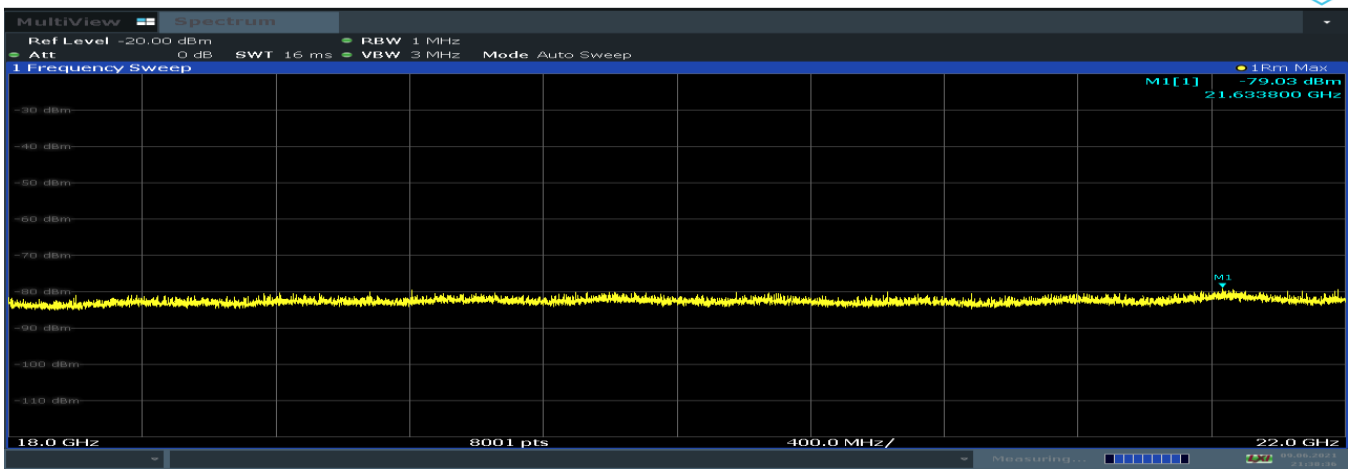


Plot 7-546. Radiated spurious emission_1 GHz to 18 GHz
(B2_5M + B66_15M+10M+10M_Non-Contiguous - Middle Channel_2T)

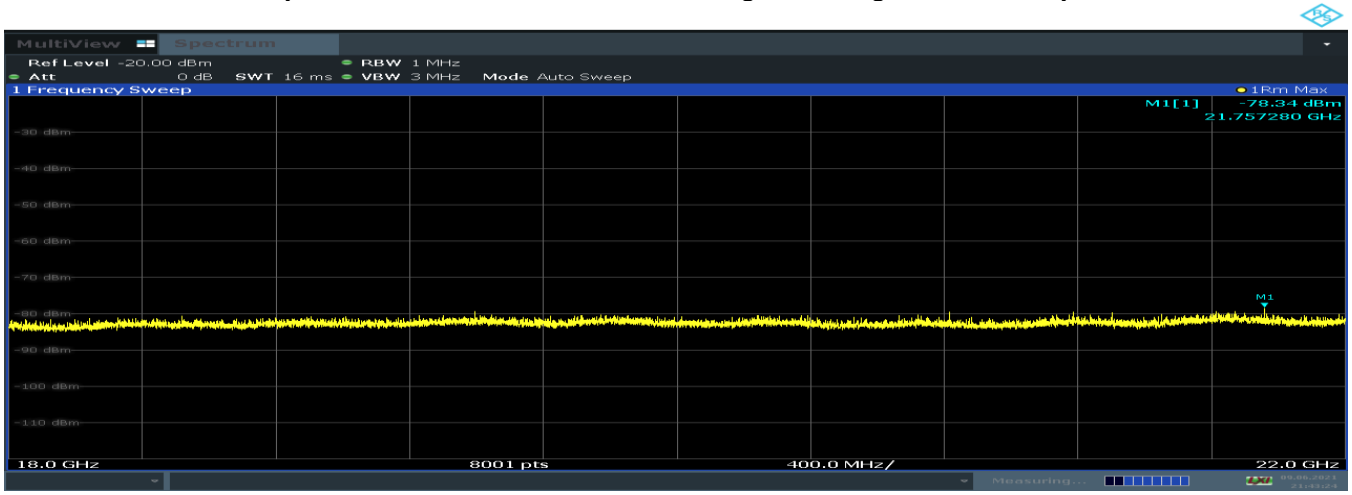
© 2021 PCTEST PK-QP-16-14 Rev.01
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



Plot 7-547. Radiated spurious emission_18 GHz to 22 GHz (B2_5M + B66_15M+10M+10M_Contiguous - Low Channel_2T)

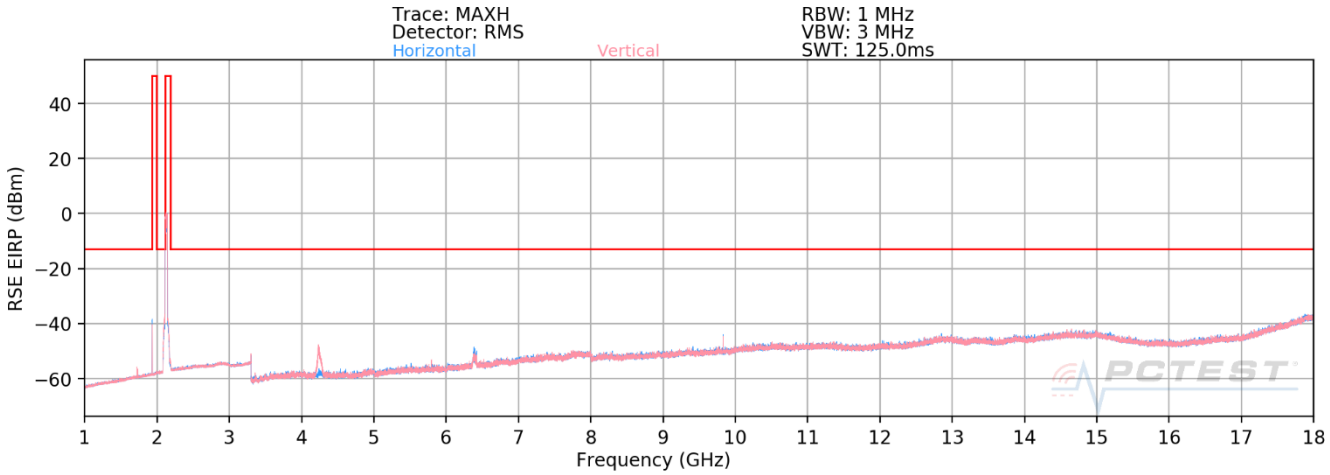


Plot 7-548. Radiated spurious emission_18 GHz to 22 GHz (B2_5M + B66_15M+10M+10M_Contiguous - High Channel_2T)

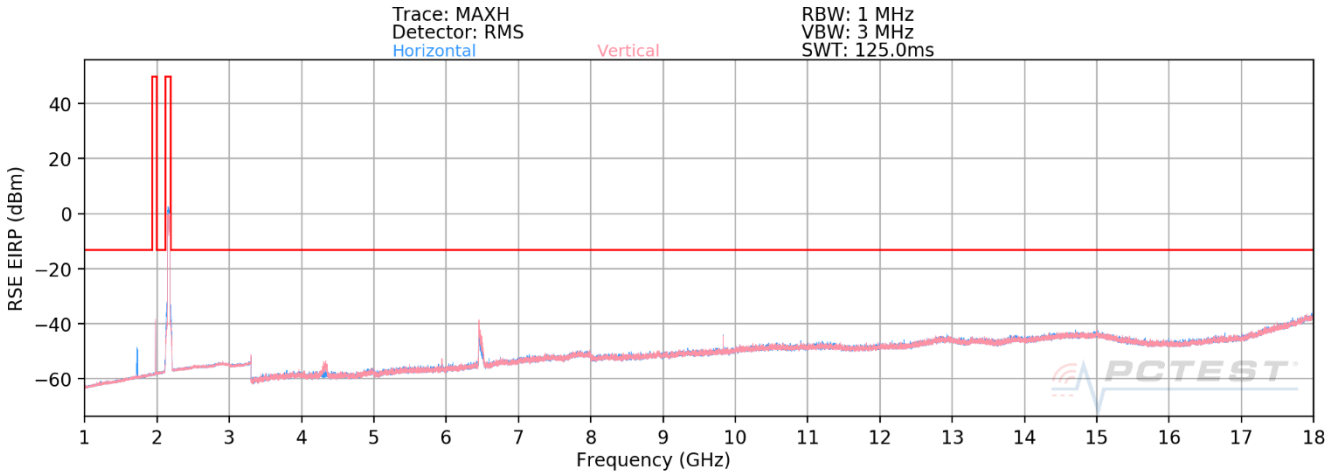


Plot 7-549. Radiated spurious emission_18 GHz to 22 GHz (B2_5M + B66_15M+10M+10M_Non-Contiguous - Middle Channel_2T)

