

Instruction Manual

UE 4Cast



UE 4Cast Instruction Manual

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UE 4Cast Overview:

I. Introduction/Overview:

UE 4Cast System incorporates sensors and a computer for continuous monitoring of bearings and other applications via either an Ethernet or WIFI connection.

Users have ability to control and set parameters such as alarms and sound recordings for individual RAS (Remote Access Sensors). RAS sensors are permanently mounted transducers that are connected to the UE 4Cast communications controller. Data stored locally on the UE 4Cast can be sent and stored directly to UE Systems Ultratrend DMS 6 software for further analysis.

II. Systems Requirements:

- Ethernet or WIFI connection
- Ultratrend DMS 6
- PC computer w/Ethernet or WIFI capabilities

A. Components:

BNC inputs



Ethernet connection

Power in

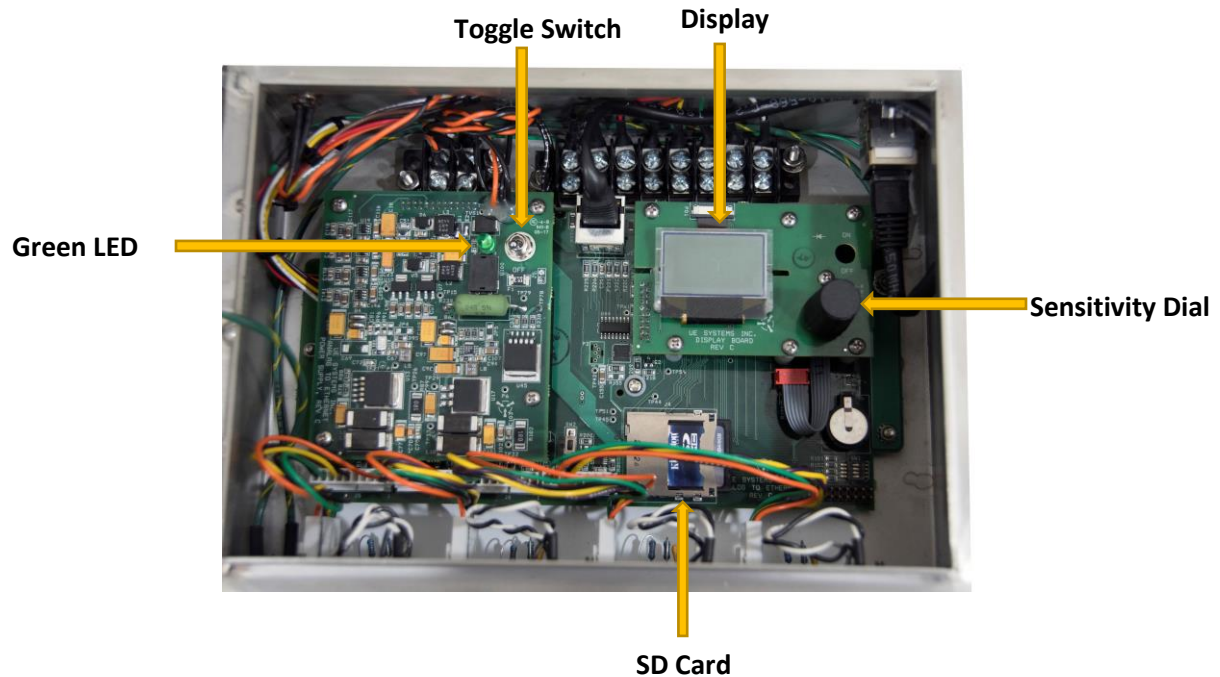


RAS

Optional Power Supply



Main Box features



III. Installation:

A. Mount and Connect UE 4Cast, RAS

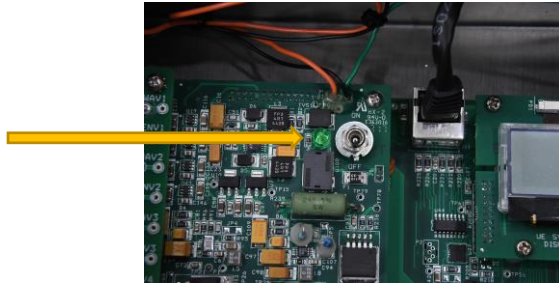
1.) **Mounting of UE 4Cast:** Mount the 4Cast to a location that will provide easy access. For drill hole dimensions refer to Appendix diagram: A-1

a. Setting up

1. Connect to Power supply: Power: 24 VDC 1 Amp Conditioned.
 - a. UE Systems offers an optional power supply.
2. Connect Ethernet cable to UE 4Cast



3. Testing power: Green light will illuminate when toggle switch is in the on position.



2. **Mounting RAS sensors:** Mount the RAS sensors as close as possible to the bearing housing by either drilling and tapping or by using our mounting kits (CBS-586).

If you are going to drill and tap, the thread size for the RAS sensors is 10/32.

The CBS-586 mounting kit: includes bonding material, a metal mount plate with 10/32 male stud. Follow the *“Stud/Standoff Installation Instructions”* (included within your kit & down below in Appendix C-1 & C-2).

3. Connect BNC cable to RAS sensors and then connect to 4Cast box. Standard cable length is 25' (7.62 m). Custom lengths can be ordered from factory.

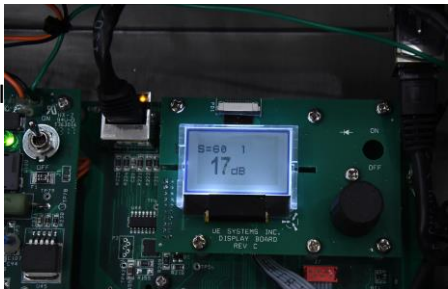


4. Be sure to check the connection between 4Cast and RAS



NOTE: Before testing RAS connection and dB values, the asset (motor, pump, etc.) ***must be running.***

- a. When power is on and the asset is operating, the display screen will show test point # and either an arrow or dB value. If the arrow is displayed, turn the sensitivity dial in the direction of the arrow until a dB value is displayed.
- b. Repeat for each of the installed RAS sensors. To do so, Push/Click the Sensitivity dial to see the Sensor number (1,2,3,4).



3. Establish connection between 4Cast and computer (Refer to our **Ultratrend DMS 6 with 4Cast Support Installation Guide**).

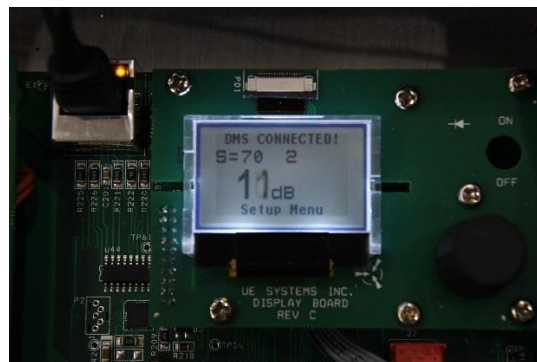
UE 4Cast is designed to be a plug-n-play device. Once DMS, database and server is configured, all the 4cast needs is an IP address of where the UE Server is located on the network.

III A: Quick (Basic) Installation:

One of the simplest configurations to have with the UE 4Cast is to first have all 3 programs (DMS, database and UE server) installed on one computer, with a Static IP address. Once the programs are installed and configured and the 4Cast is connected to power, Ethernet & RAS sensors and power switch turned on, then proceed to configure the 4Cast to the server.

Note: This is one of the simplest configurations and one of many to have. For more complex configurations, please consult your IT department.

1.) **Enter Setup Menu:** Turn the sensitivity knob till setup menu is highlighted, then push and hold till sub-menus are displayed.



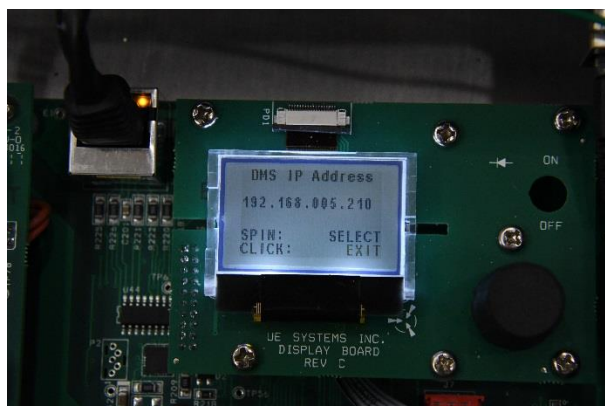
2.) **DMS Menu:** Turn knob till DMS Menu is highlighted, then push/click the knob to enter.



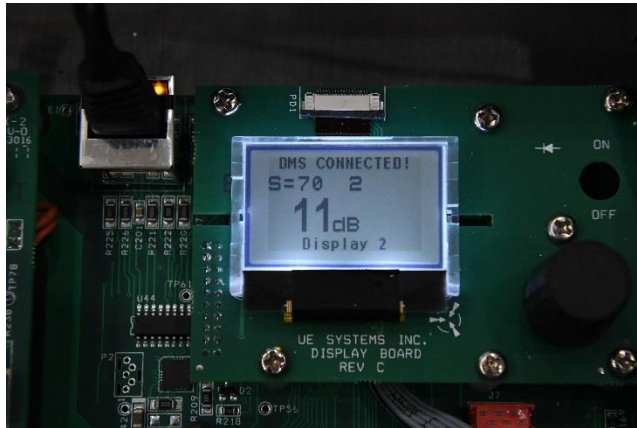
3.) **DMS IP Address:** Highlight and push/click knob to enter.



