



DFS Gateway Board Debugging

There are 3 LEDs on the Gateway board that aid in determining what is happening in the system. They are described below.

RED LED

This LED is used to determine if the communication port to the radar is active.

The Red LED is turned on when the Gateway is in communication with the radar unit itself. If the LED is off, then communication with the clock is enabled.

GREEN LED

The Green LED is turned on when the Gateway's last communication with the clock showed either of the relays being turned on. It turns off when it determines neither relay is on.

The Green LED will only update when it communicates with the clock. It attempts this communication once per minute. When the Gateway determines that the serial port is not being used by either the Guardian or the radar unit then it will attempt to communicate to the clock for new status.

YELLOW LED

The Yellow LED displays whether or not the Gateway board is available to be connected to by the modem for updating the radar reads. It also indicates when the Gateway is passing data through to a valid connection to either the radar or clock server.

When the Yellow LED is on solid, the Gateway is in use by either the gateway itself, the Clock, the Guardian, or the radar unit. During this time, any attempt to read the radar or associated clock / Guardian will result in failure since it is processing an existing command.

When the LED is flashing either fast or slow it is available to be communicated with by external devices.

Debugging Techniques

When a Guardian board and a clock are installed in the system, the Gateway will be preempted by communications to the modem from either the Guardian or the clock.

For example, when a Guardian is first powered up, it attempts to determine information from the modem that it requires to continue. After this information is gained from the modem, the Guardian may initiate a connection to report the ceasing of an error that occurred when it was powered down.

The following procedure should help establish that a Gateway is operating correctly:

1. Go to the Main Screen on the AP22. This may go into a screen saver after a few minutes, but after beginning testing, move to the main screen.
2. Manually turn the relays off in the clock.
3. Watch the flashing yellow LED on the Gateway board. If at any time it turns on solid, wait for a minute to proceed.
4. Once the Yellow LED has flashed for a minute, test the communication to the modem, radar, and clock.
5. Testing the clock communication to the modem is done with Command 39. The IMSI, IMEI, and Registration status should be shown. If there is a Guardian board present, the red LED on it will flash very rapidly when the clock is talking to the modem.
6. Exit Command 39 and return to the main screen. At this time, if the relays are off, the Green LED on the Gateway should be off.
7. Turn the relays on manually. Wait for up to a minute for the Green LED to turn on. If you have a Guardian board with an LED error, the Guardian may report this error and you may have to wait 2 – 3 minutes for things to clear up before the Gateway can talk to the clock. During this time, you may note the Red LED on the gateway will flash for a few seconds as it updates radar settings for relay on/off conditions. If it doesn't, this is no issue.
8. Manually turn the relay off and wait again to ensure the green LED turns off. During this time, you may note the Red LED on the gateway will flash for a few seconds as it updates radar settings for relay on/off conditions. If it doesn't, this is no issue.
9. Read the radar data using the web app. It should be able to read correctly now.
10. Make a connection to the server from the clock with the DA command.
11. It should be working correctly now.