

EXHIBIT A. Peak to Average Ratio

1. WCDMA_Band2

1.1. WCDMA Peak to Average Ratio(NTNV)(Channel:9262)



1.3. WCDMA Peak to Average Ratio(NTNV)(Channel:9538)



WCDMA_Band5

2.1. WCDMA Peak to Average Ratio(NTNV)(Channel:4132)



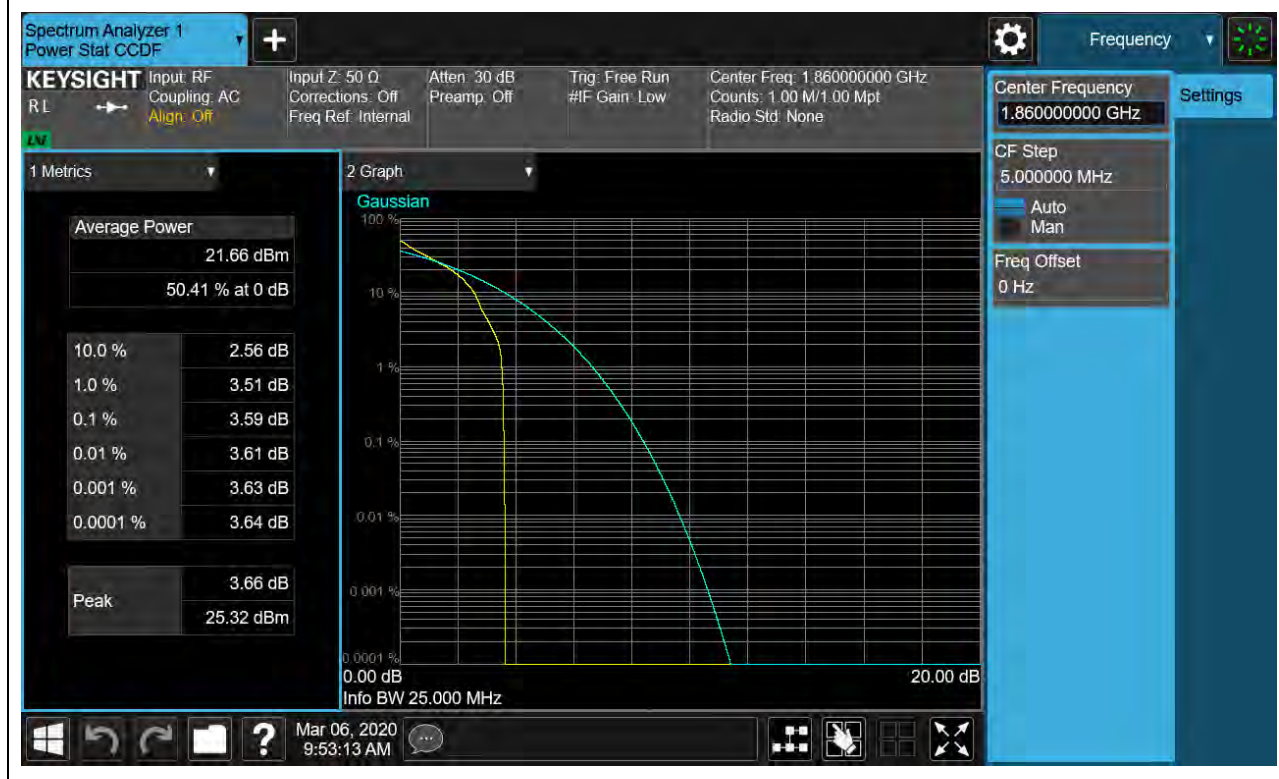
2.3. WCDMA Peak to Average Ratio(NTNV)(Channel:4233)



2. LTE_Band2

2.1. LTE Peak to Average Ratio(NTNV)(Subtest:1, Channel:18700, Bandwidth:20, Modulation:QPSK, RB Number: 1, RB Position:LOW)

Center Frequency(MHz)	PAR Percent (%)	PAR (dB)	Upper Limit (dB)	Verdict
1860	0.1	3.59	13	Pass



2.2. LTE Peak to Average Ratio(NTNV)(Subtest:2, Channel:18700, Bandwidth:20, Modulation:QPSK, RB Number: 100, RB Position:LOW)



2.3. LTE Peak to Average Ratio(NTNV)(Subtest:3, Channel:18700, Bandwidth:20, Modulation:Q16, RB Number: 1, RB Position:LOW)



2.4. LTE Peak to Average Ratio(NTNV)(Subtest:4, Channel:18700, Bandwidth:20, Modulation:Q16, RB Number: 100, RB Position:LOW)



2.5. LTE Peak to Average Ratio(NTNV)(Subtest:5, Channel:18900, Bandwidth:20, Modulation:QPSK, RB Number: 1, RB Position:LOW)



2.6. LTE Peak to Average Ratio(NTNV)(Subtest:6, Channel:18900, Bandwidth:20, Modulation:QPSK, RB Number: 100, RB Position:LOW)



2.7. LTE Peak to Average Ratio(NTNV)(Subtest:7, Channel:18900, Bandwidth:20, Modulation:Q16, RB Number: 1, RB Position:LOW)



2.8. LTE Peak to Average Ratio(NTNV)(Subtest:8, Channel:18900, Bandwidth:20, Modulation:Q16, RB Number: 100, RB Position:LOW)



2.9. LTE Peak to Average Ratio(NTNV)(Subtest:9, Channel:19100, Bandwidth:20, Modulation:QPSK, RB Number: 1, RB Position:LOW)



2.10. LTE Peak to Average Ratio(NTNV)(Subtest:10, Channel:19100, Bandwidth:20, Modulation:QPSK, RB Number: 100, RB Position:LOW)



2.11. LTE Peak to Average Ratio(NTNV)(Subtest:11, Channel:19100, Bandwidth:20, Modulation:Q16, RB Number: 1, RB Position:LOW)



2.12. LTE Peak to Average Ratio(NTNV)(Subtest:12, Channel:19100, Bandwidth:20, Modulation:Q16, RB Number: 100, RB Position:LOW)