4.) **Modify Address:** Spin the dial to the desired number, push/click the dial select and then spin again to modify. Once modified, push and spin again to exit and push again to exit out of screen. Again, the IP Address on the 4Cast needs to match the IP Address of the of the UE Server computer so that both "UE server" & 4Cast can communicate.



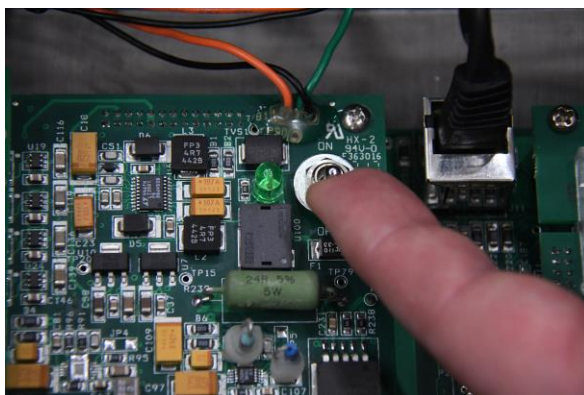
5.) **DMS Connected:** Once you have exited out of the setup menu, after a moment the “DMS Connected” will be displayed on the top of the main display. Once connected, you may now be able to go onto the DMS 6 program and configure the 4Cast to any specific machine/points within an existing route.



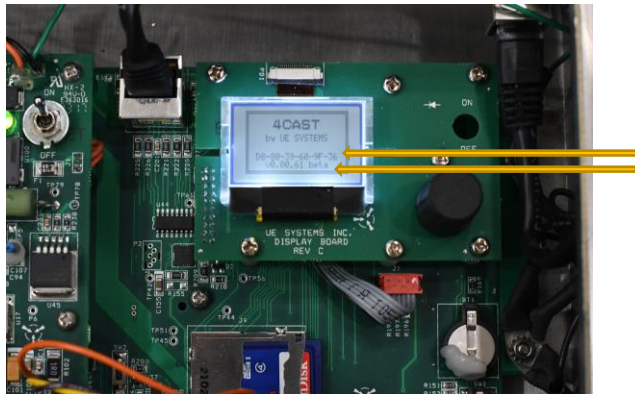
III B: Standard Setup:

NOTE: CONFIGURE DMS/UE SERVER AND DATABASE PRIOR TO CONFIGURING UE 4CAST. (Refer Ultratrend 6 with 4Cast Support Installation Guide)

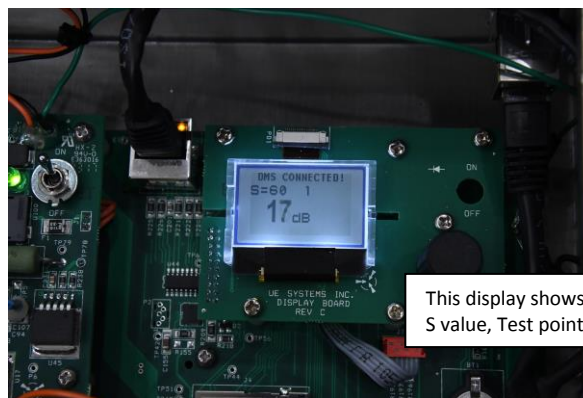
1. Once RAS sensors, power and Ethernet are connected to 4Cast and have been tested, open box and flip the toggle switch to the “ON” position. Green LED light should be lit once 4Cast is turned on.



2. **Splash Screen:** Once 4cast is turned on, the box will then start the boot-up sequence and “4CAST” should be present on the splash screen display. The splash screen should show the UUID and the firmware information of the device.



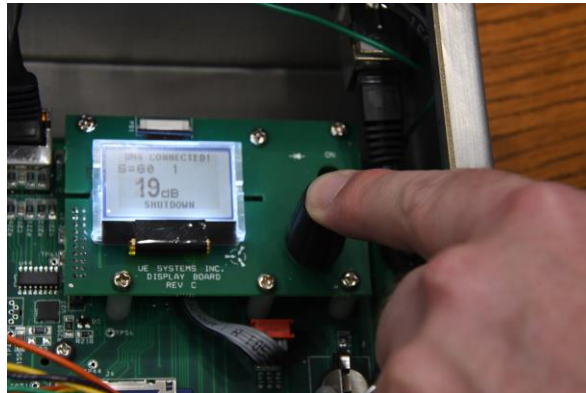
3. Once the boot sequence is finished, it will show the “main” display: The sensitivity value “S=”, Point # and dB of the sensor. If 4Cast is not reading correctly, the display will show an arrow pointing to the left, meaning over-range or an arrow pointing to the right meaning under-range.



4. **Setup Menu**: Push (click) the sensitivity knob until the bottom of screen is flashing and spin the sensitivity knob until “Setup Menu” is present. Push and hold the sensitivity knob in place until you are in the setup menu options.



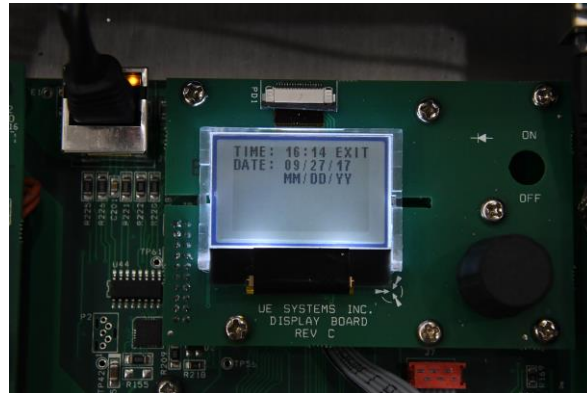
5.) Sensitivity Knob Location:



6. Menu #1- Set Date/Time: Click (push) the sensitivity knob to modify the date/time.



Z. To modify any values, just spin to the correct value (time or date) and click (push) the knob to set. Then spin again for the next value and click to set. Once finished, just spin dial highlight “EXIT”, hold down the sensitivity knob to exit out of menu #1 to go back to the main menu.



8. Menu #2- DMS Menu: The section holds the IP Address and IP Port information. Highlight DMS Menu and hold down the dial to enter.

Note: If possible, for the installation and programing of 4Cast, consult with your IT department.



9. DMS IP Address: An IP address, or simply an "IP", is a unique address that identifies a device on the Internet or a local network. It allows a system to be recognized by other systems connected via the Internet Protocol (IP). To locate the IP address of the computer that contains the Database and the UE Server program, open the Windows search box located under the start menu for Window 7 or on the task bar for Windows 10. Then type **CMD**, and select "enter". The **CMD** icon will be displayed, click on it and the window will open. In that window type **ipconfig**, and select "enter". It will display the IP, Subnet and Gateway addresses of the computer that has the UE Server program installed. This is because the UE 4Cast only communicates with the server program. There are different configuration setups for this program, therefore it is important to think this through before implementing. If possible consult with your IT department.

In 4Cast, push the sensitivity dial to enter DMS IP Address options.



10. DMS IP Address continued: Spin the dial to the desired number, push the dial to select and spin again to modify. Once modified, push dial and spin again to exit and push again to exit out of screen. The IP address on the 4Cast needs to match to the IP address of the Server so that both “UE Server” & UE 4Cast can communicate. (See DMS 6 manual for configuring IP address for UE Server)

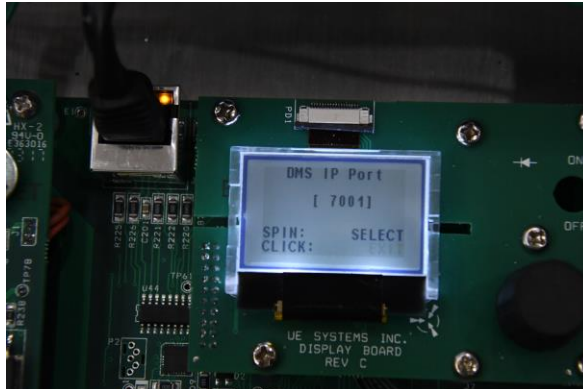


11. DMS IP Port: A port number is a way to identify a specific process to which an Internet or other network message is to be forwarded when it arrives at a server. Highlight IP Port and hold down the dial to enter.



12. DMS IP Port: Is the port number that the UE Server is configured to and connects with on the database computer. Spin the dial to the correct # you want to change and then push the dial. Next, spin to the desired value. When finished, highlight EXIT and hold down the dial to exit out of the menu.

Note: The default for the IP Port is 7001. This number will probably not be changed because its rarely ever used. Your IT people will verify if this Port number is available. If you don't have IT, just leave it as 7001.

