

5G NR RF APPENDIX

N7

Peak-to-Average Ratio for SA

Peak-to-Average Ratio(CCDF)

Test Result

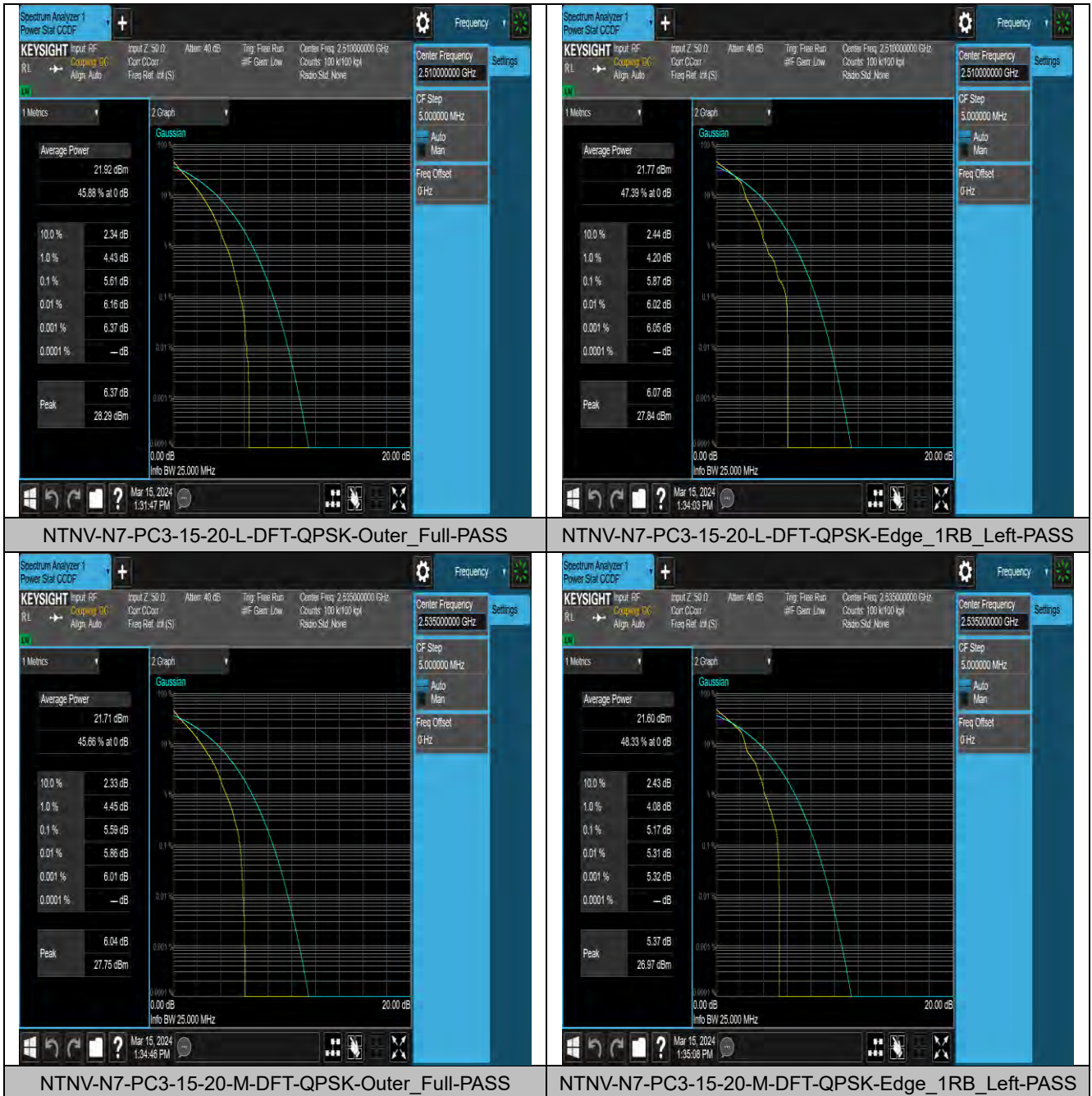
Band	SCS	Bandwidth	Modulation	Channel	RB Config	Result	Limit	Verdict
N7	15	20	DFT-QPSK	L	Outer_Full	5.61	≤13	PASS
N7	15	20	DFT-QPSK	L	Edge_1RB_Left	5.87	≤13	PASS
N7	15	20	DFT-QPSK	M	Outer_Full	5.59	≤13	PASS
N7	15	20	DFT-QPSK	M	Edge_1RB_Left	5.17	≤13	PASS
N7	15	20	DFT-QPSK	H	Outer_Full	5.57	≤13	PASS
N7	15	20	DFT-QPSK	H	Edge_1RB_Left	5.16	≤13	PASS



BUREAU
VERITAS

Reference No.: W7L-P23120020RF09

Test Graphs



BV 7Layers Communications Technology
(Shenzhen) Co., Ltd

Room B37, Warehouse A5, No.3 Chiwan 4th Road,
Zhaoshang Street, Nanshan District Shenzhen,
Guangdong, People's Republic of China
Page 2 of 293

Tel: +86 755 8869 6566
Fax: +86 755 8869 6577
Email: customerservice.sw@bureauveritas.com



BUREAU
VERITAS

Reference No.: W7L-P23120020RF09



BV 7Layers Communications Technology
(Shenzhen) Co., Ltd

Room B37, Warehouse A5, No.3 Chiwan 4th Road,
Zhaoshang Street, Nanshan District Shenzhen,
Guangdong, People's Republic of China

Tel: +86 755 8869 6566
Fax: +86 755 8869 6577
Email: customerservice.sw@bureauveritas.com

**26dB Bandwidth and Occupied Bandwidth for SA****Test Result**

Band	SCS	Bandwidth	Modulation	Channel	RB Config	Result (99%)	Result (26dB)	Verdict
N7	15	5	DFT-PI2BPSK	M	Outer_Full	4.4781	4.966	PASS
N7	15	5	DFT-QPSK	M	Outer_Full	4.4680	4.949	PASS
N7	15	5	DFT-16QAM	M	Outer_Full	4.4601	5.038	PASS
N7	15	5	DFT-64QAM	M	Outer_Full	4.4766	5.014	PASS
N7	15	5	DFT-256QAM	M	Outer_Full	4.4765	4.975	PASS
N7	15	10	DFT-PI2BPSK	M	Outer_Full	8.9230	9.898	PASS
N7	15	10	DFT-QPSK	M	Outer_Full	8.9208	9.714	PASS
N7	15	10	DFT-16QAM	M	Outer_Full	8.9290	9.511	PASS
N7	15	10	DFT-64QAM	M	Outer_Full	8.9190	9.544	PASS
N7	15	10	DFT-256QAM	M	Outer_Full	8.9167	9.408	PASS
N7	15	15	DFT-PI2BPSK	M	Outer_Full	13.407	14.26	PASS
N7	15	15	DFT-QPSK	M	Outer_Full	13.392	15.09	PASS
N7	15	15	DFT-16QAM	M	Outer_Full	13.416	14.42	PASS
N7	15	15	DFT-64QAM	M	Outer_Full	13.400	15.56	PASS
N7	15	15	DFT-256QAM	M	Outer_Full	13.399	14.50	PASS
N7	15	20	DFT-PI2BPSK	M	Outer_Full	17.887	19.87	PASS
N7	15	20	DFT-QPSK	M	Outer_Full	17.879	20.55	PASS
N7	15	20	DFT-16QAM	M	Outer_Full	17.931	20.68	PASS
N7	15	20	DFT-64QAM	M	Outer_Full	17.881	18.77	PASS
N7	15	20	DFT-256QAM	M	Outer_Full	17.881	20.19	PASS
N7	15	25	DFT-PI2BPSK	M	Outer_Full	22.855	24.67	PASS
N7	15	25	DFT-QPSK	M	Outer_Full	22.833	25.30	PASS
N7	15	25	DFT-16QAM	M	Outer_Full	22.906	24.18	PASS
N7	15	25	DFT-64QAM	M	Outer_Full	22.843	23.97	PASS
N7	15	25	DFT-256QAM	M	Outer_Full	22.867	23.91	PASS
N7	15	30	DFT-PI2BPSK	M	Outer_Full	28.572	29.75	PASS
N7	15	30	DFT-QPSK	M	Outer_Full	28.619	29.83	PASS
N7	15	30	DFT-16QAM	M	Outer_Full	28.553	29.88	PASS
N7	15	30	DFT-64QAM	M	Outer_Full	28.588	29.74	PASS
N7	15	30	DFT-256QAM	M	Outer_Full	28.572	29.74	PASS
N7	15	40	DFT-PI2BPSK	M	Outer_Full	38.499	39.96	PASS
N7	15	40	DFT-QPSK	M	Outer_Full	38.572	39.90	PASS
N7	15	40	DFT-16QAM	M	Outer_Full	38.556	39.81	PASS



Reference No.: W7L-P23120020RF09

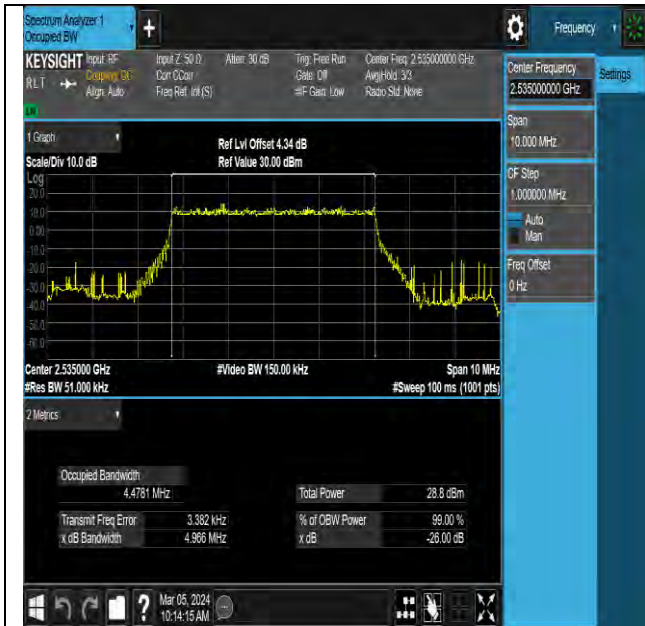
N7	15	40	DFT-64QAM	M	Outer_Full	38.552	40.04	PASS
N7	15	40	DFT-256QAM	M	Outer_Full	38.565	40.02	PASS



BUREAU
VERITAS

Reference No.: W7L-P23120020RF09

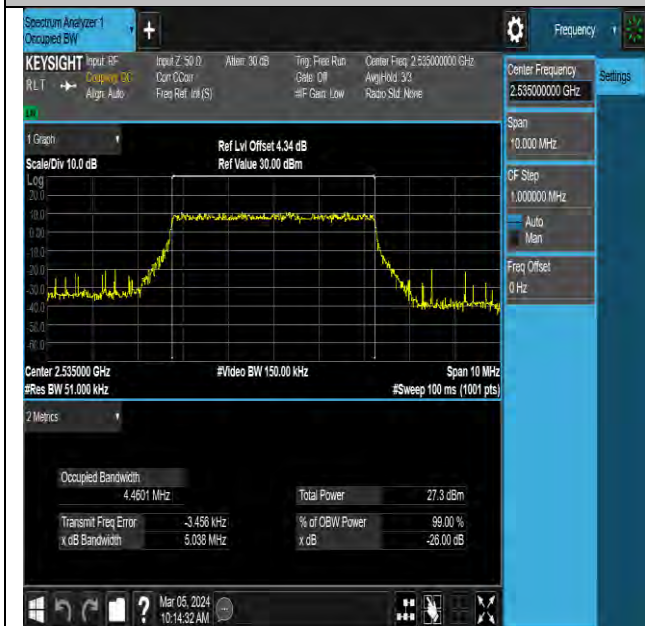
Test Graphs



NTNV-N7-PC3-15-5-M-DFT-PI2BPSK-Outer_Full-Ant1-PASS



NTNV-N7-PC3-15-5-M-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-N7-PC3-15-5-M-DFT-16QAM-Outer_Full-Ant1-PASS

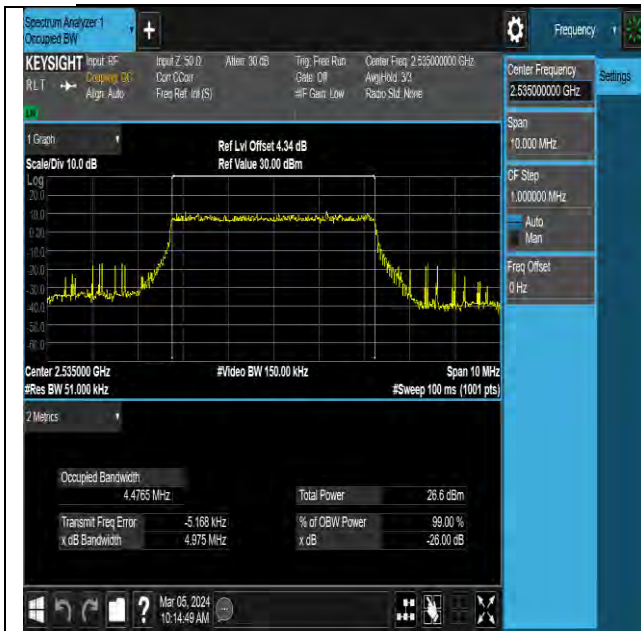


NTNV-N7-PC3-15-5-M-DFT-64QAM-Outer_Full-Ant1-PASS



BUREAU
VERITAS

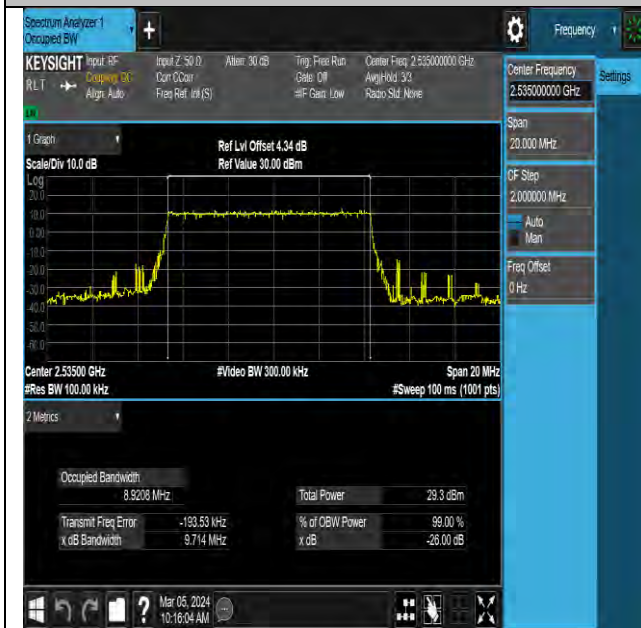
Reference No.: W7L-P23120020RF09



NTNV-N7-PC3-15-5-M-DFT-256QAM-Outer_Full-Ant1-
PASS



NTNV-N7-PC3-15-10-M-DFT-PI2BPSK-Outer_Full-Ant1-
PASS



NTNV-N7-PC3-15-10-M-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-N7-PC3-15-10-M-DFT-16QAM-Outer_Full-Ant1-
PASS

BV 7Layers Communications Technology
(Shenzhen) Co., Ltd

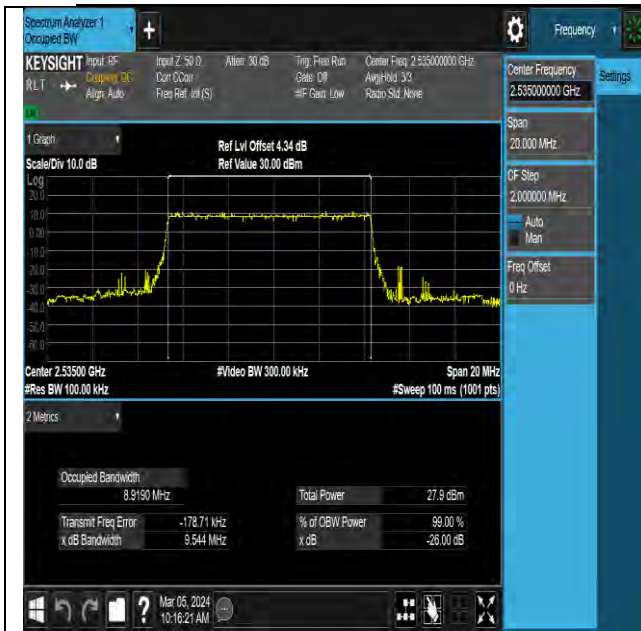
Room B37, Warehouse A5, No.3 Chiwan 4th Road,
Zhaoshang Street, Nanshan District Shenzhen,
Guangdong, People's Republic of China
Page 7 of 293

