GTEN. AMERICA

ADVANCED Cellular Modem Gateway **2023** Quick Reference Band Locking Guide



Thank you for purchasing this **GTEN**_® modem product.

You can visit www.gtenamerica.com/support to obtain more information about your product, get help, access the latest downloads and manuals.

We recommend that you use only official GTEN® support resources.

GTEN. Advanced Modem

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This manual covers the following devices:

All GTEN Model 5,6 and 6R2 devices including the GTEN Model 5 Lite and the GTEN Advanced Modem series.

Access the Modem's Internal Web Pages for the First Time

(Does not require internet)

The modem comes configured and ready to use. You can use the modem's web pages to monitor data usage and change basic settings.

You can log in to the modem's web pages over an Ethernet cable, The modem's web pages run on any device with a web browser such as Google Chrome, Mozilla Firefox, and Microsoft EDGE.

To access the modem's web pages:

1. Launch a web browser from a device that is connected to the modem.

The device can be a computer that is directly connected to the modem or a client from a router that is connected to the modem.

2. In the URL address field of your browser, enter 192.168.2.1

3. To access the full Dashboard page and other pages, you must enter your username and password which are both set by default to **GTEN** or **admin**

See the modem label for the default password.

While the password that you enter is unique to your modem and is secure, we

recommend that you change it to a password that you want to use.

a. If you do not want to enter your password each time that you access the modem's web pages, select the Remember me check box on your browser.

b. Click the Sign In button or hit <enter>. (See example)

① 192.168.2.1		
This site is asking you to sign in.		
Username		
admin		
Password		
••••		
	Sign in	Cancel
	Sight in	curreer

When the full GTEN "Network Map" page displays. You are now ready to monitor the modem and manage the settings.

If you cannot log in to the modem or your browser does not display the Dashboard page, check the following:

• Make sure that the computer, router, or WiFi router is connected to the LAN Gigabit Ethernet port of the modem or you have established a Wi-Fi connection.

• Make sure that your browser does not cache the previous page by closing and reopening the browser.

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• If your computer is set to a static or fixed IP address (this type of setting is uncommon), change the setting to obtain an IP address automatically from the modem.

What you should see when first logged in: (The Main Page)

	LTE signal	₽ :000	Wireless:	2.4G	iG
GTEN	Signal Strength	-112 dBm	Guest AP:	2.4G	iG
AMERICA	Signal Quality	-10	Firmware:	BASIC-23082	5
BASIC MODEM	Uptime:	3d 22h 58m			
🚖 Network Map		Internet Status			
		Connection Control:	Reconnec	ct Disconnect	í
ロ VPN Server					
VPN Client		Internet Source Priority:	4G Moden	n, always	~
Network Traffic	0	Simcard Status	Card inserte	ed	
Advanced Settings		LTE signal	♥ ∎000		
- Wireless 2.4GHz		Signal Strength	-112 dBm		
- Wireless 5GHz		Signal Quality	-10		
- LAN		Tower ID	319BF20		
- WAN	<u>e</u>	I TE Channel	4		
- Firewall	\Rightarrow		4		
- Cellular Settings		APN	INFINETI50	G.VZWENTP	
 Administration 		Connection Status:	Connected		
- Wireless & Wired Info	Y	Connection Type:	USB Moder	m (NDIS/RNDIS)	
- System Log	[]	Session Uptime:	1d 18h 40n	ı	

Manage Cellular Settings

This section describes how to manage the modem settings. (See example) Link> http://192.168.2.1/Advanced_Modem_others.asp

08	192.168.2.1/Advanced_Modem_others.	asp					☆
	GTEN. Advanced Modem R1	GTEN® Website GTEN® Store GTEN® YouTube	Click Here Click Here Click Here	Wireless: Guest AP: Firmware:	2.4G 2.4G Advanced	5G 5G 1-R1-230608	Log
	🕈 Network Map	Cellular Settings - 5G Mod	lem				
	USBDisk	5G Modem					
	t⊐ VPN Server	Select the type of 5G Mo Network Map and click [F	dem for your requirements Remove].	. To disconnect 5G Modem, p	please go	to	
	Network Traffic	Enable 5G Modem?					
	Advanced Settings	Lindble oo modeliin					
	- Wireless 2.4GHz	5G Modem Base Settings					
	Wireless 5GHz	Modem Type:		NDIS: LTE and other	~		
	- WAN	APN Service:		V5GA01INTERNET			
	- Firewall	Username:			*	* QMI only	
	 Cellular Settings 						
	 Administration 	Password:			()	* QMI only	
	- Wireless & Wired Info	PDP Type		IPv4	~		
	 System Log 	Authentication		NONE	~		
		SA Band					

Once you are on this page you can customize the connection channels the modem uses, this is very important in improving the overall connection of your device, by default the carrier send the modem a signal and choose the channels it wants you to be on based on numerous factors, however their choice might not always be ideal for you as such this modem gives you the freedom to break away from this control and allows you the power to set your own connection channels to enhance your signal and avoid congestion.

