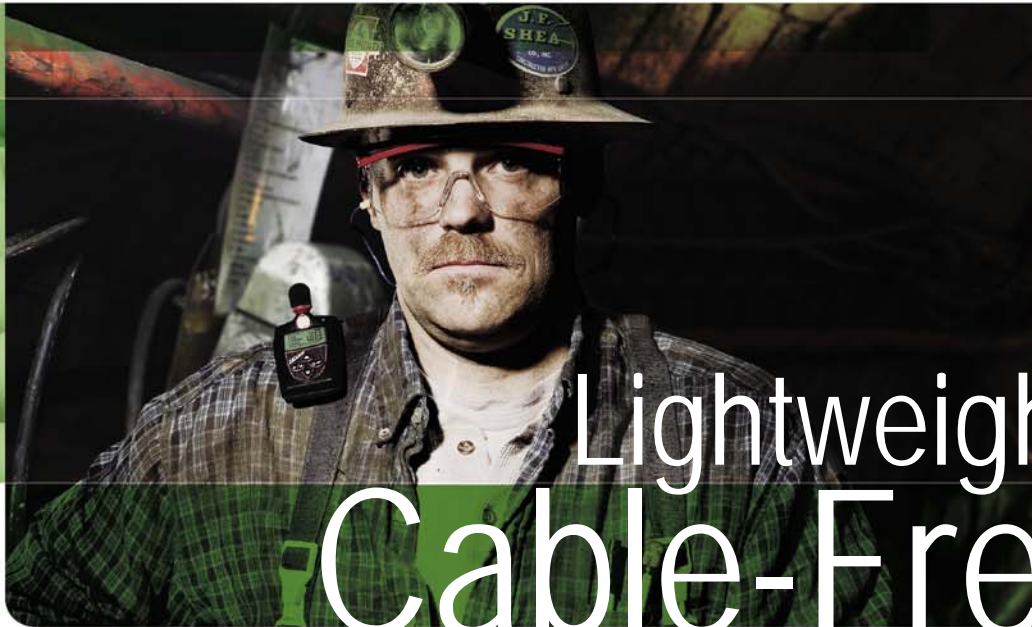


# 3M™ Edge

*Training Guide*



# Lightweight, Cable-Free Noise Detection





## You will learn.....

- What is the Edge?
  - *Overview of the features*
  - *Common applications*
- When and Why use the Edge?
- Feature comparison guide of the Edge models
- How - Quick overview of using the Edge
- Competitor comparison chart
- Where can I find out more?



# What is the Edge?

## *Overview of features*

- Cable-free noise dosimeter
- Two dosimeters in one (eg4 and eg5 models only)
- Data logging & time history
- 70 dB to 140 dB range
- Peak weighting: A, C, or Z
- RMS time response: Fast, Slow
- 2 programmable "Auto-On" options
- Exceptional battery life
  - *100+ hours on eg3/eg4 models only (eg5 – nominal 40 hours of memory)*
  - *Rechargeable Lithium Polymer Battery*
- Communicating/Charge: Docking Stations
- Interfaces with QSP-II for quick setup, analyzing data, and reporting
- Field Replaceable mic.
- Device Set Up via QSP-II
- 6 Language Display
- Light-weight: 2.5 oz (71 g), less mounting device
- Size: 88 mm long x 53 mm wide x 19 mm thick (without microphone)
  - *3.5" long x 2.1" wide x .75" thick (without microphone) Intrinsic Safety: IEC 60079-0:2004 and IEC 60079-11:2006, MSHA, ATEX, UL, cUL (Pending)*
- ✓ *eg5 model only IS: IECEx SIM 08.0012*
- Recharge 2 to 4 hrs



# When to use the Edge?

## *Common Applications*



- As a personal noise dosimeter
  - *Workers daily exposure noise levels.*
  - *Ensure compliance with OSHA, MSHA, ACGIH, IEC, or any other regulatory agencies*