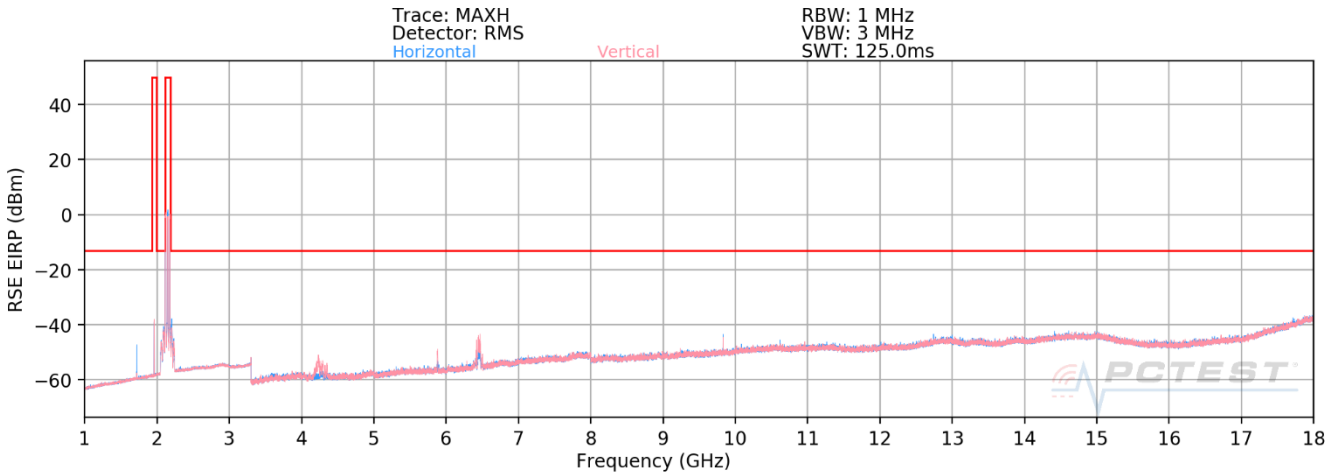
© 2021 PCTEST PK-QP-16-14 Rev.01
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



Plot 7-550. Radiated spurious emission_1 GHz to 18 GHz
(B2_5M + B66_15M+10M+10M_Contiguous - Low Channel_4T)

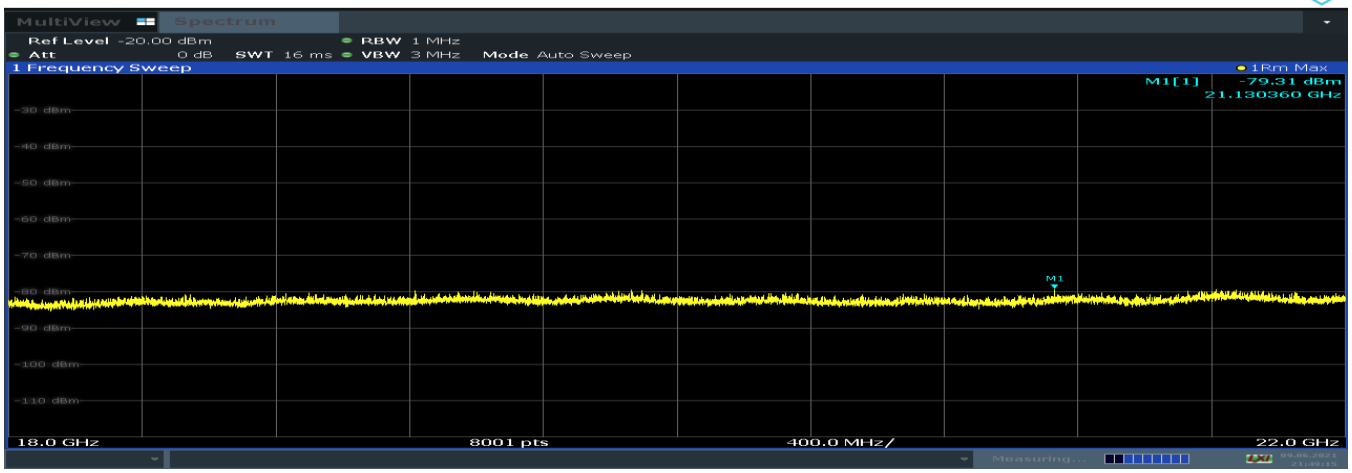


Plot 7-551. Radiated spurious emission_1 GHz to 18 GHz
(B2_5M + B66_15M+10M+10M_Contiguous - High Channel_4T)

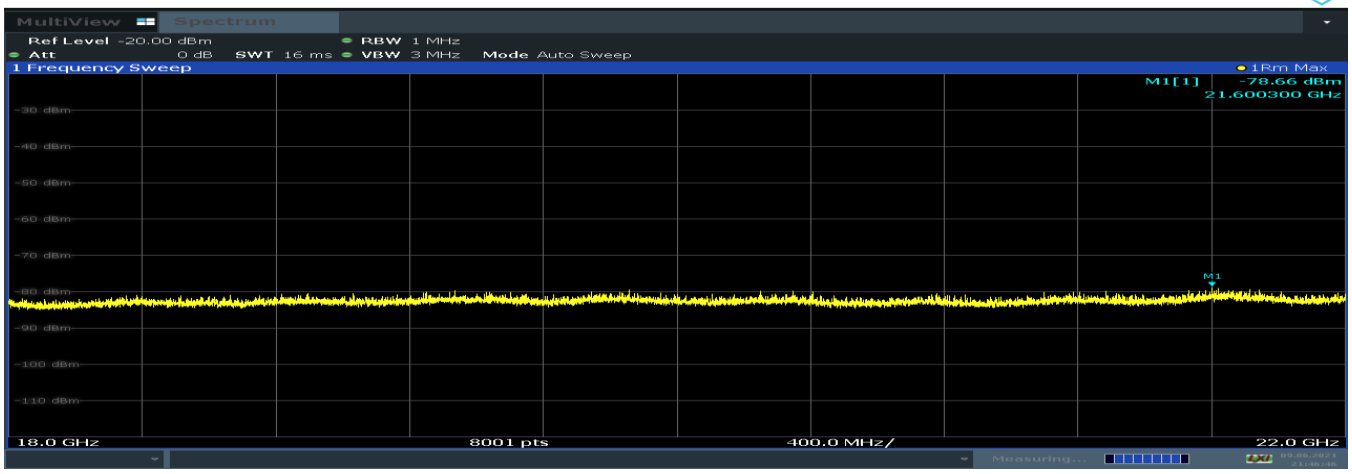


Plot 7-552. Radiated spurious emission_1 GHz to 18 GHz
(B2_5M + B66_15M+10M+10M_Non-Contiguous - Middle Channel_4T)

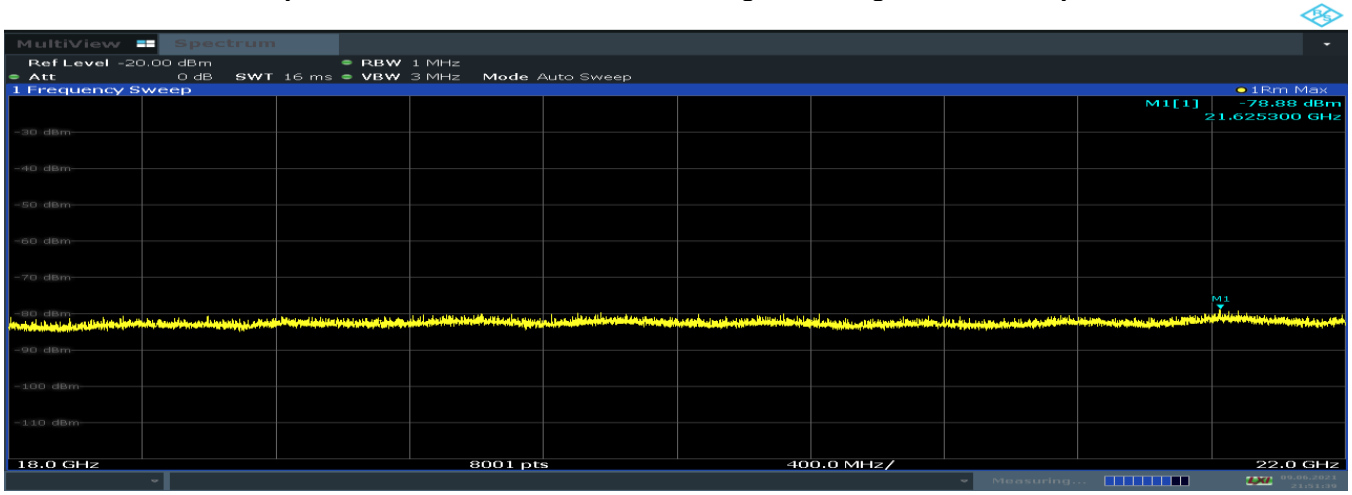
© 2021 PCTEST PK-QP-16-14 Rev.01
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



Plot 7-553. Radiated spurious emission_18 GHz to 22 GHz (B2_5M + B66_15M+10M+10M_Contiguous - Low Channel_4T)