Tel: +86 755 8869 6566
Fax: +86 755 8869 6577
Email: customerservice.sw@bureauveritas.com

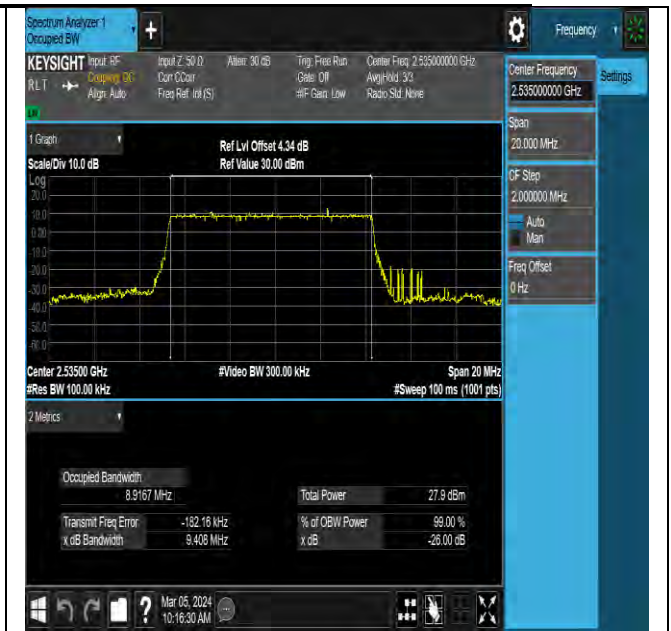


**BUREAU
VERITAS**

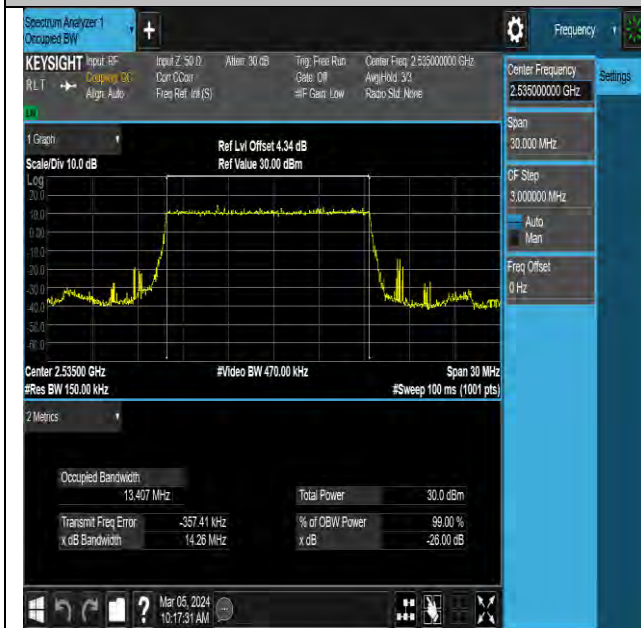
Reference No.: W7L-P23120020RF09



NTNV-N7-PC3-15-10-M-DFT-64QAM-Outer_Full-Ant1-
PASS



NTNV-N7-PC3-15-10-M-DFT-256QAM-Outer_Full-Ant1-
PASS



NTNV-N7-PC3-15-15-M-DFT-PI2BPSK-Outer_Full-Ant1-
PASS



NTNV-N7-PC3-15-15-M-DFT-QPSK-Outer_Full-Ant1-PASS

BV 7Layers Communications Technology
(Shenzhen) Co., Ltd

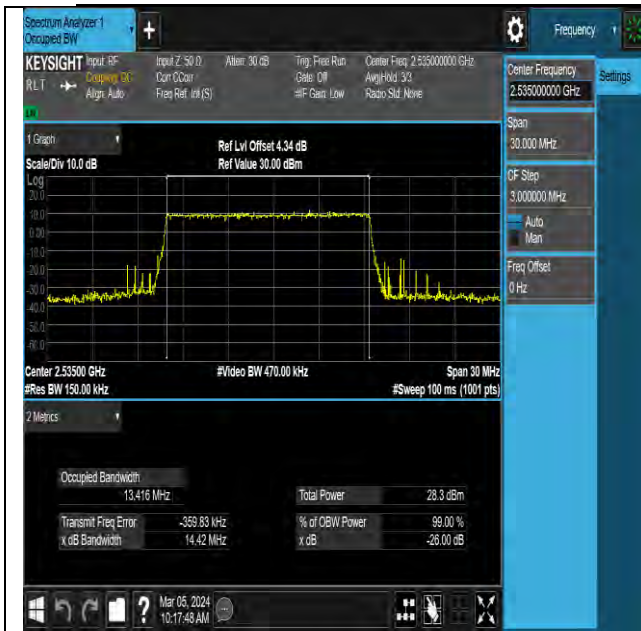
Room B37, Warehouse A5, No.3 Chiwan 4th Road,
Zhaoshang Street, Nanshan District Shenzhen,
Guangdong, People's Republic of China
Page 8 of 293

Tel: +86 755 8869 6566
Fax: +86 755 8869 6577
Email: customerservice.sw@bureauveritas.com

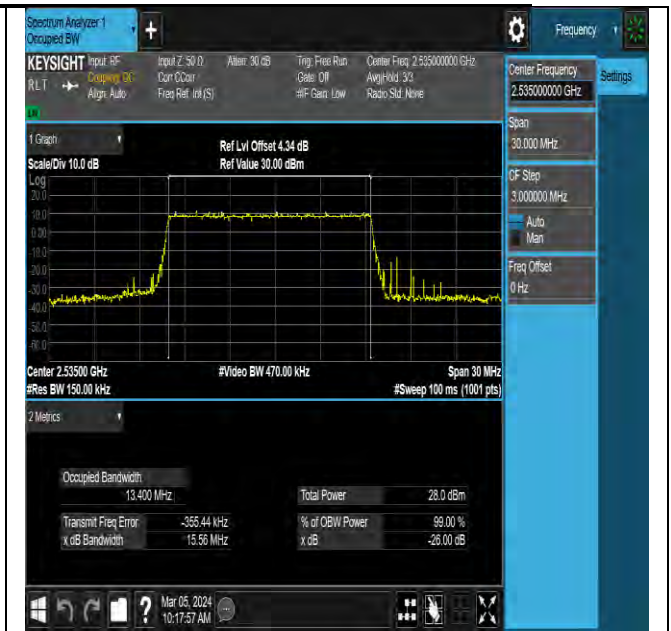


**BUREAU
VERITAS**

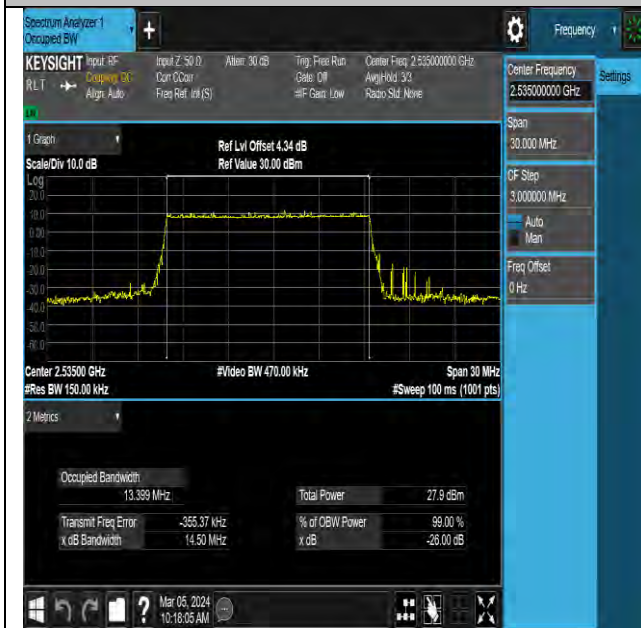
Reference No.: W7L-P23120020RF09



NTNV-N7-PC3-15-15-M-DFT-16QAM-Outer_Full-Ant1-
PASS



NTNV-N7-PC3-15-15-M-DFT-64QAM-Outer_Full-Ant1-
PASS



NTNV-N7-PC3-15-15-M-DFT-256QAM-Outer_Full-Ant1-
PASS

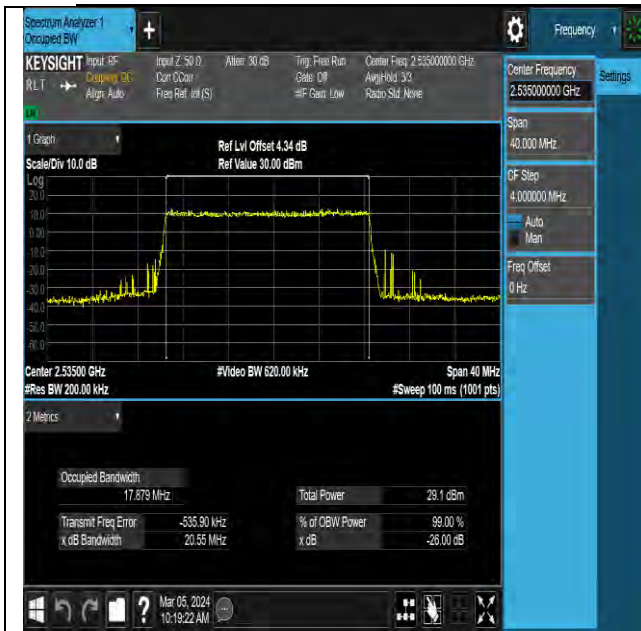


NTNV-N7-PC3-15-20-M-DFT-PI2BPSK-Outer_Full-Ant1-
PASS



BUREAU
VERITAS

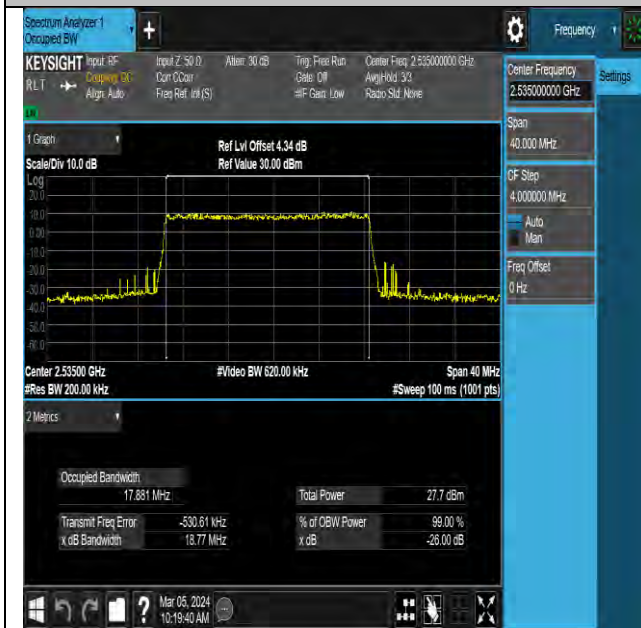
Reference No.: W7L-P23120020RF09



NTNV-N7-PC3-15-20-M-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-N7-PC3-15-20-M-DFT-16QAM-Outer_Full-Ant1-PASS



NTNV-N7-PC3-15-20-M-DFT-64QAM-Outer_Full-Ant1-PASS

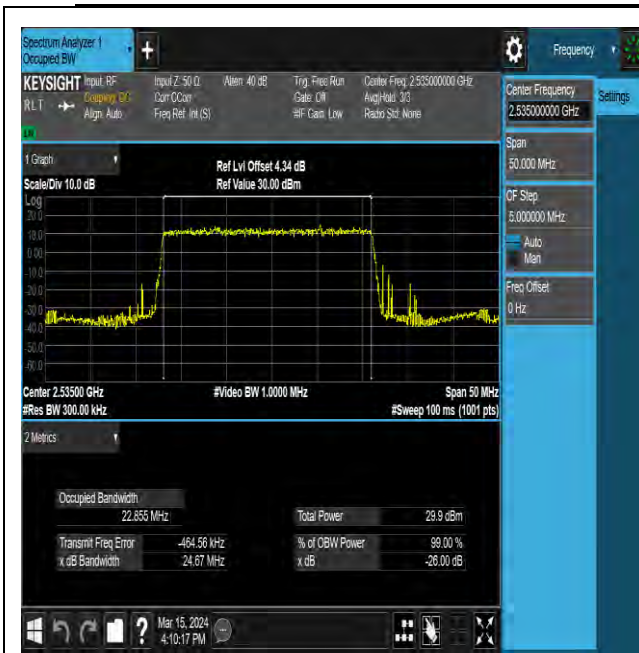


NTNV-N7-PC3-15-20-M-DFT-256QAM-Outer_Full-Ant1-PASS

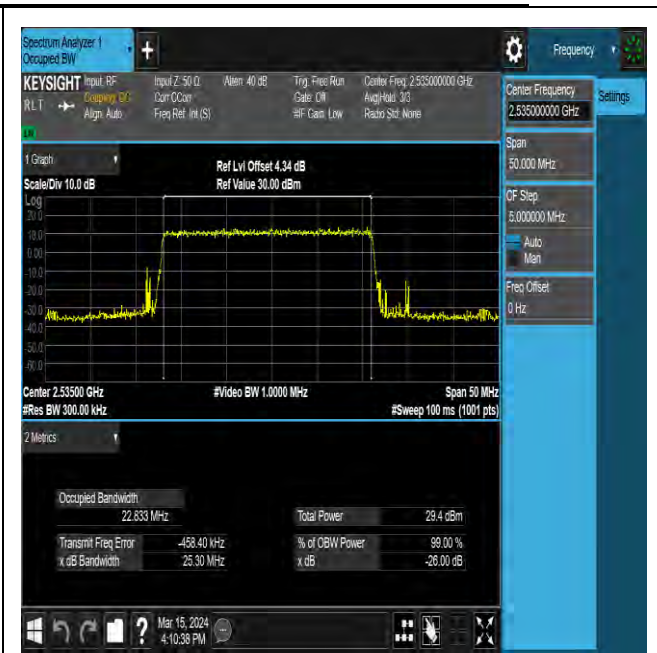


BUREAU
VERITAS

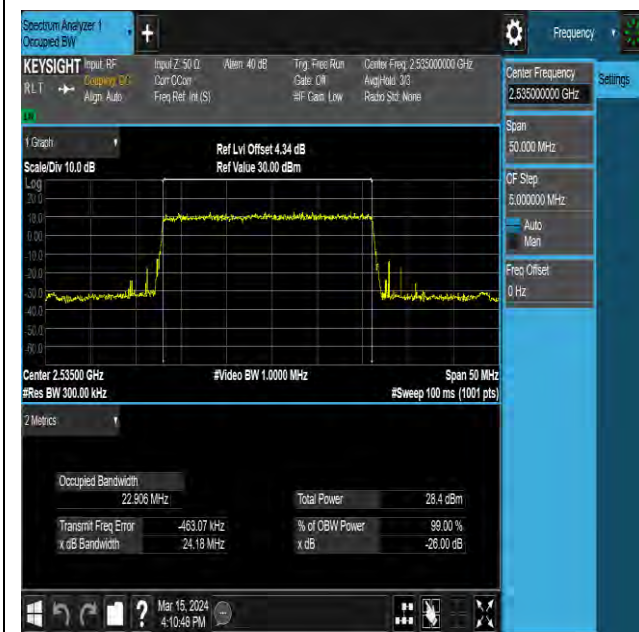
Reference No.: W7L-P23120020RF09



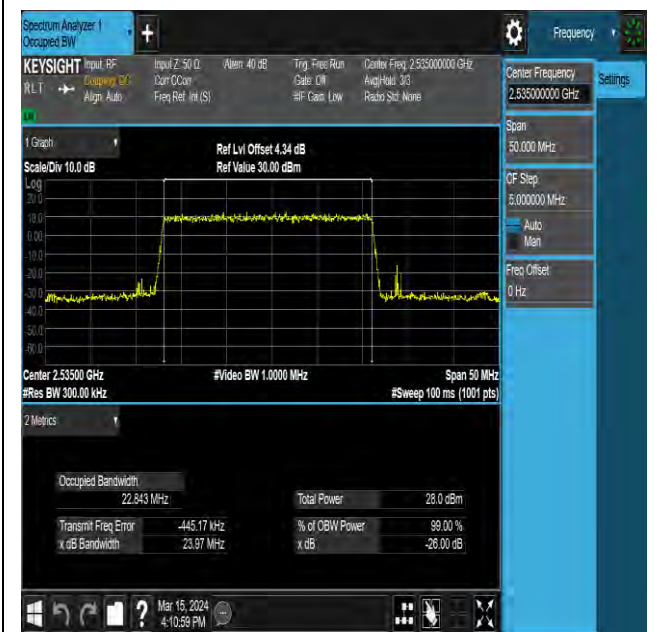
NTNV-N7-PC3-15-25-M-DFT-PI2BPSK-Outer_Full-Ant1-PASS



