SolidRF SOHO3-AT S2 for 2G/3G/4G and AT&T T-Mobile 4G LTE Manual

700 MHz (band12/band17) / 850 MHz / 1900 MHz ONLY

If you have any questions or concerns when installing or operating your cell phone booster, please email us:

Support@SolidRF.ca

Please provide the invoice of your product in your email. Or visit www.SolidRF.ca for more information.

Systems tested and certified against FCC standard, Equipment Class: Part 20 Wideband Consumer Booster (CMRS)

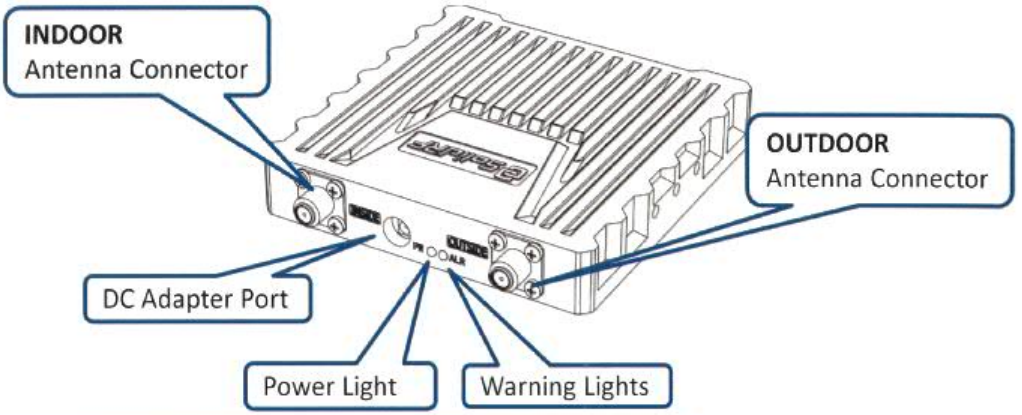
FC

Systems tested and certified against IC standard, Type of Equipment: Amplifier, RSS-131

IC

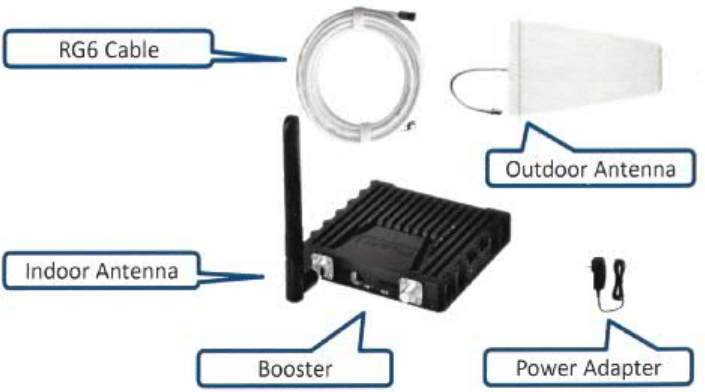
Manufactured and Warranted by
SolidRF Technology Inc. Canada
www.SolidRF.ca

Product Diagram



Package Contents

- SOHO Tri-Band Booster
- Outdoor Antenna
- Indoor Antenna
- RG6 Cables: 1 x 45 feet
- Power Adapter



Features

- Works on U.S. and Canadian Carriers 2G/3G/4G networks, Any network using 700 MHz(band12/17) /850 MHz or 1900 MHz
- Allows multiple mobile devices to be used simultaneously
- Oscillation (or interference) detection and automatic shutdown
- Overload protection circuit – protects cell towers from being overloaded
- High integration semiconductor circuits design – easily installed
- Maximum 1 watts(EIRP) output power
- Power control logic ensures maximum gain is within cellular standards
- Reduces radiation and extends battery life – up to 2 hours additional talk time in weak signal areas.

