NURO™ System User Manual

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Copyright information (?)

Building Shooters Technology LLC
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FCC Certification Information

TBD

Laser Safety Warnings (NURO)

Complies with FDA performance standards for laser products except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.

General Firearms Safety

Table of Contents

About Building Shooters Technology

Thank you for your purchase of a NURO System! And congratulations! Your purchase of a NURO system will bring you years of reliable and measurable training value when implemented with a quality training plan! The NURO system enables perfecting the most important system – the HUMAN SYSTEM. NURO is the first affordable and scalable small arms training system with unlimited versality – to include dry fire, 3D and 360 degree scenarios.

Our mission is to drive fundamental change in the firearms and tactical training industry.

NURO™ System Overview

NURO is a system of systems that can be used virtually any configuration to meet your training needs.

The System:

NURO device

Isolation Tool (ISO)

(In development)

Mobile App

(In development)

Engagement Assessment Tool (EA)

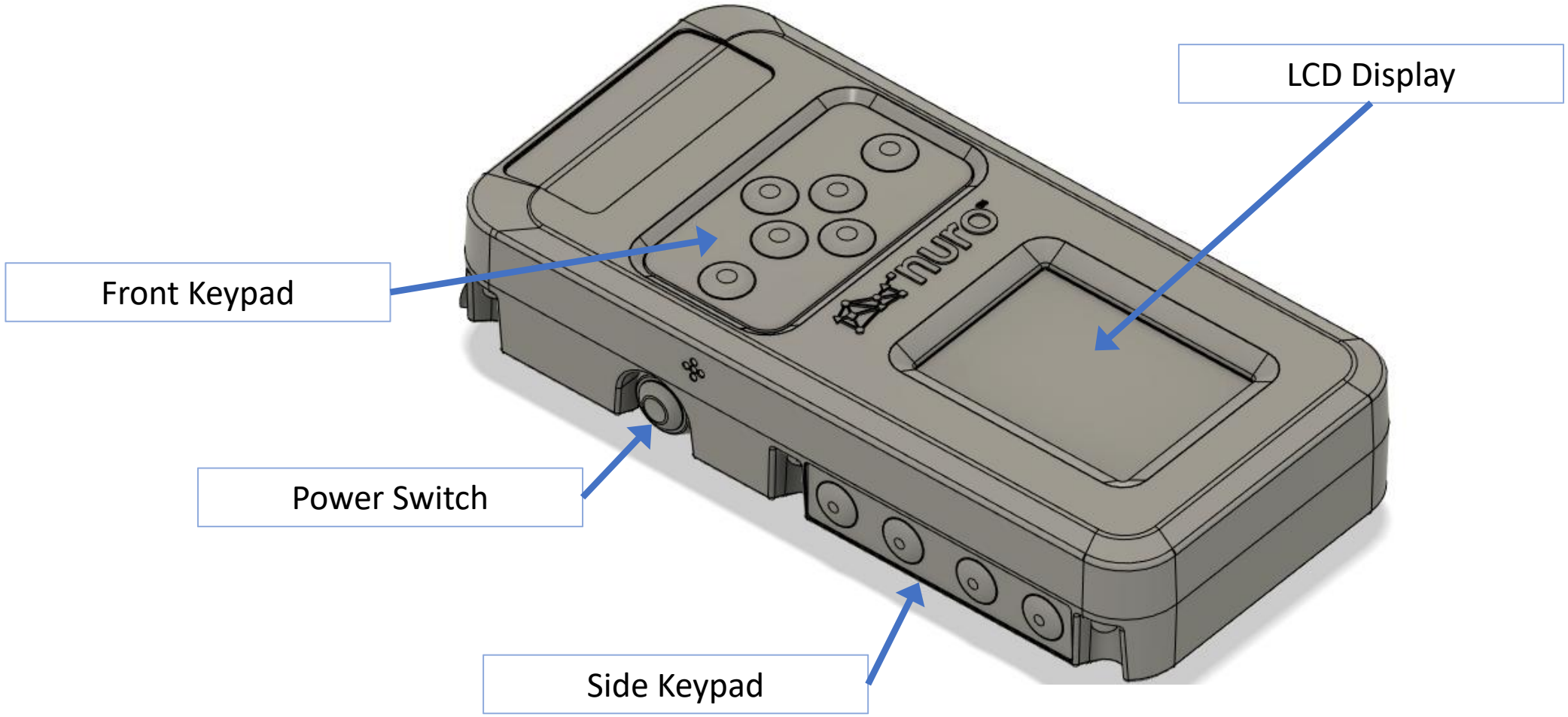
(Future capability)

NURO™ System Overview

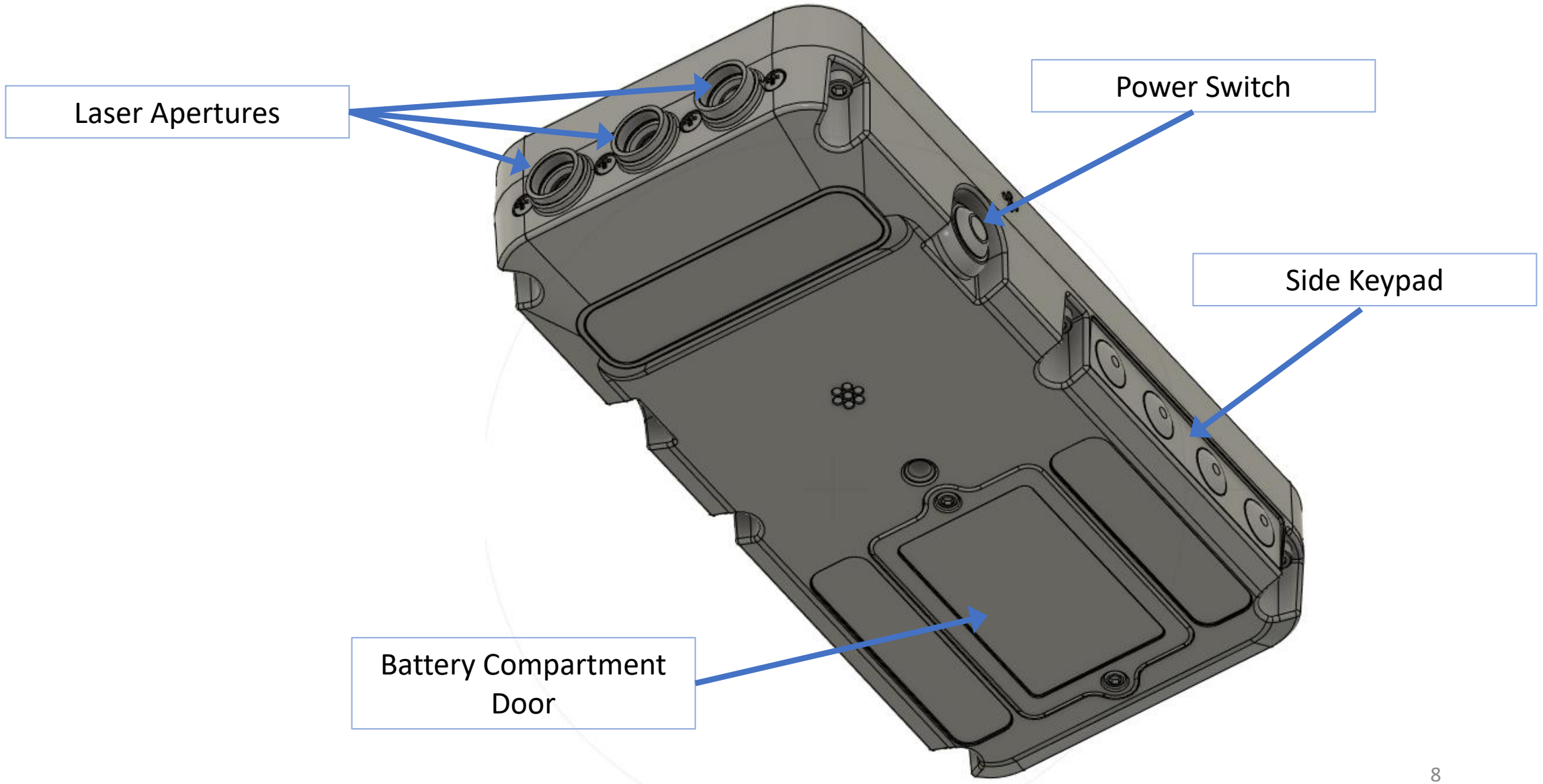
- The NURO Device is the center of the NURO system and provides an affordable and scalable means of creating an augmented reality training environment for users by means of visible laser light and/or traditional audible tones to measure visual and audible stimuli and compare them to user responses to those stimuli. NURO devices are networkable with one another and other system components via Wifi and Bluetooth RF links.
- The Isolation Tool (ISO) is a user wrist-worn remote sensor that links to a NURO device wirelessly to enable identification/ differentiation of individual user's responses allowing multiple users to participate in NURO scenarios simultaneously without a loss in user data fidelity. ISO acts as an accessory to a NURO device and can not be used alone.
- The NURO Mobile App is the gateway to maximizing the benefits of the NURO System for increased ease of user interface with networked NURO devices, building multi-device scenarios, controlling multiple devices and arrays, uploading and running subscriber content from the Building Shooters, and simply updating device firmware. The initial offering will be iOS compatible for use with Apple products (tablets are recommended for ease of interface due to the larger screen).
- The Engagement Assessment Tool (EA) is a future capability that will automatically record, process and analyze user actions. In the small arms training application this means automatic target engagement detection and scoring. This combined with the ISO will dramatically reduce the amount of training time required to conduct organizational level qualifications by allowing multiple users to train simultaneously and target analysis/ scoring to be done in-stride.

The NURO Device

Familiarization of the NURO Device:



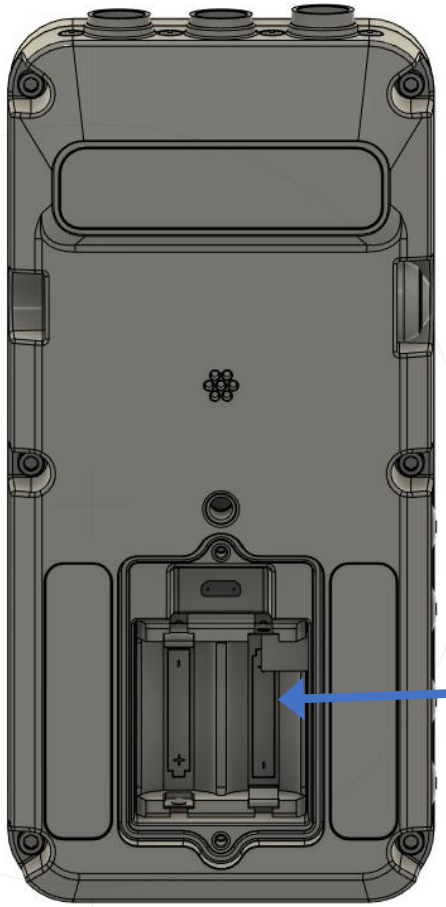
The NURO Device



The NURO Device

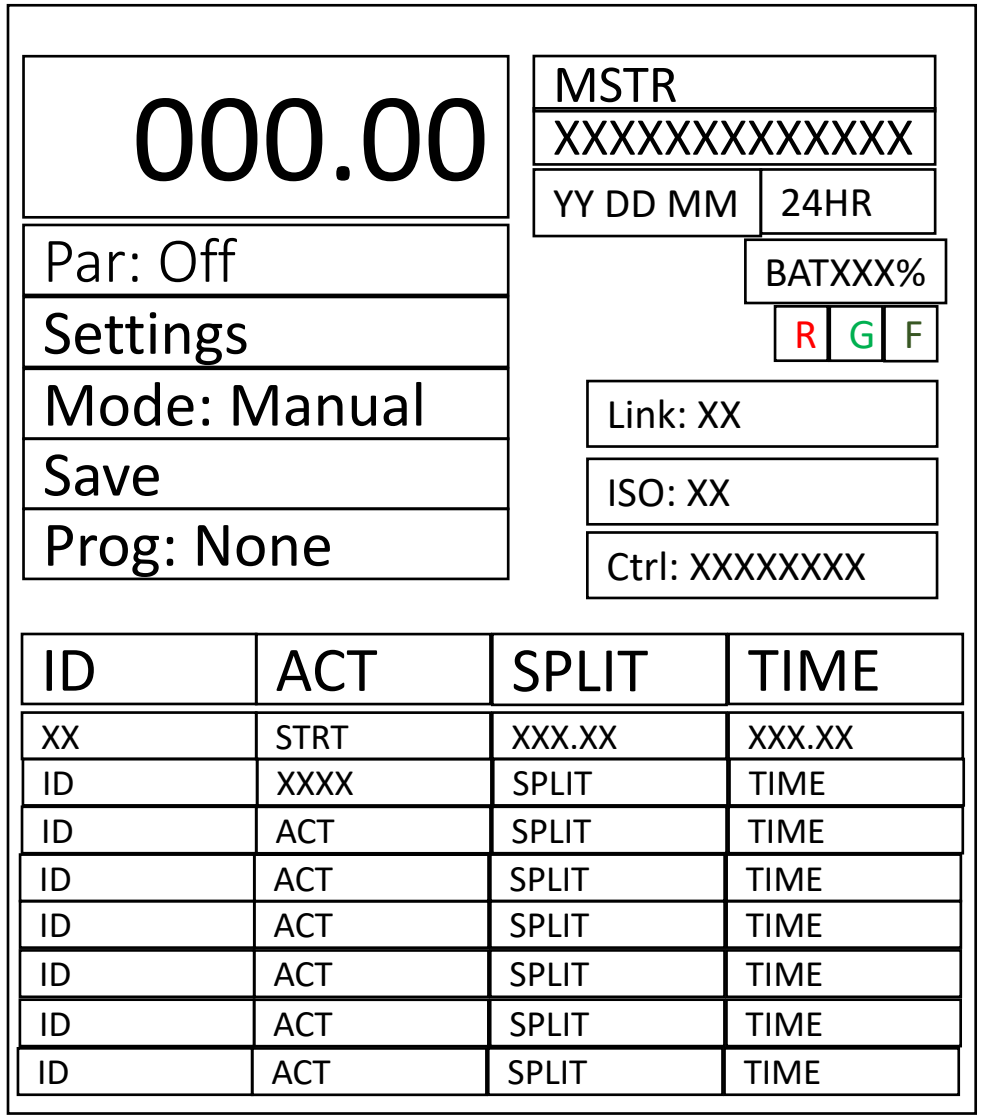
Top/Front View

Bottom View



Battery Compartment
(Door Removed)

The NURO Device



Quick start and recommended user care

- Getting started [link to latest video guide on website= seems easiest way to update a video for each FW update]

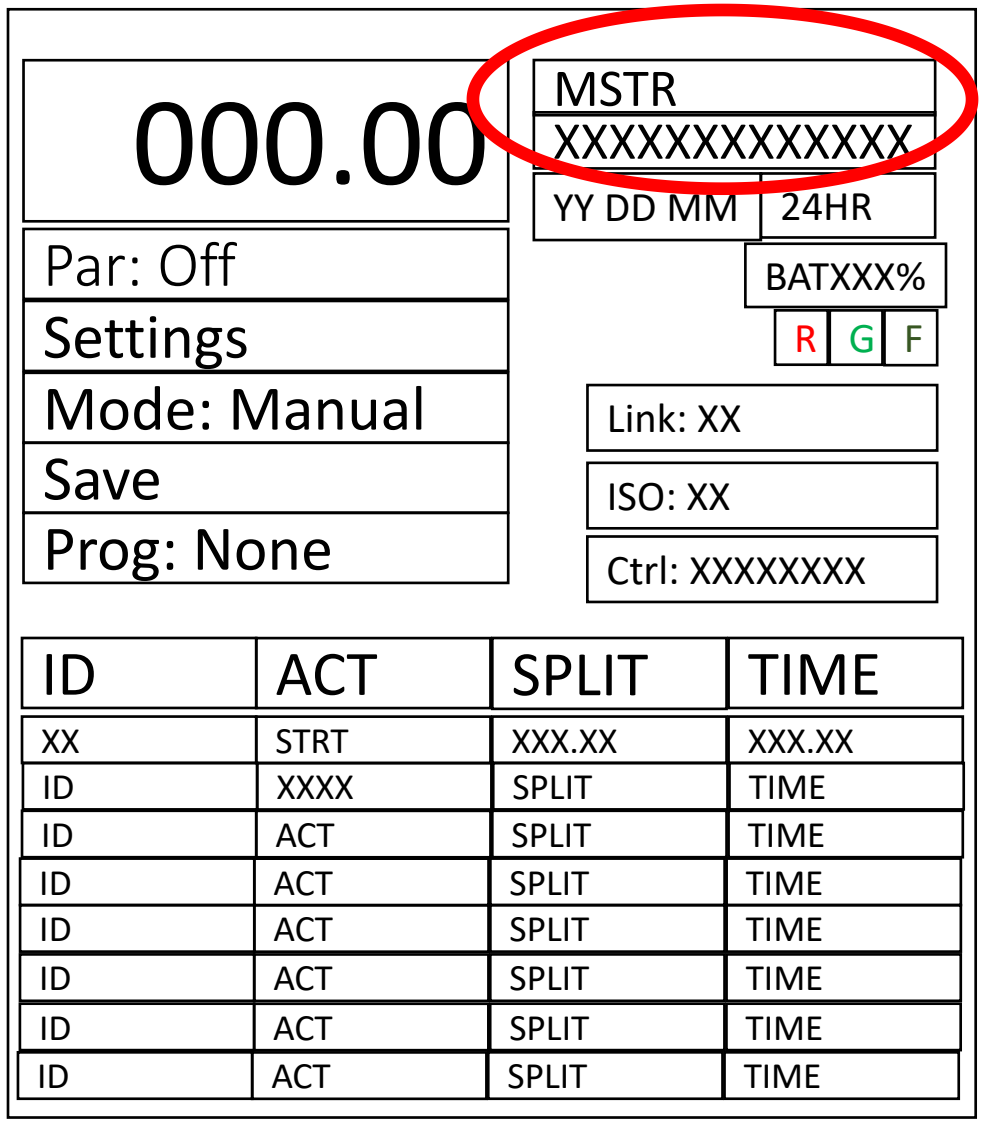
- Familiarization of controls, components, and features of the NURO will help with understanding and following these instructions and the terminology used.

- Install batteries, your NURO comes with a 5/64” allen key for loosening & tightening the battery door screws. Use caustion the screws do not require much force and should never be forced beyond finger tight if resistance is encountered. Rather unscrew and verify no debris is present on the screw threads or the threaded inserts in the housing causing the resistance.

- Observe the precaution to never look into laser apertures or point them at anyone’s eyes – turn on power by pressing the power switch. The display backlight will light. After 3-5 seconds press the enter button and the main screen should appear indicating the status and setting of the NURO device similar to the example to the left.

- The following pages explain the various settings and indications of the NURO device main screen.

The NURO Device



Device configurations:

-**Master (MSTR)** – for standalone device use or, alternatively, allows the device to be the central node / control station / data hub for an array of subservient devices. This is limited to [1]MSTR/[4]SUB.

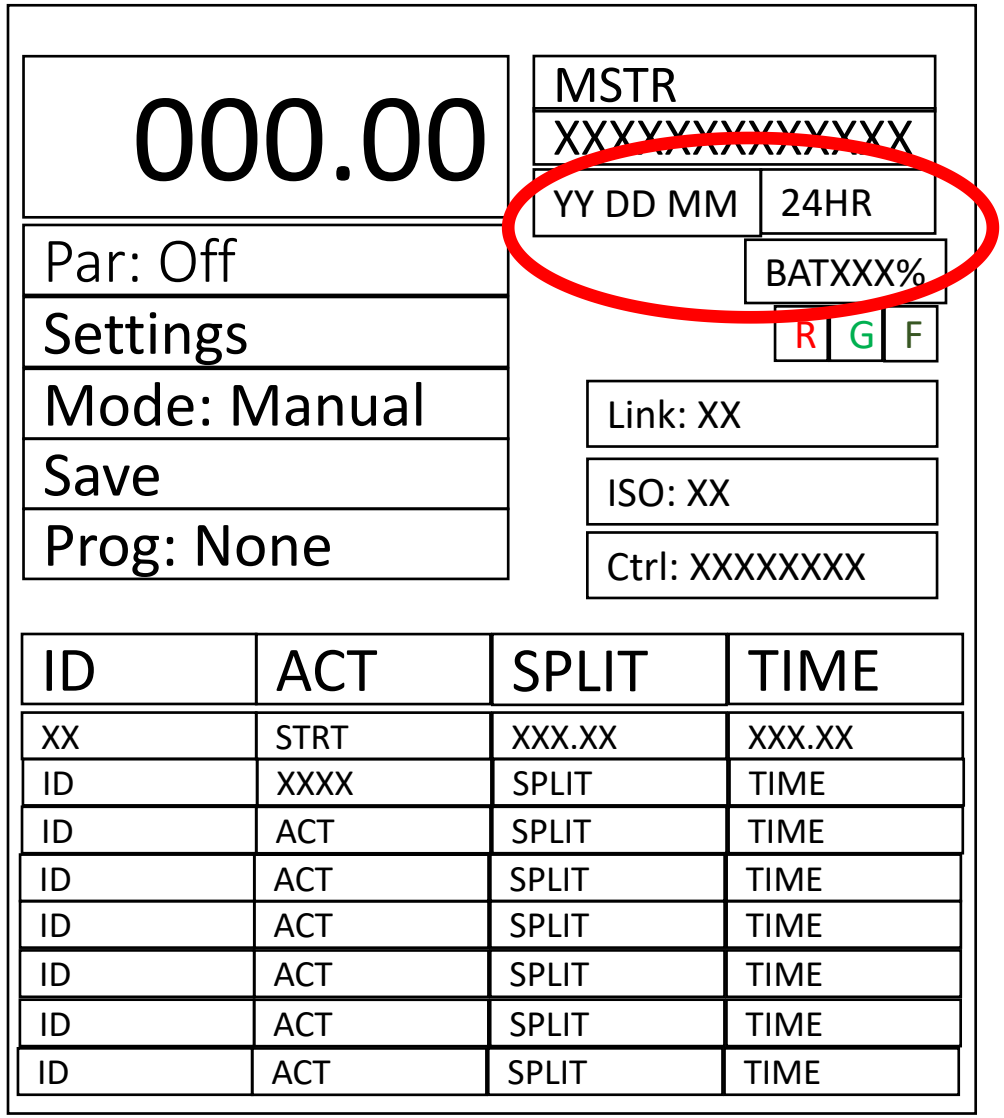
- **Repeater3 (RPR3)** – For use in networking with a limited number of devices using soft networking via the wifi chip's limited connection points. This limits to [1]RPR3/[3]SUB/[1]Control App

- **Repeater (RPTR)** – For use in group training settings. The device will function either alone or as the central node / control station/ data hub for an array of subservient devices. However, the device in repeater configuration will be subservient to, and pass data to, a mobile control device running an application (such as a tablet or phone).

- **Sub (SUBXX)** – Device functions as a projector / noise emitter only based control or programs received from either a master or repeater device. Displays Sub Identifier (XX = numerical designation)

[Changing NURO Configuration]

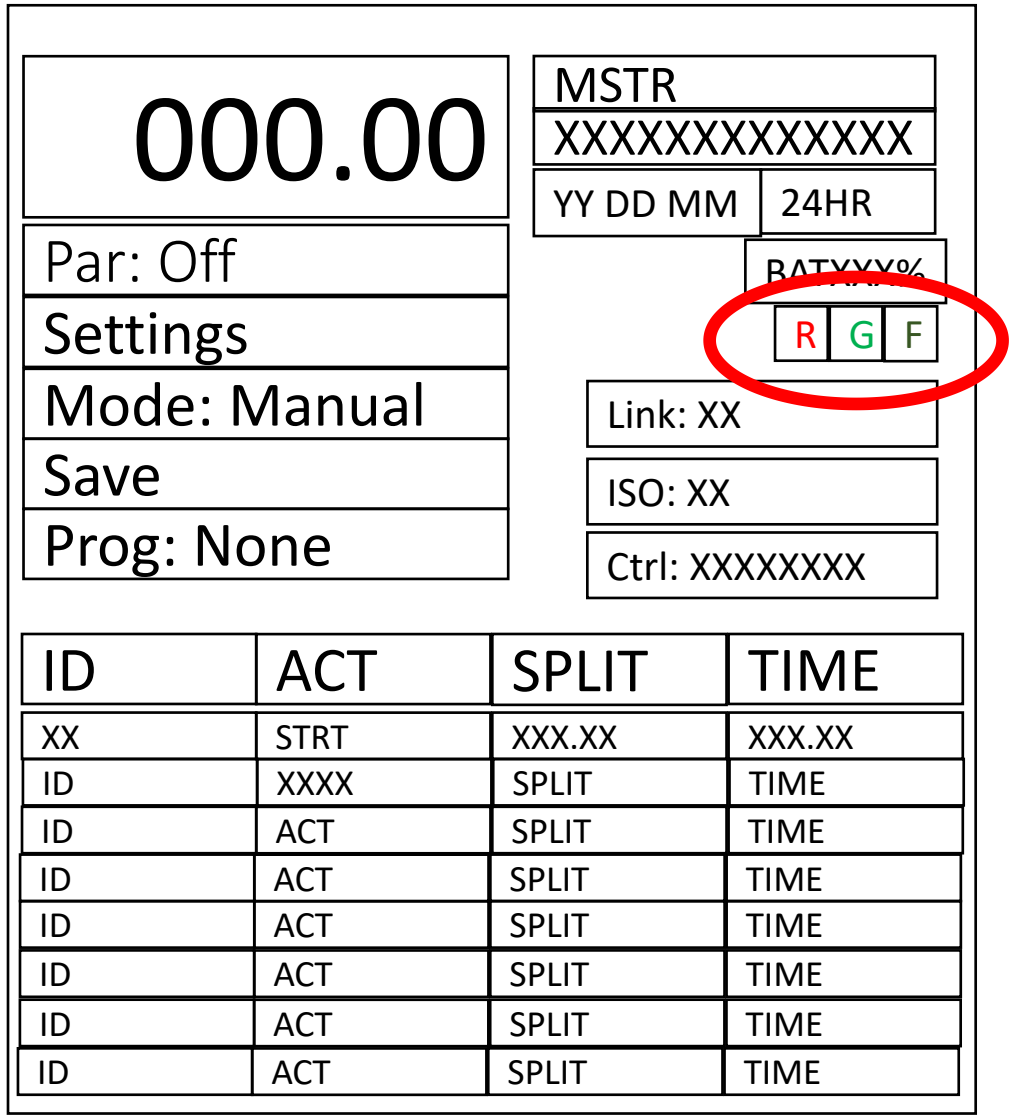
The NURO Device



Displays current date and time. Both are configured manually in settings upon device setup.

Displays current estimated battery life remaining.

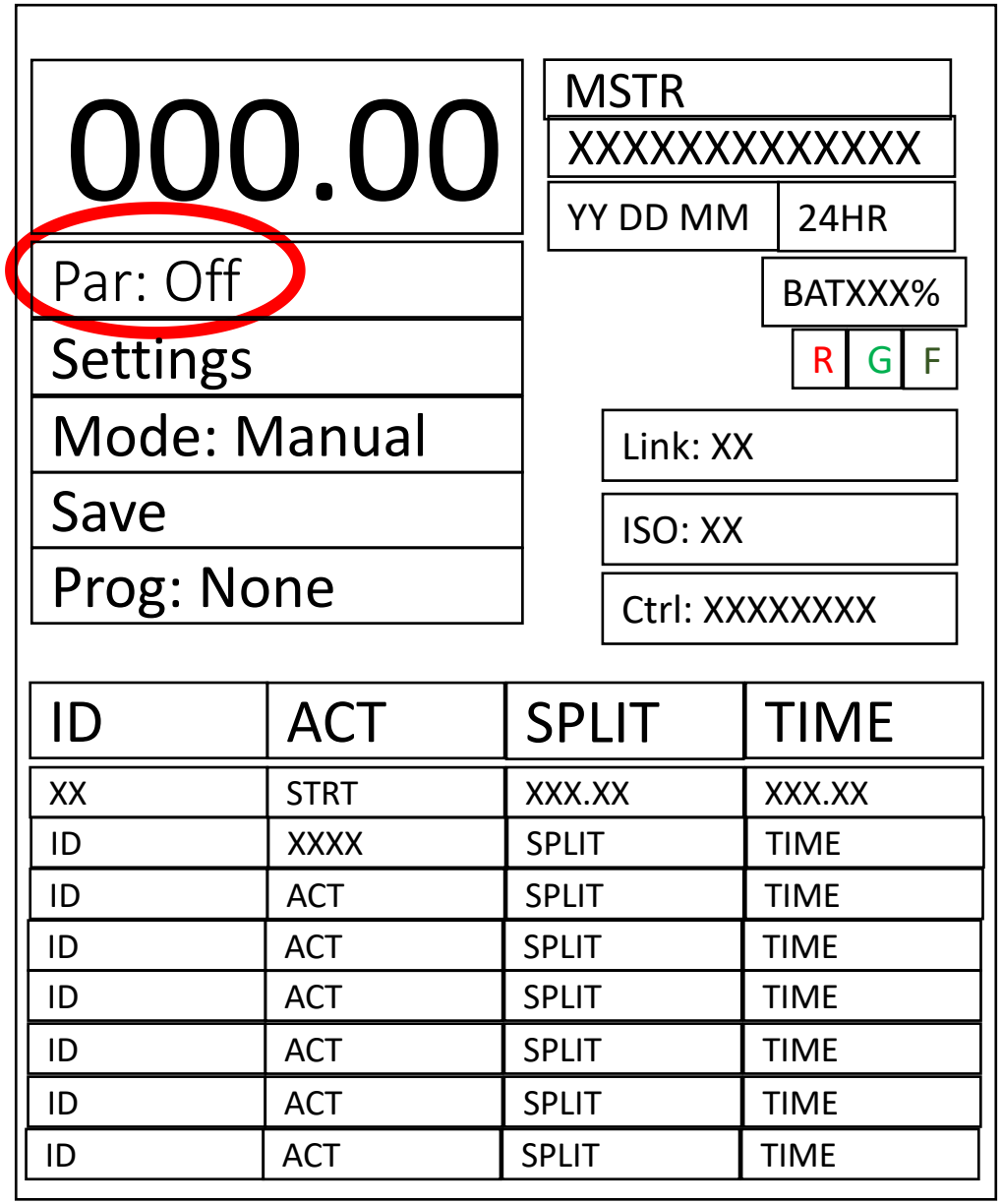
The NURO Device



Indicators showing the status of the three laser modules. If the letter is displayed, the laser is on. If the letter is not displayed, the laser is off (normal for start-up). The letter should blink if the “on” mode of the laser is set to blinking.

The following pages discuss the settings on the left side of the main display and adjusting them

NURO Main Display



A par set, within a firearms training context, is a defined time period for specific skill performance. For example, a parset time for drawing a weapon from the holster and firing two rounds might be 1.5 seconds.