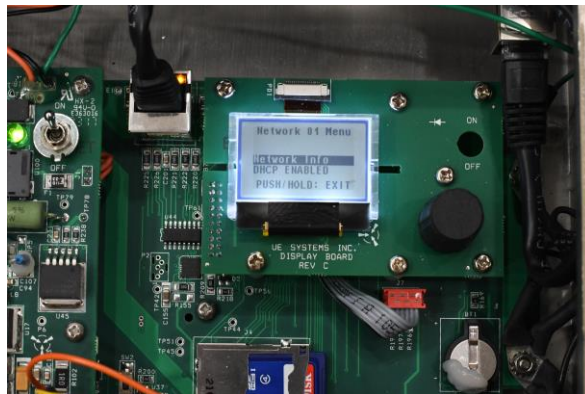


13. Network Menu: Inside this menu is where to configure the network of 4Cast. Push/click the knob to enter.

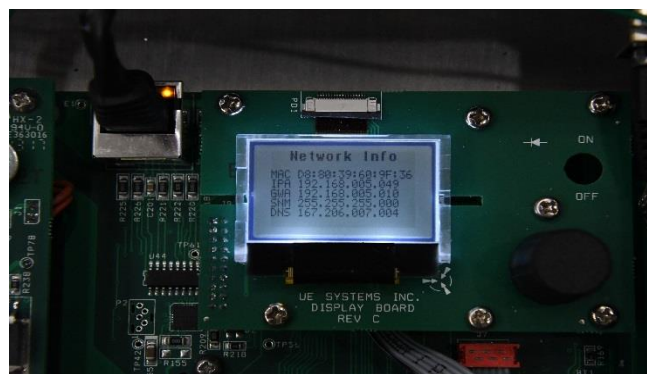
Note: If possible, for the installation and programing of 4Cast, consult with your IT department.



14. Network Info: Shows everything within 4Cast: MAC Address, IP Address, Subnet Mask, Gateway, DNS 1 & 2, Etc.



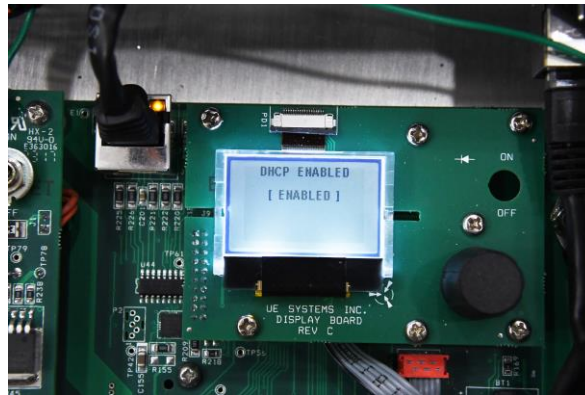
14A. Network Info. Continued: The display will show all the addresses that have been configured for UE 4Cast.



15.DHCP Enabled/Disabled: Dynamic Host Configuration Protocol (DHCP) is a client/server protocol that automatically provides an Internet Protocol (IP) host with its IP address and other related configuration information such as the subnet mask and default gateway. As an example, think of when you connect to WIFI with your phone as a guest at a facility. The facilities router will give an IP Address for your phone to use to get online.

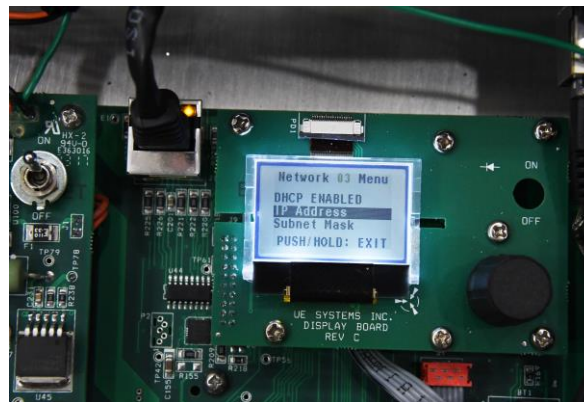


16. DHCP Continued- Turn the dial to either “Enabled” or “Disabled” then push the dial to exit that menu. The DHCP will be enabled for most configurations. Usually the only time to disable the DHCP is when you have no access to any network and must connect the 4Cast directly to a computer that has the UE server, database and DMS programs. In this configuration, the computer must have a static IP address to enable 4Cast to communicate. This means the IP address will not change.



17. IP Address: When the DHCP is disabled because there’s no access to a network and there is a need to directly connect a computer through a switch that has a static IP address and possibly have more than one 4Cast. An IP address must be assigned for all 3, the computer, the switch and 4Cast.

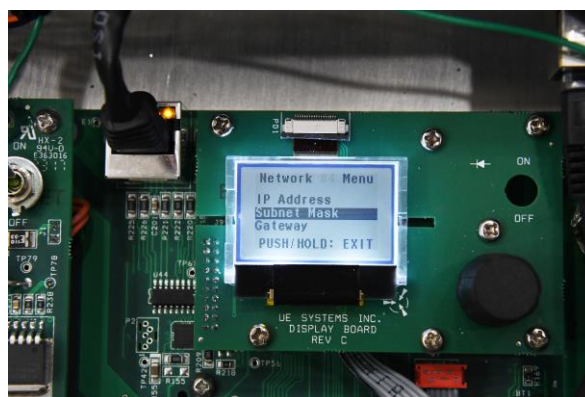
Example: A computer that is connected to 3 UE 4Cast’s via a switch and is also connected with a computer that has the UE server, database and DMS installed. The IP address for that computer is 192.168.12.224. To enable the 3 4Cast to communicate with that computer, each 4cast must match the first 3 sets of numbers from the static IP address that is configured on the computer. 1st 4cast can be 192.168.12.34, 2nd 4cast can be 192.168.12.111 and 3rd 4Cast could be 192.168.12.175. All 3 would be able to communicate with the computer.



18. IP Address Cont.: Spin dial to desired number, push dial to activate and spin again to modify. Once modified, push dial and spin to exit and push to exit out of screen.



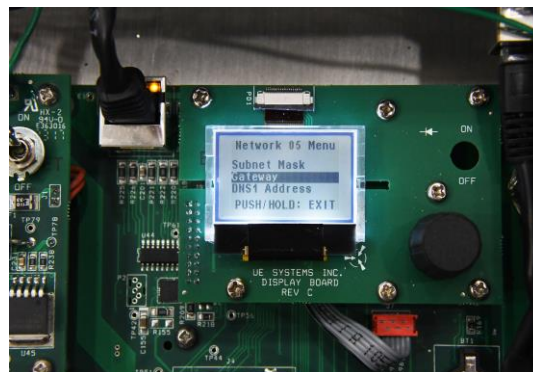
19. Subnet Mask: Makes decisions if the data is local or not. If the Subnet Mask determines that a set of data isn't local it sends that data to the "Gateway" to handle where it should be sent. Typically, the local address would be 255.255.255.0. Typing **ipconfig** in your CMD prompt will give you the Subnet mask of the computer that will be running the UE Server.



20.Subnet Mask Cont.: Spin dial to desired number, push dial to activate and spin again to modify. Once modified, push dial and spin again to “exit” and push to exit out of screen.



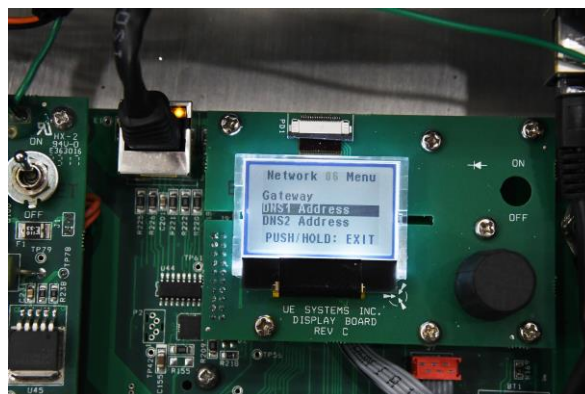
21.Gateway: When data are sent over a network, the destination IP address is examined. If the destination IP is outside of the network, then the data goes to the gateway for transmission outside of the network.



22. Gateway Cont.: Spin dial to desired number, push dial to activate and spin again to modify. Once modified, push dial and spin again to “exit” and push to exit out of screen. Typing ipconfig within the CMD prompt on the computer that will run the UE Server will give you the correct “Gateway” address.

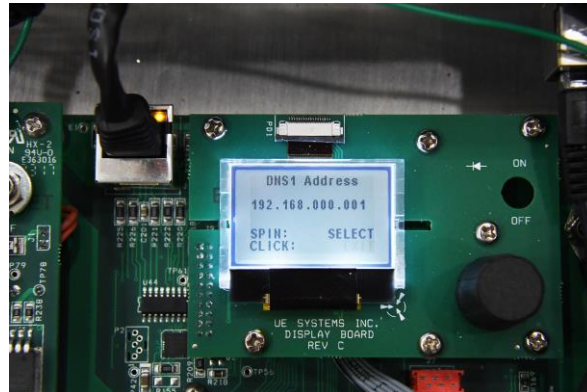


23. DNS1 Address (Primary): DNS (Domain Name System), the Internet's system for converting alphabetic names into numeric IP addresses. For example, when a Web address (Google) is typed into a browser, DNS servers return the IP address of the Web server associated with that name.



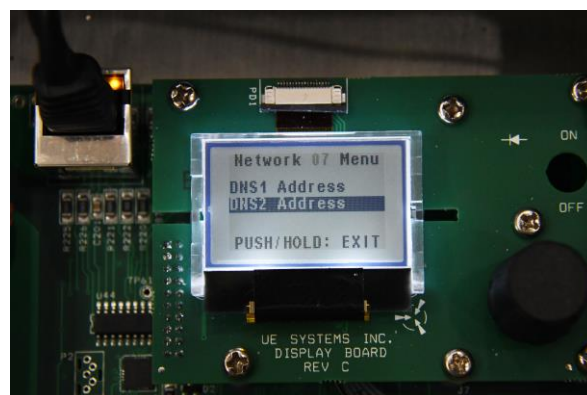
24. DNS1 Address Cont.: Spin dial to desired number, push dial to activate and spin again to modify. Once modified, push dial and spin again to exit and push to exit out of screen.

