

GardCharge FAQ List

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FAQ #001: How to set up GardCharge?

Simply connect the GardCharge unit in between your Power Adaptor and your USB Cable (which is connected to your Device under Charge such as a smart phone or a power bank); and you are ready to go.

Note, if you saw GardCharge LED indicator is “red”, just press the RESET button (which will turn the LED to “green”) to start a fresh new charging cycle.

FAQ #002: Do I need to use the App to work with GardCharge ?

No. GardCharge will work as a standalone unit to provide you full battery charging protection using the manufacturer’s default setting that works with smart phones or power banks.

However, you may use the optional GardCharge App for the advanced setting, and also to monitor Power Parameters (such as Voltage and Current) in real time on smart phone screen.

FAQ #003: How does GardCharge work?

GardCharge uses built-in intelligent algorithms based on continuous Power Parameters (namely voltage & current) sensing detection within the GardCharge unit to determine whether to provide Power/Current, or to cut off the Power/Current supplied to the connected USB Cable, and thus, the connected Device under charge (such as a smart phone or a power bank).

FAQ #004: How can GardCharge provide charging protection?

For battery charging protection application, GardCharge provides several combined protection schemes including:

- a. When detected over-current (with default value of 4A), GardCharge will cut off the Power/Current supplied to the USB Cable.
- b. When detected that the Charging Device (such as a smart phone) stopped accepting Current when it is fully charged, GardCharge will provide further insurance by cutting off the Power/Current supplied to the USB Cable.
- c. When detected that the Charging Device (such as a smart phone) is accepting very little Current to pass through (this indicates that the Charging Device is approaching fully charged stage), GardCharge will cut off the Power/Current supplied to the USB Cable after a certain Off Set /Delay Time.
- d. When detected that the Count Down Timer used reached the end, GardCharge will cut off the Power/Current supplied to the USB Cable.

FAQ #005: What is the manufacturer's default setting ?

GardCharge's factory default setting as follows:

- a. Count Down Timer at 6 Hour (enough charging time to cover most Smart Phones and Pads of 10" or less).
- b. Over-Current Limit at 4A (enough to cover normal 0.5A ~ 1.0A ~ 2.1A ~ 2.4A current range).
- c. Low Current Limit ENABLEd (for automatic charging mode) and set at 0.3A, and with Additional Time Off Set to 30min (enough to keep most smart phones or power banks' charging to 95% ~ 100%)

FAQ #006: Will GardCharge work with QC2.0/3.0 charging?

Yes. GardCharge provides Power/Current pass-through from Power Adapter to a charging device (such as a smart phone) via connected USB cable, and with Measurement Range of 3.6VDC ~ 21VDC and 0A ~ 3.5A covering the range of QC2.0/3.0 charging.

FAQ #007: What is Over Current Protection?

Normally your smart phones or power banks will accept Current value of 0.5A ~ 2.1A, and for some special devices with 3A, when charging.

Sometimes due to sudden misbehavior of the physical Power Adapter, USB Cable, or Smart Phone (like Power Surge); there might be an in-rush of higher than normal Current, which we call "Over Current". And we have Over Current Protection with the default value set at 4A as the threshold; while, pending your need, adjustable to 0.1A ~ 4A via App; and GardCharge will automatically cut off the Power/Current supplied to the USB Cable (and thus, cut off the Power/Current to the attached smart phone or power bank) to protect your charging device.

So, Over Current Protection is like having a FUSE or Circuit Breaker to protect your Charging Device.

FAQ #008: What is Low Current Limit ?

With Low Current Limit ENABLEd (as a default for the manufacturer setting), GardCharge will automatically activate intelligent algorithms to auto detect whether you have plugged-in or unplugged a charging device (such as a smart phone), and to start charging (with a fresh new cycle per your last setting) or to stop charging accordingly.

In Essense, it is placing GardCharge in automatic charging mode.

FAQ #009: How does Low Current Limit work?

* We recommend that you keep the default value for Low Current Limit with 0.3A, and with Additional Time Off Set at 30min for normal daily use (same as the factory default setting).

And the way the Low Current Limit work is that when a charging device (like a smart phone) is reaching near fully charged state, the Current going through (and supplied to the charging device) will get slower, and thus, with lower real time current

sensing/detection value; and when the current value reached below 0.3A threshold (or any other value between 0.05A ~ 0.5A for the threshold set via App), GardCharge will continue charging for additional 30min for the Time Off Set (or you may set with other Time value between 0min ~ 60min) to ensure that enough additional Power/Current is charged after reaching the Low Current Threshold.

FAQ #010: Can GardCharge work as a Mechanical Timer ?

Yes. By selecting DISABLE for the Low Current Limit within the Set Up configuration in the App, GardCharge will work as a Mechanical Count Down Timer (with Power always ON until count down to 0 min & sec); and will re-initiate the count down time whenever the RESET button is pressed.

Note in this Mode, you will not be in automatic charging mode, and will not have the auto sensing/detection of plugging or unplugging the USB Cable when charging mentioned in FAQ #008.