3. LTE_Band4

3.1. LTE Peak to Average Ratio(NTNV)(Subtest:1, Channel:20050, Bandwidth:20, Modulation:QPSK, RB Number: 1, RB Position:LOW)

Center Frequency(MHz)	PAR Percent (%)	PAR (dB)	Upper Limit (dB)	Verdict
1720	0.1	4.49	13	Pass



3.2. LTE Peak to Average Ratio(NTNV)(Subtest:2, Channel:20050, Bandwidth:20, Modulation:QPSK, RB Number: 100, RB Position:LOW)



3.3. LTE Peak to Average Ratio(NTNV)(Subtest:3, Channel:20050, Bandwidth:20, Modulation:Q16, RB Number: 1, RB Position:LOW)



3.4. LTE Peak to Average Ratio(NTNV)(Subtest:4, Channel:20050, Bandwidth:20, Modulation:Q16, RB Number: 100, RB Position:LOW)



3.5. LTE Peak to Average Ratio(NTNV)(Subtest:5, Channel:20175, Bandwidth:20, Modulation:QPSK, RB Number: 1, RB Position:LOW)



3.6. LTE Peak to Average Ratio(NTNV)(Subtest:6, Channel:20175, Bandwidth:20, Modulation:QPSK, RB Number: 100, RB Position:LOW)



3.7. LTE Peak to Average Ratio(NTNV)(Subtest:7, Channel:20175, Bandwidth:20, Modulation:Q16, RB Number: 1, RB Position:LOW)



3.8. LTE Peak to Average Ratio(NTNV)(Subtest:8, Channel:20175, Bandwidth:20, Modulation:Q16, RB Number: 100, RB Position:LOW)



3.9. LTE Peak to Average Ratio(NTNV)(Subtest:9, Channel:20300, Bandwidth:20, Modulation:QPSK, RB Number: 1, RB Position:LOW)



3.10. LTE Peak to Average Ratio(NTNV)(Subtest:10, Channel:20300, Bandwidth:20, Modulation:QPSK, RB Number: 100, RB Position:LOW)



3.11. LTE Peak to Average Ratio(NTNV)(Subtest:11, Channel:20300, Bandwidth:20, Modulation:Q16, RB Number: 1, RB Position:LOW)



3.12. LTE Peak to Average Ratio(NTNV)(Subtest:12, Channel:20300, Bandwidth:20, Modulation:Q16, RB Number: 100, RB Position:LOW)



4. LTE_Band5

4.1. LTE Peak to Average Ratio(NTNV)(Subtest:1, Channel:20450, Bandwidth:10, Modulation:QPSK, RB Number: 1, RB Position:LOW)

Center Frequency(MHz)	PAR Percent (%)	PAR (dB)	Upper Limit (dB)	Verdict
829	0.1	3.59	13	Pass



4.2. LTE Peak to Average Ratio(NTNV)(Subtest:2, Channel:20450, Bandwidth:10, Modulation:QPSK, RB Number: 50, RB Position:LOW)



4.3. LTE Peak to Average Ratio(NTNV)(Subtest:3, Channel:20450, Bandwidth:10, Modulation:Q16, RB Number: 1, RB Position:LOW)



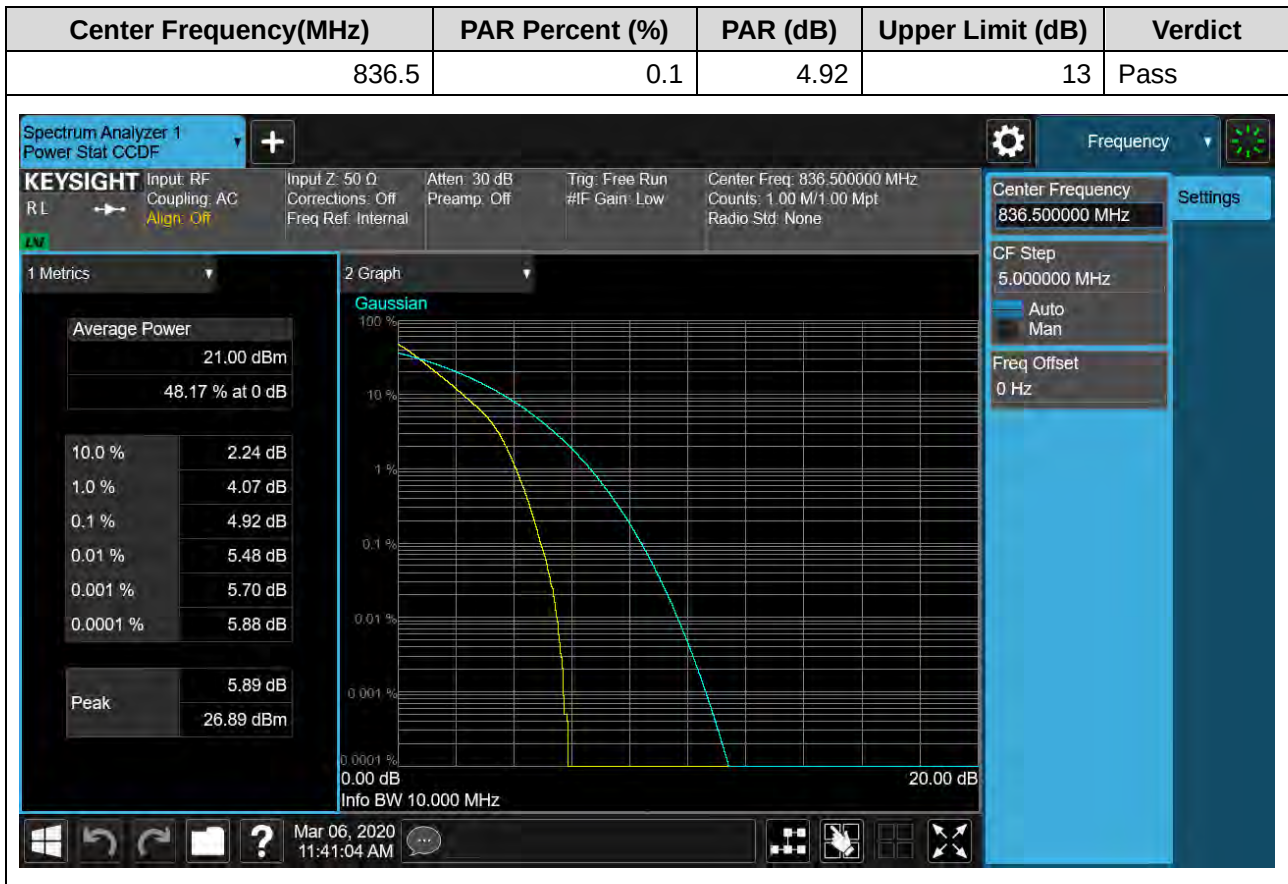
4.4. LTE Peak to Average Ratio(NTNV)(Subtest:4, Channel:20450, Bandwidth:10, Modulation:Q16, RB Number: 50, RB Position:LOW)



