



WMP100 Wireless Modem Tune up procedure

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The WMP100 wireless modem is equipped with a GSM/GPRS transceiver radio. The radio meets the requirements of the 3rd Generation Partnership Project Technical Specification Group; Mobile Station (MS) conformance specification; Part 1: Conformance specification “3GPP TS 51.0101”

The WMP100 calibration process comprises of a suite of Radio Frequency (RF) transmitter, receiver, and modulation tests that define tuning calibration values which are saved inside of each Device Under Test (DUT). Each supported band is calibrated separately.

Calibration test equipment consists of an RF signal generator, power meter and a radio communication test set that combines both. The calibration process is conducted in a shielded enclosure which prevents external RF signals from interfering or contributing to DUT RF measurements.

All transmitter power measurements made by the instruments report the power at the DUT's RF connector. A process known as RF Normalization measures both the RF cable loss and power meter inaccuracy values in order to calculate the precise power at the DUT connector.

The Calibration process is automated, with a host PC controlling both the test equipment and DUT. The PC's calibration program insures that the tuning parameters found are reasonable by applying limits to them, and by running calibration performance tests where the DUT employs its internal calibration values. Upon successful completion of all tests and conditional upon finding all results within limits, the DUT is confirmed ready for use.

The range of allowable operating power levels are defined as per the tables below

Range of operating RF power levels for GSM 1900 (PCS)

Power Control Level	Signal	Tolerances	
	dBm	Normal	Extreme
0	30	+/-2 dB	+/-2.5 dB
1	28	+/-3 dB	+/-4 dB
2	26	+/-3 dB	+/-4 dB
3	24	+/-3 dB	+/-4 dB
4	22	+/-3 dB	+/-4 dB
5	20	+/-3 dB	+/-4 dB
6	18	+/-3 dB	+/-4 dB
7	16	+/-3 dB	+/-4 dB
8	14	+/-3 dB	+/-4 dB
9	12	+/-4 dB	+/-5 dB
10	10	+/-4 dB	+/-5 dB
11	8	+/-4 dB	+/-5 dB
12	6	+/-4 dB	+/-5 dB
13	4	+/-4 dB	+/-5 dB
14	2	+/-5 dB	+/-6 dB
15	0	+/-5 dB	+/-6 dB

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Range of operating RF power levels for GSM 850

Power Control Level	Signal dBm	Tolerances	
		Normal	Extreme
5	33	+/-2 dB	+/-2.5 dB
6	31	+/-3 dB	+/-4 dB
7	29	+/-3 dB	+/-4 dB
8	27	+/-3 dB	+/-4 dB
9	25	+/-3 dB	+/-4 dB
10	23	+/-3 dB	+/-4 dB
11	21	+/-3 dB	+/-4 dB
12	19	+/-3 dB	+/-4 dB
13	17	+/-3 dB	+/-4 dB
14	15	+/-3 dB	+/-4 dB
15	13	+/-3 dB	+/-4 dB
16	11	+/-5 dB	+/-6 dB
17	9	+/-5 dB	+/-6 dB
18	7	+/-5 dB	+/-6 dB
19	5	+/-5 dB	+/-6 dB