

**BUREAU
VERITAS**

Test Report No.: W7L-P23080006RF02

CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	49.37	57.41	74	-24.63	31.75	6.18	45.97	135	190	Peak
2390	41.58	49.62	54	-12.42	31.75	6.18	45.97	135	190	Average
2480	95.35	102.94	/	/	32.04	6.3	45.93	135	190	Peak
2480	94.02	101.61	/	/	32.04	6.3	45.93	135	190	Average
2483.5	50.05	57.62	74	-23.95	32.05	6.31	45.93	135	190	Peak
2483.5	42.98	50.55	54	-11.02	32.05	6.31	45.93	135	190	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	49.95	57.6	74	-24.05	32.14	6.18	45.97	110	157	Peak
2390	42.52	50.17	54	-11.48	32.14	6.18	45.97	110	157	Average
2480	89.34	96.62	/	/	32.35	6.3	45.93	110	157	Peak
2480	88.88	96.16	/	/	32.35	6.3	45.93	110	157	Average
2483.5	50.73	57.99	74	-23.27	32.36	6.31	45.93	110	157	Peak
2483.5	42.99	50.25	54	-11.01	32.36	6.31	45.93	110	157	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 2480MHz: Fundamental frequency.



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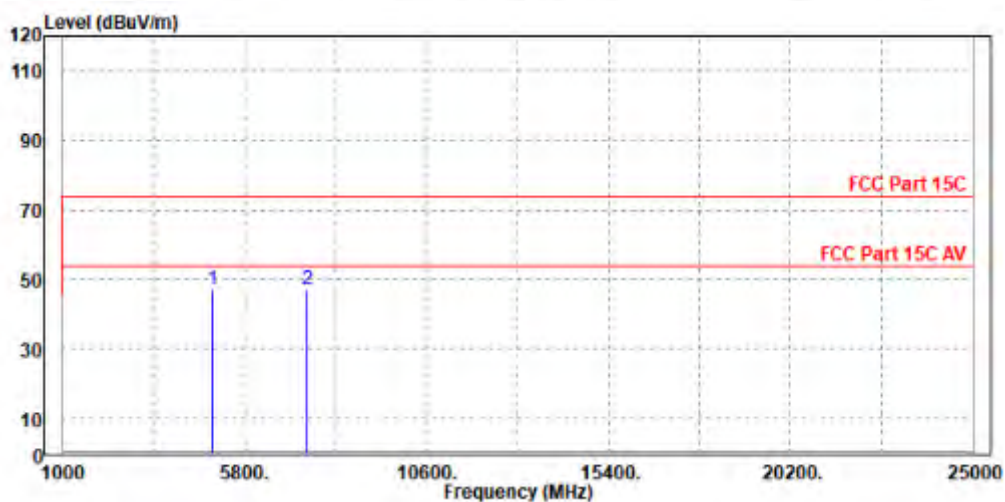
Test Report No.: W7L-P23080006RF02

Worst case harmonic:

CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	PP	4960.000	47.10	48.29	74.00	-26.90	-1.19	Peak	Horizontal
2		7432.000	47.02	45.05	74.00	-26.98	1.97	Peak	Horizontal



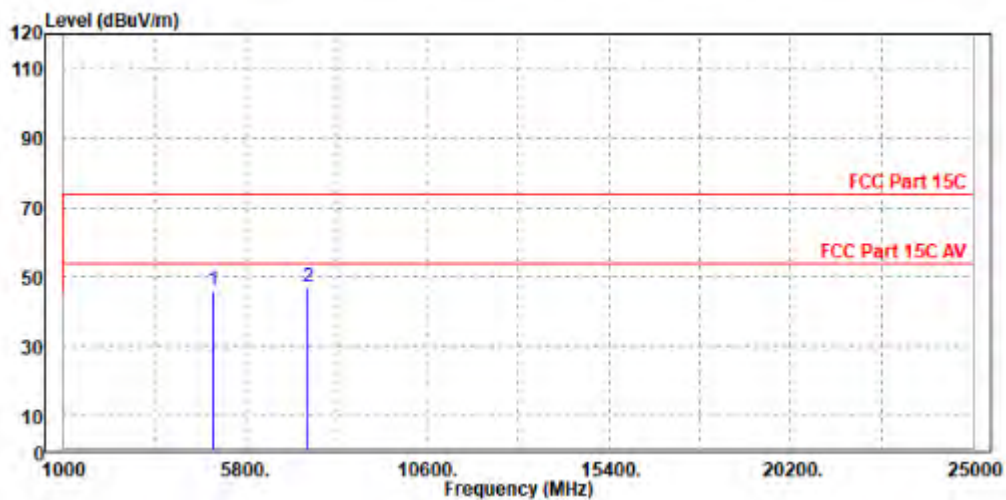


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ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	4960.000	46.23	47.22	74.00	-27.77	-0.99	Peak	Vertical
2 PP	7440.000	46.84	44.83	74.00	-27.16	2.01	Peak	Vertical



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 2480MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.



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Test Report No.: W7L-P23080006RF02

BT-LE_2M

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	49.04	57.08	74	-24.96	31.75	6.18	45.97	135	190	Peak
2390	41.45	49.49	54	-12.55	31.75	6.18	45.97	135	190	Average
2404	93.1	101.08	/	/	31.79	6.2	45.97	135	190	Peak
2404	91.1	99.08	/	/	31.79	6.2	45.97	135	190	Average
2483.5	50.39	57.96	74	-23.61	32.05	6.31	45.93	135	190	Peak
2483.5	42.57	50.14	54	-11.43	32.05	6.31	45.93	135	190	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	49.78	57.43	74	-24.22	32.14	6.18	45.97	110	157	Peak
2390	42.17	49.82	54	-11.83	32.14	6.18	45.97	110	157	Average
2404	88.82	96.42	/	/	32.17	6.2	45.97	110	157	Peak
2404	87.81	95.41	/	/	32.17	6.2	45.97	110	157	Average
2483.5	51.04	58.3	74	-22.96	32.36	6.31	45.93	110	157	Peak
2483.5	42.69	49.95	54	-11.31	32.36	6.31	45.93	110	157	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 2404MHz: Fundamental frequency.



