



Selectronic Inverter – Domestic Installation

Inverter summary

Inverter Manufacturer	Selectronic
Inverter Model	SP Pro
Inverter Size	
Maximum number of inverters connected to a single SPLASH Monitoring STREAMbox	3 but could be increased by using an external USB hub

List of parts required for connection of inverter to SPLASH Monitoring STREAMbox

To enable you to connect the above inverter to SPLASH Monitoring you will need a SPLASH Monitoring STREAMbox and connection cables, these parts are listed below.

Part description	Part number
Inverter Make / Model	As above
SPLASH Monitoring STREAMbox	SMSB HW - Hardwired network and inverter connections
Connection cable STREAMbox to inverter	Part numbers D9F-D9FX 2m D9F-D9FX10m USBa-USBb 1.5m
Connection cable STREAMbox to clients router or LAN	Part numbers SM CAT5 1m – 1m CAT5 cable SM CAT5 2m – 2m CAT5 cable SM CAT5 5m – 5m CAT5 cable SM CAT5 10m – 10m CAT5 cable
Optional	USB to RS242 D9F Adapter

Installation Guidelines

We have found that the most reliable long-term results are achieved when the Streambox, its power supply is installed well away from daily operational areas. The problem is that the loss of the Splash Monitoring service is not immediately obvious, so it can be many days or weeks before someone realises that their system is not being updated. We are in the process of developing a mechanism to detect the loss of communication which optionally sends an email alert to one or more nominated recipients, but it is always prudent to minimise the risk of disruption by following these guidelines:

- If possible install the equipment and power supplies well away from daily operational areas such as someone's desk or work bench.
- Try and secure the equipment by attaching it to a wall or shelf with screws, Velcro or double sided tape. This should prevent it from slipping and becoming disconnected.
- Always secure the STREAMbox power cord to the STREAMbox using the P clip supplied. The P clip should be located on the back of the STREAMbox using one of the existing jack posts, as illustrated:



- Always ensure the LAN cables you use are in sound condition with their retaining clips intact, and make sure they are securely fitted to the equipment by giving them a gentle tug.
- Always ensure that all cables are secured using cable ties to protect them from accidental snagging.
- Never stretch cables to the point where any movement could cause them to become dislodged.
- Always install the STREAMbox with the ridged heat sink outwards and the side vents unobstructed. It doesn't matter what orientation is used; horizontally on its bottom (the flat black surface); or vertically on its side.
- The equipment and power supplies will be labelled 'DO NOT SWITCH OFF', but you should inform people with access to the installation area that this equipment should not be turned off; for example cleaning and maintenance personnel.

Basic Connectivity

The SP Pro can be connected to the STREAMbox using a standard null modem cable* between the D9 connector on the inverter to COM2** on the STREAMbox, or a standard USB type A to USB type B cable from the rear USB socket on the STREAMbox to the USB socket on the inverter.

If you have more than one SP Pro you can connect them to any combination of the three USB sockets and/or COM2** on the STREAMbox. To access the two additional USB sockets on the STREAMbox you will need to puncture the label on the front panel just beneath the Splash logo. If you rub your finger along the bottom of the logo you will trace the outline of the two USB sockets. Running a sharp modelling knife from left to right in the middle of each socket will give sufficient access to push the USB plug into the socket. Take care not to penetrate the label by more than 1 mm and don't penetrate the SD Card socket above the USB sockets otherwise you will void the warranty on the STREAMbox.

(* Only pins 2, 3 and 5 are required, connected 2 to 3, 3 to 2 and 5 to 5)

(** COM2 is an RS232C port whereas COM1 is usually an RS485 port and will therefore not work with the SP Pro)

In special circumstances you could connect more than three inverters to the STREAMbox by using an external USB hub to increase the number of USB ports available. However, each inverter takes about 8 seconds to scan and the default scan rate is 30 seconds, so three inverters can be accommodated without changing the default scan rate. Should you need to connect more than three inverters you will need to increase the scan cycle time, which can be done using the STREAMbox's Web Information Page. Please note that if you do change the scan frequency on the STREAMbox you must also change it on the Fingerprint page on the SPLASH Monitoring web site. If these values don't match then the web site graphing and reporting tools become unstable. If in doubt please contact us to discuss your requirements.

