



**BUREAU
VERITAS**

Test Report No.: W7L-P23030016RF02

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
2390.000	51.18	59.22	74.00	-22.82	31.75	6.18	45.97	100	190	Peak
2390.000	43.67	51.71	54.00	-10.33	31.75	6.18	45.97	100	190	Average
2440.000	98.38	106.17	/	/	31.91	6.25	45.95	100	190	Peak
2440.000	96.40	104.19	/	/	31.91	6.25	45.95	100	190	Average
2483.500	51.00	58.57	74.00	-23.00	32.05	6.31	45.93	100	190	Peak
2483.500	44.76	52.33	54.00	-9.24	32.05	6.31	45.93	100	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
2390.000	51.74	59.39	74.00	-22.26	32.14	6.18	45.97	100	310	Peak
2390.000	44.17	51.82	54.00	-9.83	32.14	6.18	45.97	100	310	Average
2440.000	102.40	109.84	/	/	32.26	6.25	45.95	100	310	Peak
2440.000	100.05	107.49	/	/	32.26	6.25	45.95	100	310	Average
2483.500	52.04	59.30	74.00	-21.96	32.36	6.31	45.93	100	310	Peak
2483.500	44.21	51.47	54.00	-9.79	32.36	6.31	45.93	100	310	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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Test Report No.: W7L-P23030016RF02

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
2390.000	51.96	60.00	74.00	-22.04	31.75	6.18	45.97	100	0	Peak
2390.000	43.88	51.92	54.00	-10.12	31.75	6.18	45.97	100	0	Average
2480.000	97.38	104.97	/	/	32.04	6.30	45.93	100	0	Peak
2480.000	95.40	102.99	/	/	32.04	6.30	45.93	100	0	Average
2483.500	52.05	59.62	74.00	-21.95	32.05	6.31	45.93	100	0	Peak
2483.500	44.76	52.33	54.00	-9.24	32.05	6.31	45.93	100	0	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
2390.000	51.72	59.37	74.00	-22.28	32.14	6.18	45.97	130	290	Peak
2390.000	44.69	52.34	54.00	-9.31	32.14	6.18	45.97	130	290	Average
2480.000	100.09	107.37	/	/	32.35	6.30	45.93	130	290	Peak
2480.000	98.17	105.45	/	/	32.35	6.30	45.93	130	290	Average
2483.500	53.01	60.27	74.00	-20.99	32.36	6.31	45.93	130	290	Peak
2483.500	44.71	51.97	54.00	-9.29	32.36	6.31	45.93	130	290	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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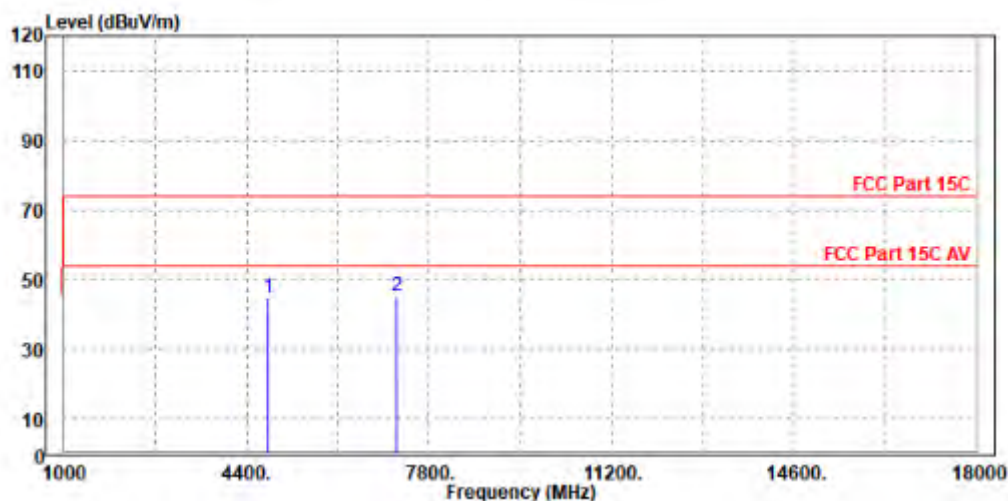
Test Report No.: W7L-P23030016RF02