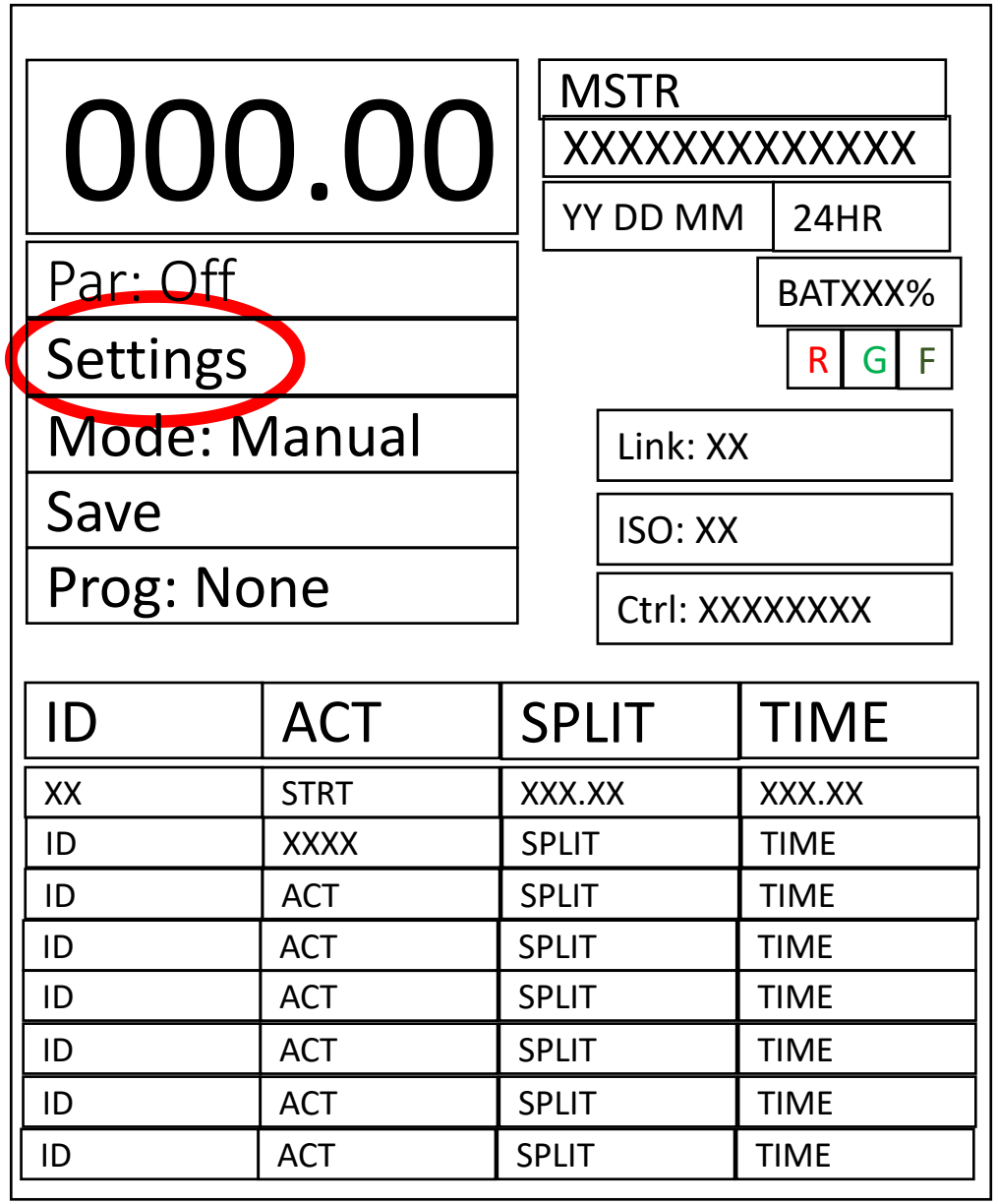
In modern training, this is typically measured based on a shooter's response time from an audible "beep" produced by a shot timer. We want to leave this same basic functionality and training capability in the NURO™ device. Therefore, the device will have a par "mode". We also want the user to be able to manually define the stimulus used for the par, along with other parameters such as duration and start time after initiation etc. (this will all occur in the settings menus).

Par sets are generally used for some very specific training reasons, mostly (though not always) in non-live-fire settings so this will often simply display "off". If the device reads IS set in par mode, this will display the stimulus (only one stimulus applies to the par set) and the time period defined by the user.

Par: X XXX.XX For example, the following would indicate a 2.5 sec par time being set for the buzzer (audible). If nothing is programmed X 000.00 work fine as default place holders.

Par: A 002.50

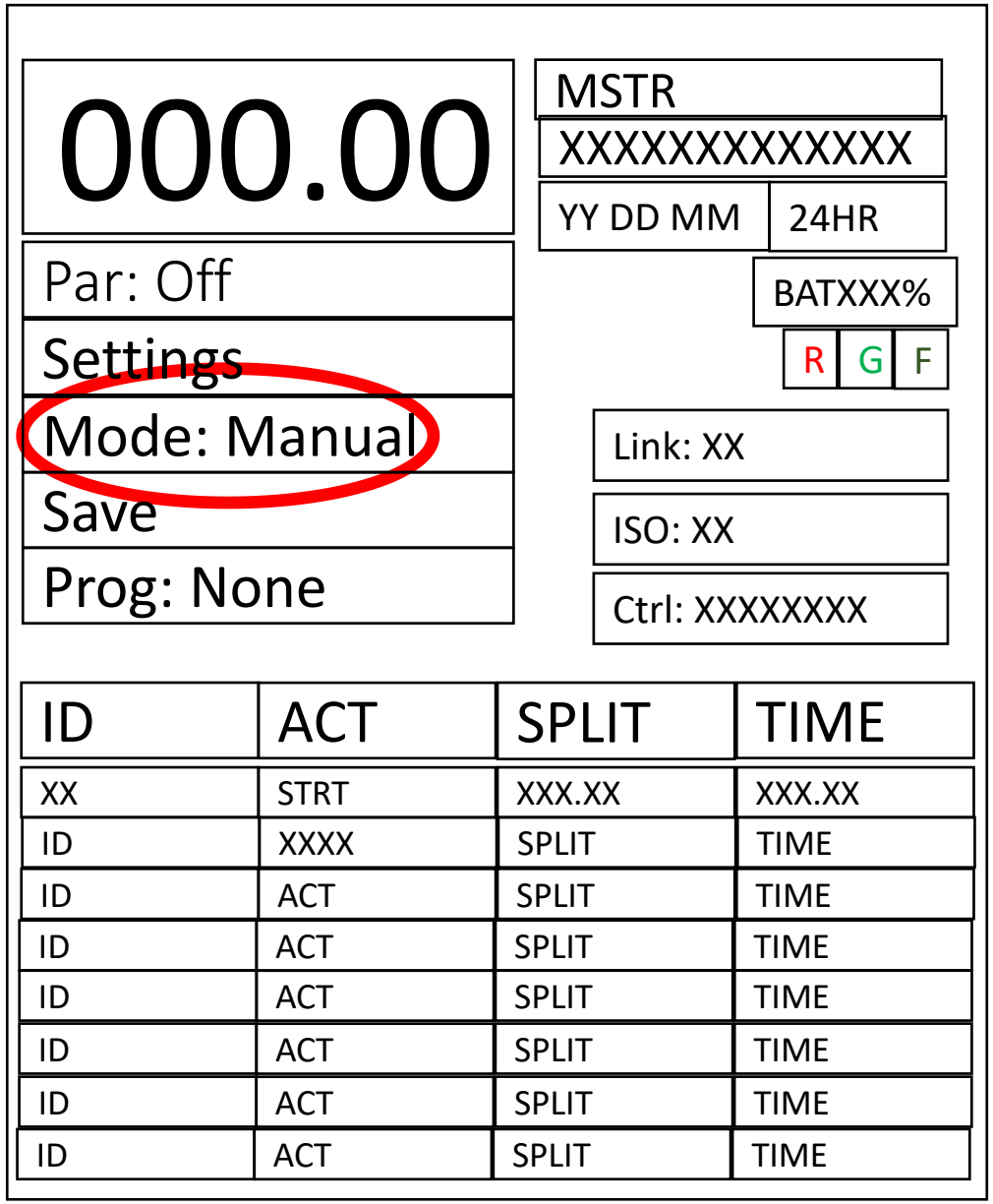
NURO Main Display



Settings menu will take the user away from this main display page to the settings main menu page. Using the arrow keys to highlight the word “Settings” and then press the “enter” button will enter the Settings menu.

[Settings Menu]

NURO Main Display



Mode The purpose of the mode option is to allow the user to quickly switch the operating mode of the device from the main screen, without going off into the settings menu.

The options here for the MVP are below. There will be other modes, to include scenario mode (downloadable commercial content), that will be developed post MVP.

Manual – this mode involves the device being intended to be used where all inputs/outputs happen through manual manipulation of the device buttons. If multiple devices are linked (ie. master device and sub device(s)) the sub device(s) output information will be fed to the master device for display.

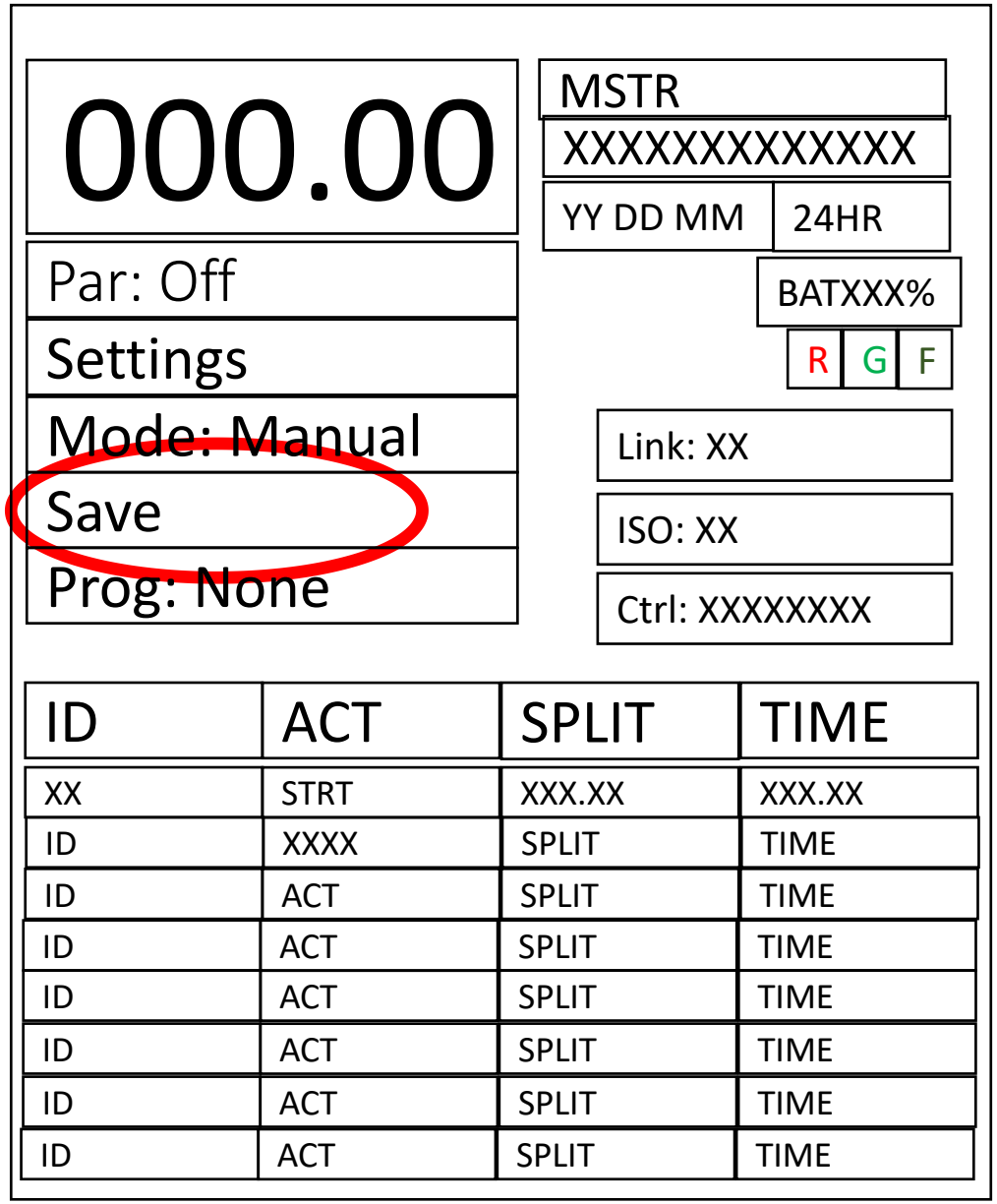
Parset – this mode places the device in a very simple operating mode, as described on page 8. When the "initiate/audio" button is pressed, the device will run the parset program that has been programmed manually into the device through the settings menu. When this mode is set, the par stimulus and defined time period will be displayed in "par".

Drill – this mode (formerly called "geezer" mode) consists of set programs (output patterns) that are "hardwired" into the device (just not editable by the user, they don't have to be anything special from a programming or database standpoint). This is one of the simplest operational modes where there is a one button interface with the device. When the I/A button is pushed, the device will run one of the defined output patterns, randomly selected.

Custom – this allows the user to run custom, user generated, scenarios/programs

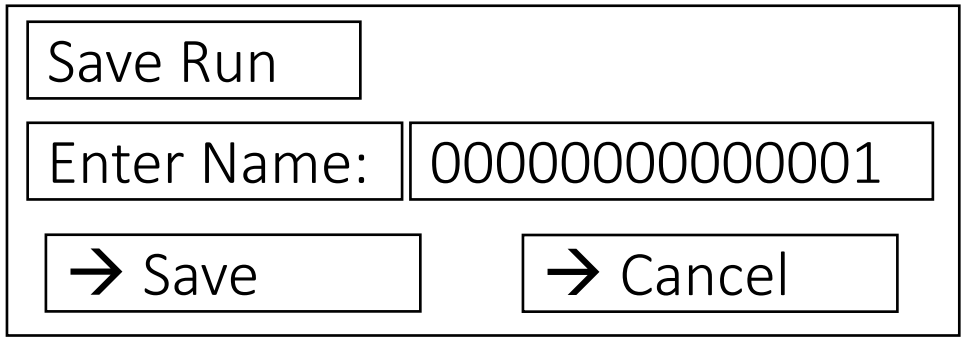
Default is Drill.

NURO Main Display

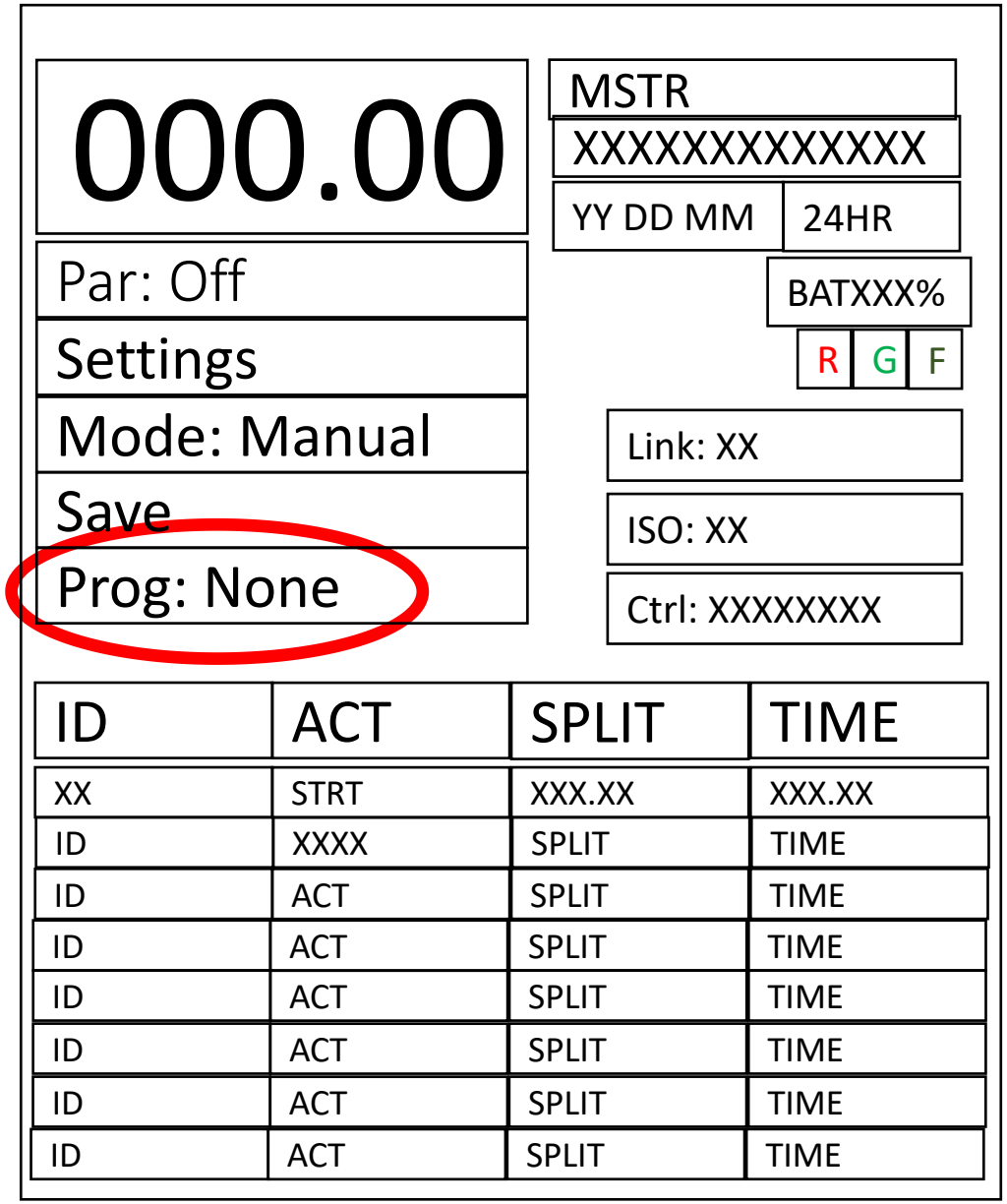


Save allows the user to save and name the data from the latest “run” in the device’s memory.

Hitting save opens a pop-up which allows the user to name the saved run if desired. Alternatively this could be a new page. Once the run is saved (or cancelled), the user is returned to the main screen.



NURO Main Display



"Prog:" stands for "program". This will display a string identifying the drill, custom program, or (in post MVP versions) the downloaded scenario that is being (or has been) run. Alternatively this may display the type of program, program lists, or DRILL and RNDM (random) to indicate that the drills are run in a random order.

Selecting this will open a menu of available drills, custom programs, or scenarios, depending on the mode in use. The menu will allow for configuration of the drill/program run and selection of the drill/program/list.

When in Manual mode, "None" is displayed because manual mode does not involve the use of pre-programmed events.

Default: DRILL RNDM
Other Examples: LIST0000001 RNDM
LIST0000001 SEQ (Sequential run of a list)
00000001 – identification of a specific program selected

Clicking / selecting this tab opens a menu

The menu contains
1) A populated "Access Table" of up to 12? – More?? either lists or custom programs – So you can have a queue of stuff to run through fast without going into multiple layers of menu

2)Ability to select either a program or list to run and define whether or not it's going to run (in the case of lists) sequentially or in random order from within the list or, alternatively, Drill Mode

If the user tries to program a list of scenarios, one of which contains more devices than are linked, the user will be prompted with a warning and an option to continue without all devices or abort.

Main Display

000.00	MSTR	
	XXXXXXXXXXXXX	
	YY DD MM	24HR
		BATXXX%
		R G F
Par: Off	Link: XX	
Settings	ISO: XX	
Mode: Manual	Ctrl: XXXXXXXX	
Save		
Prog: None		

ID	ACT	SPLIT	TIME
XX	STRT	XXX.XX	XXX.XX
ID	XXXX	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME

Drill Mode

Manage Programs & Lists

<< Main Screen

Drill List

- Drill 01
- Drill 02
- Drill 03
- Drill 04
- Drill 05

Select How Drills Run

Run Drills Random

Run Drills in Sequence

Select Single Drills

Main Display

000.00	MSTR
	XXXXXXXXXXXXX
	YY DD MM | 24HR
	BATXXX%
	R G F
Par: Off	Link: XX
Settings	ISO: XX
Mode: Manual	Ctrl: XXXXXXXX
Save	
Prog: None	

ID	ACT	SPLIT	TIME
XX	STRT	XXX.XX	XXX.XX
ID	XXXX	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME

Custom Mode

Manage Programs & Lists

<< Main Screen

Quick Access Lists/Programs

LST000000001

LST000000002

CSTM0000001

CSTM0000010

LST000000005

Custom Programs

Custom Lists

Select How List Runs

Random

Run in Sequence

Main Display

000.00	MSTR
	XXXXXXXXXXXXX
	YY DD MM | 24HR
	BATXXX%
	R G F
Par: Off	Link: XX
Settings	ISO: XX
Mode: Manual	Ctrl: XXXXXXXX
Save	
Prog: None	

ID	ACT	SPLIT	TIME
XX	STRT	XXX.XX	XXX.XX
ID	XXXX	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME

Custom Lists

<< Manage Programs and Lists

Select List

Add to Quick Access (12 max)

LST000000001	1
LST000000002	
LST000000003	3
LST000000004	
LST000000005	2
LST000000006	
BobsTrng_Fri	11

The NURO Device

- User care of NURO

- There is no user maintenance or service. Return NURO to Building Shooters for any repairs or service. Failure to comply with these precautions will void any warranty and potentially expose the user to harmful laser radiation.

- Although NURO is built to be used in a rugged outdoor environment it does contain some physically delicate electronic components and should be handled with the same care one would typically handle their cell phone: avoid physical impacts or stress to the display screen and case in general

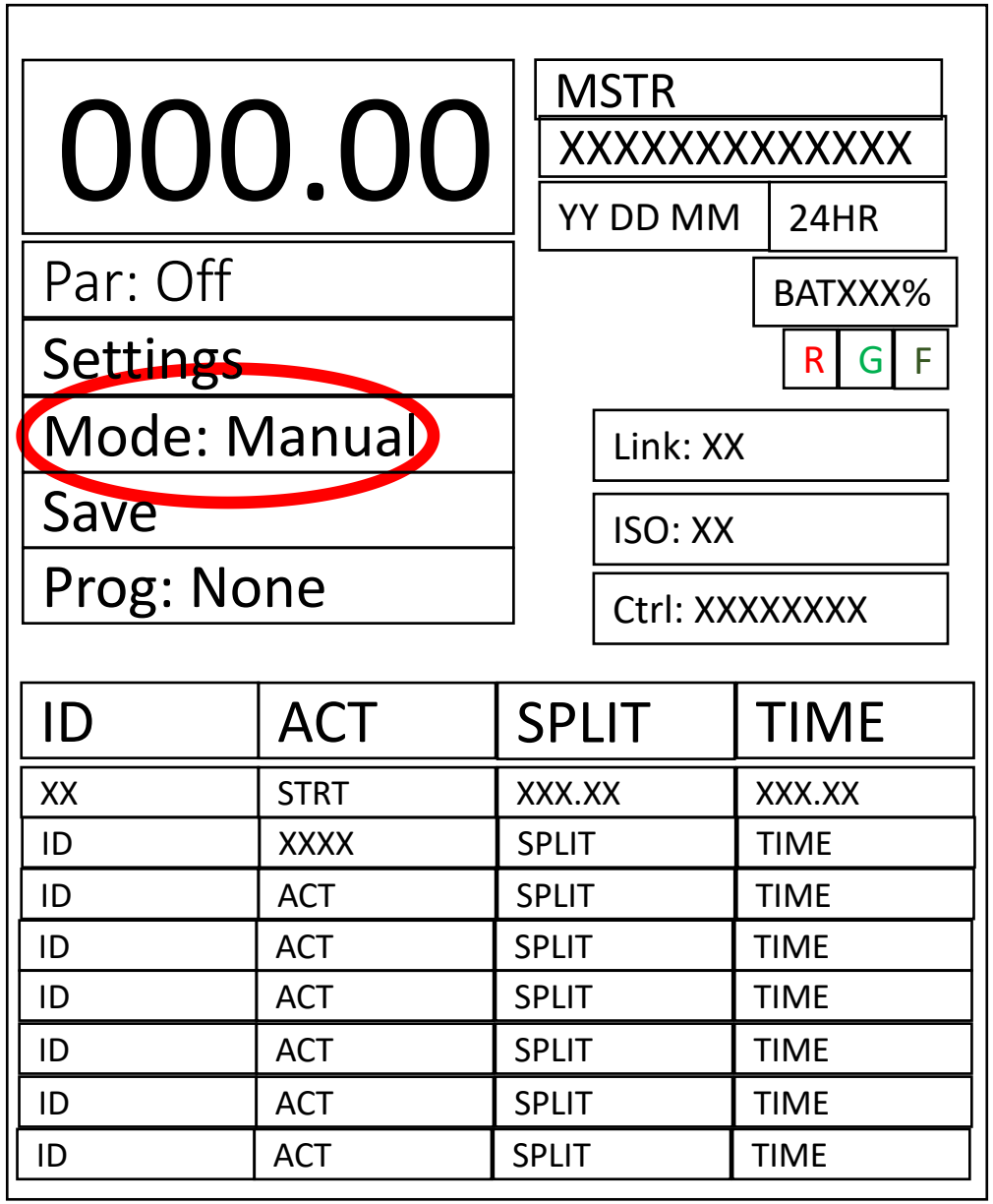
- avoid exposing NURO to excessive dust, dirt, harsh chemicals, or submersion in liquids
- wipe dust or other residue from NURO with a clean lint-free cloth damp cloth or mild cleaner
- recommend storage of NURO without batteries installed to prolong NURO and battery life

- Updating device firmware

- [Process for OTA update here]

NURO Modes of operation

Main Display



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000.00	MSTR		
	XXXXXXXXXXXXX		
	YY DD MM	24HR	
		BATXXX%	
		R G F	
Par: Off	Link: XX		
Settings			
Mode: Manual	ISO: XX		
Save			
Prog: None	Ctrl: XXXXXXXX		

ID	ACT	SPLIT	TIME
XX	STRT	XXX.XX	XXX.XX
ID	XXXX	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME

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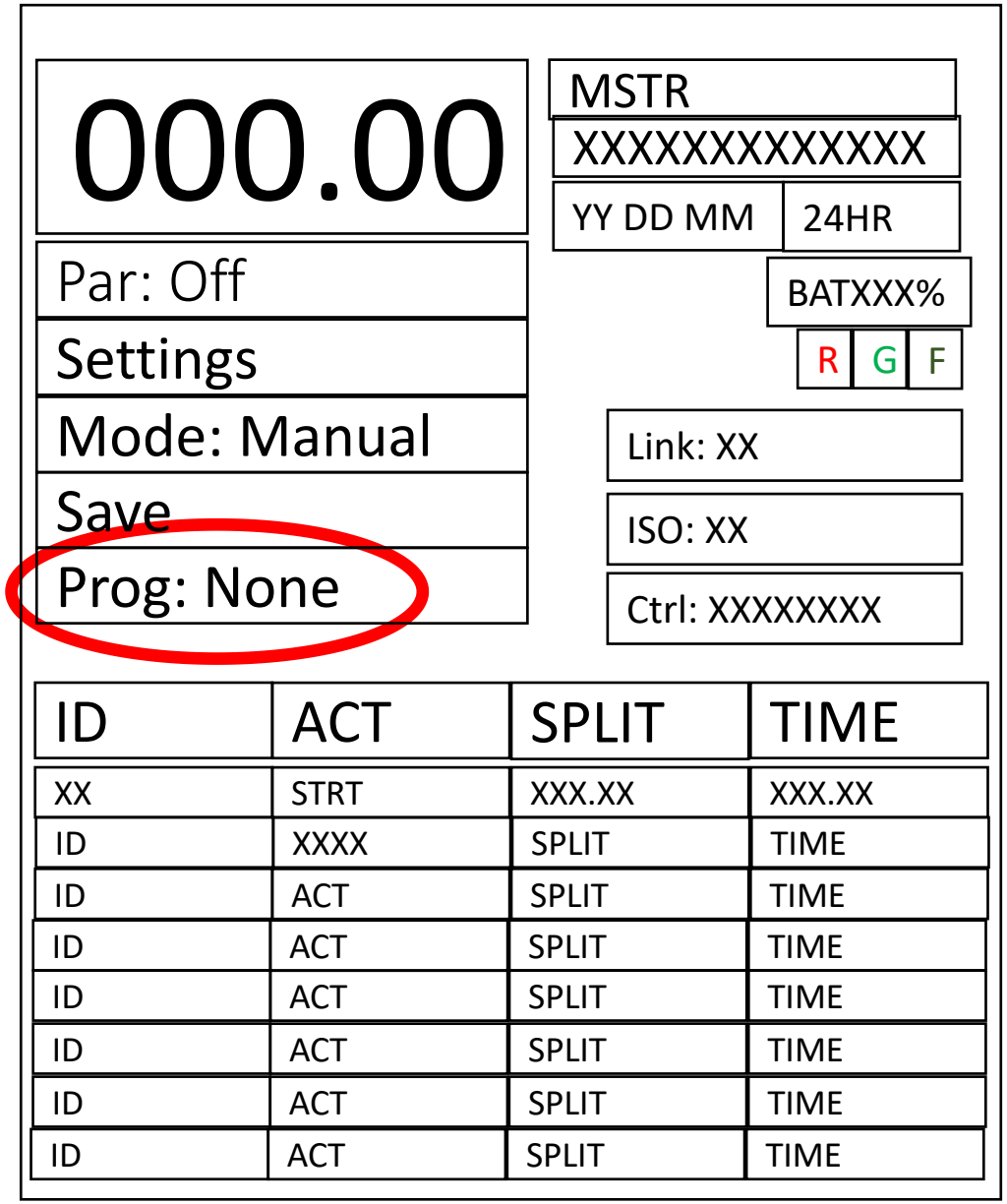
Hitting save opens a pop-up which allows the user to name the saved run if desired. Alternatively this could be a new page. Once the run is saved (or cancelled), the user is returned to the main screen.

Save Run		
Enter Name:	00000000000001	
→ Save		→ Cancel

Main Display



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000.00	MSTR	
	XXXXXXXXXXXXX	
	YY DD MM	24HR
		BATXXX%
		R G F
Par: Off	Link: XX	
Settings	ISO: XX	
Mode: Manual	Ctrl: XXXXXXXX	
Save		
Prog: None		

ID	ACT	SPLIT	TIME
XX	STRT	XXX.XX	XXX.XX
ID	XXXX	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME

Drill Mode

Manage Programs & Lists

<< Main Screen

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- Drill 03
- Drill 04
- Drill 05

Select How Drills Run

Run Drills Random

Run Drills in Sequence

Select Single Drills

Main Display

000.00	MSTR
	XXXXXXXXXXXXX
	YY DD MM | 24HR
	BATXXX%
	R G F
Par: Off	Link: XX
Settings	ISO: XX
Mode: Manual	Ctrl: XXXXXXXX
Save	
Prog: None	

ID	ACT	SPLIT	TIME
XX	STRT	XXX.XX	XXX.XX
ID	XXXX	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME

Custom Mode

Manage Programs & Lists

<< Main Screen

Quick Access Lists/Programs

LST000000001

LST000000002

CSTM0000001

CSTM0000010

LST000000005

Custom Programs

Custom Lists

Select How List Runs

Random

Run in Sequence

Main Display

000.00	MSTR
	XXXXXXXXXXXXX
	YY DD MM / 24HR
	BATXXX%
	R G F
Par: Off	Link: XX
Settings	ISO: XX
Mode: Manual	Ctrl: XXXXXXXX
Save	
Prog: None	

ID	ACT	SPLIT	TIME
XX	STRT	XXX.XX	XXX.XX
ID	XXXX	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME

Custom Lists

<< Manage Programs and Lists

Select List

Add to Quick Access (12 max)

LST000000001	1
LST000000002	
LST000000003	3
LST000000004	
LST000000005	2
LST000000006	
BobsTrng_Fri	11

Main Display

000.00		MSTR	
		XXXXXXXXXXXXX	
		YY DD MM	24HR
			BATXXX%
			R G F
Par: Off		Link: XX	
Settings		ISO: XX	
Mode: Manual		Ctrl: XXXXXXXX	
Save			
Prog: None			

ID	ACT	SPLIT	TIME
XX	STRT	XXX.XX	XXX.XX
ID	XXXX	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME

New

This identifier should be present if the device has sub devices linked to it in either master mode or repeater mode. It should display the **number** of sub devices that are actively linked.

Main Display

000.00	MSTR	
	XXXXXXXXXXXXX	
	YY DD MM	24HR
		BATXXX%
		R G F
Par: Off		
Settings		
Mode: Manual		
Save		
Prog: None		
	Link: XX	
	ISO: XX	
	Ctrl: XXXXXXXX	

ID	ACT	SPLIT	TIME
XX	STRT	XXX.XX	XXX.XX
ID	XXXX	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME

New

This identifier should be present if the device has ISO tools linked to it. (The ISO tool is the “wrist watch” device that will isolate out an individual shooter’s performance in a group range setting. It should display the number of ISO devices that are actively linked.

