

## 860 DSPi Secure860Link & Instrument Fingerprint

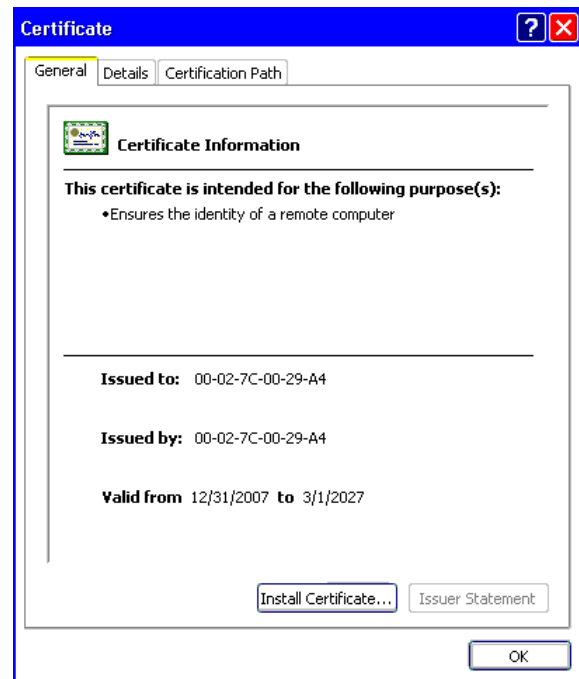
The 860 DSPi has two standard features which enhance security, Secure860Link, and Instrument Fingerprint. Secure860Link enhances privacy for communications between the meter and the TDM system. The Instrument Fingerprint, in addition to encoding the serial number internally, enables the owner to internally “imprint” an “asset id” that shows ownership of the 860 in the event that it is lost or stolen.

### Secure860Link (S8L)

The Secure860Link (S8L) feature in the 860 DSP and 860 DSPi provides enhanced privacy for all data communications between the meter and the Trilithic Data Manager (TDM) server. This is accomplished using a unique 1024 bit RSA certificate on every 860 in the cable system and utilizing Secure Sockets Layer (SSL) encryption. *Note: TDM must also have this feature for it to work.*

Upon first time activation of the S8L mode, the meter will (on the next reboot) create a self signed SSL certificate identifying the meter by its MAC address. This may take up to 5 minutes to create but must be done only once. After this certificate is created and its private key stored in hidden flash memory, the certificate will be loaded into run-time memory for use by the meter’s internal web server and internal web browser.

The meter operator (using the web browser menu) logs into TDM using secure web port 443 ([https:// link](https://link)) and causes TDM to establish a data connection back to the meter over port 443. TDM then requests the meter’s SSL certificate and compares it against authorized meters within its database. If the meter is authorized, communication continues over port 443 until the transactions are completed. If the meter is not approved in the database, then communication is halted by TDM. *Note: TDM maintains a list of connection attempts by unauthorized 860’s. The TDM admin may authorize or de-authorize a meter at any time.*

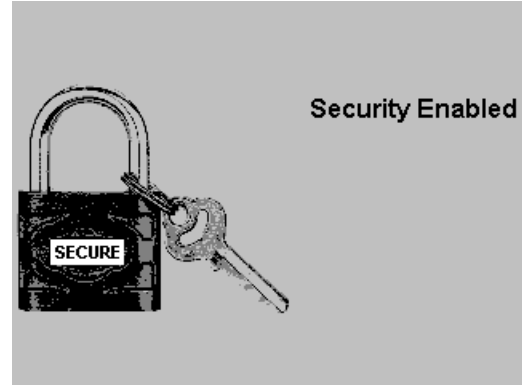


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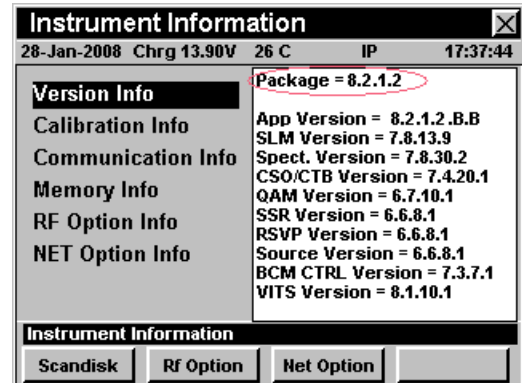
## How does my 860 DSPi utilize S8L?

Currently, the 860 DSPi can utilize S8L using a combination of its web browser over SSL as well as its web server over SSL. Both (browse and serve) directions use secure TCP port 443 as a communication path. The only connections allowed within the meter are a few identification commands. No data can be read or written to any of the flash devices in the meter while in S8L mode. Additionally, the remote control mode will not allow anyone to view the LCD remotely, thus prohibiting the ability to issue commands remotely. A sample image is shown here of what the viewer sees in Remote Control view while in S8L mode.