NTNV-N7-PC3-15-25-M-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-N7-PC3-15-25-M-DFT-16QAM-Outer_Full-Ant1-PASS

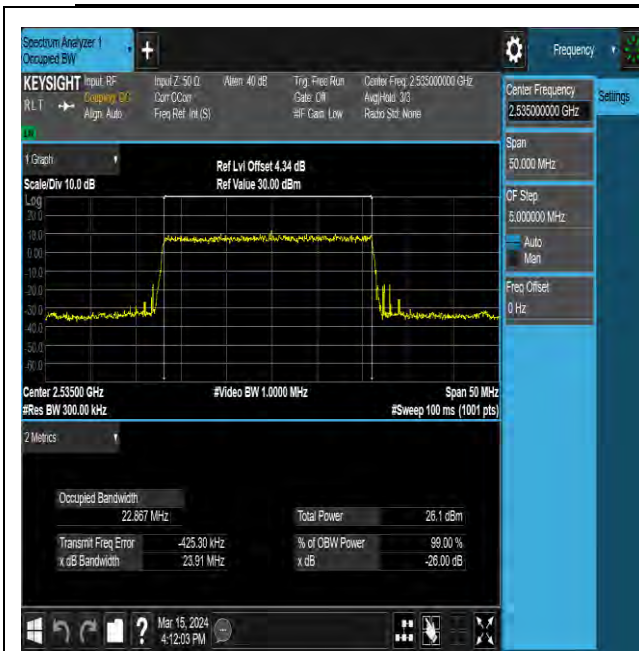


NTNV-N7-PC3-15-25-M-DFT-64QAM-Outer_Full-Ant1-PASS



BUREAU
VERITAS

Reference No.: W7L-P23120020RF09



NTNV-N7-PC3-15-25-M-DFT-256QAM-Outer_Full-Ant1-
PASS



NTNV-N7-PC3-15-30-M-DFT-PI2BPSK-Outer_Full-Ant1-
PASS



NTNV-N7-PC3-15-30-M-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-N7-PC3-15-30-M-DFT-16QAM-Outer_Full-Ant1-
PASS

BV 7Layers Communications Technology
(Shenzhen) Co., Ltd

Room B37, Warehouse A5, No.3 Chiwan 4th Road,
Zhaoshang Street, Nanshan District Shenzhen,
Guangdong, People's Republic of China
Page 12 of 293

Tel: +86 755 8869 6566
Fax: +86 755 8869 6577
Email: customerservice.sw@bureauveritas.com



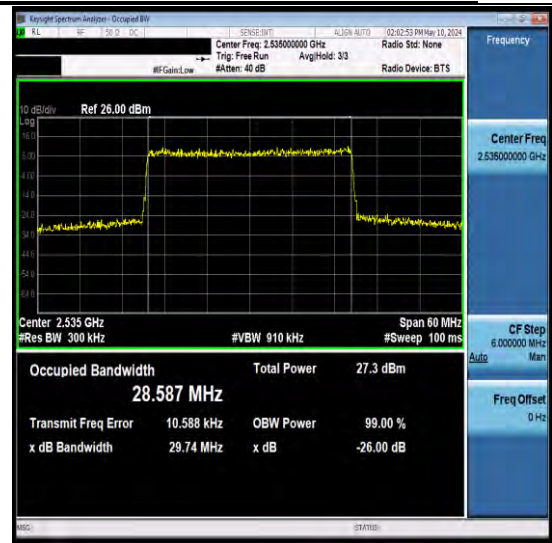
BUREAU
VERITAS

Reference No.: W7L-P23120020RF09



NTN-N7-PC3-15-30-M-DFT-64QAM-Outer_Full-Ant1-

PASS



NTN-N7-PC3-15-30-M-DFT-256QAM-Outer_Full-Ant1-

PASS



NTN-N7-PC3-15-40-M-DFT-PI2BPSK-Outer_Full-Ant1-

PASS



NTN-N7-PC3-15-40-M-DFT-QPSK-Outer_Full-Ant1-PASS



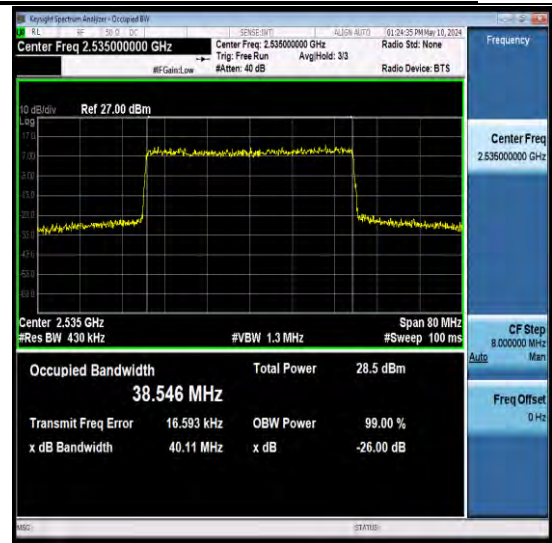
BUREAU
VERITAS

Reference No.: W7L-P23120020RF09



NTNV-N7-PC3-15-40-M-DFT-16QAM-Outer_Full-Ant1-

PASS



NTNV-N7-PC3-15-40-M-DFT-64QAM-Outer_Full-Ant1-

PASS



NTNV-N7-PC3-15-40-M-DFT-256QAM-Outer_Full-Ant1-

PASS

/

/

BV 7Layers Communications Technology
(Shenzhen) Co., Ltd

Room B37, Warehouse A5, No.3 Chiwan 4th Road,
Zhaoshang Street, Nanshan District Shenzhen,
Guangdong, People's Republic of China

Tel: +86 755 8869 6566
Fax: +86 755 8869 6577
Email: customerservice.sw@bureauveritas.com

**Band Edge for SA****Test Result**

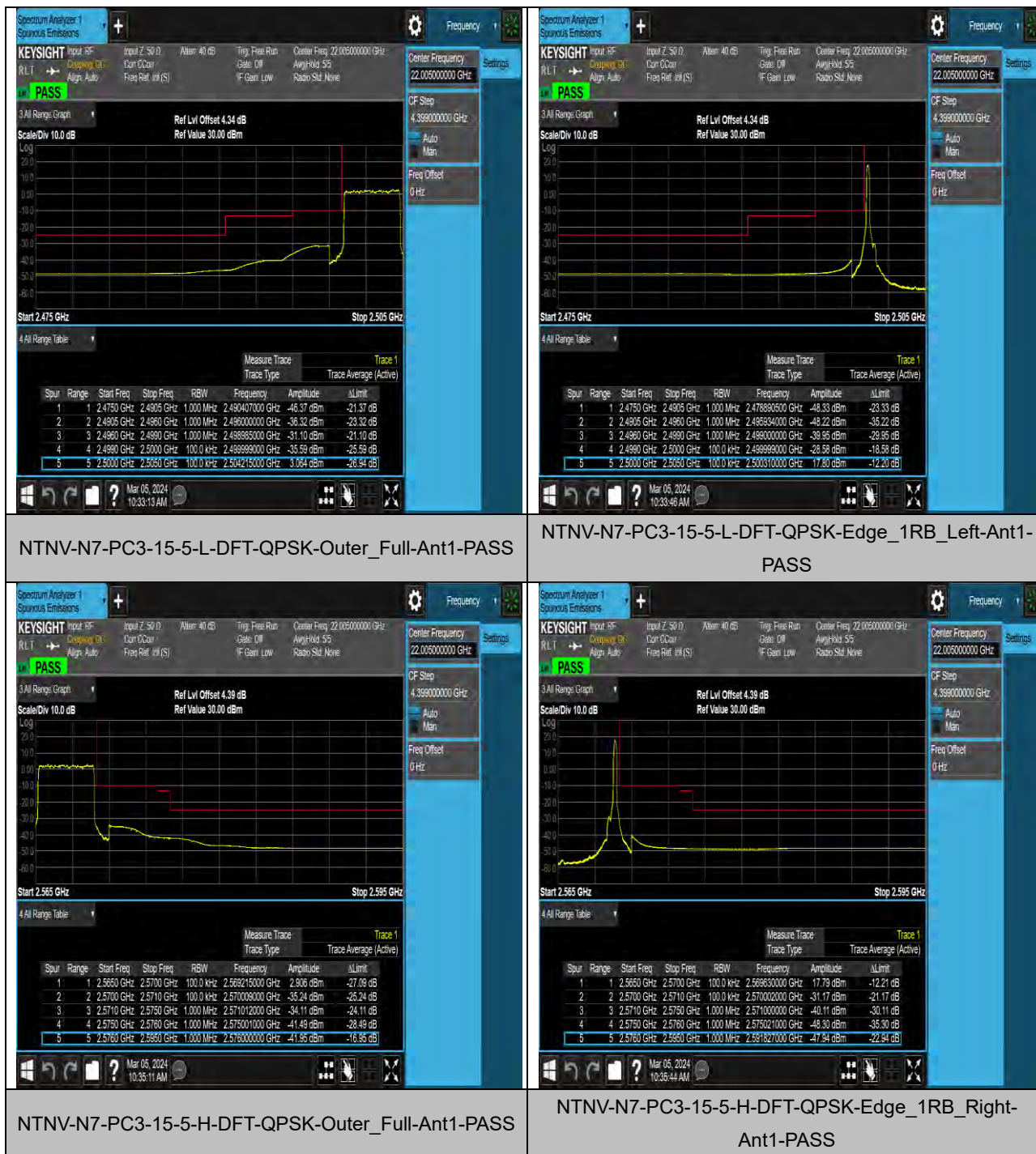
Band	SCS	Bandwidth	Modulation	Channel	RB Config	Result	Verdict
N7	15	5	DFT-QPSK	L	Outer_Full	-31.10	PASS
N7	15	5	DFT-QPSK	L	Edge_1RB_Left	-28.58	PASS
N7	15	5	DFT-QPSK	H	Outer_Full	-41.95	PASS
N7	15	5	DFT-QPSK	H	Edge_1RB_Right	-31.17	PASS
N7	15	25	DFT-QPSK	L	Outer_Full	-40.89	PASS
N7	15	25	DFT-QPSK	L	Edge_1RB_Left	-48.28	PASS
N7	15	25	DFT-QPSK	H	Outer_Full	-47.43	PASS
N7	15	25	DFT-QPSK	H	Edge_1RB_Right	-47.95	PASS
N7	15	40	DFT-QPSK	L	Outer_Full	-9.93	SeeBelow
N7	15	40	DFT-QPSK	L	Outer_Full	-28.72	PASS
N7	15	40	DFT-QPSK	L	Edge_1RB_Left	-25.76	PASS
N7	15	40	DFT-QPSK	H	Edge_1RB_Right	-48.78	PASS
N7	15	40	DFT-QPSK	H	Outer_Full	-10.80	PASS



BUREAU
VERITAS

Reference No.: W7L-P23120020RF09

Test Graphs



BV 7Layers Communications Technology
(Shenzhen) Co., Ltd

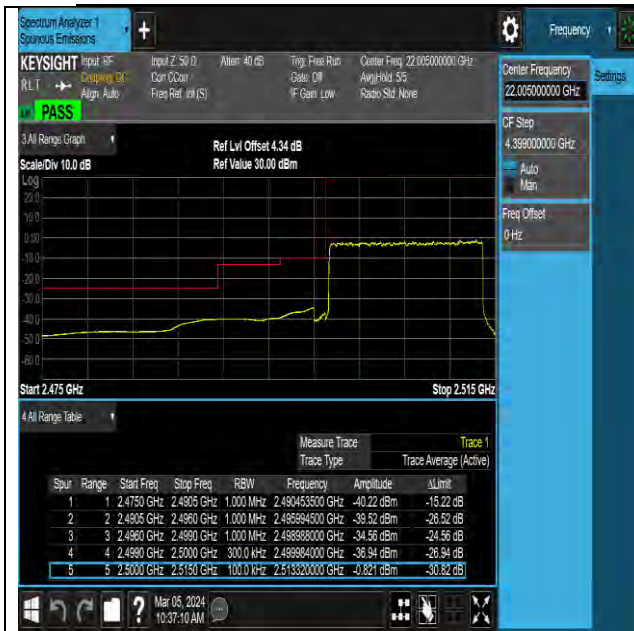
Room B37, Warehouse A5, No.3 Chiwan 4th Road,
Zhaoshang Street, Nanshan District Shenzhen,
Guangdong, People's Republic of China

Tel: +86 755 8869 6566
Fax: +86 755 8869 6577
Email: customerservice.sw@bureauveritas.com

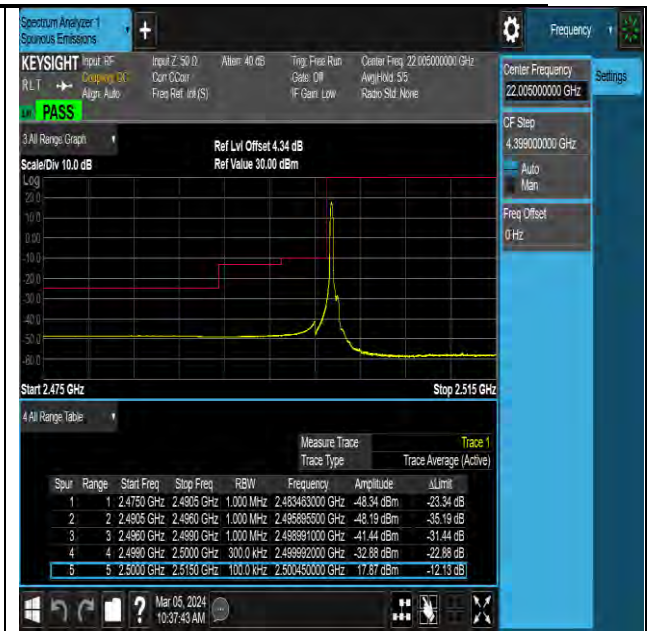


BUREAU
VERITAS

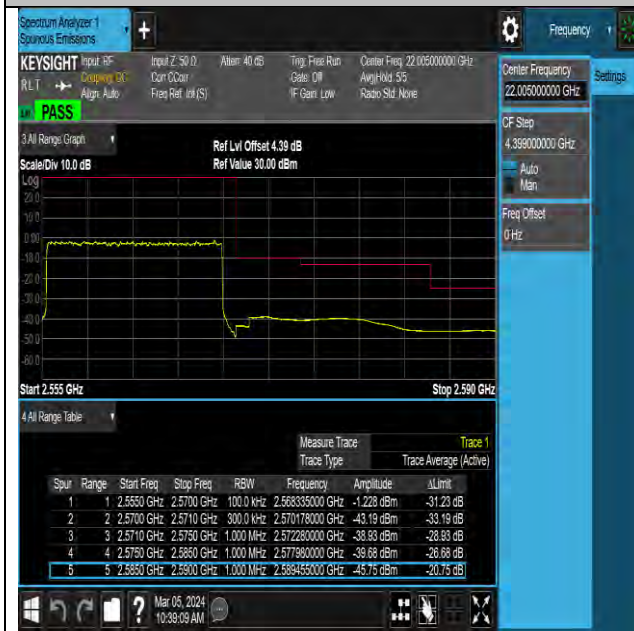
Reference No.: W7L-P23120020RF09



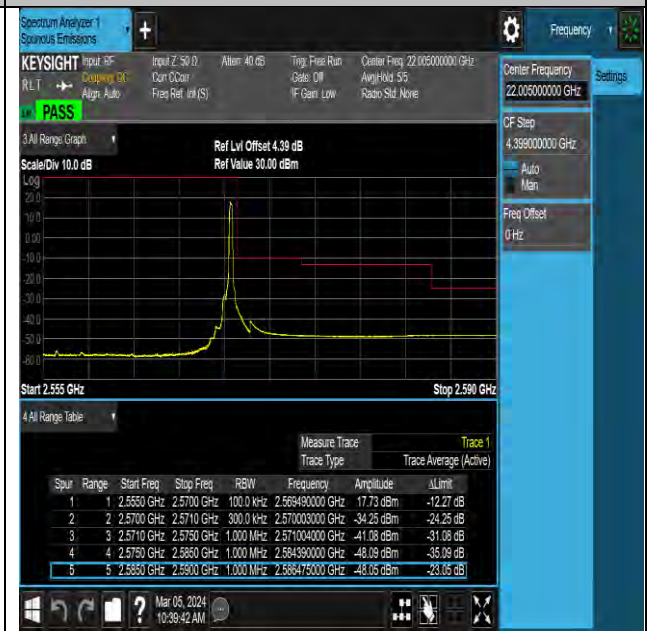
NTNV-N7-PC3-15-15-L-DFT-QPSK-Outer_Full-Ant1-
PASS