Note that there may be more than one ISO device linked to a single master (or repeater) NUROTM. This will allow individual ISOs to be mounted on individual weapon systems, to be worn on each wrist (for one handed shooting), or to be worn by the next shooter in line during a qualification setting (this will reduce the time requirement to run qualifications if the next iteration can be set up and ready to go). In the event multiple lines of shooters are wearing ISO tools, this is one of the reasons for the dual sensors in the ISO tool – to reduce the occurrence of false positives.

Main Display

000.00	MSTR		
	XXXXXXXXXXXXX		
	YY DD MM	24HR	
		BATXXX%	
		R G F	
Par: Off			
Settings			
Mode: Manual	Link: XX		
Save	ISO: XX		
Prog: None	Ctrl: XXXXXXXX		

ID	ACT	SPLIT	TIME
XX	STRT	XXX.XX	XXX.XX
ID	XXXX	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME

New

This identifier should be present if the device is linked to either a Master device, or to a Controlling device (tablet, phone, etc) while in the Repeater configuration. This identifies the device that is controlling (or receiving data from – in manual mode) either the Sub or the Repeater.

Main Display

000.00	MSTR
	XXXXXXXXXXXXX
	YY DD MM | 24HR
	BATXXX%
	R G F
Par: Off	
Settings	
Mode: Manual	Link: XX
Save	ISO: XX
Prog: None	Ctrl: XXXXXXXX

ID	ACT	SPLIT	TIME
XX	STRT	XXX.XX	XXX.XX
ID	XXXX	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME

This string identifies the device from which the output is reported.

This entire table will be disabled in “Sub” configuration. In either Master or Repeater configuration outputs from this device will read MM (master).

Possible values are:

MM –

- Outputs from device in Master configuration
- Outputs from device in Repeater configuration
- Inputs to device (shots) from internal microphone

XX (ie. 01 – 99)

- Outputs from relevant device (linked devices 01-99)

LX (ie.1-8) *New*

- Inputs (shots) from linked ISO Tools (linked wrist watches 1-8)

Main Display

000.00	MSTR
	XXXXXXXXXXXXX
	YY DD MM | 24HR
	BATXXX%
	R G F
Par: Off	Link: XX
Settings	ISO: XX
Mode: Manual	Ctrl: XXXXXXXX
Save	
Prog: None	

ID	ACT	SPLIT	TIME
XX	STRT	XXX.XX	XXX.XX
ID	XXXX	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME

Act – This is the actual event being “measured” or displayed in the timeline.

String Options

~~BUZZ~~ *New* Eliminate “BUZZ”

STRT *New* - Initiation sequence begins (customizable but by default is a .5 sec audio output from the Master/Repeater device).

GON – “Green” Laser On

G0.25 – “Green” Laser blink 0.25s

G0.75 – “Green” Laser blink 0.75s

GOFF – “Green” Laser Off

RON – “Red” Laser On

R0.25 – “Red” Laser blink 0.25s

R0.75 – “Red” Laser blink 0.75s

ROFF – “Red” Laser Off

FON – “Forrest” Laser On

F0.25 – “Forrest” Laser blink 0.25s

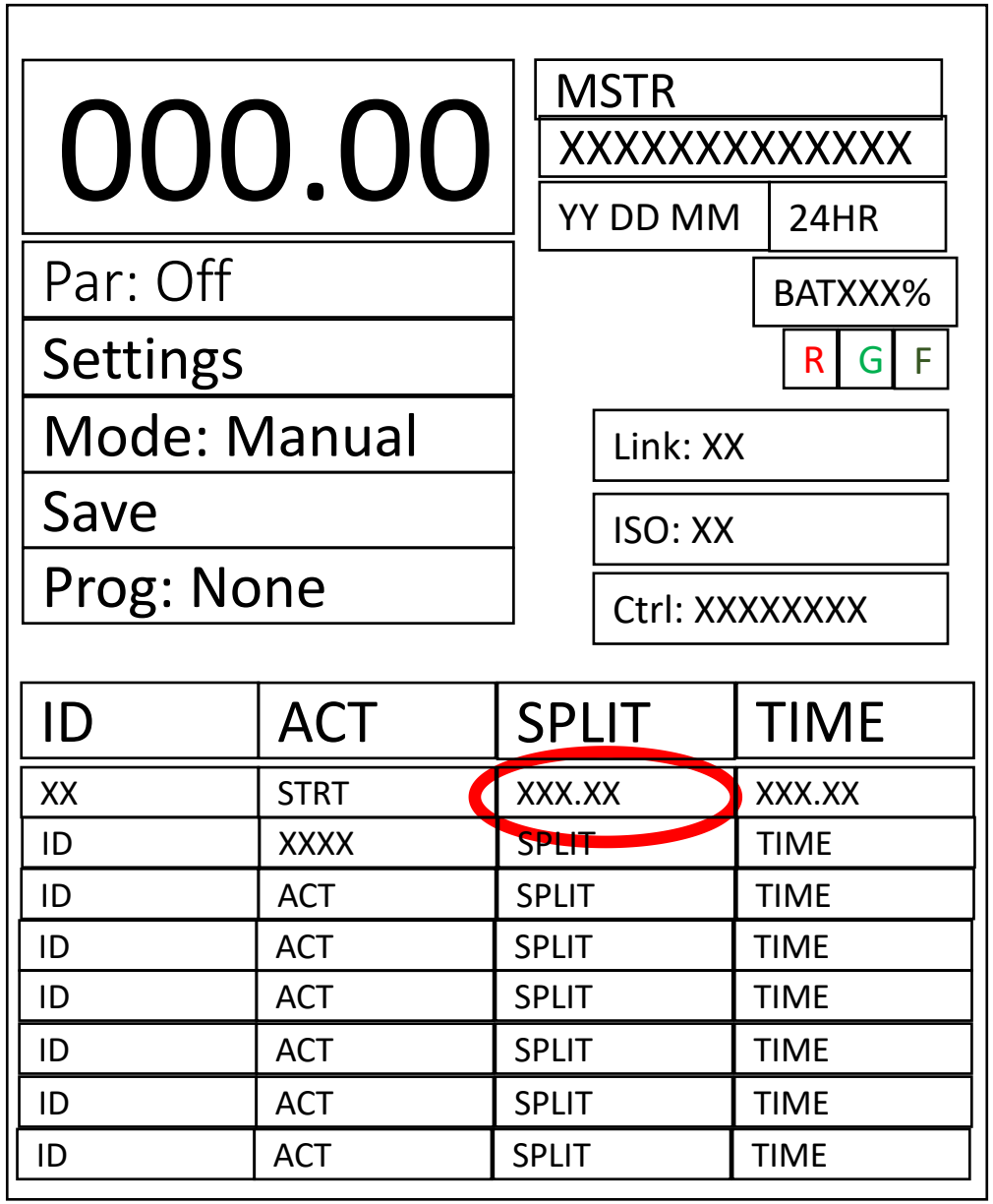
F0.75 – “Forrest” Laser blink 0.75s

FOFF – “Forrest” Laser Off

AON – Audio (buzzer) On *New*

AOFF – Audio (buzzer) Off *New*

Main Display



Split – Time elapsed between the previous event in the timeline and this listed event.

XXX.XX (ie. 000.00 seconds to 999.99 seconds).

STRT (initiation) time is always 000.00 and begins at the beginning of the initiation sequence.

If time goes over 999.99 seconds, time should keep running but begin counting/displaying again at 000.00. So in that event the split would be manually calculated at 999.99 + display time from the screen, or actual time pulled from software tool. Note that this is unlikely with envisioned usage for initial versions of firmware.

Probably best to calculate this split time locally based on the difference on the timeline between the events actually being displayed rather than all events in the timeline. The reason for this is that it will allow us to make the device run scenarios easier to "grade" in the field by only displaying the identified determinative stimuli in the timeline that is displayed on the device. This is something that will be set in the programming of custom scenarios (for multi-device or custom programmed events) or will be set locally in the settings menu for manual mode of operation.

Main Display

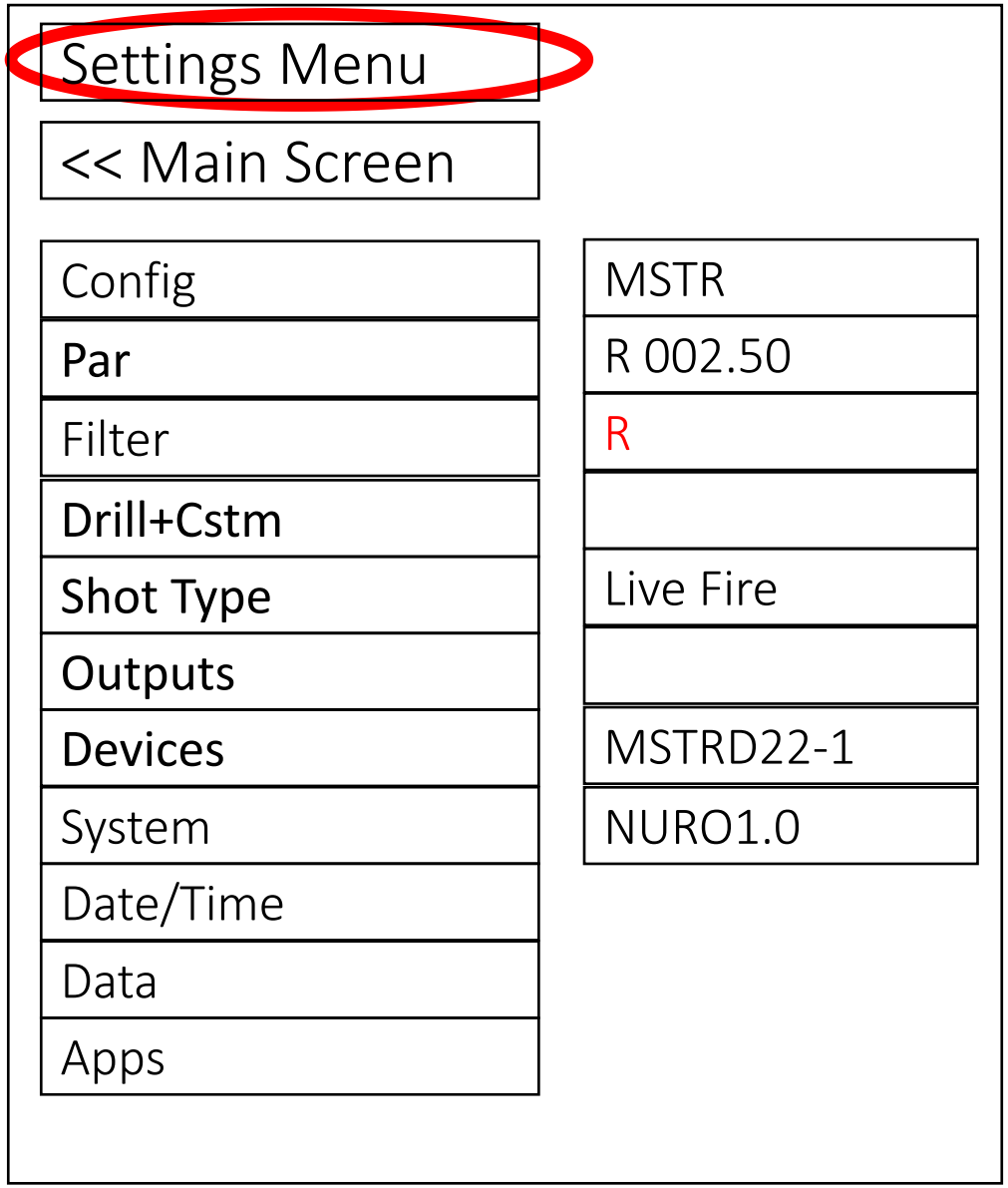
000.00	MSTR
	XXXXXXXXXXXXX
	YY DD MM | 24HR
	BATXXX%
	R G F
Par: Off	Link: XX
Settings	ISO: XX
Mode: Manual	Ctrl: XXXXXXXX
Save	
Prog: None	

ID	ACT	SPLIT	TIME
XX	STRT	XXX.XX	XXX.XX
ID	XXXX	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME

Time – Actual time of event within the timeline. STRT event is always zero and is measured from the beginning of the start event.

XXX.XX (ie. 000.00 seconds to 999.99 seconds). If time goes over 999.99 seconds, time should keep running but begin counting/displaying again at 000.00. So future events would be manually logged at 999.99 + display time from the screen, or actual time pulled from software tool. Note that this is unlikely with envisioned usage for initial versions of firmware.

Main Display > Settings



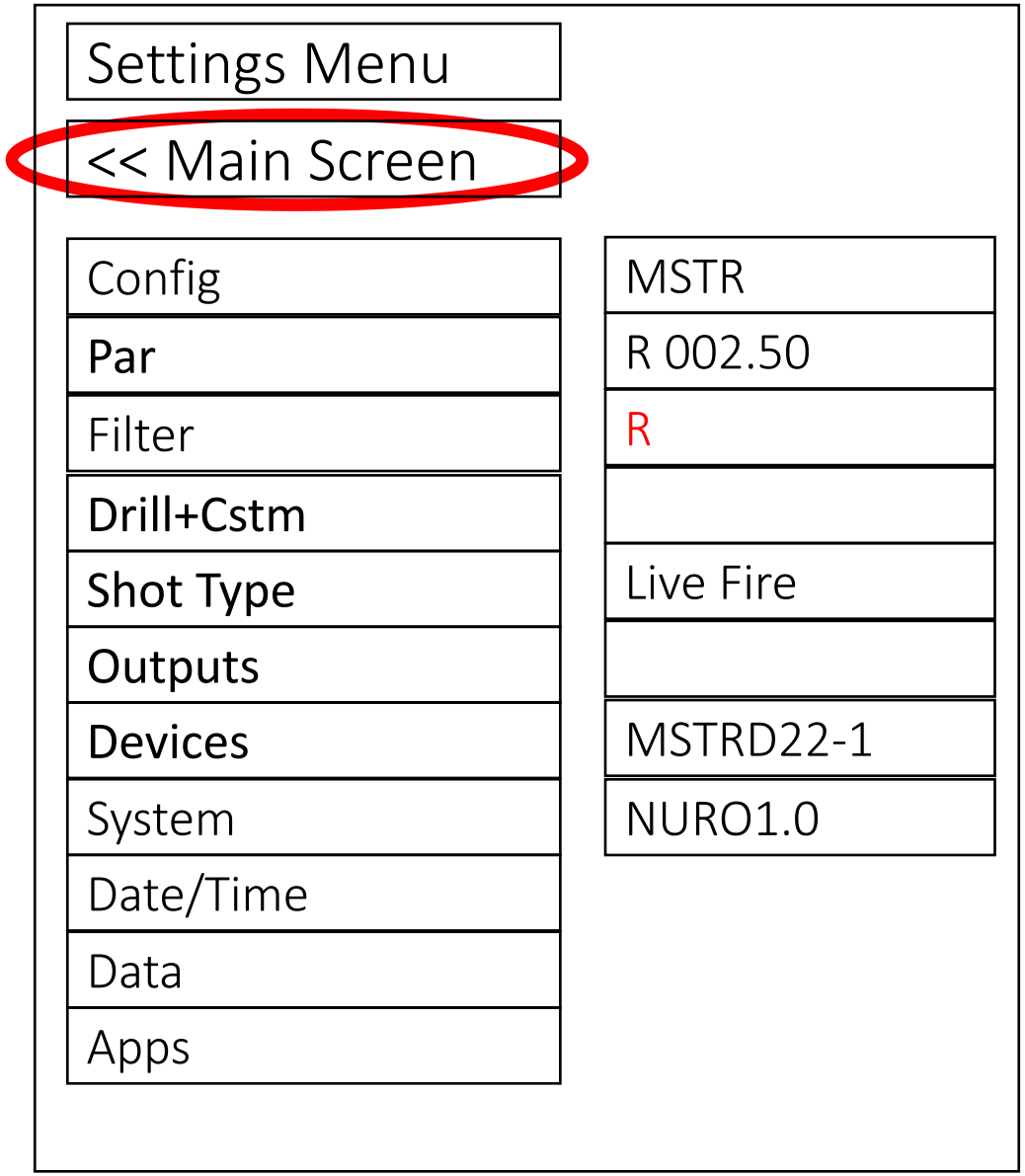
Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Just a test header to the screen.

Blinking

Manage Drills

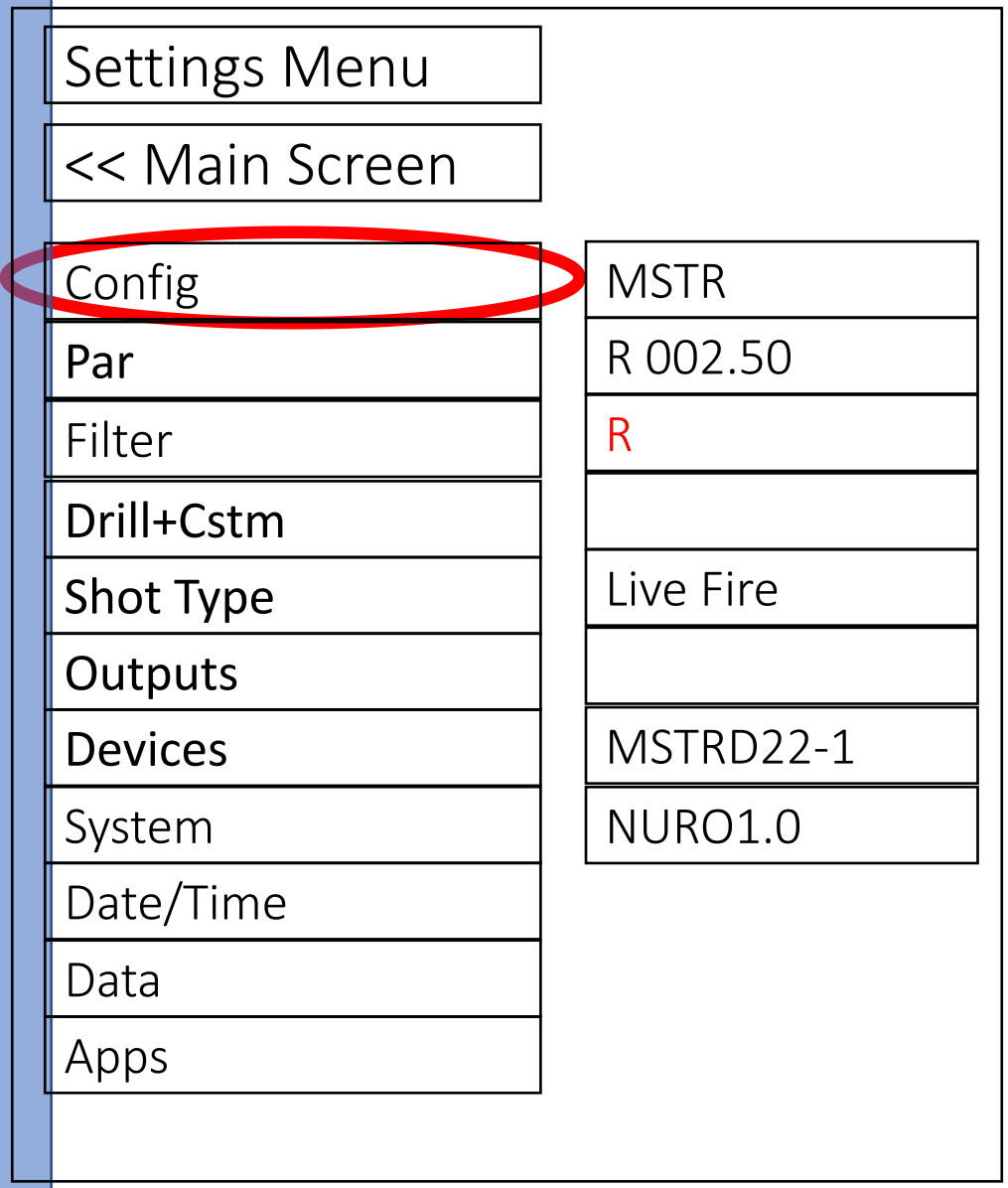
Main Display > Settings



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Allows the user to manually navigate back to the main screen

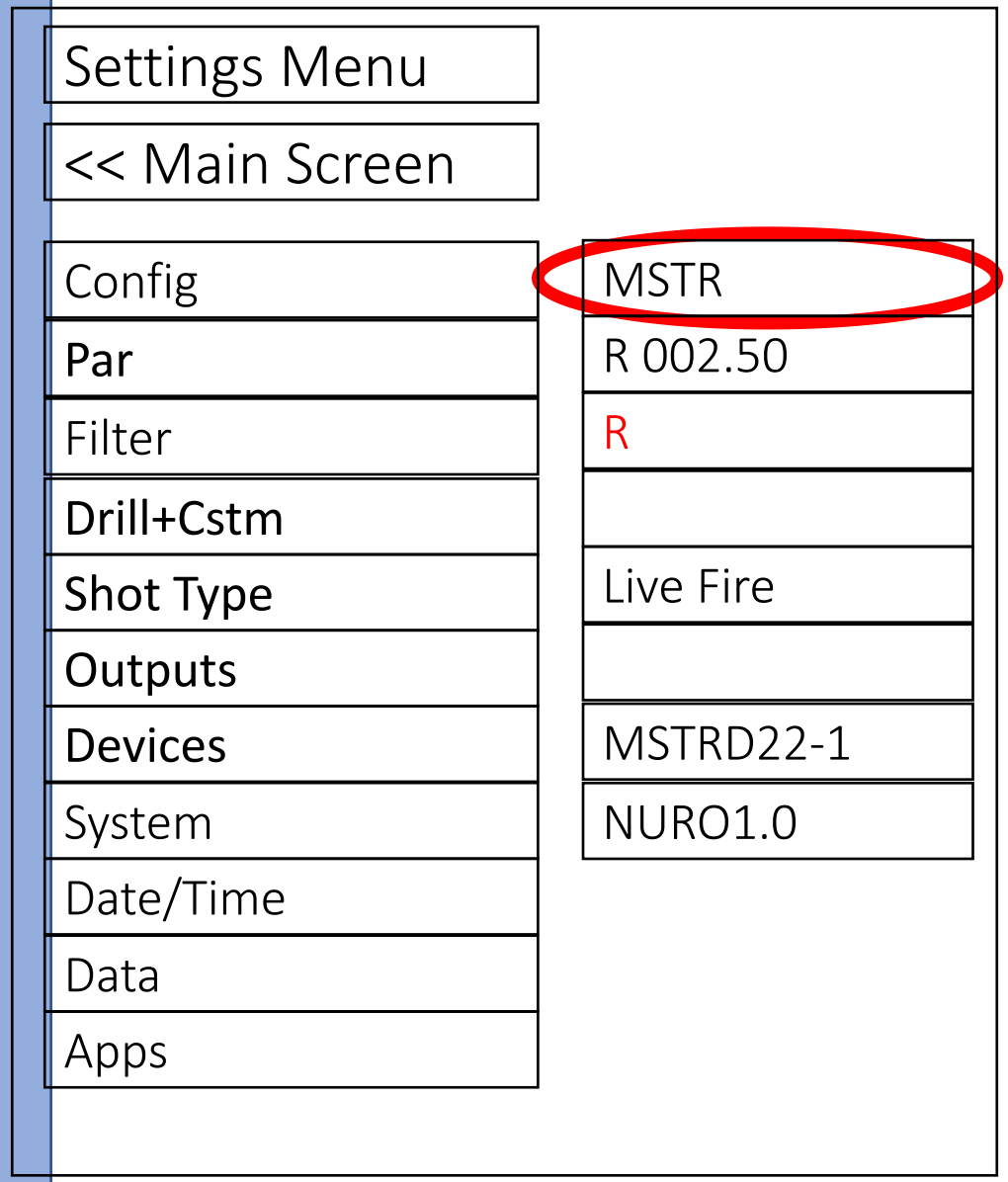
Main Display > Settings



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Allows the user to enter the configuration menu

Main Display > Settings



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Displays the current configuration setting.

Options are

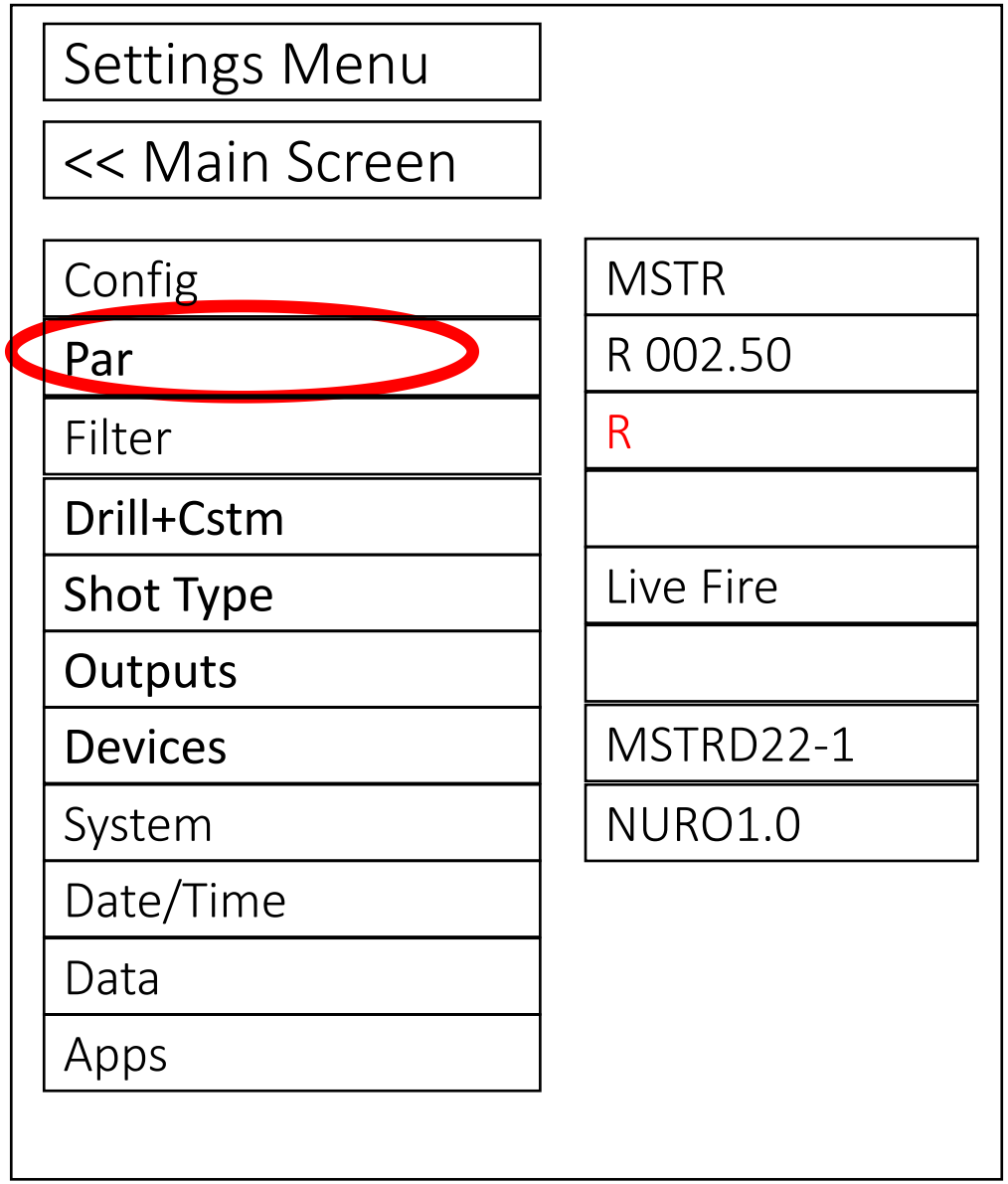
MSTR

RPTR

SUB

Default is **MSTR**

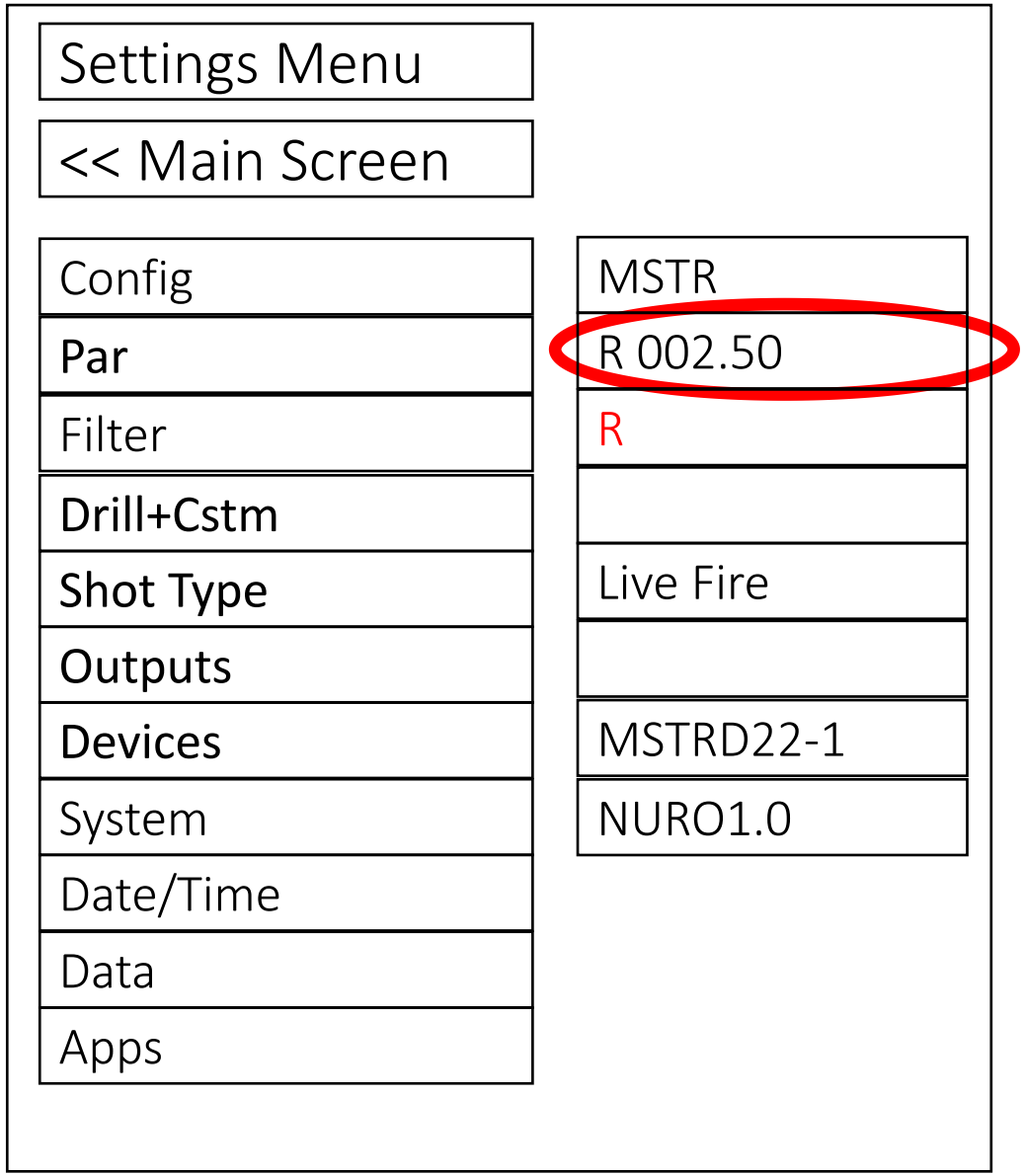
Main Display > Settings



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Allows the user to enter the par set menu

Main Display > Settings



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Displays the current par set.