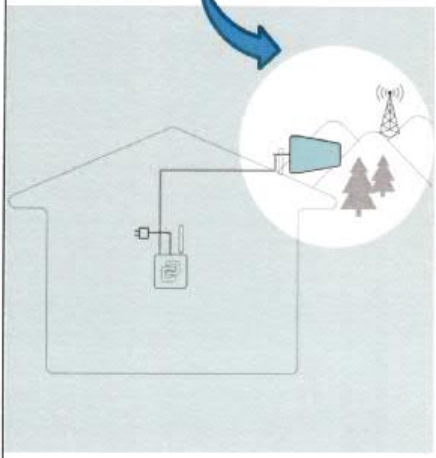
Test Installation

We **STRONGLY** recommends doing a soft install before the formal installation. Doing a test installation of a cell phone booster allows to get best optimal system setup.

Step1: Find the strongest signal, setup outdoor antenna with cable screwed

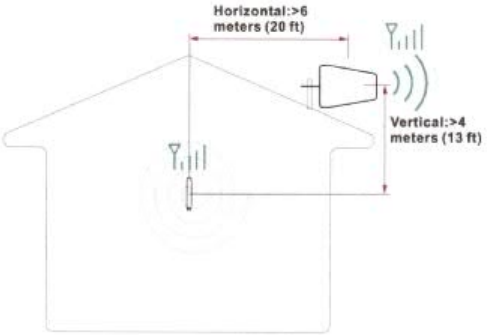
Affected by terrain and signal propagation characteristics. More higher of the outdoor antenna will get better signal. Find the best signal around the house by checking the bars of the cell phone. Setup the outdoor antenna on the top of building and connect the cable.

Find a cell tower nearby!
There are a bunch of resource online, here are some third party websites and app recommended.
SolidRF does NOT guarantee the accuracy or completeness on Third Party content
For Canada
website: www.cellmapper.net
app: TowerLocator(iPhone or Android)
For U.S.
websites:
www.cellmapper.net
www.cellreception.com/towers
www.antennasearch.com



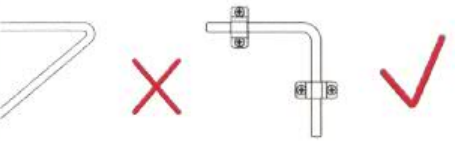
Step2: Find a suitable place inside home for booster nearby the power socket

Minimum Required Separation Distance Between Indoor And Outdoor Antenna:
6 meters (20 ft) horizontal distance
4 meters (13 ft) vertical distance(As far as possible)



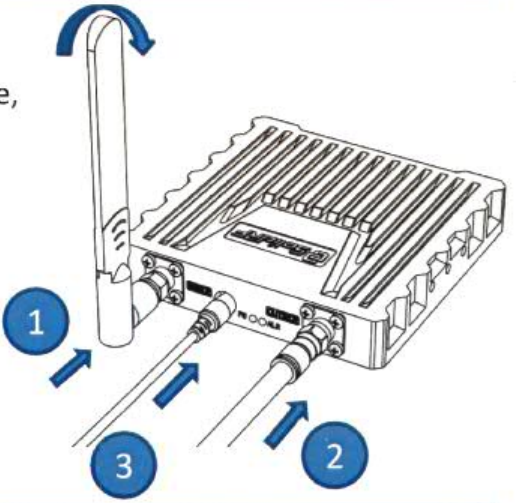
Step3: Introduce cables into room

Attention: Don't excessive bending of the cable, otherwise it will be damaged and loss functions.



Step4: Setup booster

1. Connect indoor antenna to indoor connecter, same as before, aim pin of antenna head to socket of indoor connecter;
2. Connect cable to outdoor connecter, make sure pin of the cable head smooth import connecter's socket, and then screw well till the end;
3. Plug in power cord;



Step5: Power on and evaluate effects

1. Power on booster;
2. Observe the flashing status of panel lights;
3. If the panel lights lit 1 second and then goes out, that means all the test installation is correct;
4. Now check your cell phone to see how about the signal strength improved;
5. If any light is blinking, please read the trouble shooting part of this manual;