NTNV-N7-PC3-15-15-L-DFT-QPSK-Edge_1RB_Left-
Ant1-PASS



NTNV-N7-PC3-15-15-H-DFT-QPSK-Outer_Full-Ant1-
PASS

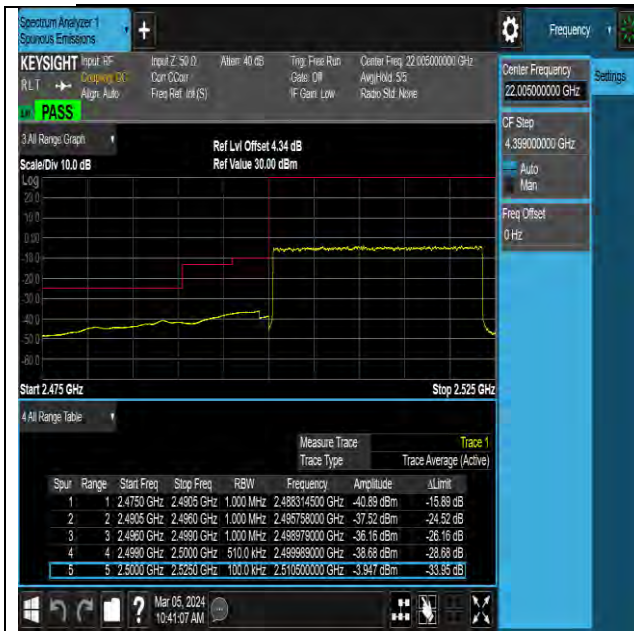


NTNV-N7-PC3-15-15-H-DFT-QPSK-Edge_1RB_Right-
Ant1-PASS

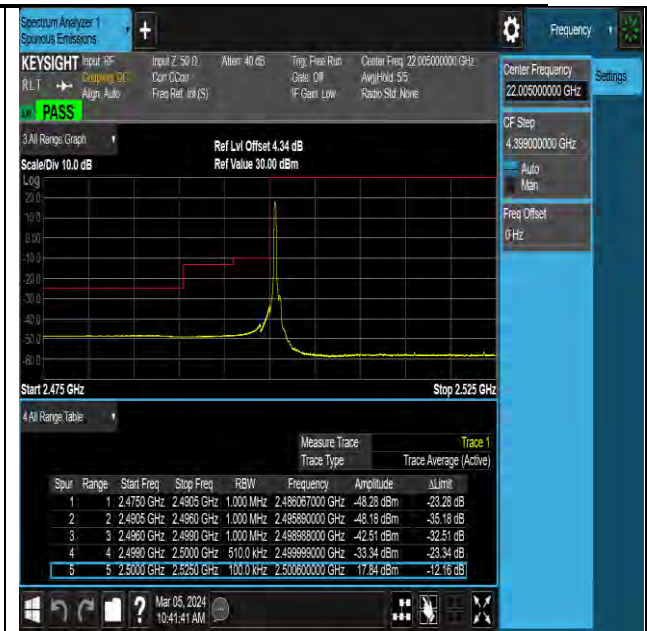


BUREAU
VERITAS

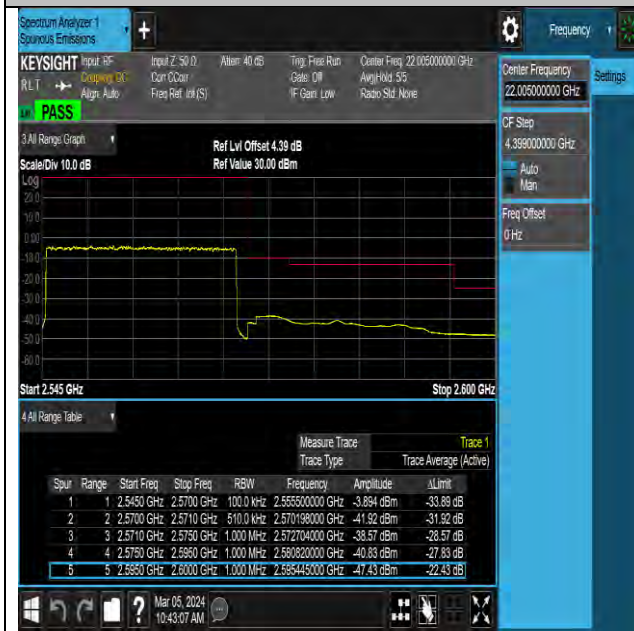
Reference No.: W7L-P23120020RF09



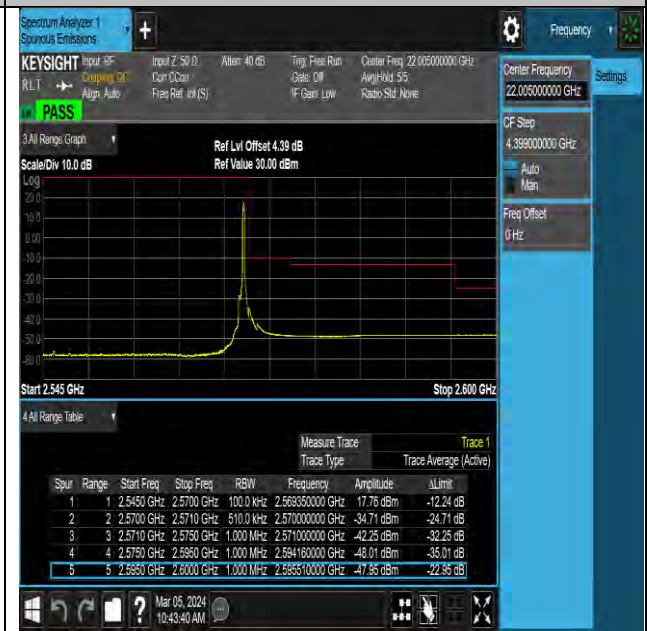
NTNV-N7-PC3-15-25-L-DFT-QPSK-Outter_Full-Ant1-
PASS



NTNV-N7-PC3-15-25-L-DFT-QPSK-Edge_1RB_Left-
Ant1-PASS



NTNV-N7-PC3-15-25-H-DFT-QPSK-Outter_Full-Ant1-
PASS

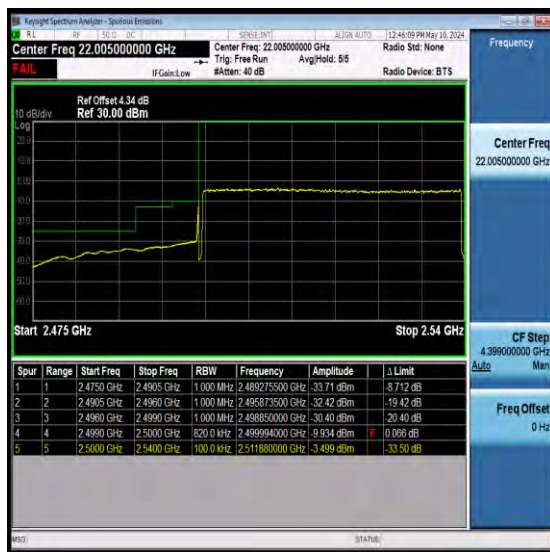


NTNV-N7-PC3-15-25-H-DFT-QPSK-Edge_1RB_Right-
Ant1-PASS

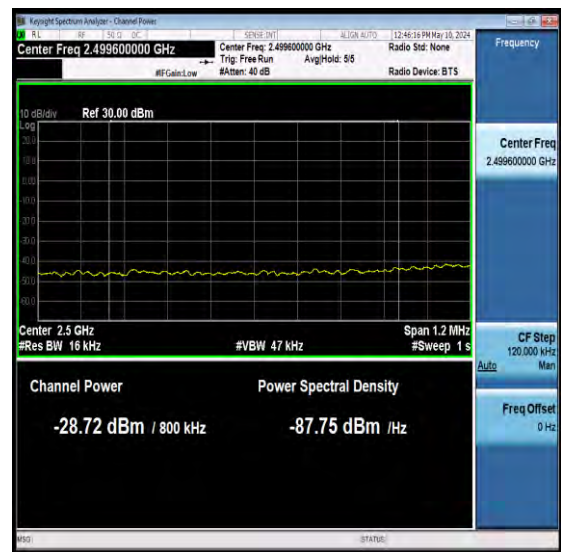


BUREAU
VERITAS

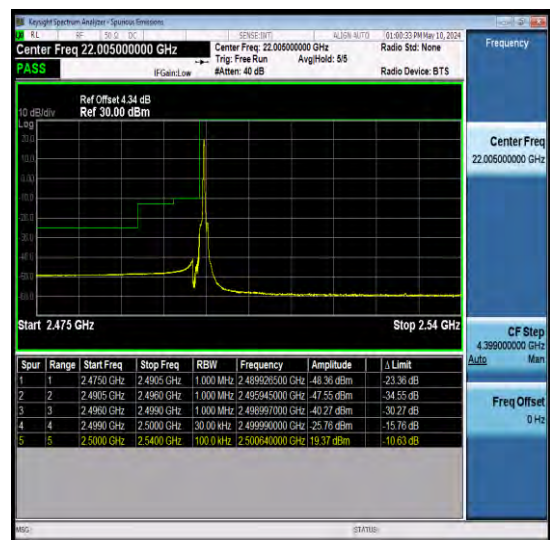
Reference No.: W7L-P23120020RF09



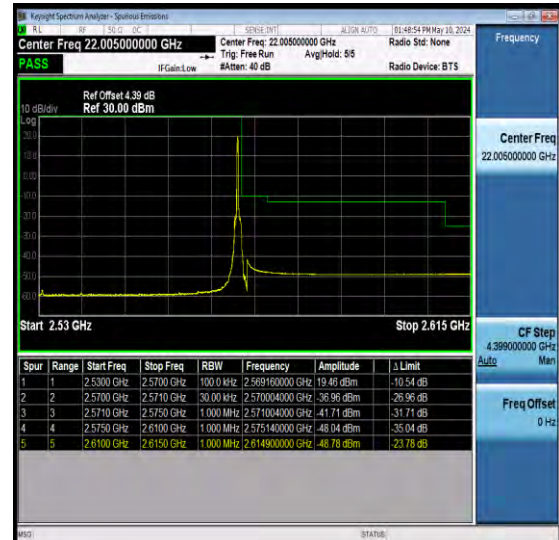
NTNV-N7-PC3-15-40-L-DFT-QPSK-Outter_Full-Ant1-FAIL



NTNV-N7-PC3-15-40-L-DFT-QPSK-Outter_Full-Ant1-PASS



NTNV-N7-PC3-15-40-L-DFT-QPSK-Edge_1RB_Left-Ant1-PASS



NTNV-N7-PC3-15-40-H-DFT-QPSK-Edge_1RB_Right-Ant1-PASS

BV 7Layers Communications Technology
(Shenzhen) Co., Ltd

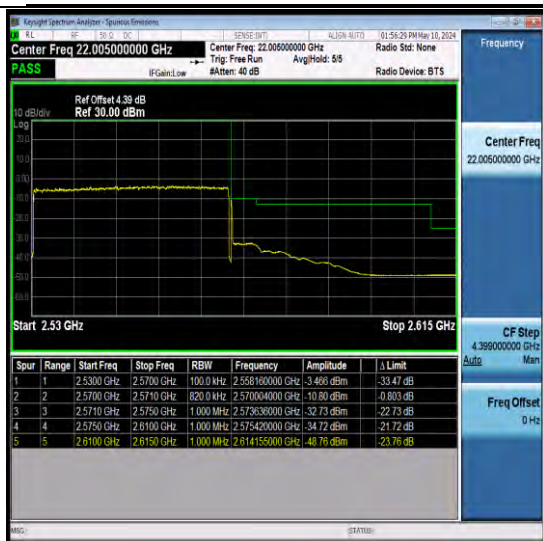
Room B37, Warehouse A5, No.3 Chiwan 4th Road,
Zhaoshang Street, Nanshan District Shenzhen,
Guangdong, People's Republic of China

Tel: +86 755 8869 6566
Fax: +86 755 8869 6577
Email: customerservice.sw@bureauveritas.com



BUREAU
VERITAS

Reference No.: W7L-P23120020RF09



NTNV-N7-PC3-15-40-H-DFT-QPSK-Outer_Full-Ant1-
PASS



Reference No.: W7L-P23120020RF09

Conducted Spurious Emission for SA

Test Result

Band	SCS	Bandwidth	Modulation	Channel	RB Config	StartFreq	StopFreq	Result	Limit	Verdict
N7	15	5	DFT-QPSK	L	Edge_1RB_Left	30	1000	-47.67	-25	PASS
N7	15	5	DFT-QPSK	L	Edge_1RB_Left	1000	27000	-31.93	-25	PASS
N7	15	5	DFT-QPSK	M	Edge_1RB_Left	30	1000	-48.22	-25	PASS
N7	15	5	DFT-QPSK	M	Edge_1RB_Left	1000	27000	-32.26	-25	PASS
N7	15	5	DFT-QPSK	H	Edge_1RB_Left	30	1000	-48.28	-25	PASS
N7	15	5	DFT-QPSK	H	Edge_1RB_Left	1000	27000	-32.16	-25	PASS
N7	15	25	DFT-QPSK	L	Edge_1RB_Left	30	1000	-48.40	-25	PASS
N7	15	25	DFT-QPSK	L	Edge_1RB_Left	1000	27000	-32.28	-25	PASS
N7	15	25	DFT-QPSK	M	Edge_1RB_Left	30	1000	-44.02	-25	PASS
N7	15	25	DFT-QPSK	M	Edge_1RB_Left	1000	27000	-32.24	-25	PASS
N7	15	25	DFT-QPSK	H	Edge_1RB_Left	30	1000	-48.32	-25	PASS
N7	15	25	DFT-QPSK	H	Edge_1RB_Left	1000	27000	-32.21	-25	PASS
N7	15	40	DFT-QPSK	L	Edge_1RB_Left	30	1000	-48.30	-25	PASS
N7	15	40	DFT-QPSK	L	Edge_1RB_Left	1000	27000	-32.19	-25	PASS
N7	15	40	DFT-QPSK	M	Edge_1RB_Left	30	1000	-48.36	-25	PASS
N7	15	40	DFT-QPSK	M	Edge_1RB_Left	1000	27000	-28.14	-25	PASS
N7	15	40	DFT-QPSK	H	Edge_1RB_Left	30	1000	-47.78	-25	PASS
N7	15	40	DFT-QPSK	H	Edge_1RB_Left	1000	27000	-32.14	-25	PASS



BUREAU
VERITAS

Reference No.: W7L-P23120020RF09

Test Graphs



NTNV-N7-PC3-15-5-L-DFT-QPSK-Edge_1RB_Left-Ant1-
PASS



NTNV-N7-PC3-15-5-L-DFT-QPSK-Edge_1RB_Left-Ant1-
PASS



NTNV-N7-PC3-15-5-M-DFT-QPSK-Edge_1RB_Left-Ant1-
PASS



NTNV-N7-PC3-15-5-M-DFT-QPSK-Edge_1RB_Left-
Ant1-PASS

BV 7Layers Communications Technology
(Shenzhen) Co., Ltd

Room B37, Warehouse A5, No.3 Chiwan 4th Road,
Zhaoshang Street, Nanshan District Shenzhen,
Guangdong, People's Republic of China

Tel: +86 755 8869 6566
Fax: +86 755 8869 6577
Email: customerservice.sw@bureauveritas.com