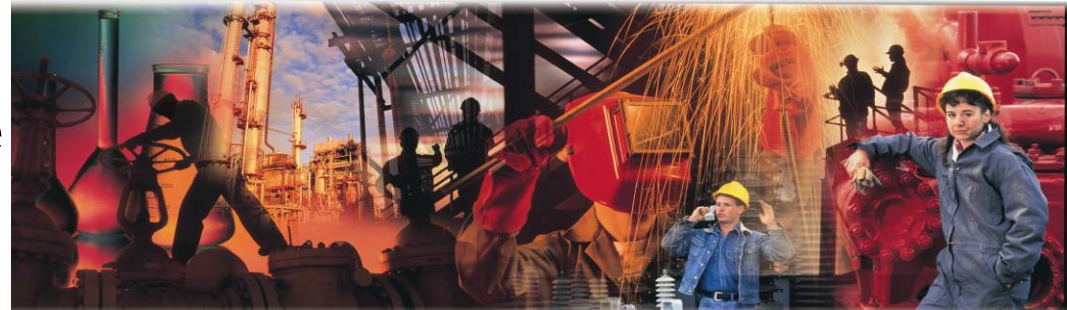
- As a time-history monitor
  - *Workers minute-by-minute noise exposure levels*



- As a survey monitor
  - *Identify machines/equipment with potential harmful noise levels*
  - *Identify Exposure and Peak levels with workers in manufacturing, military, & construction sites.*

# Why use the Edge?

- Protecting the worker from excessive noise exposure.
- Ensure noise exposure limits are not exceeded.
  - *If exceeded, appropriate protection or engineer controls are applied)*
- Easy to operate, cable-less, light-weight, personal noise dosimeter
- Real-time integrating noise microphone



# The Edge models



THE EDGE FEATURES	eg3	eg4	eg5
<b>Accuracy</b>			
Class/Type 2	.	.	.
<b>Logging (1 minute intervals)</b>			
Lavg or Leq ( on dosimeter 1 and 2), Max level, and Peak level		.	.
<b>Standards</b>			
Intrinsic safety: IEC 60079-0:2004 and IEC 60079-11:2006;			.
IECEX certification #: SIM 08.0012;			.
MSHA, ATEX, UL, cUL (Pending)			.
Virtual Dosimeters, each with its own assignable profile			
2		.	.
1	.		
<b>Range</b>			
Range RMS 70 to 140 dB	.	.	.
Peak Range: 110 to 143 dB	.	.	.
<b>RMS weighting</b>			
A and C			.
A or C	.	.	
<b>Exchange Rate</b>			
(ER) 3 dB, 4 dB, or 5 dB	.	.	.
<b>Time Response</b>			
Fast or Slow	.	.	.



Features	eg5	eg4	eg3
<b>Peak Weighting</b>			
A, C, Z			.
C, Z	.	.	
<b>Criterion Levels &amp; Threshold</b>			
70 to 90 dB in 1 dB increment	.	.	.
<b>Upper Limit</b>			
70 to 140 dB in 1 dB increment	.	.	.
<b>Displayed Data includes:</b>			
SPL, Average value (LAVG or Leq), Maximum value (LMX), Minimum value (LMN), Peak Value (LPK), Exposure, Run Time, TWA, UL Time	.	.	.
L C-A data value			.
<b>Special Features</b>			
Auto- Run (based on duration, date, time)	.	.	.
Security (lock mode for accidental turn off)	.	.	.
Customizable display (via QSP-II)	.	.	.
<b>Calibration</b>			
Saved pre and post cal. and downloaded via QSP-II	.	.	.
<b>Battery life</b>			
Up to 40 hours			.
60+ hours	.	.	
<b>Data Available Via PC Download (QSP-II)</b>			

# Quick Overview of using the Edge *Steps to an Edge survey*

- Keypad explained
- Basic operation: turning on, resetting, navigating
- Quick setup via QSP-II
- Calibrating
- Connecting to the operator
- Running and ending a study
- Reviewing results



# Keypad explained

**Windscreen and microphone**

**LED indicator**

- Red – indicates dose has exceeded the alarm level
- Amber – indicates dosimeter stopped
- Green – indicates measuring

**Battery indicator  and stop indicator **

**Display** (Splash screen shown)

- View data and various indicators

**Up Arrow** 

- Used to scroll through display/screen views

**On/Off  and Enter** 

- Used to power On/Off the meter.
- Used to switch between (toggle) dosimeter one and dosimeter two measurements and settings.