Worst case harmonic:

CHANNEL	TX Channel 0	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	4808.000	44.93	46.37	74.00	-29.07	-1.44	Peak	Horizontal
2 PP	7206.000	45.31	43.57	74.00	-28.69	1.74	Peak	Horizontal



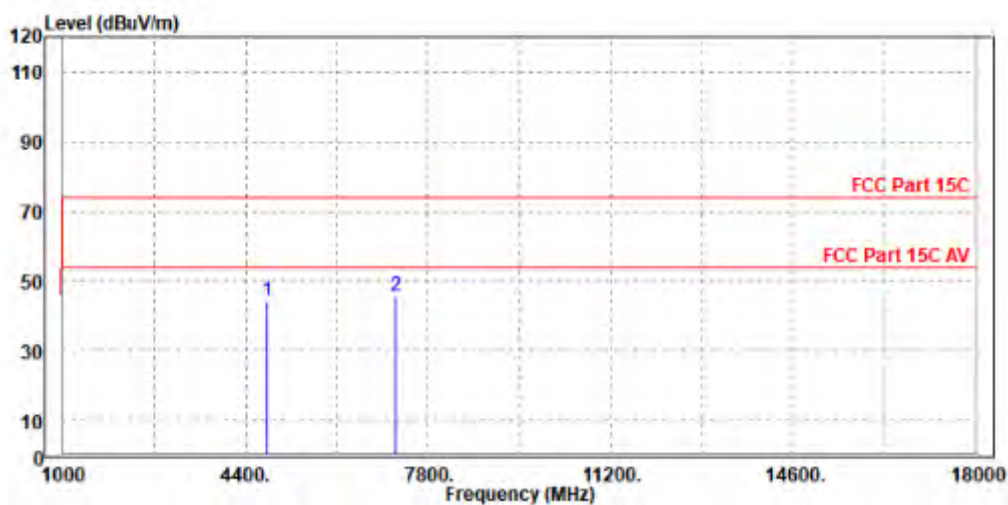


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Test Report No.: W7L-P23030016RF02

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	4804.000	44.10	45.34	74.00	-29.90	-1.24	Peak	Vertical
2 PP	7205.000	45.74	43.88	74.00	-28.26	1.86	Peak	Vertical



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 2402MHz: 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-P23030016RF02

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
2390.000	51.00	59.04	74.00	-23.00	31.75	6.18	45.97	100	190	Peak
2390.000	43.21	51.25	54.00	-10.79	31.75	6.18	45.97	100	190	Average
2402.000	97.16	105.15	/	/	31.79	6.19	45.97	100	190	Peak
2402.000	96.88	104.87	/	/	31.79	6.19	45.97	100	190	Average
2483.500	51.75	59.32	74.00	-22.25	32.05	6.31	45.93	100	190	Peak
2483.500	44.57	52.14	54.00	-9.43	32.05	6.31	45.93	100	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
2390.000	51.02	58.67	74.00	-22.98	32.14	6.18	45.97	135	310	Peak
2390.000	44.11	51.76	54.00	-9.89	32.14	6.18	45.97	135	310	Average
2402.000	100.87	108.49	/	/	32.16	6.19	45.97	135	310	Peak
2402.000	100.69	108.31	/	/	32.16	6.19	45.97	135	310	Average
2483.500	51.94	59.20	74.00	-22.06	32.36	6.31	45.93	135	310	Peak
2483.500	44.42	51.68	54.00	-9.58	32.36	6.31	45.93	135	310	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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VERITAS**