BUREAU
VERITAS

Reference No.: W7L-P23120020RF09



NTNV-N7-PC3-15-5-H-DFT-QPSK-Edge_1RB_Left-Ant1-
PASS



NTNV-N7-PC3-15-5-H-DFT-QPSK-Edge_1RB_Left-Ant1-
PASS



NTNV-N7-PC3-15-25-L-DFT-QPSK-Edge_1RB_Left-Ant1-
PASS



NTNV-N7-PC3-15-25-L-DFT-QPSK-Edge_1RB_Left-
Ant1-PASS

BV 7Layers Communications Technology
(Shenzhen) Co., Ltd

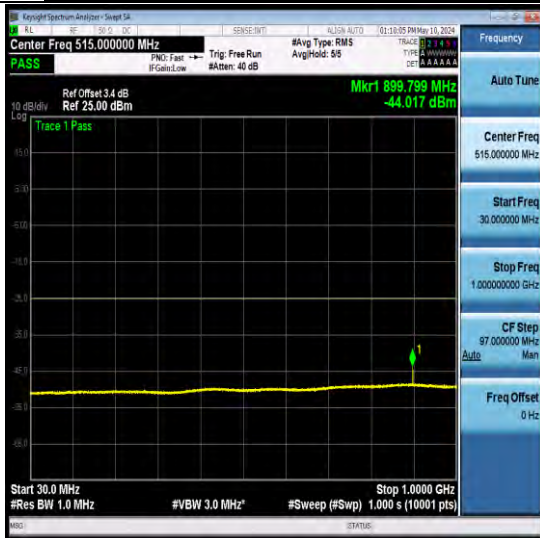
Room B37, Warehouse A5, No.3 Chiwan 4th Road,
Zhaoshang Street, Nanshan District Shenzhen,
Guangdong, People's Republic of China
Page 23 of 293

Tel: +86 755 8869 6566
Fax: +86 755 8869 6577
Email: customerservice.sw@bureauveritas.com

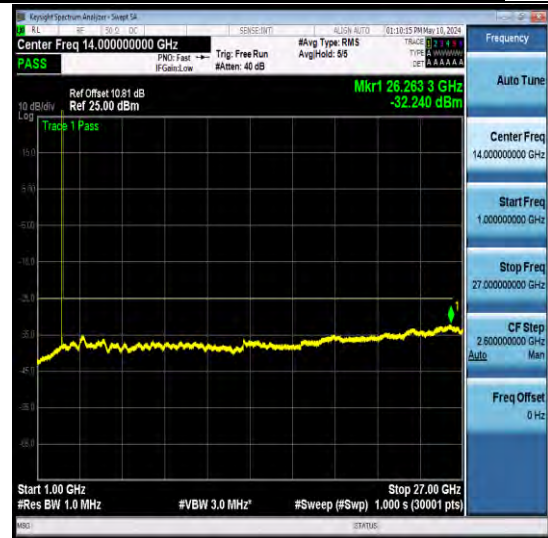


BUREAU
VERITAS

Reference No.: W7L-P23120020RF09



NTNV-N7-PC3-15-25-M-DFT-QPSK-Edge_1RB_Left-Ant1-
PASS



NTNV-N7-PC3-15-25-M-DFT-QPSK-Edge_1RB_Left-
Ant1-PASS



NTNV-N7-PC3-15-25-H-DFT-QPSK-Edge_1RB_Left-Ant1-
PASS



NTNV-N7-PC3-15-25-H-DFT-QPSK-Edge_1RB_Left-
Ant1-PASS

BV 7Layers Communications Technology
(Shenzhen) Co., Ltd

Room B37, Warehouse A5, No.3 Chiwan 4th Road,
Zhaoshang Street, Nanshan District Shenzhen,
Guangdong, People's Republic of China
Page 24 of 293

Tel: +86 755 8869 6566
Fax: +86 755 8869 6577
Email: customerservice.sw@bureauveritas.com



BUREAU
VERITAS

Reference No.: W7L-P23120020RF09



NTNV-N7-PC3-15-40-L-DFT-QPSK-Edge_1RB_Left-Ant1-
PASS



NTNV-N7-PC3-15-40-L-DFT-QPSK-Edge_1RB_Left-
Ant1-PASS



NTNV-N7-PC3-15-40-M-DFT-QPSK-Edge_1RB_Left-Ant1-
PASS



NTNV-N7-PC3-15-40-M-DFT-QPSK-Edge_1RB_Left-
Ant1-PASS



BUREAU
VERITAS

Reference No.: W7L-P23120020RF09



NTNV-N7-PC3-15-40-H-DFT-QPSK-Edge_1RB_Left-Ant1-
PASS



NTNV-N7-PC3-15-40-H-DFT-QPSK-Edge_1RB_Left-
Ant1-PASS

**FREQUENCY STABILITY FOR SA****TEST RESULT****Frequency Error VS. Voltage**

Voltage										
Band	SCS	Bandwidth	Modulation	Channel	RB Config	Voltage	Temperature	Deviation(Hz)	Deviation (ppm)	Verdict
N7	15	20	DFT-QPSK	L	Outer_Full	VL	NT	8.000000	0.003187	PASS
N7	15	20	DFT-QPSK	L	Outer_Full	VN	NT	1.000000	0.000398	PASS
N7	15	20	DFT-QPSK	L	Outer_Full	VH	NT	4.000000	0.001594	PASS
N7	15	20	DFT-QPSK	M	Outer_Full	VL	NT	6.000000	0.002367	PASS
N7	15	20	DFT-QPSK	M	Outer_Full	VN	NT	12.000000	0.004734	PASS
N7	15	20	DFT-QPSK	M	Outer_Full	VH	NT	14.000000	0.005523	PASS
N7	15	20	DFT-QPSK	H	Outer_Full	VL	NT	9.000000	0.003516	PASS
N7	15	20	DFT-QPSK	H	Outer_Full	VN	NT	3.000000	0.001172	PASS
N7	15	20	DFT-QPSK	H	Outer_Full	VH	NT	9.000000	0.003516	PASS

Frequency Error VS. Temperature

Voltage										
Band	SCS	Bandwidth	Modulation	Channel	RB Config	Voltage	Temperature	Deviation(Hz)	Deviation (ppm)	Verdict
N7	15	20	DFT-QPSK	L	Outer_Full	NV	-30	16.000000	0.006375	PASS
N7	15	20	DFT-QPSK	L	Outer_Full	NV	-20	10.000000	0.003984	PASS
N7	15	20	DFT-QPSK	L	Outer_Full	NV	-10	13.000000	0.005179	PASS
N7	15	20	DFT-QPSK	L	Outer_Full	NV	0	13.000000	0.005179	PASS
N7	15	20	DFT-QPSK	L	Outer_Full	NV	10	16.000000	0.006375	PASS
N7	15	20	DFT-QPSK	L	Outer_Full	NV	20	9.000000	0.003586	PASS
N7	15	20	DFT-QPSK	L	Outer_Full	NV	30	19.000000	0.007570	PASS
N7	15	20	DFT-QPSK	L	Outer_Full	NV	40	5.000000	0.001992	PASS
N7	15	20	DFT-QPSK	L	Outer_Full	NV	50	3.000000	0.001195	PASS
N7	15	20	DFT-QPSK	M	Outer_Full	NV	-30	8.000000	0.003156	PASS
N7	15	20	DFT-QPSK	M	Outer_Full	NV	-20	1.000000	0.000394	PASS
N7	15	20	DFT-QPSK	M	Outer_Full	NV	-10	4.000000	0.001578	PASS
N7	15	20	DFT-QPSK	M	Outer_Full	NV	0	17.000000	0.006706	PASS
N7	15	20	DFT-QPSK	M	Outer_Full	NV	10	10.000000	0.003945	PASS



Reference No.: W7L-P23120020RF09

N7	15	20	DFT-QPSK	M	Outer_Full	NV	20	13.000000	0.005128	PASS
N7	15	20	DFT-QPSK	M	Outer_Full	NV	30	3.000000	0.001183	PASS
N7	15	20	DFT-QPSK	M	Outer_Full	NV	40	16.000000	0.006312	PASS
N7	15	20	DFT-QPSK	M	Outer_Full	NV	50	6.000000	0.002367	PASS
N7	15	20	DFT-QPSK	H	Outer_Full	NV	-30	14.000000	0.005469	PASS
N7	15	20	DFT-QPSK	H	Outer_Full	NV	-20	17.000000	0.006641	PASS
N7	15	20	DFT-QPSK	H	Outer_Full	NV	-10	18.000000	0.007031	PASS
N7	15	20	DFT-QPSK	H	Outer_Full	NV	0	1.000000	0.000391	PASS
N7	15	20	DFT-QPSK	H	Outer_Full	NV	10	7.000000	0.002734	PASS
N7	15	20	DFT-QPSK	H	Outer_Full	NV	20	1.000000	0.000391	PASS
N7	15	20	DFT-QPSK	H	Outer_Full	NV	30	13.000000	0.005078	PASS
N7	15	20	DFT-QPSK	H	Outer_Full	NV	40	16.000000	0.006250	PASS
N7	15	20	DFT-QPSK	H	Outer_Full	NV	50	9.000000	0.003516	PASS

**N12****Peak-to-Average Ratio(CCDF)****Test Result**

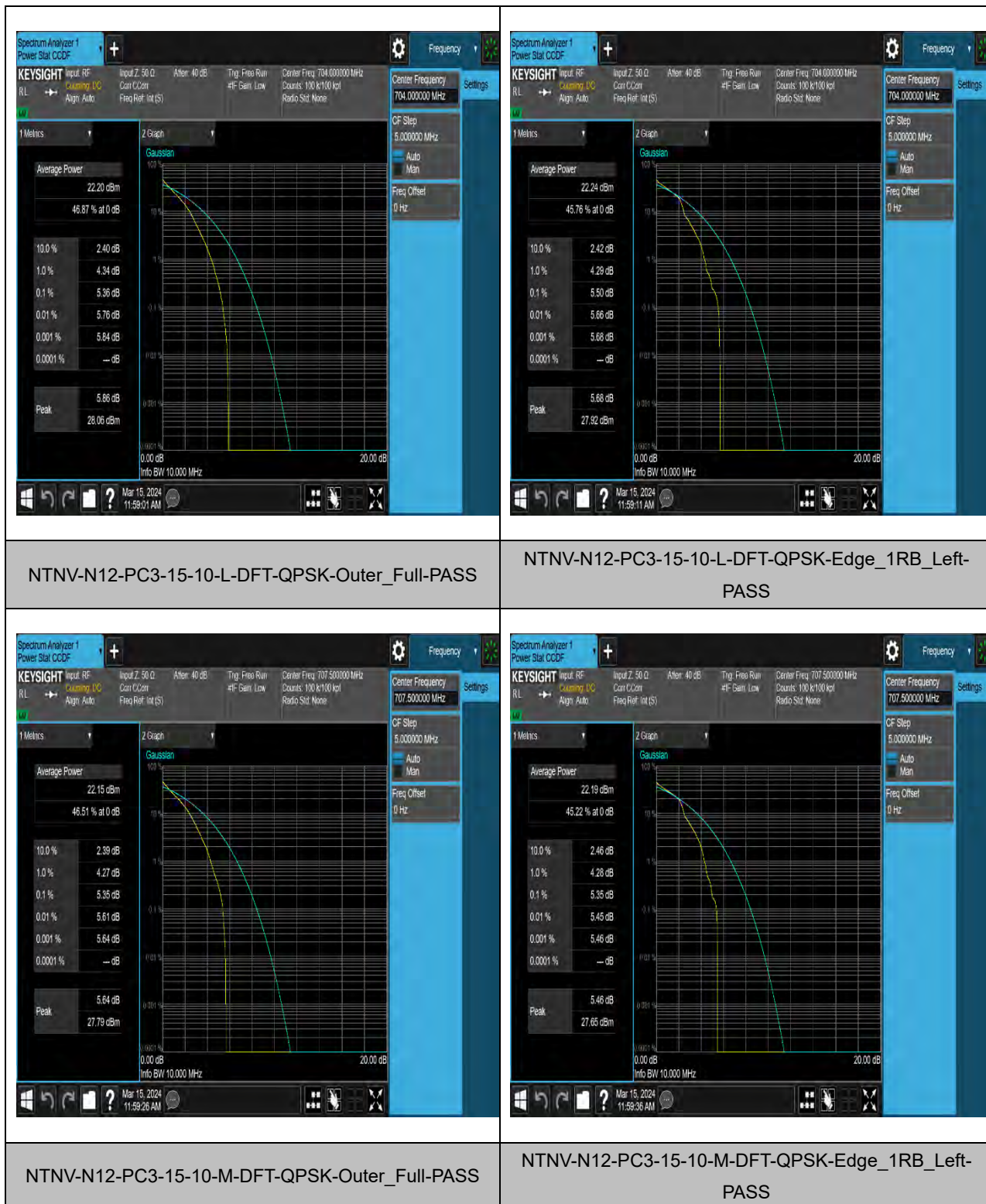
Band	SCS	Bandwidth	Modulation	Channel	RB Config	Result	Limit	Verdict
N12	15	10	DFT-QPSK	L	Outer_Full	5.36	≤13	PASS
N12	15	10	DFT-QPSK	L	Edge_1RB_Left	5.50	≤13	PASS
N12	15	10	DFT-QPSK	M	Outer_Full	5.35	≤13	PASS
N12	15	10	DFT-QPSK	M	Edge_1RB_Left	5.35	≤13	PASS
N12	15	10	DFT-QPSK	H	Outer_Full	5.45	≤13	PASS
N12	15	10	DFT-QPSK	H	Edge_1RB_Left	5.00	≤13	PASS



BUREAU
VERITAS

Reference No.: W7L-P23120020RF09

Test Graphs



BV 7Layers Communications Technology
(Shenzhen) Co., Ltd

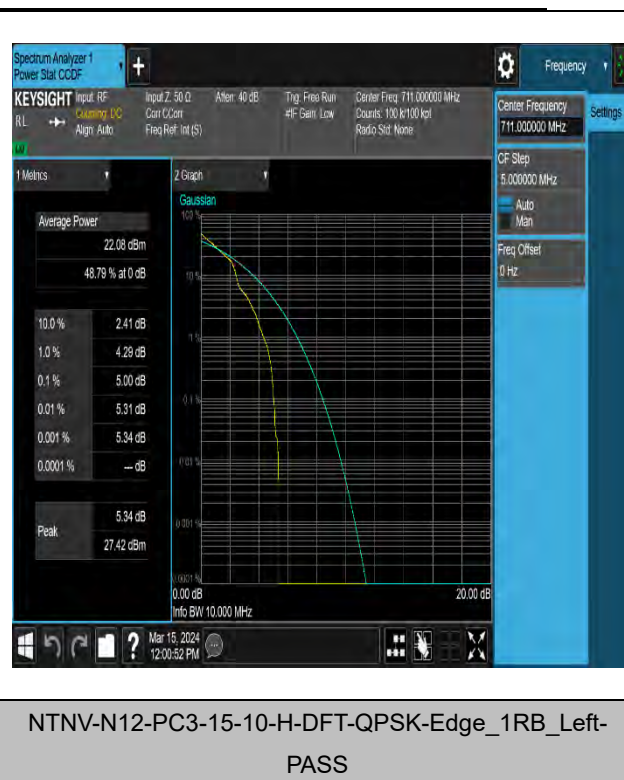
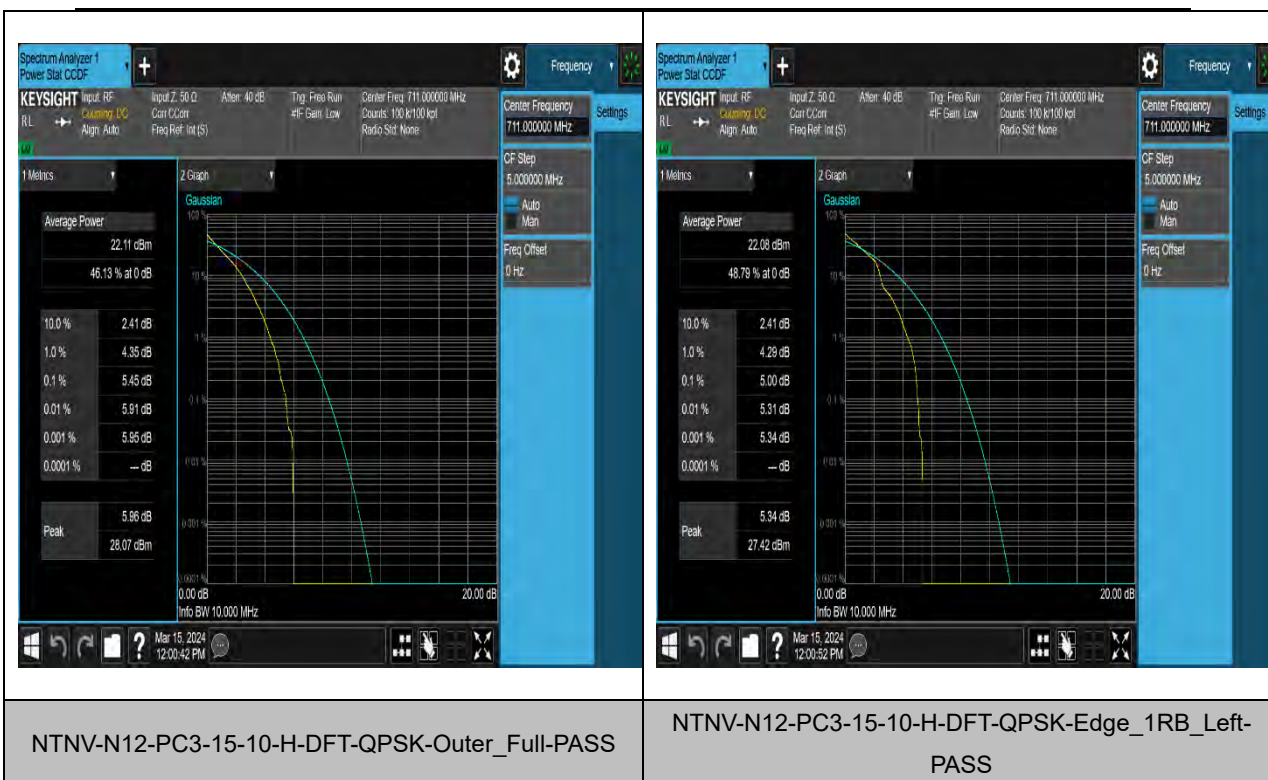
Room B37, Warehouse A5, No.3 Chiwan 4th Road,
Zhaoshang Street, Nanshan District Shenzhen,
Guangdong, People's Republic of China