**Run  and Stop** 

- Used to activate meter when running or logging measurements.
- Used to Stop your noise study.

**Down arrow** 

- Used to scroll through display/screen views

**User defined setup**

**Measurements**

- User selectable via QSP-II


**Dosimeter settings**

- With models eg4 & eg5, press on/off/enter key to toggle between two virtual dos. settings.

# Basic operation

## *Turning on, resetting, and navigating*

### ■ Turning on

- *To turn on the Edge, press the On/Off/Enter  key.*
  - A splash screen appears with edge model info and then the **measurement view** will display.

### ■ Resetting

- *Resetting the dosimeter is performed using QSP-II software via the clear tab from the Edge Set-up button. The Edge may also be reset using the keypad.*
  - See Chapter 3 and Chapter 4 in the Edge user manual for details.
  - Manual

### ■ Navigating

- *Press the Up  /Down  Arrow keys to navigate through measurement values and battery run time.*



# Setting-up with QuestSuite Software

**1** My Instruments

**2** Acoustics

**3** The Edge

**4** Setup

**My Instruments**

Acoustics

Vibration

IAQ

Heat

Other

All

SoundPro DLX

SoundPro SE/DL

The Edge

NoisePro

Qxxx

**The Edge**

Device Name	Serial Number	Managed
EHH010145	EHH010145	False
Demonstration Edge	01045	True