Test Report No.: W7L-P23030016RF02

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
2390.000	51.68	59.72	74.00	-22.32	31.75	6.18	45.97	100	190	Peak
2390.000	44.32	52.36	54.00	-9.68	31.75	6.18	45.97	100	190	Average
2440.000	99.10	106.89	/	/	31.91	6.25	45.95	100	190	Peak
2440.000	98.22	106.01	/	/	31.91	6.25	45.95	100	190	Average
2483.500	52.84	60.41	74.00	-21.16	32.05	6.31	45.93	100	190	Peak
2483.500	44.03	51.60	54.00	-9.97	32.05	6.31	45.93	100	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
2390.000	51.05	58.70	74.00	-22.95	32.14	6.18	45.97	135	310	Peak
2390.000	43.78	51.43	54.00	-10.22	32.14	6.18	45.97	135	310	Average
2440.000	102.27	109.71	/	/	32.26	6.25	45.95	135	310	Peak
2440.000	101.69	109.13	/	/	32.26	6.25	45.95	135	310	Average
2483.500	52.23	59.49	74.00	-21.77	32.36	6.31	45.93	135	310	Peak
2483.500	44.22	51.48	54.00	-9.78	32.36	6.31	45.93	135	310	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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Test Report No.: W7L-P23030016RF02

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
2390.000	52.23	60.27	74.00	-21.77	31.75	6.18	45.97	100	0	Peak
2390.000	43.50	51.54	54.00	-10.50	31.75	6.18	45.97	100	0	Average
2480.000	97.51	105.10	/	/	32.04	6.30	45.93	100	0	Peak
2480.000	97.15	104.74	/	/	32.04	6.30	45.93	100	0	Average
2483.500	51.84	59.41	74.00	-22.16	32.05	6.31	45.93	100	0	Peak
2483.500	43.87	51.44	54.00	-10.13	32.05	6.31	45.93	100	0	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
2390.000	52.16	59.81	74.00	-21.84	32.14	6.18	45.97	130	290	Peak
2390.000	44.39	52.04	54.00	-9.61	32.14	6.18	45.97	130	290	Average
2480.000	100.20	107.48	/	/	32.35	6.30	45.93	130	290	Peak
2480.000	99.99	107.27	/	/	32.35	6.30	45.93	130	290	Average
2483.500	52.83	60.09	74.00	-21.17	32.36	6.31	45.93	130	290	Peak
2483.500	44.22	51.48	54.00	-9.78	32.36	6.31	45.93	130	290	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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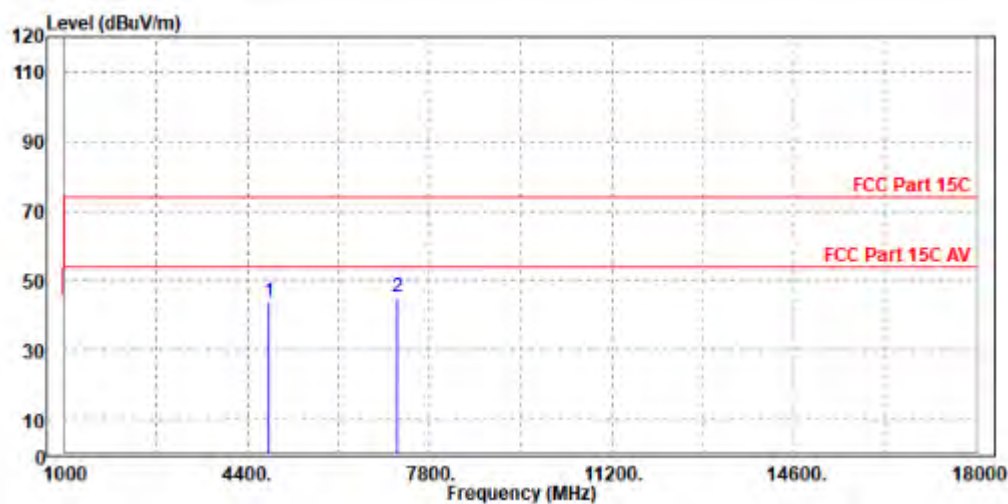
Test Report No.: W7L-P23030016RF02

Worst case harmonic:

CHANNEL	TX Channel 0	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	4804.000	43.97	45.41	74.00	-30.03	-1.44	Peak	Horizontal
2 PP	7205.000	45.02	43.28	74.00	-28.98	1.74	Peak	Horizontal