Tel: +86 755 8869 6566
Fax: +86 755 8869 6577
Email: customerservice.sw@bureauveritas.com



BUREAU
VERITAS

Reference No.: W7L-P23120020RF09



26dB Bandwidth and Occupied Bandwidth for SA

Test Result

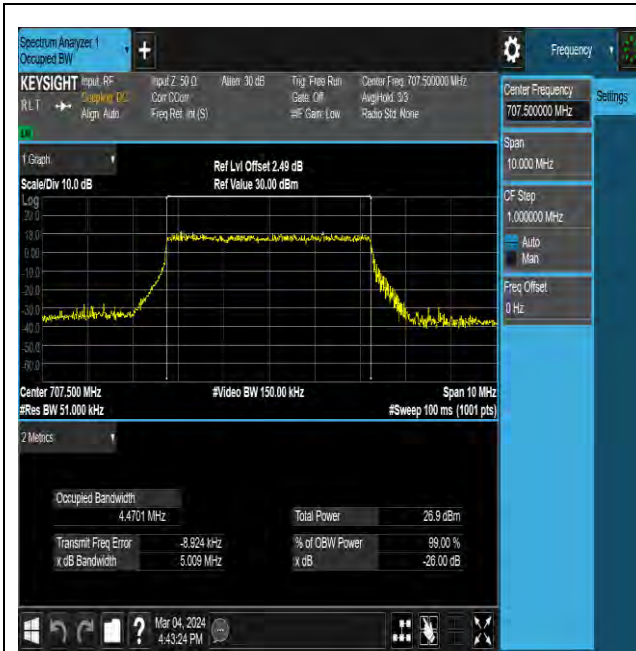
Band	SCS	Bandwidth	Modulation	Channel	RB Config	Result (99%)	Result (26dB)	Verdict
N12	15	5	DFT-256QAM	M	Outer_Full	4.4701	5.009	PASS
N12	15	5	DFT-PI2BPSK	M	Outer_Full	4.4870	4.896	PASS
N12	15	5	DFT-QPSK	M	Outer_Full	4.4720	4.970	PASS
N12	15	5	DFT-16QAM	M	Outer_Full	4.4565	4.865	PASS
N12	15	5	DFT-64QAM	M	Outer_Full	4.4783	4.982	PASS
N12	15	10	DFT-PI2BPSK	M	Outer_Full	8.9013	9.673	PASS
N12	15	10	DFT-QPSK	M	Outer_Full	8.9098	9.627	PASS
N12	15	10	DFT-16QAM	M	Outer_Full	8.8988	9.560	PASS
N12	15	10	DFT-64QAM	M	Outer_Full	8.9118	9.621	PASS
N12	15	10	DFT-256QAM	M	Outer_Full	8.9047	9.456	PASS
N12	15	15	DFT-PI2BPSK	M	Outer_Full	13.394	14.28	PASS
N12	15	15	DFT-QPSK	M	Outer_Full	13.370	14.19	PASS
N12	15	15	DFT-16QAM	M	Outer_Full	13.397	14.26	PASS
N12	15	15	DFT-64QAM	M	Outer_Full	13.381	14.22	PASS
N12	15	15	DFT-256QAM	M	Outer_Full	13.396	14.18	PASS



BUREAU
VERITAS

Reference No.: W7L-P23120020RF09

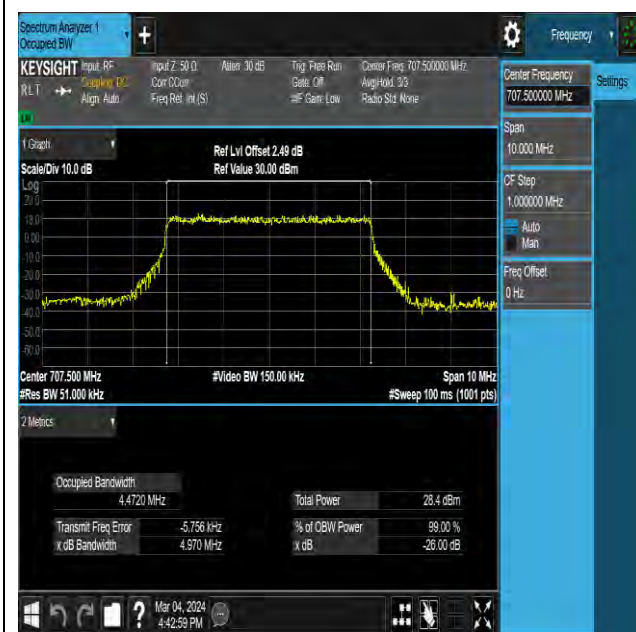
Test Graphs



NTNV-N12-PC3-15-5-M-DFT-256QAM-Outer_Full-Ant0-
PASS



NTNV-N12-PC3-15-5-M-DFT-PI2BPSK-Outer_Full-Ant0-
PASS



NTNV-N12-PC3-15-5-M-DFT-QPSK-Outer_Full-Ant0-
PASS

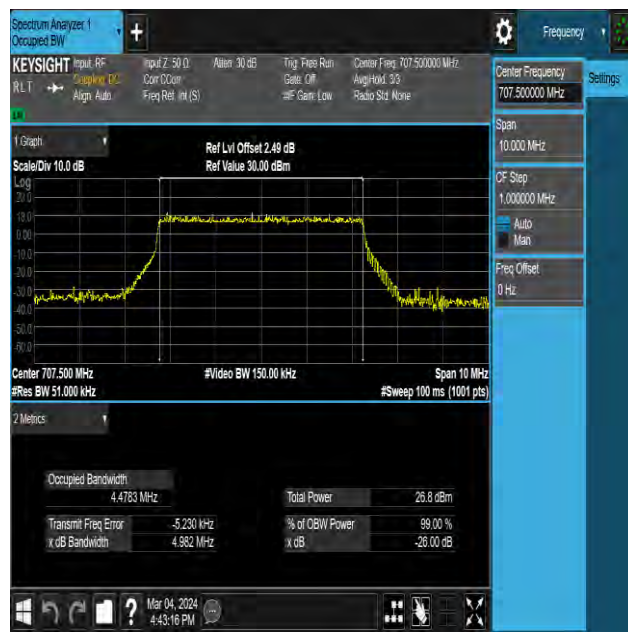


NTNV-N12-PC3-15-5-M-DFT-16QAM-Outer_Full-Ant0-
PASS



BUREAU
VERITAS

Reference No.: W7L-P23120020RF09



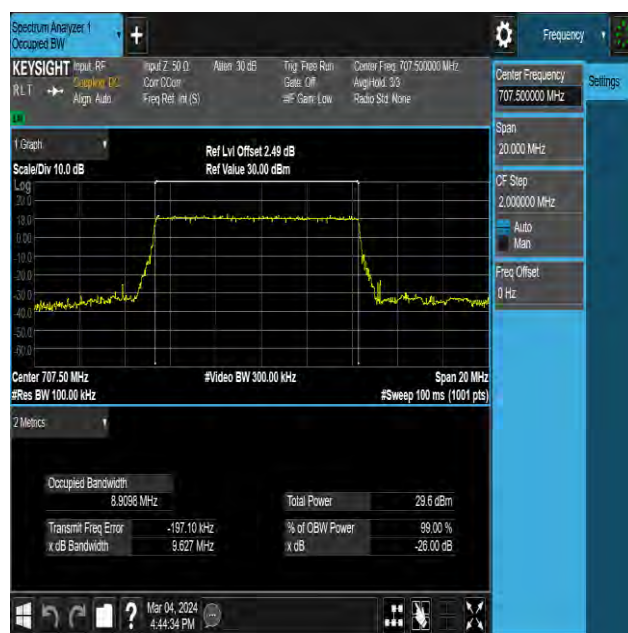
NTNV-N12-PC3-15-5-M-DFT-64QAM-Outer_Full-Ant0-

PASS



NTNV-N12-PC3-15-10-M-DFT-PI2BPSK-Outer_Full-Ant0-

PASS



NTNV-N12-PC3-15-10-M-DFT-QPSK-Outer_Full-Ant0-

PASS



NTNV-N12-PC3-15-10-M-DFT-16QAM-Outer_Full-Ant0-

PASS



BUREAU
VERITAS

Reference No.: W7L-P23120020RF09



NTNV-N12-PC3-15-10-M-DFT-64QAM-Outer_Full-Ant0-

PASS



NTNV-N12-PC3-15-10-M-DFT-256QAM-Outer_Full-Ant0-

PASS



NTNV-N12-PC3-15-15-M-DFT-PI2BPSK-Outer_Full-Ant0-

PASS



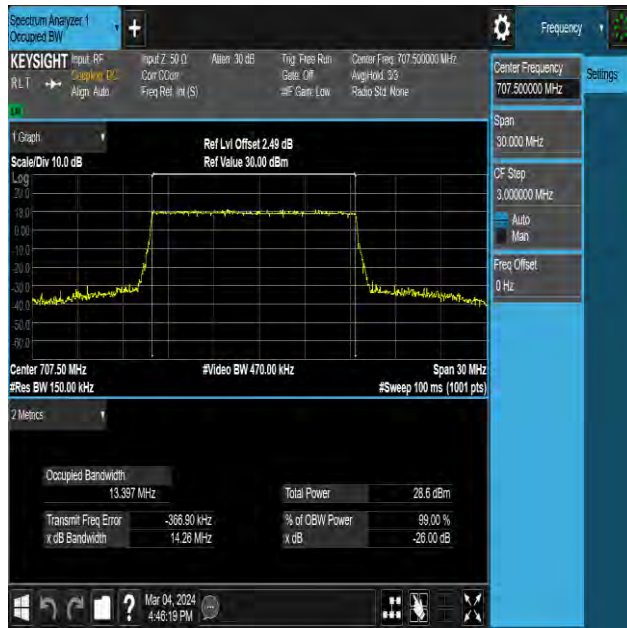
NTNV-N12-PC3-15-15-M-DFT-QPSK-Outer_Full-Ant0-

PASS



BUREAU
VERITAS

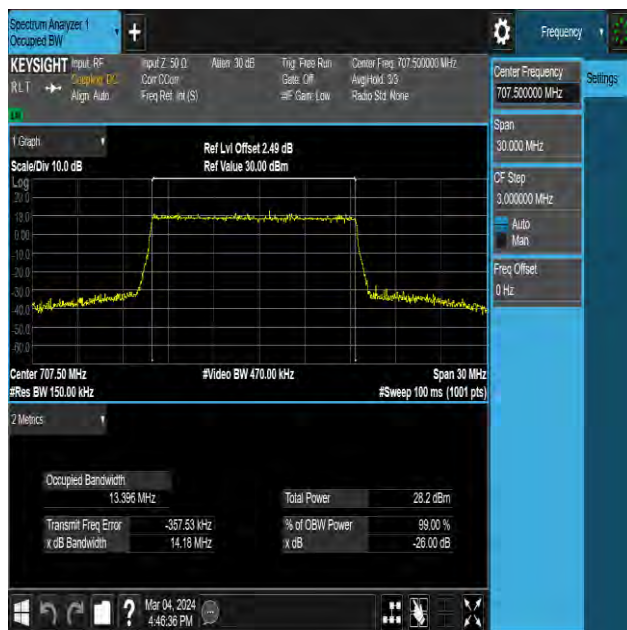
Reference No.: W7L-P23120020RF09



NTNV-N12-PC3-15-15-M-DFT-16QAM-Outer_Full-Ant0-
PASS



NTNV-N12-PC3-15-15-M-DFT-64QAM-Outer_Full-Ant0-
PASS



NTNV-N12-PC3-15-15-M-DFT-256QAM-Outer_Full-Ant0-
PASS

**Band Edge for SA****Test Result**

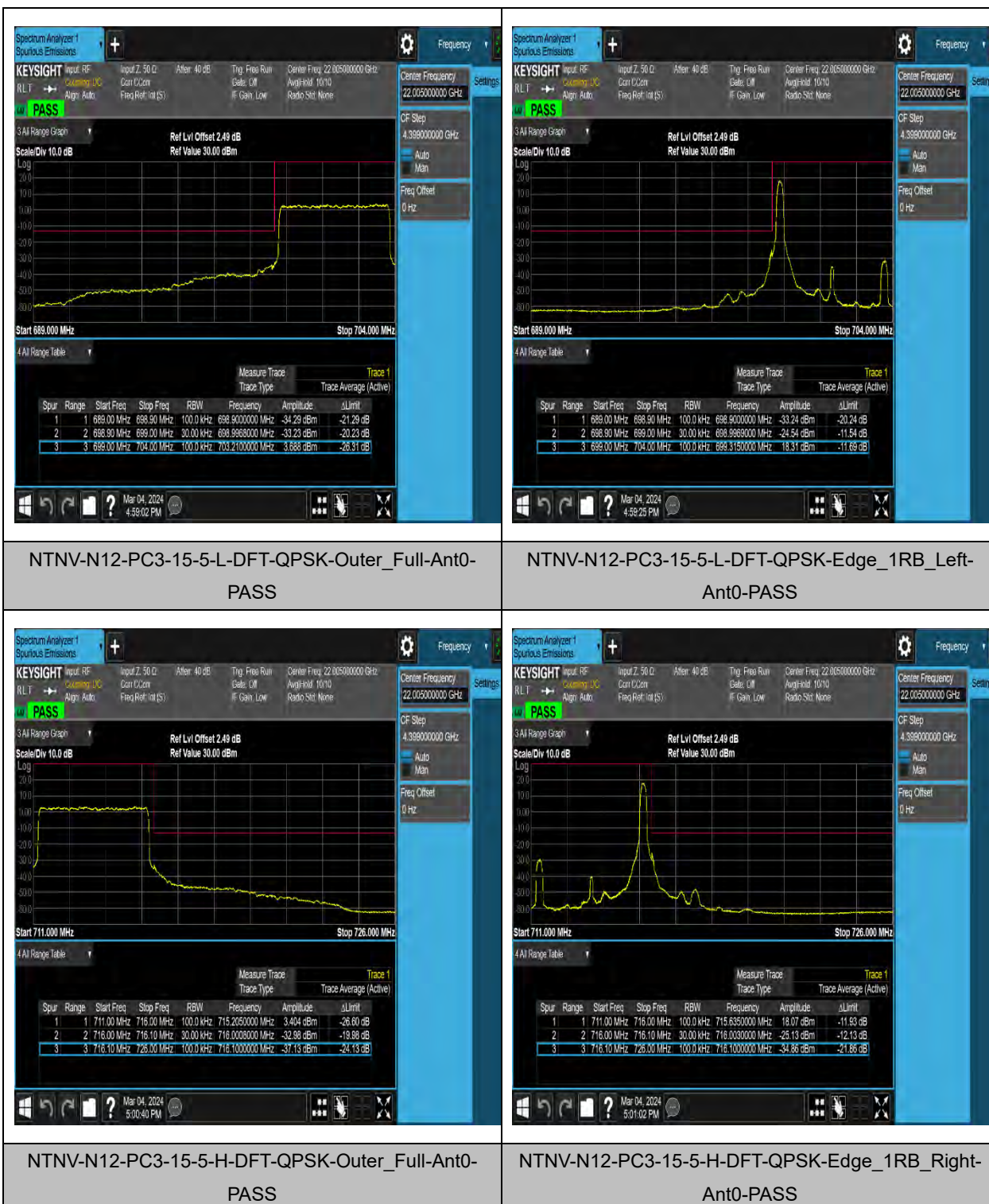
Band	SCS	Bandwidth	Modulation	Channel	RB Config	Result	Verdict
N12	15	5	DFT-QPSK	L	Outer_Full	-33.23	PASS
N12	15	5	DFT-QPSK	L	Edge_1RB_Left	-24.54	PASS
N12	15	5	DFT-QPSK	H	Outer_Full	-32.98	PASS
N12	15	5	DFT-QPSK	H	Edge_1RB_Right	-25.13	PASS
N12	15	10	DFT-QPSK	L	Outer_Full	-38.30	PASS
N12	15	10	DFT-QPSK	L	Edge_1RB_Left	-26.06	PASS
N12	15	10	DFT-QPSK	H	Outer_Full	-43.82	PASS
N12	15	10	DFT-QPSK	H	Edge_1RB_Right	-28.23	PASS
N12	15	15	DFT-QPSK	L	Outer_Full	-40.61	PASS
N12	15	15	DFT-QPSK	L	Edge_1RB_Left	-29.83	PASS
N12	15	15	DFT-QPSK	H	Outer_Full	-44.70	PASS
N12	15	15	DFT-QPSK	H	Edge_1RB_Right	-30.75	PASS



