



SolidRF

SOLID WIRELESS CONNECTION

What bands and wireless providers are served with this booster?

Frequency Bands: LTE-707(Band12, 17)/LTE-781(Band13)/Cellular850 (Band5)/PCS-1900(Band2, 25)/AWS2100 (Band4).

This equipment is a multiband signal amplifier which supports: Cellular 850 MHz, PCS 1900 MHz, AWS and 700 MHz for both AT&T and Verizon-4G networks as well as the Sprint 4G G-Block of 1900 MHz.

SolidRF SR25652001 Delivers up to 70 dB of gain and supports CDMA, GSM, EVDO, LTE, HSPA+ and WCDMA technologies.

How does it work?

1. The outside antenna receives weak signal from base station and sends it to the booster through outside cable. The booster can filter and amplify the signal. Then the inside antenna broadcasts the improved signal to indoor space to enhance the cellphone signal.
2. When user's mobile terminal transmits, the booster amplifies the cellphone's signal from the inside antenna and sends it to outside antenna through cables. The amplified signal will be transmitted to the wireless provider's tower. The whole process of the communication link is established.

Why use a Booster ?

Someone using mobile devices cannot connect to the base station signal; experiences call failure, or are unable to connect to the internet. Which this occurs, it is generally due to one of two reasons:

1. Location of the nearest cell tower – cell towers are situated to provide broad coverage; however, there are many areas in which signal strength may be reduced by topographic features or by local government restrictions on the height or placement of the towers themselves. Rural areas generally have fewer cell towers than urban regions.
2. Natural and man-made obstructions – signal strength can also be negatively affected by trees, hills, buildings, weather, and other obstructions. You may be relatively close to a cell tower but still unable to make a call. This often occurs in homes and other buildings in which stucco, concrete or metal walls may block the signal.

Easily solve these problems by installing a SolidRF booster.

Overview of installation

1. Select installation location away from direct sunlight, heat, water and proper ventilation. Do NOT install in a sealed enclosure.
2. Select a location on the roof of the building to install the Outside Antenna. Use a cell phone in test mode to find the strongest signal from the cell tower. Visit www.solidrftech.com to find test mode function for your particular cell phone.
3. Run the Outside Antenna cable to the Signal Booster and attach it to the connector labeled "Outside Antenna" on the Signal Booster. Run the Inside Antenna cable first to the splitter then to the Signal Booster and attach it to the connector labeled "Inside Antenna" on the Signal Booster. Lightning Surge Protection is recommended for all in-building installations.
4. Before powering up the Signal Booster, verify that both the Outside Antenna and the Inside Antenna are connected and check that all connections are tight. *Note: Be careful when plugging the connectors in so as not to bend the center pins on the connectors.*
5. The Signal Booster has been packaged with the gain control knobs adjusted to the highest gain position. If any of the lights are not green, please refer to page 6 – Band Lights.

Warning: Connecting the Signal Booster directly to a cell phone with use of an adapter will damage the cell phone and/or the Signal Booster.

Booster function



Figure 1

OUTSIDE : Outside port is connected to outdoor cable, outdoor antenna, lightning arrester.

INSIDE: Port to the indoor cable, indoor antennas, coupler, power splitters.

LED display: it shows the signal strength (see table 1) of selected band.

LED show	Output power
0	$\leq -80\text{dBm}$
1	$\geq -70\text{dBm}$
2	$\geq -60\text{dBm}$
3	$\geq -50\text{dBm}$

4	$\geq -40\text{dBm}$
5	$\geq -30\text{dBm}$
6	$\geq -15\text{dBm}$
7/8	$\geq 0\text{dBm}$
E	Over heat / the antennas are NOT installed properly.
F	Self-Protection

Table 1

MODE button: press it to choose LED display modes:

1. Turn off all display (except power light).
2. Display circularly the output signal strength of 700MHz, 800Mhz, 1900Mhz and 1700/2100MHz.
3. Display the output signal strength of the band selected by PRESS Band button.

Band button: when LED display mode has been set as MODE 3, press it to choose a band and display its output signal strength on LED.

Blue knobs: adjust the booster's gain from minimum 40dB to maximum 70dB.

Band lights: it shows the status of indicated band. Flicker means the booster fail on the band.

Power light: It indicated whether the power is turn on.

Find the strongest signal position

When installing your Signal Booster's Outside Antenna, aiming it towards the best signal source from your service provider is important. The best way of getting the strongest signal is to have one person on the roof to rotate the Outside Antenna, which is

connected to the Signal Booster. Turning the Outside Antenna about 45 degrees at a time, while the second person is watching the signal strength on the phone inside the building. This allows you to read the signal strength from the cell tower.