4.5. LTE Peak to Average Ratio(NTNV)(Subtest:5, Channel:20525, Bandwidth:10, Modulation:QPSK, RB Number: 1, RB Position:LOW)



4.6. LTE Peak to Average Ratio(NTNV)(Subtest:6, Channel:20525, Bandwidth:10, Modulation:QPSK, RB Number: 50, RB Position:LOW)



4.7. LTE Peak to Average Ratio(NTNV)(Subtest:7, Channel:20525, Bandwidth:10, Modulation:Q16, RB Number: 1, RB Position:LOW)



4.8. LTE Peak to Average Ratio(NTNV)(Subtest:8, Channel:20525, Bandwidth:10, Modulation:Q16, RB Number: 50, RB Position:LOW)



4.9. LTE Peak to Average Ratio(NTNV)(Subtest:9, Channel:20600, Bandwidth:10, Modulation:QPSK, RB Number: 1, RB Position:LOW)



4.10. LTE Peak to Average Ratio(NTNV)(Subtest:10, Channel:20600, Bandwidth:10, Modulation:QPSK, RB Number: 50, RB Position:LOW)



4.11. LTE Peak to Average Ratio(NTNV)(Subtest:11, Channel:20600, Bandwidth:10, Modulation:Q16, RB Number: 1, RB Position:LOW)



4.12. LTE Peak to Average Ratio(NTNV)(Subtest:12, Channel:20600, Bandwidth:10, Modulation:Q16, RB Number: 50, RB Position:LOW)



END

5. LTE_Band7

5.1. LTE Peak to Average Ratio(NTNV)(Subtest:1, Channel:20850, Bandwidth:20, Modulation:QPSK, RB Number: 1, RB Position:LOW)



5.2. LTE Peak to Average Ratio(NTNV)(Subtest:2, Channel:20850, Bandwidth:20, Modulation:QPSK, RB Number: 100, RB Position:LOW)



5.3. LTE Peak to Average Ratio(NTNV)(Subtest:3, Channel:20850, Bandwidth:20, Modulation:Q16, RB Number: 1, RB Position:LOW)



5.4. LTE Peak to Average Ratio(NTNV)(Subtest:4, Channel:20850, Bandwidth:20, Modulation:Q16, RB Number: 100, RB Position:LOW)



5.5. LTE Peak to Average Ratio(NTNV)(Subtest:5, Channel:21100, Bandwidth:20, Modulation:QPSK, RB Number: 1, RB Position:LOW)



5.6. LTE Peak to Average Ratio(NTNV)(Subtest:6, Channel:21100, Bandwidth:20, Modulation:QPSK, RB Number: 100, RB Position:LOW)



5.7. LTE Peak to Average Ratio(NTNV)(Subtest:7, Channel:21100, Bandwidth:20, Modulation:Q16, RB Number: 1, RB Position:LOW)



5.8. LTE Peak to Average Ratio(NTNV)(Subtest:8, Channel:21100, Bandwidth:20, Modulation:Q16, RB Number: 100, RB Position:LOW)



5.9. LTE Peak to Average Ratio(NTNV)(Subtest:9, Channel:21350, Bandwidth:20, Modulation:QPSK, RB Number: 1, RB Position:LOW)



5.10. LTE Peak to Average Ratio(NTNV)(Subtest:10, Channel:21350, Bandwidth:20, Modulation:QPSK, RB Number: 100, RB Position:LOW)



5.11. LTE Peak to Average Ratio(NTNV)(Subtest:11, Channel:21350, Bandwidth:20, Modulation:Q16, RB Number: 1, RB Position:LOW)



5.12. LTE Peak to Average Ratio(NTNV)(Subtest:12, Channel:21350, Bandwidth:20, Modulation:Q16, RB Number: 100, RB Position:LOW)



6. LTE_Band12

6.1. LTE Peak to Average Ratio(NTNV)(Subtest:1, Channel:23060, Bandwidth:10, Modulation:QPSK, RB Number: 1, RB Position:LOW)



6.2. LTE Peak to Average Ratio(NTNV)(Subtest:2, Channel:23060, Bandwidth:10, Modulation:QPSK, RB Number: 50, RB Position:LOW)



6.3. LTE Peak to Average Ratio(NTNV)(Subtest:3, Channel:23060, Bandwidth:10, Modulation:Q16, RB Number: 1, RB Position:LOW)



6.4. LTE Peak to Average Ratio(NTNV)(Subtest:4, Channel:23060, Bandwidth:10, Modulation:Q16, RB Number: 50, RB Position:LOW)



6.5. LTE Peak to Average Ratio(NTNV)(Subtest:5, Channel:23095, Bandwidth:10, Modulation:QPSK, RB Number: 1, RB Position:LOW)



6.6. LTE Peak to Average Ratio(NTNV)(Subtest:6, Channel:23095, Bandwidth:10, Modulation:QPSK, RB Number: 50, RB Position:LOW)



6.7. LTE Peak to Average Ratio(NTNV)(Subtest:7, Channel:23095, Bandwidth:10, Modulation:Q16, RB Number: 1, RB Position:LOW)



6.8. LTE Peak to Average Ratio(NTNV)(Subtest:8, Channel:23095, Bandwidth:10, Modulation:Q16, RB Number: 50, RB Position:LOW)



