



## Tune-up procedures of MYA-LX3

### 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 G850/PCS1900 power adjust procedure

#### Function:

After the GSM850 /PCS1900 transmit POWER calibration the HUAWEI MYA-LX3, MYA-LX3 can find the relationship between the TX-AGC and output power. So it can transmit the specific power according to the 3GPP protocol.

#### Procedure:

Step1: The computer sets HUAWEI MYA-LX3, MYA-LX3 to the Factory test mode and works at GSM850 /PCS1900 mode, sets the CMU200 to GSM850/ /PCS1900 analyzer mode.

Step2: Tuning the TX-AGC of HUAWEI MYA-LX3, MYA-LX3 from 50 to 600 and measure the output power of the HUAWEI MYA-LX3, MYA-LX3 via CMU200, so we can find the relationship between the TX-AGC and output power.

Output power of range:

GSM850/ GPRS850 (GMSK) :

1TXslot: 32.5 dBm [-1.0dB~~+1.0dB]

2TXslot: 31.5 dBm [-1dB~~+1.0dB]

3TXslot: 29.5 dBm [-1dB~~+1.0dB]

4TXslot: 28.5 dBm [-1dB~~+1.0dB]

EDGE850 (8PSK) :

1TXslot: 26.1 dBm [-1dB~~+1.0dB]

2TXslot: 25.1 dBm [-1dB~~+1.0dB]

3TXslot: 23.1 dBm [-1dB~~+1.0dB]



4TXslot: 22.1 dBm [-1dB~~+1.0dB]

EDGE850/ (GMSK) :

1TXslot: 32.5 dBm [-1dB~~+1.0dB]

2TXslot: 31.5 dBm [-1dB~~+1.0dB]

3TXslot: 29.5 dBm [-1dB~~+1.0dB]

4TXslot: 28.5 dBm [-1.0dB~~+1.0dB]

Output power of reductions:

GPRS (GMSK) :

Number of timeslots in uplink assignment	reduction of maximum output power, (dB)
1	0
2	1
3	3
4	4

EGPRS (8PSK) :

Number of timeslots in uplink assignment	reduction of maximum output power, (dB)
1	0
2	1
3	3
4	4

EGPRS (GMSK) :

Number of timeslots in uplink assignment	reduction of maximum output power, (dB)
1	0
2	1
3	3
4	4

PCS (GMSK) :

1TXslot: 29.5 dBm [-1.0dB~~+1.0dB]

2TXslot: 28.5 dBm [-1.0dB~~+1.0dB]

3TXslot: 26.5 dBm [-1.0dB~~+1.0dB]

4TXslot: 25.5 dBm [-1.0dB~~+1.0dB]



EDGE1900 (8PSK) :

1TXslot: 25.1 dBm [-1.0dB~~+1.0dB]

2TXslot: 24.1 dBm [-1.0dB~~+1.0dB]

3TXslot: 22.1 dBm [-1.0dB~~+1.0dB]

4TXslot: 21.1 dBm [-1.0dB~~+1.0dB]

EDGE1900 (GMSK) :

1TXslot: 29.5 dBm [-1.0dB~~+1.0dB]

2TXslot: 28.5 dBm [-1.0dB~~+1.0dB]

3TXslot: 26.5 dBm [-1.0dB~~+1.0dB]

4TXslot: 25.5 dBm [-1.0dB~~+1.0dB]

Output power of reductions:

GPRS (GMSK) :

Number of timeslots in uplink assignment	reduction of maximum output power, (dB)
1	0
2	1
3	3
4	4

EGPRS (8PSK) :

Number of timeslots in uplink assignment	reduction of maximum output power, (dB)
1	0
2	1
3	3
4	4

EGPRS (GMSK) :

Number of timeslots in uplink assignment	reduction of maximum output power, (dB)
1	0
2	1
3	3
4	4



### 1.3 The WCDMA Band II power adjust procedure

#### Function:

After the WCDMA band II transmit POWER calibration the UE can find the relationship between the TX-PDM value and output power and can control the maximum conduct power through HDET value. So it can transmit the specific power according to the 3GPP protocol.

#### Procedure:

Step1: The computer sets UE to the Factory test mode and works at WCDMA band II, sets the CMU200 to WCDMA band I Analyzer mode.