X XXX.XX is the naming convention

First character stands for the device output used for the par and can be

A – audio

R – Red

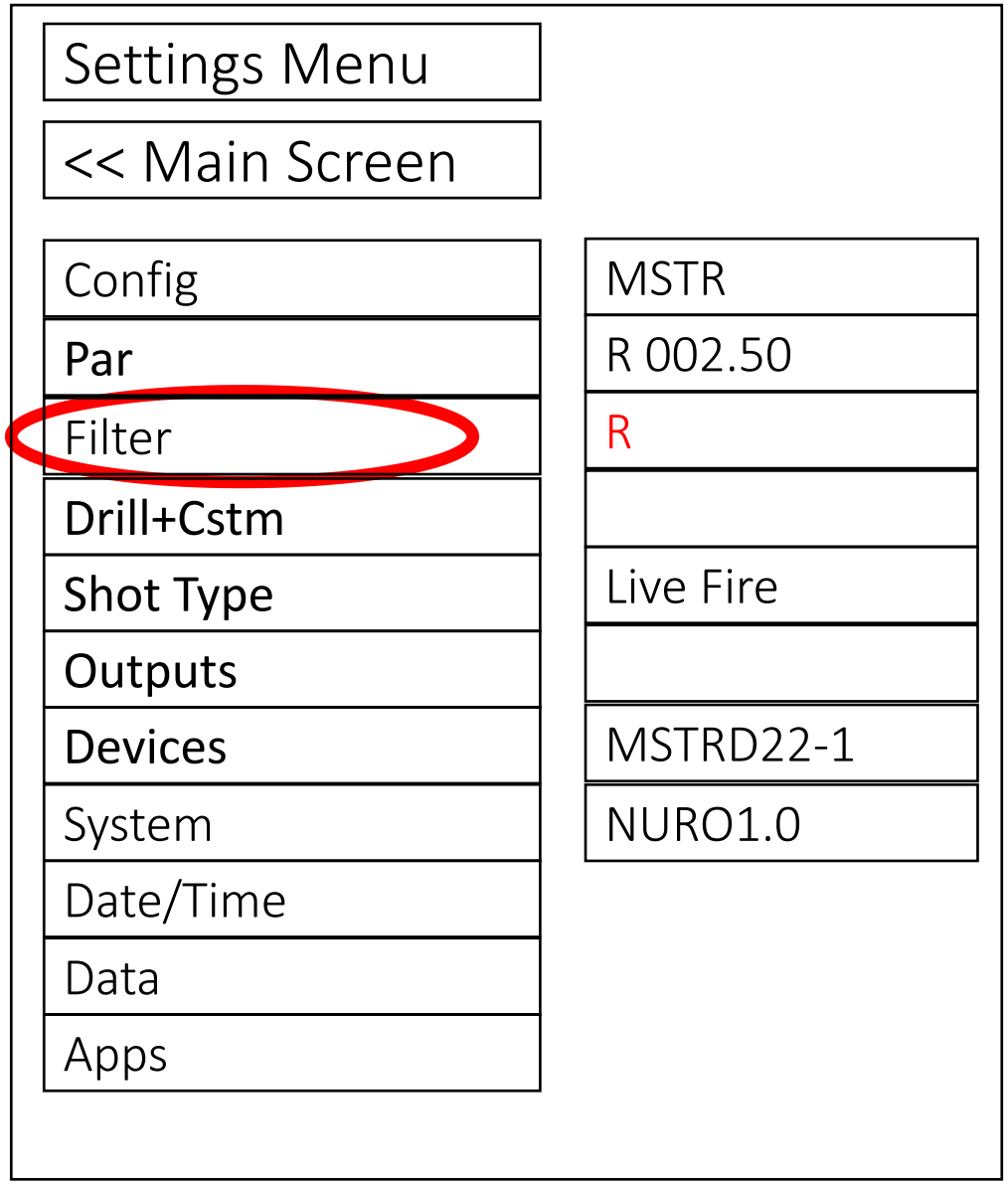
G- Green

F – Forrest

The rest of the numbers are the time set for the par.

Default is no par set. (ie. _ 000.00)

Main Display > Settings



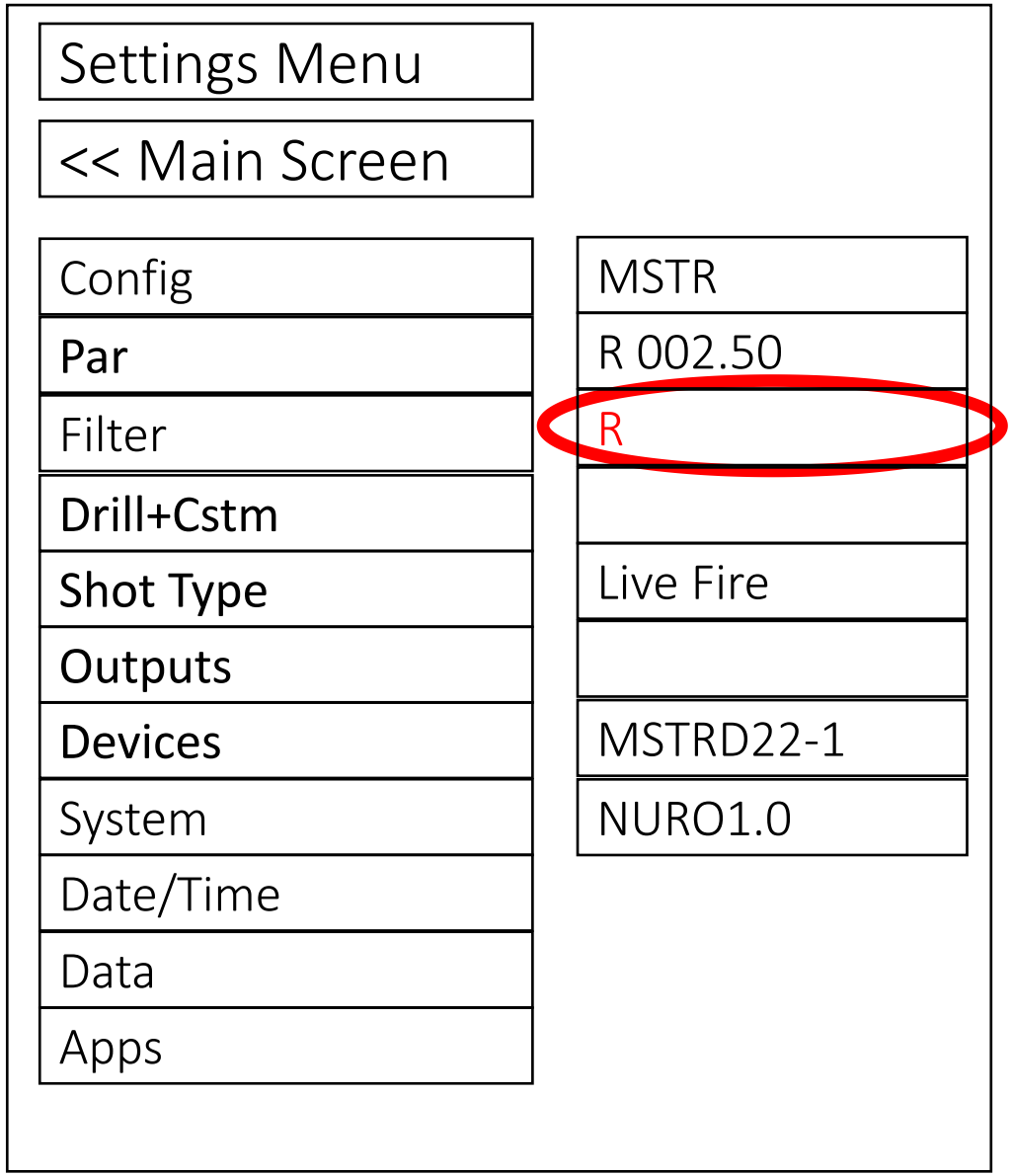
Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

New

Allows the user to enter the menu to adjust what device output data is *displayed* on the timeline presented on the main screen. All data is still collected and recorded (and potentially saved – if the user saves it) as part of each run.

This allows the user to make the "grading" much easier by only displaying the "determinative stimulus" or the stimulus that indicates deadly force application is required. This typically will be the most important element from which to measure response time, both for starting and stopping use of force (starting and stopping to shoot).

Main Display > Settings



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

New

Displays the device current display configuration

Values displayed here is either

X X X X

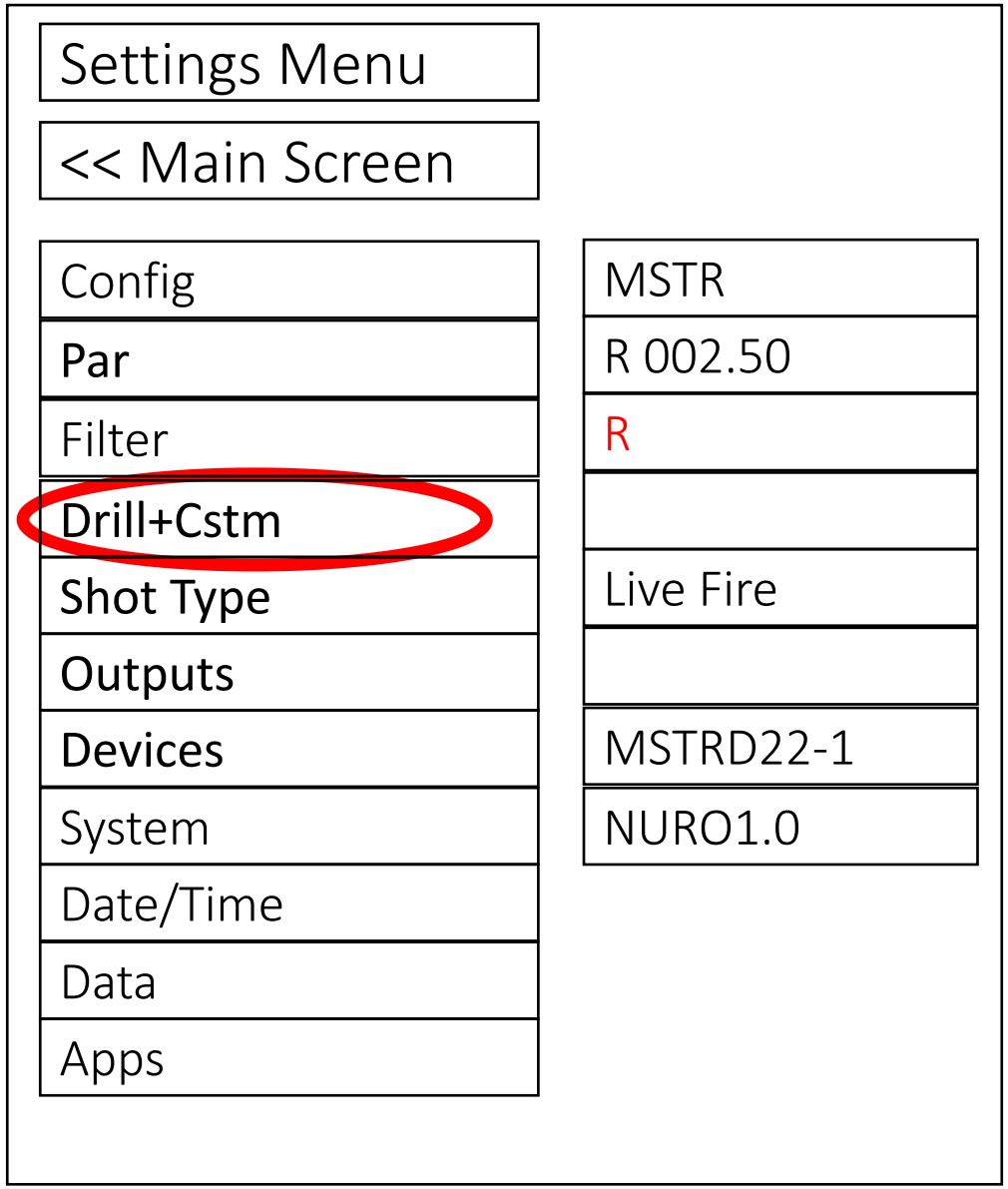
MULTIPLE

Values for each character can be A R G F for Audio, Red, Green and Forrest – representing the device outputs. The value(s) that is being displayed represent the device outputs that will be displayed in the main timeline.

If multiple projection devices are linked together the value here is MULTIPLE. This means the user will have to go into the menu to see the settings.

Default value is all device outputs being displayed.

Main Display > Settings

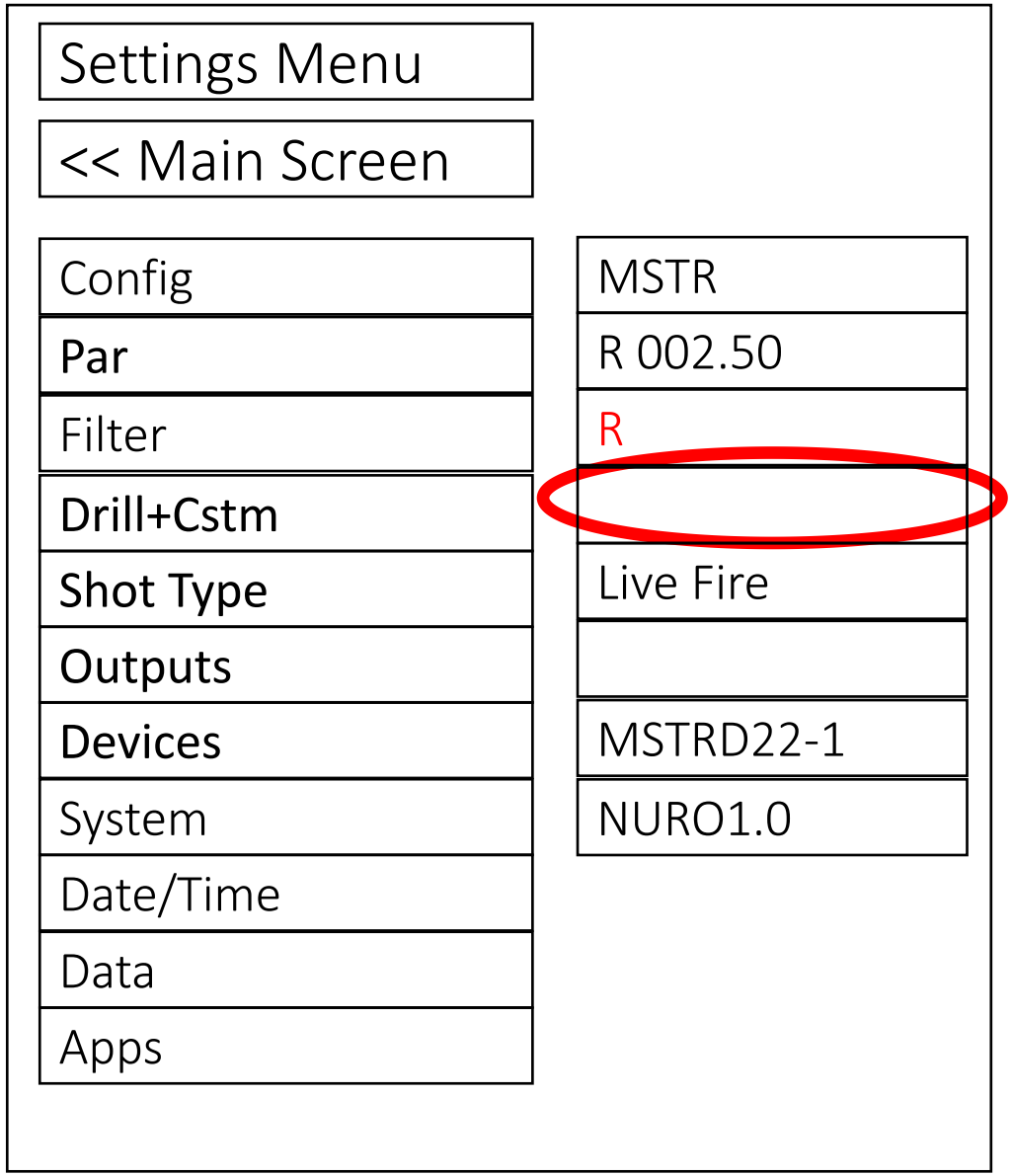


Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Allows the user to view the standard drills and manage how they are run (customize the initiation and end sequences).

Allows the user to enter the programming menu, to build their own customized programmed scenarios.

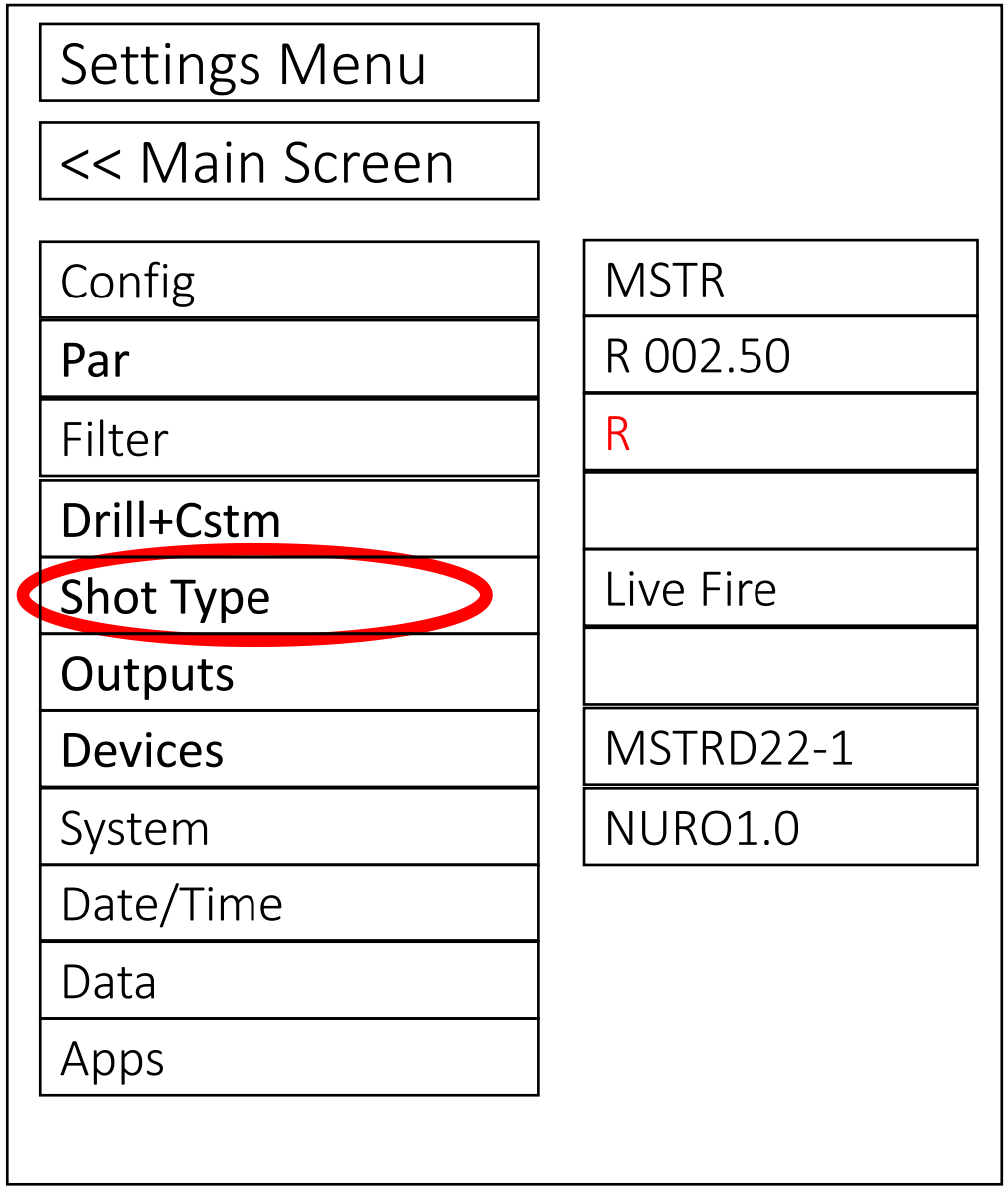
Main Display > Settings



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

No value to display.

Main Display > Settings



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Allows the user to enter the menu where they can adjust shot type and sensitivity.

The device is intended to be functional with both real firearms and with simulated weapons such as simunition, UTM, and airsoft. However, the sound and recoil (using the ISO devices) are very different between these different options, so determining whether a shot occurred or not will probably require different processing algorithms and some functions may be limited, or reliability may be reduced, when using some simulated weapons.

Functionality with simunition, airsoft, and UTM are not intended to be a component of the MVP firmware product.

However, the ability to adjust shot sensitivity for live fire and the ability to adjust dead time for live fire is important for the MVP, because these impact live fire functionality.

Main Display > Settings

Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Displays the current device setting. Values are anticipated to be:

Live Fire

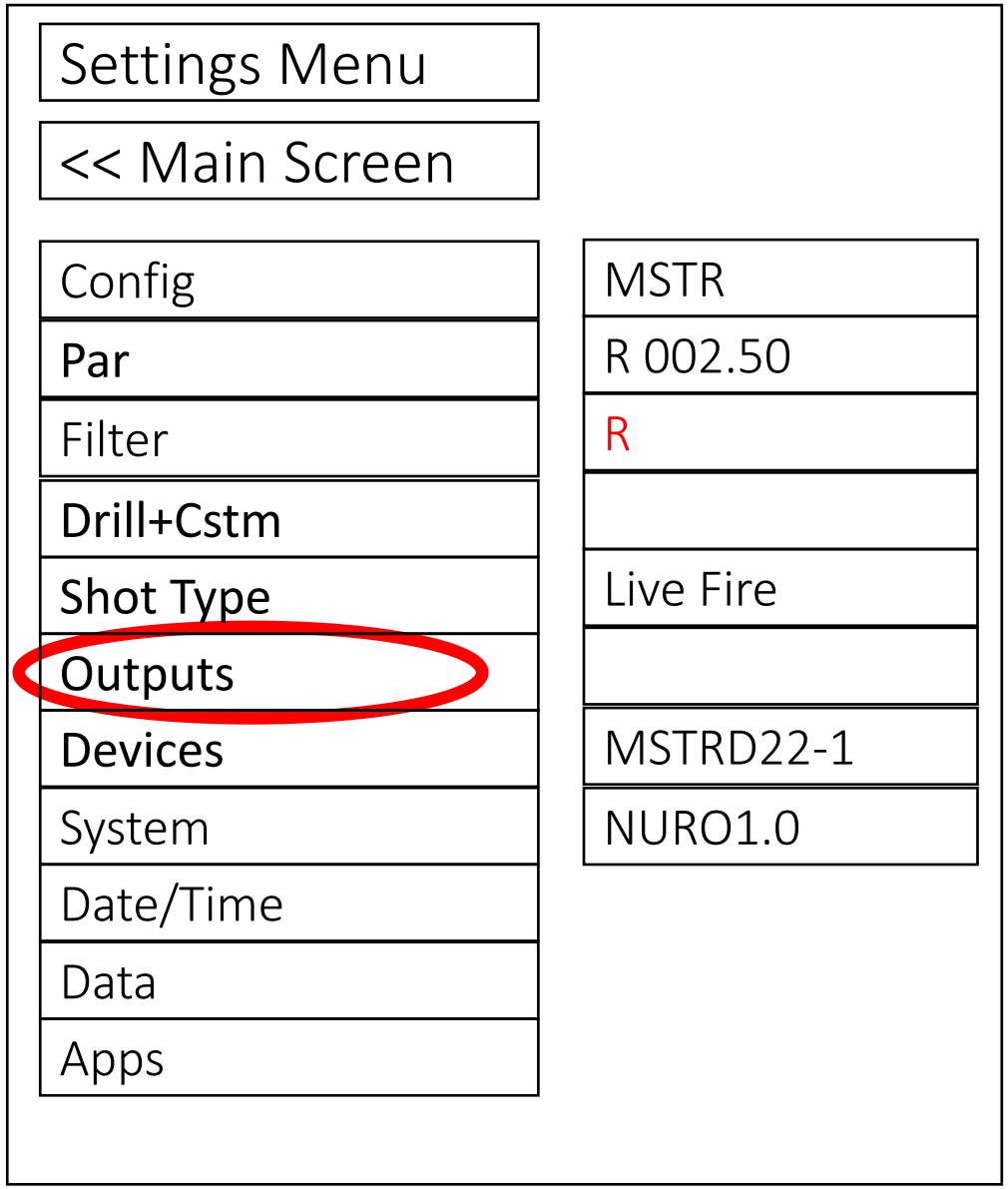
Sim

Airsoft

It is possible other firearms simulation and training technologies, such as UTM and Coolfire, may require their own processing algorithms for best performance. If so, these would be added in later firmware revisions.

Default setting is Live Fire

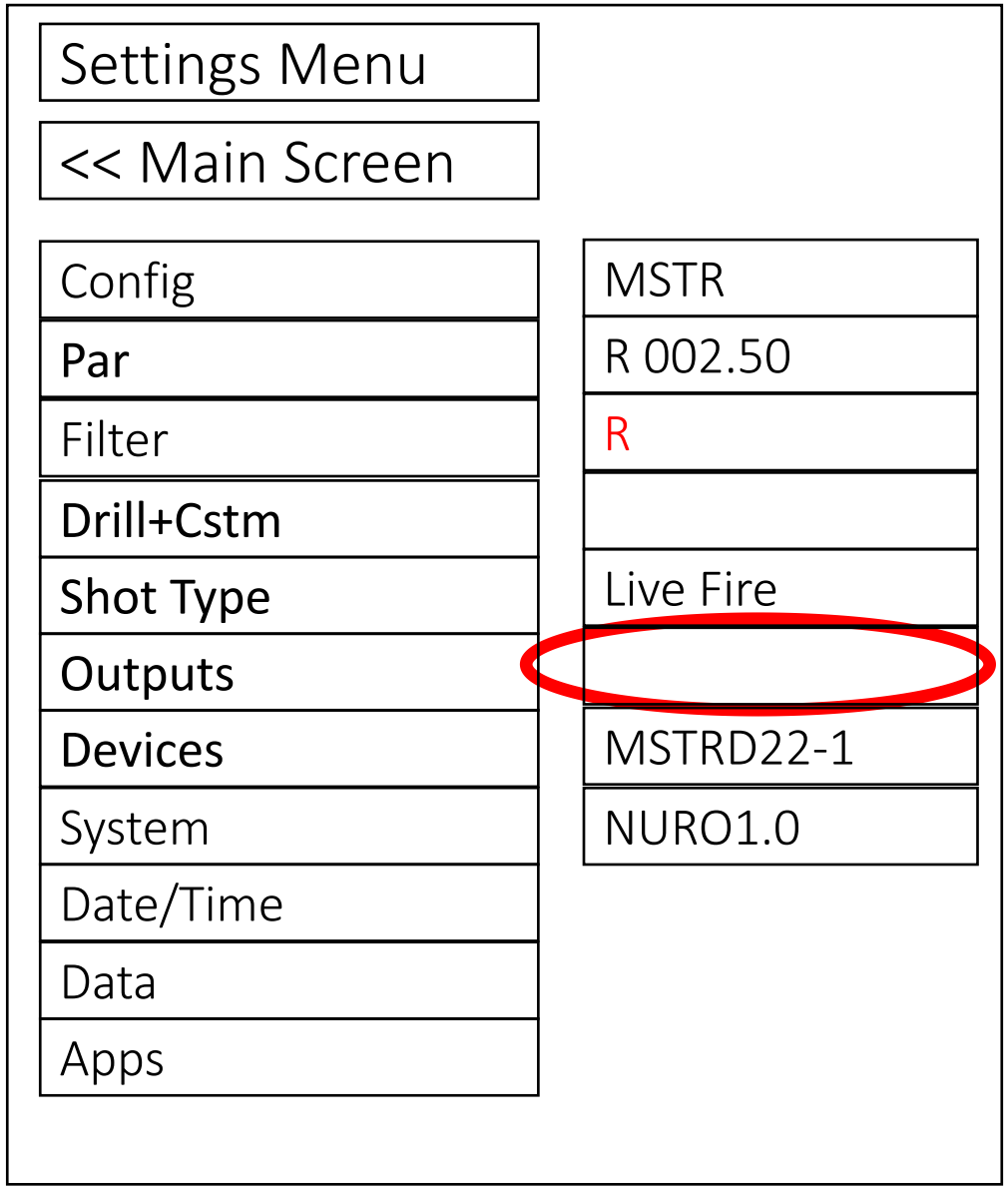
Main Display > Settings



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Allows entry into the menu to adjust the device output settings such as modulation (blinking) for the lasers in non-custom operation, laser output intensity (if possible) and volume for audio (if possible).

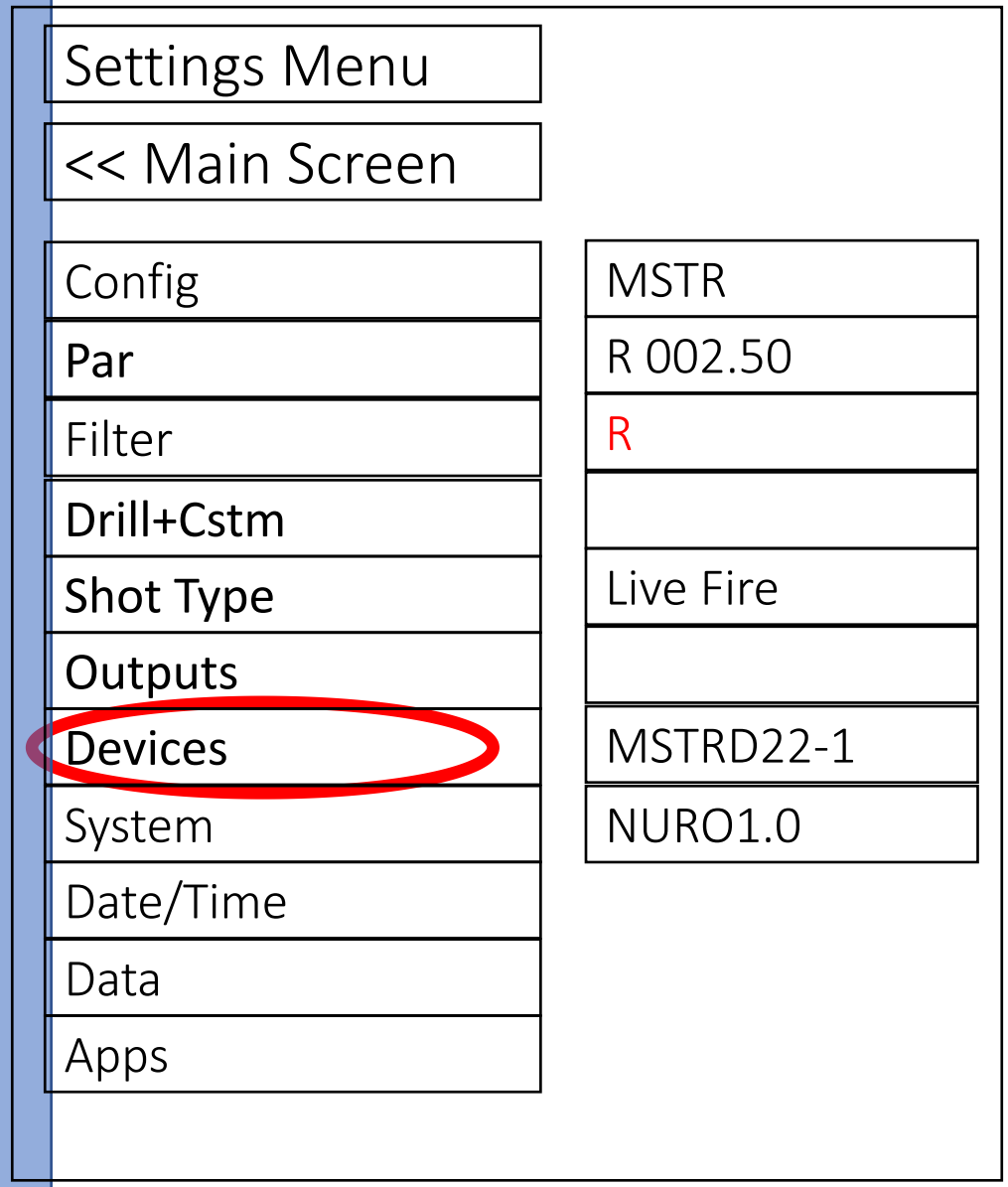
Main Display > Settings



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

No Data to Display

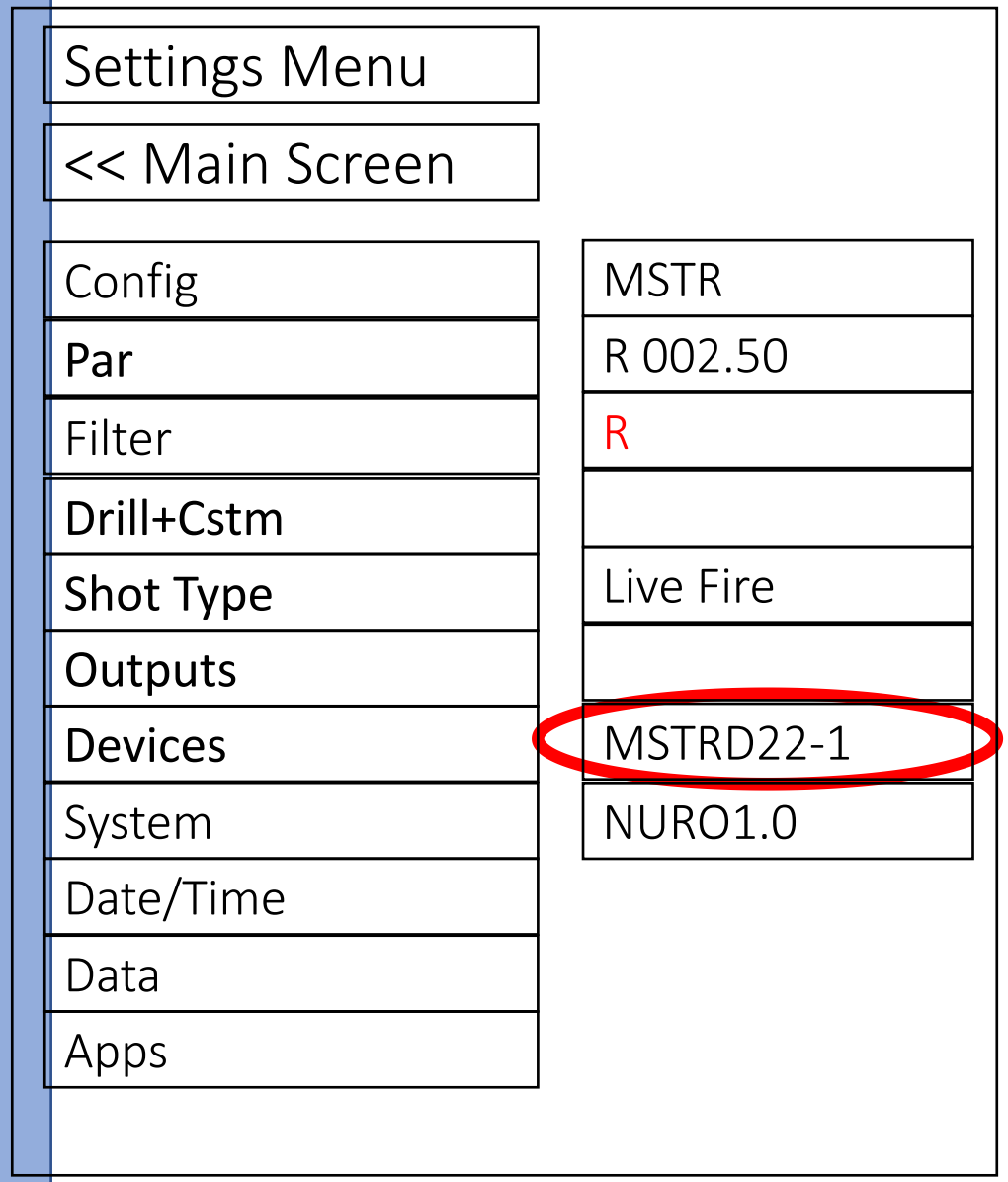
Main Display > Settings



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Allows the user to enter the menu to manage multiple devices, device interaction and naming related settings and device linking for both ISO tools and other NURO™ projection devices.