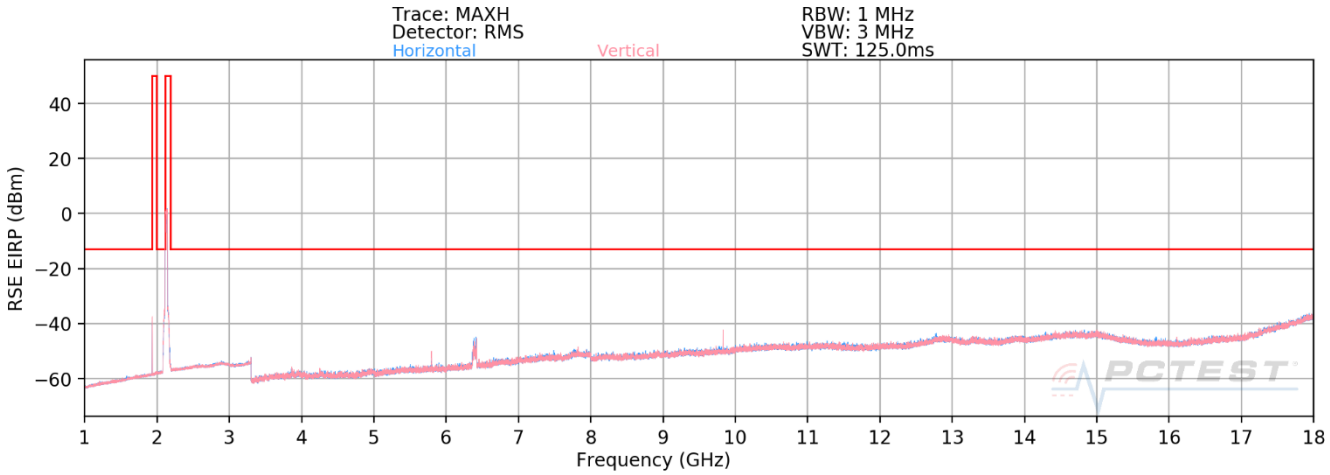


Plot 7-554. Radiated spurious emission_18 GHz to 22 GHz (B2_5M + B66_15M+10M+10M_Contiguous - High Channel_4T)

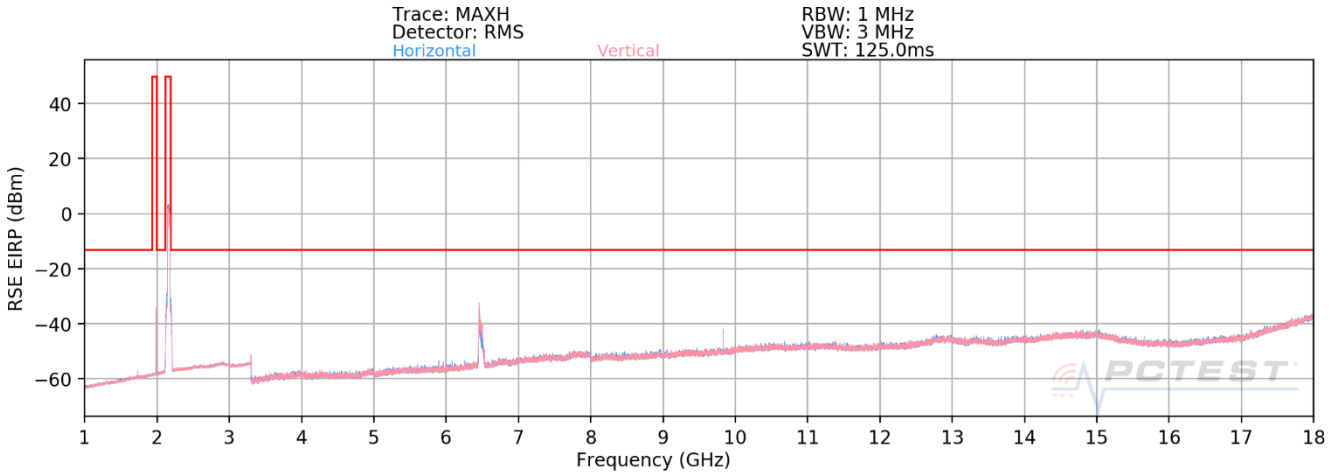


Plot 7-555. Radiated spurious emission_18 GHz to 22 GHz (B2_5M + B66_15M+10M+10M_Non-Contiguous - Middle Channel_4T)

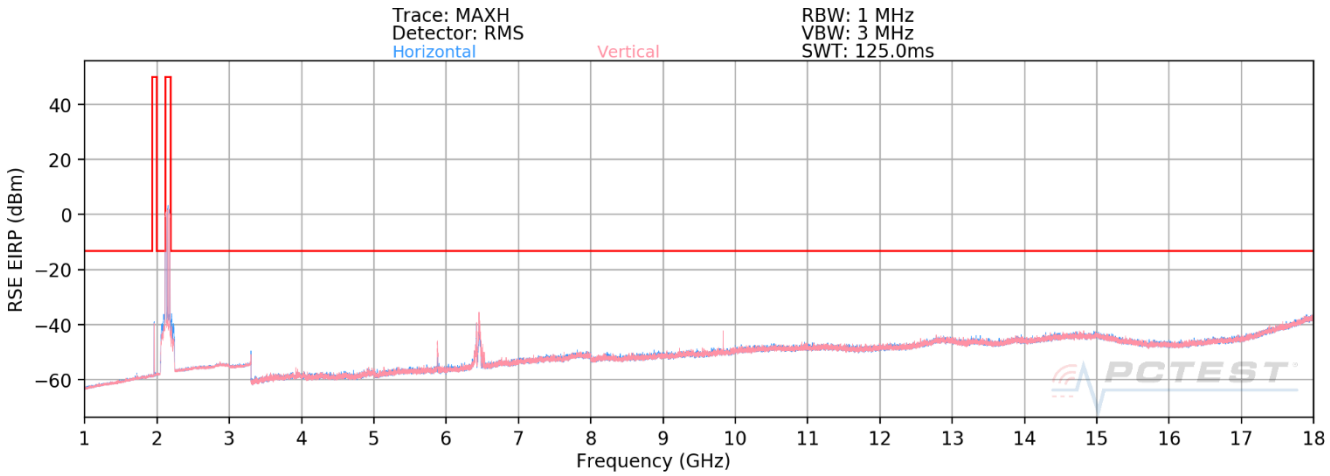
© 2021 PCTEST PK-QP-16-14 Rev.01
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



Plot 7-556. Radiated spurious emission_1 GHz to 18 GHz
(B2_5M + B66_20M+5M+10M_Contiguous - Low Channel_2T)

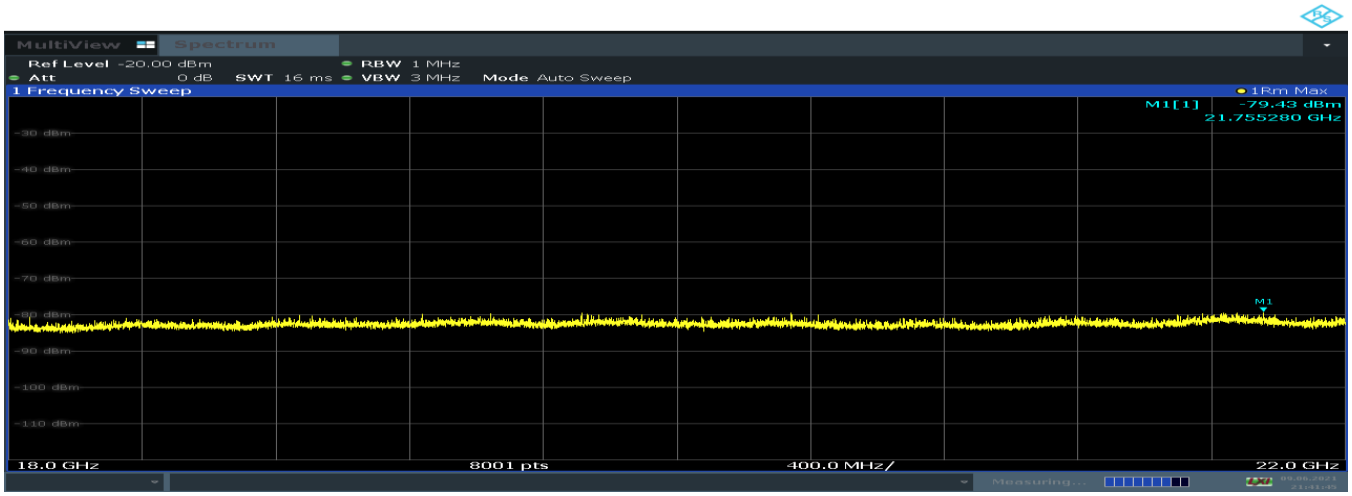


Plot 7-557. Radiated spurious emission_1 GHz to 18 GHz
(B2_5M + B66_20M+5M+10M_Contiguous - High Channel_2T)

