

Wilson® Cellular Announces a New Dual Band Wireless Mobile Amplifier with Smart Technology™

Wilson's Dual Band Wireless Mobile Amplifiers allow the benefit of an external antenna and up to 3 watt² amplifier without a physical connection to the cell phone.

What are the benefits of our Wireless Mobile Amplifiers?

The Wireless Amplifiers allow one or more users to benefit from an outside antenna and amplifier without a physical connection to the cell phone. This eliminates the need for an external antenna connection on the cell phone.

Wireless vs. Direct Connection?

The Wilson Wireless Amplifiers and Direct Connection Amplifiers perform comparably. Both amplifiers transmit up to 3 Watts to the cell site and receive a signal as weak as -110 dBm.

Does the Wireless Mobile Amplifier affect a carrier's cell site?

Wilson's Wireless Mobile Amplifiers have Smart Technology™ that automatically adjusts the power based upon the cell site's requirements. This patent pending technology ensures that the power to the cell site is within the carrier's specifications.

Tests by WTS Laboratories¹ show that the Wilson Wireless Amplifiers pass important TIA/EIA-98-E tests. These are standard tests used by the cellular industry for evaluating CDMA cell phones and ensure compatibility of cell phones with cell sites. Amplifiers that are added to the system should not harm the cell sites. They should improve cell phone performance while remaining "transparent" with their presence not affecting the cell sites' operation.

¹WTS Laboratories performs cell phone certification tests for Telus Mobility, Nokia, Motorola, Samsung, and others.
²Dependant on modulation / protocol.

Wilson Wireless Mobile Amplifiers have Patent Pending Smart Technology™ that allow the amplifier to be "transparent" on the carrier's system while improving coverage.

Passed TIA/EIA-98-E Tx & Rx Tests

3.5.1 – Receiver Sensitivity – **-110.47 dBm on 800 MHz**
-111.04 dBm on 1900 MHz

Receiver Sensitivity measures the RF sensitivity of a cell phone with each amplifier by determining the minimum received power necessary to ensure that the frame error rate (FER) does not exceed a specified value. The sensitivity is calculated separately for each frequency band and is the average of all the measurements made in that band.

4.4.5 – Maximum RF Output Power – Passed

In order for a CDMA system to operate properly, all the cell phones that communicate through a cell site must have the same signal strength at the cell site's receiver. A cell phone that has excessive power is likely to overload the cell site and cause other phones to lose communications. If a cell phone's maximum power level is not high enough, it will be beneath the receiving threshold of the cell site and will not be able to communicate.

4.4.6 – Minimum Controlled Output Power – Passed

While connecting to a cell site (open loop) or after a connection (closed loop), a cell phone is required to vary its power. The TIA/EIA-98-E test simulates the conditions where minimum power is required and measures the actual output power. If power exceeds the required level, a cell phone may overload a cell site and prevent others from communicating.

Tests show **Wilson® Cellular's** Dual Band Wireless Mobile Amplifier Outperforms Digital Antenna® and RF Engineered Solutions® (RES)¹

Tests by WTS Laboratories² show the Wilson Dual Band Wireless Mobile Amplifier passed the significant TIA/EIA-98-E transmit and receive tests while Digital Antenna and RES failed.