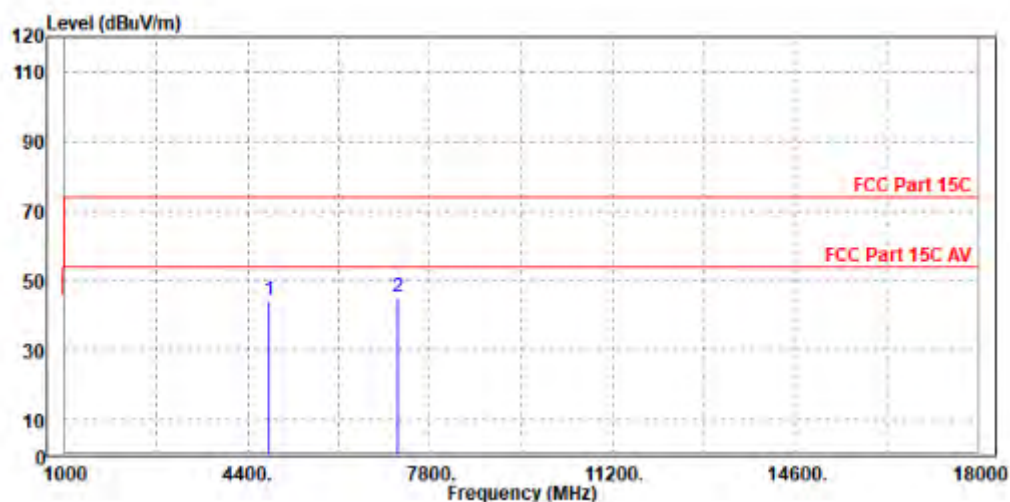


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ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	4808.000	44.09	45.33	74.00	-29.91	-1.24	Peak	Vertical
2 PP	7206.000	45.32	43.46	74.00	-28.68	1.86	Peak	Vertical



REMARKS:

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

Test Report No.: W7L-P23030016RF02

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
2390.000	51.08	59.12	74.00	-22.92	31.75	6.18	45.97	100	190	Peak
2390.000	43.58	51.62	54.00	-10.42	31.75	6.18	45.97	100	190	Average
2402.000	97.30	105.29	/	/	31.79	6.19	45.97	100	190	Peak
2402.000	96.62	104.61	/	/	31.79	6.19	45.97	100	190	Average
2483.500	51.56	59.13	74.00	-22.44	32.05	6.31	45.93	100	190	Peak
2483.500	43.93	51.50	54.00	-10.07	32.05	6.31	45.93	100	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
2390.000	51.33	58.98	74.00	-22.67	32.14	6.18	45.97	130	290	Peak
2390.000	43.90	51.55	54.00	-10.10	32.14	6.18	45.97	130	290	Average
2402.000	101.54	109.16	/	/	32.16	6.19	45.97	130	290	Peak
2402.000	100.35	107.97	/	/	32.16	6.19	45.97	130	290	Average
2483.500	51.91	59.17	74.00	-22.09	32.36	6.31	45.93	130	290	Peak
2483.500	43.67	50.93	54.00	-10.33	32.36	6.31	45.93	130	290	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
2390.000	51.28	59.32	74.00	-22.72	31.75	6.18	45.97	100	190	Peak
2390.000	43.60	51.64	54.00	-10.40	31.75	6.18	45.97	100	190	Average
2440.000	98.48	106.27	/	/	31.91	6.25	45.95	100	190	Peak
2440.000	97.90	105.69	/	/	31.91	6.25	45.95	100	190	Average
2483.500	51.63	59.20	74.00	-22.37	32.05	6.31	45.93	100	190	Peak
2483.500	43.97	51.54	54.00	-10.03	32.05	6.31	45.93	100	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
2390.000	51.52	59.17	74.00	-22.48	32.14	6.18	45.97	135	290	Peak
2390.000	44.60	52.25	54.00	-9.40	32.14	6.18	45.97	135	290	Average
2440.000	102.64	110.08	/	/	32.26	6.25	45.95	135	290	Peak
2440.000	101.93	109.37	/	/	32.26	6.25	45.95	135	290	Average
2483.500	52.35	59.61	74.00	-21.65	32.36	6.31	45.93	135	290	Peak
2483.500	44.02	51.28	54.00	-9.98	32.36	6.31	45.93	135	290	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
2390.000	51.30	59.34	74.00	-22.70	31.75	6.18	45.97	100	0	Peak
2390.000	44.41	52.45	54.00	-9.59	31.75	6.18	45.97	100	0	Average
2480.000	97.31	104.90	/	/	32.04	6.30	45.93	100	0	Peak
2480.000	96.55	104.14	/	/	32.04	6.30	45.93	100	0	Average
2483.500	51.80	59.37	74.00	-22.20	32.05	6.31	45.93	100	0	Peak
2483.500	43.57	51.14	54.00	-10.43	32.05	6.31	45.93	100	0	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
2390.000	51.97	59.62	74.00	-22.03	32.14	6.18	45.97	135	290	Peak
2390.000	43.83	51.48	54.00	-10.17	32.14	6.18	45.97	135	290	Average
2480.000	100.64	107.92	/	/	32.35	6.30	45.93	135	290	Peak
2480.000	98.95	106.23	/	/	32.35	6.30	45.93	135	290	Average
2483.500	51.12	58.38	74.00	-22.88	32.36	6.31	45.93	135	290	Peak
2483.500	45.55	52.81	54.00	-8.45	32.36	6.31	45.93	135	290	Average