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Test Report No.: W7L-P23080006RF02

CHANNEL	TX Channel 19	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	49.49	57.53	74	-24.51	31.75	6.18	45.97	135	190	Peak
2390	41.42	49.46	54	-12.58	31.75	6.18	45.97	135	190	Average
2440	95.21	103	/	/	31.91	6.25	45.95	135	190	Peak
2440	93.43	101.22	/	/	31.91	6.25	45.95	135	190	Average
2483.5	50.58	58.15	74	-23.42	32.05	6.31	45.93	135	190	Peak
2483.5	42.74	50.31	54	-11.26	32.05	6.31	45.93	135	190	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	49.66	57.31	74	-24.34	32.14	6.18	45.97	110	157	Peak
2390	42.19	49.84	54	-11.81	32.14	6.18	45.97	110	157	Average
2440	88.91	96.35	/	/	32.26	6.25	45.95	110	157	Peak
2440	86.86	94.3	/	/	32.26	6.25	45.95	110	157	Average
2483.5	51.26	58.52	74	-22.74	32.36	6.31	45.93	110	157	Peak
2483.5	42.26	49.52	54	-11.74	32.36	6.31	45.93	110	157	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 2440MHz: Fundamental frequency.



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CHANNEL	TX Channel 38	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	48.98	57.02	74	-25.02	31.75	6.18	45.97	135	190	Peak
2390	41.63	49.67	54	-12.37	31.75	6.18	45.97	135	190	Average
2478	94.04	101.64	/	/	32.03	6.3	45.93	135	190	Peak
2478	92.28	99.88	/	/	32.03	6.3	45.93	135	190	Average
2483.5	50.71	58.28	74	-23.29	32.05	6.31	45.93	135	190	Peak
2483.5	42.64	50.21	54	-11.36	32.05	6.31	45.93	135	190	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	49.5	57.15	74	-24.5	32.14	6.18	45.97	110	157	Peak
2390	42.23	49.88	54	-11.77	32.14	6.18	45.97	110	157	Average
2478	88.99	96.27	/	/	32.35	6.3	45.93	110	157	Peak
2478	88.03	95.31	/	/	32.35	6.3	45.93	110	157	Average
2483.5	51.65	58.91	74	-22.35	32.36	6.31	45.93	110	157	Peak
2483.5	42.78	50.04	54	-11.22	32.36	6.31	45.93	110	157	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 2478MHz: Fundamental frequency.



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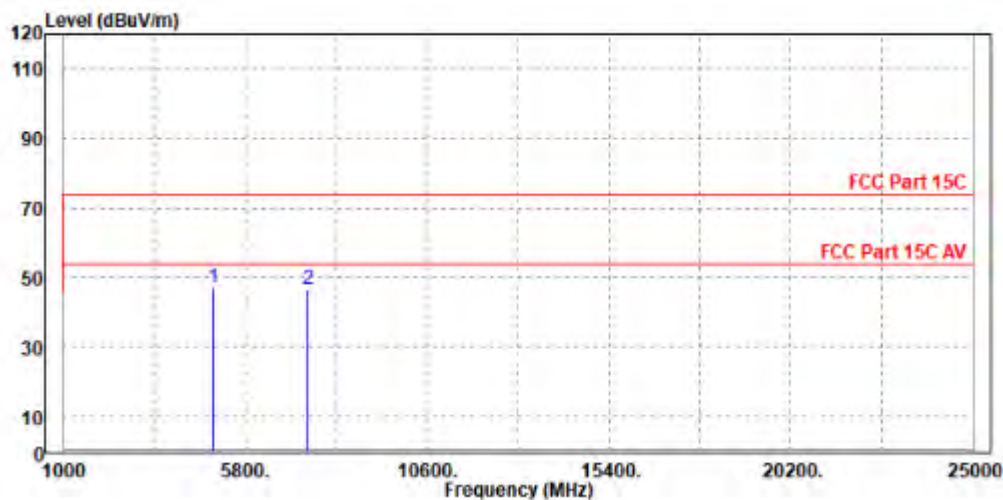
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Worst case harmonic:

CHANNEL	TX Channel 38	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	PP	4960.000	46.91	48.10	74.00	-27.09	-1.19	Peak	Horizontal
2		7434.000	46.36	44.39	74.00	-27.64	1.97	Peak	Horizontal