It is preferable to have the phone in the test mode:

The iPhones: Dial ***3001#12345#***, The top left corner can be displayed as - 80dBm (strong or weak signal values will change).

The android mobile phones: Dial ***##4636##***, Click the phone information. Signal strength: - 80dBm (strong or weak signal values will change).

You can download several apps to measure exact signal strength. Look up “check real signal strength” to find a cell signal measurement app mode so the actual signal strength can be read, as bars are not the most accurate. Go to www.solidrftech.com for help in finding the test mode for your phone.

Allow at least 30 seconds for the phone to register signal strength.

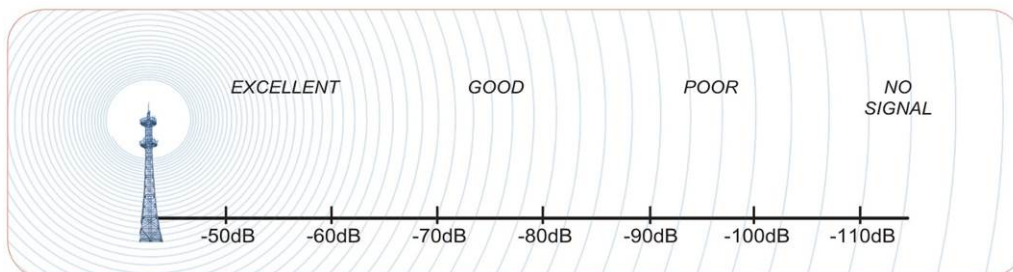


Figure 2

Signal readings usually appear as a negative number (for example, -68dBm). The closer you get to zero the stronger the signal (see figure 2)

Install the outdoor antenna and cable technique

If you are mounting the Outside Antenna on the roof of your building, we have found that it is easiest to run your cable underneath the down side of your roof's flashing. If you have

satellite TV service installed you may be able to follow the same route as the satellite TV cables that are already running from outside of your building to the inside. After routing the cable, we recommend sealing any areas where the cable passes into the building with cable bushings, silicone or other waterproof sealant to keep your installation from leaking. If you are mounting the Outside Antenna to the outside wall of your home or building, the simplest way is to run the cable on the outside of the wall and attach it to the exterior of your home. Then drill a hole through the wall where you want the cable to appear on the inside of the building. Before drilling, make sure that there are no electrical outlets, sewer or water pipes, or electrical wiring in the wall that you are about to drill through as this could potentially harm you or damage the building. After drilling the required hole, run the cable through and seal it with cable bushings, silicone or other waterproof sealant to enclose the hole that you have created. In some instances, it may be possible to run the cable up into the fascia of the attic overhang. In this circumstance, the cable will be accessible in the attic for further routing.

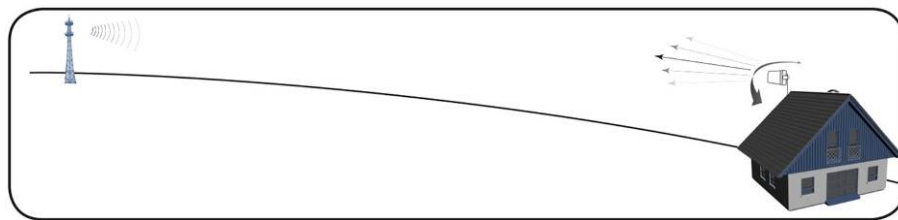


Figure 3

The antenna should be mounted as shown in the illustration above. The mounting bracket, included with antenna, is adjustable and will accommodate pipe diameters from 1.25 inches to 2 inches. Mount the antenna so that there is at least 3 feet of clearance in all directions around it. Position the antenna so that it has an unobstructed line of sight to the cell tower's strongest signal. Make sure the antenna is not pointing across your own

roof or at the Inside Antenna as this will cause the oscillation protection circuitry to shut down the Signal Booster (see figure 3).

⚠ Warning: Lightning protection is recommended for all installations (sold separately). Take extreme care to ensure that neither you nor the antenna comes near any electric power lines.

⚠ Warning: Antenna installation is restricted to 10 meters or less height above ground, even if the antenna is installed indoor. When used with a mobile device that operates in the 1710-1755 MHz band. Violation of this requirement may subject the owner of the booster to potential FCC enforcement actions.

