



User Manual 02P

HiBoost Hi20-23
HiBoost Professional Signal Boosters

Manuel de l'utilisateur 16P

HiBoost Hi20-23
Amplificateurs de Puissance Professionnels HiBoost

Betriebsanleitung 30P

HiBoost Hi20-23
Professionelle HiBoost Signalverstärker

Manuale d'uso 44P

HiBoost Hi20-23
Amplificatore di Segnale HiBoost Professionale

Manual de Usuario 58P

HiBoost Hi20-23
Amplificadores de señal profesionales HiBoost

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Preface



AT	BE	CY	CZ	DK	EE	FI
FR	DE	EL	HU	IE	IT	LV
LT	LU	MT	NL	PL	PT	SK
SI	ES	SE	UK	BG	RO	HR

This user manual describes design, installation, commissioning and maintenance of Hiboost professional signal boosters. Please read user manual carefully before installing and maintaining the boosters. The information in this manual is subject to change without prior notice. Opinions are welcomed about the manual improvement.

Booster Model

The user manual can be used for the models as below: Hi20-EW/3S/5S, Hi23- EW/3S/5S.

Note: The users of repeaters should get permission from the mobile providers for the use and installation of the repeater.

Glossary of Terms

Item	Definition
800MHz	Available on LTE800(832–862MHz/791–821MHz) network
900MHz	Available on EGSM900(880–890MHz/925–935MHz) and PGSM900(890–915MHz/935–960MHz), WCDMA/UMTS900(880–915MHz/925–960MHz) networks
1800MHz	Available on GSM/LTE1800(1710–1785MHz/1805–1880MHz) networks
2100MHz	Available on 3G(WCDMA/UMTS2100) (1920–1980MHz/2110–2170MHz) networks
2600MHz	Available on LTE2600(2500–2570MHz/2620–2690MHz) network
RF	Radio Frequency
ATT	Attenuation
ALC	Automatic Level Control
AGC	Automatic Gain Control
MGC	Manual Gain Control
LNA	Low Noise Amplifier
PA	Power Amplifier
dB	Decibel
dBm	Decibels relative to 1 milliwatt
UL	Uplink
DL	Downlink
Hz	Hertz
MHZ	Megahertz
NF	Noise Figure
RSSI	Received Signal Strength Indicator

Safety Warnings

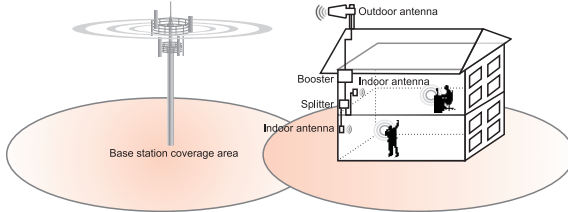
Users must follow the principles stated below:

- ⚠️ Booster should follow system requirements of mobile signal enhancement equipment, assure good grounding and lightning protection.
- ⚠️ Booster's power supply voltage should meet the standards of security requirements; any operation should be carried out only after cutting off power in advance. Only the professional is authorized for the operation.
- ⚠️ Do not dismantle machine, maintain or displace accessories by yourself. In this way the equipment can be damaged and you can even get an electric shock.
- ⚠️ Do not open the booster, touch the module of booster, or open the cover of module to touch the electronic component. The components will be damaged due to electrostatic.
- ⚠️ Keep away from heating equipment, because the booster will dissipate heat during working. And do not cover booster with anything that influences heat-dissipation.
- ⚠️ The device has a plug connection, the socket must be close to the device and accessible.
- ⚠️ During the transportation and storage process, the device should avoid the humid environment, prevent violent impact and avoid strong vibration.

Overview

Hiboost professional boosters are designed to help mobile users to amplify weak cell phone signal. The devices are bi-directional. The outdoor antenna receives the signal from the cell tower and transmits it to the signal booster, the booster amplifies the signal and the indoor antenna sends it to your mobile device. Visa versa, the signal

produced by your phone is also received by the indoor antenna, amplified by the booster and then sent back to the cell tower through the outdoor antenna.