Note: Both DNS1 & DNS2 are currently disabled and the address' for both can be left alone at 0.0.0.0.

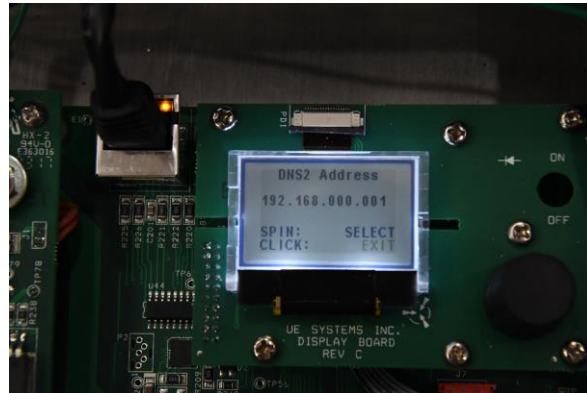


25. DNS2 Address (Secondary): In general, domain names can work with only one name server - the primary DNS. However, practice has shown that a domain name needs to have at least two-name servers assigned to be available at any time. In case there is a problem with the primary name server, the secondary name server will be able to answer the online request for a particular domain. This back-up requirement has turned into an accepted Internet standard that prevents domain names from going offline.

Note: Both DNS1 & DNS2 are currently disabled and the address' for both can be left alone at 0.0.0.0.



26. DNS2 Address Cont.: Spin dial to desired number, push dial to activate and spin again to modify. Once modified, push dial and spin again to “exit” and push to exit out of screen.



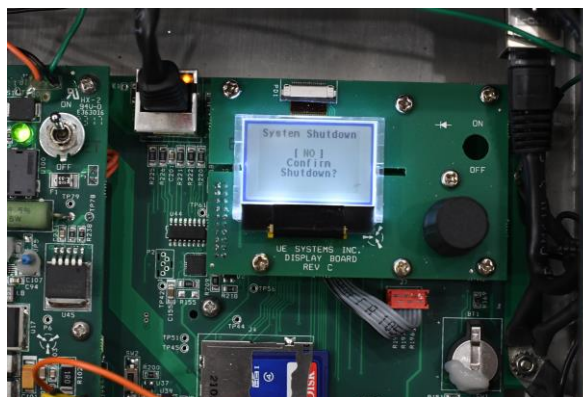
27. DMS Connected: Once configuration for the network is complete and correct (for both the UE Server and UE 4Cast), the top of display will state that DMS is now connected to the 4Cast box.



28. System Shutdown: Push the Sensitivity knob to activate the menu.



29. System Shutdown Continued. To keep the system on-line, Click/push to enter, select “No” and push the dial to exit shutdown mode.



30. System Shutdown Continued: To turn the 4Cast system off, select “Yes” and push the dial to confirm shutdown.



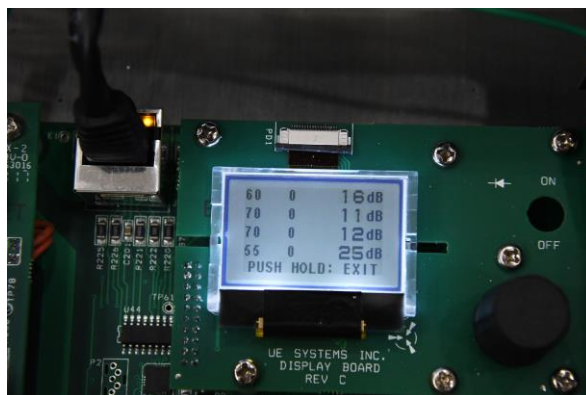
31. System Shutdown Cont.: After confirming shutdown, flip toggle switch to the off position to turn off 4Cast.



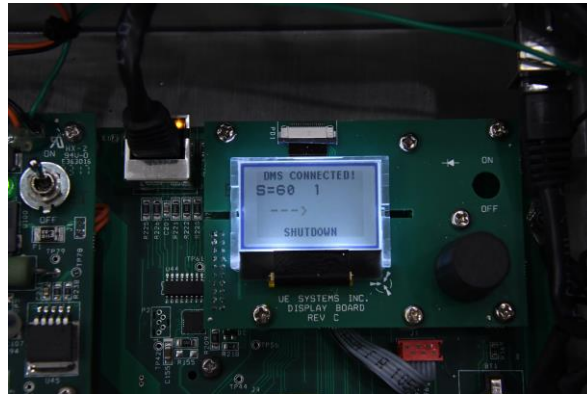
32. Display 2: Make sure that “Display 2” is being displayed and push and hold the sensitivity knob.



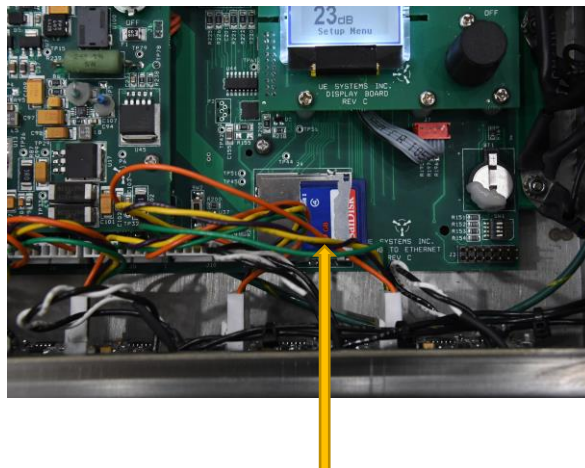
33. Display 2 Continued: Once Display 2 is enabled, the screen will display all 4 sensors with current “live” decibels and sensitivity levels.



Shutdown Option #2: Another way to “shutdown” the unit is in the main display itself. Simply push and hold the sensitivity knob to select the shutdown option. Once display states that it’s safe to turn off, you may then flip the toggle switch to the off position to cut power to the unit.



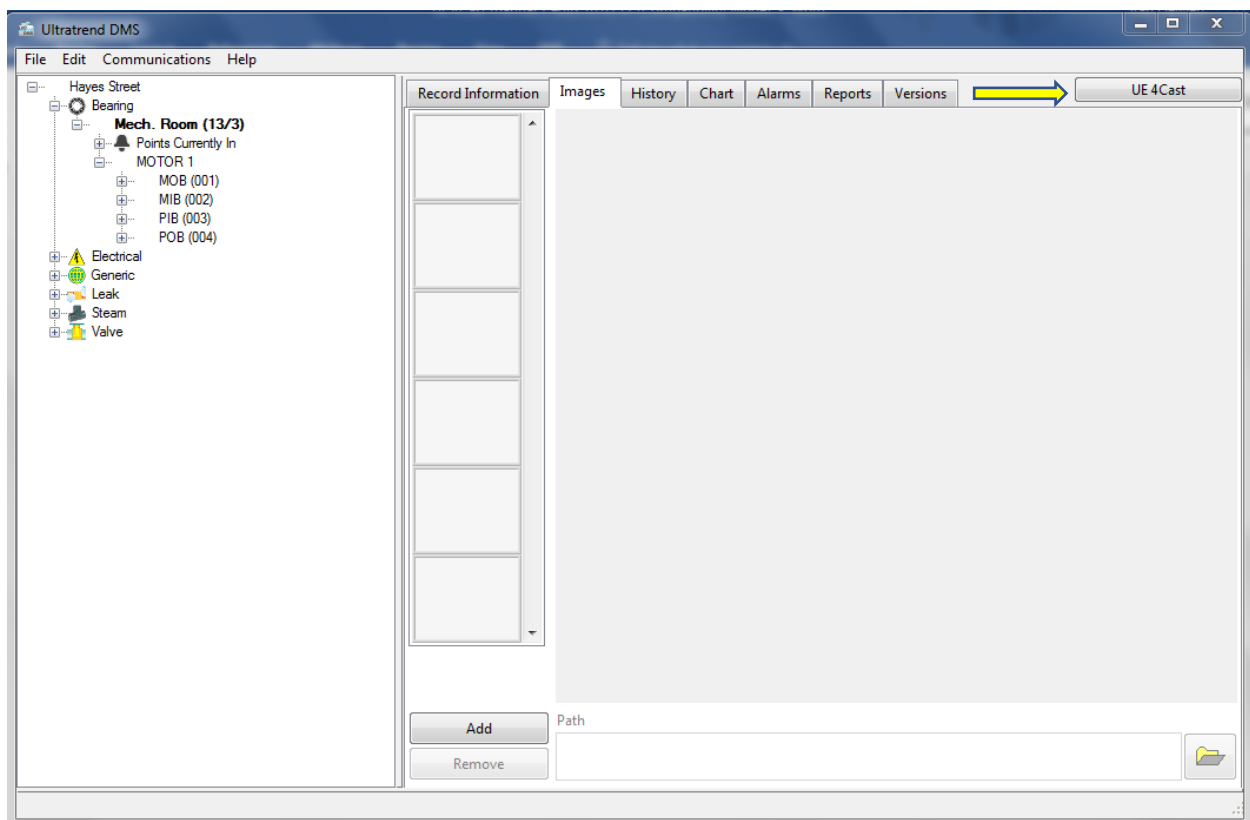
SD Card Location: Standard size that comes with each UE 4Cast is 8GB. Maximum size to use is 32GB.



