

New Features for Version 1.20 over 1.10.6

110 V operation

- When using the breaker settings of 16 or 20, the spa lowers the estimated load for the heater to 11 A from 22 A.
- When the breaker size is 25 A, the heater is estimated to have a load of 21 A
- This allows pump and heater operation on spas which consume less power

Sauna Control

- If this code is loaded on to a sauna pack, it will function as a normal sauna pack

Real-Time Clock control

- The filter, ozone, and onzen are all controlled based on a real-time clock. This means that the ozone and onzen will run at midnight, 6 AM, noon, and 6 PM. You can still force them on by scrolling through the settings menu (this will cause an extra cycle).
- The filter will run the same as before. Scrolling through the settings menu will start the first filtration cycle (and purge), and it will run every 12 hours if set to twice a day, 8 hours if set to 3 times a day, etc...
- Note this only functions when the spa connects to the iPhone/iPod since the iPhone/iPod is used to synch the time. If no phone has ever told the spa the time it runs as before (which is not “real time” but based on timers).

Display Half Degrees when showing Celsius

- Used for better resolution when using the Celsius temperature display. The temperature can be changed by holding the light button for 5 seconds.
- European packs will default to display the temperature in Celsius

Updated temperature table

- The displayed temperature on the topside and in the App is closer to the actual temperature of the water. This was a very small change to make the temperature more accurate at lower temperatures.

Suspend the filter when the temperature is more than 2°F above the set-point

- This is in place to prevent filtering from heating the water higher than the set-point when an exhaust fan is not installed. This will be turned on and off in LLP.
 - FS 0 – Filtration Suspend de-activated (filtration ignores set point)
 - FS 1 – Filtration Suspend activated (filtration cuts out 2° F above set point)

Freeze protect

- If the temperature of the spa goes below 50°F then the heater turns on in an attempt to heat the water. If that does not work then at 45°F Pump 2 starts and pump 1 goes on to high to try to heat the water. At 40°F Pump 3 starts, and at 35°F Pump 4 and 5 or the blowers turn on to try to keep the spa from freezing.
- In the event the spa has been filled with cold water, pressing any accessory button will suspend the freeze protect mode for 60 minutes

Scrolling boot screen

- When the spa starts up, the firmware version scrolls across the topside screen showing “GSC-X #.##.#” where X denotes whether you are using a North American pack (A), a European pack (E), or a Sauna pack (S) and the #.##.# denotes the firmware version (e.g. 1.20)

Economy Mode

- Economy mode lets the user set regions of time where some functions of the spa are disabled. There is 1-2 peak regions, 1-2 mid-peak regions, and the off-peak region. The spa functions normally in the off-peak region but in the other regions the user can set whether or not the heater, filter, and/or ozone will run. When these regions occur can be set using the app, and what days of the week they are active.
- This is used to keep the spa from consuming too much power when installed in a location with time based power billing.
- Defaults are based on the Ontario guidelines, but user can adjust as necessary

UDP Discovery

- This allows the App to discover the spa when it uses any IP address, or when it is connected to the home network

IP Settings

- The IP address of the tub can be set to either Static (St) or Dynamic (dy). The static IP is 169.254.3.3 where the dynamic IP is assigned by the router the spa is connected to. When the spa is set to have a dynamic IP, an Ethernet wire can be used to connect the spa to a home router.
- The spa needs to be powered down, and then back up again after the IP setting has been changed.
- If the spa is set to a dynamic IP then after the IP setting the last octet of the IP address assigned to the spa is shown in the form of “.XXX”.
- If the spa router is logged into another wireless network by AP Client, then the IP address assigned to the router is shown after the IP settings if the IP setting is either static or dynamic.

Telnet Upload

- This allows firmware updates to be sent to the spa using the app. Once the firmware update has been sent to the spa, the spa needs to be rebooted to implement the new firmware.

Router set-up

- A new screen on the app allows the user to set the information needed to connect to a home router. The user needs to input the wireless network's:
 - SSID
 - Password
 - Encryption
 - Security Protocol
- Once the data has been sent, the router will be reset and connect into the home router so that the user should not need to connect to the spa's network to control the spa.
- Note that after the router settings have been used, new router settings cannot be inputted for about five minutes.

Ground Fault Test (GFT)

- The GFT is used to test each of the relays on the spa to see if any of the relays are causing a ground fault. Holding the light button for 10 seconds will display GFT on the screen. Pressing the filter button will begin the GFT and pressing the pump 3 button enters the enable/disable menu. Pressing the pump 1 button brings you back to regular operation.
- The GFT turns on each of the relays in turn in the following sequence:
 - Pump 1 Low (P1L)
 - Pump 1 High (P1H)
 - Pump 2 (P2)
 - Pump 3 (P3)
 - Pump 4 (P4)
 - Pump 5 (P5)
 - Blower (B1)
 - Blower (B2)
 - Onzen (On)
 - Ozone (O3)
 - Stereo (St)
 - Fan (rE)
 - Lights (Lt)
 - Heater 1 (H1)
 - Heater 2 (H2)
- With the bracketed abbreviations shown on the topside. The spa also goes through a short pumping cycle ("HP") before testing the heaters, and a short cool down cycle ("HCd") after testing the heaters. The test can be stopped at any time by pressing the pump 1

button which will bring you back to normal operation. If a ground fault occurs during the test, the relay is disabled when the spa powers up again and can be enabled in the enable/disable menu.

- The enable/disable menu lets the user enable/disable different relays. You advance through the menu by pressing the pump 3 button and go back with the filter button. Pressing the up arrow will enable a relay, and pressing the down button will disable the relay. Pressing the pump 1 key brings you back to the GFT menu.