REMARKS:

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



BUREAU
VERITAS

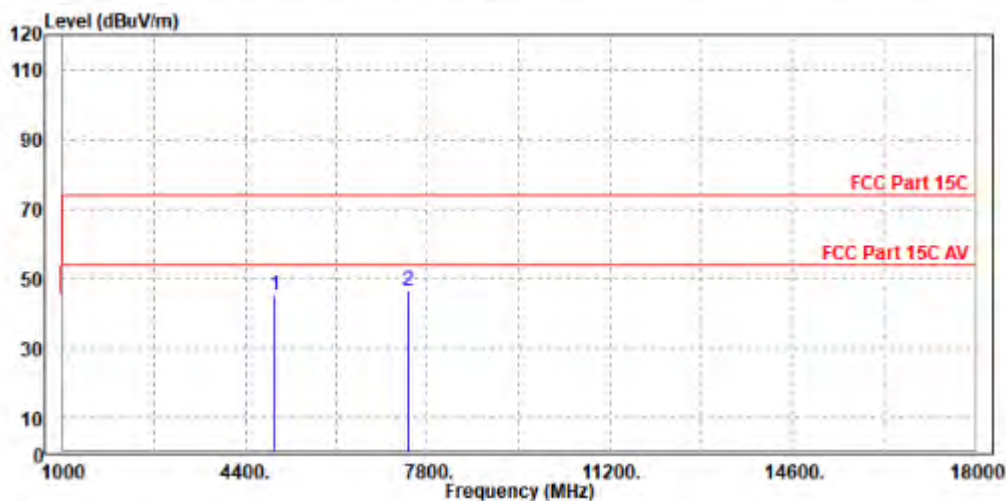
Test Report No.: W7L-P23030016RF02

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	4961.000	45.31	46.50	74.00	-28.69	-1.19	Peak	Horizontal
2 PP	7440.000	46.36	44.38	74.00	-27.64	1.98	Peak	Horizontal



