



How to test your Cell Coverage

Android Version



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Anyone can learn how to test their home or office cell coverage with a few simple steps.

In this PDF we'll teach you:

- how to test your cell coverage
- · how to determine how well your cell service is working at the location tested
- · if anything can or needs to be done about your cell service

As well as letting you know about a way to fix problematic service too.

Before getting started you'll need to:

Know:

- Your phone brand/manufacturer
- Your phone model
- Your Wireless Carrier (Verizon, AT&T, Sprint, T-Mobile)

Download the Network Cell Info Lite App from the Google Play Store.

Print out the Cellular Coverage Printout (page 8 of this PDF).



If you don't know how to install an app from the Google Play Store check out <u>this article</u>.



Don't know the model of your phone or how to find it? Read <u>this Article</u>: How to Find Out What Model of Android Phone You Have at How-To Geek

How am I going to test my Cellular Coverage?

To test your Cellular Coverage you be taking specific measurements with the **Network Cell Info Lite App** and recording them on your Cellular Coverage Printout. Later in this PDF we will teach you what to do with the measurements you've taken.

What am I looking for in the Network Cell App?

After downloading the Network Cell Lite App, open the app and tap the gauge tab in the upper left corner which will take you to the correct interface. Note: Where this image shows "Operator 1" in the orange text beside the LTE Label, yours will say the name of your provider, like AT&T, Verizon, Sprint, or T-Mobile (etc).

When looking at the app the only numbers you'll need will be:

- 1. RSRP the pink circle (your signal strength)
- 2. RSRQ the white circle (the quality of your cell service)
- 3. PCI the orange circle

These are the three measurements you'll be recording on your Cell Coverage sheet.

Make sure when recording the RSRP and RSRQ numbers to record that they're negative.



Where do I take measurements to test my Cell Coverage?

Recording your outside, cell service coverage is simple. You'll be recording the RSRP, RSRQ, and PCI values from the **Network Cell Lite App** at certain locations onto the **Cell Coverage Worksheet.**

The number of measurements you will be taking is dictated by the shape of your house (see image 1).

Think of, or even draw, the shape of your house.

If your house/office is flat on each side (nothing sticking out more than two feet). Then your building shape is like A and you just need to measure 4 times. Once for each side of the building.

Any outcroppings on the side of your house that are deeper than two feet means you need to measure on either side of that outcropping. For example, if your house is like B look at the numbers 4 and 3. You would need to take on measurement on either side of the outcropping.

6

The house examples C, D, and E show you how you would measure for more complex houses.



How many measurements do you need to take inside?

Inside you'll only need 2-3 measurements.

Think of the places you use your phone the most. These areas could be your kitchen, home office, living room, etc. Pick 2-3 of those places and that is where you'll be measuring inside. If this is your offices, pick the lobby, main conference room and one or key other key places.

How to measure your cell coverage.

Outside

• Stand with your back against your building in the middle of a section



(every number in a blue circle counts as a section)

- Open Network Cell Lite App and tap the "gauge" tab in the app.
- On the Cell Coverage Worksheet record the numbers for RSRP, RSRQ, and PCI. (Look at page 3 "What am I looking for in the Network Cell LiteApp?" for where to find these numbers.)
- Repeat for each section of your building.

Inside

- In each of the 2-3 places you picked inside your building, open
 Network Cell Lite App and tap the "gauge" tab in the app.
- Record on the Cell Coverage Worksheet the number values for **RSRP**, **RSRQ**, and **PCI**.

Is my cell coverage good or bad?

To learn if your cell coverage is good or bad you'll need to do some simple calculations using your printout.

On your printout you need to know two numbers from the RSRP column – the largest outside measurement and the largest inside measurement. Because they are negative numbers the largest number in both cases are the one's closest to zero. Make sure you mark those numbers.

Once you've marked the numbers you can forget about them being negative for the following equation only – subtract the smaller number from the larger one (like this, 111-105=6). Put the answer into the building loss space on your printout.

Now take your building loss number, subtract that number from each of your largest RSRP numbers (for example -111-6=-117 and -105-6=-111). You will end up with two results, one for outside and one for inside.

Take your results and enter them into the "Your Coverage" spaces (bottom right of the form).

Now you're ready to find out what your cell coverage is rated.

Taking the two results from the "Your Coverage" spaces compare them to the RSRP numbers in the Signal Chart on your printout.

Each number will fall into one of the Signal Ranges on the chart which will tell you how your coverage is rated.

For example, if your house loss is 6 and your largest, inside RSRP signal is -111, subtracting the house loss from that RSRP signal will give you a result of -117. If we look at the Signal Chart that means your coverage has a poor rating, **which means you have no useable service.**

If your results are in the good or excellent categories, you don't need to do anything to improve your cell service, but if it falls into the fair or poor categories your inside cellular coverage needs to be fixed. The good new is that easy now that you have the data.