Retrieve Data

Setup

Device List

- Show Managed
- Show All

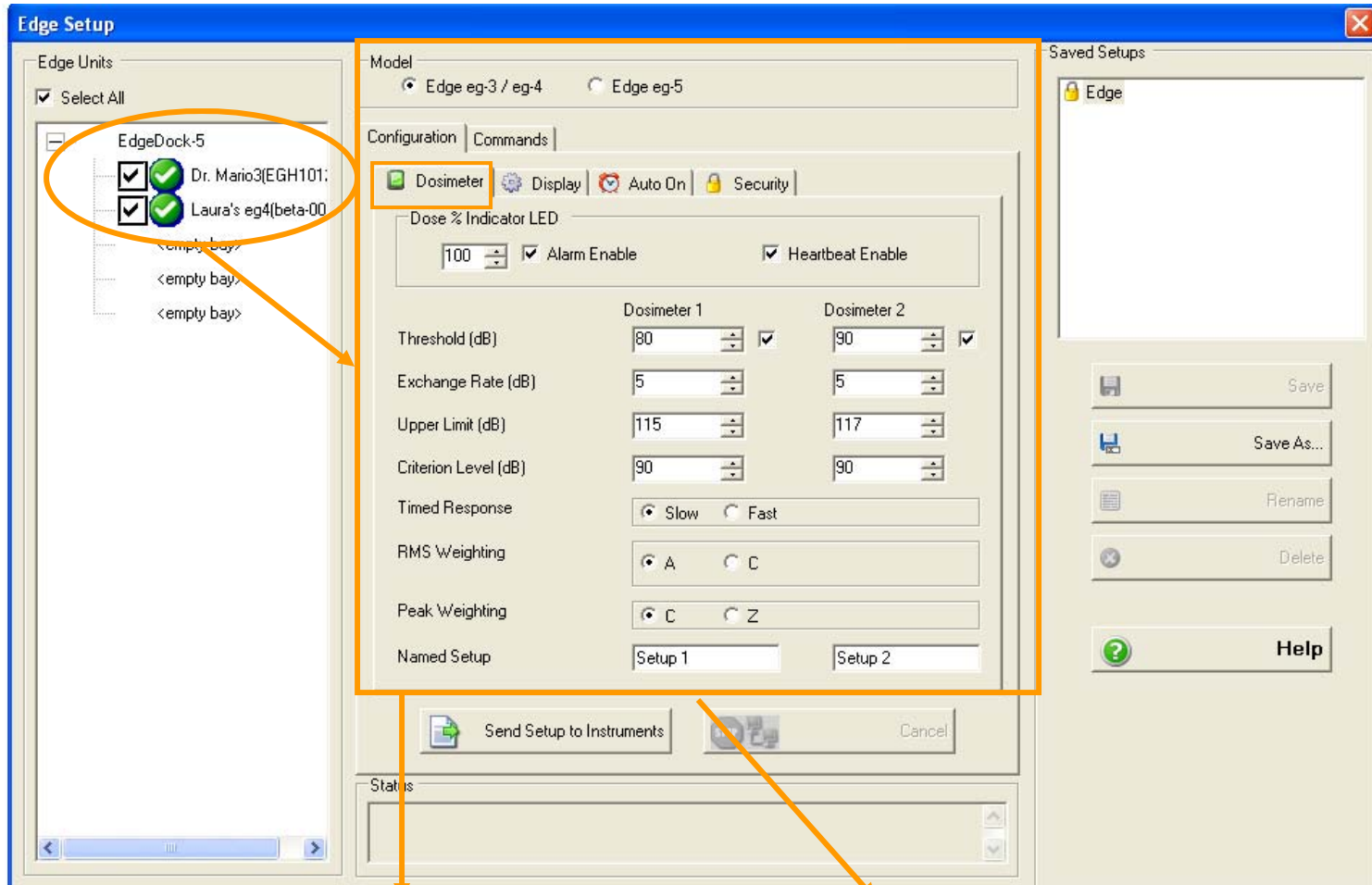
Buttons: Add, Edit, Delete, Help

Selecting and opening setup screens (Refer to items 1-4)

# Setting-up the Edge overview with software

## Quick look at the Dosimeter screen

(Please see Edge manual for more details)



1. Setting up two eg4 dosimeters

2. Send setup to instrument

# Setting-up the Edge

## **D2: Setup 2**

Indicates virtual dosimeter 2 settings and its measurements values



- In the previous screen, you selected the measurements and settings for virtual dosimeter 1 and virtual dosimeter 2.
- The results of dosimeter 2 settings include:
  - *Virtual dosimeter 2 settings include:*
    - *Threshold 90 dB, Exchange rate 5 dB, Criterion level 90 dB, and Slow response with A weighting*
    - *(TH-90, ER-5, CL-90, SLOW-A)*

# Setting-up dosimeter overview with software

## Quick look at the Display screen

This example shows 3 Edge instruments with a customized measurement setup that will appear on the display of the instruments.

The screenshot shows the 'Edge Setup' software interface. On the left, a tree view under 'Edge Units' shows 'EdgeDock-5' containing three items: 'Laura's eg4(beta-00)', 'KenTest1(sqball777)', and 'Dr. Mario3(EGH101:)', each with a checked box and a green checkmark. The main configuration area is titled 'Model' and shows 'Edge eg-3 / eg-4' selected. Below this, the 'Commands' tab is active, showing 'Dosimeter', 'Display', 'Auto On', and 'Security' buttons. The 'Display Configuration Menu' contains a table with 16 rows and two columns: 'Display position' and 'Item to display'. The table lists various measurement parameters like 'Sound Pressure Level (Lxx)', 'Max (LxxMx)', 'Lavg', 'Upper Limit Time (UL)', 'Peak (LxPK)', 'TWA (LtwA)', 'DOSE', 'Battery Time Remaining', 'Run time (RT)', 'Sound Exposure Level (SEL)', 'Min (Lmin)', and 'OFF'. Below the table is a 'Set Selected Item:' dropdown menu currently showing 'Min (Lmin)'. At the bottom, there are buttons for 'Send Setup to Instruments', 'STOP', and 'Cancel'. On the right side, a 'Saved Setup' panel shows 'Edge' as a saved setup, with buttons for 'Save', 'Save As...', 'Rename', 'Delete', and 'Help'.

