Status Indicator LEDs

All CoreOS devices have both a Status and Activity indicator. In some cases the indicators use a single RGB LED or a separate blue LED and an RGB LED. The indicators are used to communicate system status and error information:

- The **Activity Indicator** is a blue LED that flashes to indicate when the device is processing data and that system communications are active.
- **Status Indicator** is a multi-color RGB LED that indicates to the user system status and error conditions.

The state tables below are used to decode the system status and activity. The first table is for the Bootloader followed by the Application state table.

State Table - Bootloader

System Status	Status Indicator Colors	Details
Booting	**Magenta**	The system is booting up. When a CoreOS device firmware update is being installed, this process could take up to 30 seconds.
No Memory Detected (1)	**Magenta**	The system was unable to mount a micro-SD card. Ensure the micro-SD card is properly seated in its tray.
System Failed to Boot	**Red**	A fatal error occurred and the system was unable to boot. Contact customer support.

State Table - Application

System Status	Status Indicator Colors	Details
SD Card Error (1)	**Red**	The application was unable to mount the micro-SD card.
File Error	**Orange**	A configuration is missing.
Working	**White**	A new configuration file has been transferred to the CoreOS device and is actively transferring it to other WeCanX devices. Some functionality may be unavailable during this time.
Unconfigured Node	**Cyan**	The system has a valid configuration file installed, but a device is present on the bus that is not in the configuration.
Active	**Green**	The system is actively communicating with attached devices and processing events.
Communication (2)	**Blue Flash**	System communications are active.

1. **Some CoreOS devices use a non-removable flash memory device instead of a micro-SD card.**
2. **For a single shared RGB LED a blue flash will override the current color.**

System Status	Status Indicator Colors	Troubleshooting Steps
Booting	**Magenta**	A CoreOS device firmware update can take up to 30 seconds to install. If diagnostic LED is still magenta after 30 seconds refer to "No Memory Detected (1)."
No Memory Detected (1)	**Magenta**	Remove cover from Core by removing the four T-10 screws on the back. With cover removed, ensure the micro-SD card is properly seated in its tray. If problem persists, the SD card may be manually erased on a computer SD Card reader and then reinserted into Core. *Note: erasing the SD card will erase current configuration on Core.*
System Failed to Boot	**Red**	Follow the steps outlined in "No Memory Detected (1)" for steps to erase the contents of the micro-SD card or insert a new SD card formatted to FAT. If problem still persists, contact customer support.
File Error	**Orange**	Transfer a valid configuration from Command.
Working	**White**	Refer to "Communication (2) section for more information about transfer activity.
Unconfigured Node	**Cyan**	Verify that all peripheral devices connected to Core are in the Whelen Command configuration.
Communication (2)	**Blue Flash**	The LED will flash Blue whenever an input change is detected by Core. For siren configurations, if large DVMs are configured, this can take up to 15 minutes to complete. A full system power cycle is recommended if the communication status doesn't change. If power or ignition is lost at any point during transfer, the process will start over the next time the unit is powered. The siren will not be functional until this process is complete. If the problem still persists, contact customer support.

CORE SYSTEM DIAGNOSTIC INDICATORS

DEVICE System Status	Status LED Colors				Detail
Booting	Blue	Off	Off	Off	Indicator will blip blue once, when power is applied to unit
Initializing (Arges control head)	White		Off		Arges control head will flash white when it is initializing Arges in standalone mode
Bootloader: Valid application	Blue		Off		Device will display this status when preparing to receive firmware update. if the device is displaying this status and you are not updating firmware, reinitialize device and update the firmware to fix
Bootloader: Invalid or modifying application	Blue	Off	Blue	Off	This status indicates that device is receiving a firmware update. If the device is displaying this status and you are not updating firmware, reinitialize device and update the firmware to fix
Receiving configuration files			Off		Any device receiving configuration files will flash Red to indicate that it is currently receiving files. If device is interrupted during transfer, reinitializing will restart the transfer. This needs to be configured by user in"configuration settings". If this is not configured the indicator will be off during this status
Idle State / Valid Configuration	Green				The system has been initialized with a valid configuration is ready to process system events. This needs to be configured by the user in "configuration settings". If this is not configured the indicator will be off during this status.
THESE INDICATOR SETTINGS MUST BE TURNED ON MANUALLY BY USER IN CONFIGURATION SETTINGS					

VSG GATEWAY DIAGNOSTIC CODES

NOTE: All fusing provided by customer.