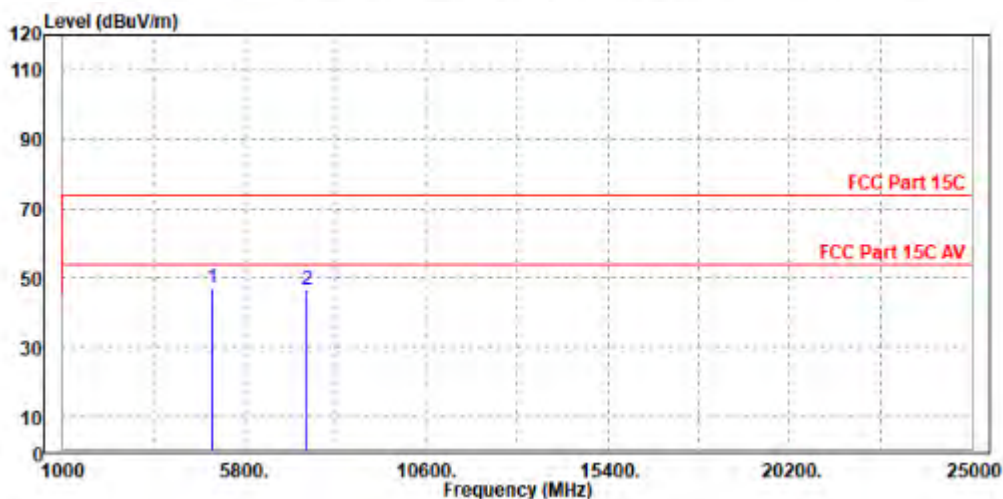


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ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	PP	4956.000	46.86	47.86	74.00	-27.14	-1.00	Peak	Vertical
2		7432.000	46.60	44.60	74.00	-27.40	2.00	Peak	Vertical



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 2478MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet



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Test Report No.: W7L-P23080006RF02

BT-LE _S2

CHANNEL	TX Channel 0	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	49.11	57.15	74	-24.89	31.75	6.18	45.97	135	190	Peak
2390	41.75	49.79	54	-12.25	31.75	6.18	45.97	135	190	Average
2402	94.66	102.65	/	/	31.79	6.19	45.97	135	190	Peak
2402	93.46	101.45	/	/	31.79	6.19	45.97	135	190	Average
2483.5	49.41	56.98	74	-24.59	32.05	6.31	45.93	135	190	Peak
2483.5	42.42	49.99	54	-11.58	32.05	6.31	45.93	135	190	Average

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.64	59.29	74	-22.36	32.14	6.18	45.97	110	157	Peak
2390	42.43	50.08	54	-11.57	32.14	6.18	45.97	110	157	Average
2402	88.85	96.47	/	/	32.16	6.19	45.97	110	157	Peak
2402	88.51	96.13	/	/	32.16	6.19	45.97	110	157	Average
2483.5	50.94	58.2	74	-23.06	32.36	6.31	45.93	110	157	Peak
2483.5	42.61	49.87	54	-11.39	32.36	6.31	45.93	110	157	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 2402MHz: Fundamental frequency.



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CHANNEL	TX Channel 19	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	49.73	57.77	74	-24.27	31.75	6.18	45.97	135	190	Peak
2390	42.33	50.37	54	-11.67	31.75	6.18	45.97	135	190	Average
2440	95.08	102.87	/	/	31.91	6.25	45.95	135	190	Peak
2440	94.87	102.66	/	/	31.91	6.25	45.95	135	190	Average
2483.5	49.27	56.84	74	-24.73	32.05	6.31	45.93	135	190	Peak
2483.5	42.51	50.08	54	-11.49	32.05	6.31	45.93	135	190	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	48.78	56.43	74	-25.22	32.14	6.18	45.97	110	157	Peak
2390	41.99	49.64	54	-12.01	32.14	6.18	45.97	110	157	Average
2440	88.66	96.1	/	/	32.26	6.25	45.95	110	157	Peak
2440	88.4	95.84	/	/	32.26	6.25	45.95	110	157	Average
2483.5	49.78	57.04	74	-24.22	32.36	6.31	45.93	110	157	Peak
2483.5	42.5	49.76	54	-11.5	32.36	6.31	45.93	110	157	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 2440MHz: Fundamental frequency.



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CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	49.89	57.93	74	-24.11	31.75	6.18	45.97	135	190	Peak
2390	41.67	49.71	54	-12.33	31.75	6.18	45.97	135	190	Average
2480	94.86	102.45	/	/	32.04	6.3	45.93	135	190	Peak
2480	94.45	102.04	/	/	32.04	6.3	45.93	135	190	Average
2483.5	52.04	59.61	74	-21.96	32.05	6.31	45.93	135	190	Peak
2483.5	43.51	51.08	54	-10.49	32.05	6.31	45.93	135	190	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	49.7	57.35	74	-24.3	32.14	6.18	45.97	110	157	Peak
2390	41.9	49.55	54	-12.1	32.14	6.18	45.97	110	157	Average
2480	89.12	96.4	/	/	32.35	6.3	45.93	110	157	Peak
2480	88.68	95.96	/	/	32.35	6.3	45.93	110	157	Average
2483.5	50.58	57.84	74	-23.42	32.36	6.31	45.93	110	157	Peak
2483.5	42.72	49.98	54	-11.28	32.36	6.31	45.93	110	157	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 2480MHz: Fundamental frequency.



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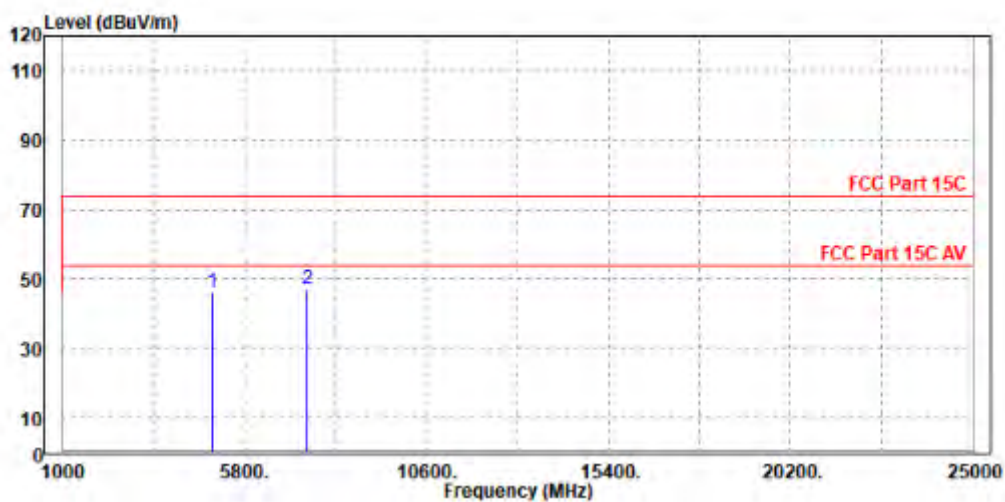
Test Report No.: W7L-P23080006RF02