### Customize what appears on the display

1. Click in one of the "items to display" field.
2. Choose a field name by selecting from the "Set Selected Item" field.
3. Then click Send Setup to Instruments button.

# Setting-up the display on the Edge





- In the previous screen, you selected what measurements/indicators will appear on the display.

- *The first three selected were Sound Pressure Level, Maximum, & Average*

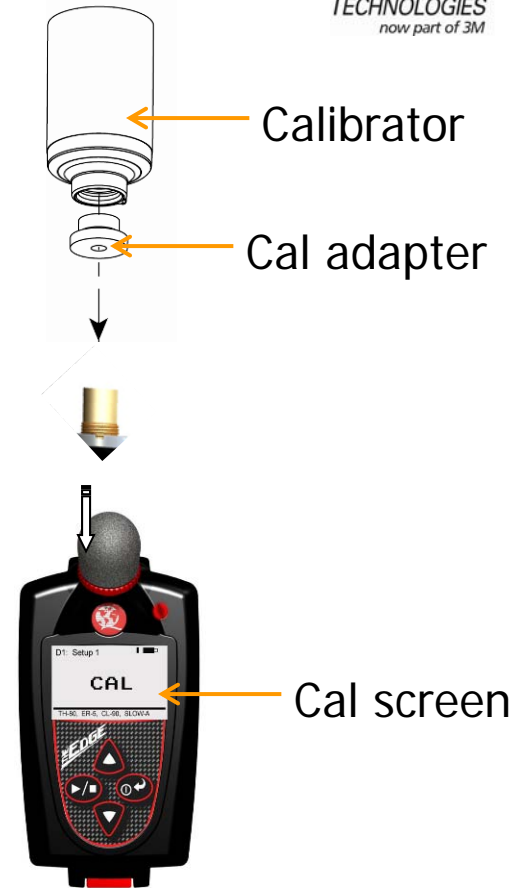
- NOTE: to view the next three measurements, you would press the down arrow key. This will toggle you through the display values.

# Calibrating

1. Remove the windscreen.
2. Ensure The Edge is turned on and stopped.
3. Slide the Edge into the mouth of the calibrator (ensuring the adapter ring is inserted into the calibrator).
4. Turn on the calibrator. Ensure parameters are set to 114 dB and 1000 Hz. (*Refer to calibration manual for further details.*) 'Cal will flash on the display.
5. Press the **on/off enter**  key to trigger the calibration display.
6. To match the values on the calibration display, press repeatedly the up or down arrow.
7. When you selected the appropriate dB level, press the **on/off enter**  key.

*A shaded bar will appear when loading your calibration information. Then a summary screen will indicate the date and time.*

8. To return to measurement screen, press **on/off enter**  key.





# Collect Data

## *Run, Stop, and Turning off*


### Running a study

1. Once the dosimeter is turned on, press and hold the **run/stop**  key.
  - ✓ A 3, 2, 1 countdown will appear.
  - ✓ Then, a **run**  indicator key will appear on the top right of the display with a flashing green LED indicator (unless you disabled this in QSP-II).

### Stopping a Study

1. While running a study, press and hold the **run/stop**  key.
  - ✓ The **stop**  indicator will appear in the same location of the run indicator.

### Turning off

1. Press and hold the **on/off/enter**  key.
  - ✓ A 3, 2, 1 countdown will appear. Continue to press until nothing appears on the display.



## Measurements viewed in run/stop mode

Up to 12 Displayed values

- LAS – displayed as SPL in QSP-II
- Lavg or Leq
- TWA
- Max Level
- Min Level
- Peak Level
- Exposure
- Run Time Battery Gas Gauge
- Memory
- Run / Pause
- OL
- Dose Exposure Indicator
- User Set-Up