TIA/EIA-98-E Test Results

3.5.1 – Receiver Sensitivity

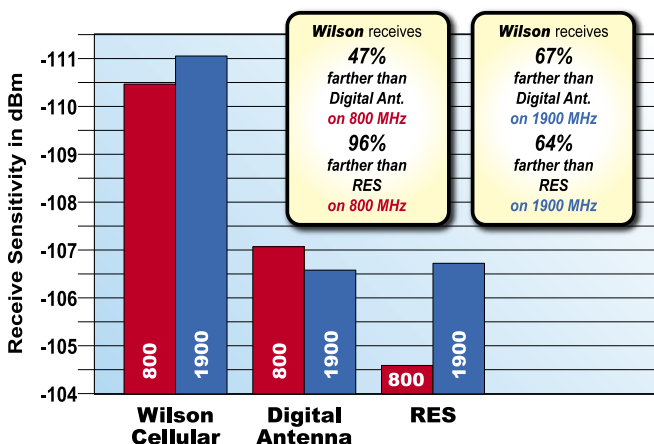
Receiver Sensitivity measures the lowest amount of receive signal that allows communication based on a frame error rate that does not exceed TIA/EIA-98-E standards³. A more sensitive amplifier receiver can detect a weaker signal which allows the cell site to communicate with the cell phone at a greater distance.

	Model #	800 MHz	1900 MHz
Wilson Cellular	801201	-110.47 dBm	-111.04 dBm
Digital Antenna	DA4000MR	-107.08 dBm	-106.56 dBm
RES	B800-1900-1	-104.60 dBm	-106.71 dBm

For example, the Wilson Amplifier has a receive sensitivity of -111.04 dBm in the 1900 MHz band and the Digital Antenna amplifier⁴ has a sensitivity of -106.56 dBm. The Wilson amplifier can receive a signal that is 4.48 dBm weaker than the Digital Antenna amplifier⁴. This means with a Wilson amplifier you can receive a signal from the cell site up to 67% farther than with Digital Antenna's amplifier.⁵

Tests show that on 800 & 1900 MHz, the Digital Antenna and RES amplifier's⁴ sensitivity is less than the tested cell phone alone. The cell phone used for the WTS tests has a sensitivity of -107.97 dBm on 800 MHz and -107.81 dBm on 1900 MHz.

Receiver Sensitivity Comparison



4.4.5 – Maximum RF Output Power

In order for a CDMA system to operate properly, all the cell phones that communicate through a cell site must have the same signal strength at the cell site's receiver. A cell phone that has excessive power is likely to overload the cell site and cause other phones to lose communications. If a cell phone's maximum power level is not high enough, it will be beneath the receiving threshold of the cell site and will not be able to communicate.

	Model #	800 MHz	1900 MHz
Wilson Cellular	801201	Passed	Passed
Digital Antenna	DA4000MR	Failed	Passed
RES	B800-1900-1	Failed	Failed

The RES amplifiers⁴ failed the 4.4.5 tests due to low power output. In most cases, the RES amplifiers⁴ had less power output than the test cell phone.

4.4.6 Minimum Controlled Output Power

While connecting to a cell site (open loop) or after a connection (closed loop), a cell phone is required to vary its power. The TIA/EIA-98-E test simulates the conditions where minimum power is required and measures the actual output power. If output power exceeds the required level, a cell phone may overload a cell site and prevent others from communicating.

	Model #	800 MHz	1900 MHz
Wilson Cellular	801201	Passed	Passed
Digital Antenna	DA4000MR	Failed	Passed
RES	B800-1900-1	Failed	Failed

For example, Digital Antenna's amplifiers⁴ on 800 MHz had an average minimum output 14 dB higher than the level allowed by TIA/EIA-98-E which would cause serious interference with other cell phone users on the same channel.

¹Richardson Electronics/RF Engineering Solutions(RES).

²WTS Laboratories performs cell phone certification tests for Telus Mobility, Nokia, Motorola, Samsung, and others.

³TIA/EIA-98-E Test 3.5.1 - Receiver Sensitivity measures the RF sensitivity of a cell phone with each amplifier by determining the minimum received power necessary to ensure that the frame error rate (FER) does not exceed a specified value. From any given manufacturer, two amplifiers were tested. On each frequency tested, 3 tests were made using different test parameters (e.g. data rates). The sensitivity for each manufacturer's amplifier is calculated separately for each frequency band and is the average of all the measurements made on all of the amplifiers in that band.

⁴From any given manufacturer, two amplifiers were tested.

⁵A free space model, line of site, was used for the distance calculations.