Installing Lightning Protection (sold separately)

Install the lightning surge protector (LSP) close to the signal booster. Connecting the cable from the outside antenna to the LSP, ensure the LSP is properly grounded. For more information, refer to www.solidrftech.com

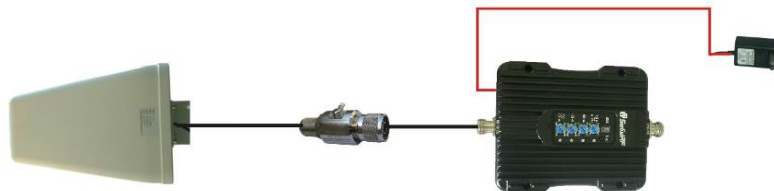


Figure 4

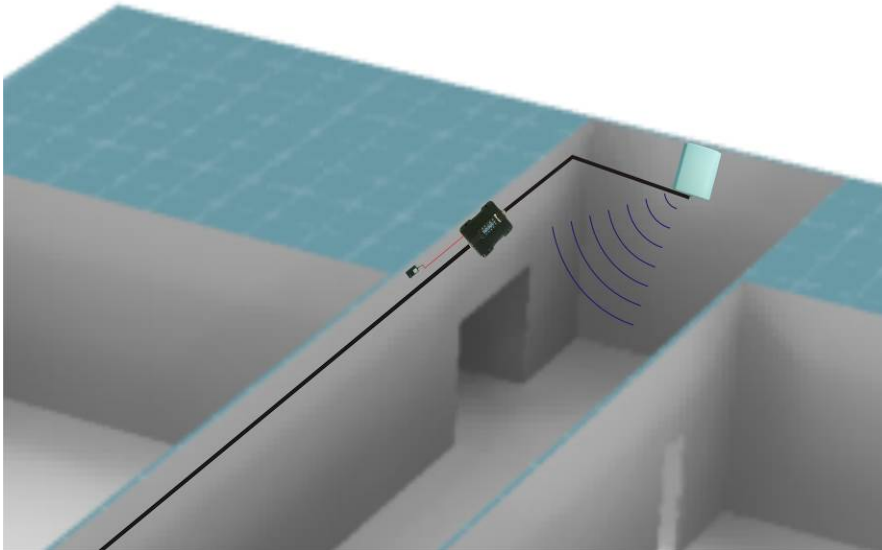
Choose outdoor directional antenna

Select a location on the roof of the building to install the Outside Antenna. Use a cell phone in test mode to find the strongest signal from the cell tower (see below for more information). To get the strongest signal possible, it is very important to set up your Outside Antenna properly. The Inside and the Outside Antenna must be mounted in such

a way that they are able to pick up the best possible cell signal on the outside of the building and provide the best possible signal on the inside of the building. Mount the Outside Antenna as high as possible facing the cell tower in an area with the best possible signal coverage.

Note: Never point the front of a Directional Antenna toward the Inside Antenna. See Figures 3

Installing the Inside Antenna (室内天线安装)



Install inside antenna at least 1.5 meters high on the wall.

Point the front of antenna toward coverage area.

The booster can automatically detect self-oscillation and other situation that can interference public networks, then it will shut down itself immediately if self-oscillation or interference cannot be eliminated.

With any bands failure or shutdown, please first check whether antennas are installed properly then reset the power supply to resume the booster.

Warnings and Recommendations

- ⚠ Warning: This consumer booster is for Home use only.
- ⚠ Warning: Unauthorized antennas, cables, and/or coupling devices are prohibited by FCC regulations. Please contact FCC for details: 1-888-CALL-FCC.
- ⚠ Warning: Outdoor antenna orientation must be back side of indoor antenna is to prevent the indoor antenna receiving the signal emitted by outside antenna. Otherwise it will cause self-oscillation of booster.
- ⚠ Warning: RF safety, any antenna used with this device must be located at 20 cm (8 inches) away from persons or by bystanders.
- ⚠ Warning: It will damage the mobile device and the booster if connect them with a cable directly.
- ⚠ Warning: Use the power supply provided by SolidRF only. Other power supplies may cause damage of the booster.
- ⚠ Warning: If the antenna is higher than buildings nearby. Lightning protection device and lightning conductor is needed.
- ⚠ Warning: Antenna installation is restricted to 10 meters or less height above ground, even if the antenna is installed indoors when used with a mobile device that operates in the 1710-1755 MHz band. Violation of this requirement may subject the owner of the booster to potential FCC enforcement actions.
- ⚠ Warning: Never point the front of a directional antenna toward the inside antenna. Verify that both the outside antenna and the inside antenna are connected to the booster before powering up the booster.