Worst case harmonic:

CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	4960.000	46.22	47.41	74.00	-27.78	-1.19	Peak	Horizontal
2 PP	7432.000	47.07	45.10	74.00	-26.93	1.97	Peak	Horizontal



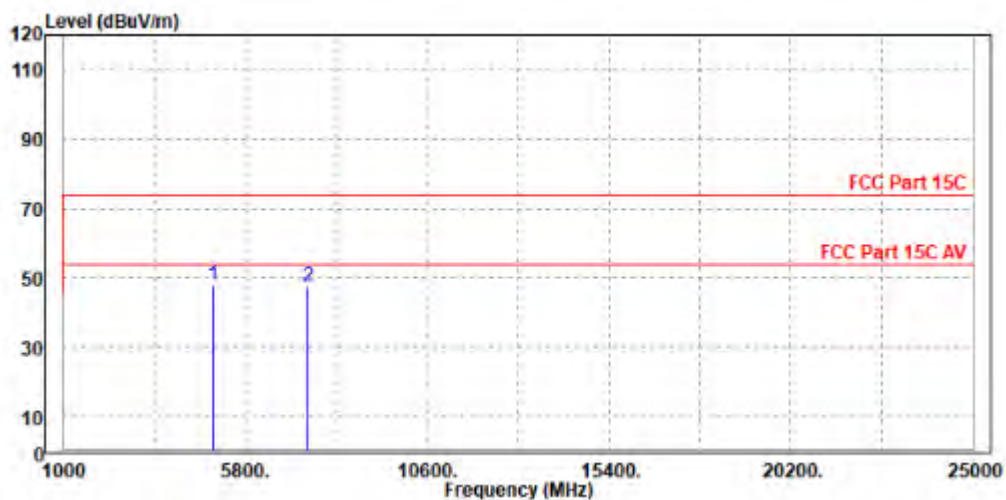


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ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	PP	4960.000	47.76	48.75	74.00	-26.24	-0.99	Peak	Vertical
2		7440.000	47.63	45.62	74.00	-26.37	2.01	Peak	Vertical



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 2480MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet



**BUREAU
VERITAS**

Test Report No.: W7L-P23080006RF02

BT-LE _S8

CHANNEL	TX Channel 0	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.08	58.12	74	-23.92	31.75	6.18	45.97	135	190	Peak
2390	41.92	49.96	54	-12.08	31.75	6.18	45.97	135	190	Average
2402	92.74	100.73	/	/	31.79	6.19	45.97	135	190	Peak
2402	91.82	99.81	/	/	31.79	6.19	45.97	135	190	Average
2483.5	49.85	57.42	74	-24.15	32.05	6.31	45.93	135	190	Peak
2483.5	41.8	49.37	54	-12.2	32.05	6.31	45.93	135	190	Average

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	49.56	57.21	74	-24.44	32.14	6.18	45.97	110	157	Peak
2390	42.72	50.37	54	-11.28	32.14	6.18	45.97	110	157	Average
2402	89.25	96.87	/	/	32.16	6.19	45.97	110	157	Peak
2402	88.92	96.54	/	/	32.16	6.19	45.97	110	157	Average
2483.5	49.9	57.16	74	-24.1	32.36	6.31	45.93	110	157	Peak
2483.5	41.56	48.82	54	-12.44	32.36	6.31	45.93	110	157	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 2402MHz: Fundamental frequency.



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Test Report No.: W7L-P23080006RF02

CHANNEL	TX Channel 19	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	49.13	57.17	74	-24.87	31.75	6.18	45.97	135	190	Peak
2390	41.64	49.68	54	-12.36	31.75	6.18	45.97	135	190	Average
2440	95.08	102.87	/	/	31.91	6.25	45.95	135	190	Peak
2440	94.44	102.23	/	/	31.91	6.25	45.95	135	190	Average
2483.5	49.47	57.04	74	-24.53	32.05	6.31	45.93	135	190	Peak
2483.5	42.21	49.78	54	-11.79	32.05	6.31	45.93	135	190	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.08	58.73	74	-22.92	32.14	6.18	45.97	110	157	Peak
2390	42.06	49.71	54	-11.94	32.14	6.18	45.97	110	157	Average
2440	88.95	96.39	/	/	32.26	6.25	45.95	110	157	Peak
2440	88.41	95.85	/	/	32.26	6.25	45.95	110	157	Average
2483.5	49.94	57.2	74	-24.06	32.36	6.31	45.93	110	157	Peak
2483.5	42.73	49.99	54	-11.27	32.36	6.31	45.93	110	157	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 2440MHz: Fundamental frequency.