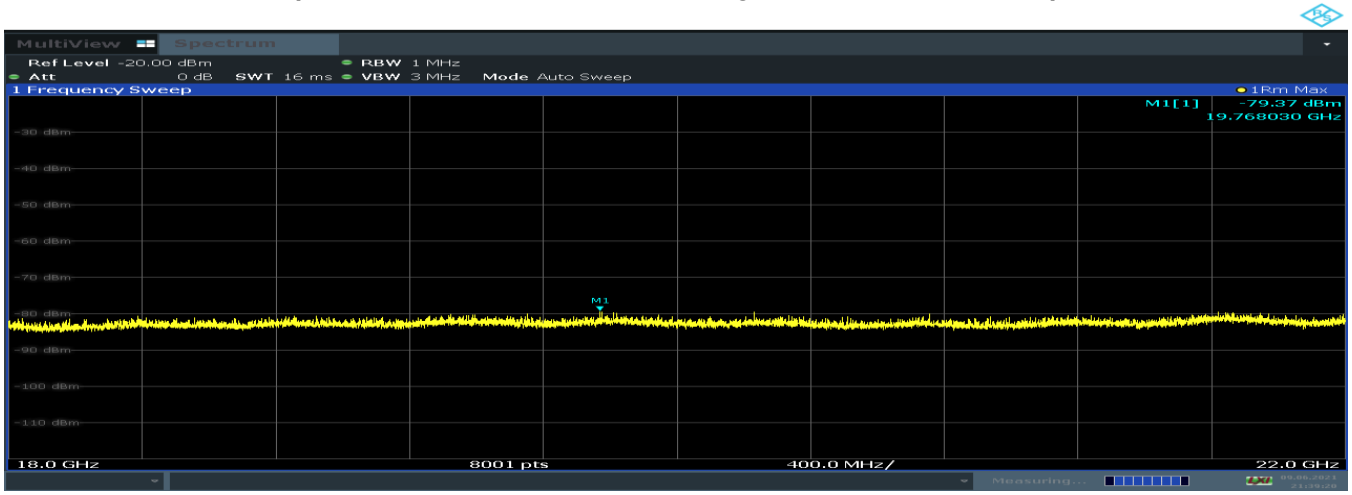


Plot 7-558. Radiated spurious emission_1 GHz to 18 GHz
(B2_5M + B66_20M+5M+10M_Non-Contiguous - Middle Channel_2T)

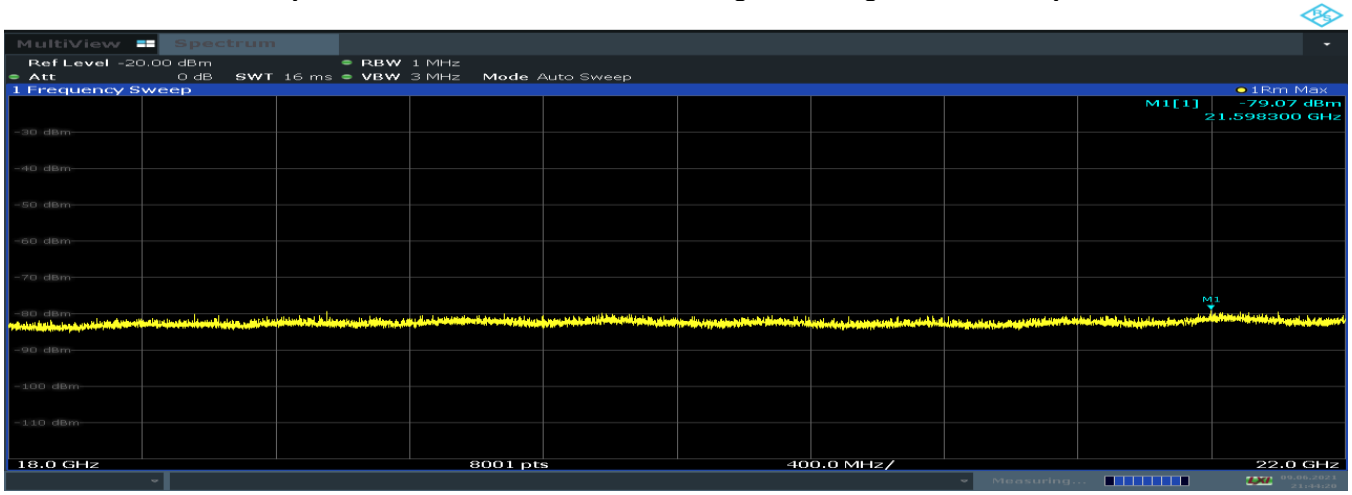
© 2021 PCTEST PK-QP-16-14 Rev.01
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



Plot 7-559. Radiated spurious emission_18 GHz to 22 GHz (B2_5M + B66_20M+5M+10M_Contiguous - Low Channel_2T)

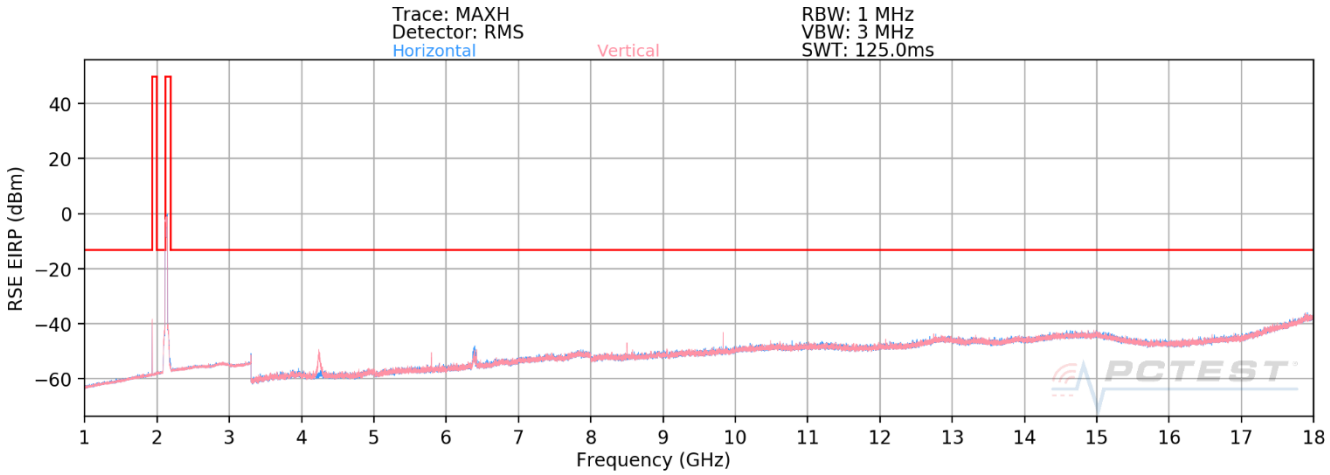


Plot 7-560. Radiated spurious emission_18 GHz to 22 GHz (B2_5M + B66_20M+5M+10M_Contiguous - High Channel_2T)

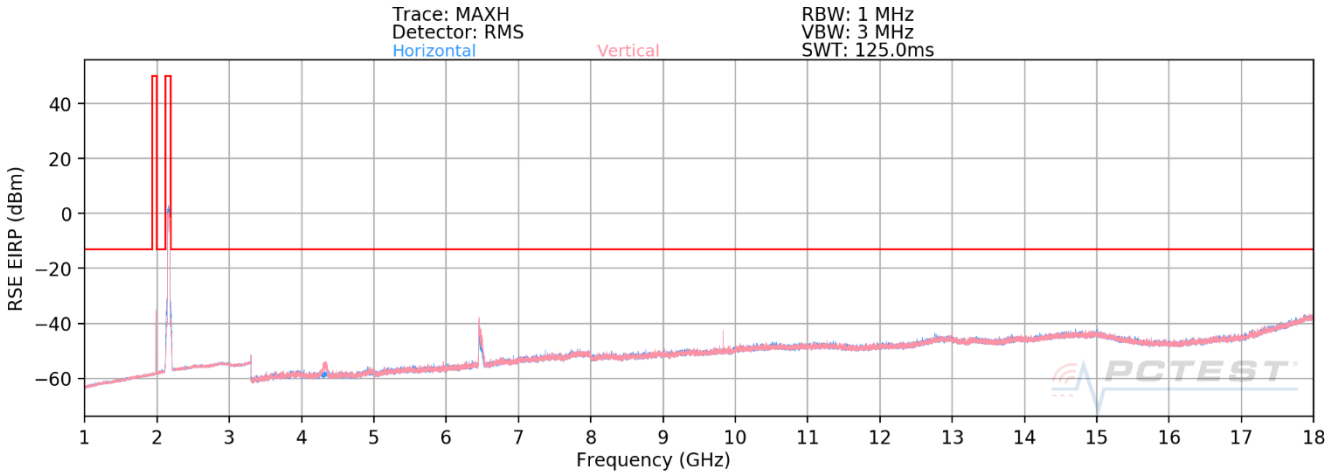


Plot 7-561. Radiated spurious emission_18 GHz to 22 GHz (B2_5M + B66_20M+5M+10M_Non-Contiguous - Middle Channel_2T)