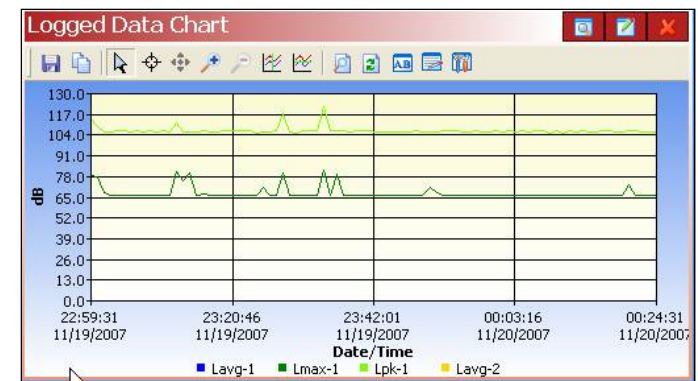
# Reviewing results in software (QuestSuite Professional II)

## Overview

- ❖ Data is downloaded to QSP-II for analysis, managing, file storage & printing
- ✓ See "Downloading" in [Chapter 5 of the Edge user manual](#) for details



General Data Panel		
Description	Meter/Sensor	Value
Dose	1	0 %
Pdose	1	0 %
Lavg	1	20.5 dB
Lmin	1	65.6 dB
Lmax	1	81.7 dB
Lpk	1	121.2 dB
TWA	1	8.1 dB
Rtime	1	01:26:30
OL%	1	0 %
ULtime	1	00:00:00
SEL	1	82.2 dB
UR%	1	0 %
Mxtime	1	11/19/2007 10:58:31 PM
Mxtime	1	11/19/2007 11:33:56 PM
PKtime	1	11/19/2007 11:33:57 PM
Projected TWA	1	20.5 dB



## Understanding the LED on the Edge

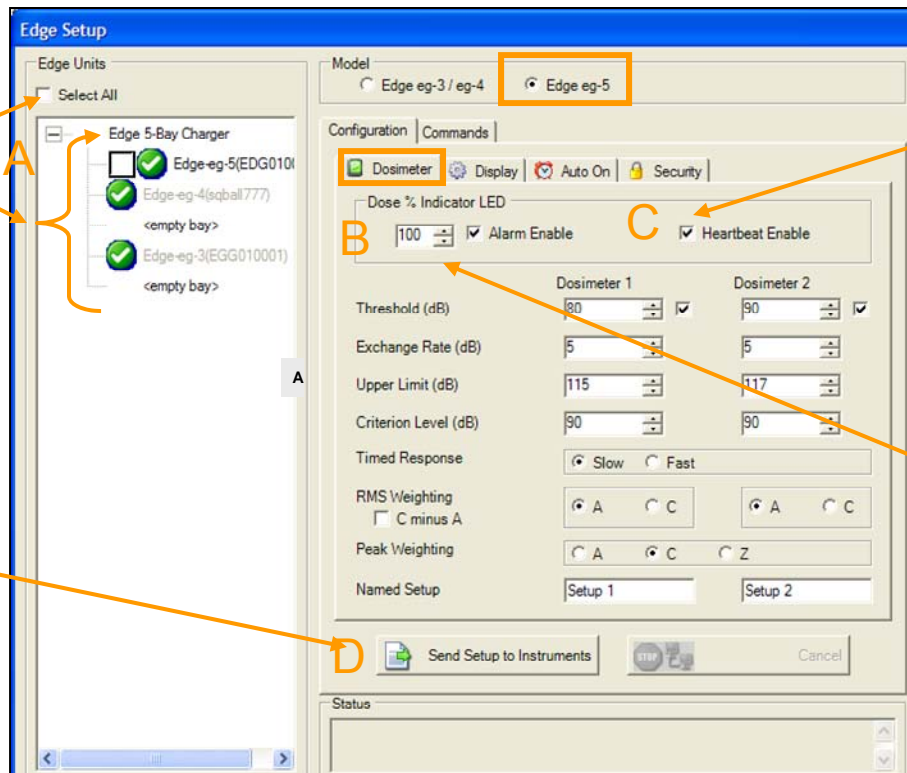


- **Scenario:** we would like to know when the dosimeter is in "run" mode and also receive notification when the Dose level has exceeded 100 %.
- **Procedures:**
  - Dock the Edge(s) and select from the "Edge Bay" charger section (see A) (Note: if you have a single-bay, click in the Select All checkbox.)
  - Click in the "A" and "B" checkboxes. Click on **Send Setup to Instruments** (see "C")