BUREAU
VERITAS

Reference No.: W7L-P23120020RF09

Test Graphs



BV 7Layers Communications Technology
(Shenzhen) Co., Ltd

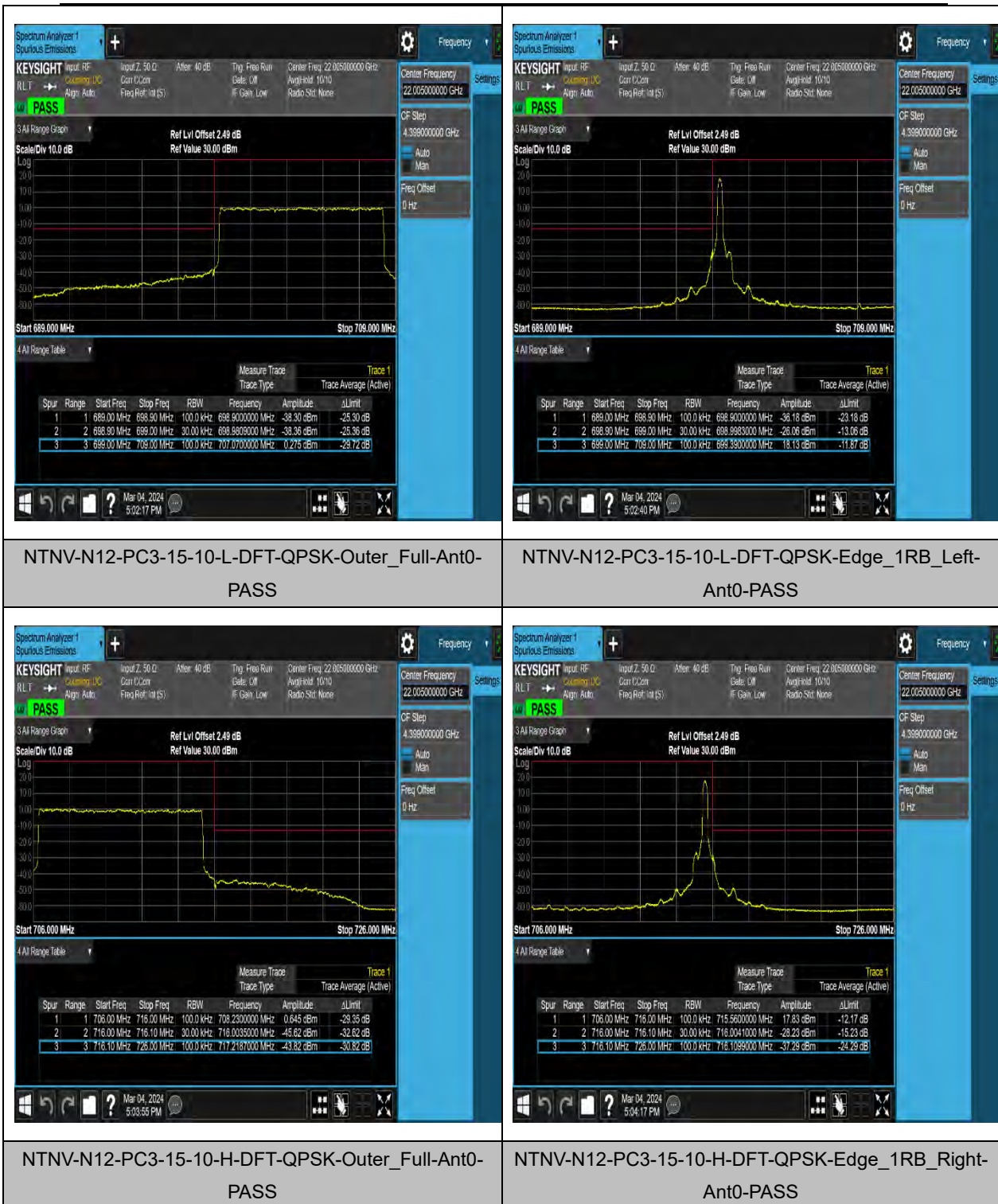
Room B37, Warehouse A5, No.3 Chiwan 4th Road,
Zhaoshang Street, Nanshan District Shenzhen,
Guangdong, People's Republic of China
Page 38 of 293

Tel: +86 755 8869 6566
Fax: +86 755 8869 6577
Email: customerservice.sw@bureauveritas.com



BUREAU
VERITAS

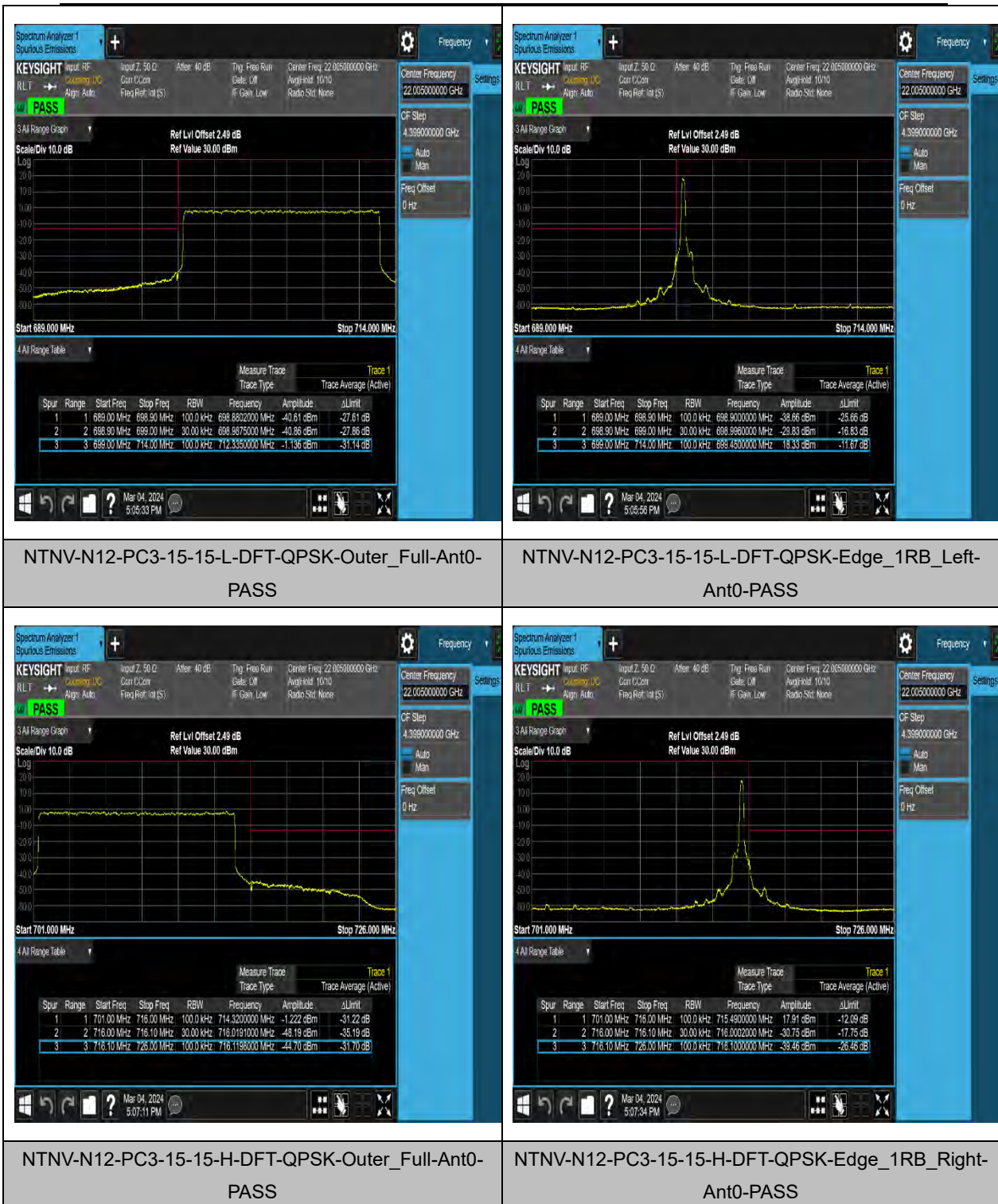
Reference No.: W7L-P23120020RF09





BUREAU
VERITAS

Reference No.: W7L-P23120020RF09





Reference No.: W7L-P23120020RF09

Conducted Spurious Emission for SA

Test Result

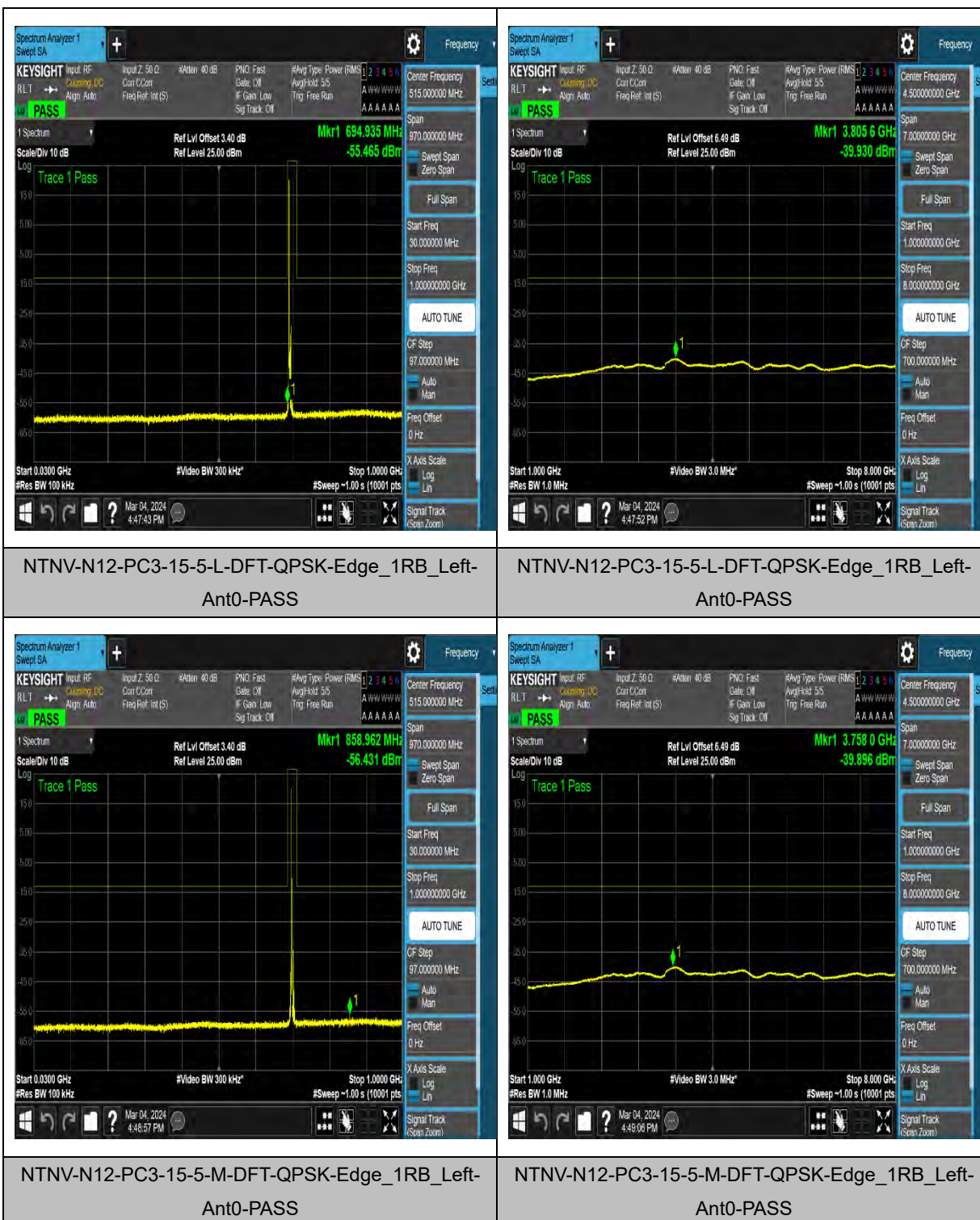
Band	SCS	Bandwidth	Modulation	Channel	RB Config	StartFreq	StopFreq	Result	Limit	Verdict
N12	15	5	DFT-QPSK	L	Edge_1RB_Left	30	1000	-55.47	-13	PASS
N12	15	5	DFT-QPSK	L	Edge_1RB_Left	1000	8000	-39.93	-13	PASS
N12	15	5	DFT-QPSK	M	Edge_1RB_Left	30	1000	-56.43	-13	PASS
N12	15	5	DFT-QPSK	M	Edge_1RB_Left	1000	8000	-39.90	-13	PASS
N12	15	5	DFT-QPSK	H	Edge_1RB_Left	30	1000	-56.88	-13	PASS
N12	15	5	DFT-QPSK	H	Edge_1RB_Left	1000	8000	-39.83	-13	PASS
N12	15	10	DFT-QPSK	L	Edge_1RB_Left	30	1000	-56.44	-13	PASS
N12	15	10	DFT-QPSK	L	Edge_1RB_Left	1000	8000	-39.98	-13	PASS
N12	15	10	DFT-QPSK	M	Edge_1RB_Left	30	1000	-56.91	-13	PASS
N12	15	10	DFT-QPSK	M	Edge_1RB_Left	1000	8000	-39.89	-13	PASS
N12	15	10	DFT-QPSK	H	Edge_1RB_Left	30	1000	-57.00	-13	PASS
N12	15	10	DFT-QPSK	H	Edge_1RB_Left	1000	8000	-39.93	-13	PASS
N12	15	15	DFT-QPSK	L	Edge_1RB_Left	30	1000	-56.27	-13	PASS
N12	15	15	DFT-QPSK	L	Edge_1RB_Left	1000	8000	-39.77	-13	PASS
N12	15	15	DFT-QPSK	M	Edge_1RB_Left	30	1000	-57.05	-13	PASS
N12	15	15	DFT-QPSK	M	Edge_1RB_Left	1000	8000	-39.81	-13	PASS
N12	15	15	DFT-QPSK	H	Edge_1RB_Left	30	1000	-56.93	-13	PASS
N12	15	15	DFT-QPSK	H	Edge_1RB_Left	1000	8000	-39.94	-13	PASS