Package Contents

HiBoost Professional Signal Booster Standard Packing List

No.	Name	Description	Quantity
1	Hiboost Professional Signal Booster		1
2	Adapter	Dual Band 12V/3A Triple Band 12V/7A Quintuple Band 12V/7A	1
3	Power Cord	European Standard Plug	
4	Plastic expansion bolt	Dual Band Φ6 Triple Band Φ8 Quintuple Band Φ8	5
5	Tapping screw	Dual Band M4*25 Triple Band M6*50 Quintuple Band M6*50	4
6	Hanging folder	Dual Band mount hardware	1
7	User Manual		
8	Outdoor Wide Band Directional Antenna	N-Female	1
9	Hiboost 5D low-loss cable	50 feet, N-male	1

HiBoost Professional Signal Booster optional panel pro kit/omni pro kit includes the following accessories:

No.	Name	Description	Quantity
1	Indoor wide band panel/omni antenna	N-Female	1
2	Hiboost 5D low-loss cable	35 feet, N-male	1

Model	Standard Package Contents	Additional Kit Accessories
Hi20-EW,Hi23-EW		
Hi20-3S,Hi23-3S		Panel Pro Kit
Hi20-5S,Hi23-5S		Omni Pro Kit

Note: The booster requires outdoor and indoor antennas connected with appropriate RF cables. The length of cable or other accessories needed can vary according to the size and construction materials used in the building, outdoor signal

strength and layout of the structure. Please contact us for assistance in designing your system.

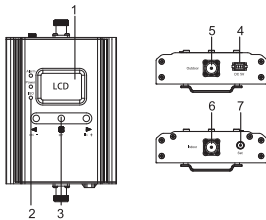
If you need to add more indoor antennas or other accessories, please contact Hupatec Support Team on the phone 044-20-32395808 or by e-mail sales@hupatec.eu.

Features

- Embedded CPU, self-adaptive intelligent system very easy to use and install, better performance is guaranteed even under complicated and constantly changing RF environment conditions.
- ISO: Intelligent isolation processing to avoid self-oscillation, quite wide adjusting range to stabilize the signal strength/quality for clearer voice/ higher data throughput and avoid interference with mobile networks.
- ALC: Intelligent automatic level control, quite wide adjusting range to stabilize the output power and improve the signal quality for clearer voice and higher data throughput.
- LCD Display: Displays ISO status, ALC status, RSSI status, actual gain and downlink output power which makes booster installation and troubleshooting much easier.
- MGC: Control buttons to adjust the gain for both uplink and downlink independently, 31dB range.
- Excellent RF performance, larger coverage area, clearer voice and higher data throughput.
- Elegant design, compact size, very low power consumption to minimize cost during operation and low heat dissipation.
- Local Monitoring: It's easy to adjust and control booster performance locally via Bluetooth or a mobile app using wifi. (only for 3S/5S series)

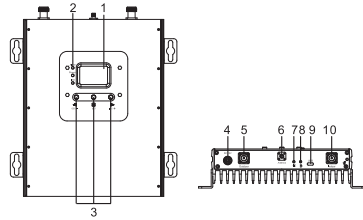
Booster 's Port Description

Dual Band



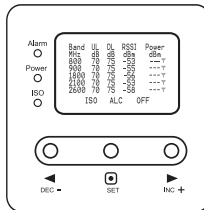
- 1. LCD 2. LED indicators 3. Control buttons 4. Set
- 5. Outdoor antenna port 6. Indoor antenna port 7. Power connector

Triple and Quintuple Band



- 1. LCD 2. LED indicators 3. Control buttons 4. Power connector 5. Outdoor antenna port
- 6. Coupled antenna 7. Wifi 8. Bluetooth 9. Set 10. Indoor antenna port

LCD Introduction



After the booster is on, gain and power will light up on the screen.

"Band"– displays the working frequency. Find below the list of frequencies displayed corresponding to the networks.