Step2: Tuning the TX-PDM of UE from 0 to 123 and measure the output power of the UE via CMU200, at the same time measure the HDET value ,so we can find the relationship between the TX-PDM、 the HDET value and output power.

Output power of range:

WCDMA: 23dBm [-1dB~~+1dB]

HSDPA: 23 dBm [-3dB~~+1dB]

HSUPA: 22 dBm [-2dB~~+1dB]

HSPA+: 22 dBm [-2dB~~+1dB]

HSDPA:

Reduction of maximum output power, (dB)			
Sub-test 1	Sub-test 2	Sub-test 3	Sub-test 4
0.5	0.5	1.5	1.5

HSUPA:

Reduction of maximum output power, (dB)				
Sub-test 1	Sub-test 2	Sub-test 3	Sub-test 4	Sub-test 5
2.0	2.0	2.0	2.0	0.5

### 1.4 The WCDMA Band IV power adjust procedure

#### Function:



After the WCDMA band IV transmit POWER calibration the UE can find the relationship between the TX-PDM value and output power and can control the maximum conduct power through HDET value. So it can transmit the specific power according to the 3GPP protocol.

**Procedure:**

Step1: The computer sets UE to the Factory test mode and works at WCDMA band IV, sets the CMU200 to WCDMA band IV Analyzer mode.

Step2: Tuning the TX-PDM of UE from 0 to 123 and measure the output power of the UE via CMU200, at the same time measure the HDET value ,so we can find the relationship between the TX-PDM、 the HDET value and output power.

Output power of range:

WCDMA: 22.5dBm [-1dB~~+1dB]

HSDPA: 22.5 dBm [-3dB~~+1dB]

HSUPA: 22 dBm [-2dB~~+1dB]

HSPA+: 22 dBm [-2dB~~+1dB]

HSDPA:

Reduction of maximum output power, (dB)			
Sub—test 1	Sub—test 2	Sub—test 3	Sub—test 4
0.5	0.5	1.5	1.5

HSUPA:

Reduction of maximum output power, (dB)				
Sub—test 1	Sub—test 2	Sub—test 3	Sub—test 4	Sub—test 5
2.5	2.5	2.5	2.5	0.5

**1.5 The WCDMA Band V power adjust procedure**

**Function:**

After the WCDMA Band V transmit POWER calibration the UE can find the relationship between the TX-PDM value and output power and can control the maximum conduct power through HDET value.



So it can transmit the specific power according to the 3GPP protocol.

### Procedure:

Step1: The computer sets UE to the Factory test mode and works at WCDMA band V, sets the CMU200 to WCDMA Band V Analyzer mode.

Step2: Tuning the TX-PDM of UE from 0 to 123 and measure the output power of the UE via CMU200, at the same time measure the HDET value ,so we can find the relationship between the TX-PDM、 the HDET value and output power.

Output power of range:

WCDMA: 23 dBm [-1dB~~+1dB]

HSDPA: 23 dBm [-3dB~~+1dB]

HSUPA: 22 dBm [-2dB~~+1dB]

HSPA+: 22 dBm [-2dB~~+1dB]

HSDPA:

Reduction of maximum output power, (dB)			
Sub—test 1	Sub—test 2	Sub—test 3	Sub—test 4
0.5	0.5	1.5	1.5

HSUPA:

Reduction of maximum output power, (dB)				
Sub—test 1	Sub—test 2	Sub—test 3	Sub—test 4	Sub—test 5
1.5	1.5	1.5	1.5	0.5

## 1.6 The LTE Band II power adjust procedure

### Function:

After the LTE Band II transmit POWER calibration the UE can find the relationship between the TX-PDM value and output power and can control the maximum conduct power through HDET value.



So it can transmit the specific power according to the 3GPP protocol.

### Procedure:

Step1: The computer sets UE to the Factory test mode and works at LTE band II, sets the CMW500 to LTE band II Analyzer mode.

Step2: Tuning the TX-PDM of UE from 0 to 123 and measure the output power of the UE via CMW500, at the same time measure the HDET value ,so we can find the relationship between the TX-PDM、 the HDET value and output power.