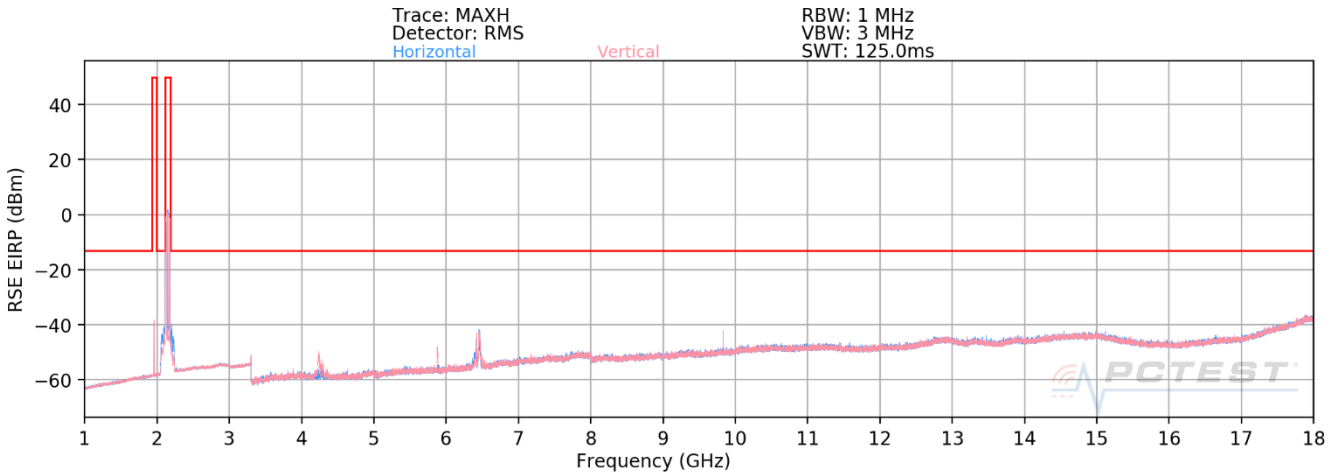
© 2021 PCTEST PK-QP-16-14 Rev.01
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



Plot 7-562. Radiated spurious emission_1 GHz to 18 GHz
(B2_5M + B66_20M+5M+10M_Contiguous - Low Channel_4T)

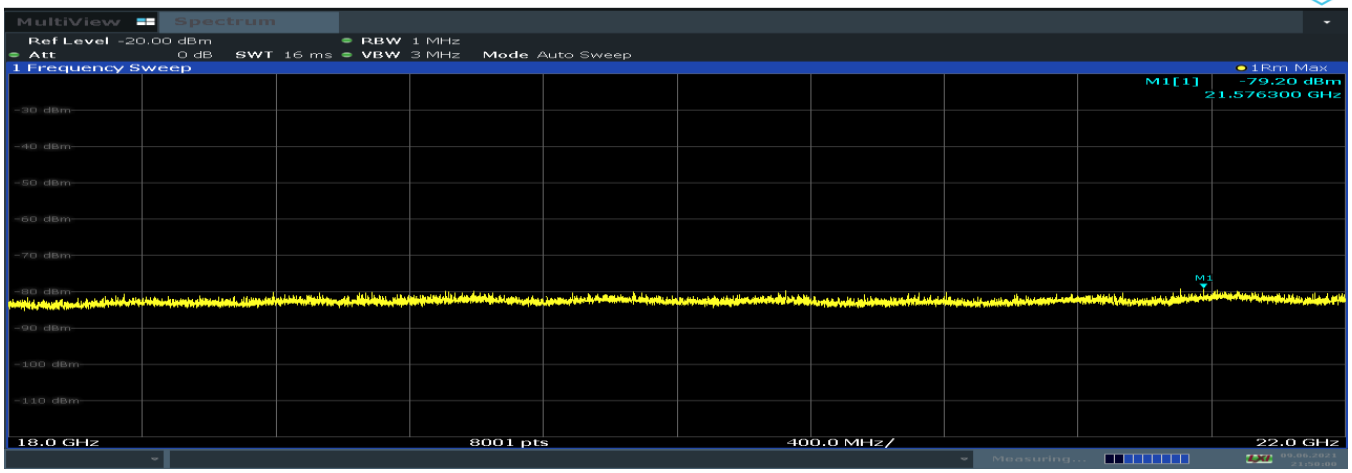


Plot 7-563. Radiated spurious emission_1 GHz to 18 GHz
(B2_5M + B66_20M+5M+10M_Contiguous - High Channel_4T)

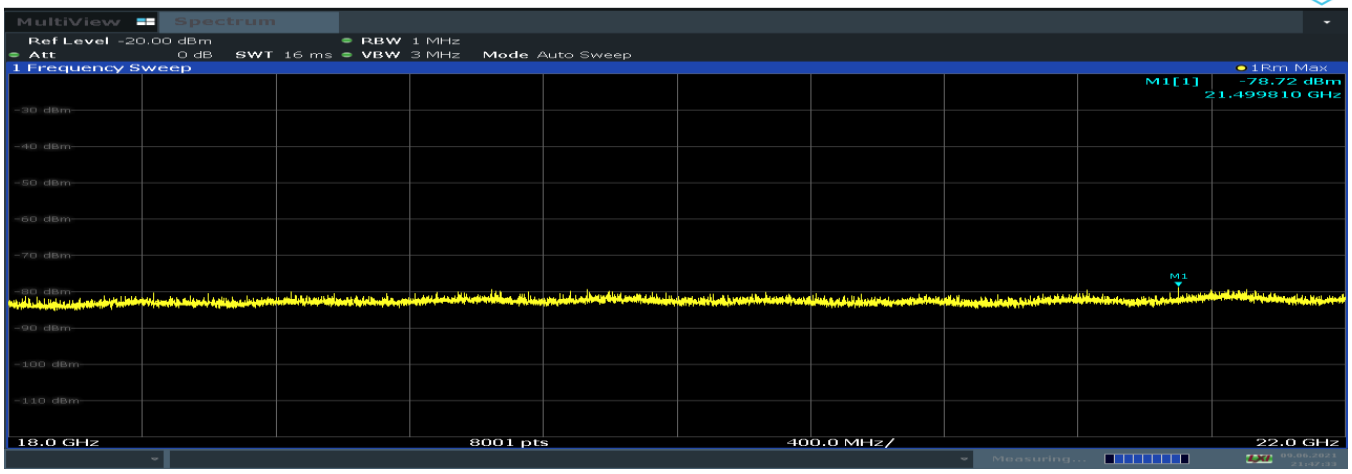


Plot 7-564. Radiated spurious emission_1 GHz to 18 GHz
(B2_5M + B66_20M+5M+10M_Non-Contiguous - Middle Channel_4T)

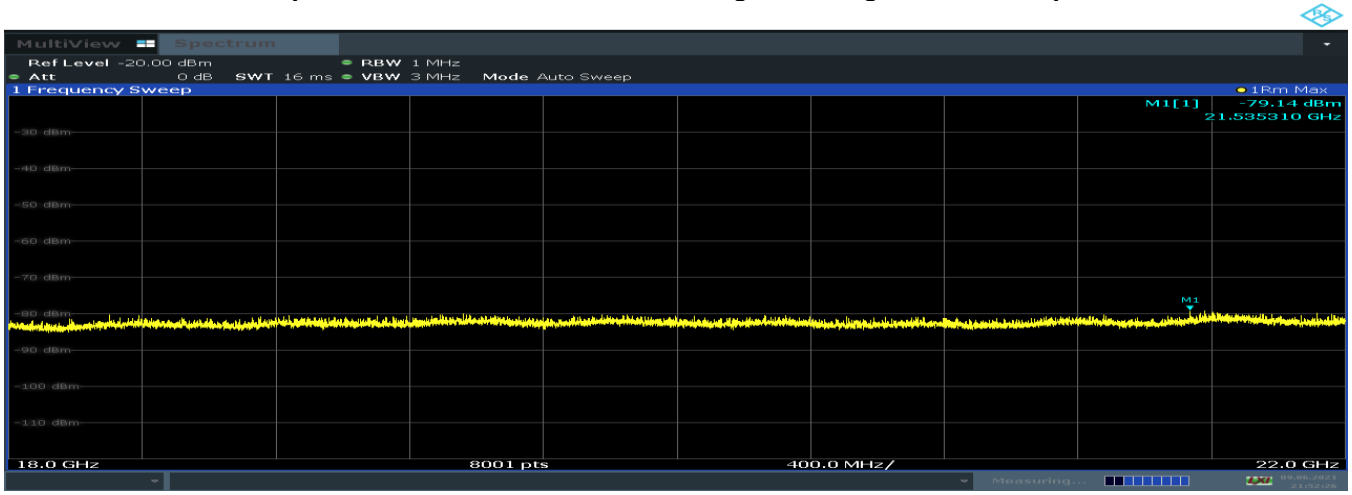
© 2021 PCTEST PK-QP-16-14 Rev.01
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



Plot 7-565. Radiated spurious emission_18 GHz to 22 GHz (B2_5M + B66_20M+5M+10M_Contiguous - Low Channel_4T)