Frequency	LCD display
LTE800	800 MHz
EGSM&UMTS900	900 MHz
GSM<E1800	1800 MHz
WCDMA/UMTS2100	2100 MHz
LTE2600	2600 MHz

"ULdB"/"DLdB"– gain indication.

The displayed value shows real-time uplink and downlink gain.

"Power dBm" – power indication.

The displayed value shows real-time power. When booster's output power is lower 40dBm than rated output power, the value will display "--".

"ISO" – isolation alarm indication.

When the booster doesn't have enough isolation between the outdoor and indoor antennas, the "ISO" is flashing. Press the "SET" key and the LCD screen will turn on to help with troubleshooting and display "ISO" value showing the current band or bands affected.

Band	UL	DL	RSST	Power
MHz	dB	dB	dBm	dBm
800	50	50	-40	-17 ^{Typ}
900	50	50	-42	-17 ^{Typ}
1800	65	70	-72	-16 ^{Typ}
2100	65	70	-87	-16 ^{Typ}
2600	65	70	-97	---
		ALC	OFF	

ISO flash		
Band	UL	DL
800MHz	ISO	ISO
900MHz	ISO	ISO
1800MHz	---	---
2100MHz	---	---
2600MHz	---	---

"ALC" - strong receiving power alarm indication.

When the booster's receiving too strong signal from outside, output power gets overrated and "ALC" starts flashing. Press the "SET" button and the screen will turn on to help with troubleshooting and show the band or bands affected.

Band	UL	DL	RSST	Power
MHz	dB	dB	dBm	dBm
800	65	50	-40	-17 ^{Typ}
900	50	50	-42	-17 ^{Typ}
1800	50	50	-42	-17 ^{Typ}
2100	65	70	-87	-16 ^{Typ}
2600	65	70	-97	---
		ISO	OFF	

ALC flash		
Band	UL	DL
800MHz	---	ALC
900MHz	ALC	ALC
1800MHz	ALC	ALC
2100MHz	---	---
2600MHz	---	---

"OFF" - booster shut-down alarm indication.

When LCD screen is in "OFF" state and the booster shuts down, LCD screen will be flashing.

When LCD screen is "ON" and the booster shuts down, the "OFF" is flashing. Pressing the "SET" button will turn on to help with troubleshooting and display which band or bands are affected.

OFF flash		
Band	UL	DL
800MHz	---	---
900MHz	---	---
1800MHz	---	---
2100MHz	OFF	OFF
2600MHz	OFF	OFF

Control Buttons Operation and Manual gain control (MGC)

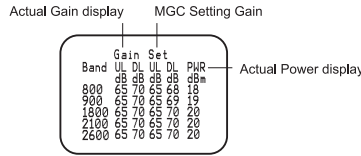
There are 5 operation modes relative to the control keys:

- Press the "SET" key for more than 3 seconds
- Short press on the "SET" key
- Short press on the "DEC-" key
- Short press on "INC+" key
- Simultaneously press on the "DEC-" and "INC+" keys for more than 3 seconds

Since the booster has a self-adaptive smart automatic level control (ALC) and isolation gain processing (ISO), most of the time manual adjustments are not required to achieve good coverage. However, in some cases where the ALC or ISO is working at a very high rate to adjust the gain and the Alarm or ISO LED is flashing more than once a second, a manual adjustment might be desired.

When the LCD is in the fixed display mode, press the "SET" key for more than 3 seconds. It will go into the "Gain Setting Mode" and make one of the gain values start to blink.

- Briefly press "SET" key, and the LCD will switch to the next gain value and it will start to blink. (Uplink or downlink gain for a different band).
- Press "INC+" key once shortly and the gain will increase by 1dB, Press "DEC-" once shortly and the gain value will be reduced by 1dB.
- Press the "SET" key for more than 3 seconds, and the LCD will return to the fixed display mode.



