
Tune-up procedures of NL952-NA

1.1 Test Equipment List

- Radio Communication Tester: CMW500
- Dummy battery or Power Supply: Agilent 66319D
- PC with serial port
- GPIB card

1.2 The LTE Band 2 power adjust procedure

Output power of range:

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						Power (dBm)
	1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz	
QPSK	1	1	1	1	1	1	23+1/-1dB
QPSK	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	23+1/-1dB
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	22+1/-1 dB
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	22+1/-1 dB
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	21+1/-1 dB

1.3 The LTE Band 4 power adjust procedure

Output power of range:

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						Power (dBm)
	1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz	
QPSK	1	1	1	1	1	1	23+1/-1dB
QPSK	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	23+1/-1dB
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	22+1/-1 dB
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	22+1/-1 dB
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	21+1/-1 dB

1.4 The LTE Band 5 power adjust procedure

Output power of range:

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]				Power (dBm)
	1.4MHz	3MHz	5MHz	10MHz	
QPSK	1	1	1	1	23+1/-1dB
QPSK	≤ 5	≤ 4	≤ 8	≤ 12	23+1/-1dB
QPSK	> 5	> 4	> 8	> 12	22+1/-1 dB
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	22+1/-1 dB
16 QAM	> 5	> 4	> 8	> 12	21+1/-1 dB

1.5 The LTE Band 7 power adjust procedure

Output power of range:

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]				Power (dBm)
	5MHz	10MHz	15MHz	20MHz	
QPSK	1	1	1	1	23+1/-1dB
QPSK	≤ 8	≤ 12	≤ 16	≤ 18	23+1/-1dB
QPSK	> 8	> 12	> 16	> 18	22+1/-1 dB
16 QAM	≤ 8	≤ 12	≤ 16	≤ 18	22+1/-1 dB
16 QAM	> 8	> 12	> 16	> 18	21+1/-1 dB

1.6 The LTE Band 12 power adjust procedure

Output power of range:

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]				Power (dBm)
	1.4MHz	3MHz	5MHz	10MHz	
QPSK	1	1	1	1	23+1/-1dB
QPSK	≤ 5	≤ 4	≤ 8	≤ 12	23+1/-1dB
QPSK	> 5	> 4	> 8	> 12	22+1/-1 dB
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	22+1/-1 dB
16 QAM	> 5	> 4	> 8	> 12	21+1/-1 dB

1.7 The LTE Band 13 power adjust procedure

Output power of range:

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						Power (dBm)
	1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz	
QPSK			1	1			23+1/-1dB
QPSK			≤ 8	≤ 12			23+1/-1dB
QPSK			> 8	> 12			22+1/-1 dB
16 QAM			≤ 8	≤ 12			22+1/-1 dB
16 QAM			> 8	> 12			21+1/-1 dB

1.8 The LTE Band 14 power adjust procedure

Output power of range:

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						Power (dBm)
	1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz	
QPSK			1	1			23+1/-1dB
QPSK			≤ 8	≤ 12			23+1/-1dB
QPSK			> 8	> 12			22+1/-1 dB
16 QAM			≤ 8	≤ 12			22+1/-1 dB
16 QAM			> 8	> 12			21+1/-1 dB

1.9 The LTE Band 17 power adjust procedure

Output power of range:

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						Power (dBm)
	1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz	
QPSK			1	1			23+1/-1dB
QPSK			≤ 8	≤ 12			23+1/-1dB
QPSK			> 8	> 12			22+1/-1 dB
16 QAM			≤ 8	≤ 12			22+1/-1 dB
16 QAM			> 8	> 12			21+1/-1 dB

1.10 The LTE Band 25 power adjust procedure

Output power of range:

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						Power (dBm)
	1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz	
QPSK	1	1	1	1	1	1	23+1/-1dB
QPSK	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	23+1/-1dB
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	22+1/-1 dB
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	22+1/-1 dB
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	21+1/-1 dB

