

## Tune-up procedures

### 1.1 Test Equipment List

- GSM and WCDMA tester: CMU200
- Dummy battery or Power Supply: agilent E66319D
- PC with serial port
- GPIB card

### 1.2 VCTCXO frequency accuracy adjust procedure

Function:

To calibrate the VCTCXO frequency accuracy.

Procedure:

step1: The computer sets HUAWEI MediaPad 7 Vogue (MediaPad 7 Vogue for short) to the Factory test mode and works at GSM850/PCS1900/WCDMA1900/WCDMA850 band, sets the CMU200 to GSM850/PCS1900/WCDMA1900/WCDMA850 Analyzer mode.

Step2: MediaPad 7 Vogue was adjusted to transmit 30dBm/33dBm/24 dBm by tuning the ADC. Use the CMU200 to measure the frequency error. Tuning the PDM parameter until the frequency error  $\leq 90\text{Hz}/180\text{Hz}/210\text{Hz}/90\text{Hz}$ .

### 1.3 The WCDMA 850MHz power adjust procedure

Function:

After the WCDMA transmit POWER calibration the MediaPad 7 Vogue 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 MediaPad 7 Vogue to the Factory test mode and works at WCDMA band, sets the CMU200 to WCDMA Analyzer mode.

Step2: Tuning the TX-AGC of MediaPad 7 Vogue from 20 to 240 and measure the output power of the MediaPad 7 Vogue via CMU200, So we can find the relationship between the TX-AGC and output power.

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

HSDPA: 21.5 dBm [-2.0dB~~+2.0dB]



DC-HSDPA: 20.5 dBm [-1.5dB~~+1.5dB]

HSUPA: 21.5 dBm [-2.0dB~~+2.0dB]

HSDPA:

Reduction of maximum output power, (dB)			
Sub-test 1	Sub-test 2	Sub-test 3	Sub-test 4
0	0	0.5	0.5

DC-HSDPA:

Reduction of maximum output power, (dB)			
Sub-test 1	Sub-test 2	Sub-test 3	Sub-test 4
0	0	0.5	0.5

HSUPA:

Reduction of maximum output power, (dB)				
Sub-test 1	Sub-test 2	Sub-test 3	Sub-test 4	Sub-test 5
0	2	1	2	0

#### 1.4 The WCDMA 1900MHz power adjust procedure

Function:

After the WCDMA transmit POWER calibration the MediaPad 7 Vogue 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 MediaPad 7 Vogue to the Factory test mode and works at WCDMA band, sets the CMU200 to WCDMA Analyzer mode.

Step2: Tuning the TX-AGC of MediaPad 7 Vogue from 20 to 240 and measure the output power of the MediaPad 7 Vogue via CMU200, So we can find the relationship between the TX-AGC and output power.

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



HSDPA: 21.5 dBm [-2.0dB~~+2.0dB]

DC-HSDPA: 21.0 dBm [-1.5dB~~+1.5dB]

HSUPA: 21.5 dBm [-2.0dB~~+2.0dB]

HSDPA:

Reduction of maximum output power, (dB)			
Sub-test 1	Sub-test 2	Sub-test 3	Sub-test 4
0	0	0.5	0.5

DC-HSDPA:

Reduction of maximum output power, (dB)			
Sub-test 1	Sub-test 2	Sub-test 3	Sub-test 4
0	0	0.5	0.5

HSUPA:

Reduction of maximum output power, (dB)				
Sub-test 1	Sub-test 2	Sub-test 3	Sub-test 4	Sub-test 5
0	2	1	2	0

### 1.5 The GSM850 power adjust procedure

Function:

After the GSM850 transmit POWER calibration the MediaPad 7 Vogue can find the relationship between the TX-DAC and output power. So it can transmit the specific power according to the 3GPP protocol.

Procedure:

Step1: The computer sets MediaPad 7 Vogue to the Factory test mode and works at GSM850 band, sets the CMU200 to GSM850 Analyzer mode.

Step2: Tuning the TX-DAC of MediaPad 7 Vogue from 2000 to 15500 and measure the output power of the MediaPad 7 Vogue via CMU200, So we can find the relationship between the TX-DAC and output power.