Main Display > Settings



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Displays current device name. This should be the same value as at the top right of the main display. (obviously it's not in this example)

MSTRXXXXXXX

RPTRXXXXXXX

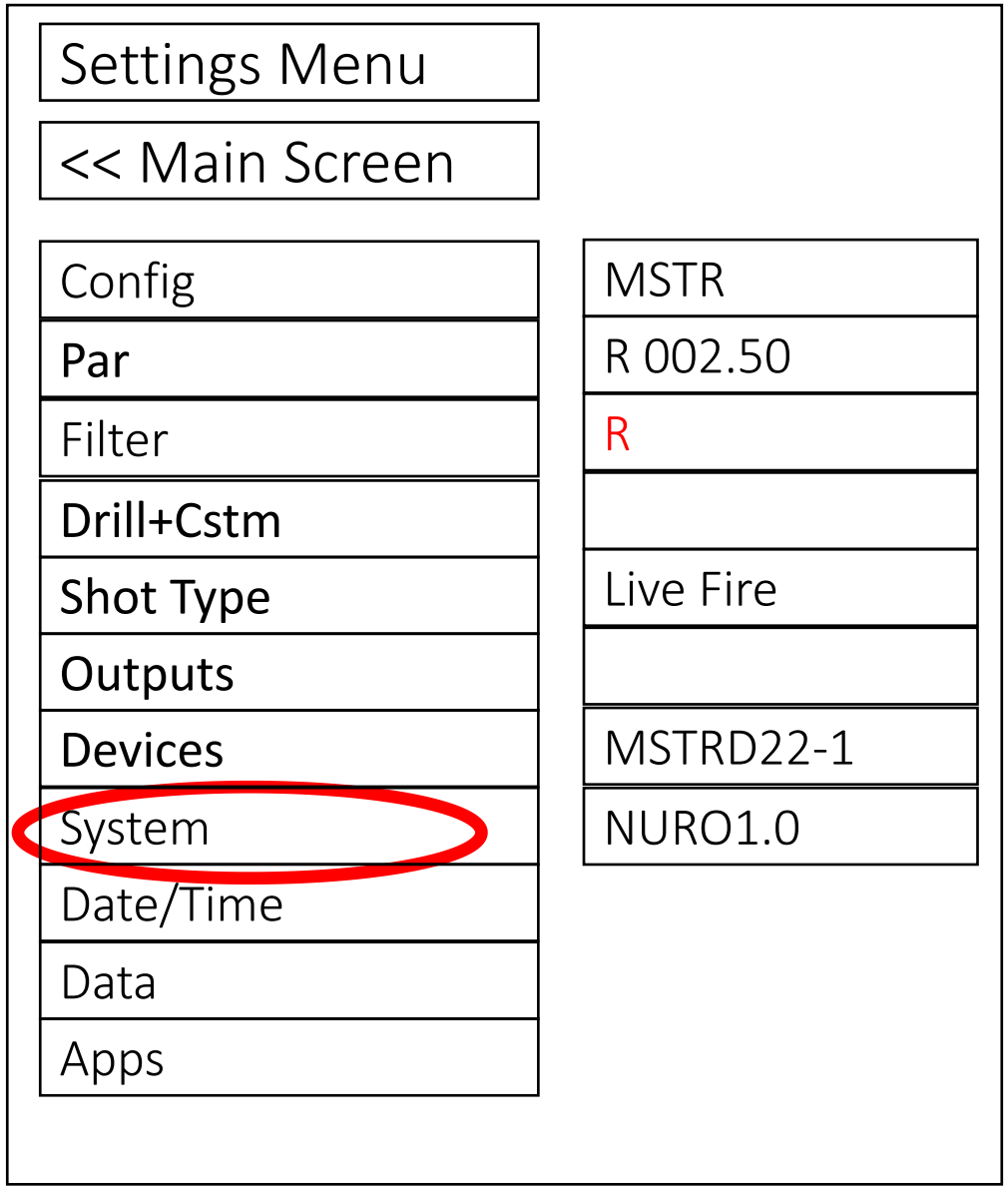
SUBXX

The optional string after the label allows the user to provide a custom name to the device (set inside the configuration menu) for Master or Repeater configurations.

The assigned device number (01-99) will be displayed in Sub configuration once the device is synced up. This should be assigned in order of syncing (ie. first sub device synced to a MSTR or RPTR device is 01. Second is 02. Third is 03 and so on.)

Default would simply be MSTR

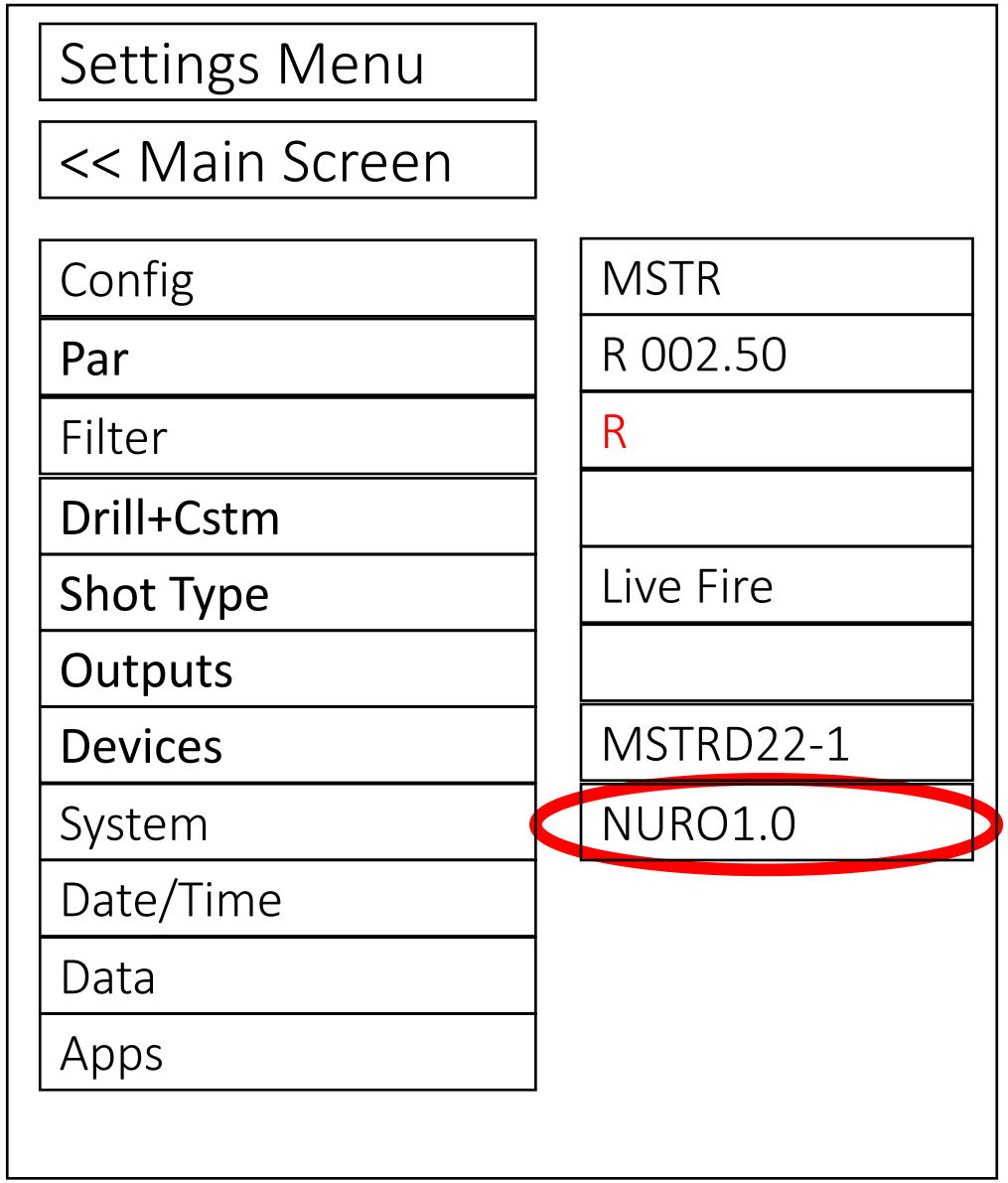
Main Display > Settings



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Provides access to menu to show any relevant data about the device and allow the user to connect to the application and update the device firmware.

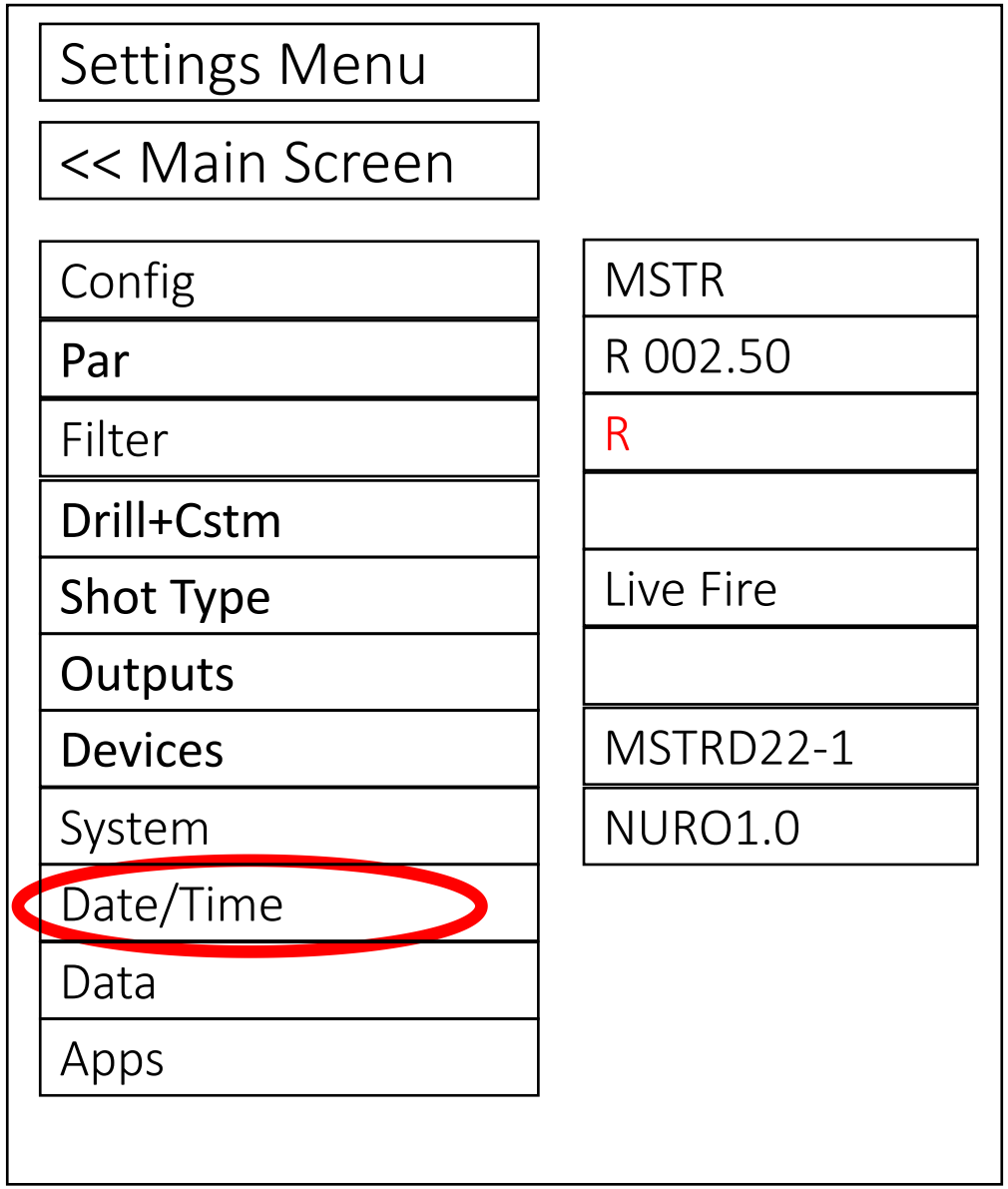
Main Display > Settings



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Displays latest firmware version (naming convention is NOT being defined here – just placeholder stuff - open to suggestions. Sure you probably already have this in place).

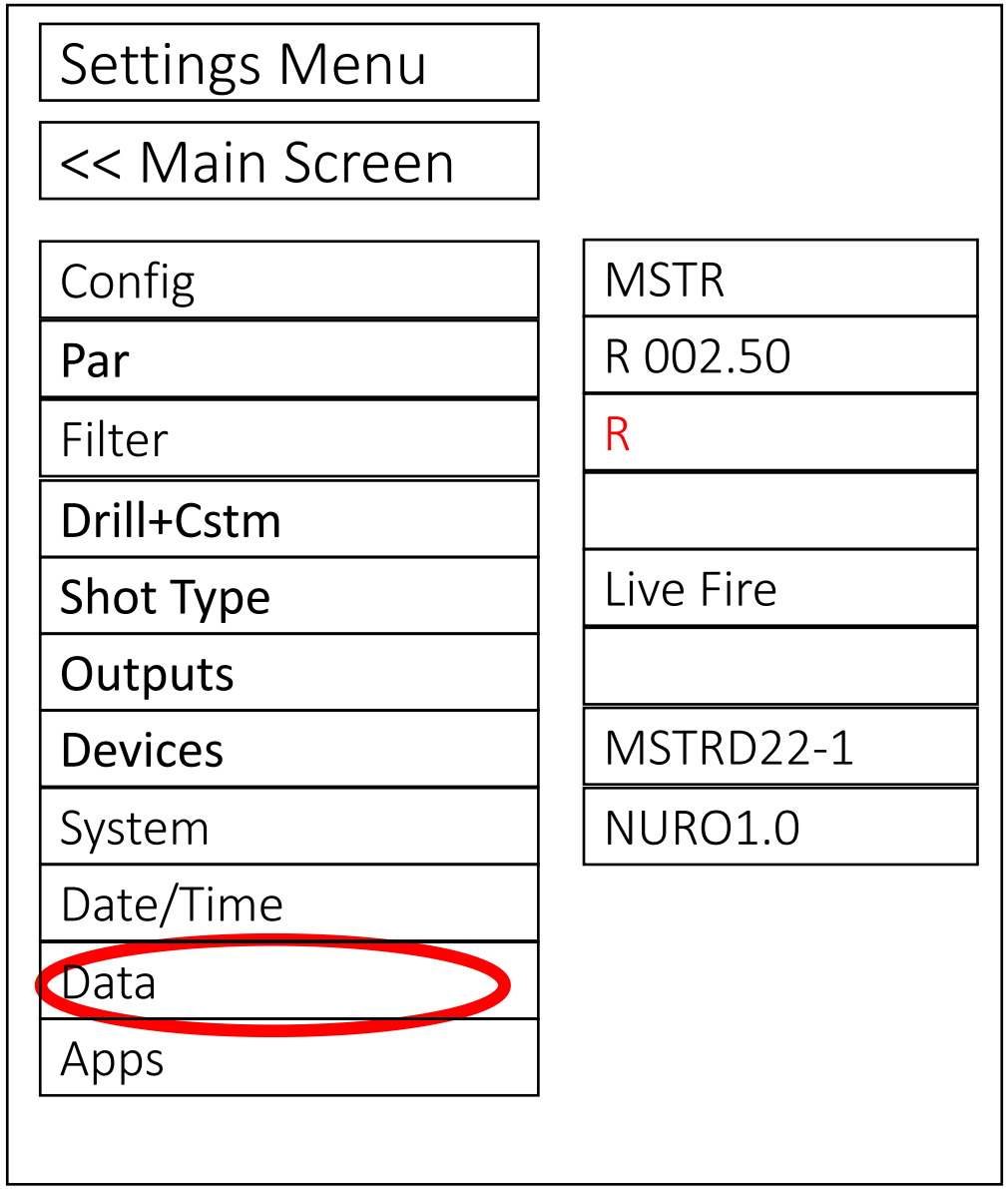
Main Display > Settings



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Allows use to enter the menu to set date and time for the device

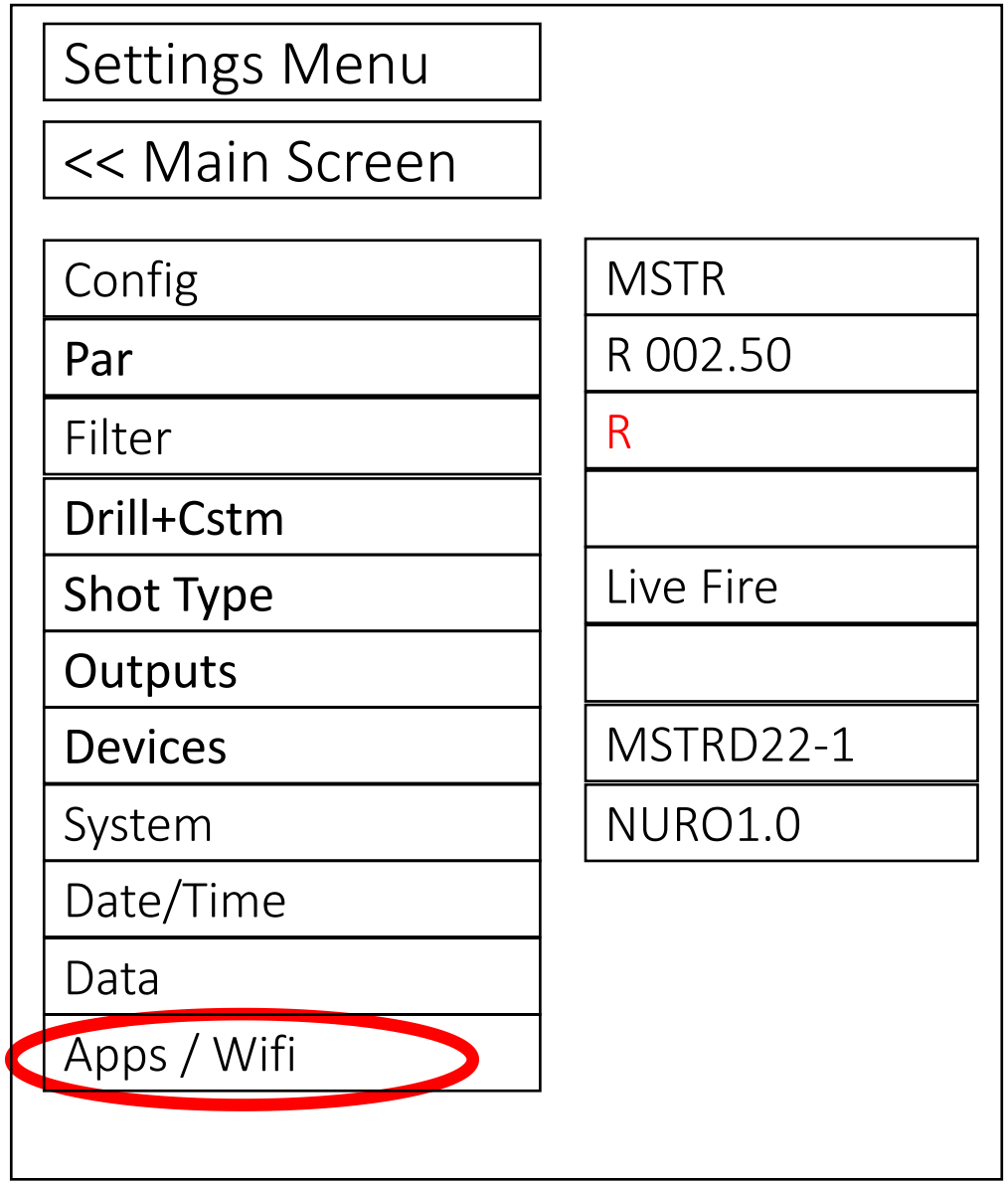
Main Display > Settings



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Allows use to enter the menu to view or manipulate saved data

Main Display > Settings

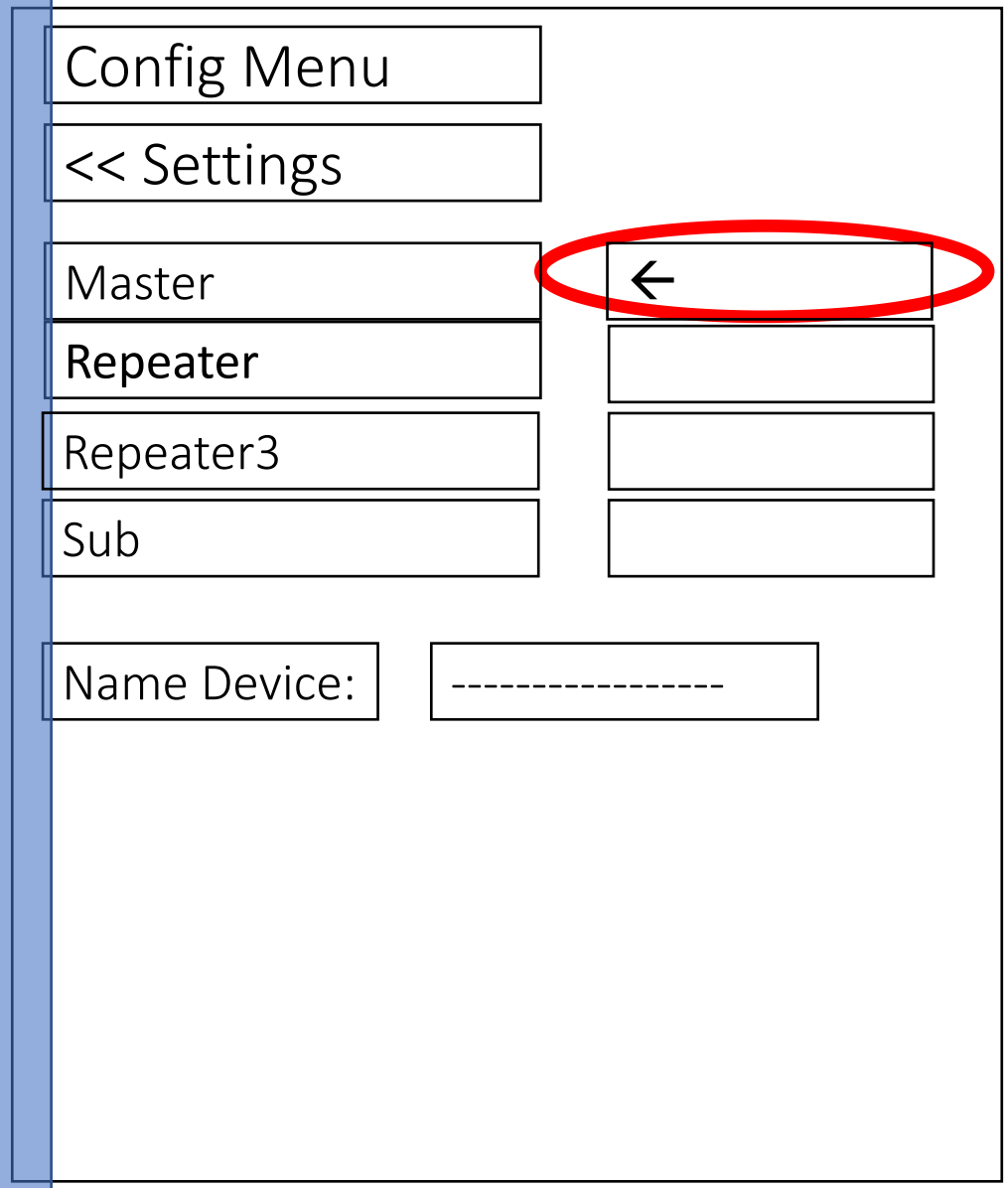


Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Allows user to enter the menu to set up / manage device interface with applications on either mobile devices or computers.

Allows Wifi and BLE Turn Off / Turn On

Main Display > Settings > Set Configuration



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

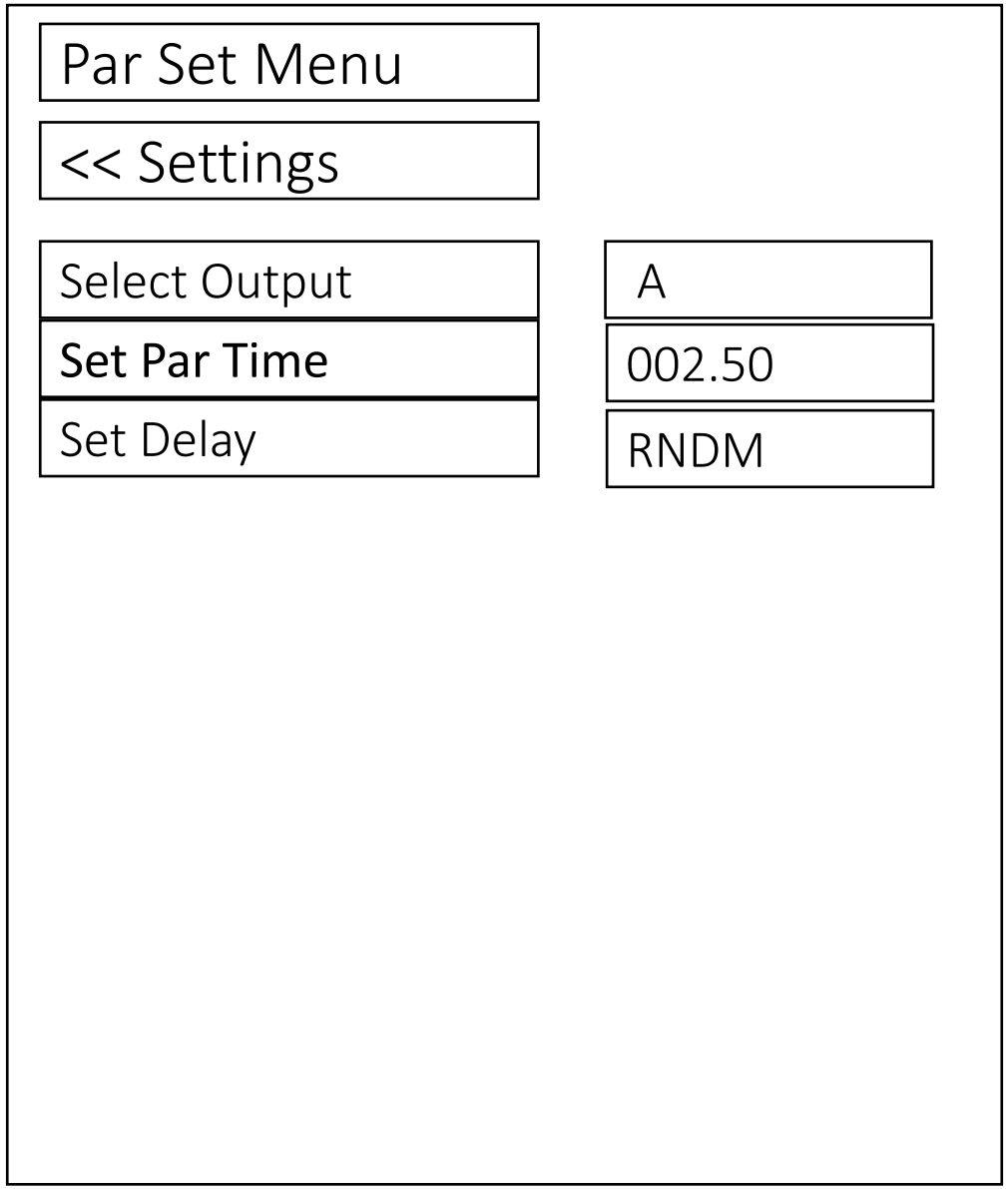
This menu allows the user to select the device configuration. It should also show some indicator as to which is currently selected, which updates when the selection is changed. This does NOT have to be an arrow as depicted, it's just a concept placeholder. The objective is to have an intuitive method of indicating which configuration has been selected.

Alternative this can be accomplished through a dropdown menu or selected configuration such as:

Where the other two dropdown options are Repeater and Sub

Allows user to add custom device name (string)

Main Display > Settings > Set Par



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

This menu allows the user to customize a par set.