	Outside	RSRP (pink circle)
	example: Front of House	-110
1	Back of the House	-105
2	Right side of the House	-112
3	Front of House	-117
4	Left side of House	-106
5		
6		
7		
8		
9		
	Inside	RSRP (pink circle)
	example: Home Office	-113
1	Kitchen	-111
2	Living Room	-112

Signal Chart

	Signal Strength	Signal Quality M	
	RSRP (dBm)	RSRQ (dB)	SINF
Excellent	>-84	>-4	>-1
Good	-85 to -102	-5 to -8	-10 to
Fair	-103 to -111	-9 to -11	-7 t
Poor	< -112	< -12	<

House Loss: (111-105=) 6

Your Coverage

Outside: <u>-111 (fair)</u> Inside: <u>-117 (poor)</u>

Fixing Fair or Poor Cellular Service

If your building's cell coverage falls into the fair or poor categories what options do you have?

First you can test friend's or family member's phones the same way you have your own if they're on different carriers and see if there would be a better wireless service provider for you.

If you don't want to switch carriers or if there isn't a better wireless provider in your area then there's still a solution to fix your cellular service.

A Cel-Fi GO - Smart Signal Booster™ or Quatra™ cellular solution.

Once properly installed as part of a three piece cell service solution the Smart Signal Booster[™] from Cel-Fi Go[™] can automatically increase the cell coverage in your house up to **33 times**. The Smart Signal Booster[™] can cover about 5-7K square feet using multiple indoor antennas. If you need more coverage or multiple cellular providers, then the Quatra solution maybe a better choice.

These cell service solutions can be professionally installed by us at VentusRF or we can teach you how to do it on your own. Either way we're here to help you.

If you would like to discuss improving your cell coverage or to learn more about how to install the Smart Signal Booster™ head to the "Contact Us" page at <u>VentusRF.com</u> and send us a message.

Please make sure to include a copy of your filled out Cell Coverage Worksheet so we can analyze it and give you our recommendations.





If your friend or family member's phone is an Apple device follow the Apple version of "How to test your Cell Coverage" found at www.VentusRF.com website.

Cell Coverage Worksheet

Nan	ne:						Date:	
Pho	ne Brand:					Address:		
Pho	ne Model:				Phone	e Number:		
Wire	eless Carrier:				Email	Address:		
Outside RSRP (pink		RSRP (pink circle)	RSRQ (white circle)	PCI (orange circle)		Building Shape Ex	amples	
	example: Front of House	-110	-8	22		O	[
1					4	25	26	
2								2
3					3	4 3		5 4
4								
5								
6					Signal Chart			
7						Signal Strength	Signal Qua	lity Metrics
8						RSRP (dBm)	RSRQ (dB)	SINR (dB)
9						, , ,		. ,
	Inside	RSRP (pink circle)	RSRQ (white circle)	PCI (orange circle)	Excellent	>-84	>-4	>-12.5
	example: Home Office	-110	-8	22	Good	-85 to -102	-5 to -8	-10 to -12.5
1					Fair	-103 to -111	-9 to -11	-7 to -10
2					Poor	<-112	< -12	<-7
3						1		
	Building Loss:							

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Outside:_____Inside:_____

Your Coverage

EXAMPLE Cell Coverage Worksheet

Name: Dan

Phone Brand: iPhone

Phone Model: _____7

Wireless Carrier: Ting

	Outside	RSRP (pink circle)	RSRQ (white circle)	PCI (orange circle)
	example: Front of House	-110	-8	22
1	Back of the House	-105	-9	28
2	Right side of the House	-112	-11	20
3	Front of House	-117	-14	20
4	Left side of House	-106	-10	22
5				
6				
7				
8				
9				
	Inside	RSRP (pink circle)	RSRQ (white circle)	PCI (orange circle)
	example: Home Office	-113	-8	22
1	Kitchen	<mark>-111</mark>	-11	21
2	Living Room	-112	-16	22
3				

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	Date:
Address:	

Phone Number:_____

Email Address:_____



Signal Chart

	Signal Strength	Signal Quality Metrics	
	RSRP (dBm)	RSRQ (dB)	SINR (dB)
Excellent	>-84	>-4	>-12.5
Good	-85 to -102	-5 to -8	-10 to -12.5
Fair	-103 to -111	-9 to -11	-7 to -10
Poor	< -112	< -12	<-7

Building Loss: (111-105=) 6

Your Coverage

Outside: <u>-111 (fair)</u> Inside: <u>-117 (poor)</u>