6.9. LTE Peak to Average Ratio(NTNV)(Subtest:9, Channel:23130, Bandwidth:10, Modulation:QPSK, RB Number: 1, RB Position:LOW)



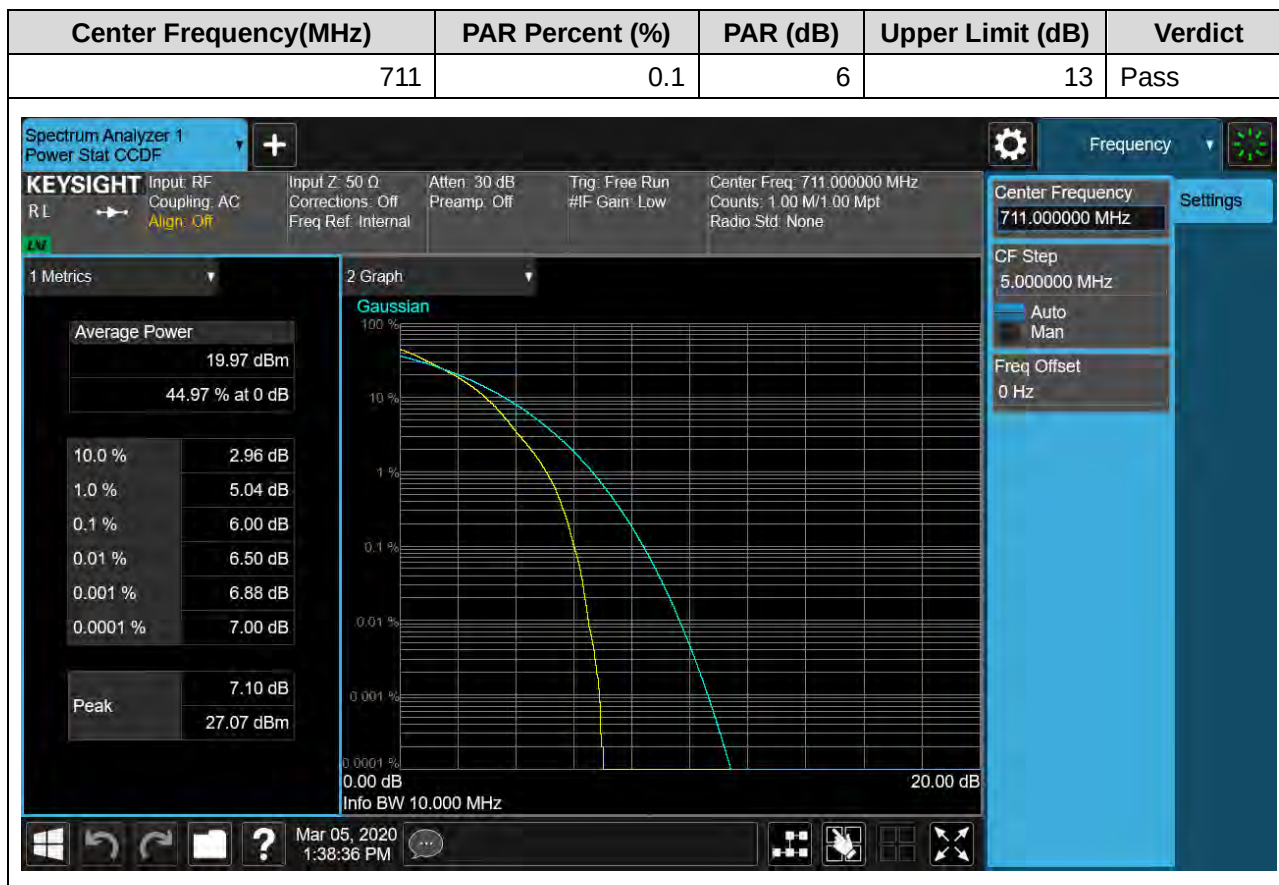
6.10. LTE Peak to Average Ratio(NTNV)(Subtest:10, Channel:23130, Bandwidth:10, Modulation:QPSK, RB Number: 50, RB Position:LOW)



6.11. LTE Peak to Average Ratio(NTNV)(Subtest:11, Channel:23130, Bandwidth:10, Modulation:Q16, RB Number: 1, RB Position:LOW)



6.12. LTE Peak to Average Ratio(NTNV)(Subtest:12, Channel:23130, Bandwidth:10, Modulation:Q16, RB Number: 50, RB Position:LOW)



7. LTE_Band13

7.1. LTE Peak to Average Ratio(NTNV)(Subtest:1, Channel:23230, Bandwidth:10, Modulation:QPSK, RB Number: 1, RB Position:LOW)

Center Frequency(MHz)	PAR Percent (%)	PAR (dB)	Upper Limit (dB)	Verdict
782	0.1	4.41	13	Pass



