Tune-up procedures

1.1Test Equipment List

–GSM and WCDMA tester: CMU200

–Dummy battery or Power Supply: Agilent E66319D

–PC with serial port

–GPIB card

1.2 The GSM850 power adjust procedure

Function:

After the GSM850 transmit POWER calibration the UE 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 the UE to the Factory test mode and works at GSM850 band, sets the CMU200 to GSM850 Analyzer mode.

Step2: Tuning the TX-DAC of UE from 50 to 600 and measure the output power of the UE via CMU200. So we can find the relationship between the TX-DAC and output power.

Output power of range：

GSM/GPRS（**GMSK** ）:

1TXslot: 32.5 dBm   [-2dB~~+1.5dB]

2TXslot: 30.5 dBm   [-2dB~~+1.5dB]

EDGE（**8PSK** ）:

1TXslot: 27dBm   [-2dB~~+1.5dB]

2TXslot: 25 dBm [-2dB~~+1.5dB]

EDGE（**GMSK** ）:

1TXslot: 32.5 dBm   [-2dB~~+1.5dB]

2TXslot: 30.5   dBm   [-2dB~~+1.5dB]

GPRS（GMSK）:

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

EGPRS(8PSK):

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

EGPRS(GMSK):

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

1.3 The PCS1900 power adjust procedure

Function:

After the PCS1900 transmit POWER calibration the UE 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 UE to the Factory test mode and works at PCS1900 band, sets the CMU200 to PCS1900 Analyzer mode.

Step2: Tuning the TX-DAC of UE from 50 to 600 and measure the output power of the UE via CMU200, So we can find the relationship between the TX-DAC and output power.

Output power of range：

PCS/GPRS（**GMSK** ）:

1TXslot:30 dBm [-2dB~~+1.5dB]

2TXslot:28 dBm [-2dB~~+1.5dB]

EDGE（**8PSK** ）：

1TXslot: 26 dBm [-2dB~~+1.5dB]

2TXslot: 24 dBm [-2dB~~+1.5dB]

EDGE（**GMSK** ）：

1TXslot:30 dBm [-2dB~~+1.5dB]

2TXslot:28 dBm [-2dB~~+1.5dB]

GPRS（GMSK）：

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

EGPRS(8PSK):

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

EGPRS(GMSK):

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

1.4 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 II Analyzer mode.

Step2: Tuning the TX-PDM of UE from 0 to 250 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 [-2dB~~+0.8dB]

HSDPA: 23 dBm [-3dB~~+0.8dB]

HSUPA: 23 dBm [-3dB~~+0.8dB]

HSDPA:

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

HSUPA:

Reduction of maximum output power, (dB)				
Sub－test 1	Sub－test 2	Sub－test 3	Sub－test 4	Sub－test 5
0.5	2.0	1.5	1.5	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 250 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: 22.2 dBm [-2dB~~+0.8dB]

HSDPA: 22.2 dBm [-3dB~~+0.8dB]

HSUPA: 22.2 dBm [-3dB~~+0.8dB]

HSDPA:

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

HSUPA:

Reduction of maximum output power, (dB)				
Sub－test 1	Sub－test 2	Sub－test 3	Sub－test 4	Sub－test 5
0.5	2.0	0.5	1.5	0

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 250 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: 23.5 dBm [-3dB~~+1dB]

HSDPA: 23.5 dBm [-3dB~~+1dB]

HSUPA: 23.5 dBm [-3dB~~+1dB]

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
0.5	2.0	1.5	1.5	0.5

1.6 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:

≤8dBm

BT Peak Power:

≤12dBm

1.7 The WIFi RF test procedure

5G WIFI:

802.11a：14 dBm

802.11n（5G Band）：12 dBm

2.4G WIFI:

BG1 Mode:

802.11b: 18dBm

802.11g: 15dBm

802.11n：13dBm

BG2 Mode:

802.11b: 15dBm

802.11g: 12dBm

802.11n：   11dBm

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