

Tune Up Procedure

Tune-up procedure

GSM/WCDMA/LTE TEST

Measurement Procedure:

GSM/WCDMA/LTE

1.Connect EUT with CMU200(E5515C)/CMW500, through RF cable. Make a call from CMU200(E5515C)/CMW500;

2.Measure the Output Power Average value;

3.Remarks: All Output Power are tested in Average Value specification.

For WIFI/BT

1: Connect to Power meter (NRVD) through RF cable and let the EUT Continuously transmit

2: Measure the Output Power Average value

Manufacturing tolerance

GSM

GSM 850 (GMSK) (Burst Average Power)			
Channel	Channel 251	Channel 190	Channel 128
Target (dBm)	32.0	32.0	32.0
Tolerance \pm (dB)	1.0	1.0	1.0
GSM 1900 (GMSK) (Burst Average Power)			
Channel	Channel 810	Channel 661	Channel 512
Target (dBm)	29.0	29.0	29.0
Tolerance \pm (dB)	1.0	1.0	1.0

GSM 850 GPRS (GMSK) (Burst Average Power)				
Channel		128	190	251
1 Txslot	Target (dBm)	32.0	32.0	32.0
	Tolerance \pm (dB)	1.0	1.0	1.0
2 Txslot	Target (dBm)	30.5	30.5	30.5
	Tolerance \pm (dB)	1.0	1.0	1.0
3 Txslot	Target (dBm)	28.5	28.5	28.5
	Tolerance \pm (dB)	1.0	1.0	1.0
4 Txslot	Target (dBm)	27.0	27.0	27.0
	Tolerance \pm (dB)	1.0	1.0	1.0
GSM850 EGPRS (8PSK) (Burst Average Power)				
Channel		128	190	251
1 Txslot	Target (dBm)	25.5	25.5	25.5
	Tolerance \pm (dB)	1.0	1.0	1.0
2 Txslot	Target (dBm)	24.0	24.0	24.0
	Tolerance \pm (dB)	1.0	1.0	1.0
3 Txslot	Target (dBm)	22.0	22.0	22.0
	Tolerance \pm (dB)	1.0	1.0	1.0

4 Txslot	Target (dBm)	20.5	20.5	20.5
	Tolerance \pm (dB)	1.0	1.0	1.0
GSM 1900 GPRS (GMSK) (Burst Average Power)				
Channel		512	661	810
1 Txslot	Target (dBm)	29.0	29.0	29.0
	Tolerance \pm (dB)	1.0	1.0	1.0
2 Txslot	Target (dBm)	27.0	27.0	27.0
	Tolerance \pm (dB)	1.0	1.0	1.0
3 Txslot	Target (dBm)	26.0	26.0	26.0
	Tolerance \pm (dB)	1.0	1.0	1.0
4 Txslot	Target (dBm)	24.5	24.5	24.5
	Tolerance \pm (dB)	1.0	1.0	1.0
GSM 1900 EDGE (8PSK) (Burst Average Power)				
Channel		512	661	810
1 Txslot	Target (dBm)	25.0	25.0	25.0
	Tolerance \pm (dB)	1.0	1.0	1.0
2 Txslot	Target (dBm)	23.5	23.5	23.5
	Tolerance \pm (dB)	1.0	1.0	1.0
3 Txslot	Target (dBm)	22.0	22.0	22.0
	Tolerance \pm (dB)	1.0	1.0	1.0
4 Txslot	Target (dBm)	20.0	20.0	20.0
	Tolerance \pm (dB)	1.0	1.0	1.0

UMTS

UMTS Band V			
Channel	Channel 4132	Channel 4183	Channel 4233
Target (dBm)	22.0	22.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band V HSDPA(sub-test 1)			
Channel	Channel 4132	Channel 4183	Channel 4233
Target (dBm)	22..0	22..0	22..0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band V HSDPA(sub-test 2)			
Channel	Channel 4132	Channel 4183	Channel 4233
Target (dBm)	22..0	22..0	22..0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band V HSDPA(sub-test 3)			
Channel	Channel 4132	Channel 4183	Channel 4233
Target (dBm)	22..0	22..0	22..0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band V HSDPA(sub-test 4)			
Channel	Channel 4132	Channel 4183	Channel 4233
Target (dBm)	22..0	22..0	22..0

Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band V HSUPA(sub-test 1)			
Channel	Channel 4132	Channel 4183	Channel 4233
Target (dBm)	22..0	22..0	22..0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band V HSUPA(sub-test 2)			
Channel	Channel 4132	Channel 4183	Channel 4233
Target (dBm)	22..0	22..0	22..0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band V HSUPA(sub-test 3)			
Channel	Channel 4132	Channel 4183	Channel 4233
Target (dBm)	22..0	22..0	22..0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band V HSUPA(sub-test 4)			
Channel	Channel 4132	Channel 4183	Channel 4233
Target (dBm)	22..0	22..0	22..0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band V HSUPA(sub-test 5)			
Channel	Channel 4132	Channel 4183	Channel 4233
Target (dBm)	22..0	22..0	22..0
Tolerance \pm (dB)	1.0	1.0	1.0

UMTS Band IV			
Channel	Channel 1312	Channel 1413	Channel 1513
Target (dBm)	22.5	22.5	22.5
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band IV HSDPA(sub-test 1)			
Channel	Channel 1312	Channel 1413	Channel 1513
Target (dBm)	22.0	22.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band IV HSDPA(sub-test 2)			
Channel	Channel 1312	Channel 1413	Channel 1513
Target (dBm)	22.0	22.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band IV HSDPA(sub-test 3)			
Channel	Channel 1312	Channel 1413	Channel 1513
Target (dBm)	22.0	22.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band IV HSDPA(sub-test 4)			
Channel	Channel 1312	Channel 1413	Channel 1513
Target (dBm)	22.0	22.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band IV HSUPA(sub-test 1)			

Channel	Channel 1312	Channel 1413	Channel 1513
Target (dBm)	22.0	22.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band IV HSUPA(sub-test 2)			
Channel	Channel 1312	Channel 1413	Channel 1513
Target (dBm)	22.0	22.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band IV HSUPA(sub-test 3)			
Channel	Channel 1312	Channel 1413	Channel 1513
Target (dBm)	22.0	22.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band IV HSUPA(sub-test 4)			
Channel	Channel 1312	Channel 1413	Channel 1513
Target (dBm)	22.0	22.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band V HSUPA(sub-test 5)			
Channel	Channel 1312	Channel 1413	Channel 1513
Target (dBm)	22.0	22.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0

UMTS Band II			
Channel	Channel 9262	Channel 9400	Channel 9538
Target (dBm)	22.5	22.5	22.5
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band II HSDPA(sub-test 1)			
Channel	Channel 9262	Channel 9400	Channel 9538
Target (dBm)	22.0	22.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band II HSDPA(sub-test 2)			
Channel	Channel 9262	Channel 9400	Channel 9538
Target (dBm)	22.0	22.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band II HSDPA(sub-test 3)			
Channel	Channel 9262	Channel 9400	Channel 9538
Target (dBm)	22.0	22.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band II HSDPA(sub-test 4)			
Channel	Channel 9262	Channel 9400	Channel 9538
Target (dBm)	22.0	22.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band II HSUPA(sub-test 1)			
Channel	Channel 9262	Channel 9400	Channel 9538

Target (dBm)	22.0	22.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band II HSUPA(sub-test 2)			
Channel	Channel 9262	Channel 9400	Channel 9538
Target (dBm)	22.0	22.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band II HSUPA(sub-test 3)			
Channel	Channel 9262	Channel 9400	Channel 9538
Target (dBm)	22.0	22.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band II HSUPA(sub-test 4)			
Channel	Channel 9262	Channel 9400	Channel 9538
Target (dBm)	22.0	22.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0
UMTS Band II HSUPA(sub-test 5)			
Channel	Channel 9262	Channel 9400	Channel 9538
Target (dBm)	22.0	22.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0

LTE Band 2

BW:1.4MHz [<RB=1>]						
Channel	Channel 18607		Channel 18900		Channel 19193	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:1.4MHz [<RB=3>, <RB=6>]						
Channel	Channel 18607		Channel 18900		Channel 19193	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:3MHz [<RB=1>]						
Channel	Channel 18615		Channel 18900		Channel 19185	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:3MHz [<RB=8>, <RB=15>]						
Channel	Channel 18615		Channel 18900		Channel 19185	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:5MHz [<RB=1>]						
Channel	Channel 18625		Channel 18900		Channel 19175	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0

Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:5MHz [<RB=12>, <RB=25>]						
Channel	Channel 18625		Channel 18900		Channel 19175	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:10MHz [<RB=1>]						
Channel	Channel 18650		Channel 18900		Channel 19150	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:10MHz [<RB=25>, <RB=50>]						
Channel	Channel 18650		Channel 18900		Channel 19150	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:15MHz [<RB=1>]						
Channel	Channel 18675		Channel 18900		Channel 19125	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:15MHz [<RB=37>, <RB=75>]						
Channel	Channel 18675		Channel 18900		Channel 19125	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:20MHz [<RB=1>]						
Channel	Channel 18700		Channel 18900		Channel 19100	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:20MHz [<RB=50>, <RB=100>]						
Channel	Channel 18700		Channel 18900		Channel 19100	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0

LTE Band 4

BW:1.4MHz [<RB=1>]						
Channel	Channel 19957		Channel 20175		Channel 20393	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	22.5	22.5	22.5	22.5	22.5	22.5
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0

BW:1.4MHz [<RB=3>, <RB=6>]						
Channel	Channel 19957		Channel 20175		Channel 20393	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	22.5	22.5	22.5	22.5	22.5	22.5
Tolerance ±(dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:3MHz [<RB=1>]						
Channel	Channel 19965		Channel 20175		Channel 20385	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	22.5	22.5	22.5	22.5	22.5	22.5
Tolerance ±(dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:3MHz [<RB=8>, <RB=15>]						
Channel	Channel 19965		Channel 20175		Channel 20385	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	22.5	22.5	22.5	22.5	22.5	22.5
Tolerance ±(dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:5MHz [<RB=1>]						
Channel	Channel 19975		Channel 20175		Channel 20375	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	22.5	22.5	22.5	22.5	22.5	22.5
Tolerance ±(dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:5MHz [<RB=12>, <RB=25>]						
Channel	Channel 19975		Channel 20175		Channel 20375	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	22.5	22.5	22.5	22.5	22.5	22.5
Tolerance ±(dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:10MHz [<RB=1>]						
Channel	Channel 20000		Channel 20175		Channel 20350	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	22.5	22.5	22.5	22.5	22.5	22.5
Tolerance ±(dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:10MHz [<RB=25>, <RB=50>]						
Channel	Channel 20000		Channel 20175		Channel 20350	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	22.5	22.5	22.5	22.5	22.5	22.5
Tolerance ±(dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:15MHz [<RB=1>]						
Channel	Channel 20025		Channel 20175		Channel 20325	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	22.5	22.5	22.5	22.5	22.5	22.5
Tolerance ±(dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:15MHz [<RB=37>, <RB=75>]						
Channel	Channel 20025		Channel 20175		Channel 20325	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM



Target (dBm)	22.5	22.5	22.5	22.5	22.5	22.5
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:20MHz [<RB=1>]						
Channel	Channel 20050		Channel 20175		Channel 20300	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	22.5	22.5	22.5	22.5	22.5	22.5
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:20MHz [<RB=50>, <RB=100>]						
Channel	Channel 20050		Channel 20175		Channel 20300	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	22.5	22.5	22.5	22.5	22.5	22.5
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0

LTE Band 5

BW:1.4MHz [<RB=1>]						
Channel	Channel 20407		Channel 20525		Channel 20643	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	24.0	23.5	24.0	23.5	24.0	23.5
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:1.4MHz [<RB=3>, <RB=6>]						
Channel	Channel 20407		Channel 20525		Channel 20643	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	24.0	23.5	24.0	23.5	24.0	23.5
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:3MHz [<RB=1>]						
Channel	Channel 20415		Channel 20525		Channel 20635	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	24.0	23.5	24.0	23.5	24.0	23.5
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:3MHz [<RB=8>, <RB=15>]						
Channel	Channel 20415		Channel 20525		Channel 20635	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	24.0	23.5	24.0	23.5	24.0	23.5
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:5MHz [<RB=1>]						
Channel	Channel 20425		Channel 20525		Channel 20625	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	24.0	23.5	24.0	23.5	24.0	23.5
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:5MHz [<RB=12>, <RB=25>]						
Channel	Channel 20425		Channel 20525		Channel 20625	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	24.0	23.5	24.0	23.5	24.0	23.5

Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:10MHz [$<RB=1>$]						
Channel	Channel 20450		Channel 20525		Channel 20600	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	24.0	23.5	24.0	23.5	24.0	23.5
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:10MHz [$<RB=25>$, $<RB=50>$]						
Channel	Channel 20450		Channel 20525		Channel 20600	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	24.0	23.5	24.0	23.5	24.0	23.5
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0

LTE Band 7

BW:5MHz [$<RB=1>$]						
Channel	Channel 20775		Channel 21100		Channel 21425	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	20.5	20.0	20.5	20.0	20.5	20.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:5MHz [$<RB=12>$, $<RB=25>$]						
Channel	Channel 20775		Channel 21100		Channel 21425	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	20.5	20.0	20.5	20.0	20.5	20.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:10MHz [$<RB=1>$]						
Channel	Channel 20800		Channel 21100		Channel 21400	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	20.5	20.0	20.5	20.0	20.5	20.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:10MHz [$<RB=25>$, $<RB=50>$]						
Channel	Channel 20800		Channel 21100		Channel 21400	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	20.5	20.0	20.5	20.0	20.5	20.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:15MHz [$<RB=1>$]						
Channel	Channel 20825		Channel 21100		Channel 21375	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	20.5	20.0	20.5	20.0	20.5	20.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:15MHz [$<RB=37>$, $<RB=75>$]						
Channel	Channel 20825		Channel 21100		Channel 21375	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	20.5	20.0	20.5	20.0	20.5	20.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0

Channel	Channel 20000		Channel 20175		Channel 20350	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.5	23.0	23.5	23.0	23.5	23.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:10MHz [<RB=25>, <RB=50>]						
Channel	Channel 20000		Channel 20175		Channel 20350	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.5	23.0	23.5	23.0	23.5	23.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0

LTE Band 17

BW:5MHz [<RB=1>]						
Channel	Channel 23755		Channel 23790		Channel 23825	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.5	22.5	23.5	22.5	23.5	22.5
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:5MHz [<RB=12>, <RB=25>]						
Channel	Channel 23755		Channel 23790		Channel 23825	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.5	22.5	23.5	22.5	23.5	22.5
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:10MHz [<RB=1>]						
Channel	Channel 23755		Channel 23790		Channel 23825	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.5	22.5	23.5	22.5	23.5	22.5
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:10MHz [<RB=25>, <RB=50>]						
Channel	Channel 23755		Channel 23790		Channel 23825	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.5	22.5	23.5	22.5	23.5	22.5
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0

LTE Band 66

BW:1.4MHz [<RB=1>]						
Channel	Channel 131979		Channel 132422		Channel 132665	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:1.4MHz [<RB=3>, <RB=6>]						
Channel	Channel 131979		Channel 132422		Channel 132665	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0

Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:3MHz [<RB=1>]						
Channel	Channel 131987		Channel 132422		Channel 132657	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:3MHz [<RB=8>, <RB=15>]						
Channel	Channel 131987		Channel 132422		Channel 132657	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:5MHz [<RB=1>]						
Channel	Channel 131997		Channel 132422		Channel 132647	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:5MHz [<RB=12>, <RB=25>]						
Channel	Channel 131997		Channel 132422		Channel 132647	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:10MHz [<RB=1>]						
Channel	Channel 132022		Channel 132422		Channel 132622	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:10MHz [<RB=25>, <RB=50>]						
Channel	Channel 132022		Channel 132422		Channel 132622	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:15MHz [<RB=1>]						
Channel	Channel 132047		Channel 132422		Channel 132597	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:15MHz [<RB=37>, <RB=75>]						
Channel	Channel 132047		Channel 132422		Channel 132597	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:20MHz [<RB=1>]						
Channel	Channel 132072		Channel 132422		Channel 132572	

	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0
BW:20MHz [<RB=50>, <RB=100>]						
Channel	Channel 132072		Channel 132422		Channel 132572	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Target (dBm)	23.0	22.0	23.0	22.0	23.0	22.0
Tolerance \pm (dB)	1.0	1.0	1.0	1.0	1.0	1.0

