2BPTB-CTAB14 Tune Up Procedure

Measurement Procedure:

1. Set the device to operational voltage and on a predefined channel in a special test mode.
2. The actual output power is measured at several power levels.
3. The gain factors of each individual device are adjusted until the target value is met. The appropriate gain control settings for each output power level are stored in each device individually (for each power level). The user has no possibility to change these settings later on.
4. The maximum gains of each individual device are adjusted and measured until the target value is met. The production target power with tolerance compiles with the maximum power in test report.

Rated RF power output:

Mode	GSM850(AVG)	GSM1900(AVG)
GSM/PCS	32±1dBm	29±1dBm
GPRS (1 Slot)	31.5±1dBm	28.5±1dBm
GPRS (2 Slot)	30.5±1dBm	28±1dBm
GPRS (3 Slot)	29±1dBm	26±1dBm
GPRS (4 Slot)	28±1dBm	25±1dBm

Mode	WCDMA Band II(AVG)	WCDMA Band V(AVG)
RMC	23±1dBm	23±1dBm
HSDPA Subtest-1	23±1dBm	23±1dBm
HSDPA Subtest-2	22±1dBm	22±1dBm
HSDPA Subtest-3	22±1dBm	22±1dBm
HSDPA Subtest-4	22±1dBm	22±1dBm
HSUPA Subtest-1	22±1dBm	22±1dBm
HSUPA Subtest-2	22±1dBm	22±1dBm
HSUPA Subtest-3	22±1dBm	22±1dBm
HSUPA Subtest-4	22±1dBm	22±1dBm
HSUPA Subtest-5	22±1dBm	22±1dBm

BW[MHz]	RB Size	Mode	Band 5	Band 7
1.4	1	QPSK	23±1dBm	N/A
1.4	3		22±1dBm	N/A
1.4	6		22±1dBm	N/A
1.4	1	16- QAM	22±1dBm	N/A
1.4	3		21±1dBm	N/A
1.4	6		21±1dBm	N/A
3	1	QPSK	23±1dBm	N/A
3	8		22±1dBm	N/A
3	15		22±1dBm	N/A
3	1	16- QAM	22±1dBm	N/A
3	8		21±1dBm	N/A
3	15		20.5±1dBm	N/A
5	1	QPSK	23±1dBm	23±1dBm
5	12		22±1dBm	22±1dBm
5	25		22±1dBm	21.5±1dBm
5	1	16- QAM	22±1dBm	22±1dBm
5	12		21±1dBm	21±1dBm
5	25		21±1dBm	21±1dBm
10	1	QPSK	23±1dBm	23±1dBm
10	25		22±1dBm	22±1dBm
10	50		22±1dBm	22±1dBm
10	1	16- QAM	22±1dBm	22±1dBm
10	25		21±1dBm	21±1dBm
10	50		21±1dBm	21±1dBm
15	1	QPSK	N/A	23±1dBm
15	36		N/A	22±1dBm
15	75		N/A	22±1dBm
15	1	16- QAM	N/A	22±1dBm
15	36		N/A	21±1dBm
15	75		N/A	21±1dBm
20	1	QPSK	N/A	23±1dBm
20	50		N/A	22±1dBm
20	100		N/A	22±1dBm
20	1	16- QAM	N/A	22±1dBm
20	50		N/A	21±1dBm
20	100		N/A	21±1dBm

Mode	2.4G WLAN(AVG)
802.11b	14±1dBm
802.11g	12.5±1dBm
802.11n(HT 20)	12.5±1dBm
802.11n(HT 40)	12±1dBm

Mode	5.2G WLAN(AVG)
802.11a	13±1dBm
802.11 n-HT20	12.5±1dBm
802.11 n-HT40	12±1dBm
802.11 ac-VHT20	12.5±1dBm
802.11 ac-VHT40	12.5±1dBm
802.11 ac-VHT80	13±1dBm

Mode	5.8G WLAN(AVG)
802.11a	10.5±1dBm
802.11 n-HT20	10±1dBm
802.11 n-HT40	10±1dBm
802.11 ac-VHT20	10.5±1dBm
802.11 ac-VHT40	9.5±1dBm
802.11 ac-VHT80	10.5±1dBm

Mode	BT(AVG)
GFSK	-1±1dBm
π/4-DQPSK	-2±1dBm
8DPSK	-1.5±1dBm

Mode	BLE(AVG)
GFSK(1Mbps)	-4.5±1dBm
GFSK(2Mbps)	-4.5±1dBm

Then these appropriate rated RF output power settings are stored in each device individually. The user has no possibility to change these settings later on, and during manufacturing each device will be individual calibrated. The measurement is done in fully calibrated setup, which is based on the base station simulator. Furthermore, the highest power level is verified afterwards in a call measurement on three channels(low, middle and high).