Note: When adjusting the gain manually, please ensure that the uplink gain is equal to or not 5 dB less than the downlink gain setting. This avoids interference with the local cell site tower network. When the LCD is in the fixed display mode, press the "DEC-" and "INC+" key simultaneously for more than 3 seconds, the booster will reset the gain to the default manufacturer settings. When the LCD is in the alarm display mode, press the "SET" key and the LCD screen will turn on to help with troubleshooting and display the alarm indication showing the affected band or bands, press the "INC+" (or "DEC-") key will switch to different pages. If none of the keys are pushed within 30 seconds, the display will return to the fixed display mode. If none of the control keys are pushed within 5 minutes, the LCD screen will turn off. Pressing any key will return the display to the fixed mode.

Install Hiboost Booster System

Before You Install

- Make sure you have sufficient cable length between the outdoor, indoor antennas and the booster in case you have not a standard kit
- Make sure the place where you install the booster is near to one existing electrical outlet. It should also be well ventilated, away from excessive heat, moisture, and direct sunlight.

Dual band installation tools and accessories

Num.	Name	Specification	Quantity	Remark
1	Plastic expansion bolt	Ø6	5	Standard accessories
2	Tapping screw	M4*25	4	Standard accessories
3	Hanging folder	51*68*1.5mm H5,5mm	1	Standard accessories
4	Reciprocating drill		1	Provided by engineer
5	Shot bit	Ø6	1	Provided by engineer

Triple and quintuple band installation tools and accessories

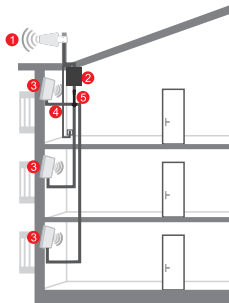
Num.	Name	Specification	Quantity	Remark
1	Plastic expansion bolt	Ø8	5	Standard accessories
2	Tapping screw	M6*50	4	Standard accessories
3	Hanging folder		1	Standard accessories
4	Reciprocating drill		1	Provided by engineer
5	Shot bit	Ø8	1	Provided by engineer

Installation Overview

Installation is easy to perform in 4 simple steps:

1. Find the strongest received signal for the location of the outdoor antenna.
2. Install the outdoor antenna on the roof to obtain the strongest downlink signal from the local cellular towers. It should also be as far away as possible from where you plan to place the indoor antenna (vertical separation is more important than horizontal separation).
3. Install the indoor antennas where you want to improve the signal level.
4. Mount the booster, connect the cables from the outdoor antenna and indoor antenna at the designated ports, and connect the booster to the AC supply (make sure all the cables are connected before applying power).

Booster System Installation Examples



Multi-storey building

1. Outdoor Antenna
2. Booster
3. Indoor Panel Antenna
4. Power Supply
5. Splitter

Step 1. Installation of Outdoor Antenna

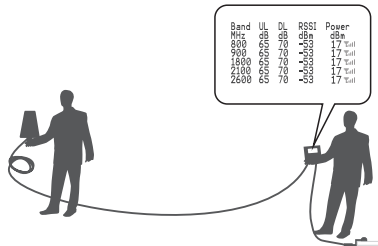
1.1 How to find the location with the strongest received signal

The booster's main function is to improve a weak RF signal inside a house, office or any other indoor area. The received outdoor downlink signal strength directly affects the efficiency of the indoor coverage. That is why it is crucially important to install the antenna at a good location and point it properly towards a tower where signal reception is the strongest.

There are three methods that can be used to find the strongest downlink signal from the local towers. One is to use the LCD display on the amplifier that shows the downlink power output of the amplifier in each band, the other is to use a mobile phone that shows the signal bars and the third is to use a commercially available signal strength meter. We highly recommend that you use the LCD display on the amplifier as this method is generally more accurate. However, in situations where the desired carrier's signal is much weaker than the other local signals, using a signal level meter can be a more accurate method of homing in on the best signal for an installation.

• LCD Display Method

Connect the outdoor antenna to the booster's outdoor port. Fix the outdoor antenna on the roof of the building and point it to the nearest cell tower. Then have a look at gain and output power value displayed on the amplifier's LCD.