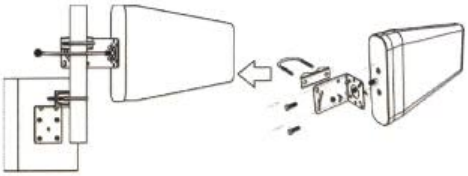
The Formal Installation

OUTDOOR ANTENNA INSTALLATION

a. Choose right position
- 30 cm away from any other metallic objects
- 100 cm away from any windows

b. Mount the antenna as the picture shows

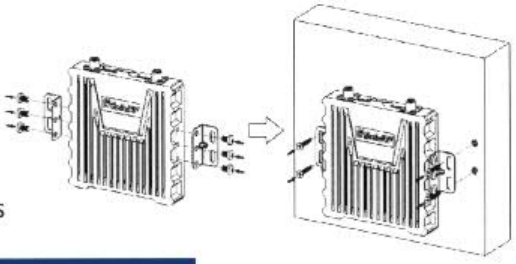
c. Connect the cable to the outdoor antenna
- Make sure connectors are well screwed in
- Seal the connectors with glued tape



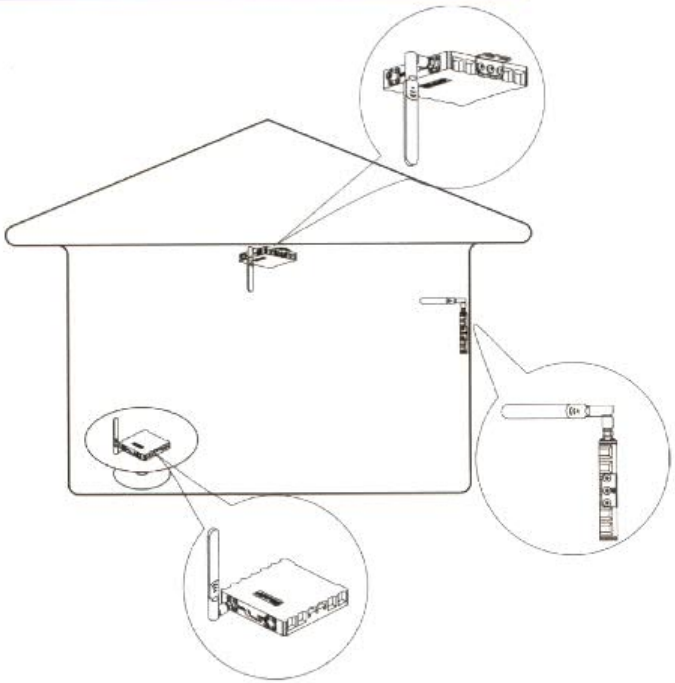
ARRANGE BOOSTER

a. Choose right position
- Be sure to be far from any heat source
- In a ventilated dry place, temperature range should be from -5 ℃ to +50 ℃

b. Mount the booster as the picture shows



Recommended Installation Position



Technical Specification

Supported Carriers

- AT&T 2G/3G (HSPA+)/4G LTE
- Verizon 3G
- T-Mobile 2G/3G/4G
- Sprint 3G/4G
- US Cellular 3G
- Metro PCS 3G/4G
- Major Canadian Carriers 2G/3G
- All other carriers using 700MHz(band12/17)/850MHz and 1900 MHz

		Cellular	PCS	4G LTE
Frequency (MHz)		(band5)	(band 25/2)	(band12/17)
	Uplink	824-849	1850-1915	698-716
	Downlink	869-894	1930-1995	728-746
Gain	Uplink	62±2	65±2	60±2
	Downlink	65±2	68±2	63±2
Output power	23±2dBm(Uplink)/0±2dBm(Downlink)			
Noise figure	<3dB			
In-band Flatness	<5dB			
Weight	0.7Kg			
EIRP	1W			
Gain adjustment	20dB			
Impedance	75 ohm			
Operating temperature	-20 ℃ to +50 ℃			
Current	≦1.5A(12V DC)			
Dimension(mm)	155*125*25			

Coverage Area

Note: Any cell phone booster has a limit of amplification power. This depends on the original output power of the closest cell tower.

Power level at the outdoor antenna location	Coverage Area (sq. ft.)
Strong (5 bars on the cellphone)	3000
Medium (3~4 bars on the cellphone)	1200
Weak (1~2 bars on the cellphone)	300

ATTENTION: Self Oscillation

We strongly recommend it must achieve the Minimum Required Separation Distance for the installation. The improper installation could result in possible Self Oscillation.