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Test Report No.: W7L-P23080006RF02

CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	49.6	57.64	74	-24.4	31.75	6.18	45.97	135	190	Peak
2390	41.21	49.25	54	-12.79	31.75	6.18	45.97	135	190	Average
2480	95.92	103.51	/	/	32.04	6.3	45.93	135	190	Peak
2480	94.86	102.45	/	/	32.04	6.3	45.93	135	190	Average
2483.5	51.68	59.25	74	-22.32	32.05	6.31	45.93	135	190	Peak
2483.5	42.95	50.52	54	-11.05	32.05	6.31	45.93	135	190	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	49.92	57.57	74	-24.08	32.14	6.18	45.97	110	157	Peak
2390	42.44	50.09	54	-11.56	32.14	6.18	45.97	110	157	Average
2480	89.92	97.2	/	/	32.35	6.3	45.93	110	157	Peak
2480	89.2	96.48	/	/	32.35	6.3	45.93	110	157	Average
2483.5	51.1	58.36	74	-22.9	32.36	6.31	45.93	110	157	Peak
2483.5	42.9	50.16	54	-11.1	32.36	6.31	45.93	110	157	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 2480MHz: Fundamental frequency.



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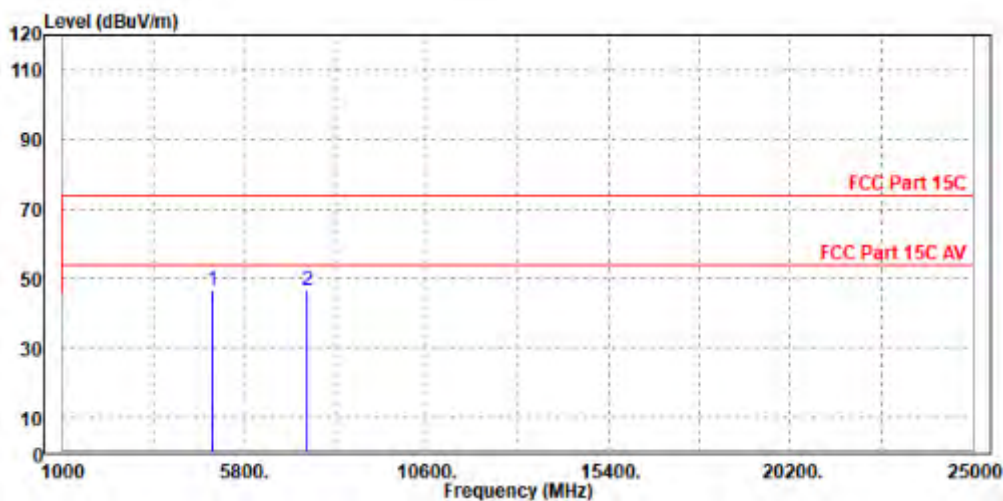
Test Report No.: W7L-P23080006RF02

Worst case harmonic:

CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	PP 4960.000	46.49	47.68	74.00	-27.51	-1.19	Peak	Horizontal
2	7440.000	46.42	44.44	74.00	-27.58	1.98	Peak	Horizontal



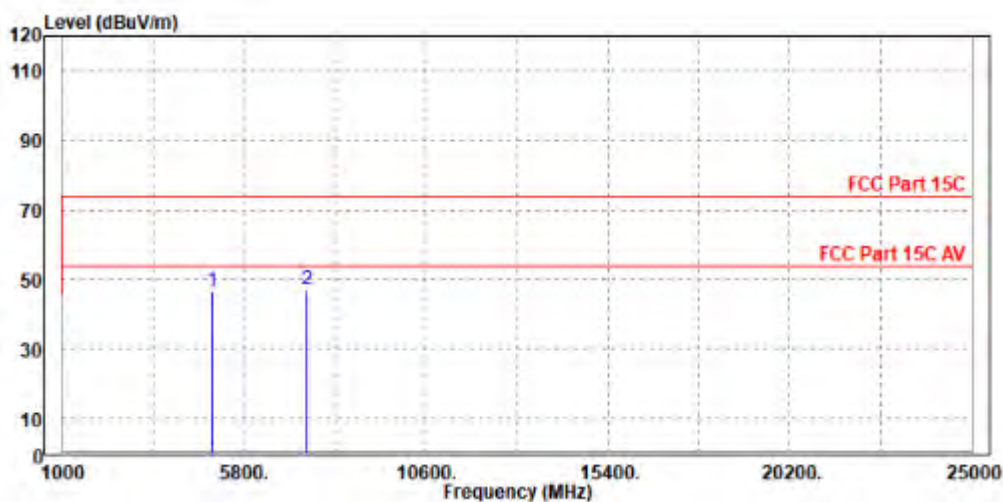


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VERITAS

Test Report No.: W7L-P23080006RF02

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	4960.000	46.34	47.33	74.00	-27.66	-0.99	Peak	Vertical
2 PP	7432.000	46.84	44.84	74.00	-27.16	2.00	Peak	Vertical



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 2480MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet



3.3 6 dB BANDWIDTH MEASUREMENT

3.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum 6dB Bandwidth Measurement is 0.5 MHz.

3.3.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Meter	ANRITSU	ML2495A	1506002	Feb. 14,23	Feb. 13,24
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510523	Feb. 14,23	Feb. 13,24
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	May.10,23	May.09,24
Power Sensor	ANRITSU	MA2411B	1339352	Feb. 14,23	Feb. 13,24

NOTE:

1. The calibration interval of the above test instruments is 12 months, and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The test was performed in the RF Oven room.

3.3.3 TEST PROCEDURE

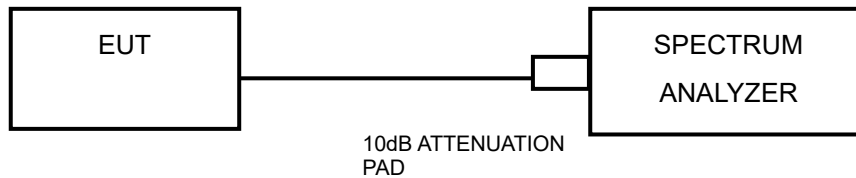
1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.