Troubleshooting -
Diagnostic LEDs:

Modem LED (See Above)

Solid Green	Unit On - Not communicating with CPU
Flashing Green	Unit On - Communicating with CPU

System LED (See Above)

Yellow	Initializing
Cyan	Connected to WCP - GPS Offline
Blue	Connected to WCP - GPS Online
Blue/Green	Connected to Core and WCP - GPS Online
White	OTA download in progress
Red	Connection or OTA Error
Purple	Booting and Installing firmware updates
Green	Going to sleep

CORE COMMUNICATIONS TROUBLESHOOTING GUIDE - CHECKLIST

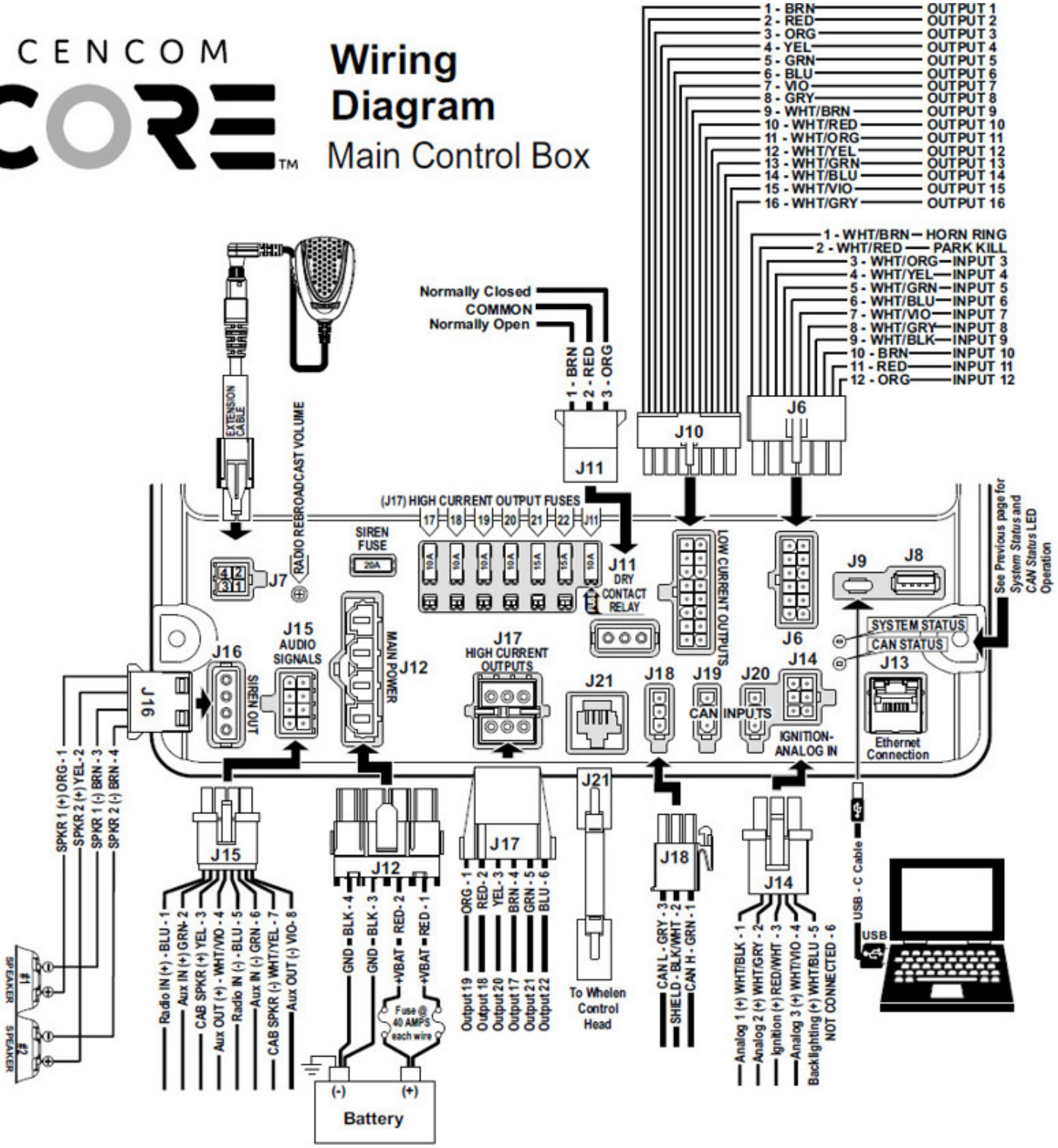
- Ensure the computer you are plugging into Core with is connected to the internet so that all necessary USB drivers can be downloaded and WCX device firmware updates can be applied.
- Check Main Power on Core – Look for 12.5v or more.
- Check Ignition power on Core with a meter – Look for 12.5v or more.
- Confirm all grounds on Core are good.
- Confirm main power connecter is not using a Carbide cable (you would know this already as it would have had much bigger issues)
- Plug in USB from computer to Core – Look for diagnostic light activity – If lights are active, power up Core / Core Network and verify all items can be seen in the program under the Firmware update screen.
- Always check for properly operating Ignition input (check voltage with a meter). Note: The USB cable will power up the Core and the Network. You can tell if you have a bad ignition trigger based on the entire network and Core going dark when the USB is removed. To properly program your Core and the accessories on the network, proper Ignition signal, main power and ground is required. Do not try to program network devices with only USB power.
- Try different USB ports on the computer.
- Make sure all windows updates are applied before programming.
- Reboot computer – Not a shutdown and power on – Laptops especially have different restart and shutdown modes. Many go into hibernation or sleep. These modes might not clear USB errors or issues. Verify how your laptop is set up.
- Try to only use USB A (Computer side) and USB C (Core side) cables. C to C has been known to sometimes cause compatibility issues with Windows drivers.
- Power down Core totally – Let sit for 5 minutes – Try plugging in once again as this can fix some communications issues.
- Plug in to AC power for your laptop. Some laptops will put USB ports into low power mode, this can cause issues with USB communications at times.
- Make sure not to have multiple copies of Command open when trying to troubleshoot communications issues.
- Unhook all inputs to Core except Main Power and Ignition trigger plug and USB and see if issues persist.
- Try a different Core unit if available.
- Check for debris and bits of wire that may have fallen into the Core ARM.