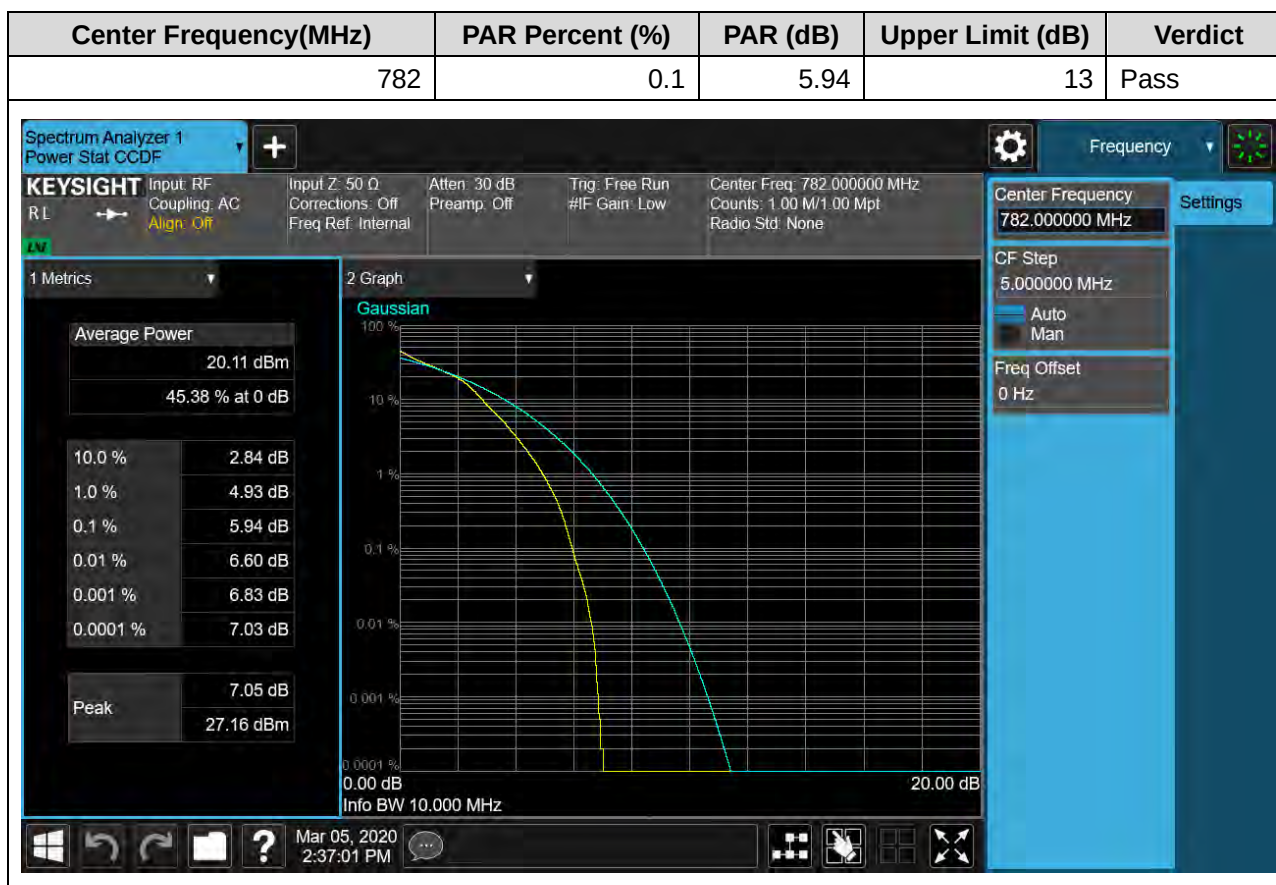
7.2. LTE Peak to Average Ratio(NTNV)(Subtest:2, Channel:23230, Bandwidth:10, Modulation:QPSK, RB Number: 50, RB Position:LOW)



7.3. LTE Peak to Average Ratio(NTNV)(Subtest:3, Channel:23230, Bandwidth:10, Modulation:Q16, RB Number: 1, RB Position:LOW)



7.4. LTE Peak to Average Ratio(NTNV)(Subtest:4, Channel:23230, Bandwidth:10, Modulation:Q16, RB Number: 50, RB Position:LOW)



8. LTE_Band17

8.1. LTE Peak to Average Ratio(NTNV)(Subtest:1, Channel:23780, Bandwidth:10, Modulation:QPSK, RB Number: 1, RB Position:LOW)

Center Frequency(MHz)	PAR Percent (%)	PAR (dB)	Upper Limit (dB)	Verdict
709	0.1	4.16	13	Pass



8.2. LTE Peak to Average Ratio(NTNV)(Subtest:2, Channel:23780, Bandwidth:10, Modulation:QPSK, RB Number: 50, RB Position:LOW)



8.3. LTE Peak to Average Ratio(NTNV)(Subtest:3, Channel:23780, Bandwidth:10, Modulation:Q16, RB Number: 1, RB Position:LOW)



8.4. LTE Peak to Average Ratio(NTNV)(Subtest:4, Channel:23780, Bandwidth:10, Modulation:Q16, RB Number: 50, RB Position:LOW)



8.5. LTE Peak to Average Ratio(NTNV)(Subtest:5, Channel:23790, Bandwidth:10, Modulation:QPSK, RB Number: 1, RB Position:LOW)



8.6. LTE Peak to Average Ratio(NTNV)(Subtest:6, Channel:23790, Bandwidth:10, Modulation:QPSK, RB Number: 50, RB Position:LOW)



8.7. LTE Peak to Average Ratio(NTNV)(Subtest:7, Channel:23790, Bandwidth:10, Modulation:Q16, RB Number: 1, RB Position:LOW)



8.8. LTE Peak to Average Ratio(NTNV)(Subtest:8, Channel:23790, Bandwidth:10, Modulation:Q16, RB Number: 50, RB Position:LOW)



8.9. LTE Peak to Average Ratio(NTNV)(Subtest:9, Channel:23800, Bandwidth:10, Modulation:QPSK, RB Number: 1, RB Position:LOW)



8.10. LTE Peak to Average Ratio(NTNV)(Subtest:10, Channel:23800, Bandwidth:10, Modulation:QPSK, RB Number: 50, RB Position:LOW)



8.11. LTE Peak to Average Ratio(NTNV)(Subtest:11, Channel:23800, Bandwidth:10, Modulation:Q16, RB Number: 1, RB Position:LOW)



8.12. LTE Peak to Average Ratio(NTNV)(Subtest:12, Channel:23800, Bandwidth:10, Modulation:Q16, RB Number: 50, RB Position:LOW)



9. LTE_Band25

9.1. LTE Peak to Average Ratio(NTNV)(Subtest:1, Channel:26140, Bandwidth:20, Modulation:QPSK, RB Number: 1, RB Position:LOW)