3.3.4 DEVIATION FROM TEST STANDARD

No deviation.

3.3.5 TEST SETUP



3.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.



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3.3.7 TEST RESULTS

Please Refer to Appendix1/2 Of this test report.

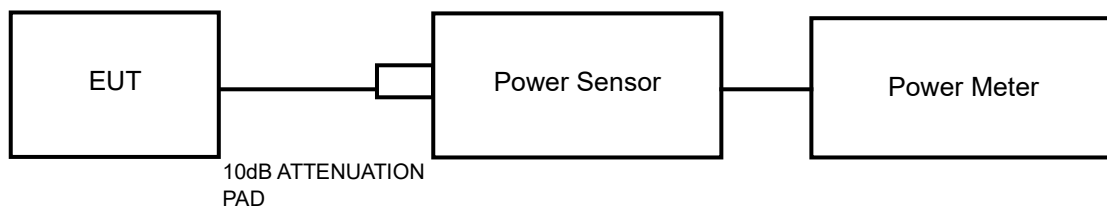


3.4 CONDUCTED OUTPUT POWER

3.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

For systems using digital modulation in the 2400–2483.5 MHz band: 1 Watt (30dBm)

3.4.2 TEST SETUP



3.4.3 TEST INSTRUMENTS

Refer to section 3.3.2 to get information about the above instrument.

3.4.4 TEST PROCEDURES

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

3.4.5 DEVIATION FROM TEST STANDARD

No deviation.

3.4.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle, and highest channel frequencies individually.



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3.4.7 TEST RESULTS

3.4.7.1 MAXIMUM PEAK OUTPUT POWER

Please Refer to Appendix1/2 Of this test report.



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3.4.7.2 AVERAGE OUTPUT POWER (FOR REFERENCE)

The average power sensor was used on the output port of the EUT. A power meter was used to read the response of the power sensor. Record the power level.

Please Refer to Appendix1/2 Of this test report.

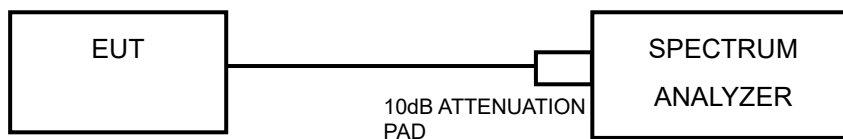


3.5 POWER SPECTRAL DENSITY MEASUREMENT

3.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm/3KHz.

3.5.2 TEST SETUP



3.5.3 TEST INSTRUMENTS

Refer to section 3.3.2 to get information about the above instrument.

3.5.4 TEST PROCEDURE

1. Set the span to 1.5 times the DTS bandwidth.
2. Set the RBW = 3 kHz, VBW $\geq 3 \times$ RBW, Detector = peak.
3. Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
4. Use the peak marker function to determine the maximum amplitude level.

3.5.5 DEVIATION FROM TEST STANDARD

No deviation.

3.5.6 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle, and highest channel frequencies individually.



Test Report No.: W7L-P23080006RF02

3.5.7 TEST RESULTS

Please Refer to Appendix1/2 Of this test report.

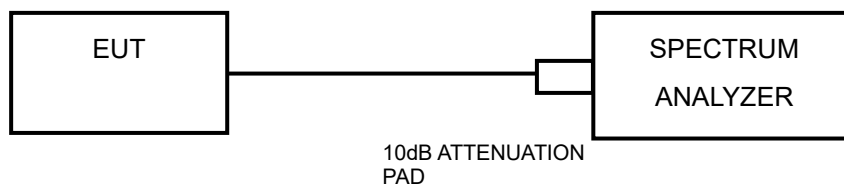


3.6 OUT OF BAND EMISSION MEASUREMENT

3.6.1 LIMITS OF OUT OF BAND EMISSION MEASUREMENT

Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

3.6.2 TEST SETUP



3.6.3 TEST INSTRUMENTS

Refer to section 3.3.2 to get information about the above instrument.

3.6.4 TEST PROCEDURE

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW $\geq$ 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.



MEASUREMENT PROCEDURE OOBE

1. Set RBW = 100 kHz.
2. Set VBW $\geq$ 300 kHz.
3. Set span to encompass the spectrum to be examined
4. Detector = peak.
5. Trace Mode = max hold.
6. Sweep = auto couple.

3.6.5 DEVIATION FROM TEST STANDARD

No deviation.

3.6.6 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle, and highest channel frequencies individually.

3.6.7 TEST RESULTS

For Band Edge :The spectrum plots are attached in the Appendix. Mark1 value indicates the reference Level. DL line indicates the 20dB offset below reference Level. It shows compliance with the requirement.

For CSE :The spectrum plots are attached in the Appendix. 100KHZ PSD value indicates the reference Level. DL line indicates the 20dB offset below Mark1 value. It shows compliance with the requirement.



3.7 ANTENNA REQUIREMENTS

3.7.1 STANDARD APPLICABLE

If transmitting antenna directional gain is greater than 6 dBi, both the peak transmits power, and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.7.2 ANTENNA CONNECTED CONSTRUCTION

An embedded-in antenna design is used.

3.7.3 ANTENNA GAIN

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit and PSD limit.

4 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).



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5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.