- Call your local Whelen Rep for additional help as needed.
    - Try the following steps after talking to your local rep:
        - Remove SD card from Core – Fully erase Card using an SD card reader – This will usually confirm two things. 1) if the card is physically bad it will not read (Replace card) 2. If this erase and re-install into Core solves the issue more than likely the card was corrupted because of a bad transfer. This is usually caused by a computer side issue or a USD driver issue.
        - Last Option is to return the unit for Warranty Repair.

CENCOM CORE™

Wiring Diagram

Main Control Box



Cencom™ Core™ Installation Worksheet

This worksheet has been provided so that a written record of all Input, Output and Axillary connections may be created. After all data has been verified and recorded, store and retain this sheet for future reference. It is recommended that you make a copy of this worksheet before filling in. so that if any changes need to be made you will have a blank copy.

WARNING!All customer supplied wires that connect to the positive terminal of the battery must be sized to supply at least 125% of the maximum operating current and fused "at the battery" to carry that load

CONNECTOR - PIN - FUNCTION	ASSIGNED TO:
J15 - 1 - BLU - RADIO IN (+)	
2 - GRN - AUX IN (+)	
3 - YEL - CAB SPKR (+)	
4 - WHT/VIO- AUX OUT (+)	
5 - BLU - RADIO IN (-)	
6 - GRN - AUX IN (-)	
7 - WHT/YEL - CAB SPKR (-)	
8 - VIO - AUX OUT (-)	
J17 - 1 - ORG - OUTPUT 19	
2 - RED - OUTPUT 18	
3 - YEL - OUTPUT 20	
4 - BRN - OUTPUT 17	
5 - GRN - OUTPUT 21	
6 - BLU - OUTPUT 22	
J14 - 1 - WHT/BLK - Analog 1 (+)	
2 - WHT/GRY - Analog 2 (+)	
3 - RED/WHT - Ignition (+)	
4 - WHT/VIO - Analog 3 (+)	
5 - WHT/BLU - Analog 4 (+)	*(Pre-Assigned: Backlighting)*
6 - WHT/GRN - N/C	
J6 - 1 - WHT/BRN - INPUT 1	*(Pre-Assigned: Horn Ring)*
2 - WHT/RED - INPUT 2	*(Pre-Assigned: : Park Kill)*
3 - WHT/ORG - INPUT 3	
4 - WHT/YEL - INPUT 4	
5 - WHT/GRN - INPUT 5	
6 - WHT/BLU / INPUT 6	
7 - WHT/VIO - INPUT 7	
8 - WHY/GRY - INPUT 8	
9 - WHT/BLK - INPUT 9	
10 - BRN - INPUT 10	
11 - RED - INPUT 11	
12 - ORG - INPUT 12	
J10 - 1 - BRN - OUTPUT 1	
2 - RED - OUTPUT 2	
3 - ORG - OUTPUT 3	
4 - YEL - OUTPUT 4	
5 - GRN - OUTPUT 5	
6 - BLU - OUTPUT 6	
7 - VIO - OUTPUT 7	
8 - GRY - OUTPUT 8	
9 - WHT/BRN - OUTPUT 9	
10 - WHT/RED - OUTPUT 10	
11 - WHT/ORG - OUTPUT 11	
12 - WHT/YEL - OUTPUT 12	
13 - WHT/GRN - OUTPUT 13	
14 - WHT/BLU - OUTPUT 14	
15 - WHT/VIO - OUTPUT 15	
16 - WHT/GRY - OUTPUT 16