SMA COMMUNICATIONS QUICK REFERENCE GUIDE

Greetings from the SMA Service Team!

This document provides an overview of the primary SMA communication options and also summarizes the advanced network configurations that may be needed to get the SMA communications products online with the Local Area Network and/or the Sunny Portal. In most small, residential networks these special configurations are not typically needed. They apply more to commercial, government, or large business networks with higher level security implemented.

SMA DATA I Protocol

- Used on RS485 transmission only
- Published/Public specification, 3rd parties/customers can build their own monitoring solution
- Products Using DATA I: WebBox-10 (RS485), RS485 Data Modules, RS485 Piggy-Back cards, SensorBox with RS485 Power Injector

SMA DATA II+ Protocol

- Used on Bluetooth, Speedwire and Webconnect/Multigate transmissions
- Proprietary specification, not published, no options for 3rd party development
- Products Using DATA II+: WebBox-BT-20 (Bluetooth), Webconnect/Speedwire Modules, Cluster Controller, MultiGate, SensorBox with Bluetooth Power Injector

WEBBOX(BLUETOOTH/RS485)

- Up to 50 devices per Webbox/Plant
- RS485 and Bluetooth options, can connect to Sunny Sensorbox
- RPC, Flashview, FTP and Modbus capable
- Ability to build custom pages on Sunny Portal
- Not Plug-n-Play, screw terminals and specific pin-out for wiring, jumpers placed correctly
- Manual configuration required, some networking knowledge needed
- Daisy-chain is the ONLY configuration allowed (for hard wired RS485 version)
- Advanced Network Security Requirements:
    - HTTP Port 80 must be open outgoing for the WebBox to connect to Sunny Portal
    - If there is a firewall, an exception may need to be configured for the WebBox to upload to the portal.
        - Portal upload server IP: 171.25.178.18
        - Portal upload server name: com.sunny-portal.de

CLUSTER CONTROLLER

- Up to 75 devices per Controller/Plant
- Automatic network configuration, DHCP by default
- Ability to build custom pages on Sunny Portal
- Star, ring or daisy-chain wiring allowed for inverter connections
- Modbus/TCP capable
- No RS485 or Bluetooth connection/integration, which means no Sunny SensorBox
- No RPC or Flashview
- Advanced Network Security Requirements:
    - HTTP Port 80 must be open outgoing for the Cluster Controller to connect to Sunny Portal
    - Port 9522 must be open on all routers/switches in between the Cluster Controller and the Internet connection
        - This port must also be opened on any switches or routers in the Speedwire/inverter-to-Cluster Conroller connection
    - If there is a firewall, an exception may need to be configured for the Cluster Controller to upload to the portal.
        - Portal upload server IP: 171.25.178.23
        - Portal upload server name: ccl-com.sunny-portal.de
        - Portal **update** server IP: 171.25.178.20

WEBCONNECT/MULTIGATE

- Plug-n-Play installation, no wire terminations, just like plugging a computer into a router/switch
- Automatic network configuration (DHCP), Plant Setup Assistant automates Sunny Portal registration
- Star, ring or daisy-chain wiring allowed, just like a LAN
- Limit of 4 devices per plant on Sunny Portal, if more than 4 inverters, more than 1 plant is created
- Sunny Explorer can be used as local interface
- No RS485 or Bluetooth connection/integration, which means no Sunny SensorBox
- No RPC, FTP, Flashview or Modbus/TCP capabilities
- No custom pages on Sunny Portal
- Advanced Network Security Requirements:
    - UDP Ports 9523 (sip-proxy-port, sip-registrar-port) and 3478 (stun-port) need to be open on all routers/switches in the connection, they must be open both incoming and outgoing to allow for the IGMP (multi-cast protocol)
        - sip-proxy-host: proxy.ied.sma.de
        - sip-registrar-host: registrar.ied.sma.de
        - stun-host: stun.ied.sma.de
        - sip-domain: ied.sma.de
    - A range of UDP ports > 1024 must be open (these are not typically blocked on hard-wired connections, may be needed for cellular, WiFi, or satellite ISPs)
    - Speedwire connections (Sunny Explorer) require IGMP (multi-cast), **in some cases WiFi and Powerline adapters (DLAN) do NOT support IGMP/multicast**