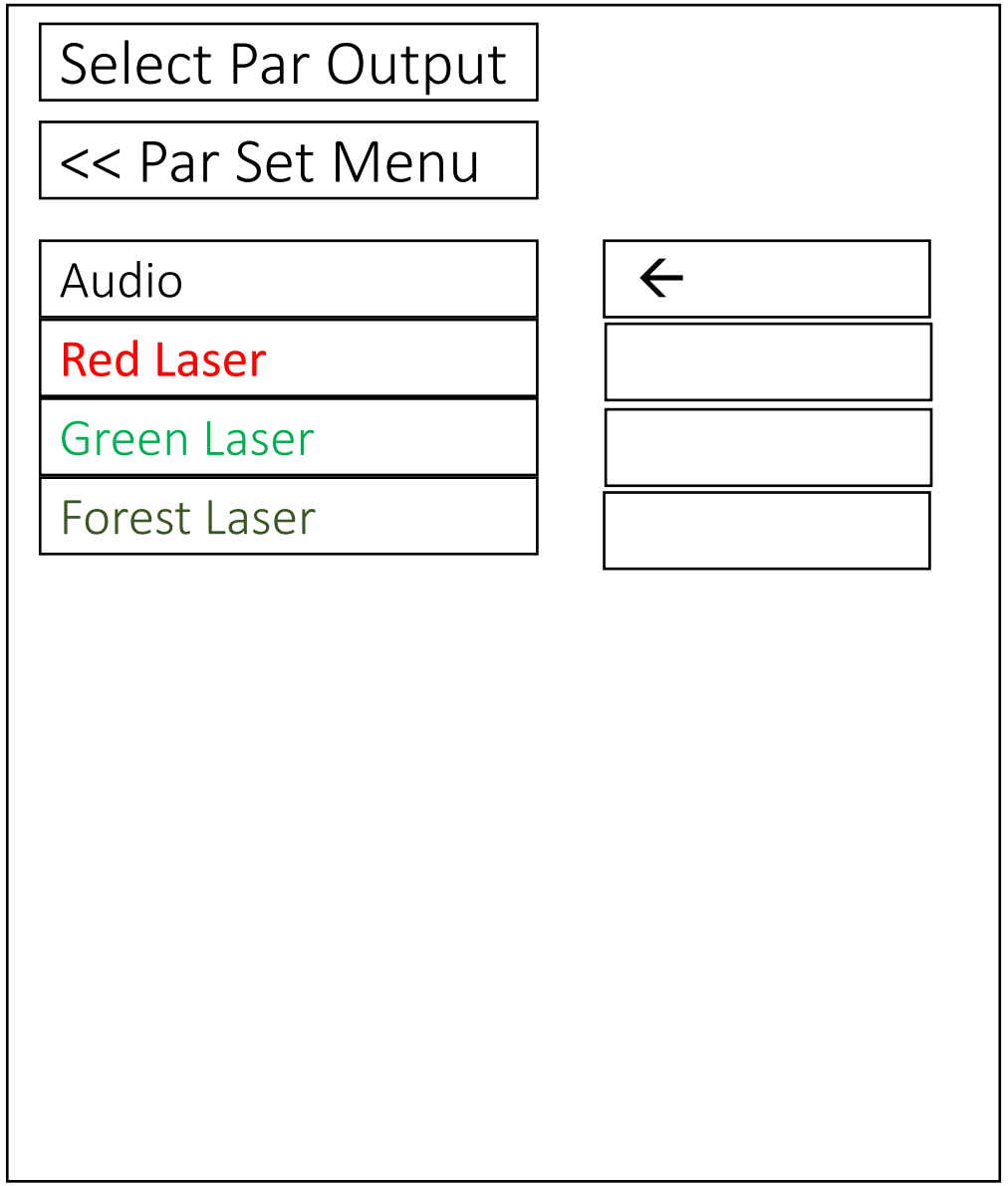
The first menu item will take the user to a page that allows them to select the output used for the par. There are four options, A, R, G, F. (Audio, Red Laser, Green Laser, Forest Laser).

The second menu item will allow the user to a page that allows them to set the par time.

The third menu item will take the user to a page that allows them to customize the delay for the parset that occurs upon the pressing of the initiation button. This feature is useful depending upon the application. For example, as an instructor running a student through drills using a parset, you typically want the par to start immediately when you hit the initiate button. As an individual running yourself through drills alone, you typically want a random delay between when you hit the button and when the drill starts. This menu item allows for customization and personalization of this feature to meet the user's unique specifications.

Options are
NONE
RNDM
XXX.XX *Specific Time Defined in Set Delay Page*

Main Display > Settings > Set Par > Select Output



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

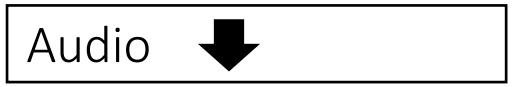
This menu allows the user to Select the par output.

Default is Audio.

Note that the visual outputs will perform based on the standard device settings. In other words if the output settings are for blinking, the laser will blink. If the output settings are for a steady beam, the laser will NOT blink.

Same concept as before on the arrow – this is a place holder for an intuitive method of showing which item is selected.

Alternatively this can be selected in a single drop down menu or selection configuration such as:



Where the other selections are Red Laser, Green Laser, Forest Laser

Main Display > Settings > Set Par > Set Par Time

Set Par Time	
<< Par Set Menu	
Audio	XXX.XX
Red Laser	XXX.XX
Green Laser	XXX.XX
Forest Laser	XXX.XX

Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

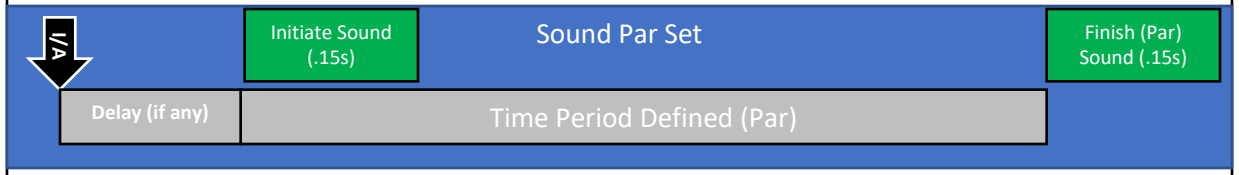
This menu allows the user to Select the par time. Default is 000.00 for all outputs.

The concept I'm working off of right now is that the user can use the arrow buttons to move up/down on the "Audio/Red Laser etc." section and left/right from the output to the various time components (hundreds of seconds to hundredths of a second). Once in the number section, the up/down arrows will change the number. Open to any and all better ideas on how to do this.

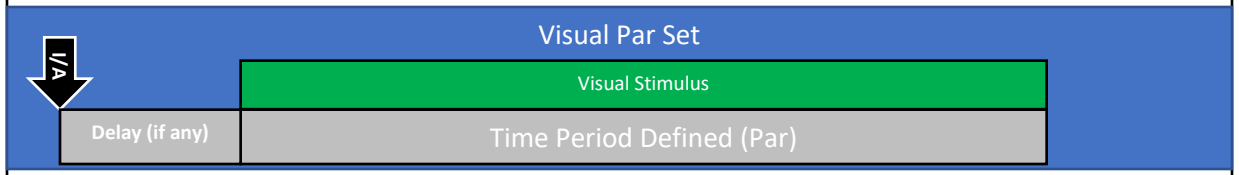
In terms of what these actually mean from an output standpoint….

The user will hit the initiate/audio button. This will go through the delay (if assigned – next menu) or straight into the par depending on those settings (next menu).

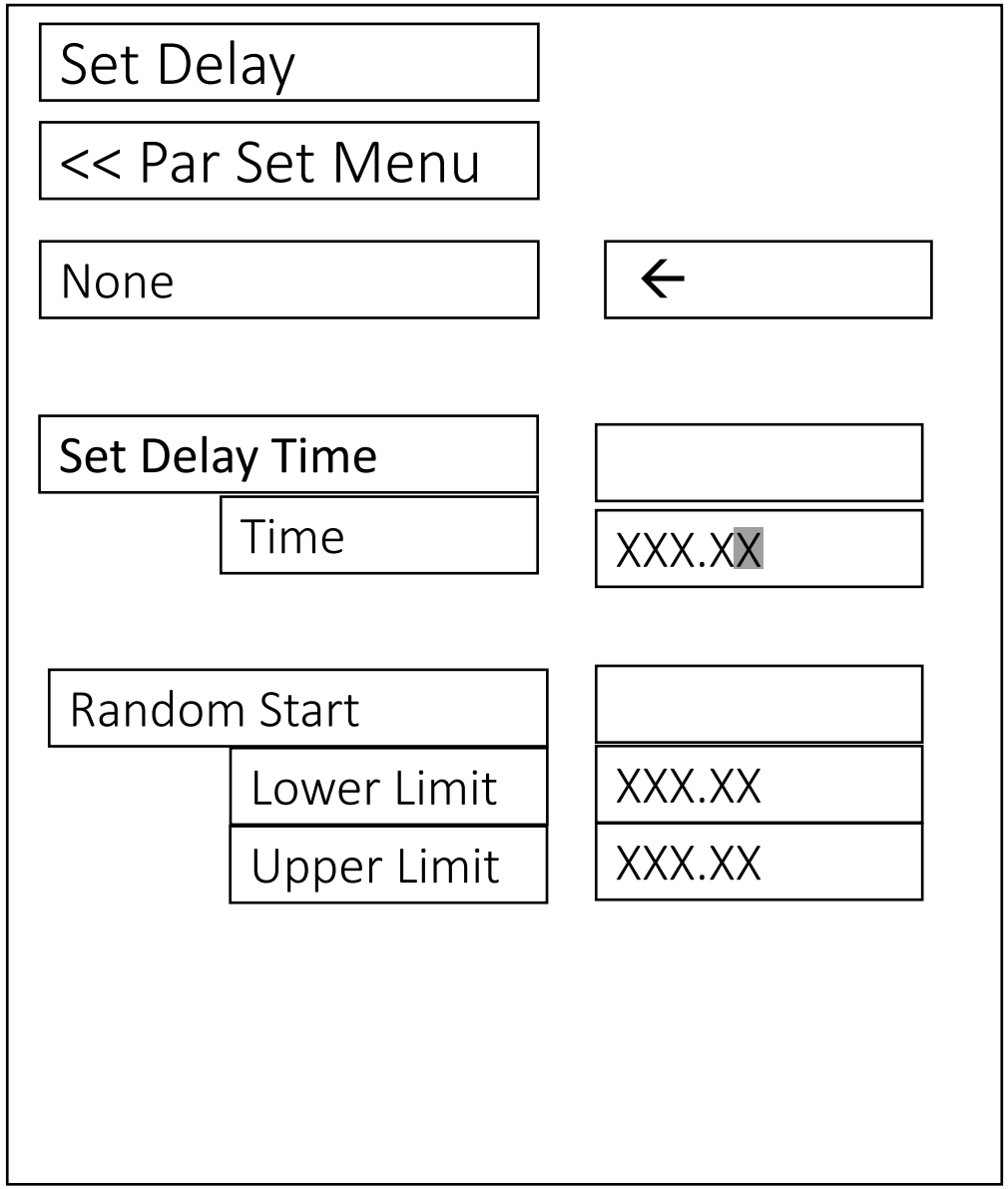
For an audible par, it will function like this. Sound output fixed at .15sec – no modulation.



For visual par (lasers) it will Function like this



Main Display > Settings > Set Par > Set Delay



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

This menu allows the user to Select and set the delay type and time for par sets.

Delay indicates what happens when the user presses the I/A (Initiate / Audio) button on the device in par mode. The par will either start immediately (No Delay) or the start of the par stimulus will be delayed by either a fixed time period or a random time period within user defined parameters.

Default is None.

Same concept as before on the arrow – this is a place holder for an intuitive method of showing which item is selected.

Same concept as before on the time adjustment method and use of arrow keys on the device.

Main Display > Settings > Filter Display (Drill)

Filter Display Menu	DRILL

<< Settings

ALL DRILLS

Reset Programmed Settings

Stimulus Projection

Dvc	R	G	F	A
MM	-------	-------	-------	-------
	X	X	X	X

Shot Isolation

01	X

Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

This menu allows the user to choose what device outputs are displayed on the main screen in MANUAL mode or DRILL mode.

The Start STRT will always display.

The End END will always display.

Default in MANUAL or DRILL modes is all stimuli being selected.

In PARSET mode the par stimulus will always display. There will be no options.

In CUSTOM mode these values will be pulled from what is defined in the custom program, however, the user may change the values here if desired.

In all cases, all data is collected and stored (if saved) with the run. This function simply acts as a data filter to make use of the display and the data more user friendly (in other words, the user can define that only the specific stimuli which indicate deadly force should be used are displayed).

In DRILL Mode the user can choose to remove any of the visual outputs from the data displayed on the main screen. The user can scroll to any of the “X” boxes and either select or not select it to change the status. “X” means that the stimulus will display. User can also select or not ISO tools linked to device.

In the “Data” field (-----), any data definition assigned to that stimulus will be displayed.

Main Display > Settings > Filter Display (Manual)

Filter Display Menu	MANUAL

<< Settings

Manual

No pre-set filters

Stimulus Projection

Dvc	R	G	F	A
MM	-------	-------	-------	-------
	X	X	X	X
01	-------	-------	-------	-------
	X	X	X	X

Shot Isolation

01	X
02	X

Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

This menu allows the user to choose what device outputs are displayed on the main screen in MANUAL mode or DRILL mode.

The Start STRT will always display.

Default in these modes is ALL

In PARSET mode the par stimulus will always display. There will be no options.

In CUSTOM mode these values will be pulled from what is defined in the custom program, however, the user may change the values here if desired.

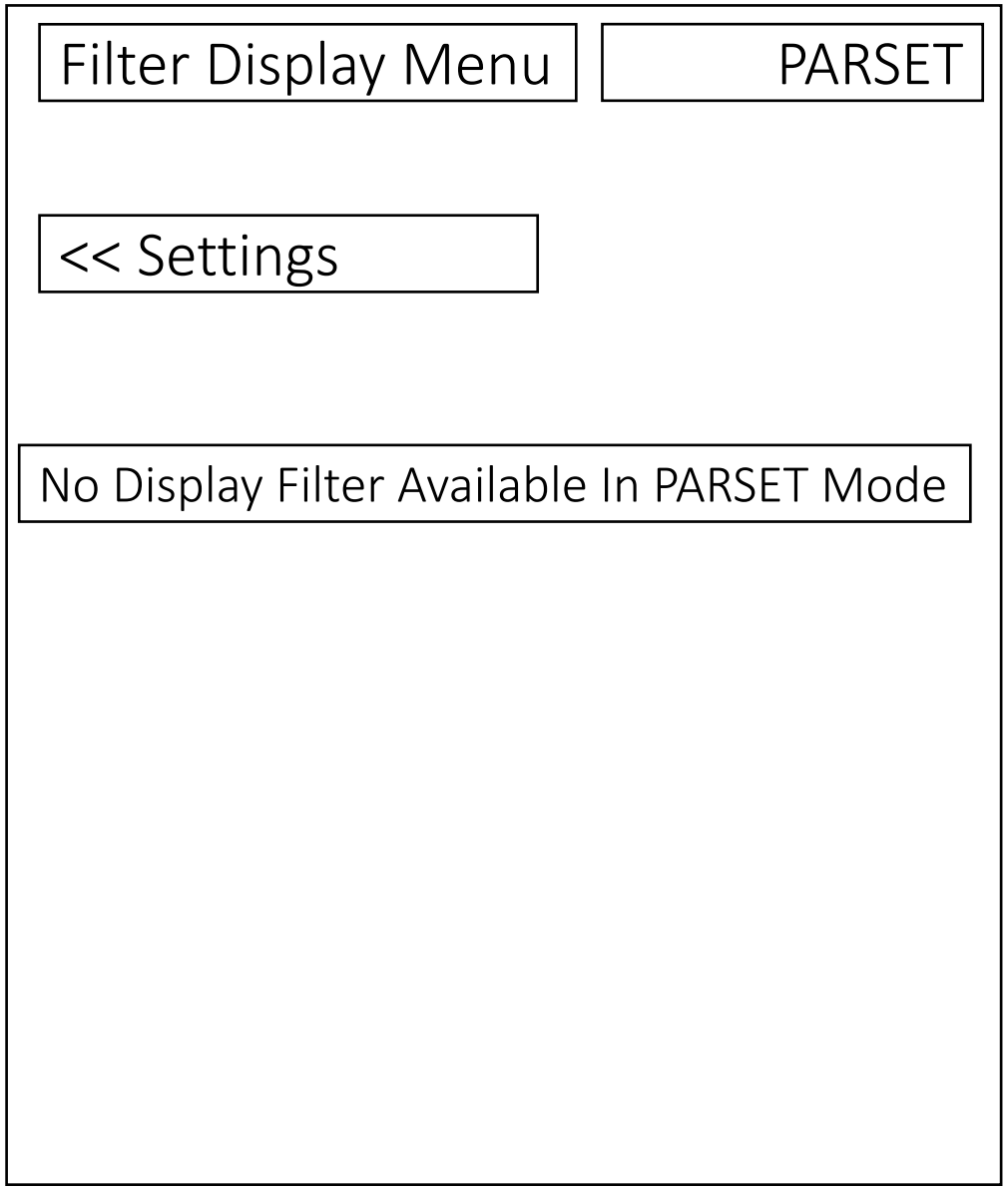
In all cases, all data is collected and stored (if saved) with the run. This function simply acts as a data filter to make use of the display and the data more user friendly (in other words, the user can define that only the specific stimuli which indicate deadly force should be used are displayed).

In MANUAL Mode the user can choose to remove any of the visual outputs from the Master Device from the data displayed on the main screen.

The user can choose to remove any of the visual outputs and the audio output from the any of the linked devices (including shot isolation tools) from the data displayed on the main screen.

The screen should scroll down with the down arrow to show all linked projection devices and shot isolation devices (if any).

Main Display > Settings > Filter Display (Parset)



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

There are no options in parset mode.

Thought about making this not available

Main Display > Settings > Filter Display (Custom)

Filter Display Menu | CUSTOM

<< Settings

CSTM000000001

Restore pre-set filters

Stimulus Projection

	R	G	F	A
MM	-------	-------	-------	-------
	X	X	X	X
01	-------	-------	-------	-------
	X	X	X	X

Shot Isolation

01	X
02	X

Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

This menu allows the user to choose what device outputs are displayed on the main screen in MANUAL mode or DRILL mode.

The Start STRT will always display.

Default in these modes is ALL

In PARSET mode the par stimulus will always display. There will be no options.

In CUSTOM mode these values will be pulled from what is defined in the custom program, however, the user may change the values for the local display here if desired.

In all cases, all data is collected and stored (if saved) with the run. This function simply acts as a data filter to make use of the display and the data more user friendly (in other words, the user can define that only the specific stimuli which indicate deadly force should be used are displayed).

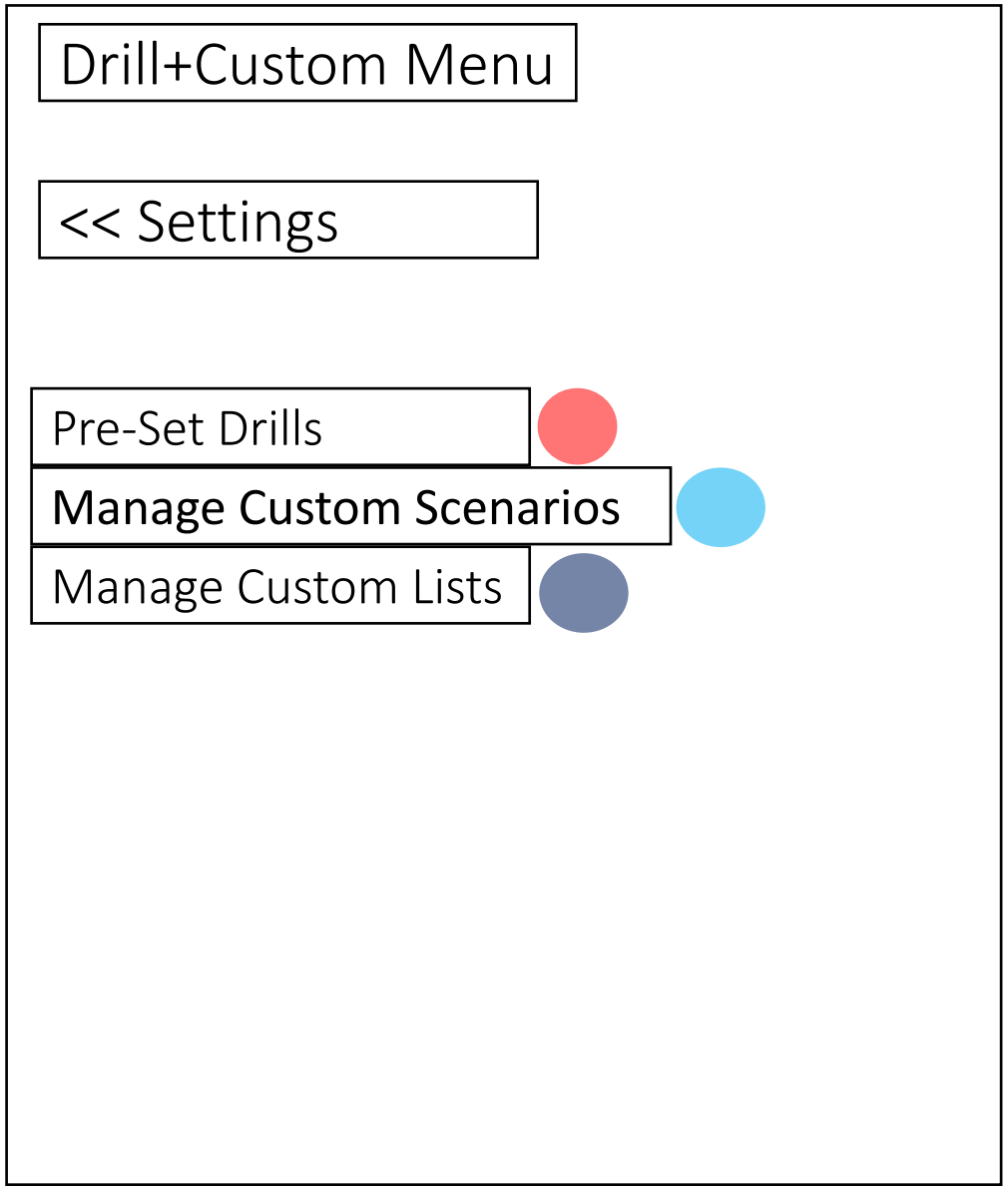
In CUSTOM Mode the user can choose to remove any of the visual outputs from the Master Device from the data displayed on the main screen.

The user can choose to remove any of the visual outputs and the audio output from the any of the linked devices from the data displayed on the main screen.

The screen should scroll down with the down arrow to show all options for the custom scenario.

The user has the option, after having made manual changes, to return to the settings programmed with the current custom program being run. (See Red Circle)

Main Display > Settings > Drills + Custom Prog



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

This menu allows the user to enter the detailed menus for creating, managing and viewing custom scenario programs and viewing the pre-set drill parameters and managing initiation sequences and/or delays for them.

Main Display > Settings > Drills + Custom Prog > Pre-set Drills

Pre-set Drill Menu

Device	R	G	F
MM	--------	--------	---------

Change Initiation Seq	Default
Change End Seq	Default

Drills

- Drill 01
- Drill 02
- Drill 03
- Drill 04

Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

This menu allows the user to view drills or, edit the initiation and ending sequence for the drills as well as define output definitions (such as hand, gun, knife etc.) for the visual stimuli of the drills.

This menu allows the user to change the initiation and ending sequence for the standard drills (geezer mode). It also allows them to edit the output definitions for the

Default initiation is an audio output of .5s

Default ending is four audio outputs of .5s

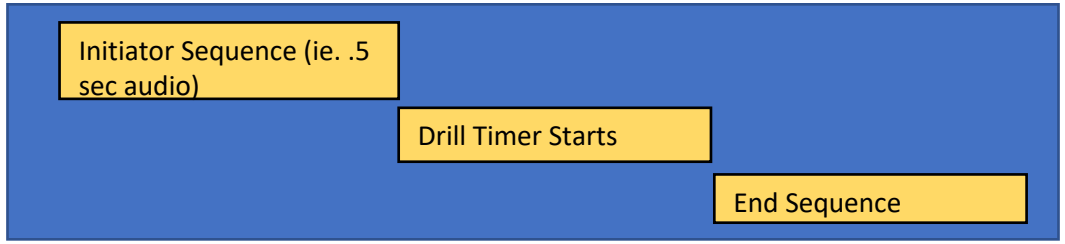
Scrolling down and selecting each drill will bring up a new screen displaying the drill information.

There are currently 12 standard drills. Scrolling up/down will take the user to the other drills.

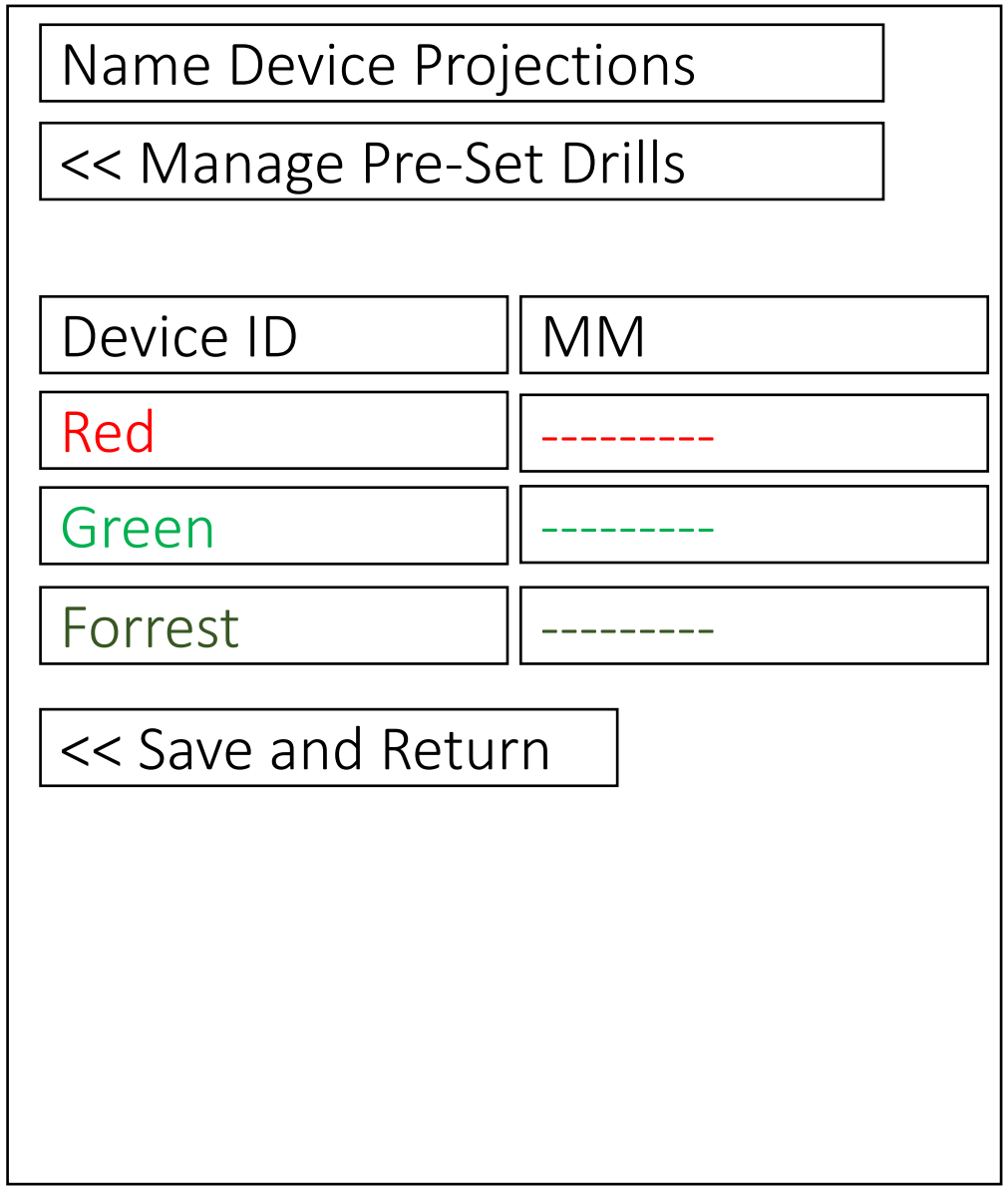
These drills are not editable in terms of output or timing.

The same initiation will apply to all drills. Appropriate colors should be applied to the table, just like on the main screen table.

Initiation (STRT) and END sequences apply as follows: Note that the start and end sequences run on their own separate timelines.



Main Display > Settings > Drills + Custom Prog > Pre-set Drills



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

This menu allows the user to edit device output definitions during custom scenario generation.

The device ID here is only MM (master/repeater). It cannot be changed because these are drills.

The user can add a manual name to each projection (for example, hand, gun, knife) that will be displayed in the drill tables. The names entered here will apply to ALL DRILLS only. They do not apply to custom scenarios.

Selecting Remove Device is not available here because only the master device is relevant on the pre-set drills.

Main Display > Settings > Drills + Custom Prog > Pre-set Drills > Drill (XX)

Drill (XX)

<< Pre-set Drill Menu

Act	Proj	Blink	Time
STRT	----	----	XXX.XX
MMGON	----	----	XXX.XX
	----	----	XXX.XX
MMRON	----	----	XXX.XX
END	----	----	XXX.XX

Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

This screen allows the user to view drill content for each of the drills.

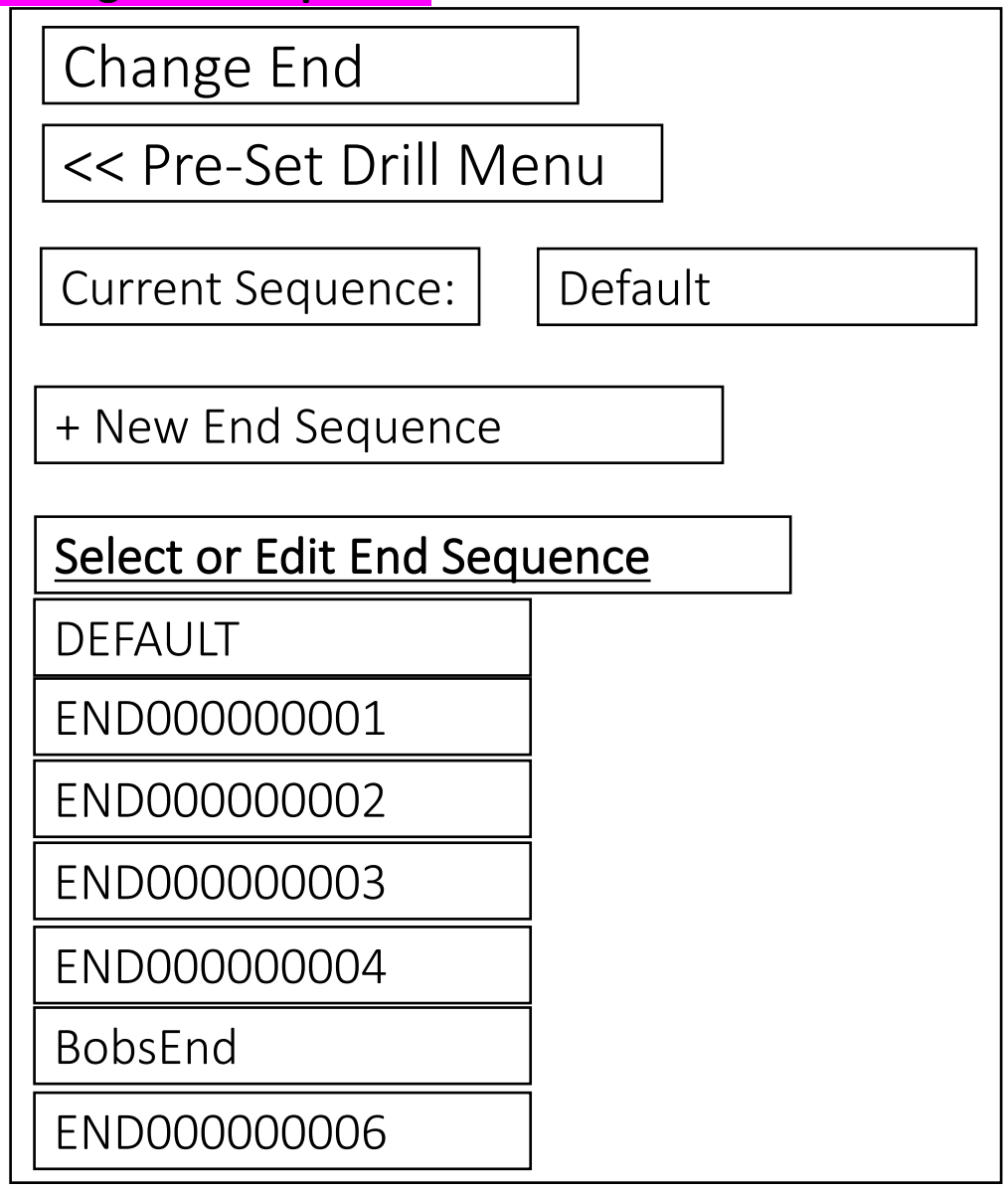
Appropriate colors should be applied to the table, just like on the main screen table.