Output power of range:

LTE: 22.0dBm [-2dB~~+1dB]

LTE Band II						
Frequency (MHz)	BW (MHz)	Modulation	RB Size	Target power	MPR Target	MPR Allowed by 3Gpp
Uplink:1850~1910 Downlink:1930~1990	1.4	QPSK	≤5	22.0	0	0
		16-QAM	≤5	21.0	1	0-1
		QPSK	>5	21.0	1	0-1
		16-QAM	>5	20.0	2	0-2
Uplink:1850~1910 Downlink:1930~1990	3	QPSK	≤4	22.0	0	0
		16-QAM	≤4	21.0	1	0-1
		QPSK	>4	21.0	1	0-1
		16-QAM	>4	20.0	2	0-2
Uplink:1850~1910 Downlink:1930~1990	5	QPSK	≤8	22.0	0	0
		16-QAM	≤8	21.0	1	0-1
		QPSK	>8	21.0	1	0-1
		16-QAM	>8	20.0	2	0-2
Uplink:1850~1910 Downlink:1930~1990	10	QPSK	≤12	22.0	0	0
		16-QAM	≤12	21.0	1	0-1
		QPSK	>12	21.0	1	0-1
		16-QAM	>12	20.0	2	0-2
Uplink:1850~1910 Downlink:1930~1990	15	QPSK	≤16	22.0	0	0
		16-QAM	≤16	21.0	1	0-1
		QPSK	>16	21.0	1	0-1
		16-QAM	>16	20.0	2	0-2



Uplink:1850~1910 Downlink:1930~1990	20	QPSK	≤18	22.0	0	0
		16-QAM	≤18	21.0	1	0-1
		QPSK	>18	21.0	1	0-1
		16-QAM	>18	20.0	2	0-2

## 1.7 The LTE Band IV power adjust procedure

### Function:

After the LTE Band IV transmit POWER calibration the UE can find the relationship between the TX-PDM value and output power and can control the maximum conduct power through HDET value. So it can transmit the specific power according to the 3GPP protocol.

### Procedure:

Step1: The computer sets UE to the Factory test mode and works at LTE band IV, sets the CMW500 to LTE band IV Analyzer mode.

Step2: Tuning the TX-PDM of UE from 0 to 123 and measure the output power of the UE via CMW500, at the same time measure the HDET value ,so we can find the relationship between the TX-PDM、 the HDET value and output power.

Output power of range:

LTE: 22.0dBm [-2dB~~+1dB]

LTE Band IV						
Frequency (MHz)	BW (MHz)	Modulation	RB Size	Target power	MPR Target	MPR Allowed by 3Gpp
Uplink:1710~1755 Downlink:2110~2155	1.4	QPSK	≤5	22.0	0	0
		16-QAM	≤5	21.0	1	0-1
		QPSK	>5	21.0	1	0-1
		16-QAM	>5	20.0	2	0-2
Uplink:1710~1755 Downlink:2110~2155	3	QPSK	≤4	22.0	0	0
		16-QAM	≤4	21.0	1	0-1
		QPSK	>4	21.0	1	0-1
		16-QAM	>4	20.0	2	0-2
Uplink:1710~1755 Downlink:2110~2155	5	QPSK	≤8	22.0	0	0
		16-QAM	≤8	21.0	1	0-1



		QPSK	>8	21.0	1	0-1
		16-QAM	>8	20.0	2	0-2
Uplink:1710~1755 Downlink:2110~2155	10	QPSK	≤12	22.0	0	0
		16-QAM	≤12	21.0	1	0-1
		QPSK	>12	21.0	1	0-1
		16-QAM	>12	20.0	2	0-2
Uplink:1710~1755 Downlink:2110~2155	15	QPSK	≤16	22.0	0	0
		16-QAM	≤16	21.0	1	0-1
		QPSK	>16	21.0	1	0-1
		16-QAM	>16	20.0	2	0-2
Uplink:1710~1755 Downlink:2110~2155	20	QPSK	≤18	22.0	0	0
		16-QAM	≤18	21.0	1	0-1
		QPSK	>18	21.0	1	0-1
		16-QAM	>18	20.0	2	0-2

## 1.8 The LTE Band V power adjust procedure

### Function:

After the LTE Band V transmit POWER calibration the UE can find the relationship between the TX-PDM value and output power and can control the maximum conduct power through HDET value. So it can transmit the specific power according to the 3GPP protocol.

### Procedure:

Step1: The computer sets UE to the Factory test mode and works at LTE band V, sets the CMW500 to LTE band V Analyzer mode.

Step2: Tuning the TX-PDM of UE from 0 to 123 and measure the output power of the UE via CMW500, at the same time measure the HDET value ,so we can find the relationship between the TX-PDM、 the HDET value and output power.

