

Date: 6/10/2005

Subject: Calculate Antenna Gain for iWM3140 Device.

Antenna Manufacture: Mobile Mark Communication Antennas

Model: SMW-UMB-1A3J2C

Descriptions: Multi-band Surface Mount Antenna Cellular/DCS/PCS/GPS and 2.4 GHz.

Gain Specification Without Cable Loss

Band 1, 806 to 960 MHz : 2 dBi Band 2, 1710 to 1990 MHz: 5dBi Band 3, 2400 to 2585 MHz: 5dBi

Cable Loss

Band 1, 806 to 960 MHz : 2.25 dB Band 2, 1710 to 1990 MHz: 3.3 dB Band 3, 2400 to 2585 MHz: 3.3 dB

Actual Estimated Antenna Gain

Band 1, 806 to 960 MHz: -0.25 dBi Band 2, 1710 to 1990 MHz: 1.7dBi Band 3, 2400 to 2585 MHz: 1.7dBi