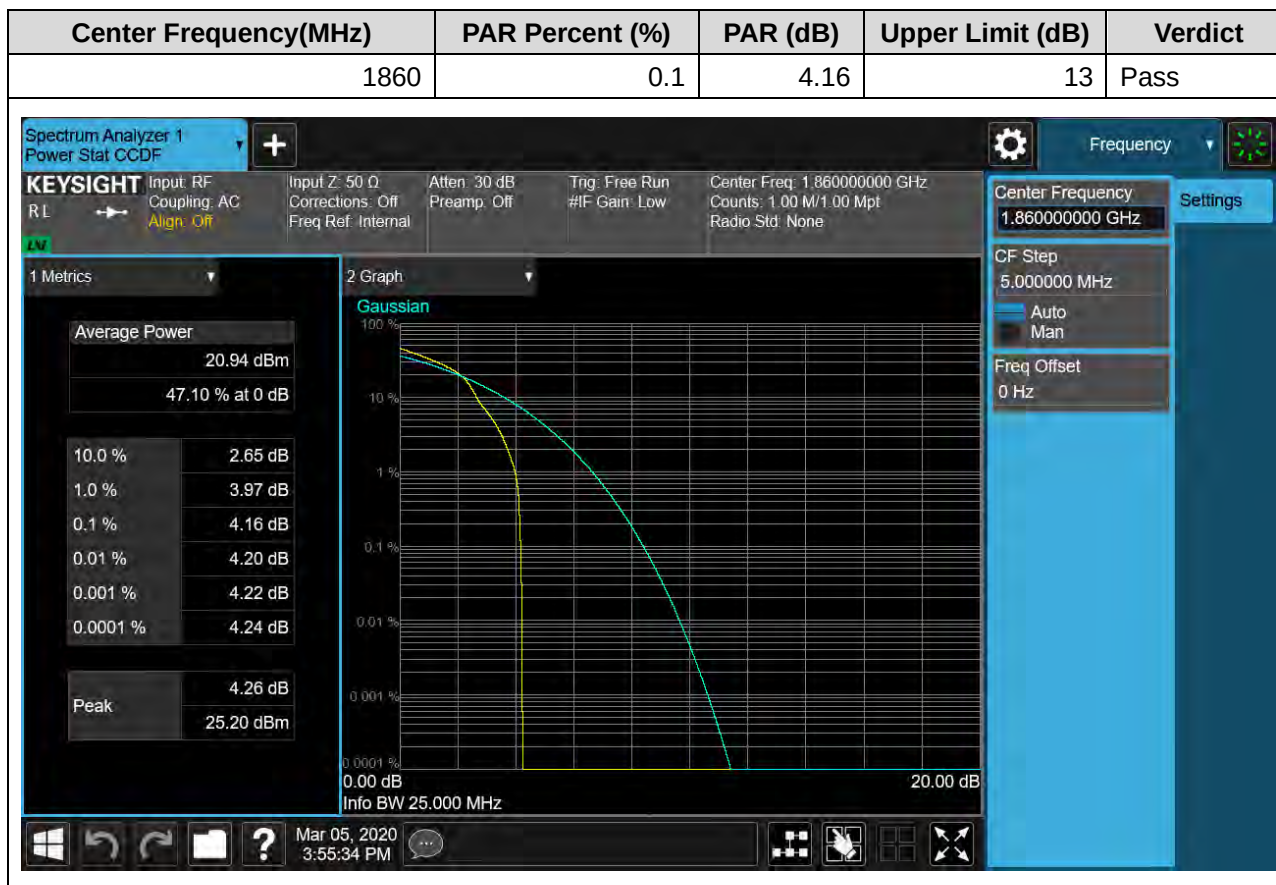
Center Frequency(MHz)	PAR Percent (%)	PAR (dB)	Upper Limit (dB)	Verdict
1860	0.1	3.67	13	Pass



9.2. LTE Peak to Average Ratio(NTNV)(Subtest:2, Channel:26140, Bandwidth:20, Modulation:QPSK, RB Number: 100, RB Position:LOW)



9.3. LTE Peak to Average Ratio(NTNV)(Subtest:3, Channel:26140, Bandwidth:20, Modulation:Q16, RB Number: 1, RB Position:LOW)



9.4. LTE Peak to Average Ratio(NTNV)(Subtest:4, Channel:26140, Bandwidth:20, Modulation:Q16, RB Number: 100, RB Position:LOW)



9.5. LTE Peak to Average Ratio(NTNV)(Subtest:5, Channel:26365, Bandwidth:20, Modulation:QPSK, RB Number: 1, RB Position:LOW)



9.6. LTE Peak to Average Ratio(NTNV)(Subtest:6, Channel:26365, Bandwidth:20, Modulation:QPSK, RB Number: 100, RB Position:LOW)



9.7. LTE Peak to Average Ratio(NTNV)(Subtest:7, Channel:26365, Bandwidth:20, Modulation:Q16, RB Number: 1, RB Position:LOW)



9.8. LTE Peak to Average Ratio(NTNV)(Subtest:8, Channel:26365, Bandwidth:20, Modulation:Q16, RB Number: 100, RB Position:LOW)



9.9. LTE Peak to Average Ratio(NTNV)(Subtest:9, Channel:26590, Bandwidth:20, Modulation:QPSK, RB Number: 1, RB Position:LOW)



9.10. LTE Peak to Average Ratio(NTNV)(Subtest:10, Channel:26590, Bandwidth:20, Modulation:QPSK, RB Number: 100, RB Position:LOW)



9.11. LTE Peak to Average Ratio(NTNV)(Subtest:11, Channel:26590, Bandwidth:20, Modulation:Q16, RB Number: 1, RB Position:LOW)