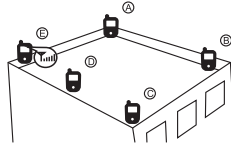
The outdoor antenna receives the strongest signal when the booster's downlink output power reaches its highest level in each band.

The booster's LCD display shows the gain and output power. The output power can be checked below "Power dBm" on LCD display.

Remark: when ALC shows up flashing, it means the receiving signal power is stronger than the system needs it. It is recommended to adjust outdoor antenna position unless ALC alarm disappears. Or you can leave it as it is to let the booster self-adjust automatically. However when ALC flashes, and the displayed gain is more than 30dB less than rated gain value, try to adjust outdoor antenna to decrease the receiving power.

• Mobile Phone Method

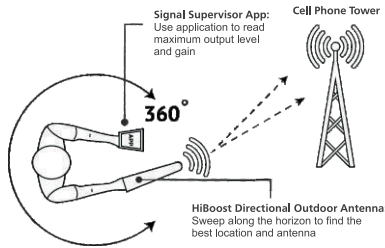
You can use telephone to test signal strength near the window or on the top of the building. The number of bars on network indicator will define approximate strength of the received signal. Normally the roof of the building is the best place to receive the strongest signal. As shown on the graph below, you need to test the signal in points from A to E, and select a place with best signal strength for outdoor installation. It is recommended to use mobile app that can display signal level, since it is more accurate than checking signal bars.



• Signal Supervisor method (only for 3S / 3SL / 5S series)

Connect your booster with your smartphone through the Signal Supervisor application. Temporarily fix the outdoor antenna on the roof and check the output power and gain values on your mobile phone. Turn the antenna slowly until the application shows maximum power. Once this is achieved, the current location is the best to maximize the performance of your amplifier.

Attention: for Hi13 models of the 3S / 3SL / 5S Series the output power is 13dBm, the maximum output gain is 65dB. For Hi17 models of 3S / 3SL / 5S Series power amplifiers, the output power is 17dbm, the maximum gain is 65dB.



1.2 Install Outdoor Antenna

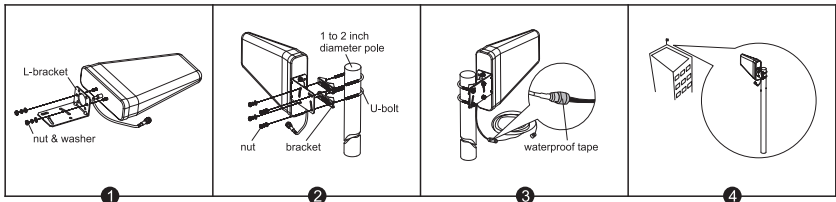
Install the outdoor antenna at the location with the strongest received signal.

IMPORTANT: Testing the signal 3 times in the desired location before installing the outdoor antenna will help ensure the most smooth and stable phone calls and data transmission.

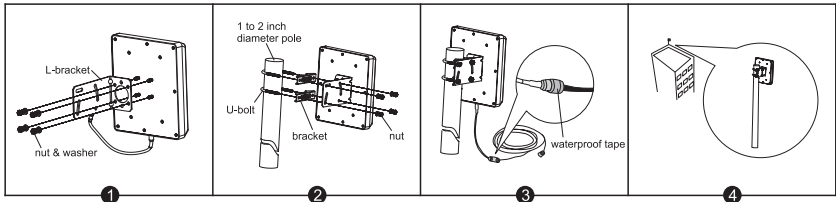
In most cases outdoor wide band directional antenna is the best choice. You can also choose an outdoor wide-band panel antenna as an option.

Pole mounting is recommended for your convenience:

Outdoor Wide Band Directional Antenna Installation:



Outdoor Wide Band Panel Antenna Installation:

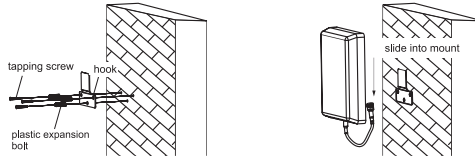


Note: Wrap waterproof tape around the connectors between outdoor antenna and feeder line to avoid water or other kind of damage.