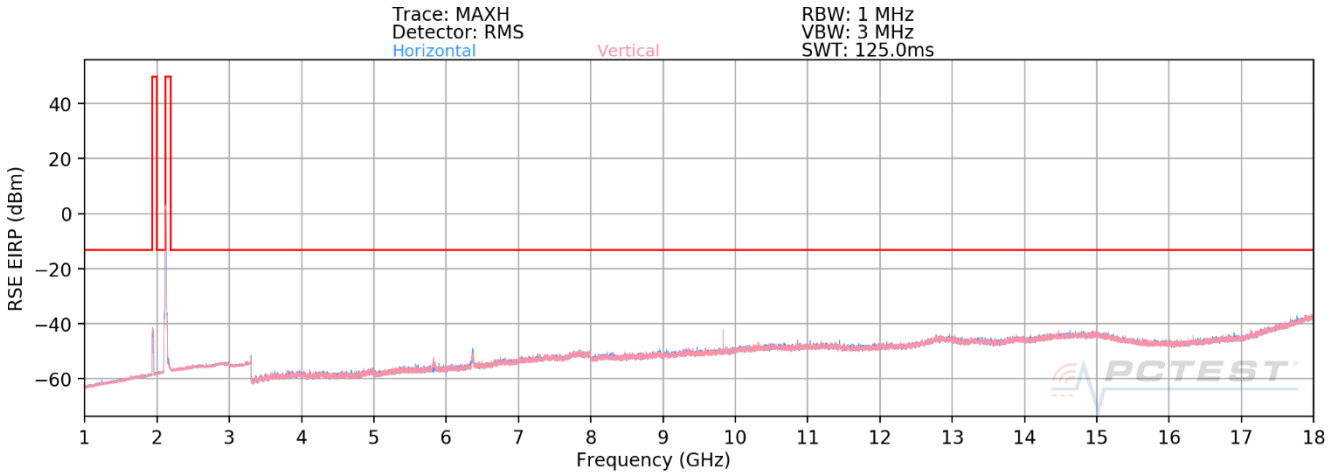


Plot 7-566. Radiated spurious emission_18 GHz to 22 GHz (B2_5M + B66_20M+5M+10M_Contiguous - High Channel_4T)

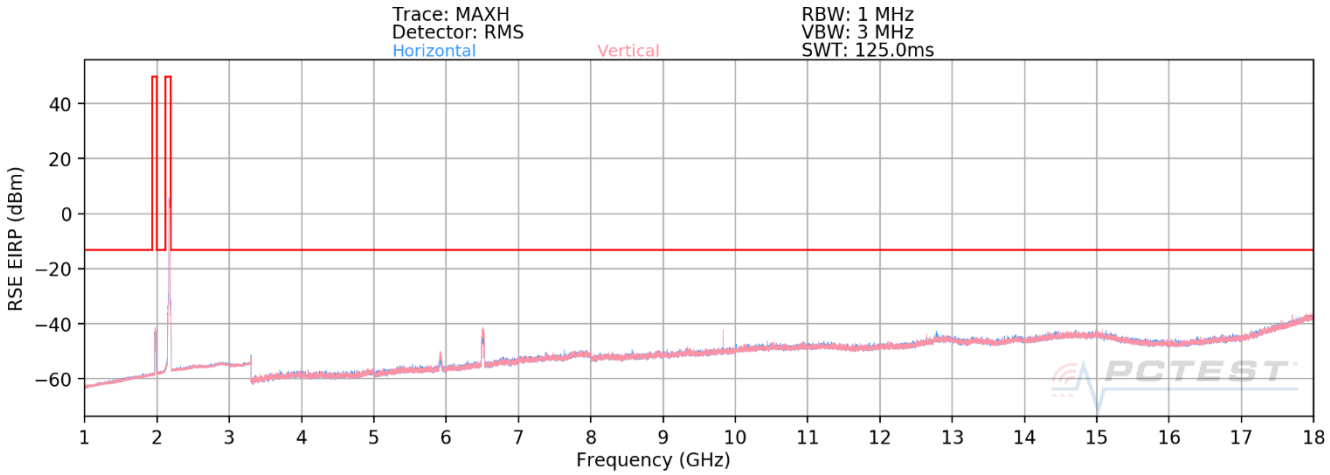


Plot 7-567. Radiated spurious emission_18 GHz to 22 GHz (B2_5M + B66_20M+5M+10M_Non-Contiguous - Middle Channel_4T)

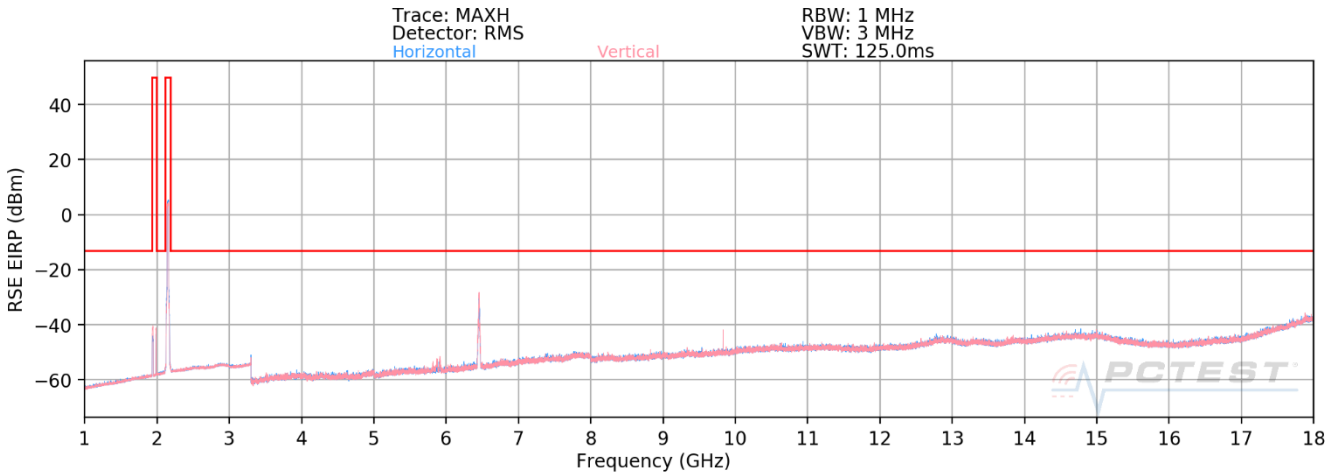
© 2021 PCTEST PK-QP-16-14 Rev.01
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



Plot 7-568. Radiated spurious emission_1 GHz to 18 GHz (B2_20M+5M + B66_20M_Contiguous - Low Channel_2T)

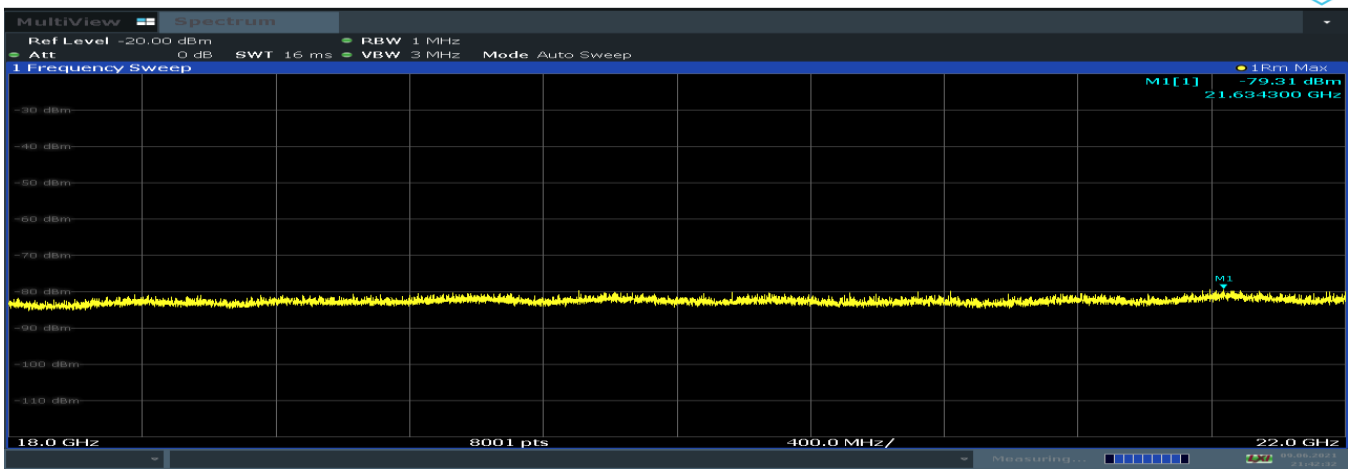


Plot 7-569. Radiated spurious emission_1 GHz to 18 GHz (B2_20M+5M + B66_20M_Contiguous - High Channel_2T)

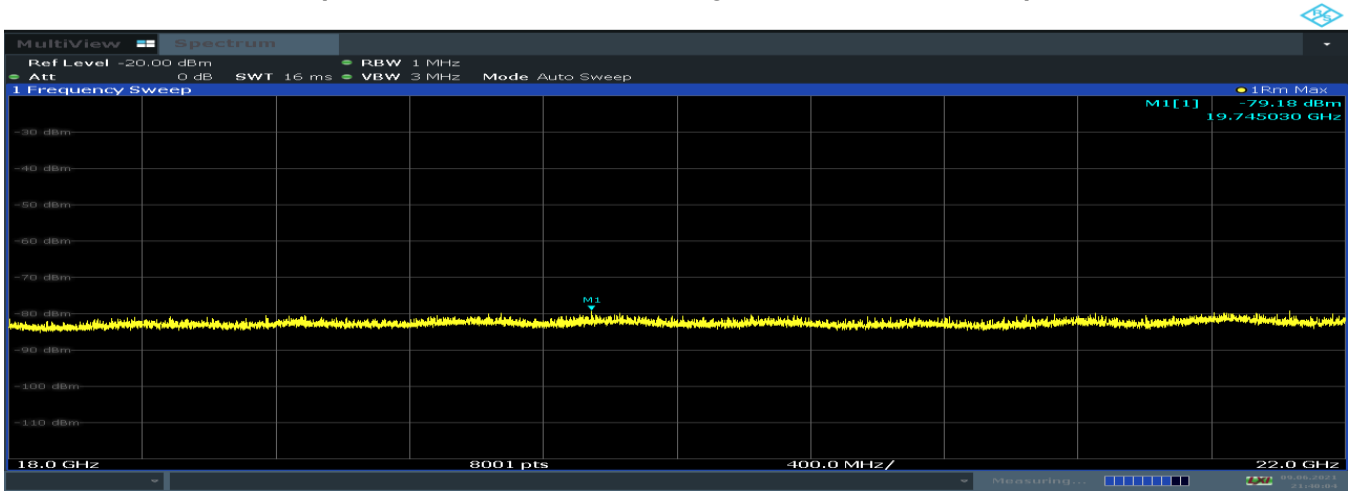


Plot 7-570. Radiated spurious emission_1 GHz to 18 GHz (B2_20M+5M + B66_20M_Non-Contiguous - Middle Channel_2T)