Projection definitions should be displayed (if defined).

"Blink" should be based on the value assigned to the manual/drill modes in the device menu. Default is S (steady)

Initiation (STRT) and END sequences apply as follows: Note that the start and end sequences run on their own separate timelines.

Main Display > Settings > Drills + Custom Prog > Pre-set Drills > Change End Sequence



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

This menu allows the user to view or edit the end sequence for the drills.

This menu allows the user to change the ending sequence for the standard drills (geezer mode). Default may not be edited. The only sequence in the device is DEFAULT unless user programs new one(s).

Default ending is four audio outputs of .5s

Scrolling down and selecting each end sequence that has been created allows user to edit and/or select the sequence.

Main Display > Settings > Drills + Custom Prog > Pre-set Drills > Change End Sequence > New End Sequence > End Sequence Event

Edit End Sequence Event	
<< Edit End Sequence	
Device ID	MM
Output	R

On/Off?	ON
Blink? Y/N	STDY
Time	XXX.XX
<< Save and Return	
Delete/Cancel Event	

Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

This menu allows the user to edit or delete an individual event in the sequence.

In the event an initiation sequence is run that requires other devices, the device will go to the default setting for End sequence.

Blink should produce the options of STDY (steady, no blinking), 0.25 (1/4 second blinking) or 0.75 (3/4 second blinking)

The name displayed for the output in this table (space below the out put definition – R in this example) will be pulled from the string assigned to the Drills for that output. It is not editable here, it is only displayed for reference purposes.

Selecting Delete should create a “Are you sure you want to delete this?” pop-up to verify the action before deletion.

Main Display > Settings > Drills + Custom Prog > Manage Custom Scenarios

Custom Scenarios

<< Drill+Custom Menu

+ Add Custom Scenario

Edit Custom Scenarios

CSTM0000001

CSTM0000002

CSTM0000003

CSTM0000004

CSTM0000005

CSTM0000006

Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

This menu allows the user to create, view, or edit custom scenarios.

Scrolling down and selecting each custom scenario will bring up a new screen displaying the scenario information information.

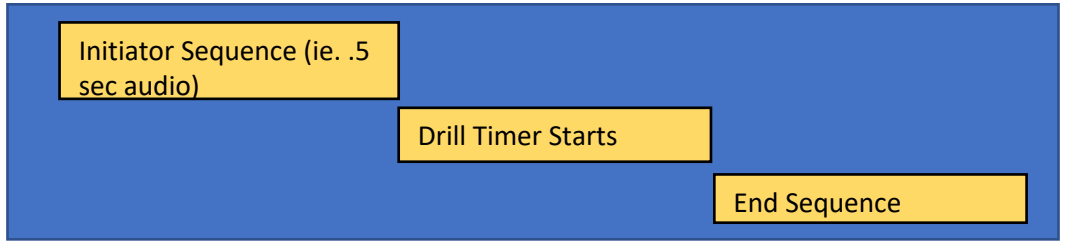
Scrolling up/down will take the user to the full list of custom scenarios.

Custom scenarios are fully editable.

Each scenario will have its own initiation/ending if desired.

Appropriate colors should be applied to the table, just like on the main screen table.

Initiation (STRT) and END sequences apply as follows: Note that the start and end sequences run on their own separate timelines.



Main Display > Settings > Drills + Custom Prog > Manage Custom Scenarios > Edit Custom Scenario > Change End > Edit End Sequence

Edit End Sequence

<< Change End Sequence

Select this sequence

Delete this sequence

Change Name	END00000001
Delay	000.00

+ End Sequence Event

Act	Proj	Blink	Time
MMGON	----	----	XXX.XX
MMGON	----	----	XXX.XX
MMGOFF	----	----	XXX.XX
MMRON	----	----	XXX.XX
MMFON	----	----	XXX.XX

Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

This page allows the user to either select, delete, or to edit a custom end sequence.

Scrolling down to an Act and selecting it allows the user to edit that event. (Brings up the next slide/menu for that individual event).

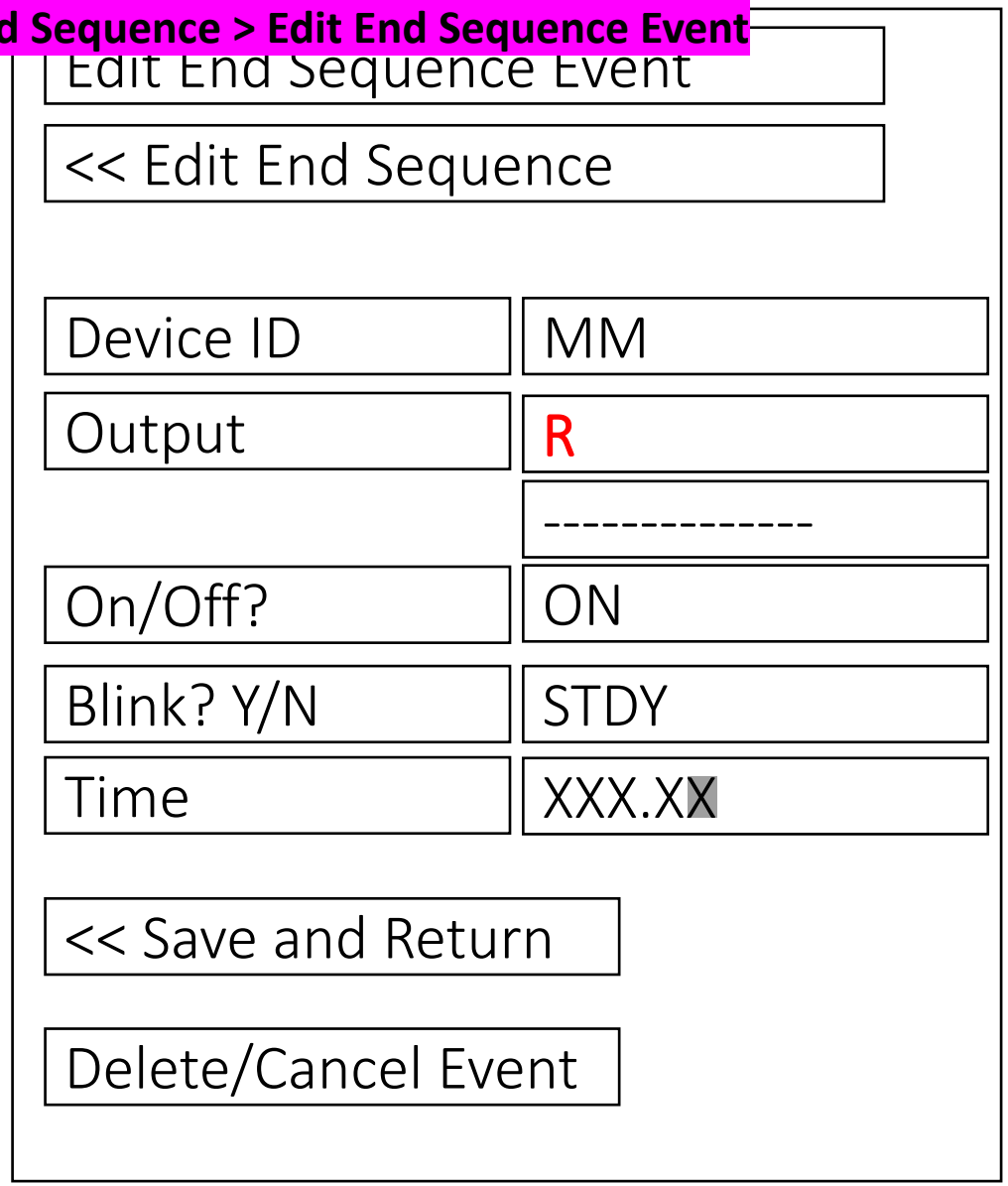
Selecting “Name Sequence” should allow the user to change the default name (ENDXXXXXXXXX)

The end sequence table should scroll.

Selecting Delete should create a “Are you sure you want to delete this?” pop-up to verify the action before deletion.

DELAY time is the time from the end of the last event in the scenario until the time when the end sequence begins.

Main Display > Settings > Drills + Custom Prog > Manage Custom Scenarios > Edit Custom Scenario > Change End > Edit End Sequence > Edit End Sequence Event



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

This menu allows the user to edit or delete an individual event in the sequence.

In the event an initiation sequence is run that requires other devices, the device will go to the default setting for End sequence.

Blink should produce the options of STDY (steady, no blinking), 0.25 (1/4 second blinking) or 0.75 (3/4 second blinking)

The name displayed for the output in this table (space below the out put definition – R in this example) will be pulled from the string assigned to the Drills for that output. It is not editable here, it is only displayed for reference purposes.

Selecting Delete should create a “Are you sure you want to delete this?” pop-up to verify the action before deletion.

Main Display > Settings > Drills + Custom Prog > Manage Custom Scenarios > Edit Custom Scenario >> Edit Device

Edit Device (Custom Scenario)

<< Edit Custom Scenario

Device ID	MM
Red	---------
Green	---------
Forrest	---------

<< Save and Return

Remove Device

Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

This menu allows the user to edit device output definitions during custom scenario generation.

When this menu is accessed by selecting “Add Device” from the Edit Custom Scenario menu, the device ID is automatically assigned in chronological order (ie. 01,02,03,04 etc.).

To edit a specific device’s information its page must be accessed from the table on the previous page (edit custom scenario).

Selecting Remove Device should create a “Are you sure you want to delete this?” pop-up to verify the action before deletion. Devices can only be in order, because that is how devices are linked to a master (or repeater) NURO™. For example, a scenario cannot have devices 01, 03, 05. If a device is deleted (for example a scenario with devices 01, 02, 03, 04 has device 03 deleted), the sequential devices above that will be re-numbered to fill the sequence, the rest of the data (output definitions) will stay the same.

Default values for all visual outputs here for all added devices are undefined (------)

Main Display > Settings > Drills + Custom Prog > Manage Custom Scenarios > Edit Custom Scenario > Edit Event

Edit Custom Scenario Event	
<< Edit Custom Scenario	
Device ID	MM
Output	R

On/Off?	ON
Blink? Y/N	STDY
Time	XXX.XX
<< Save and Return	
Delete/Cancel Event	

Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

This menu allows the user to edit or delete an individual event in the sequence.

In the event an initiation sequence is run that requires other devices, the device will go to the default setting for End sequence.

Blink should produce the options of STDY (steady, no blinking), 0.25 (1/4 second blinking) or 0.75 (3/4 second blinking)

The name displayed for the output in this table (space below the out put definition – R in this example) will be pulled from the string assigned to the relevant output for that specific custom scenario. It is not editable here, it is only displayed for reference purposes.

Selecting Delete should create a “Are you sure you want to delete this?” pop-up to verify the action before deletion.

Main Display > Settings > Drills + Custom Prog > Manage Custom Scenarios > Edit Custom Scenario> Filter Display

Filter Display

<<Edit Custom Scenario

CSTM000000001

No pre-set Filters

Stimulus Projection

Dvc	R	G	F	A
MM	-------	-------	-------	-------
	X	X	X	X
01	-------	-------	-------	-------
	X	X	X	X
02	-------	-------	-------	-------
	X	X	X	X

Shot Isolation

01	X

*Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled**

This menu allows the user to choose what device outputs are displayed on the main screen in MANUAL mode or DRILL mode.

The Start STRT will always display.

Default in these modes is ALL

In PARSET mode the par stimulus will always display. There will be no options.

In CUSTOM mode these values will be pulled from what is defined in the custom program, however, the user may change the values for the local display here if desired.

In all cases, all data is collected and stored (if saved) with the run. This function simply acts as a data filter to make use of the display and the data more user friendly (in other words, the user can define that only the specific stimuli which indicate deadly force should be used are displayed).

In CUSTOM Mode the user can choose to remove any of the visual outputs from the Master Device from the data displayed on the main screen.

The user can choose to remove any of the visual outputs and the audio output from the any of the linked devices from the data displayed on the main screen. Use may also pre-set settings for ISO tools (if used).

The screen should scroll down with the down arrow to show all options for the custom scenario.

The user has the option, after having made manual changes, to return to the settings programmed with the current custom program being run.

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Main Display > Settings > Drills + Custom Prog > Manage Custom Lists

Manage Custom Lists

<< Drills + Custom Prog

+ List of Custom Scenarios

Edit List of Custom Scenarios

LST000000001

LST000000002

LST000000003

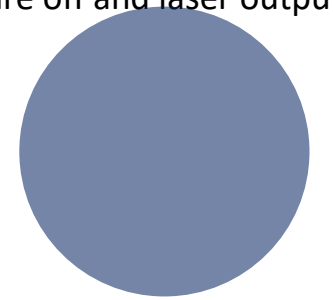
LST000000004

LST000000005

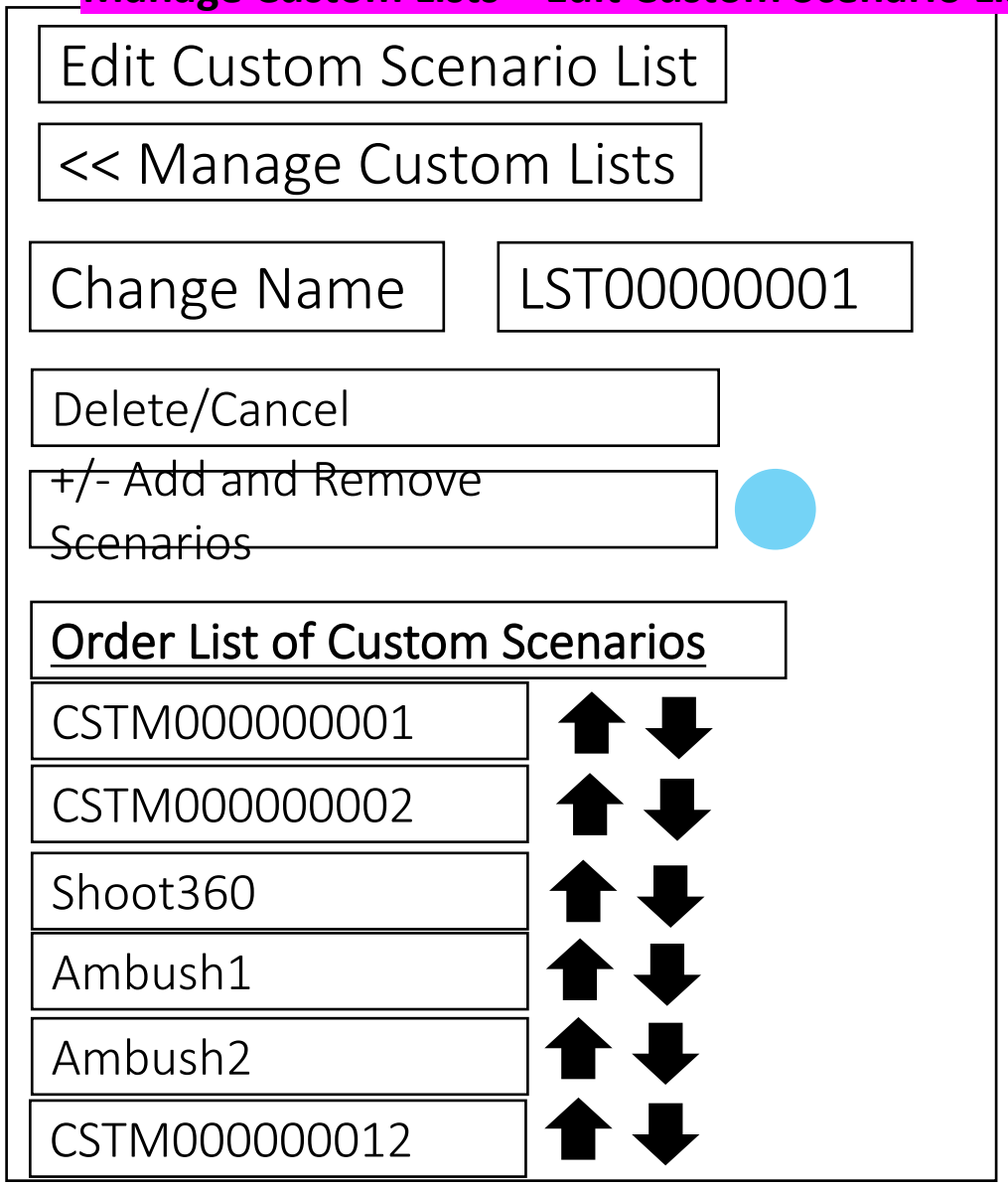
LST000000006

BobsTrng_Fri

Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled



Main Display > Settings > Drills + Custom Prog > Manage Custom Lists > Edit Custom Scenario List



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

This menu allows the user to create/edit a custom scenario list.

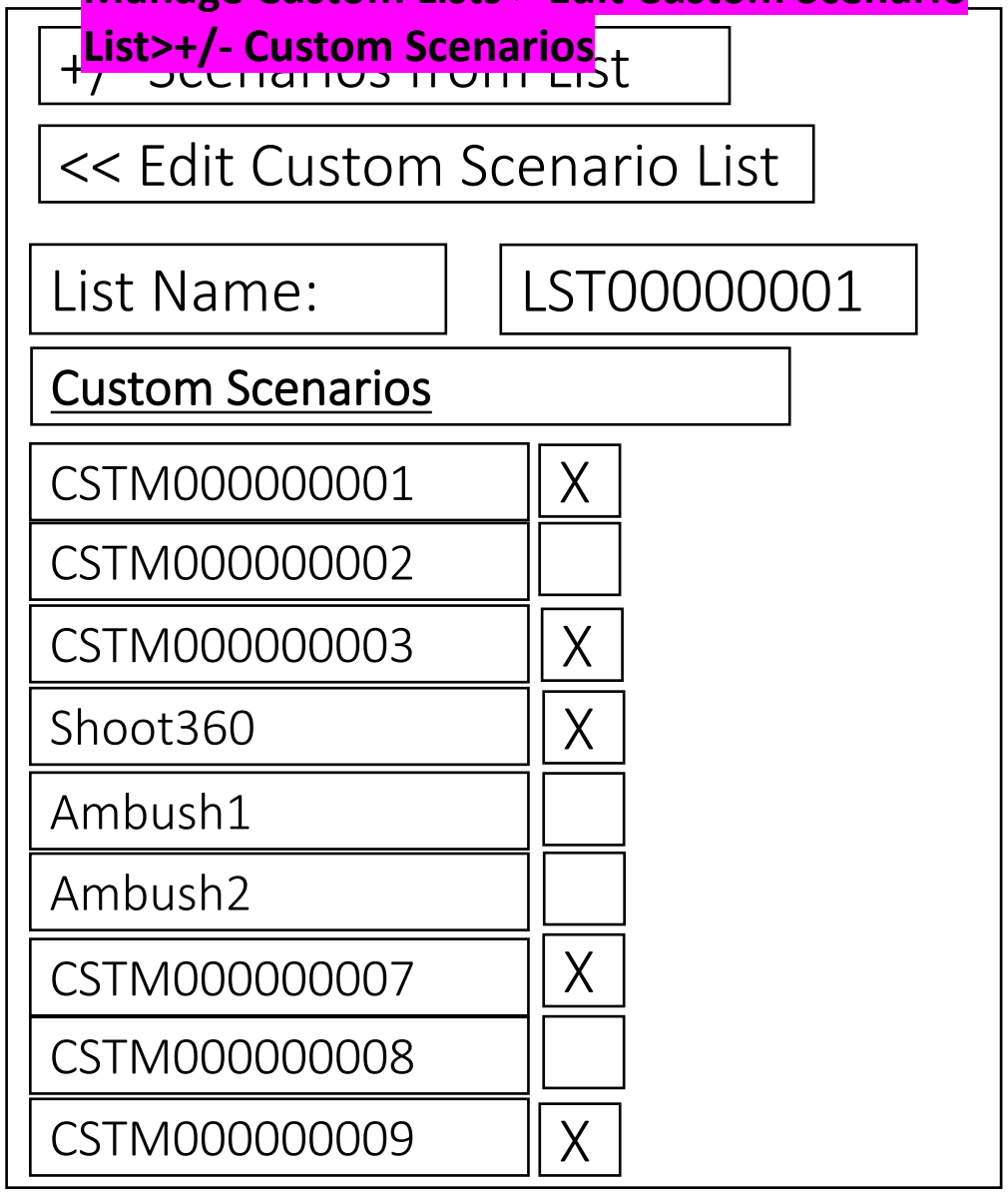
The user can change the name of the list.

The user can add a custom scenario to the list.

The user can change the order of the list by using the arrows. Or the user can remove a scenario from the list.

Scenarios themselves cannot be selected or edited here.

Main Display > Settings > Drills + Custom Prog > Manage Custom Lists > Edit Custom Scenario List>+/- Custom Scenarios



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

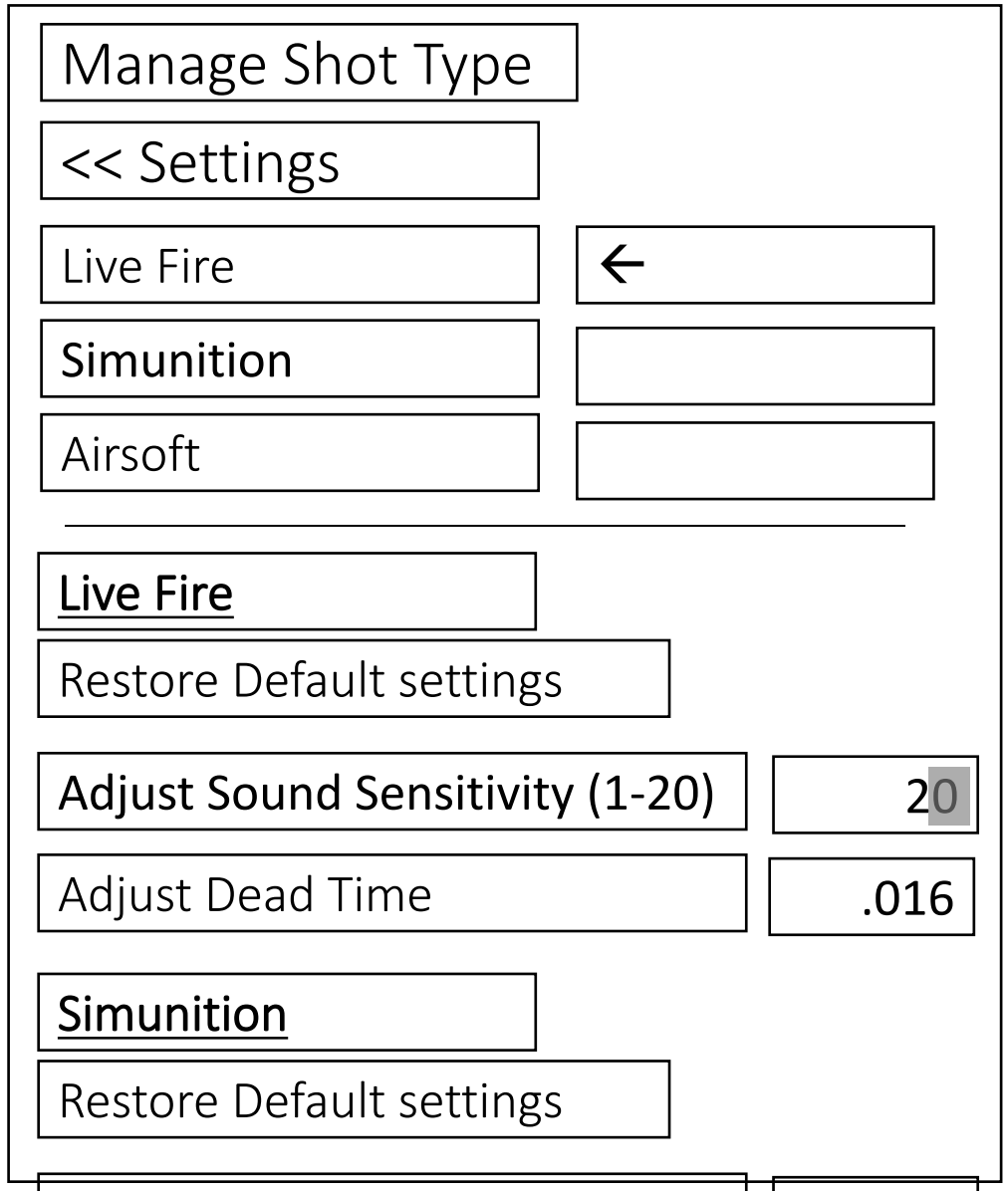
This menu allows the user to add or remove custom scenarios from a list.

All custom scenarios are listed here (scrolling down to see them all) Scenarios with an "X" in the box are included in the list.

To select a scenario, scroll down to it and hit enter. This will check the box, meaning that this scenario is included on the list. Selecting again will uncheck the box.

Scenarios themselves cannot be selected or edited here.

Main Display > Settings > Manage Shot Type



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Allows the user to enter the menu where they can adjust shot type and sensitivity.

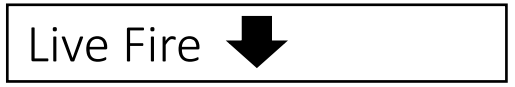
The device is intended to be functional with both real firearms and with simulated weapons such as simunition, UTM, and airsoft. However, the sound and recoil (using the ISO devices) are very different between these different options, so determining whether a shot occurred or not will probably require different processing algorithms and some functions may be limited, or reliability may be reduced, when using some simulated weapons.

Functionality with simunition, airsoft, and UTM are not intended to be a component of the MVP firmware product.

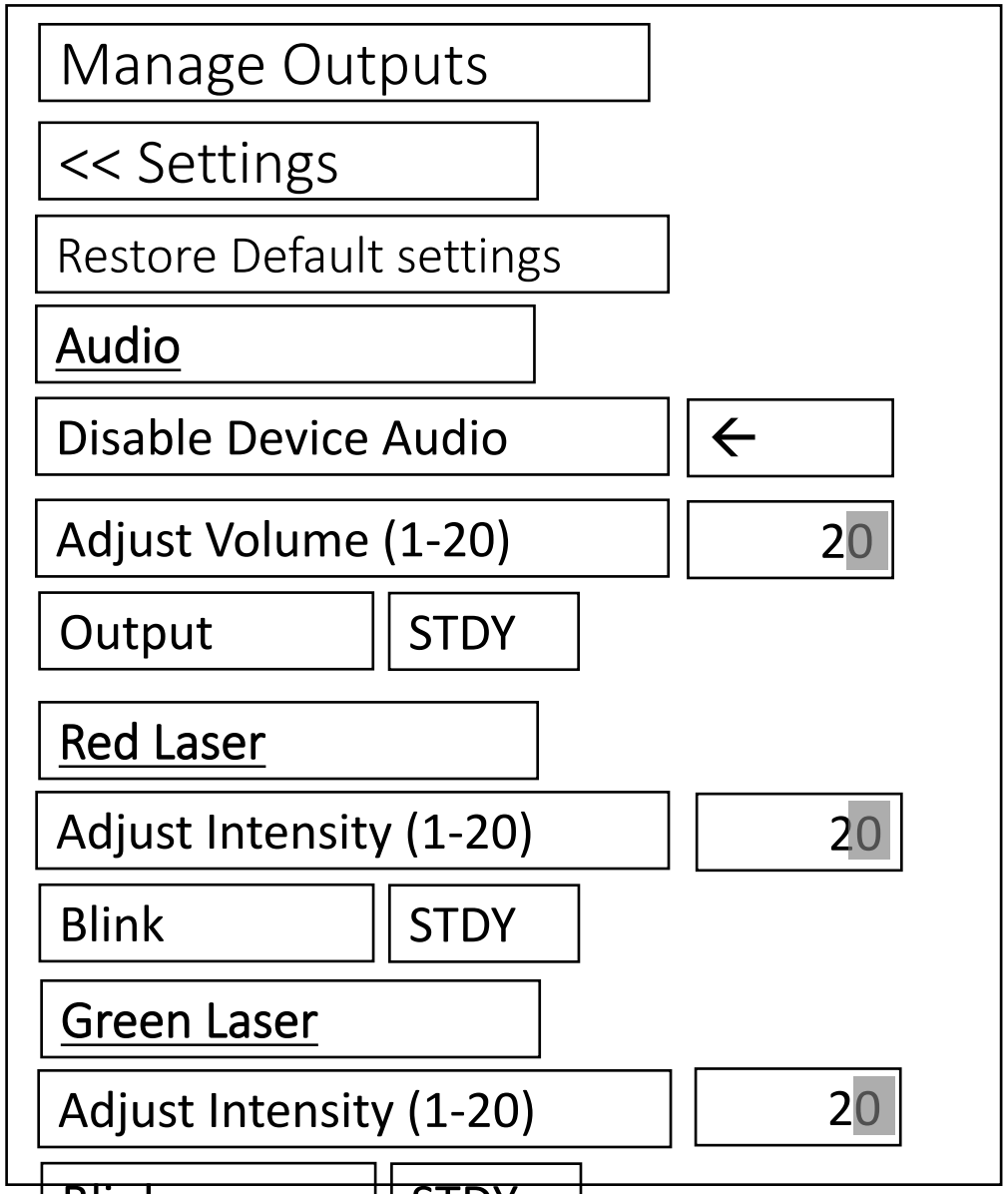
However, the ability to adjust shot sensitivity for live fire and the ability to adjust dead time for live fire is important for the MVP, because these impact live fire functionality.

Select the one in use at the top. Adjust settings for each individual mode below by scrolling down.

Alternative for the selection of the type of input (live fire/simunition/airsoft) is to use a dropdown or selection menu where the selections are Live Fire, Simunition, Airsoft)



Main Display > Settings > Manage Outputs



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Allows the user to enter the menu where they can adjust the outputs.

The user can disable the device audio. This applies in all modes.