FAQ #011: Can GardCharge be used for Smart Watch charging?

Yes. Please set the GardCharge as a Mechanical Timer per FAQ #010 by DISABLEing the Low Current Limit; and set the Count Down Timer to, say, 30min ~ 1Hour pending your Smart Watch charging time requirement.

This is due to Smart Watch uses very little Power/Current when charging, and sometimes lower than the lower bound limit of the Low Current Limit of 0.05A; so that the Low Current Limit may not suitable to use here for the auto Current detection.

FAQ #012: When to use Mechanical Timer mode?

Other than charging Smart Watch mentioned within FAQ #011, you may need to run Mechanical Timer mode for devices with very low charging current (for charging current less than, say, 0.3A), or for devices normally running with very low current (say, less than 0.3A; such as USB LED Night-Light) or devices with unstable current (such as USB Fan with current running dynamically between 0A ~ 0.5A).

And of course, you may just use Mechanical Timer mode as you feel appropriate. You will still have the benefit of Over Current Protection, but just keep in mind that Power/Current will be supplied until Count Down Timer reached the end.

FAQ #013: How to wireless connect GardCharge with App?

First search and install “GardCharge” App on your iPhone or Android Phone from Apple iOS App Store or Google Play Store respectively.

Then enable Bluetooth in your smart phone Set Up (if Bluetooth is not yet enabled); and run the App to proceed for the connection process. And make sure that GardCharge device is connect to your Power Adapter and with green-light ON.

For iOS, press the Search-Magnifier icon on the Upper Right corner of the App, and you will see GardCharge device icon with alpha-numeric ID name shown on screen (and if you have more than one GardCharge device, you will see more than one device icon on screen). Press and select the appropriate GardCharge device icon to connect.

For Android, press the Menu Selection on the Upper Left, then select “Scan/Connect”, and you will see GardCharge device’s alpha-numeric ID name shown on screen (and if you have more than one GardCharge device, you will see more than one device ID on the screen list). Press and select the appropriate GardCharge device ID to connect.

Note, for a small percentage of Android phone, it may take a little longer to Scan (may take 5 sec ~ 30 sec). And if a GardCharge device is ON and nearby, but you cannot see the device ID on App screen list, please press the “SCAN” on the upper-right corner of the App to re-scan. And if you still have Scan problem, please remove GardCharge App from your Android Phone’s background task, and you may need to restart your Android Phone, then proceed for the Scan process again.

FAQ #014: Can you charge less than 100% ?

Yes.

Some Smart Phone users may prefer charging the Phone with less than 100% fully charged state to prolong battery life.

For those of you who are interested in the technology behind, please read through FAQ #008 & FAQ#009 about Low Current Limit first.

For the majority of Smart Phones and/or Power Banks, under App Set Up, the Low Current Limit of 0.2A ~ 0.3A and Additional Off Set Time of 20min ~ 30min will be sufficient to take you to 95% ~ 100% charging state.

And to lower the battery charging % (say, to 85% ~ 95%), you may experiment and change the Low Current Limit to 0.3A ~ 0.4A, and Additional Off Set Time to 0min ~ 10min for your Smart Phone / Power Bank. With the higher the Current Limit threshold value, this means that when the battery is “nearly” charged, the rate of the current flow will go slower (from higher value than 0.4A to lower value), so that our current detection mechanism will see 0.3A ~ 0.4A quicker than seeing 0.2A ~ 0.3A. Similarly with lowering the Additional Off Set Time for charging from 20min~30min down to 0min~10min, the charging process will stop quicker.

FAQ #015: Why do you need Factory Default option on the App?

When you changed the Setting Value within the App (such as the Count Down Timer, Over Current Limit Value, Low Current Limit setting, etc.), sometimes it may not be appropriate for your next charging device (such as charging a Smart Watch then charging a Smart Phone); and the quickest way is to set to Factory Default to recover with the original out of factory setting. And after a Factory Default is set within the App, please make sure to press the RESET button on GardCharge device afterward to ensure a fresh new charging cycle with Factory Default setting.

FAQ #016: Why is the App disconnected after RESET is pressed?

We designed GardCharge with non-auto reconnect feature after the RESET button is pressed on the GardCharge device; so that Android/iPhone's App will be disconnected by default. To re-connect, you may refer to FAQ #013 for wireless connection procedure.

The reason for implementing non-auto reconnect after RESET is that we don't know which member in your family will use his/her respective phone to connect to GardCharge for the next charging cycle; so it is not appropriate to auto reconnect to the last smart phone connected, otherwise, the user with next charging cycle cannot connect with the App.

FAQ #017: What's inside of GardCharge Hardware?

We've chosen Texas Instruments' TI CC2541 Wireless MCU along with TI INA138NA/250 Current Output Current Shunt Monitor, as the key Wireless Microprocessor and current sensing components to build GardCharge.

While the rest of electronic materials are procured in Taiwan and Japan (such as FRAM, resistors, capacitors, inductors, PCB Board, etc.); and mechanical materials procured in Taiwan and China (such as Housing, USB connectors, etc.)