BUREAU
VERITAS

Reference No.: W7L-P23120020RF09

Test Graphs





BUREAU
VERITAS

Reference No.: W7L-P23120020RF09



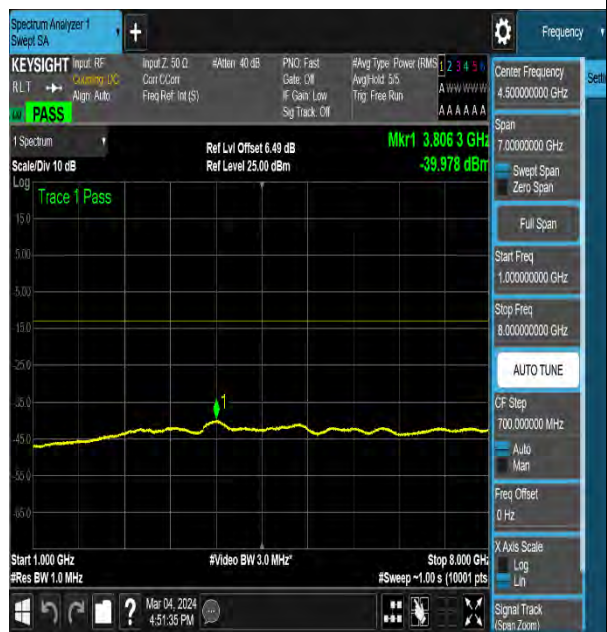
NTNV-N12-PC3-15-5-H-DFT-QPSK-Edge_1RB_Left-
Ant0-PASS



NTNV-N12-PC3-15-5-H-DFT-QPSK-Edge_1RB_Left-
Ant0-PASS



NTNV-N12-PC3-15-10-L-DFT-QPSK-Edge_1RB_Left-
Ant0-PASS

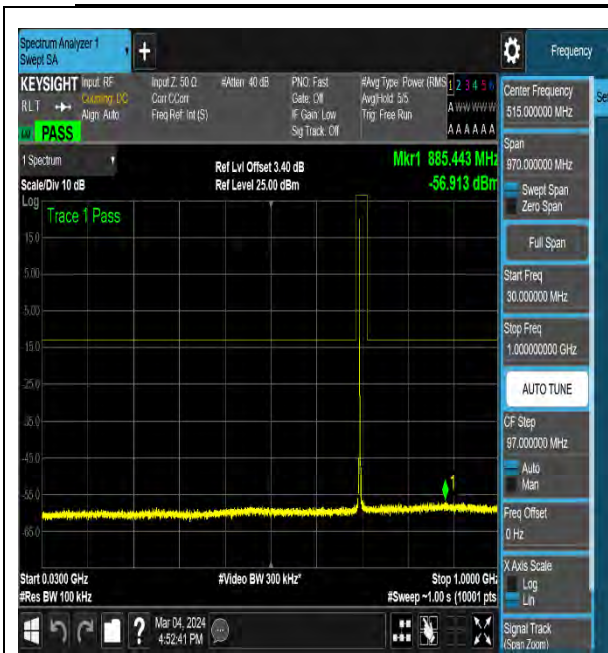


NTNV-N12-PC3-15-10-L-DFT-QPSK-Edge_1RB_Left-
Ant0-PASS

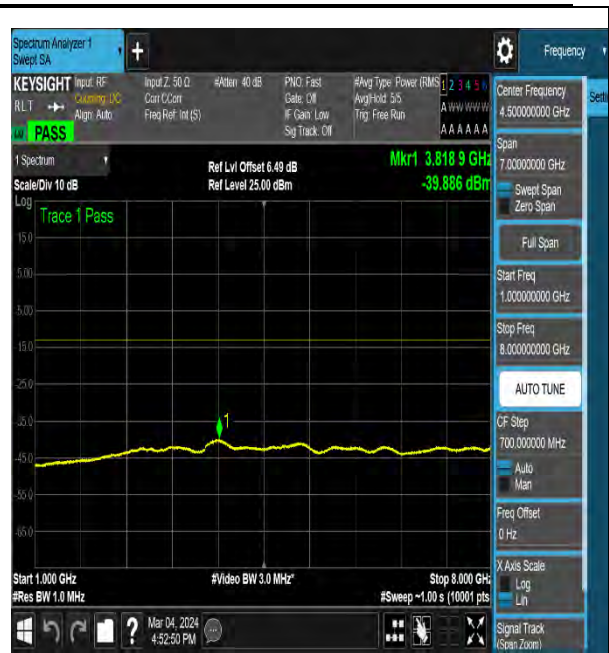


BUREAU
VERITAS

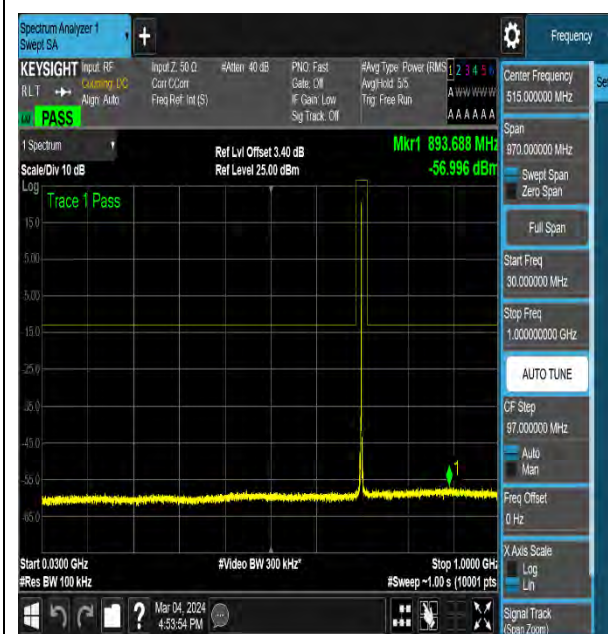
Reference No.: W7L-P23120020RF09



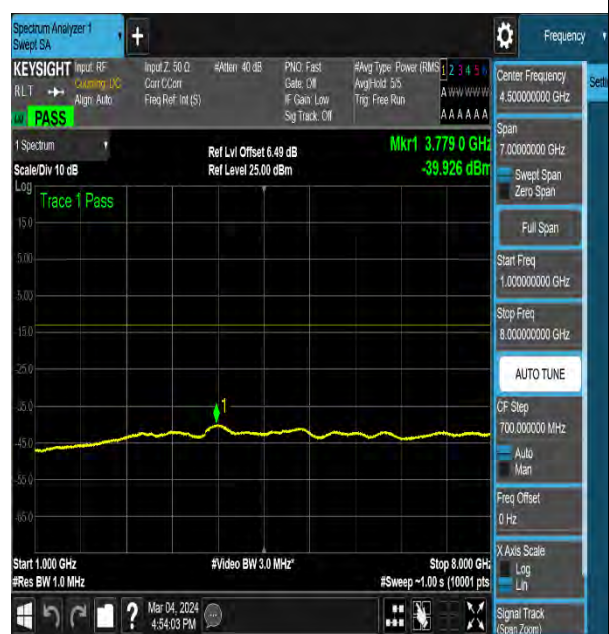
NTNV-N12-PC3-15-10-M-DFT-QPSK-Edge_1RB_Left-
Ant0-PASS



NTNV-N12-PC3-15-10-M-DFT-QPSK-Edge_1RB_Left-
Ant0-PASS



NTNV-N12-PC3-15-10-H-DFT-QPSK-Edge_1RB_Left-
Ant0-PASS



NTNV-N12-PC3-15-10-H-DFT-QPSK-Edge_1RB_Left-
Ant0-PASS



BUREAU
VERITAS

Reference No.: W7L-P23120020RF09



NTNV-N12-PC3-15-15-L-DFT-QPSK-Edge_1RB_Left-
Ant0-PASS



NTNV-N12-PC3-15-15-L-DFT-QPSK-Edge_1RB_Left-
Ant0-PASS



NTNV-N12-PC3-15-15-M-DFT-QPSK-Edge_1RB_Left-
Ant0-PASS

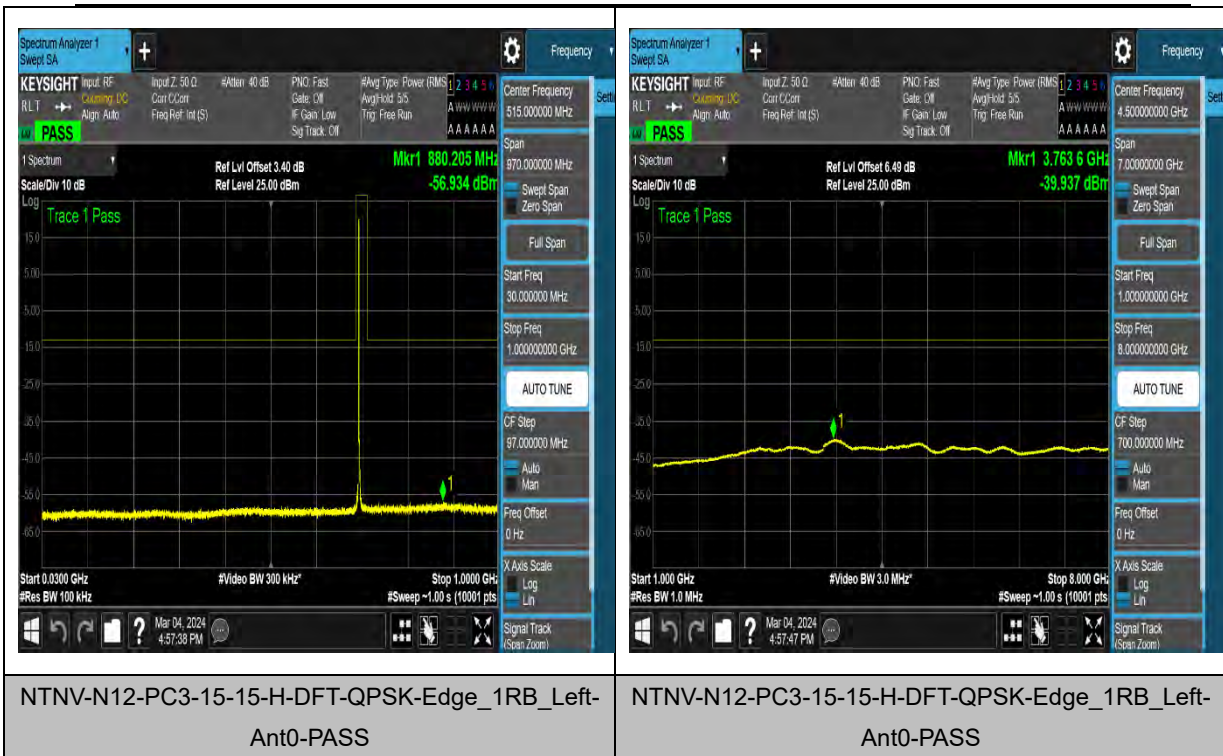


NTNV-N12-PC3-15-15-M-DFT-QPSK-Edge_1RB_Left-
Ant0-PASS



BUREAU
VERITAS

Reference No.: W7L-P23120020RF09



BV 7Layers Communications Technology
(Shenzhen) Co., Ltd

Room B37, Warehouse A5, No.3 Chiwan 4th Road,
Zhaoshang Street, Nanshan District Shenzhen,
Guangdong, People's Republic of China
Page 46 of 293

Tel: +86 755 8869 6566
Fax: +86 755 8869 6577
Email: customerservice.sw@bureauveritas.com

**Frequency Stability for SA****Test Result****Frequency Error VS. Voltage**

Voltage										
Band	SCS	Bandwidth	Modulation	Channel	RB Config	Voltage	Temperature	Deviation (Hz)	Deviation (ppm)	Verdict
N12	15	15	DFT-QPSK	L	Outer_Full	VL	NT	8.000000	0.011323	PASS
N12	15	15	DFT-QPSK	L	Outer_Full	VN	NT	10.000000	0.014154	PASS
N12	15	15	DFT-QPSK	L	Outer_Full	VH	NT	4.000000	0.005662	PASS
N12	15	15	DFT-QPSK	M	Outer_Full	VL	NT	2.000000	0.002827	PASS
N12	15	15	DFT-QPSK	M	Outer_Full	VN	NT	14.000000	0.019788	PASS
N12	15	15	DFT-QPSK	M	Outer_Full	VH	NT	1.000000	0.001413	PASS
N12	15	15	DFT-QPSK	H	Outer_Full	VL	NT	14.000000	0.019760	PASS
N12	15	15	DFT-QPSK	H	Outer_Full	VN	NT	14.000000	0.019760	PASS
N12	15	15	DFT-QPSK	H	Outer_Full	VH	NT	17.000000	0.023994	PASS

Frequency Error VS. Temperature

Voltage										
Band	SCS	Bandwidth	Modulation	Channel	RB Config	Voltage	Temperature	Deviation (Hz)	Deviation (ppm)	Verdict
N12	15	15	DFT-QPSK	L	Outer_Full	NV	-30	6.000000	0.008493	PASS
N12	15	15	DFT-QPSK	L	Outer_Full	NV	-20	19.000000	0.026893	PASS
N12	15	15	DFT-QPSK	L	Outer_Full	NV	-10	13.000000	0.018401	PASS
N12	15	15	DFT-QPSK	L	Outer_Full	NV	0	15.000000	0.021231	PASS
N12	15	15	DFT-QPSK	L	Outer_Full	NV	10	9.000000	0.012739	PASS
N12	15	15	DFT-QPSK	L	Outer_Full	NV	20	3.000000	0.004246	PASS
N12	15	15	DFT-QPSK	L	Outer_Full	NV	30	16.000000	0.022647	PASS
N12	15	15	DFT-QPSK	L	Outer_Full	NV	40	6.000000	0.008493	PASS
N12	15	15	DFT-QPSK	L	Outer_Full	NV	50	19.000000	0.026893	PASS
N12	15	15	DFT-QPSK	M	Outer_Full	NV	-30	4.000000	0.005654	PASS
N12	15	15	DFT-QPSK	M	Outer_Full	NV	-20	4.000000	0.005654	PASS
N12	15	15	DFT-QPSK	M	Outer_Full	NV	-10	7.000000	0.009894	PASS
N12	15	15	DFT-QPSK	M	Outer_Full	NV	0	19.000000	0.026855	PASS
N12	15	15	DFT-QPSK	M	Outer_Full	NV	10	10.000000	0.014134	PASS



Reference No.: W7L-P23120020RF09

N12	15	15	DFT-QPSK	M	Outer_Full	NV	20	19.000000	0.026855	PASS
N12	15	15	DFT-QPSK	M	Outer_Full	NV	30	1.000000	0.001413	PASS
N12	15	15	DFT-QPSK	M	Outer_Full	NV	40	3.000000	0.004240	PASS
N12	15	15	DFT-QPSK	M	Outer_Full	NV	50	16.000000	0.022615	PASS
N12	15	15	DFT-QPSK	H	Outer_Full	NV	-30	17.000000	0.023994	PASS
N12	15	15	DFT-QPSK	H	Outer_Full	NV	-20	8.000000	0.011291	PASS
N12	15	15	DFT-QPSK	H	Outer_Full	NV	-10	17.000000	0.023994	PASS
N12	15	15	DFT-QPSK	H	Outer_Full	NV	0	8.000000	0.011291	PASS
N12	15	15	DFT-QPSK	H	Outer_Full	NV	10	1.000000	0.001411	PASS
N12	15	15	DFT-QPSK	H	Outer_Full	NV	20	14.000000	0.019760	PASS
N12	15	15	DFT-QPSK	H	Outer_Full	NV	30	4.000000	0.005646	PASS
N12	15	15	DFT-QPSK	H	Outer_Full	NV	40	14.000000	0.019760	PASS
N12	15	15	DFT-QPSK	H	Outer_Full	NV	50	7.000000	0.009880	PASS

**N13****Peak-to-Average Ratio(CCDF)****Test Result**

Band	SCS	Bandwidth	Modulation	Channel	RB Config	Result	Limit	Verdict
N13	15	5	DFT-QPSK	M	Edge_1RB_Left	5.46	≤13	PASS
N13	15	5	DFT-QPSK	L	Outer_Full	5.07	≤13	PASS
N13	15	5	DFT-QPSK	L	Edge_1RB_Left	4.27	≤13	PASS
N13	15	5	DFT-QPSK	M	Outer_Full	5.41	≤13	PASS
N13	15	5	DFT-QPSK	H	Outer_Full	5.50	≤13	PASS
N13	15	5	DFT-QPSK	H	Edge_1RB_Left	5.32	≤13	PASS
N13	15	10	DFT-QPSK	M	Edge_1RB_Left	4.76	≤13	PASS
N13	15	10	DFT-QPSK	M	Outer_Full	5.46	≤13	PASS