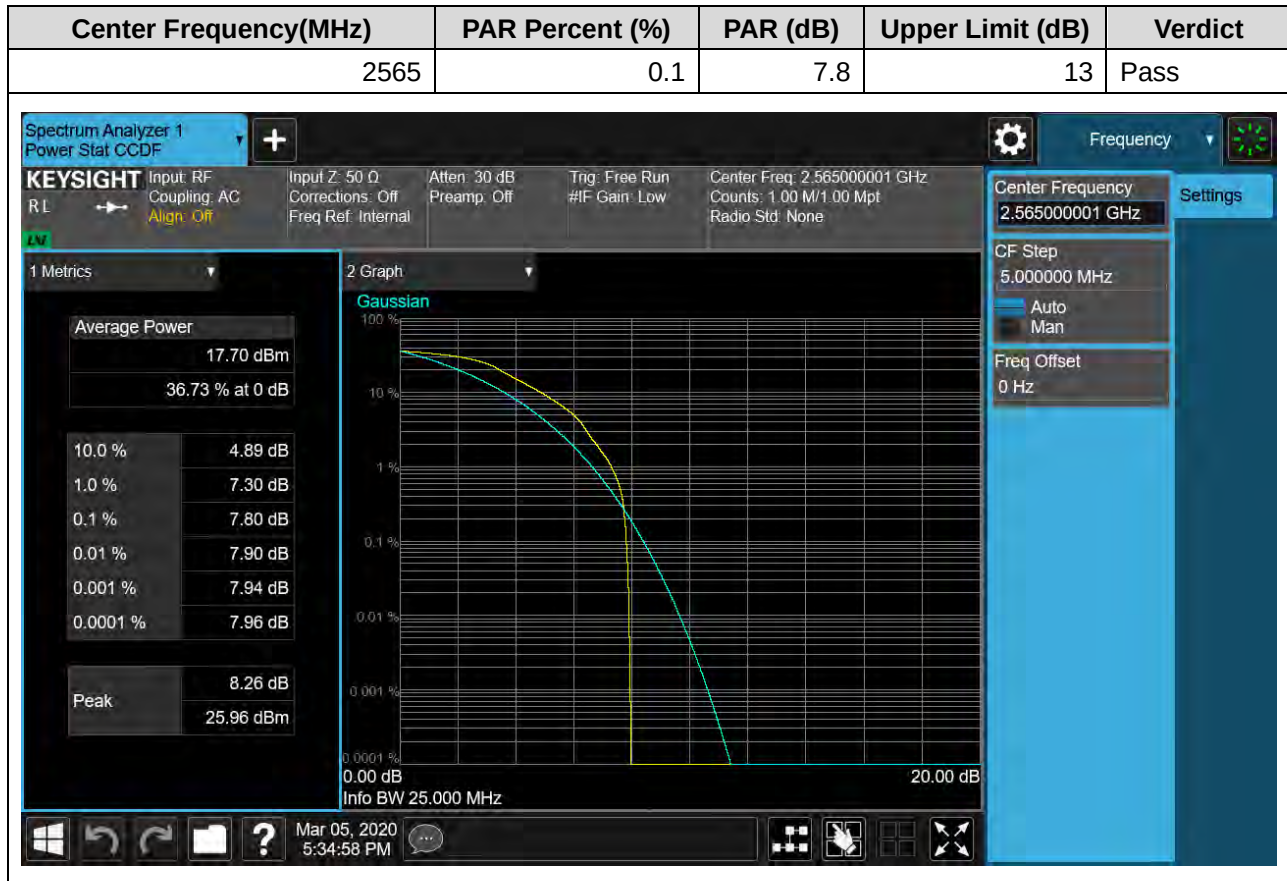


9.12. LTE Peak to Average Ratio(NTNV)(Subtest:12, Channel:26590, Bandwidth:20, Modulation:Q16, RB Number: 100, RB Position:LOW)



10. LTE_Band41 100M

10.1. LTE Peak to Average Ratio(NTNV)(Subtest:1, Channel:40340, Bandwidth:20, Modulation:QPSK, RB Number: 1, RB Position:LOW)



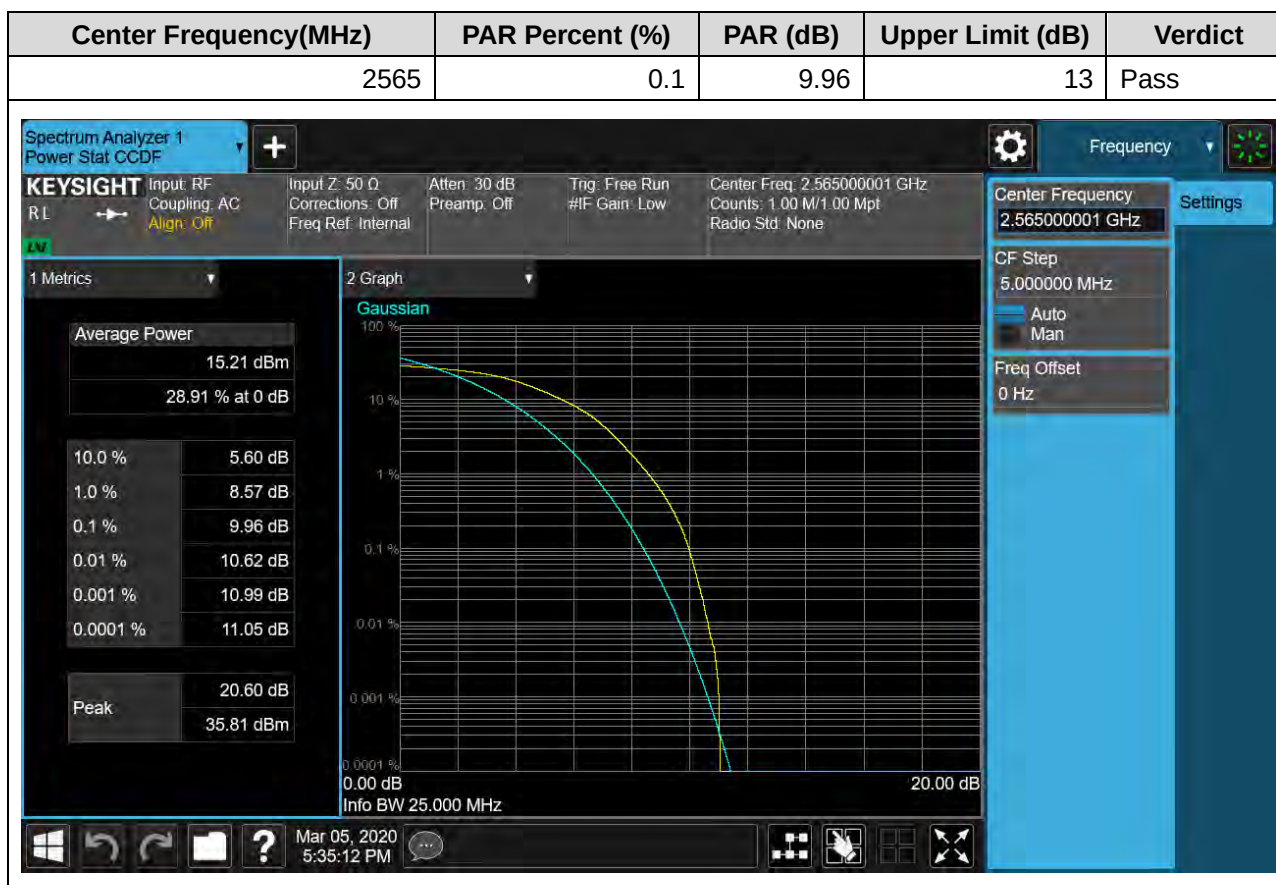
10.2. LTE Peak to Average Ratio(NTNV)(Subtest:2, Channel:40340, Bandwidth:20, Modulation:QPSK, RB Number: 100, RB Position:LOW)