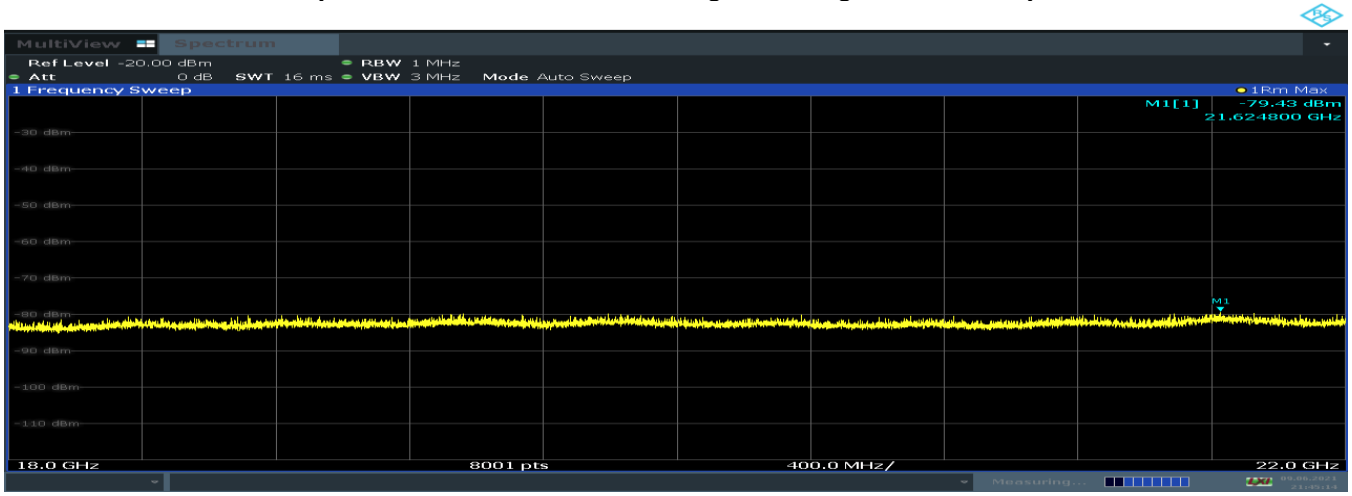
© 2021 PCTEST PK-QP-16-14 Rev.01
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



Plot 7-571. Radiated spurious emission_18 GHz to 22 GHz (B2_20M+5M + B66_20M_Contiguous - Low Channel_2T)



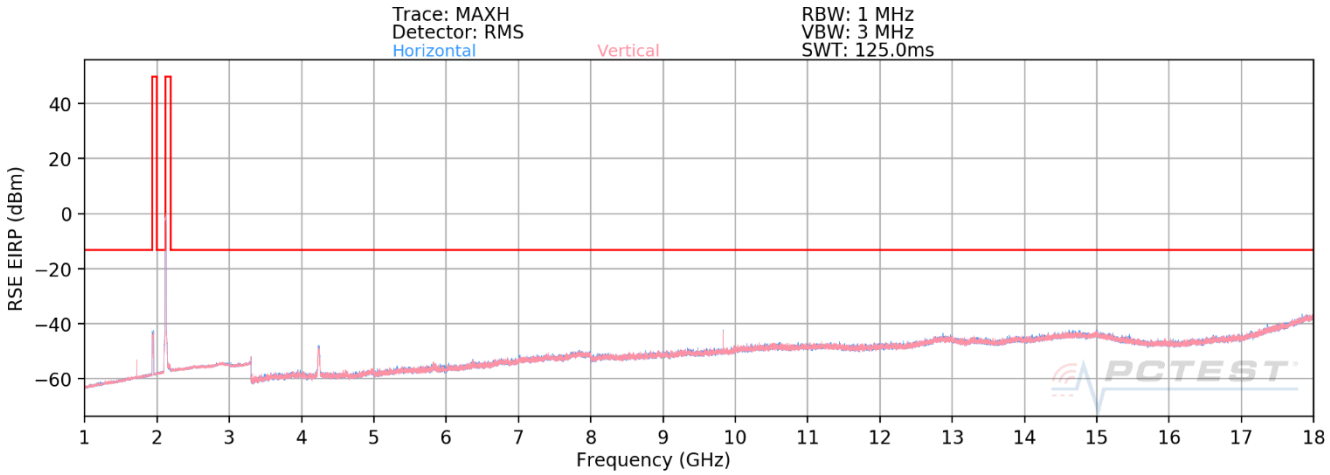
Plot 7-572. Radiated spurious emission_18 GHz to 22 GHz (B2_20M+5M + B66_20M_Contiguous - High Channel_2T)



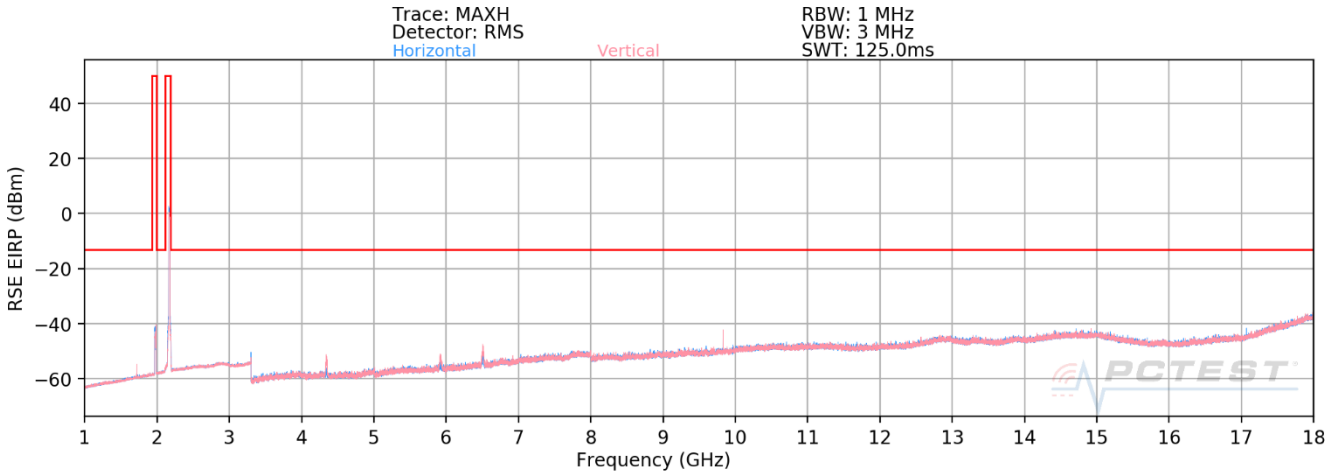
Plot 7-573. Radiated spurious emission_18 GHz to 22 GHz (B2_20M+5M + B66_20M_Non-Contiguous - Middle Channel_2T)

© 2021 PCTEST PK-QP-16-14 Rev.01

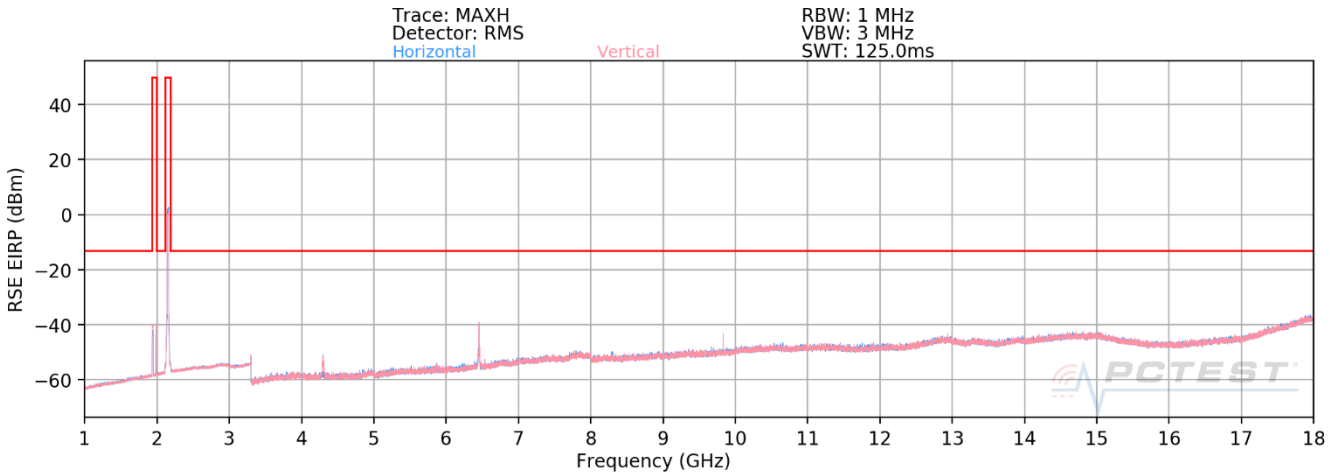
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