IV. Start-Up:

A. Launch DMS 6

1. **Open or create Plant**
2. **Launch 4Cast by clicking “UE 4Cast” button**



V. Operation:

A. UE 4Cast Configuration Tab:

Click “Enable Editing”

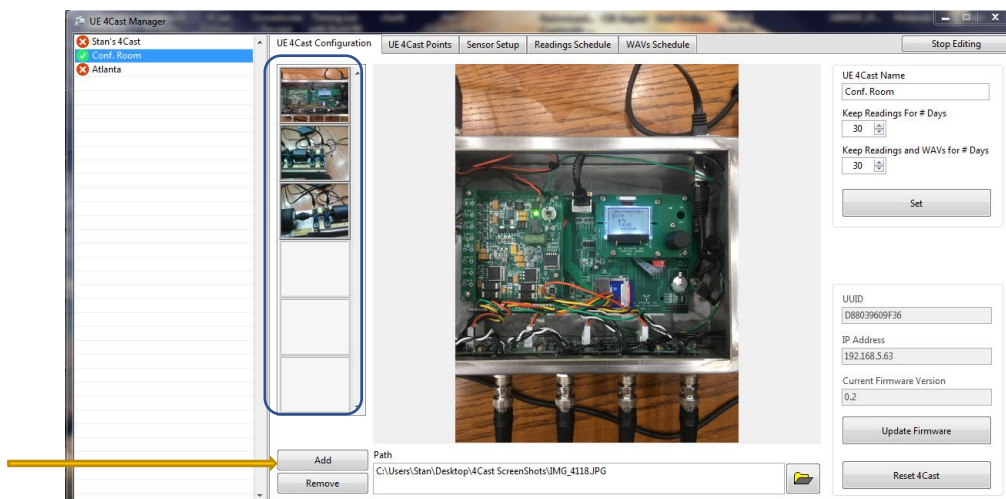
1. Create Individual names for UE 4Cast “boxes”.



2. In addition to naming, it's recommended that you attach images of each box (location of the box within facility, etc.) within the 4Cast Configuration screen.

To do so:

- Select the “Add” button
- Search for image that you want to use and double-click the image to link it to the 4Cast configuration screen.
- To remove link of image, select the image within the list of images that may be present and select the “Remove”. This will only remove the link. It will not delete the image from your computer.



3. Be sure to establish the time periods needed for “**Keep Readings and WAVs for # Days**” on the UE 4Cast before it starts erasing the old data from the unit (starting with the oldest reading. See “A”). The default is set @ 30 days. This section will also show the UUID (Universal Unique Identifier), the IP Address, Current Firmware Version, Update Firmware and Reset 4Cast (See “B”). NOTE: Do you mean “A” or a. below, B or b below???



a. **Set Button:** Once the configuration is complete, just click on the “Set” button to save the configuration.

b. **UUID - (Universal Unique Identifier):** Uniquely identifies an object or entity on the Internet. Depending on the specific mechanisms used, a UUID is either guaranteed to be different or is, at least, extremely likely to be different from any other UUID device.

c. **IP address:** Address of that specific 4Cast

d. **Current Firmware Version:** Version of the software that is installed on the UE 4Cast.

e. **Update Firmware:** Just as with any software, periodically there will be firmware upgrades for UE 4Cast. If a latest version of the firmware has been downloaded from the UE website, simply click on “Update Firmware” and enter where the new firmware is located. Double click on the latest version and 4Cast will start updating itself with the new firmware. During the update, 4Cast will reset itself and will lose connection momentarily with the server, but will re-establish connection on its own.

Note: If there are more than one 4Cast, update the other units. (It’s not mandatory).

f. **Reset 4Cast:** If you need to reset (reboot) 4Cast, click the reset button and confirm.

Note: Resetting 4cast will NOT delete settings that had been previously set entered.

B. UE 4Cast Points Tab:

If RAS sensors are placed on test points that were previously used in DMS routes or if they are on a new route, configure these sensors to reflect those test point names. (For previously set test points, use the original names found within a specific group/route in DMS 6). Once configured, you will be able to obtain or “get” dB & WAV files for each sensor. You will also be able to get multiple readings and WAV’s from a specific date and transfer that information directly to DMS 6 (see example below).

1. Configuring your sensors to existing DMS route:

- A. **Plant Level:** Click on the dropdown box to choose the plant that will connect with the sensors.
- B. **Application Level:** Click the dropdown box to choose an application.
- C. **Group/Route Level:** Select the group for the sensors.
- D. **Machine/Location:** Select the asset associated with the sensors.
- E. **Points:** Choose and select the individual test points to which the sensors are connected.
- F. **Set All:** Once the sensors have been configured, click on the “Set All” button to save the configuration.
- G. **Get Reading Now:** This will receive data from an individual sensor to be stored in DMS. Or by clicking on the “Get Readings Now” button on the far left, data from all 4 sensors will be sent to DMS.

Note: Do this after “Sensor Setup” has been configured so that there is a dB value to transfer over to DMS.

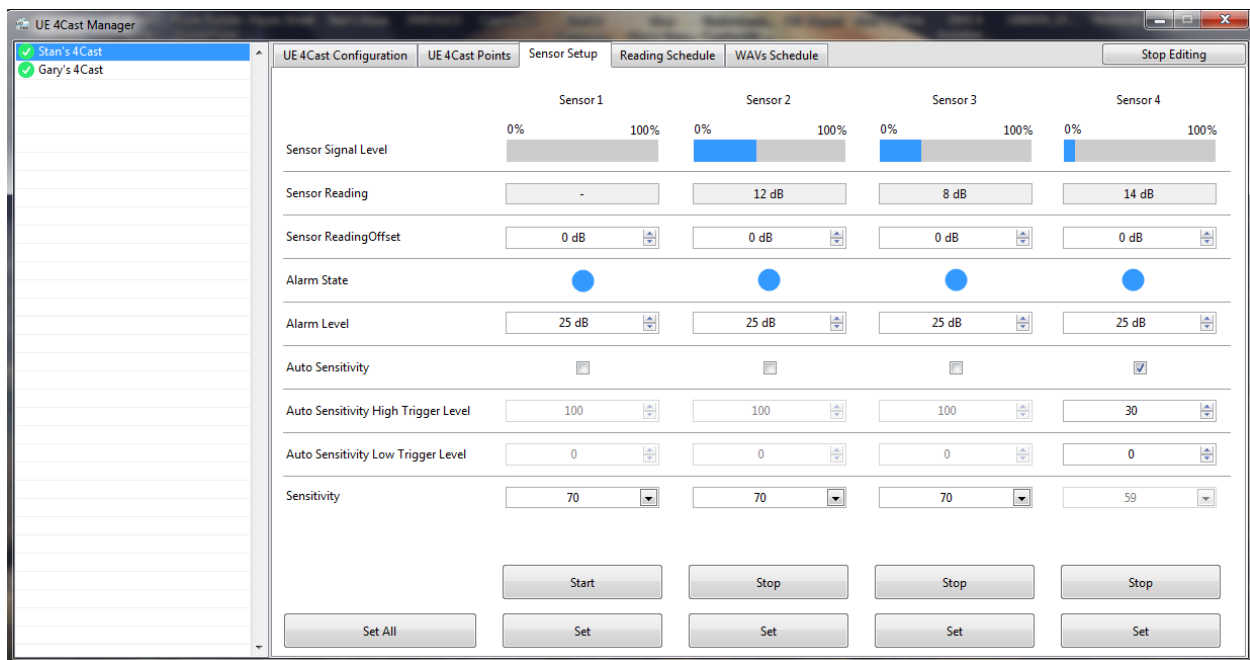
H. **Get Readings with WAV Now:** Same as “Get Readings Now”, but a WAV file is included with dB values that will be transferred to DMS.

I. **Archive Access:** The 4cast stores readings and WAV’s that haven’t been transferred to DMS. These can be retrieved. To do so, first, choose a sensor. Choose a start and end date of the desired information. Then choose the MAX # of files 4Cast will transfer to DMS. Next, select either “Get Readings” or “Get Readings with WAV’s Between Dates”.

Note: Depending on how often readings/wavs are stored, it may take some time for DMS to populate all the archive files that you have chosen.

C. Sensor Setup Tab:

Use Sensor Setup to view “Live” readings from all 4 sensors and make fine adjustments for each sensor.



1. Configuring Individual Sensors:

a. First click on the individual “Start” buttons to start viewing the “Live feed” of each sensor. If the sensor is within range, the dB values will present themselves in the “Sensor Reading” row.

b. **Sensor Signal Level:** This is the intensity of the ultrasound running through the sensor. This signal is important when recording WAV files. If the blue bar is too high, the sound file will be oversaturated and will be difficult to analyze when viewing in the UE Spectralyzer software.