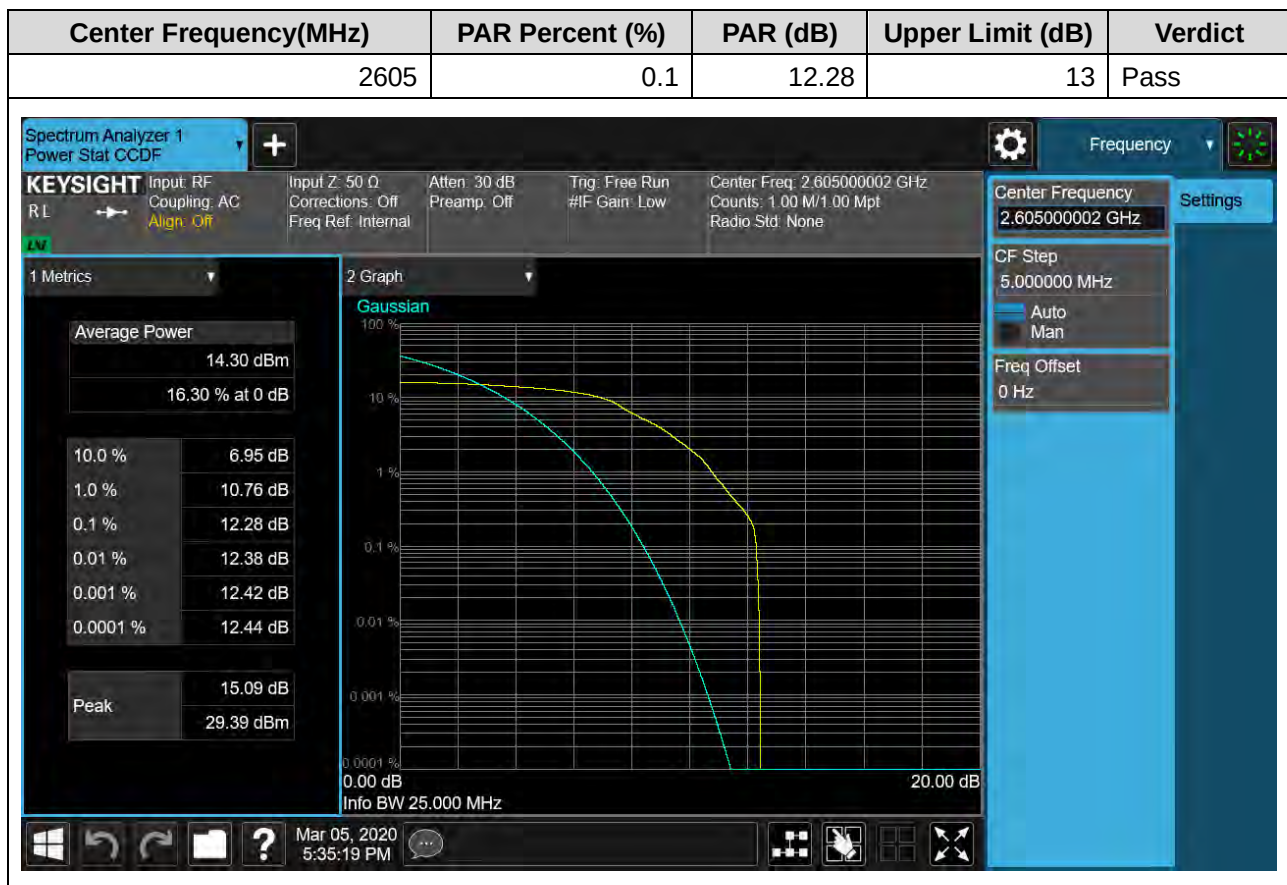
10.3. LTE Peak to Average Ratio(NTNV)(Subtest:3, Channel:40340, Bandwidth:20, Modulation:Q16, RB Number: 1, RB Position:LOW)



10.4. LTE Peak to Average Ratio(NTNV)(Subtest:4, Channel:40340, Bandwidth:20, Modulation:Q16, RB Number: 100, RB Position:LOW)



10.5. LTE Peak to Average Ratio(NTNV)(Subtest:5, Channel:40740, Bandwidth:20, Modulation:QPSK, RB Number: 1, RB Position:LOW)



10.6. LTE Peak to Average Ratio(NTNV)(Subtest:6, Channel:40740, Bandwidth:20, Modulation:QPSK, RB Number: 100, RB Position:LOW)



10.7. LTE Peak to Average Ratio(NTNV)(Subtest:7, Channel:40740, Bandwidth:20, Modulation:Q16, RB Number: 1, RB Position:LOW)



10.8. LTE Peak to Average Ratio(NTNV)(Subtest:8, Channel:40740, Bandwidth:20, Modulation:Q16, RB Number: 100, RB Position:LOW)



10.9. LTE Peak to Average Ratio(NTNV)(Subtest:9, Channel:41140, Bandwidth:20, Modulation:QPSK, RB Number: 1, RB Position:LOW)



10.10. LTE Peak to Average Ratio(NTNV)(Subtest:10, Channel:41140, Bandwidth:20, Modulation:QPSK, RB Number: 100, RB Position:LOW)



10.11. LTE Peak to Average Ratio(NTNV)(Subtest:11, Channel:41140, Bandwidth:20, Modulation:Q16, RB Number: 1, RB Position:LOW)



10.12. LTE Peak to Average Ratio(NTNV)(Subtest:12, Channel:41140, Bandwidth:20, Modulation:Q16, RB Number: 100, RB Position:LOW)