Step 2. Install Indoor Antenna

Select indoor panel antenna or omni-ceiling antenna as an indoor antenna according to your needs to provide indoor coverage.

Install the indoor panel antenna as shown on the graph below.



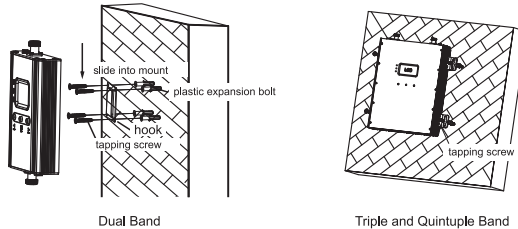
If you have an indoor omni ceiling antenna, the best place to install it is the center of your house. Install omni ceiling antenna as shown on the graph below.



NOTE: the required distance between the indoor and outdoor antennas is 10-15 m.

Step 3. Install Signal Booster

1. Select the location near a power supply on a wall
2. Mount the booster with the screws included into the kit as shown on the graph below.



3. Connect the outdoor antenna cable to booster connector marked as "outdoor". Tighten the connection by hand or with a wrench.
4. Connect the indoor antenna cables to booster connector marked as "indoor". Tighten the connection by hand or with a wrench.
5. Connect AC power cord to the signal booster, then connect the plug to the electrical outlet to power on the booster.

Note: the required booster mounting distance above the floor is 1-1,8 m.

If it's necessary to install multiple indoor antennas solution, please contact us, We will provide you with a professional installation coverage plan.

Step 4. Booster Commissioning

Overview : The booster has an intelligent startup system, booster commissioning is an automatic process able to guarantee system optimal performance.

As soon as you finish booster system installation, plug it in a power supply to power on the booster. It will start working and checking the receiving signal strength and the isolation to ensure best system performance. Automatic adjustment will take about 3-5 seconds.

After the booster starts, check the coverage is improved as you wish. The booster commissioning is completed.

In case the coverage is not enough, please check the following conditions.

1. The rated output power is reached, but the coverage is not enough or the signal in some areas are not improved:
 - Check whether the indoor antenna is installed correctly or not, try to change the antenna position to improve coverage.
 - Check if it is necessary to adjust the direction of the indoor antenna.
 - Check whether it is necessary to add more indoor antennas since barriers block the signal.
2. The rated output power is not reached,
 - Change the position or direction of the outdoor antenna to get a stronger receiving signal and higher output power

(Not necessarily to reach rated value as long as the coverage is enough).

- Check LCD display, if the reading gain is less than rated value and "ISO" is flashing, it means the gain is reduced by ISO function for not having enough isolation.

More about "ISO" legend indication

ISO status indicates if the booster has enough isolation between outdoor and indoor antennas in order to avoid loop back or so-called self-oscillation. HiBoost is with an ideal mechanism, Smart AGC, to avoid from interference with operator mobile networks. "ISO" flashing on LCD display means that ISO function is working great and self-oscillation has been eliminated.

LCD	Status	Meaning	Solution Methods
ISO status	Remain still	No loop back or no self-oscillation.	No action is needed.
	Flashing but actual gain is not more than 30dB and less than rated gain.	Slight loop back or self-oscillation.	No action is needed.
	Flashing but actual gain is more than 30dB.	Deep loop back or self-oscillation.	Please check the Troubleshooting section to get solutions.

More about "ALC" legend indication

ALC indicates the strength of receiving power of the booster. Flashing ALC means that the booster has strong receiving power.

LCD	Status	Meaning	Solution Methods
ALC status	Remain still	Output power is not weak or just suitable.	Check coverage, leave it as it is if it's good. Please check the Troubleshooting section to get solutions if coverage is not good.
	Flashing but current gain is not more than 30 dB and less than rated gain.	Full output power	Working properly.
	Flashing but actual gain is more than 30dB.	Too strong receiving signal.	Working properly, but the signal is too strong. Please check the Troubleshooting section to get solutions.