- c. **Sensor Reading:** Displays dB, >> (under-range), << (over-range).
- d. **Sensor Reading Offset:** If there is a dB discrepancy between previous Ultraprobe readings and 4Cast readings, use “Sensor Reading Offset” to align those previous Ultraprobe readings with current 4Cast readings.
- e. **Alarm State:** When a test point enters an alarm state, the blue circle will turn red.
- f. **Alarm Level:** Set the dB alarm threshold for an individual sensor. When that threshold is passed, it will trigger an alarm state and the blue circle will turn red.
- g. **Auto Sensitivity:** Auto sensitivity is unique, when checked, it will enable both the “High” & “Low” sensitivity triggers. When set correctly and enabled, it will provide the best recording parameters to prevent distortion of recordings, such as too high volume/over saturation or too low a volume.
- h. **Auto Sensitivity High Trigger Level:** Set this to prevent oversaturation of high volume recordings (out of range high). If the recording volume is too high it will distort WAV recordings and be viewed as chopped or “clipped” images on the time series and spectra screens.
- i. **Auto Sensitivity Low Trigger Level:** Set the low recording range of the sensor. If the recorded volume level is too low (out of range low) the sound sample may not be recorded or viewed on the spectra and time series screens.
- j. **Sensitivity:** If some of the sensors aren’t showing any decibels, it could mean that they are either out of range low, under-ranged (>>) or out of range high, over-ranged (<<). Adjust the sensitivity of the sensors to bring them into a recordable range for both decibel and sound analysis. Click on the dropdown box for the sensitivity of a specific sensor and adjust accordingly. The range for the sensitivity is 0-70.
- k. **Set Buttons:** Once the sensor or sensors are configured click on the individual set buttons for each sensor or click on the “Set All” button and 4cast will save all sensor configurations.

D. Reading Schedule Tab:

This section is about configuring 4Cast to schedule readings (dB's), how often to store them to the SD card and when to send a reading to DMS.

The screenshot shows the 'UE 4Cast Manager' application window with the 'Reading Schedule' tab selected. The left sidebar lists 'Stan's 4Cast' and 'Gary's 4Cast'. The main area is divided into four columns for 'Sensor 1', 'Sensor 2', 'Sensor 3', and 'Sensor 4'. Each column has six rows of configuration options, each with a numeric input field and a unit dropdown menu. The settings are as follows:

Configuration Option	Sensor 1	Sensor 2	Sensor 3	Sensor 4
Storage Interval	3 days	3 days	3 days	3 days
Send-to-DMS Interval	30 days	30 days	30 days	30 days
Storage Interval When In Alarm	1 days	1 days	1 days	1 days
Readings Before Alarm to send to DMS	5	5	5	5
Readings During Alarm to send to DMS	3	3	3	3
Readings After Alarm to send to DMS	5	5	5	5

At the bottom of each column are two buttons: 'Apply To All' and 'Set'. There is also a 'Set All' button at the bottom left of the main area. A 'Stop Editing' button is located at the top right of the main area.

a. **Storage Interval:** This is how often 4cast will take a reading from the sensors and store them to the SD card for archiving. Click on the dropdown box, to select minutes, hours, days and weeks. In the example above, we have chosen every 3rd day to store dB's to 4Cast.

b. **Send-to-DMS Interval:** This is how often to send readings to DMS 6. The example above shows every 30th day or every 10th reading to be sent to DMS.

c. **Storage Interval When in Alarm:** Set how often to store readings to 4Cast while a test point is in the alarm state.

d. **Readings Before Alarm to Send to DMS:** Set 4Cast to send several readings prior to alarm to DMS for further analysis when a sensor goes into alarm.

e. **Readings During Alarm to Send to DMS:** Set 4Cast to send several readings during alarm to DMS.

f. **Readings After Alarm to Send to DMS:** Set 4Cast to send several readings to DMS after an alarm condition has passed.

g. **Apply to All:** After one sensor has been configured, click the “Apply to All” button under that sensor and the rest of the sensors will then be set with the same configuration.

h. **Set/Set All:** Once satisfied with a configuration, click on the individual Set buttons to save or click on the Set All button and it will save all the sensor configurations to 4Cast.

E. WAVs Schedule:

This section is about configuring 4Cast to schedule sound recordings (WAV files), how often to store them to the SD card and when to send a sound recording to DMS.

The screenshot shows the 'UE 4Cast Manager' application window. On the left, a sidebar lists two sensors: 'Stan's 4Cast' and 'Gary's 4Cast', both with green checkmarks. The main window has several tabs: 'UE 4Cast Configuration', 'UE 4Cast Points', 'Sensor Setup', 'Reading Schedule', and 'WAVs Schedule'. The 'WAVs Schedule' tab is active, showing a 'Stop Editing' button in the top right. The configuration is organized into four columns, one for each sensor (Sensor 1, Sensor 2, Sensor 3, and Sensor 4). Each column contains eight rows of settings, each with a numeric input field and a unit dropdown menu. The settings are: WAV Storage Interval (15 days), WAV Send-to-DMS Interval (30 days), WAV Storage Interval When In Alarm (1 days), WAVs Before Alarm to send to DMS (5), WAVs During Alarm to send to DMS (3), WAVs After Alarm to send to DMS (5), WAV Record Time (s) (10), and WAV Record Time in Alarm (s) (15). At the bottom of each column, there are two buttons: 'Apply To All' and 'Set'. A 'Set All' button is located at the bottom left of the main configuration area.

	Sensor 1	Sensor 2	Sensor 3	Sensor 4
WAV Storage Interval	15 days	15 days	15 days	15 days
WAV Send-to-DMS Interval	30 days	30 days	30 days	30 days
WAV Storage Interval When In Alarm	1 days	1 days	1 days	1 days
WAVs Before Alarm to send to DMS	5	5	5	5
WAVs During Alarm to send to DMS	3	3	3	3
WAVs After Alarm to send to DMS	5	5	5	5
WAV Record Time (s)	10	10	10	10
WAV Record Time in Alarm (s)	15	15	15	15
WAV Record Time for Manual (s)	10	10	10	10

a. **WAV Storage Interval:** This is how often to schedule 4cast to take sound recordings from sensors and store them to the SD card for archiving. Click on the dropdown box to choose: minutes, hours, days and weeks. In the example above, we have chosen every 15th day to store a WAV file to 4Cast.

b. **WAV Send-to-DMS Interval:** This is how often to send sound recordings to DMS 6. The example above shows that every 30th day or every 2nd recording will be sent to DMS.