6 APPENDIX 1 :WLAN 2.4G

DTS BANDWIDTH

TEST RESULT

Test Mode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.520	2408.000	2416.520	0.5	PASS
		2437	7.560	2433.000	2440.560	0.5	PASS
		2462	9.040	2457.480	2466.520	0.5	PASS
11G	Ant1	2412	14.120	2405.680	2419.800	0.5	PASS
		2437	15.680	2428.880	2444.560	0.5	PASS
		2462	16.080	2453.840	2469.920	0.5	PASS
11N20SISO	Ant1	2412	15.640	2404.520	2420.160	0.5	PASS
		2437	15.120	2429.440	2444.560	0.5	PASS
		2462	15.720	2453.840	2469.560	0.5	PASS



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TEST GRAPHS

11B_Ant1_2412



11B_Ant1_2437



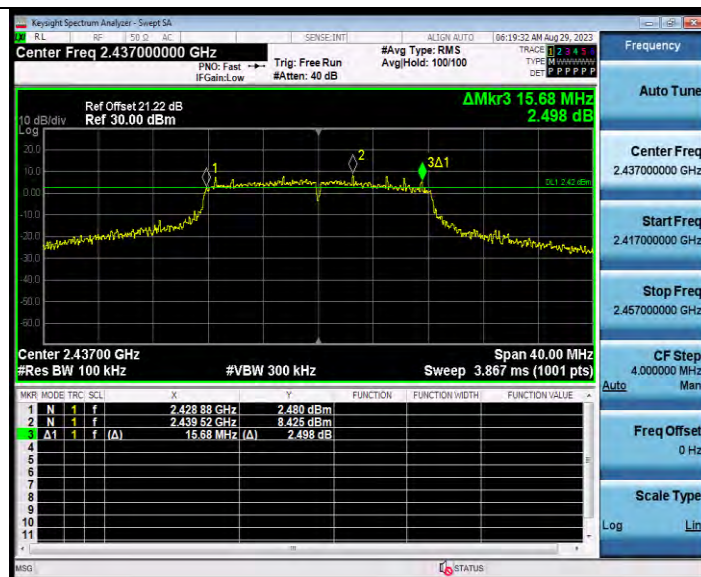
11B_Ant1_2462





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11G_Ant1_2462



11N20SISO_Ant1_2412



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11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



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**OCCUPIED CHANNEL BANDWIDTH****TEST RESULT**

Test Mode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	13.485	2405.5001	2418.9851	---	---
		2437	14.226	2429.7645	2443.9905	---	---
		2462	14.388	2454.7485	2469.1365	---	---
11G	Ant1	2412	17.294	2403.6366	2420.9306	---	---
		2437	17.655	2427.8784	2445.5334	---	---
		2462	17.985	2452.8527	2470.8377	---	---
11N20SISO	Ant1	2412	18.127	2403.1855	2421.3125	---	---
		2437	18.579	2427.4512	2446.0302	---	---
		2462	20.044	2451.4441	2471.4881	---	---

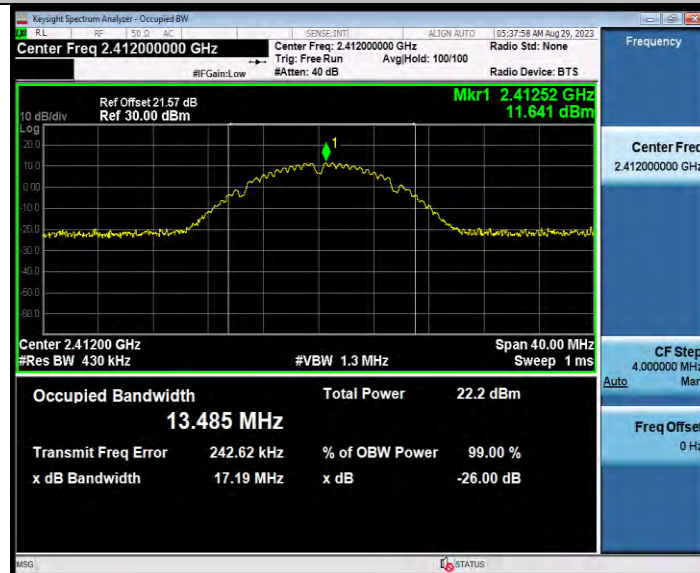


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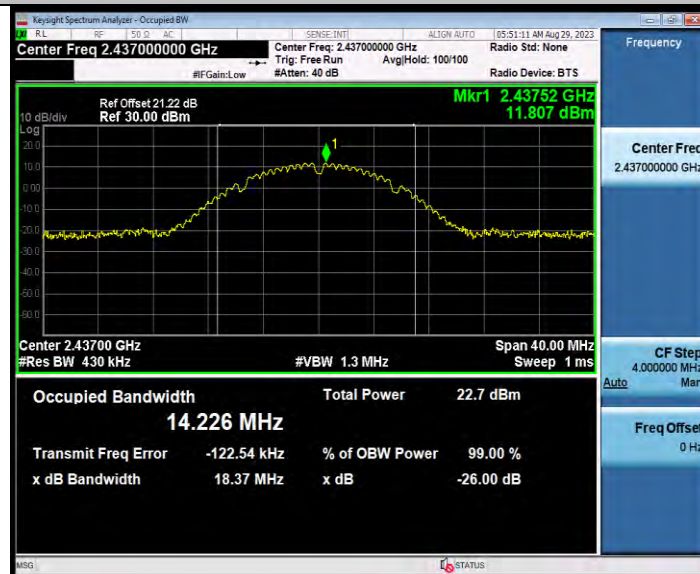
Test Report No.: W7L-P23080006RF02