More about LCD indication:

LCD	Status	Meaning	Solution Methods
"----" status		Output power is lower 40dBm than rated output power.	Check coverage, leave it as it is if it's good; Please check the Troubleshooting section to get solutions if coverage is not good.
"OFF" status	Actual gain is more than 42dB less than rated gain.	Severe loop back or self-oscillation or output power is heavily over rated which leads to booster break down.	Not working properly. Please check the Troubleshooting section to get a solutions.
Flashing LCD screen			

When the ISO or ALC indicators are flashing, please check the ISO and Alarm LED colors.

ISO LED flashing means that ISO function is working well and self-oscillation has been eliminated. ISO LED will remain "Green" or will be "Slow Flashing Green".

Note: This improvement won't increase the coverage, but is mandatory to avoid causing interference to carrier's local cell site towers.

LED	Status	Meaning	Solution Methods
ISO LED	Green	No loop back or no self-oscillation	NO action is needed.
	Slow Flashing Green	Slight loop back or self-oscillation	NO action is needed.
	Quick Flashing Green	Deep loop back or self-oscillation	Not working properly. Check coverage. Leave it as is if it's good. Please check the Troubleshooting section to get a solutions if coverage is not good.
	Quick Flashing Red	Severe loop back or self-oscillation	Not working properly. Please check the Troubleshooting section to get a solutions.
	OFF	The booster auto shuts off for protection due to very severe self-oscillation.	

Alarm LED: Indicates the strength of received signal from the tower. Flashing Alarm means that the booster is receiving a strong signal in one or more of the bands. Alarm LED shall remain "Green" or "Slow Flashing Green". Slow flashing green indicates that everything is working well and the booster is working at nearly the optimum output power to achieve the best possible coverage

LED	Status	Meaning	Solution Methods
Alarm LED	Green	Output power is not full.	Check coverage, if it is good, leave it as it is; if coverage is not good, increase the receiving signal level.
	Slow Flashing Green	Full output power	Working properly.
	Quick Flashing Green	Output power is over rated.	Not working properly. Check coverage, leave it as it is if it's good; actions must be taken if coverage is not good or you don't feel comfortable about Alarm LED quick flashing green.
	Quick Flashing Red	The booster auto shuts off for protection due to much over rated output power.	Not working properly, actions must be taken.

Troubleshooting

Problem	Solution
The signal booster has no power.	Check that the AC outlet is working.
The booster's power is on but the phone is not connected to the network and still cannot communicate with the signal.	Try to fasten the connections between the different parts of the system. Change the direction of the donor antenna or its installation position.
Good downlink signal with poor communication quality.	Check whether there's interference. Consult the operator whether the signal source base station works well.
The power is on but the coverage is not good.	Check "ISO", "ALC" or other LCD or LED indications. Take the actions mentioned below.

Eliminate Flashing ISO legend and Quick Flashing Green, Quick Flashing Red ISO LED problems:

1. Adjust the outdoor antenna direction, keeping it away from indoor antenna. Restart booster.
2. Increase the vertical or horizontal distance between the outdoor antenna and indoor antenna. Restart booster.
3. Use barriers such as walls to increase the isolation.
4. Change the indoor antenna type to an antenna with a more directional antenna pattern. Orient the indoor antenna and outdoor antenna so they point in opposite directions.
5. Reduce the booster's downlink gain using the manual gain controls. Keep the uplink gain value and downlink gain value the same then restart the booster.

Note: Uplink gain must be equal to or not less than 5dB below the downlink gain, to avoid interference with the local carrier's cell site network.

Target: The ISO issues are solved when the ISO LED is "Green" or "Slow Flashing Green" or no flashing ISO legend.

Eliminate Flashing ALC legend and Quick Flashing Green, Quick Flashing Red Alarm LED problems:

1. Adjust the antennas' directions or locations to lower downlink received signal level.
2. Slowly reduce the downlink gain using the Manual Gain Controls.
3. If the above methods don't work, reduce the booster's gain with an external attenuator in line with the outdoor antenna or replace with lower gain antenna.