### Dock/Bay Charger

Select all or select specific dosimeters

(see A)  
Send Setup to Instrument  
(see D)



If "Heartbeat enable" is checked, the Edge will flash green while running and flash amber when stopped. (If unchecked, a green and amber LED will not flash.) (see C)

If "Alarm enable" is checked for the Dose %, then the dosimeter LED will flash red when the dose value exceeds the designated dose value entered. (see B)





# FAQ/Trouble-shooting

*How do I unlock once locked?* (Secure/Unsecure run mode)

- **Scenario:** You locked the Edge during run mode (so no one can change the settings) and now you wish to unlock. You forgot the keypad combination.

- **Procedures:**

- *To unlock the dosimeter, press **Run/Stop**  key 3 consecutive times, within one second intervals, and then press the **on/off enter** button.*
- *To lock the dosimeter while running a study, this is enabled via QSP-II setup tab. Press **On/Off/Enter**  key three consecutive times within one second intervals.*



# FAQ/Trouble-shooting

## *The Edge does not calibrate*

1. Ensure the Adapter ring is inserted into the calibrator and remove the windscreen on the microphone.

### 2. **Procedures:**

- Slide the powered on Edge (while in stop mode) into the mouth of the calibrator.
- Turn on the Calibrator. **"CAL"** will flash on the display of the Edge.
- Press the **on/off enter** button to trigger the calibration display.
- To match the values, repeatedly press the **up or down arrow** to match the desired output (i.e., 114 dB).
- Press **on/off enter** button to set the new value. Once set, press on/off enter button again to return to the main screen.

QC-10 calibrator  
Example displays setting to & On mode



"CAL"  
Flashes when calibrate is attached








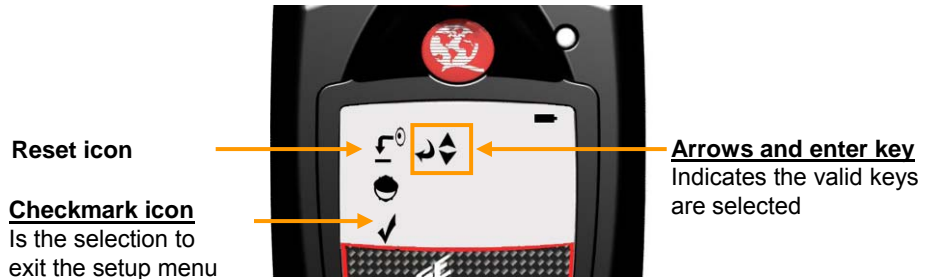
# FAQ/Trouble-shooting

## *How do I reset/clear data in the field without QSP-II?*

1. Ensure the Edge is off. Turn the dosimeter on by pressing **on/off enter** button.

### 2. *Procedures:*

- Hold both the **Run/Stop**  key and **On/Off/Enter**  key down until the splash screen disappears.
- When the setup menu appears, repeatedly press the **Up or Down** arrow to select the **Reset**  icon. (When selected, the enter key and arrows will appear to the right of the reset icon.)
- Press and hold the **On/Off/Enter**  key. Proceeding a 3,2,1 countdown, press the **Down arrow** until the checkmark icon is selected.
- To return to the main menu, press the **On/Off/Enter**  key.








# FAQ/Trouble-shooting

## *How do I change the contrast in the field? (Without using QSP-II)*

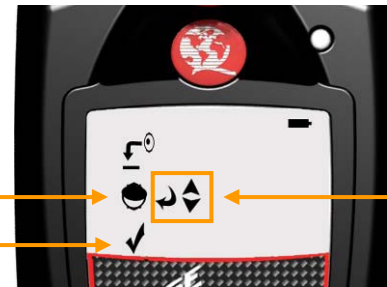
1. Ensure the Edge is off. Turn the dosimeter on by pressing **on/off enter** button.