1.11 The LTE Band 26 power adjust procedure

Output power of range:

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						Power (dBm)
	1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz	
QPSK	1	1	1	1	1		23+1/-1dB
QPSK	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16		23+1/-1dB
QPSK	> 5	> 4	> 8	> 12	> 16		22+1/-1 dB
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16		22+1/-1 dB
16 QAM	> 5	> 4	> 8	> 12	> 16		21+1/-1 dB

1.12 The LTE Band 30 power adjust procedure

Output power of range:

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						Power (dBm)
	1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz	
QPSK			1	1			22+1/-1dB
QPSK			≤ 8	≤ 12			22+1/-1dB
QPSK			> 8	> 12			21+1/-1 dB
16 QAM			≤ 8	≤ 12			21+1/-1 dB
16 QAM			> 8	> 12			20+1/-1 dB

1.13 The LTE Band 66 power adjust procedure

Output power of range:

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						Power (dBm)
	1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz	
QPSK	1	1	1	1	1	1	23+1/-1dB
QPSK	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	23+1/-1dB
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	22+1/-1 dB
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	22+1/-1 dB
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	21+1/-1 dB

1.14 The LTE Band 71 power adjust procedure

Output power of range:

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						Power (dBm)
	1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz	
QPSK			1	1	1	1	23+1/-1dB
QPSK			≤ 8	≤ 12	≤ 16	≤ 18	23+1/-1dB
QPSK			> 8	> 12	> 16	> 18	22+1/-1 dB
16 QAM			≤ 8	≤ 12	≤ 16	≤ 18	22+1/-1 dB
16 QAM			> 8	> 12	> 16	> 18	21+1/-1 dB

2.1 The LTE Band 41 power adjust procedure

Output power of range:

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						Power (dBm)
	1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz	
QPSK			1	1	1	1	23+1/-1dB
QPSK			≤ 8	≤ 12	≤ 16	≤ 18	23+1/-1dB
QPSK			> 8	> 12	> 16	> 18	22+1/-1 dB
16 QAM			≤ 8	≤ 12	≤ 16	≤ 18	22+1/-1 dB
16 QAM			> 8	> 12	> 16	> 18	21+1/-1 dB

2.2 The LTE Band 48 power adjust procedure

Output power of range:

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]				Power (dBm)
	5MHz	10MHz	15MHz	20MHz	
QPSK	1	1	1	1	21+1/-1dB
QPSK	≤ 8	≤ 12	≤ 16	≤ 18	21+1/-1dB
QPSK	> 8	> 12	> 16	> 18	20+1/-1dB
16 QAM	≤ 8	≤ 12	≤ 16	≤ 18	20+1/-1dB
16 QAM	> 8	> 12	> 16	> 18	19+1/-1dB

3.1 The WCDMA Band 2,4,5 power adjust procedure

Output power of range:

Operating Band	Power Class3 Power (dBm)
Band2	23.5+1/-1dB
Band4	23.5+1/-1dB
Band5	23.5+1/-1dB

4.1 The inter-band ULCA power adjust procedure

Output power of range:

Operating Band	Power Class3 Power (dBm)		
	PCC+SCC	PCC	SCC
2A-4A	23+1/-1dB	21+1/-1dB	21+1/-1dB
2A-12A	23+1/-1dB	21+1/-1dB	21+1/-1dB
2A-13A	23+1/-1dB	21+1/-1dB	21+1/-1dB
2A-66A	23+1/-1dB	21+1/-1dB	21+1/-1dB

4A-5A	23+1/-1dB	21+1/-1dB	21+1/-1dB
4A-12A	23+1/-1dB	21+1/-1dB	21+1/-1dB
4A-13A	23+1/-1dB	21+1/-1dB	21+1/-1dB
13A-66A	23+1/-1dB	21+1/-1dB	21+1/-1dB

4.1 The intra-band ULCA power adjust procedure

Operating Band	Power Class3 Power (dBm)
5B	23+1/-1dB
66C	23+1/-1dB