Target: The overload issues are fixed when the Alarm LED is "Green" or "Slow Flashing Green" or no flashing ALC legend. Please note that a "Green" LED indication may result in smaller coverage area. This can be improved by adjusting the outdoor antenna to receive a stronger signal.

Eliminate poor coverage problems when Power "—" legend on LCD and Alarm LED is Green:

1. If the signal has not been improved, please check below:
 - The weak downlink signal leads to the low output signal level. Change the direction or position of the outdoor antenna. You may also try replacing the outdoor antenna with a higher gain antenna to increase the incoming signal.
 - Check to see if it is necessary to add more indoor antennas. Barriers such as walls can block the signal indoors. You should also check the booster to make sure the power is maximized. Try installing more indoor antennas or replace the booster with a higher powered one.
2. If the signal in a small section of the building hasn't been improved, try the following:
 - Check to see if the indoor antenna is installed correctly. Try moving the antenna to improve coverage.
 - Try adjusting the direction the indoor antenna is pointing.

Remark:

• When increasing the downlink gain make sure the isolation is adequate to prevent system oscillation
Note: The flashing ISO and Alarm status indicates that ISO and ALC functions are working properly and the problems of self-oscillation and strong downlink signals are fixed. In most cases, there is no need to take any additional measures except for deep self-oscillation or excessively strong signals from the tower. The self-adaptive ALC and isolation gain processing system automatically solve most problems.

Main Specifications

RF Parameter		UL	DL
Frequency Range	900 MHz	880-915 MHz	925-960 MHz
	1800 MHz	1710-1785 MHz	1805-1880 MHz
	2100 MHz	1920-1980 MHz	2110-2170 MHz
	800 MHz	832-862 MHz	791-821 MHz
	2600 MHz	2500-2570 MHz	2620-2690 MHz
Max. Gain	Hi20		70 dB
	Hi23		75 dB
Max. output power	Hi20	17dBm	20 dBm
	Hi23	17dBm	23 dBm
MGC (Step Attenuation)		≥31 dB/1 dB step	
Intelligent AGC*	ALC	≥42 dB	
	ISO	≥42 dB	
Electrical Parameter			
Power Supply	Dual band	Input AC100-240 V, 50 / 60 Hz, Output DC 12 V / 3 A	
	Triple&Quint band	Input AC100-240 V, 50 / 60 Hz, Output DC 12 V / 7 A	
Power Consumption	Dual band	≤ 10W	
	Triple&Quint band	≤ 24W	
Input & Output Impedance		50 ohm	
Mechanical Parameter			
I/O Port Type		N-Female	
Dimensions	Dual band	120*198*34 mm;	
	Triple&Quint band	220*280*55 mm	
Weights	Dual band	≤ 1 kg	
	Triple&Quint band	≤ 3,6 kg	
Environment Parameter			
Operating Temperature		-10°C~+55°C	
Relative Humidity		5% - 95%	
Barometric Pressure		55 kPa -106 kPa	
Environment Conditions		IP40	

Product Warranty

30-Day Money-Back Guarantee

All Hiboost products are protected by 30-day money-back guarantee. If for any reason the performance of the received product is not acceptable, the client can return the product within 30-day period and get spent money back.

2-Year Warranty

Hiboost signal boosters are covered with 2-year warranty. Hupatec offers two options for the products under warranty: repair or replace.

This warranty does not apply to HiBoost signal boosters or kits that have been subjected to misuse, abuse, neglect or mishandling and that have its physical or electronic properties altered or damaged. Failure to use surge protected AC power strip with at least a 1000 Joule rating will void your warranty.

All Hiboost products that are packaged with Hiboost accessory products are intended for use and resale as a single unit, and such product kits are required to be sold to the end users or subsequent reseller as packaged.

For any questions or suggestions do not hesitate to contact Hupatec Support Team on the phone 044-20-32395808 or by e-mail sales@hupatec.eu.

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