### 2. *Procedures:*

- Hold both the **Run/Stop**  key and **On/Off/Enter**  key down until the splash screen disappears.
- When the setup menu appears, repeatedly press the **Up or Down** arrow to select the **Contrast**  icon. (When selected, the enter key and arrows will appear to the right of the contrast icon.)
- Press and hold the **On/Off/Enter**  key. Proceeding a 3,2,1 countdown, press the **Down arrow** until the checkmark icon is selected.
- To return to the main menu, press the **On/Off/Enter**  key.

Contrast icon

Checkmark icon  
Is the selection to exit the setup menu



Arrows and enter key  
Indicates the valid keys are selected

# FAQ/Trouble-shooting

*C-A and eg5 model (only)  
How do I view c-a results?*

1. Ensure C minus A is selected in the software (QSP-II) setup and sent to the instrument. Turn the dosimeter on by pressing **on/off enter** button (see "A").

2. *Procedures:*



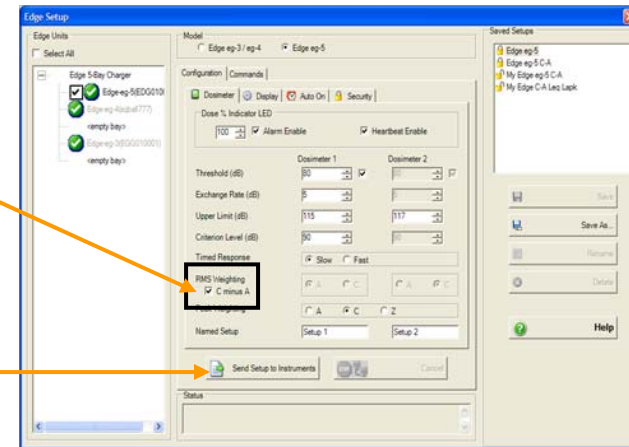
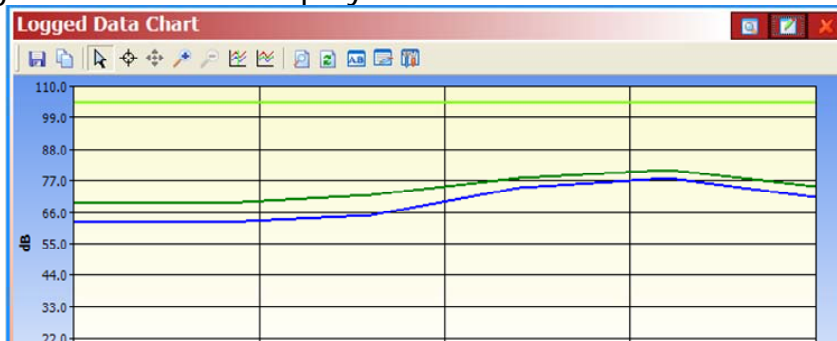
● In either the logged data chart or the general data panel, click on the Edit Panel icon.

● Click on the System tab and click in the c-a checkbox. Click Ok (see "B").

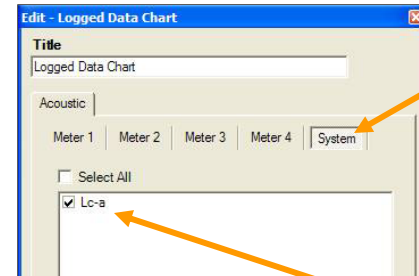
● The C-A measurement results will appear in the selected panel you chose. [An example of c-a results in a logged data chart is displayed below

c-a results : "C").

C



B



# Reference materials/Questions?

- [Link to glossary](#)
- [eg3 and eg4 manual](#)
- [eg5 manual](#)
- [Sales guide/brochure](#)
- [FAQ's](#)
- The *Edge* QuestSuite Professional (software) help guide

**QUEST Technologies, a 3M company, is here to help!**

Call Technical support: 1-800-245-0779 or 1-262-567-9157

**Questions: [www.questtechnologies.com](http://www.questtechnologies.com)**