Minimum Required Separation Distance (MRSD): 6 meters (20 ft) distance and 4 meters (13 ft) vertical height distance.

What is Self Oscillation:

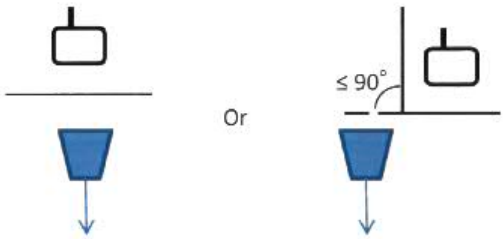
When the antennas are too close, they could pick up each others signals, creating a feedback loop condition, which is called Self Oscillation.

By FCC regulations, the cell phone booster would automatically detect this condition and immediately shut down to prevent Self Oscillation from damaging the cellular network.
(see TroubleShooting Booklet)

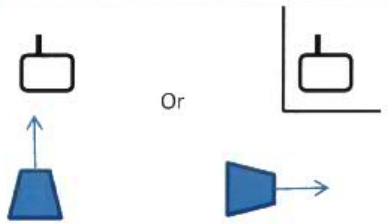
How to correct Self Oscillation:

If the booster detects Self Oscillation, it will not operate until the condition is corrected. One way to correct Self Oscillation is to increase separation distance between the antennas until the sufficient separation distance is achieved. Also **the antennas can NOT directly face each other.**

Antennas Installation Recommended



Antennas Installation Prohibited



Why is it so important to prevent Self Oscillation:

The Self Oscillation could cause interference to the cellular network, The FCC regulations extremely prohibit cell phone booster users from causing interference to the cellular networks. If you were contacted by the FCC or any wireless provider – yours or any other – and told your cell phone booster is causing interference, you must shut it down until you can fix the interference problem. Under most situation, it is Self Oscillation problem.
Please refer to:
https://www.fcc.gov/wireless-telecommunications/signal-boosters/faq/signal-boosters-faq.

Quick Troubleshooting

Correct functioning:

- Power Light should be solid green
- Every time the booster is powered on, the Status Light will be lit in red for several times. It will turn off eventually.
- Status Light is off (no mobile devices are in use) or flashing (one or more mobile devices are in use).

Incorrect functioning: *(Please see The Troubleshooting booklet for the details)*

- Flashing Power Light: please contact the technical support
- Status Light: indicate the booster condition

  SOLID RED – self oscillation is occurring. You must switch off the booster and check the booster system is properly installed by re-checking each step in this manual.

  SOLID GREEN – the cable from the inside unit to the outside unit is not correctly connected.

  LIGHT IS OFF WITHOUT SIGNAL IMPROVEMENT - *(Please see The Troubleshooting booklet for the details)*

Weather condition:

The booster outside unit, include the amplifier and the outside antenna have an integrated design. Each are waterproof and no matter rain, snow or fog, they will work properly. However extreme hot or cold temperatures may cause problems to the booster. Optimal functioning will occur from -20 ℃ to +50 ℃. Too high or low temperatures beyond this range will cause the booster to lower output power to avoid damage.

If you can not fix the problem, please contact the technical support or the reseller.
SolidRF Technical Support: Support@SolidRF.ca

Find Strongest Signal

Use Cell Phone Only:

- Check the signal indicator on the cell phone display, it takes up to 30 seconds to reset a new reading. Or place calls from several locations outside the building.
- Read signal strength with numerical value (Smart Phone Only):

  iPhone: Dial *3001#12345#* then tap the CALL button, a negative number in the upper left corner.

  Android Phone: Go to Setting – About Phone – Status (SIM Status) – Signal Strength

  It would a negative number instead of the five dots, the range is from -120 (weak) to -65 (strong)

Use Cell Phone During Test Installation:

- One person adjusts the outside directional antenna small angle at a time. Allow 30 seconds for the phone to react with each turn.
- Second person read the signal strength on the cell phone inside the building.

See Test Installation Section for Find A Cell Tower Nearby