Antenna Kitting Information

Component	Prod No. Description	Gain/Loss					Notes
		LTE-70	LTE-	800MH	1900M	1700MHz\2100	
Outside Antenna	SR-31400100	7dBi	7dBi	8dBi	10dBi	10dBi\10dBi	Directional antenna
Outside Antenna	SR-31300100	3dBi	3dBi	3dBi	3.5dBi	3.5dBi\3.5dBi	Omni-directio nal antenna
Outdoor Cable	SRG58-30FN 30Feet	4.5dB	4.5dB	4.9dB	7.6dB	7.2dB\8dB	
Outdoor Cable	SRLMR400-75FN 75Feet	4.2dB	4.2dB	4.4dB	6.1dB	5.8dB\6.5dB	
Inside Cable	SRG58-15FN 15Feet	2.35dB	2.4dB	2.56dB	3.9dB	3.7dB\ 4.1dB	
Inside Cable	SRLMR400-30NN 30Feet	1.9dB	1.9dB	1.95dB	2.8dB	2.55dB\2.9dB	
Inside Antenna	SR-21200100	7dBi	7dBi	7dBi	10dBi	10dBi\10dBi	Directional antenna
Inside Antenna	SR-21300100	3dBi	3dBi	3dBi	3.5dBi	3.5dBi\3.5dBi	Omni-directio nal antenna
Lightning Protector	SR-LP35000090	0.1 dB	0.1dB	0.1 dB	0.18dB	0.16dB\0.2dB	Ideal for any external antenna

All equivalent antennas and cables are suitable for use with the SR25652001 booster.

Default antenna and cable shipped with the booster

Component	Prod No. Description	Gain/Loss					Notes
		LTE-7 07	LTE-7 81	800M Hz	1900M Hz	1700MHz\2100 MHz	
Outside Antenna	SR-31300100	3dBi	3dBi	3dBi	3.5dBi	3.5dBi\3.5dBi	Omni-directional antenna
Outdoor Cable	SRG58-30FN 30Feet	4.5dB	4.5dB	4.9dB	7.6dB	7.2dB\8dB	
Inside Cable	SRG58-15FN 15Feet	2.35dB	2.4dB	2.56dB	3.9dB	3.7dB\ 4.1dB	
Inside Antenna	SR-21200100	7dBi	7dBi	7dBi	10dBi	10dBi\10dBi	Directional antenna

Description of network protection features:

The SolidRF SR25652001 including safeguards to protect the cellular network from interference. Each Signal Booster is individually tested and factory set to ensure FCC compliance.

1. The Signal Booster cannot be adjusted without factory reprogramming or disabling the hardware.
2. The Signal Booster will amplify, but **ONLY** incoming and outgoing signals in order to increase coverage of authorized frequency bands.

3. If the Signal Booster is not in use for five minutes, it will reduce gain until a signal is detected.
4. If a detected signal is too high in a frequency band, or if the Signal Booster detects an oscillation, the Signal Booster will automatically turn the power off on that band.
5. For a detected oscillation the Signal Booster will automatically resume normal operation after a minimum of 1 minute. After 5 times consecutive such automatic restarts, if the detected oscillation still remains, any problematic bands are permanently shut off until the Signal Booster has been manually restarted by reconnecting power supply to the Signal Booster.
6. Noise power, gain, and linearity are maintained by the Signal Booster's microprocessor.

This is a CONSUMER device

BEFORE USE ,you **MUST REGISTER THIS DEVICE** with your wireless provider and have your provider's consent .Most wireless provider consent to the use of signal boosters .Some provider may not consent to the use of this device on their network .If you are unsure ,contact your provider.

You **MUST** operate this device with approved antenna and cables as specified by the manufacturer .Antennas **MUST** be installed at least 20cm (8inches) from any person.

You **MUST** cease operating this device immediately if requested by the FCC or a licensed wireless service provider.

WARNING.E911 location information may not be provided or may be inaccurate for calls served by using this device.

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device

must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help

Contact information for providers

A subscriber must have the consent of a wireless provider to operate a consumer signal booster. Please register your booster with your wireless service provider, refer to contact information for providers:

Sprint:

signalbooster@sprint.com

T-Mobile:

www.T-Mobile.com/BoosterRegistration

<https://support.t-mobile.com/docs/DOC-9827>

Verizon:

<http://www.verizonwireless.com/wcms/consumer/register-signal-booster.html>

AT&T:

<https://securec45.securewebsession.com/attsignalbooster.com/>

U.S. Cellular:

<http://www.uscellular.com/uscellular/support/fcc-booster-registration.jsp>

Metro PCS

<https://www.metropcs.com/support/signal-booster>