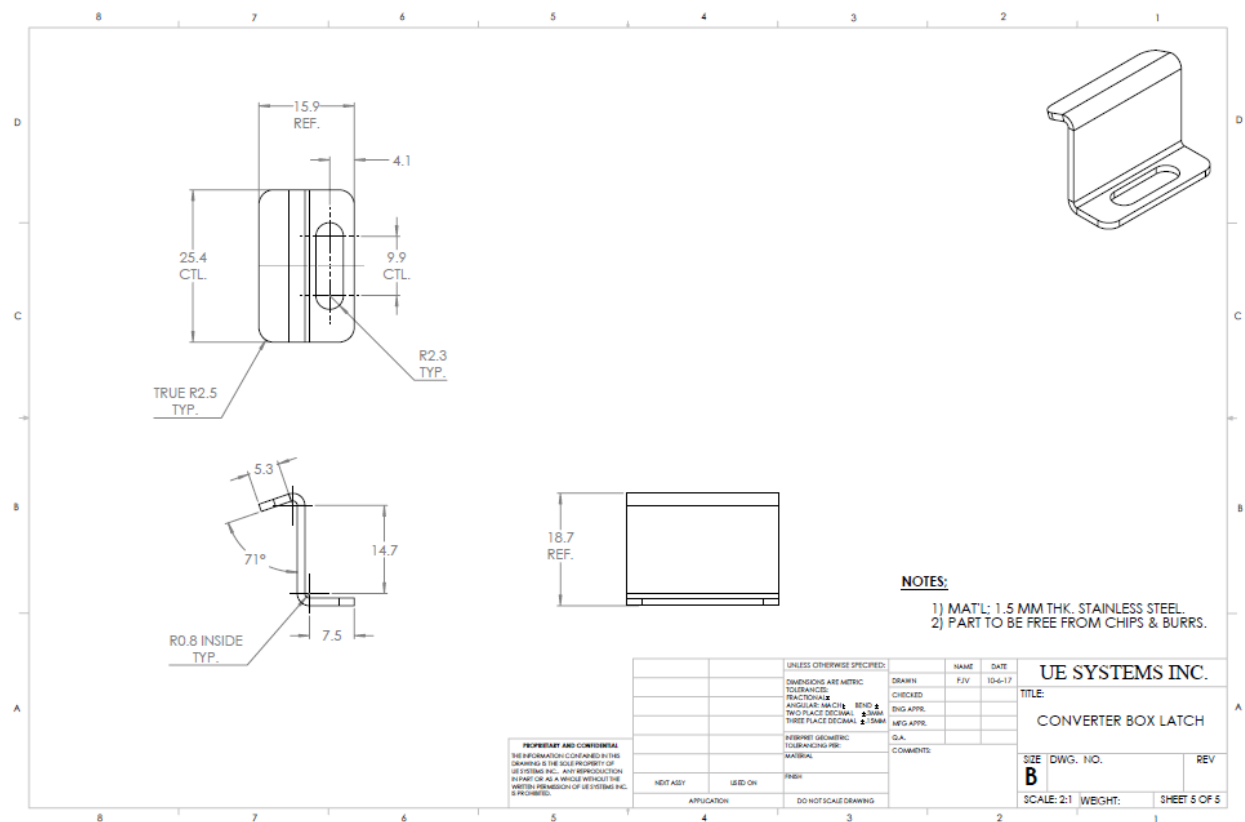
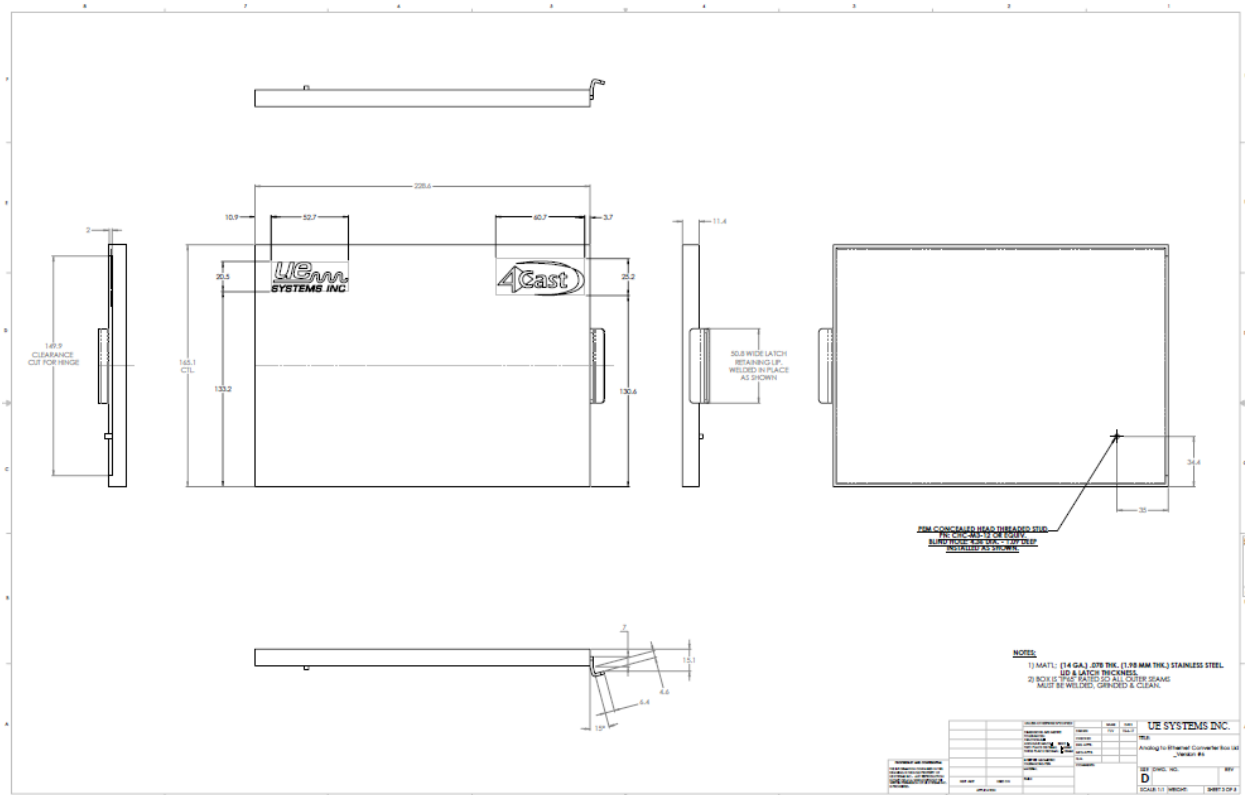
c. **WAV Storage Interval When in Alarm:** When the test point (sensor) is in an alarm state, select how often to store the sound recordings to 4Cast.

d. **WAVs Before Alarm to Send to DMS:** Use this feature to set 4Cast to send several WAV files prior to alarm to DMS for analysis when a sensor has entered the alarm state.

- e. **WAVs During Alarm to Send to DMS:** Just as above, set 4Cast to send several readings during an alarm state to DMS.
- f. **WAVs After Alarm to Send to DMS:** Set 4Cast to send several readings after alarm to DMS.
- g. **WAV Record Time (s):** Is how long 4Cast will record a sound during “normal” operation.
- h. **WAV Record Time in Alarm (s):** Set how long 4Cast will record sounds when a sensor goes into alarm.
- i. **WAV Record Time for Manual (s):** Set how long 4Cast will record sounds when clicking on the “Get Readings with WAVs Now” within the UE 4Cast Points tab.
- j. **Apply to All:** After one sensor has been configured, click the “Apply to All” button under that sensor and the rest of the sensors will be set with the same configuration.
- k. **Set/Set All:** Once satisfied with a configuration, click on the individual “Set” buttons to save or click the “Set All” button and it will save all the sensor configurations to 4Cast.

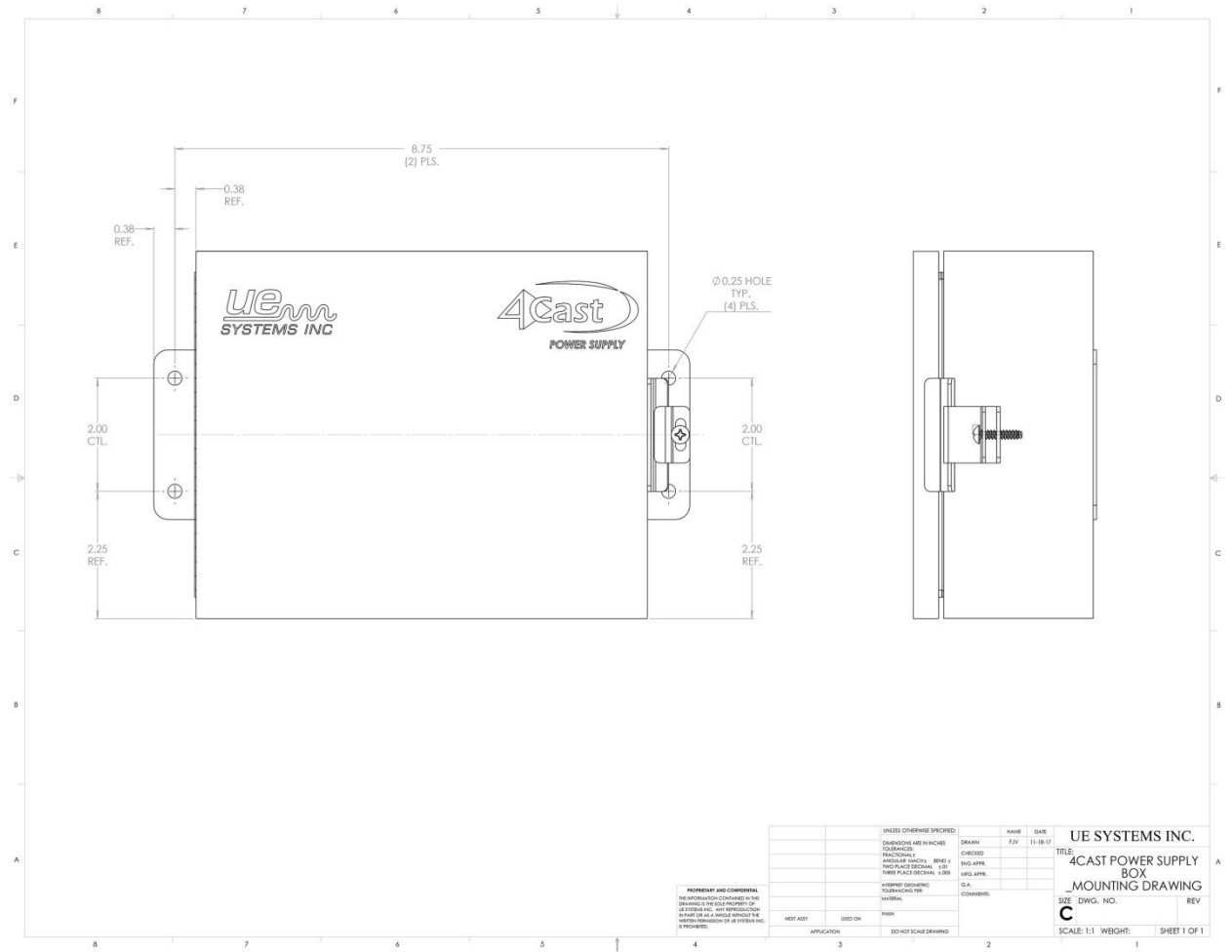
A. UE 4Cast Diagrams:





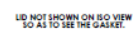
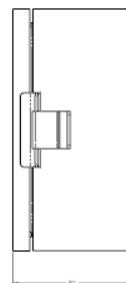
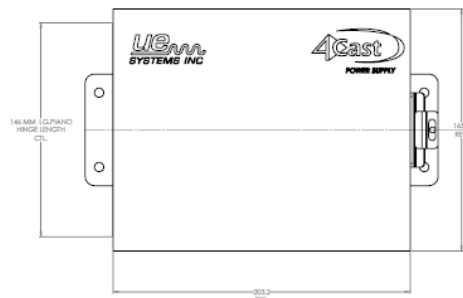
Appendix B:

B: UE Power Supply Diagram:



MONASTER CAP
WELDED IN PLACE

TANK
WELDED IN PLACE



Interpretation and conclusions:
The results of this study suggest that the use of a structured approach to the assessment of the patient's history and physical examination can improve the accuracy of the diagnosis and the management of the patient. The use of a structured approach can also help to identify the patient's needs and to provide a more comprehensive and coordinated care.