## How can I see if my 860 DSPi supports S8L?

The easiest method to see if your 860 DSPi supports S8L is to go to the Information Menu on the Setup TAB. Firmware ending in ".2" indicates that SSL is supported and if your firmware is at least V8.4.1.2 or higher, your meter supports S8L.



## How do I enable / disable S8L?

S8L can be enabled or disabled via WorkBench or the Setup/Global menu in the meter.

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### How does S8L work?

The basic theory behind S8L is two fold. The first is to restrict access to open ports within the 860 and the second is to encrypt data over the available open port 443. The following security measures are activated when S8L is turned on.

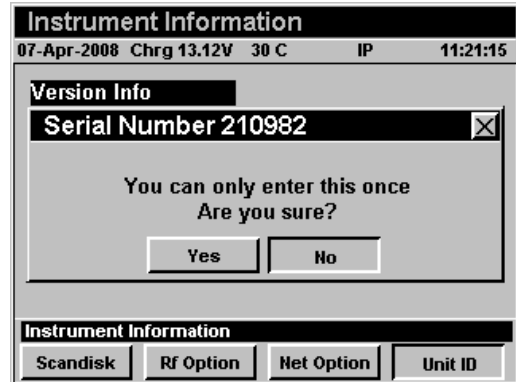
1. TCP Port 24007 only supports the following three commands:
  - a. Hello, Who Are You, and What are your Options
  - b. Allows Old WorkBench users to see an 860 but cannot modify the meter in any way.
2. UDP Port 24008 only supports the following two commands:
  - a. Hello and Who Are You
  - b. Allows Auto detection of an 860 on a LAN but cannot modify the meter in any way.
3. TCP Port 443 only supports reading the following files
  - a. screen.bmp -- Actual Screen with Security Message
  - b. index.html -- Remote control large view
  - c. index2.html -- Remote control mini view
  - d. top.jpg -- JPEG of 860
  - e. left.jpg -- JPEG of 860
  - f. right.jpg -- JPEG of 860
  - g. keys.jpg -- JPEG of 860
  - h. cert.der -- 860 DSP Server Certificate
  - i. p32.html -- HTML Page "Trilithic Command Processor"
4. TCP Port 443 only supports writing the following files
  - a. P32.html -- Binary encrypted Command Path
5. Remote Control is disabled
6. Splash Screen says "Security Enabled" in upper left on meter boot up.

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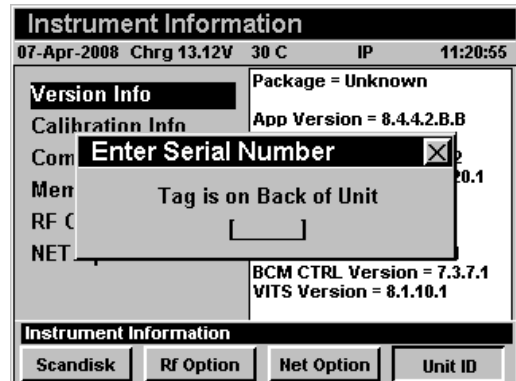
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## Instrument Fingerprint

The 860 DSPi "Instrument Fingerprint" feature, in addition to keeping the serial number in a secure internal code, also enables the owner to "imprint" the meter with an "asset id" that identifies the original owner in the event that the analyzer is lost or stolen.



A six digit serial number is entered at the factory, and in addition to being unchangeable, is displayed when the instrument is powered-on. It can also be displayed in the "Info" screen by pressing the #4 soft-key which displays the unit's ID. When an 860 with older firmware is updated to the version containing this feature, they can access this feature by navigating to the "Information" screen and pressing the number 4 soft-key (Unit ID). The user will be prompted for the serial number on the back of the unit and then asked "Are you sure?".



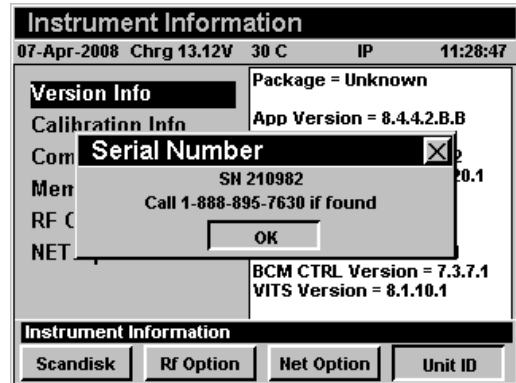
The splash screen will show the serial number in the upper left hand corner.



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The serial number can also be seen in the Info screen by pressing softkey #4 (Unit ID).



An "asset tag" (at most 31 characters ending in a NULL) can be entered as a free form text string only once using WorkBench. This tag appears in the lower left corner of the boot-up screen, and can be displayed in the "Info" screen by pressing the #4 softkey (Unit ID). (Examples: "Call if found: 1-800-xxx-xxxx"; "Property of cable system name") This can also be seen in the Info screen by pressing softkey #4 (Unit ID) if a serial number has been entered.



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