WiFi 2.4G

802.11b (Average)			
Channel	Channel 1	Channel 6	Channel 11
Target (dBm)	11.5	11.5	11.5
Tolerance \pm (dB)	1.0	1.0	1.0
802.11g (Average)			
Channel	Channel 1	Channel 6	Channel 11
Target (dBm)	12.0	12.0	12.0
Tolerance \pm (dB)	1.0	1.0	1.0
802.11n HT20 (Average)			
Channel	Channel 1	Channel 6	Channel 11
Target (dBm)	9.5	12.5	14.0
Tolerance \pm (dB)	1.0	1.0	1.0

WiFi 5.2G

802.11a (Average)			
Channel	Channel 36	Channel 40	Channel 48
Target (dBm)	12.5	13.0	10.0
Tolerance \pm (dB)	1.0	1.0	1.0
802.11n(20MHz) (Average)			
Channel	Channel 36	Channel 40	Channel 48
Target (dBm)	12.5	13.0	9.5
Tolerance \pm (dB)	1.0	1.0	1.0
802.11n(40MHz) (Average)			
Channel	Channel 38	Channel 46	
Target (dBm)	13.0	10.5	
Tolerance \pm (dB)	1.0	1.0	
802.11ac(20MHz) (Average)			
Channel	Channel 36	Channel 40	Channel 48
Target (dBm)	12.5	12.0	9.5
Tolerance \pm (dB)	1.0	1.0	1.0
802.11ac(40MHz) (Average)			
Channel	Channel 38	Channel 46	
Target (dBm)	12.0	10.5	



Tolerance \pm (dB)	1.0	1.0
IEEE 802.11ac VHT80(Average)		
Channel	Channel 42	
Target (dBm)	11.5	
Tolerance \pm (dB)	1.0	

WiFi 5.8G

802.11a (Average)			
Channel	Channel 149	Channel 157	Channel 165
Target (dBm)	14.0	12.0	13.0
Tolerance \pm (dB)	1.0	1.0	1.0
802.11n(20MHz) (Average)			
Channel	Channel 149	Channel 157	Channel 165
Target (dBm)	13.0	12.5	11.5
Tolerance \pm (dB)	1.0	1.0	1.0
802.11n(40MHz) (Average)			
Channel	Channel 151	Channel 159	
Target (dBm)	12.5	12.0	
Tolerance \pm (dB)	1.0	1.0	
802.11ac(20MHz) (Average)			
Channel	Channel 149	Channel 157	Channel 165
Target (dBm)	14.0	12.5	12.5
Tolerance \pm (dB)	1.0	1.0	1.0
802.11ac(40MHz) (Average)			
Channel	Channel 151	Channel 159	
Target (dBm)	14.0	11.5	
Tolerance \pm (dB)	1.0	1.0	
802.11ac(80MHz) (Average)			
Channel	Channel 155		
Target (dBm)	12.0		
Tolerance \pm (dB)	1.0		

Bluetooth V5.0

BLE-GFSK (Average)			
Channel	Channel 0	Channel 19	Channel 39
Target (dBm)	0.5	-0.5	-0.5
Tolerance \pm (dB)	1.0	1.0	1.0
GFSK (Average)			
Channel	Channel 0	Channel 39	Channel 78
Target (dBm)	2.0	1.0	1.5
Tolerance \pm (dB)	1.0	1.0	1.0
π/4DQPSK (Average)			
Channel	Channel 0	Channel 39	Channel 78

Target (dBm)	2.0	1.0	2.0
Tolerance \pm (dB)	1.0	1.0	1.0
8DPSK (Average)			
Channel	Channel 0	Channel 39	Channel 78
Target (dBm)	2.0	1.5	2.0
Tolerance \pm (dB)	1.0	1.0	1.0



Tune Up Procedure

1. RX Gain Calibration
 - a. Put DUT in test mode
 - b. Put DUT in BCH mode
 - c. Put DUT in selected channel band
 - d. Total gain chain calibration at center ARFCN
 - e. Frequency Ripple calibration
 - f. Complete RX_AGC Gain table

2. TX Power Calibration
 - a. Put DUT in test mode
 - b. Put DUT in BCH mode
 - c. Put DUT in selected channel band
 - d. Total gain chain calibration at center ARFCN
 - e. Frequency Ripple calibration
 - f. Complete TX_APC Gain table

3. AFC calibration
 - a. Put DUT in test mode
 - b. Put DUT in selected channel mode
 - c. Calibration AFC at center ARFCN
 - d. Complete AFC result table