Output power of range:

GSM/GPRS (**GMSK**) :

1TXslot:32.0 dBm [-1.5dB~~+1.5dB]

2TXslot:30.0 dBm [-1.5dB~~+1.5dB]

3TXslot:29.0 dBm [-1.5dB~~+1.5dB]

4TXslot:27.0 dBm [-1.5dB~~+1.5dB]

EDGE (**8PSK**) :

1TXslot: 26.5 dBm [-1.5dB~~+1.5dB]

2TXslot: 24.5 dBm [-1.5dB~~+1.5dB]

3TXslot:22.5 dBm [-1.5dB~~+1.5dB]

4TXslot:20.5 dBm [-1.5dB~~+1.5dB]

EDGE (**GMSK**) :

1TXslot:32.0dBm [-1.5dB~~+1.5dB]

2TXslot:30.0 dBm [-1.5dB~~+1.5dB]

3TXslot:29.0 dBm [-1.5dB~~+1.5dB]

4TXslot:27.0dBm [-1.5dB~~+1.5dB]

GPRS (GMSK) :

Number of timeslots in uplink assignment	reduction of maximum output power, (dB)
1	0
2	2
3	4
4	6

EGPRS(8PSK):

Number of timeslots in uplink assignment	reduction of maximum output power, (dB)
1	0
2	2
	4
	6

EGPRS(GMSK):

Number of timeslots in uplink assignment	reduction of maximum output power, (dB)
1	0
2	2
3	4
4	6

### 1.6 The PCS1900 power adjust procedure

Function:

After the PCS1900 transmit POWER calibration the MediaPad 7 Vogue can find the relationship between the TX-DAC and output power. So it can transmit the specific power according to the 3GPP protocol.

Procedure:

Step1: The computer sets MediaPad 7 Vogue

to the Factory test mode and works at PCS1900 band, sets the CMU200 to PCS1900 Analyzer mode.

Step2: Tuning the TX-DAC of MediaPad 7 Vogue from 2000 to 15500 and measure the output power of the via CMU200, So we can find the relationship between the TX-DAC and output power.

Output power of range:

GSM/GPRS ( **GMSK** ) :

1TXslot:29.5 dBm [-1.5dB~~+1.5dB]

2TXslot:27.0 dBm [-1.5dB~~+1.5dB]

3TXslot:26.0 dBm [-1.5dB~~+1.5dB]

4TXslot:24.0 dBm [-1.5dB~~+1.5dB]

EDGE ( **8PSK** ) :



1TXslot: 25.5 dBm [-1.5dB~~+1.5dB]

2TXslot: 23.5 dBm [-1.5dB~~+1.5dB]

3TXslot:21.5 dBm [-1.5dB~~+1.5dB]

4TXslot:19.5 dBm [-1.5dB~~+1.5dB]

EDGE (GMSK) :

1TXslot:29.5 dBm [-1.5dB~~+1.5dB]

2TXslot:27.0 dBm [-1.5dB~~+1.5dB]

3TXslot:26.0dBm [-1.5dB~~+1.5dB]

4TXslot:24.0 dBm [-1.5dB~~+1.5dB]

GPRS (GMSK) :

Number of timeslots in uplink assignment	reduction of maximum output power, (dB)
1	0
2	2
3	4
4	6

EGPRS(8PSK):

Number of timeslots in uplink assignment	reduction of maximum output power, (dB)
1	0
2	2
	4
	6

EGPRS(GMSK):

Number of timeslots in uplink assignment	reduction of maximum output power, (dB)
1	0
2	2
3	4
4	6

1.7 The 2.4GHz power adjust procedure

**Function:**

After the 2.4GHz transmit POWER calibration the MediaPad 7 Vogue can find the relationship between the TX-DAC and output power. So it can transmit the specific power according to the protocol.

**Procedure:**

Step1: The computer sets HUAWEI MediaPad

to the Factory test mode and works at 2.4GHz sets the CMU200 to 2.4GHz Analyzer mode.

Step2: Tuning the TX-DAC of MediaPad 7 Vogue from 2000 to 15500 and measure the output power of the via CMU200, So we can find the relationship between the TX-DAC and output power.

**RF Conduct Output Power Range:****WIFI:**

(average conduct power):

11b:  $\leq 17.0\text{dBm}$

11g:  $\leq 14.0\text{dBm}$

11n:  $\leq 13.0\text{dBm}$

(peak conduct power):

11b:  $\leq 21.5\text{dBm}$

11g:  $\leq 24.5\text{dBm}$

11n:  $\leq 23.5\text{dBm}$

**BT:**

(average conduct power):

0CH:  $\leq 7.0\text{dBm}$

39CH:  $\leq 7.5\text{dBm}$

78CH:  $\leq 7.0\text{dBm}$

(peak conduct power):

0CH:  $\leq 7.5\text{dBm}$

39CH:  $\leq 7.5\text{dBm}$

78CH:  $\leq 7.5\text{dBm}$



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