TEST GRAPHS

11B_Ant1_2412



11B_Ant1_2437



11B_Ant1_2462

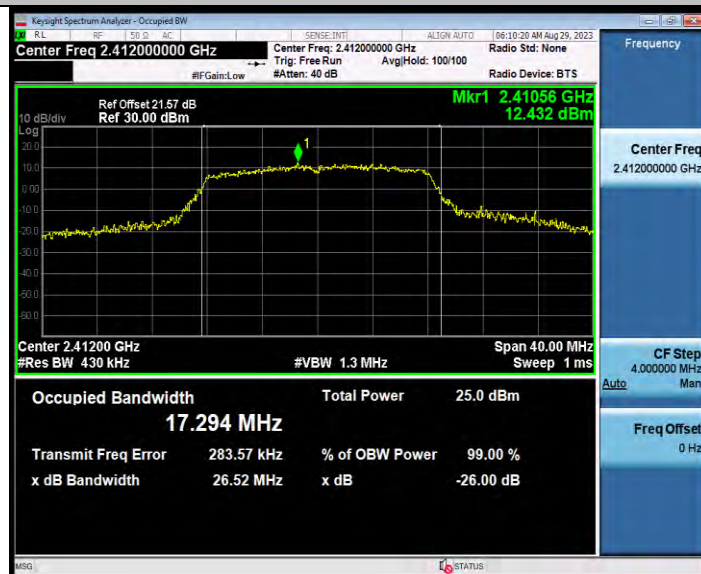


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Test Report No.: W7L-P23080006RF02



11G_Ant1_2412

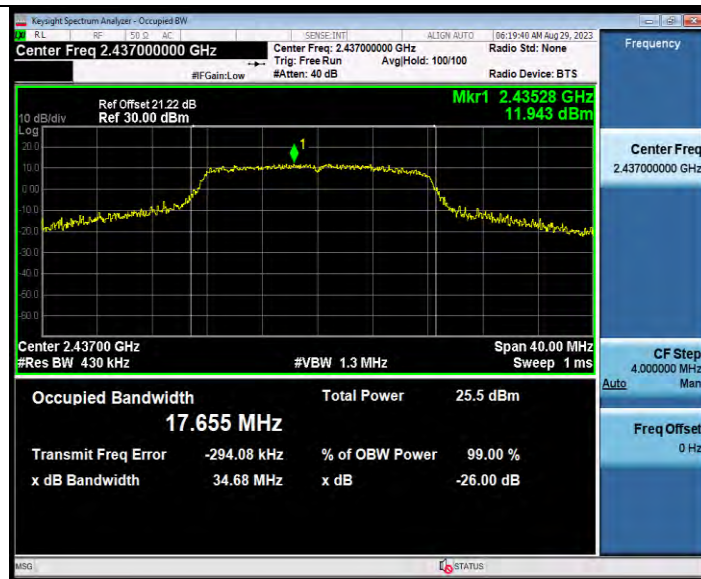


11G_Ant1_2437



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Test Report No.: W7L-P23080006RF02



11G_Ant1_2462

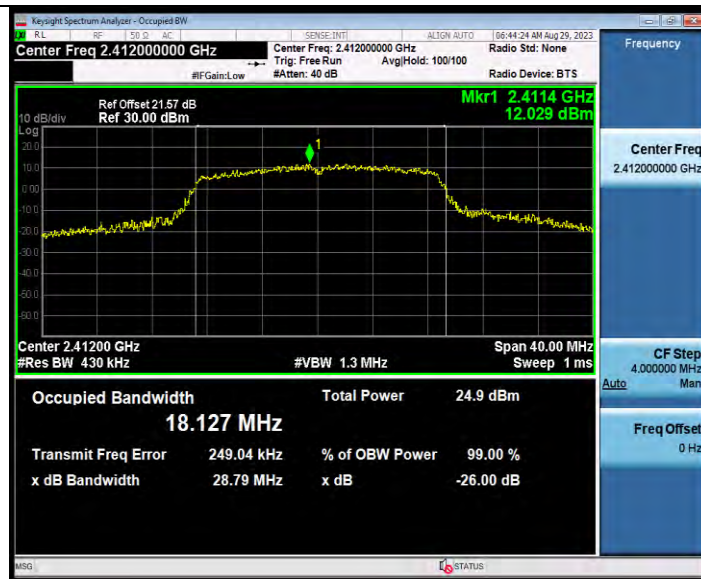


11N20SISO_Ant1_2412

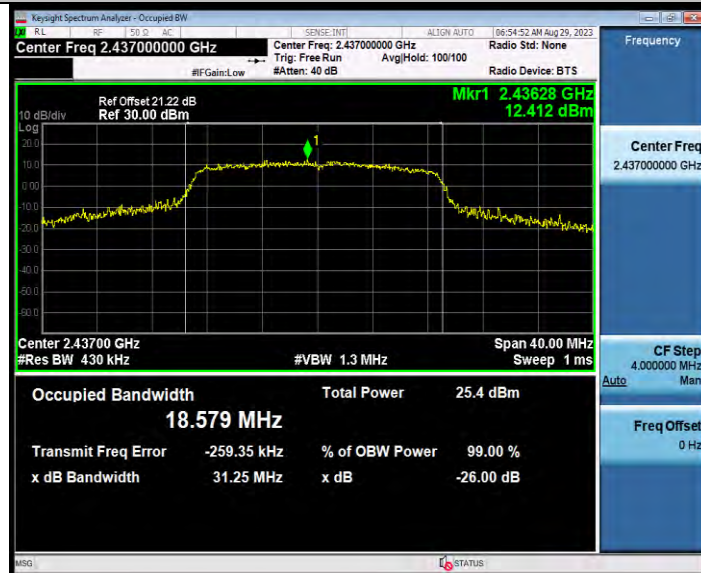


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Test Report No.: W7L-P23080006RF02



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



BUREAU
VERITAS

Test Report No.: W7L-P23080006RF02