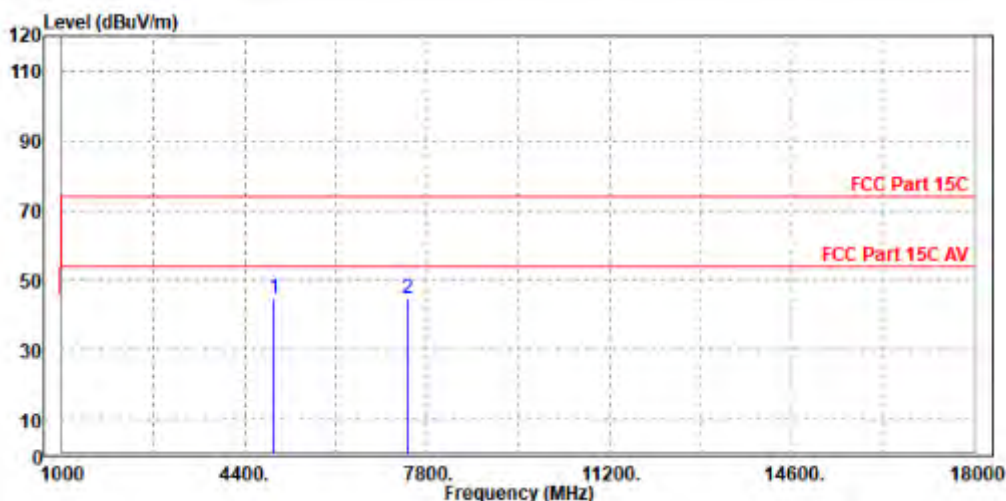


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ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	4960.000	44.64	45.63	74.00	-29.36	-0.99	Peak	Vertical
2 PP	7443.000	44.91	42.91	74.00	-29.09	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 of 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. 22,22	Feb. 21,23
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510322	Feb. 18,22	Feb. 17,23
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	May.15,22	May.14,23
Power Sensor	ANRITSU	MA2411B	1339352	May. 06,22	May. 05,23

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 RF Oven room.

3.3.3 TEST PROCEDURE

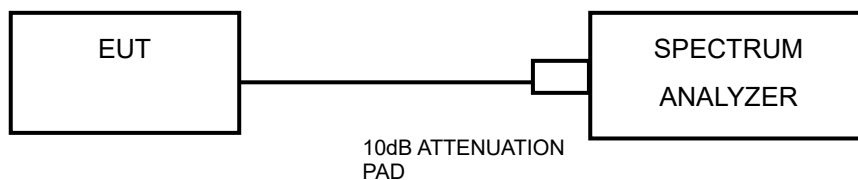
1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points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

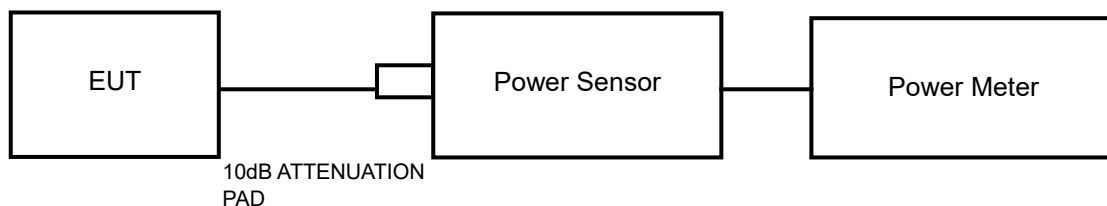


3.4 CONDUCTED OUTPUT POWER

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 of 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.

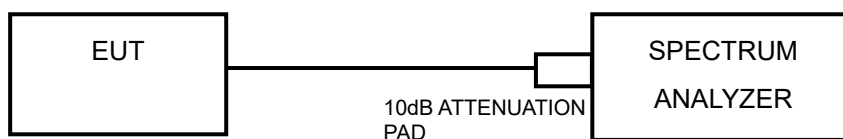


3.5 POWER SPECTRAL DENSITY MEASUREMENT

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 of 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-P23030016RF02

3.5.7 TEST RESULTS

Please Refer to Appendix1/2 Of this test report.

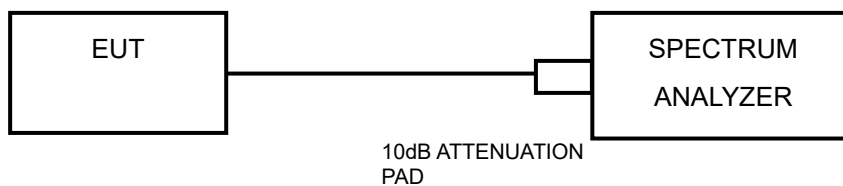


3.6 OUT OF BAND EMISSION MEASUREMENT

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 of 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 OOB

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

The spectrum plots are attached on the following images. D1 line indicates the highest level. D2 line indicates the 20dB offset below D1. It shows compliance to the requirement.

Please Refer to Appendix1/2 Of this test report.