This section is focused on Channels only, do not modify or change your APN settings there is a different guide available for this by visiting this link> <u>https://infiniteic.com/apnforv5/</u>

Enable Modem: This feature is ENABLED by default.		
NSA/SA/5G band This section is where you configure	4:5:41:71 <u>Pro Tip:</u> When setting the sure to go in number characteristics of the sure to go in number charac	he channels you make annel order and always
the Mobile Broadband 5G channels you want to choose: (Only available for 5G Modems)	use a : between each ch use spaces. SA option should alwa not in use in North Am 2023.	nannel number and do not nys be set to 0 as SA is nerica as of September
LTE band This section is where you configure the Mobile Broadband channels you want to choose: Available LTE Bands: 1:2:3:4:5:7:8:12:20:25:28:38:40:41:4 8:66:71	2:4:5:13 Pro Tip: When setting the sure to go in number character of the sure a : between each character of the spaces.	he channels you make annel order and always hannel number and do not
Preferred Network: This section is where you choose the type of Mobile Broadband connection.	Auto Set to Auto by default. If your modem has a NR5G option you should set the modem to LTE unless you intend to use NR5G networks and then you leave the setting as AUTO	
When you are all set. Click the	Apply	button to save your changes.

Examples of channel locking

One Channel at a time option

This is an example of single channel locking: This type of channel lock uses one channel at a time and will not search for any other channel. This type of channel locking will cause slower speeds but in certain areas may be the best for stability.

	Username:		^ QIVII only
- Cellular Settings	Password:	<	* QMI only
- Administration			
 Wireless & Wired Info 	РDР Туре	IPv4v6 v	
 System Log 	Authentication	NONE ~	
	SA Band	0	
	NSA Band	2	
	LTE Band	2	
	Preferred Network:	Auto ~	* QMI only
	<u>мтu:</u>	1428	[10001500]

<u>Pro Tip:</u> If you have an SA or NSA Band option should always be set to 0 as SA is not in use in North America as of September 2023.

More than one Channel at a time

This is an example of using several channels when channel locking: This type of channel lock uses more than one channel at a time and will not search for any other channel besides what is inputted. This type of channel locking will increase speeds by taking advantage of Carrier Aggregation¹ however this setting may not be the best option for every location, especially if one the secondary channels has a weaker signal.

 Cellular Settings 		
 Administration 	Password:	* QMI only
- Wireless & Wired Info	PDP Type	IPv4v6 V
 System Log 	Authentication	NONE
	SA Band	0
	NSA Band	2:5:13:66
	LTE Band	2:5:13:66
	Preferred Network:	Auto v * QMI only

<u>Pro Tip:</u> When setting the channels you make sure to go in number channel order and always use a : between each channel number and do not use spaces.

<u>Pro Tip 2:</u> Channels available: 1:2:4:5:7:12:13:14:17:25:26:30:41:48:66:71 (5G Modems also use channel 77)

1. In wireless communication, carrier aggregation is a technique used to increase the data rate per user, whereby multiple channels (called bands) are assigned to the same modem at the same time. The maximum possible data rate per user is increased the more channels are assigned to a user.

What carriers use what channels?

The information regarding carriers' connection channels is available online by searching on google for the latest information, as of this publication here is the latest information:

CH. 2	All carriers use this channel, which is not available in all areas.
CH. 4	All carriers use this channel, not available in some very remote areas.
СН. 5	AT&T primarily uses this channel, which is not available in all areas. Verizon/US Cellular are also known to use this channel in higher populated areas.
CH. 12	T-Mobile channel, however, is used by AT&T and US Cellular for roaming.
CH. 13	Verizon channel. Slower but most stable channel on the Verizon network.
CH. 14	Primarily used by AT&T, intended for Emergency communications and during times of grave emergencies AT&T may restrict traffic on this channel, also seems to be used by US Cellular in certain markets.
CH. 17	AT&T channel. Slower but most stable channel on the AT&T network.
CH. 30	AT&T channel. Limited reception and limited availability, highly used in Alaska.
CH. 41	T-Mobile high speed channel, Limited reception and limited availability are mainly used for 5G networks now.
CH. 48	Verizon primarily uses this channel, Limited reception, and limited availability.
CH. 66	All carriers use this channel, which is not available in some very remote areas. This channel is the new standard primary channel for LTE Internet traffic in the U.S.
CH. 71	T-Mobile channel, used for 5G networks but works on LTE as well, great for longer distances.
CH. 77	Verizon primarily uses this channel, Limited reception, and limited availability. Designed for only 5G connectivity, Also being used by AT&T and US Cellular in certain merkets.

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How do I know what channel(s) my modem is connected to?

The information regarding your connection channels is available on the very first page of the Modems web interface:

	LTE signal	▼ •000	Wireless:	2.4G 5G
GTEN	Signal Strength	-112 dBm	Guest AP:	2.4G 5G
AMERICA	Signal Quality	-10	Firmware:	BASIC-230825
BASIC MODEM	Uptime:	3d 22h 58m		L C O
♠ Network Map		Internet Status		
USBDISK		Connection Control:	Reconnect	Disconnect
ロ VPN Server		Internet Course Drievitu	40 Madam	alumur.
VPN Client		Internet Source Priority:	4G Modem,	aiways 🗸
Network Traffic		Simcard Status	Card inserted	
Advanced Settings		LTE signal	₽ ∎0000	
- Wireless 2.4GHz		Signal Strength	-112 dBm	
- Wireless 5GHz		Signal Quality	-10	
- LAN		Tower ID	319BE20	
- WAN	A 6	LTE Channel	4	
- Firewall	\Rightarrow	LIE Gnannei	4	
 Cellular Settings 		APN	INFINETI5G.	VZWENTP
		Connection Statuce		

If you are using more than one channel, the additional channel information can be found by using the picture example below:

🕈 Network Map		5G Modem Status	
USBDisk		Model Version:	RM500QGLABR11A06M4G
tユ VPN Server		Manufacturer:	Quectel
VPN Client		Modem Type:	NDIS/RNDIS
Network Traffic	O	Operator	T-Mobile
Advanced Settings		IMEI	0016
 Wireless 2.4GHz 			8004260257
 Wireless 5GHz 			8901260257
– LAN		IMSI	3102602549
- WAN		Network Type	NR5G-NSA
- Firewall	\mathbf{V}	Band	41
 Cellular Settings 		Carrier Aggregation	66,2
 Administration 		Go to Cellular Settings:	Go
 Wireless & Wired Info 			
- System Log		Safely remove 5G Modem:	Remove

Returning my modem to connect to all channels?

If you want to turn your modem back to see all channels just leave the BAND/Channel box blank and then hit apply and the modem will return to search all channels again. (See example)

	Username:	* QMI only
 Cellular Settings 	Bernard	A * OMLonky
 Administration 	Password:	Qivil only
 Wireless & Wired Info 	РDР Туре	~
 System Log 	Authoritication	
	Authentication	~
	SA Band	0
	NSA Band	
	LTE Band	

When you are all set. Click the

Apply

button to save your changes.

Using Console for band and signal info?

For you advanced users, the console is a great tool to provide detailed connection information. For console users, you can send command **atcmd at+qcainfo** to get advanced details regarding your signal and connection channels, (see example below)

🕈 Network Map	Administration - Console					
📕 USBDisk	System Services Operation Mode Firmware Upgrade Settings Console					
t⊐ VPN Server	Warning! Console emulator may be used only for commande which rature result immediately					
VPN Client	Commands which return result immediately. Commands such as [top], [ping], [traceroute], etc. will block the WebUI.					
Network Traffic						
Advanced Settings	atcmd at+qcainto					
 Wireless 2.4GHz 	node ttyUSB1, vid=2c7c, pid=800					
 Wireless 5GHz 	tty: /dev/ttyUSBZ at+qcainfo					
- LAN	at+qcainfo					
- WAN	+QCAINFO: "PCC",66786,100,"LTE BAND 66",1,377,-96,-17,-57,3 +QCAINFO: "SCC",675,75,"LTE BAND 2",1,26,-100,-12,-78,0 OK					
- Firewall						
 Cellular Settings 						
 Administration 						
 Wireless & Wired Into 						
 System Log 						

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