Connect the STREAMbox to your LAN using a standard CAT5 or CAT6 patch cable. The LAN in your case may mean a Router, ADSL Modem, Network Switch, or any other network device connected to the Internet.

Setting Up Your STREAMbox

Unless the STREAMbox has already been configured according to your specifications, it will be configured to acquire a DHCP IP address from your router or DHCP server. For most domestic applications this will work without any modification. However, if you do need to change its settings see below for guidance.

Web Site Setup:

A standard SPLASH Monitoring system can hold up to 56 data points, however the SP Pro delivers over 300 data points of which we currently** monitor some 150. In order to accommodate this many data points we have split them into logical 'systems' roughly along the lines of some of Selectronic's SP Link data tabs.

When you scan your Fingerprint (see "Getting Started" document), you should see four systems. Each system represents a tab from the SP Link software: System 1 represents the "Now" tab; System 2 is a status page; System 3 represents the "Today" tab; and System 4 represents the "Technical Data" tab. When configuring the system settings select the Pre-set that matches the system number you are configuring and this will populate the appropriate system settings.

The SP Pro can be in up to 20 different states all at the same time. Each of these states is represented by a numerical "reason code" and there are three categories of state: Information (no action required if the inverter is in this state); Warning (inverter may need imminent attention); and Action (inverter requires immediate action). Currently the SPLASH Monitoring web site can only store and display numerical values, therefore you will need to translate the reason code into words, which can be done by clicking on the "View Info" button on the status system's Animation page.

** This will soon change to a single system containing the 56 most critical values output by the SP Pro. The remaining 250 or so values will be stored on the STREAMbox, to be made accessible to the user as a CSV file upon request. These values will be stored at the selected scan frequency for a number of years.

Trouble Shooting:

“No Stream Found” on the SM Web site:

This is because the web site hasn't received any data from the STREAMbox.

- SP Pro inverters can only be interrogated for data if the batteries are connected. If the batteries have sufficient power to run the inverter it is not necessary to have the grid connected to get data.
- Allow at least 10 minutes after powering up the STREAMbox before starting your diagnostic checks.
- Check the connections between the STREAMbox and your router and ensure you have a solid green light at the top left of the RJ45 (LAN) socket and a flashing green light at the top right of the socket.
- No solid green light could indicate: the STREAMbox is switched off (check the power light on the front of the STREAMbox); or the router isn't powered up, or the LAN cable isn't connected to the router; or the LAN cable is faulty. To eliminate the LAN cable and router, connect the LAN cable to a known working device like your laptop or PC and if you can get a web session, then the LAN connectivity is OK.
- Check the connection between the STREAMbox and the inverter. There's not much you can do other than check the physical connections at the STREAMbox, USB converter and the inverter.
- Try power cycling the STREAMbox – switch it off, wait 5 sec, switch it back on.
- Try logging on to the STREAMbox: enter “splash” in your web browser's address line, or if your STREAMbox has a fixed IP address, enter that into your web browser. For instructions on how to use the STREAMbox's 'Web Information Page' go to <http://www.splashmonitoring.com/assets/SM-STREAMbox-Web-Information-Page.html>
- On the Web Information Page check that “si-selectronic-ser” appears as an entry in the “Other Addresses” row of the “Scanning Information” table.
- The most common issue we encounter is the site's network firewall not allowing outbound traffic. This is rarely an issue with domestic routers, but very common in managed commercial networks. Unless you have someone you can ask (like a network administrator) a good way to detect this issue is to log onto the STREAMbox and run a 'Healthcheck' report. This will give you lots of information including whether the STREAMbox can 'see' the internet.
- The STREAMbox is not able to work with a proxy server. If you have a proxy server you will need to make special arrangements with your network administrator to have the STREAMbox circumnavigate it by issuing a fixed IP address with appropriate privileges.
- If you connect both the D9 and USB on the same inverter to the STREAMbox you will only get data from the D9 connection. Similarly if the STREAMbox is connected to the USB socket on the inverter and you connect your PC to the D9 socket on the inverter, then use SP Link to gather data, this will prevent the STREAMbox from obtaining data from the inverter. Conversely if you have connected the STREAMbox to the D9 socket on the inverter you will get a connection failure if you try to connect your PC/SP Link to the USB socket.