SECTION A-A

SECTION B-B

MODEL:

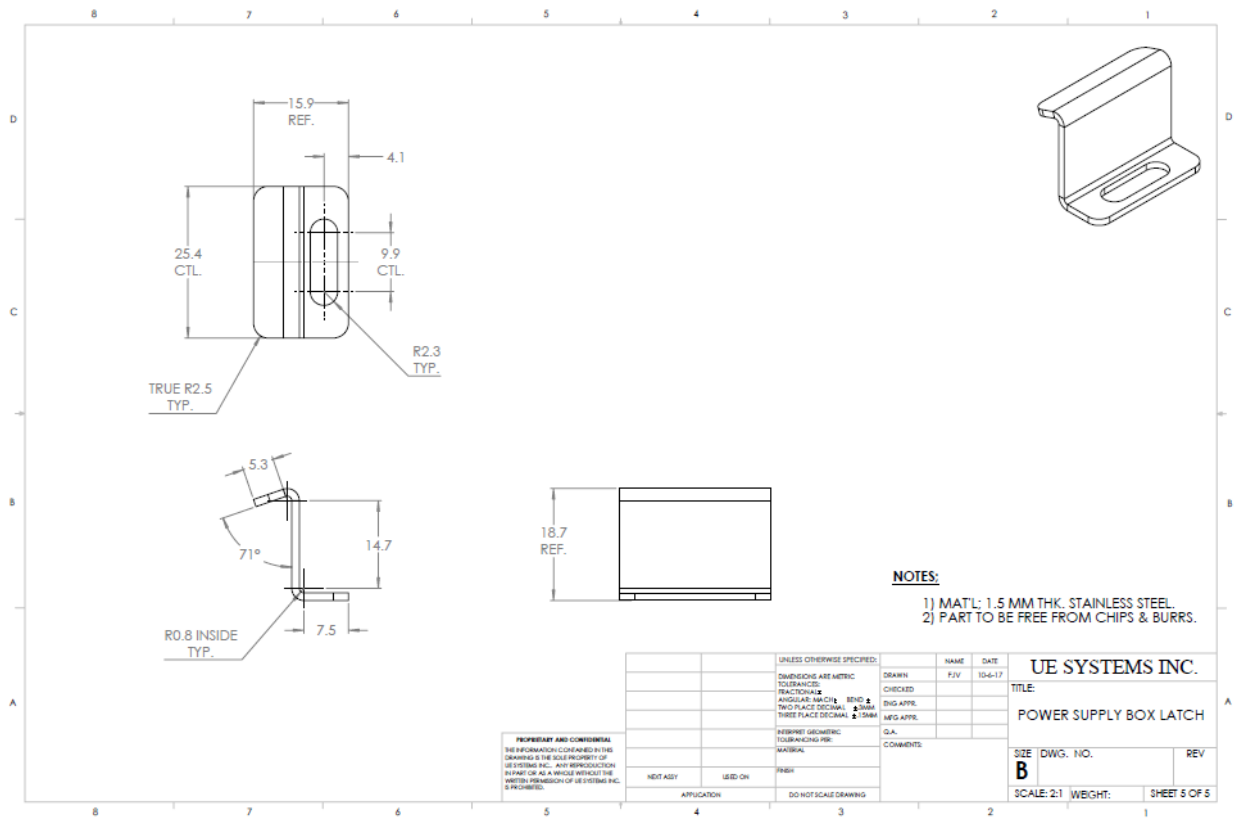
1) MAT'L: (14 GA.) STEEL, (1.18 MM THK) STAINLESS STEEL
BOX LATCH & MOUNTING HARDWARE
2) BOX LATCH TYPE: (1) ALL OTHERS SEAMS
MUST BE WELDED, GRINDED & CLEAN.

UE SYSTEMS INC.

MODEL:

1) MAT'L: (14 GA.) STEEL, (1.18 MM THK) STAINLESS STEEL
DOOR LATCH & MOUNTING HARDWARE
2) DOOR LATCH TYPE: (1) ALL OTHERS SEAMS
MUST BE WELDED, GRINDED & CLEAN.

UE SYSTEMS INC.





Stud/Standoff Installation Instructions

Before You Start

Safety First

When using solvents and adhesives, follow appropriate safety precautions. These include personal protection equipment (gloves & protective eye wear) and adequate ventilation. Refer to SDS for complete information. Read all instructions before starting work.

More

Visit www.clickbond.com for:

- Product information and guides for fasteners, adhesives, and tools.
- Safety Data Sheets (SDS).

Or contact Click Bond:

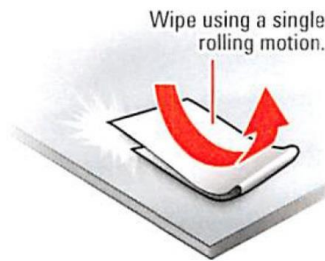
- +1-775-885-8000

Step 1 Prepare Substrate

Clean

Clean substrate to remove all surface contaminants:

- Solvent wipe substrate with a single rolling motion.
- Check cloth for residue. If present, repeat wipe using clean side of cloth.
- If necessary, use clean dry cloth to remove any solvent left on substrate.



Abrade

Abrade substrate where part is to be installed:

Caution: If installing on composite substrate, do not damage fibers during abrading.

- Remove surface oxides, top coat, and primer to expose bare material.

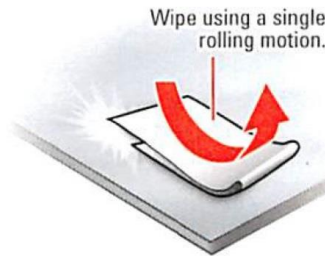
Tip: Use random motion to abrade substrate.



Clean

Repeat cleaning process to remove abrasion residue:

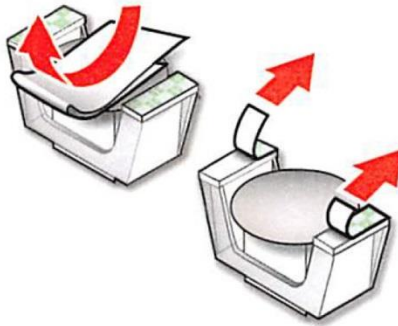
- Solvent wipe the substrate with a single rolling motion.
- Check cloth for residue. If present, repeat wipe using clean side of cloth.
- If necessary, use clean dry cloth to remove any solvent left on substrate.



Appendix C-2: RAS Mounting Kit (Stud/Standoff Installation Instructions)

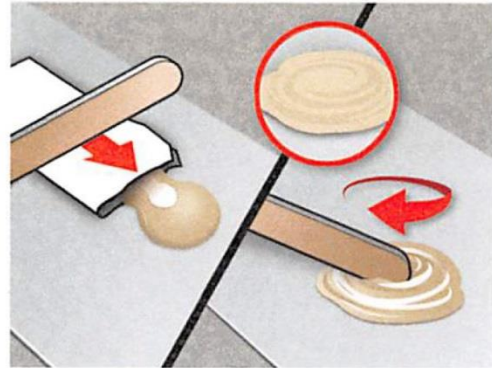
Step 2 Prepare Part

- Solvent wipe base of part with single rolling motion.
 - Remove backing paper from feet of fixture.
- Tip:** Prepare all parts before mixing adhesive.



Step 3 Prepare Adhesive

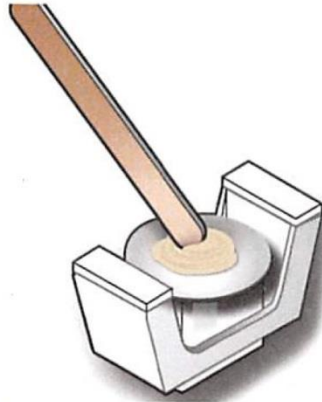
- Remove tear strip, fold packet lengthwise, and use edge of mixing stick to squeeze out **all** adhesive and accelerator.
 - Mix **thoroughly** until uniform in color.
- Tip:** Scrape residue from mixing stick to ensure **all** components are mixed together.



Step 4 Prepare Part

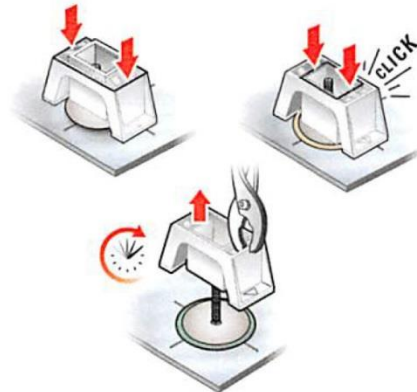
- Apply adhesive to center of part base as shown.

Tip: Use enough adhesive to provide a small, uniform amount of squeeze-out when part is installed.



Step 5 Locate & Bond

- Position and align part.
- Press down firmly on **outer** body of fixture to adhere foam tape to substrate.
- Apply pressure to **inner** body of fixture, until it clicks, to actuate fixture.
- Allow adhesive to cure, then remove fixture and discard.



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UE Systems Europe, Windmolen 20, 7609 NN Almelo (NL)
e: info@uesystems.eu w: www.uesystems.eu
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www.uesystems.eu