Output power of range:

LTE: 22.0dBm [-2dB~~+1dB]

LTE Band V						
Frequency (MHz)	BW (MHz)	Modulation	RB Size	Target power	MPR Target	MPR Allowed by 3Gpp
Uplink:824~849 Downlink: 869~894	1.4	QPSK	≤5	22.0	0	0
		16-QAM	≤5	21.0	1	0-1



		QPSK	>5	21.0	1	0-1
		16-QAM	>5	20.0	2	0-2
Uplink:824~849 Downlink: 869~894	3	QPSK	≤4	22.0	0	0
		16-QAM	≤4	21.0	1	0-1
		QPSK	>4	21.0	1	0-1
		16-QAM	>4	20.0	2	0-2
Uplink:824~849 Downlink: 869~894	5	QPSK	≤8	22.0	0	0
		16-QAM	≤8	21.0	1	0-1
		QPSK	>8	21.0	1	0-1
		16-QAM	>8	20.0	2	0-2
Uplink:824~849 Downlink: 869~894	10	QPSK	≤12	22.0	0	0
		16-QAM	≤12	21.0	1	0-1
		QPSK	>12	21.0	1	0-1
		16-QAM	>12	20.0	2	0-2

## 1.9 The LTE Band VII power adjust procedure

### Function:

After the LTE Band VII transmit POWER calibration the UE can find the relationship between the TX-PDM value and output power and can control the maximum conduct power through HDET value. So it can transmit the specific power according to the 3GPP protocol.

### Procedure:

Step1: The computer sets UE to the Factory test mode and works at LTE band VII, sets the CMW500 to LTE band VII Analyzer mode.

Step2: Tuning the TX-PDM of UE from 0 to 123 and measure the output power of the UE via CMW500, at the same time measure the HDET value ,so we can find the relationship between the TX-PDM、 the HDET value and output power.

Output power of range:

LTE: 21.7dBm [-2dB~~+1dB]

LTE Band VII						
Frequency (MHz)	BW (MHz)	Modulation	RB Size	Target power	MPR Target	MPR Allowed by 3Gpp



Uplink:2500~2570 Downlink:2620~2690	5	QPSK	$\leq 8$	22.0	0	0
		16-QAM	$\leq 8$	21.0	1	0-1
		QPSK	$> 8$	21.0	1	0-1
		16-QAM	$> 8$	20.0	2	0-2
Uplink:2500~2570 Downlink:2620~2690	10	QPSK	$\leq 12$	22.0	0	0
		16-QAM	$\leq 12$	21.0	1	0-1
		QPSK	$> 12$	21.0	1	0-1
		16-QAM	$> 12$	20.0	2	0-2
Uplink:2500~2570 Downlink:2620~2690	15	QPSK	$\leq 16$	22.0	0	0
		16-QAM	$\leq 16$	21.0	1	0-1
		QPSK	$> 16$	21.0	1	0-1
		16-QAM	$> 16$	20.0	2	0-2
Uplink:2500~2570 Downlink:2620~2690	20	QPSK	$\leq 18$	22.0	0	0
		16-QAM	$\leq 18$	21.0	1	0-1
		QPSK	$> 18$	21.0	1	0-1
		16-QAM	$> 18$	20.0	2	0-2

## 2.0 The Bluetooth RF test procedure

Step1: The computer sets UE to the Factory test mode and works at Bluetooth mode and sets the CMU200 to Bluetooth Analyzer mode.

Step2: The EUT's Bluetooth chip connects with CMU200 through SMA interface, then all the BT RF performances can be tested.

### BT Average Power:

BT DH5: 7dBm [-2dB~~+1dB]

BT 2DH5/3DH5: 4dBm [-2dB~~+1.5dB]

BT4.0: -3dBm [-1dB~~+1dB]

### BT Peak Power:

$\leq 12$  dBm

## 2.1 The Wi-Fi RF test procedure

WIFI station:

Average Power:

11b: 17 dBm[-2dB~~+2dB]



11g: 16dBm[-2dB~~+2dB]

11n20: 14 dBm[-2dB~~+2dB]

11n40: 13 dBm[-2dB~~+2dB]

Peak Power:

21 dBm [-2dB~~+2dB]

**Note: The user has no possibility to change these settings later on.**