Plot 7-574. Radiated spurious emission_1 GHz to 18 GHz (B2_20M+5M + B66_20M_Contiguous - Low Channel_4T)

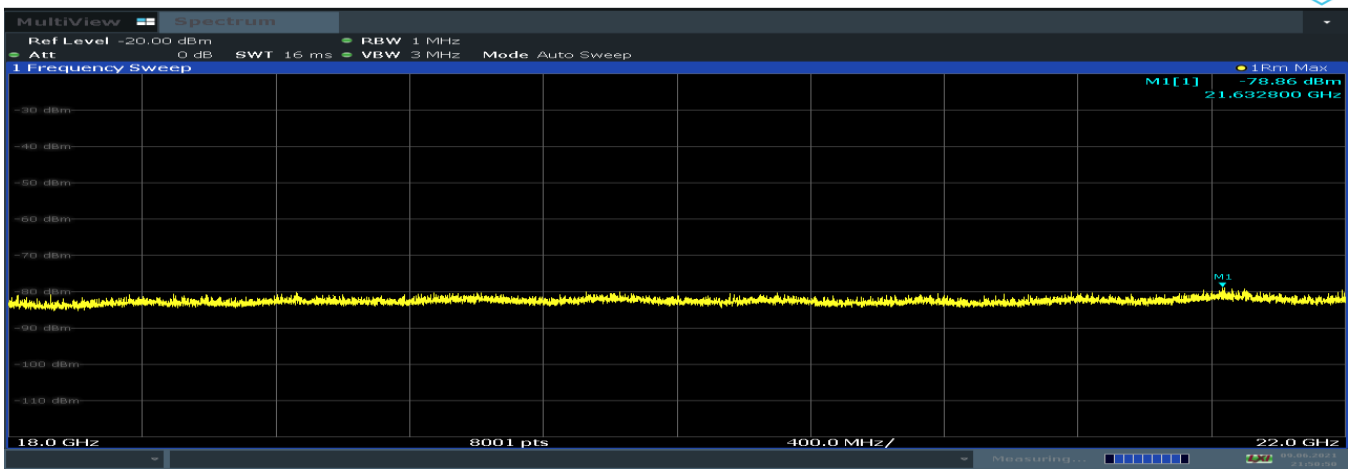


Plot 7-575. Radiated spurious emission_1 GHz to 18 GHz (B2_20M+5M + B66_20M_Contiguous - High Channel_4T)

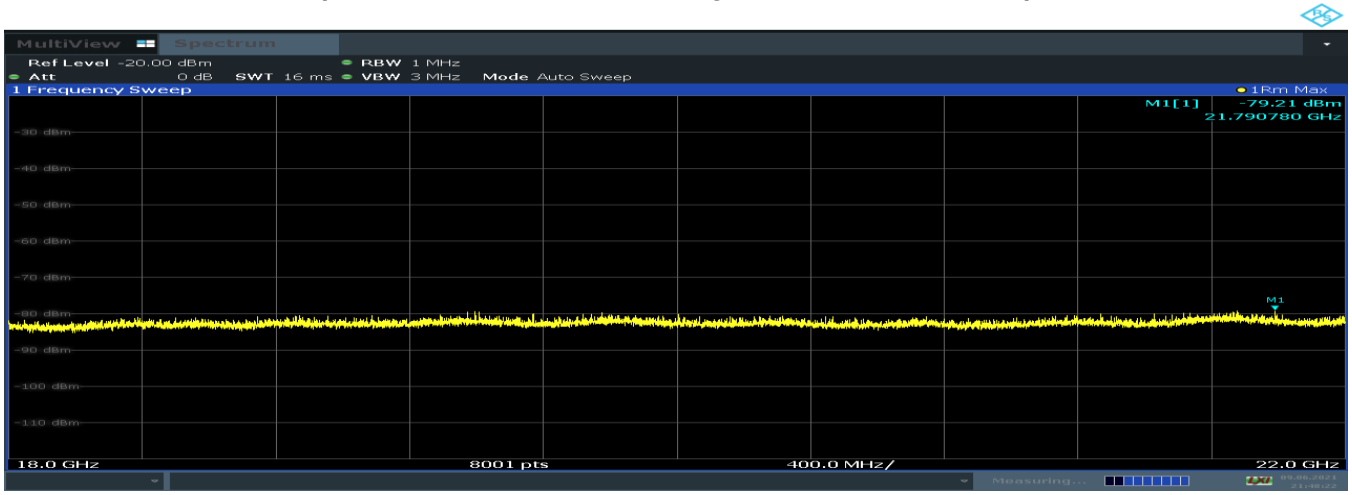


Plot 7-576. Radiated spurious emission_1 GHz to 18 GHz (B2_20M+5M + B66_20M_Non-Contiguous - Middle Channel_4T)

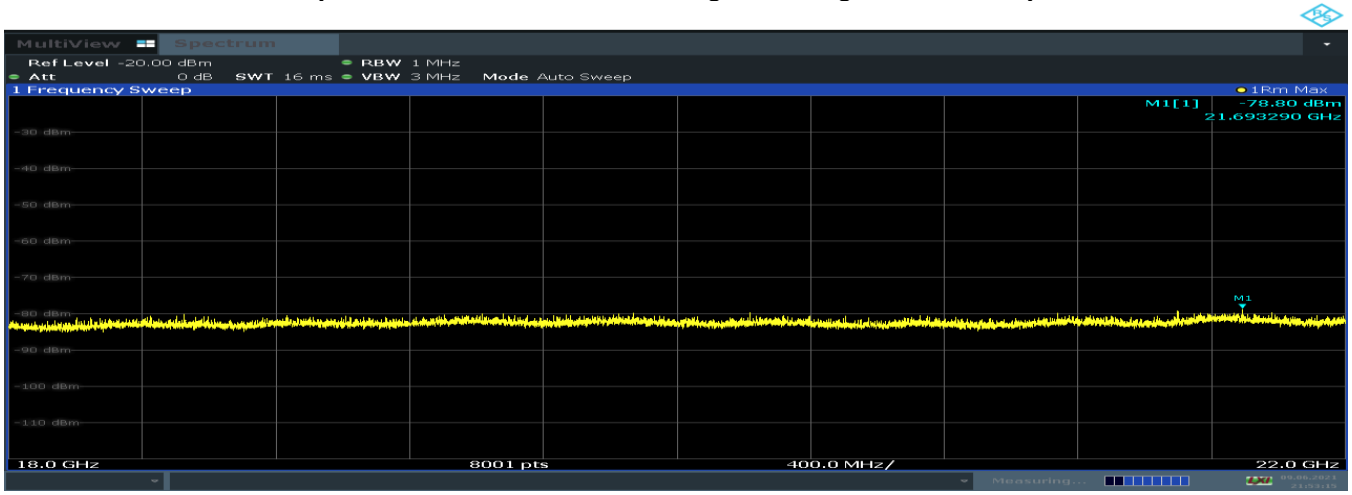
© 2021 PCTEST PK-QP-16-14 Rev.01
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



Plot 7-577. Radiated spurious emission_18 GHz to 22 GHz (B2_20M+5M + B66_20M_Contiguous - Low Channel_4T)



Plot 7-578. Radiated spurious emission_18 GHz to 22 GHz (B2_20M+5M + B66_20M_Contiguous - High Channel_4T)



Plot 7-579. Radiated spurious emission_18 GHz to 22 GHz (B2_20M+5M + B66_20M_Non-Contiguous - Middle Channel_4T)

© 2021 PCTEST PK-QP-16-14 Rev.01
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Mode:	Inter-band Carrier Aggregation
Band / Bandwidth (MHz):	B2:20M+5M & B66:20M (Non-Contiguous)
Carrier configuration:	B2: 1940MHz+1987.5MHz & B66: 2150MHz
Modulation Signal:	QPSK

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Heigh [cm]	Turntable azimuth [degree]	Analyzer Level [dBm]	AFCL [dBm]	Field Strength [dBµV/m]	RSE EIRP [dBm]	Limit [dBm]	Margin [dB]
556.47	V	100	167	-86.42	20.53	41.11	-54.14	-13.00	-41.14
1720.04	H	100	133	-75.68	1.94	33.26	-62.00	-13.00	-49.00

Table 7-72. Radiated spurious emission Table

© 2021 PCTEST PK-QP-16-14 Rev.01
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung RRU(RFV01U)** FCC **IC: A3L RFV01U-D1A** complies with all of the requirements of Part 2, 24, 27 FCC Rules.

© 2021 PCTEST PK-QP-16-14 Rev.01

All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.