3.7 ANTENNA REQUIREMENTS

3.7.1 STANDARD APPLICABLE

If transmitting antenna directional gain is greater than 6 dBi, both the peak transmit 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

According to FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

Directional gain = GANT + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain = $10 \log(N_{ANT} / N_{ss})$ dB;

For power measurements on IEEE 802.11 devices, Array Gain = 0 dB for $N_{ANT} \leq 4$;

The EUT supports Cyclic Delay Diversity (CDD) mode,

For power measurements, the directional GANT is set equal to the antenna having the highest gain as following formulas.

Directional Gain = Max.Gain + Array Gain.

For PSD measurements, the directional GANT calculation is following F)2)f)ii of KDB 662911 D01 v02r01.

The directional gain is calculated as following table.

2.4GHz	Ant 1 (dBi)	Ant 2 (dBi)	DG For Power (dBi)	DG For PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
	0.10	-3.70	0.10	1.42	0.00	0.00

NOTE :DG= directional gain, Power Limit Reduction = DG For Power Gain -6dBi<0

PSD Limit Reduction = DG For PSD – 6dBi<0. Therefore, it is not necessary to reduce maximum peak output power and PSD limit.



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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

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B-CDD	Ant1	2412	7.560	2408.000	2415.560	0.5	PASS
	Ant2	2412	7.600	2408.440	2416.040	0.5	PASS
	Ant1	2437	7.800	2432.960	2440.760	0.5	PASS
	Ant2	2437	8.120	2432.520	2440.640	0.5	PASS
	Ant1	2462	8.080	2457.960	2466.040	0.5	PASS
	Ant2	2462	8.040	2457.960	2466.000	0.5	PASS
11G-CDD	Ant1	2412	16.280	2403.880	2420.160	0.5	PASS
	Ant2	2412	16.320	2403.880	2420.200	0.5	PASS
	Ant1	2437	16.080	2428.840	2444.920	0.5	PASS
	Ant2	2437	16.360	2428.800	2445.160	0.5	PASS
	Ant1	2462	16.320	2453.840	2470.160	0.5	PASS
	Ant2	2462	16.320	2453.840	2470.160	0.5	PASS
11N20MIMO	Ant1	2412	15.600	2404.800	2420.400	0.5	PASS
	Ant2	2412	16.320	2404.480	2420.800	0.5	PASS
	Ant1	2437	17.560	2428.200	2445.760	0.5	PASS
	Ant2	2437	17.640	2428.160	2445.800	0.5	PASS
	Ant1	2462	17.560	2453.200	2470.760	0.5	PASS
	Ant2	2462	15.680	2453.200	2468.880	0.5	PASS
11N40MIMO	Ant1	2422	32.720	2404.240	2436.960	0.5	PASS
	Ant2	2422	32.560	2406.960	2439.520	0.5	PASS
	Ant1	2437	36.080	2418.840	2454.920	0.5	PASS
	Ant2	2437	36.320	2418.840	2455.160	0.5	PASS
	Ant1	2452	35.680	2433.840	2469.520	0.5	PASS
	Ant2	2452	35.680	2433.840	2469.520	0.5	PASS
11AX20MIMO	Ant1	2412	18.640	2402.720	2421.360	0.5	PASS
	Ant2	2412	16.920	2404.440	2421.360	0.5	PASS
	Ant1	2437	18.920	2427.520	2446.440	0.5	PASS



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	Ant2	2437	18.720	2427.520	2446.240	0.5	PASS
	Ant1	2462	18.880	2452.480	2471.360	0.5	PASS
	Ant2	2462	17.680	2452.560	2470.240	0.5	PASS
11AX40MIMO	Ant1	2422	34.000	2403.680	2437.680	0.5	PASS
	Ant2	2422	34.880	2405.680	2440.560	0.5	PASS
	Ant1	2437	38.000	2417.880	2455.880	0.5	PASS
	Ant2	2437	37.040	2418.040	2455.080	0.5	PASS
	Ant1	2452	37.840	2433.120	2470.960	0.5	PASS
	Ant2	2452	36.480	2433.120	2469.600	0.5	PASS