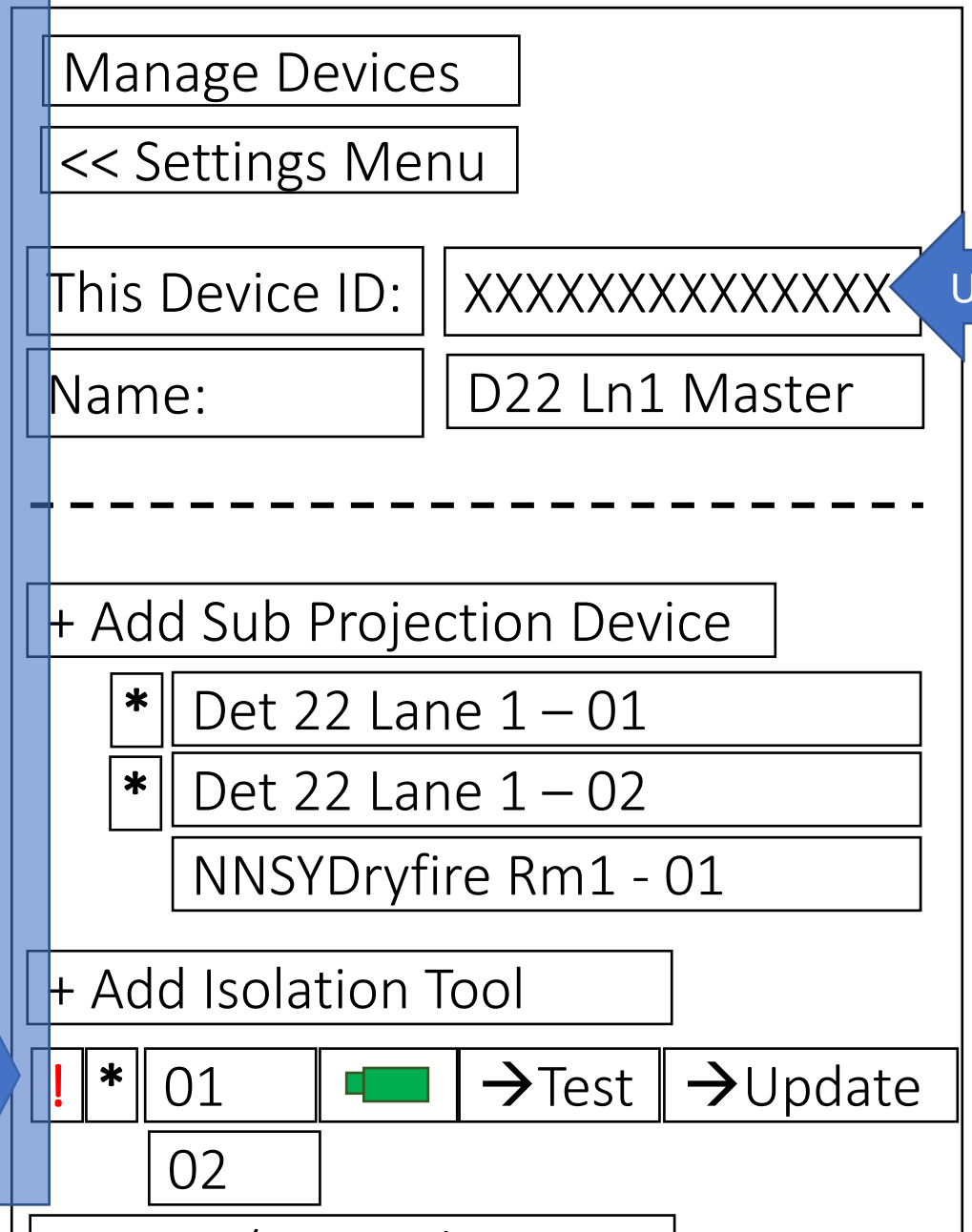
I don't think the current rev allows us to adjust intensity on the outputs because we took out the ability to adjust current and voltage. If this is accurate, you can take out this menu item. We may consider this for a future gen of the NURO. If it can be applied, the setting here will be applied in all modes.

Blink should produce the options of STDY (steady, no blinking), 0.25 (1/4 second blinking) or 0.75 (3/4 second blinking)

The rest of the adjustments made here are applied in manual mode, parset mode, and drill mode. They will not apply in custom mode.

Defaults are max output power (if applicable) and STDY output for all options.

Main Display > Settings > Manage Devices



Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Allows the user to add or edit linked devices.

Devices that are linked add underneath each relevant heading category as they are added.

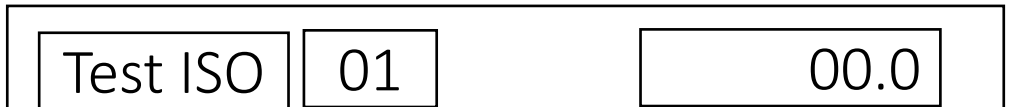
Scrolling down using the arrow keys should take the user to a linked device, allowing them to edit / remove that device if desired.

Devices links are controlled by master mode, however, the NURO sub device will need to be in the Manage Devices menu before it can be linked or delinked.

The exception is the Isolation Tool, which does not have a menu or any control buttons. It is controlled by accelerometer input.

Master devices that this device is subbed to in either master or repeater mode are listed here for information purposes only.

Because ISO tools do not have a screen. Linked ISO tools **that are currently communicating with** the device will have the battery status displayed here.Battery status should only be communicated when the master device is on this page. There will also be an option to quickly test an ISO tool from this page. This will allow the user to verify which ISO is which if labeling gets confused. Select the "→ Test" button and the following pop-up will appear. The timer will count down from 12 sec automatically. The value of "X" will be random between 3 and 9.



Main Display > Settings > Manage Devices > Add Sub Projection Device

Add Sub Projection Device

<< Manage Devices

In order to link a device

- Turn the device on
- Select the "Manage Devices" menu
- Place within 10ft of this device.

This Device ID: XXXXXXXXXXXXXXX

Name: D22 Ln1 Master

Link to: ID code: X X X X

XXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXX

Unique IDs of non-linked devices detected

Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Allows the user link projection devices. Are you sure?

Each time this menu is opened, a new, unique and random ID Code is generated and displayed. This will be used to link to any other NURO projection devices.

All projection devices in link mode (set on manage device settings menu) that are within range will be displayed EXCEPT those devices already linked.

In order for a device to be linked, it needs to be on – and communicating with the relevant device in the Manage Devices Menu.

After the user selects "Yes" to "Are you sure", the other device should have a menu show up that says the following

Link as sub to this device?

Device ID: XXXXXXXXXXXXXXX

Name: D22 Ln1 Master

Enter Code:

Confirm Link

Main Display > Settings > Manage Devices > Remove Sub Projection Device

Remove Sub Projection Device

<< Manage Devices

This Device: XXXXXXXXXXXXXXX

Device ID: XXXXXXXXXXXXXXX

Name: Det 22 Lane 1-01

Delink this device

In order to de-link a device

- Turn the device on
- Select the “Manage Devices” menu
- Place within 10ft of this device.

Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Allows the user to delink sub projection devices. Are you sure?

In order for a device to be delinked, it needs to be on – and communicating with the relevant device.

After the user selects “Yes” to “Are you sure”, the other device should have a menu show up that says the following

De-link from this device?

Device ID: XXXXXXXXXXXXXXX

Name: D22 Ln1 Master

Confirm Delink

After this is selected, a pop up or menu should appear that says – Delink Successful on BOTH devices

Main Display > Settings > Manage Devices > Add Isolation Tool

Add Isolation Tool

<< Manage Devices

In order to link an ISO Tool

- Put a battery in the ISO Tool
- Shake ISO for at least 10 sec
- Place within 10ft of this device
- Follow instructions below

→ Add ISO Now | 00.0

Shake/Tape ISO | X | Times

Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled
Allows the user link Isolation devices.

Each time this menu is opened, The menu will display instruction to get a battery in the ISO tool and shake it for 10 seconds (which should turn it on).

The user should select and hit "enter" on "→ Add ISO Now"

After this is selected, the first set of instructions should show up telling the user to shake/tap the iso tool being linked a randomly generated number of times (3-9). (This is represented as "X" in the picture). The timer should also start running. It will run backwards from 12 seconds.

If this is identified successfully, a pop-up should appear saying

ISO Tool identified

→ Continue linking | → Cancel

If nothing was identified, a pop-up should appear saying: (Cancel returns to Manage Devices Menu).

Attempt unsuccessful. Check ISO battery.

→ Try again | → Cancel

There should be three iterations of aligning the random number of shake/tap

Main Display > Settings > Manage Devices > Remove Isolation Tool

Remove Isolation Tool

<< Manage Devices

In order to de-link an ISO Tool

- Put a battery in the ISO Tool
- Shake ISO for at least 10 sec
- Place within 10ft of this device
- Follow instructions below

→ De-link ISO Now | 00.0

Shake/Tape ISO | X | Times

Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled
Allows the user link Isolation devices. This is opened by selecting a linked-iso tool from the menu.

Each time this menu is opened, The menu will display instruction to get a battery in the ISO tool and shake it for 10 seconds (which should turn it on). The user should select and hit "enter" on "→ De-Link ISO Now"

After this is selected, the first set of instructions should show up telling the user to shake/tap the iso tool being linked a randomly generated number of times (3-9). (This is represented as "X" in the picture). The timer should also start running. It will run backwards from 12 seconds.

If this is identified successfully, a pop-up should appear saying

ISO Tool identified

→ Continue delinking | → Cancel

If nothing was identified, a pop-up should appear saying: (Cancel returns to Manage Devices Menu).

Attempt unsuccessful. Check ISO battery.

→ Try again | → Cancel

There should be three iterations of aligning the random number of shake/tap

Main Display > Settings > System

System

<< Settings

This Device ID:	XXXXXXXXXXXX
This Device Name:	XXXXXXXXXXXX
Firmware Version	NURO1.0

→Check for Updates

→ Wifi / BLE On

Wifi / BLE Off

Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Provides access to menu to show any relevant data about the device and allow the user to connect to the application and update the device firmware. Allows Users to turn on/off the wireless communications suite (Wifi/BLE)

Update to Firmware XXXXXXX

→ Update → Cancel

Firmware up to date

→ Finished

Connect Device to App

→ Finished

Update Complete!

→ Finished

Main Display > Settings > Set Date / Time

Set Date / Time

<< Settings Menu

Set Date: YYYY MM DD

Set Time (24hr): 0000

Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Allows use to enter the menu to set date and time for the device

Main Display > Settings > Manage Saved Data

Manage Saved Data

<< Settings Menu

DTG	Name
YYMMDDT24HR	CustomName
----------	TestRun
200209T2154	Jon1
200209T2155	Jon2
200209T2156	Jon3
200209T2157	Jon4
200209T2158	Dusty1
200209T2159	Dusty2
200209T2200	Dusty3
200209T2201	Dusty4

Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Allows use to enter the menu to view saved data.

User can see the saved runs, saved in order with date time group (if any) and custom name (if any) displayed. User can scroll to or select any individual run for more information.

Main Display > Settings > Manage Saved Data > View / Delete Run

View / Delete Saved Run

<< Manage Saved Data

Run Time:	200209T2201
Run Name:	Dusty4
Mode:	Manual
Prog:	None

→Delete This Run

Filter

ID	ACT	SPLIT	TIME
XX	STRT	XXX.XX	XXX.XX
ID	XXXX	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME

Note – whenever out of main screen – all lasers are off and laser outputs (including from manual operation) are disabled

Allows use to view all relevant data from the saved run.

This adheres to the settings on the relevant display filters for the mode and/or scenario. If the scenario data isn't there any more (ie. the scenario has been deleted) it will revert to the CUSTOM filters settings for the device.

Deleting the run will result in an "Are you Sure" pop-up to verify.

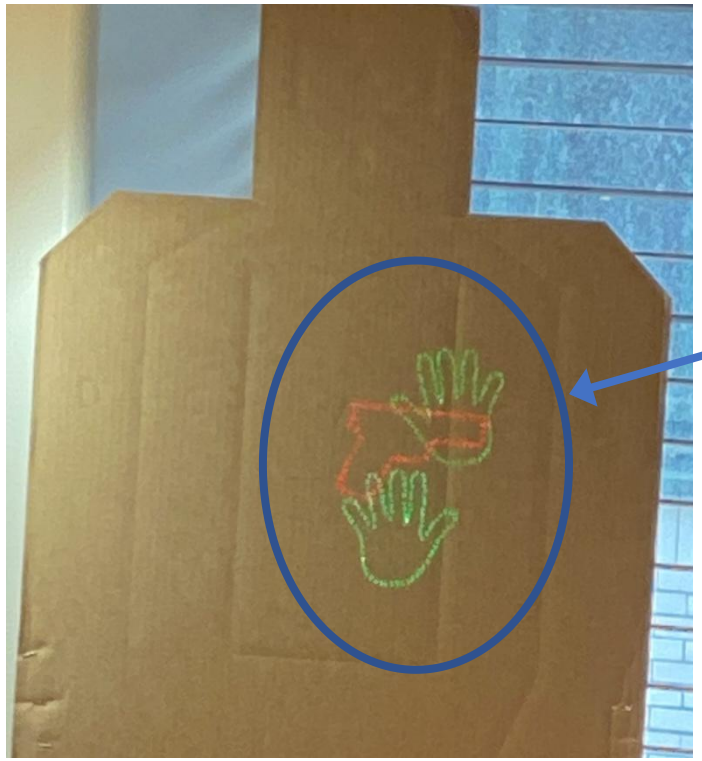
Selecting Filter will open Filter Menu for whichever mode the saved run was run in.

NURO ACCESSORIES

Accessories and recommended care

Diffractive Optical Elements (DOEs) work like a lens that may be installed over each laser aperture to produce a specific sized shape at a given projection distance. The unique DOE housing allows for 360 degrees of orientation of each shape for additional training scenario versatility.

The DOE's require no special care beyond wipe clean with a lint free damp clot safe for glass and optical materials. Do take care to keep the DOE free from dirt and debris as that may hinder proper thread engagement when installing them into the NURO laser aperture and/or add friction (difficulty) in unscrewing them.

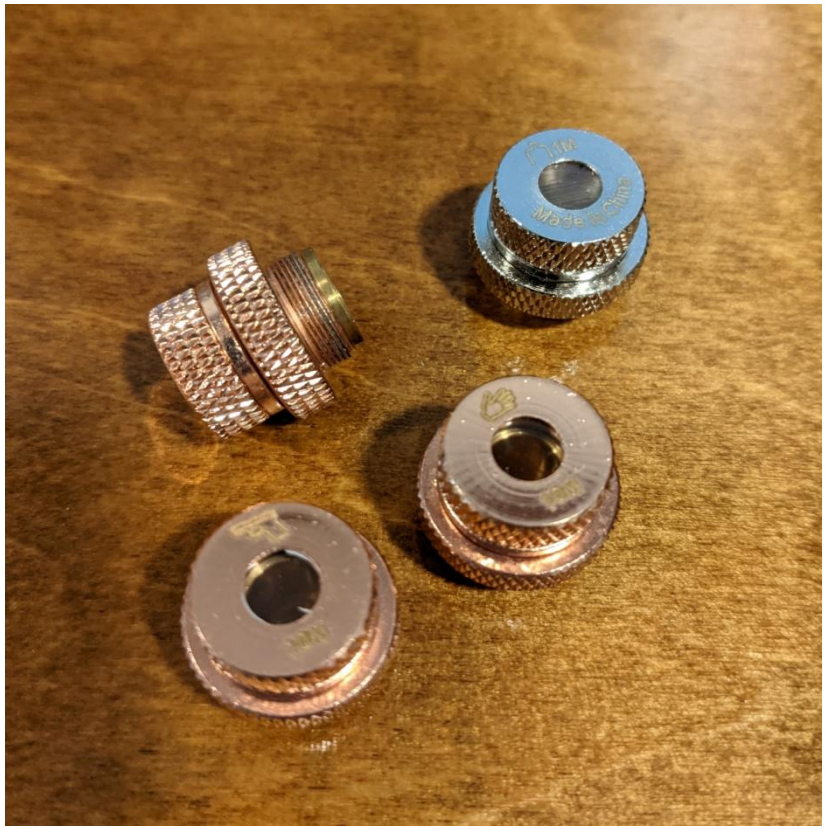


Projected Images

The NURO Device

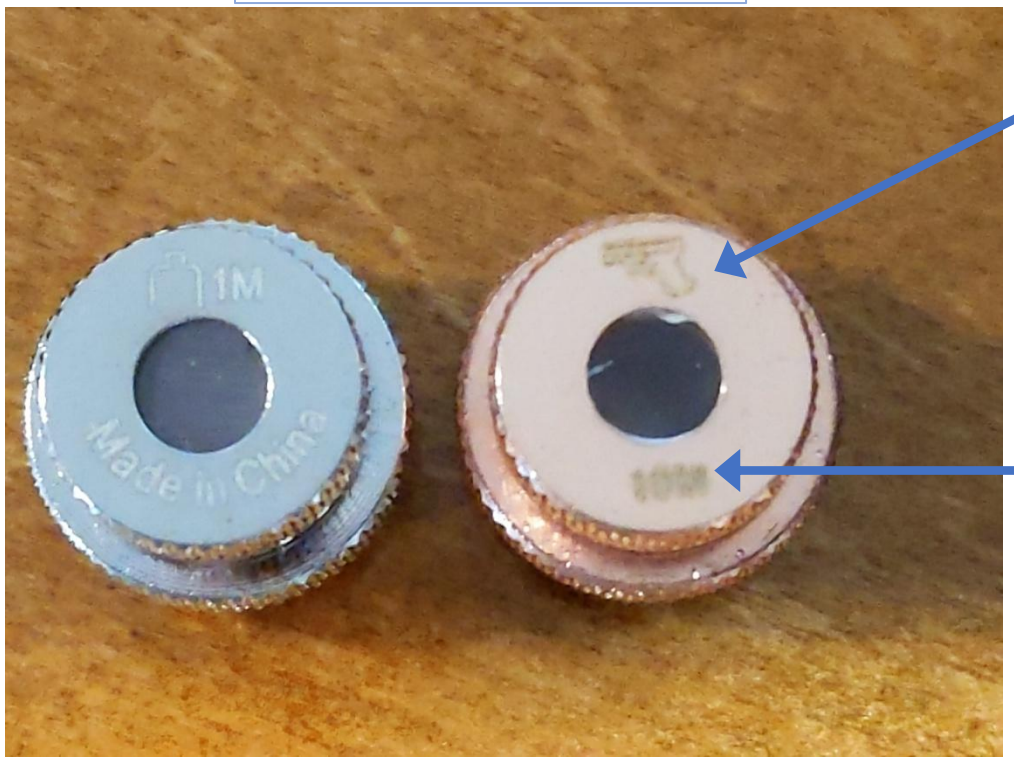
Diffractive Optical Elements (DOEs)

Currently in two projection distances: 10m (copper colored housing) and 1m (silver colored housing). Each DOE is laser engraved with a representative of the image and some have the projection distance indicated as well.



DOE Labeling

Projected Image (Gun)



Projection distance (10m)

The smaller outer knurled ring turns freely and allows adjustment of the projected image orientation (angular). The larger diameter knurled section controls the threads for installation in the NURO device.

The NURO Device

The Isolation Tool (ISO) is a user wrist-worn sensor that links to NURO devices to allow differentiation of users by two sensor technologies. This differentiation allows the NURO System to distinguish between the actions of multiple users conducting training simultaneously.

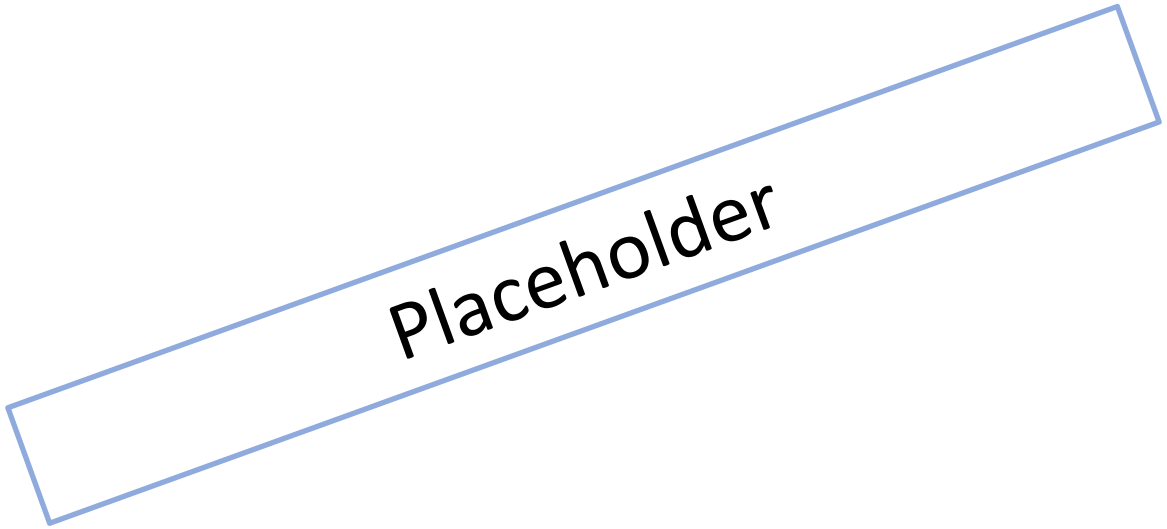
The ISO links to NURO via Bluetooth wireless connection providing NURO with sensor data.

[Linking ISO to NURO]

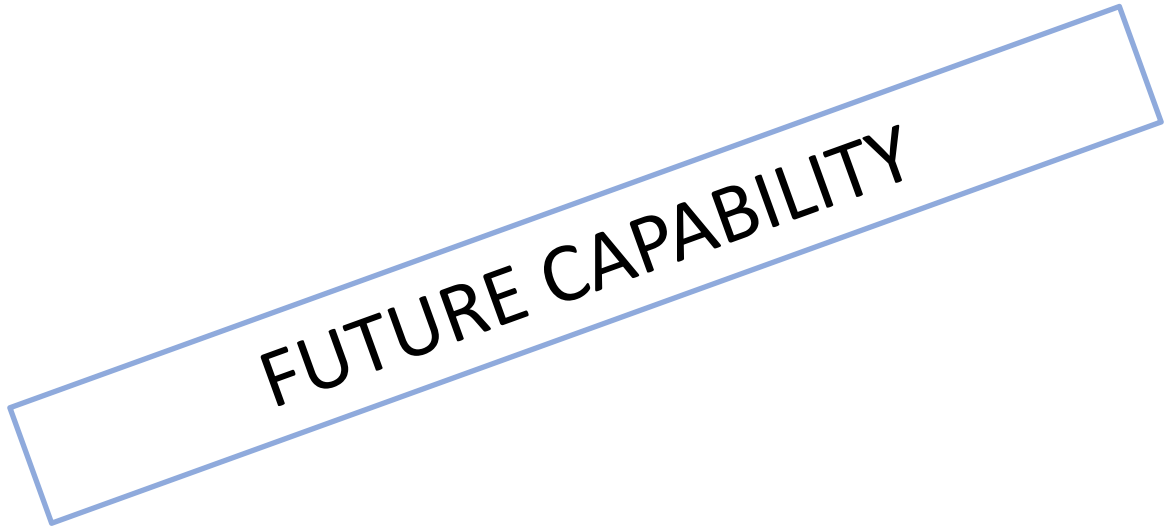
The ISO requires occasional battery changes (2032 coin battery) and to be wiped clean with a damp cloth.

*Your wrist strap may vary from the example shown here.

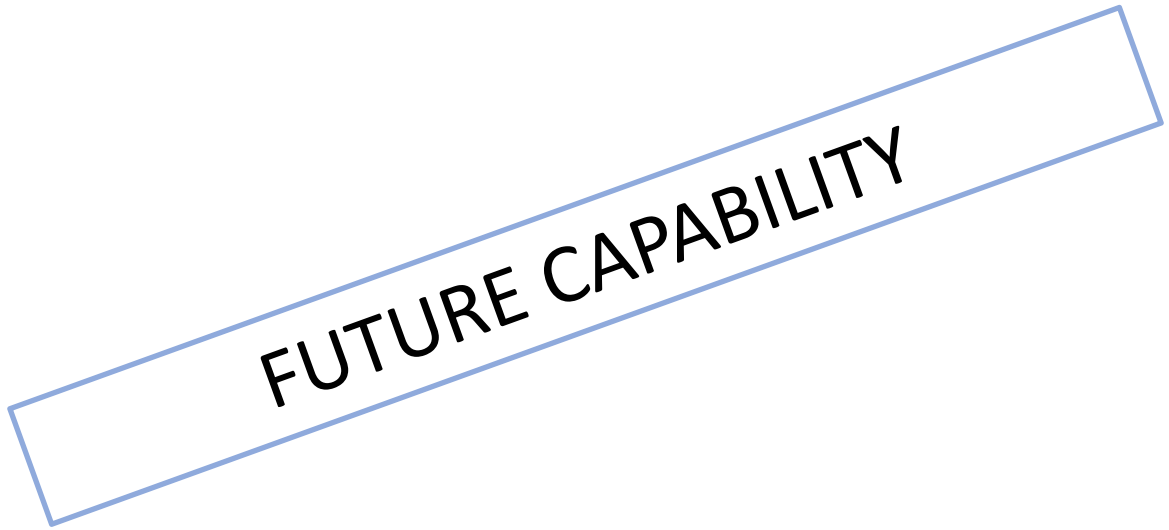
The NURO Mobile App



The Engagement Assessment Tool (EA)



The NURO System Online Ecosystem



Building Shooter Customer Support

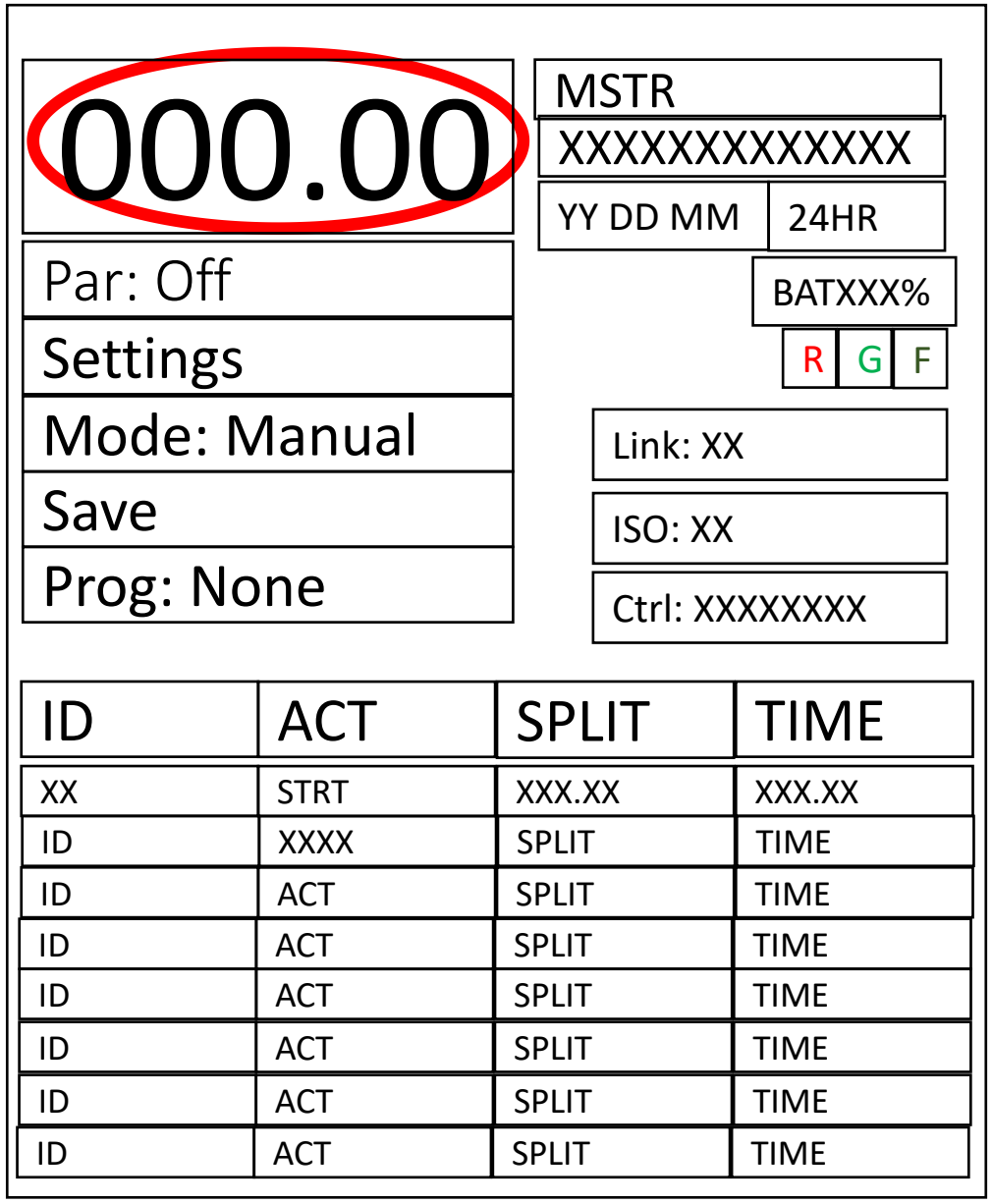
www.Buildingshooters.com

[phone/ helpline#]

Changing Names / Manual Data String Entry

The intent is to have an alphabet menu that can be scrolled through using the arrow buttons, similar to how a non-touch screen Garmin GPS works.

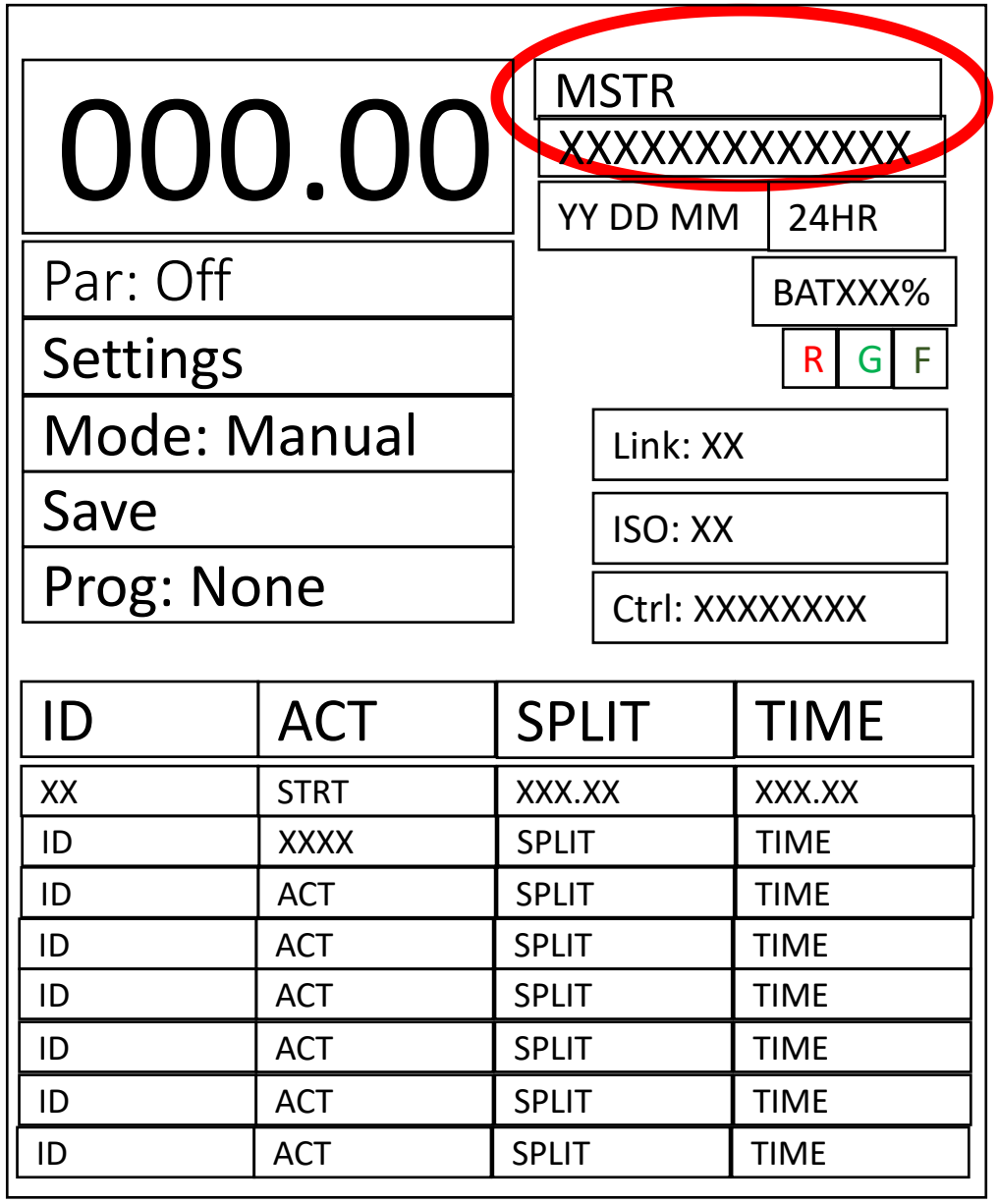
Main Display



Main run display. This displays the total time elapsed for the run. It is not a constant running display. The time listed here will be identical to the time listed for the last event (shot?) – *what does the existing prototype/code display? I don't remember.* recieved in the timeline. Time here is defined as the amount of time elapsed between the initiation indicator / initiation (may be the same or not depending on if there is a delay involved) and the event.

Events are the initiation sequence, audio (buzzer) on/off, R on/off, G on/off, F on/off and shot occurrence.

Main Display



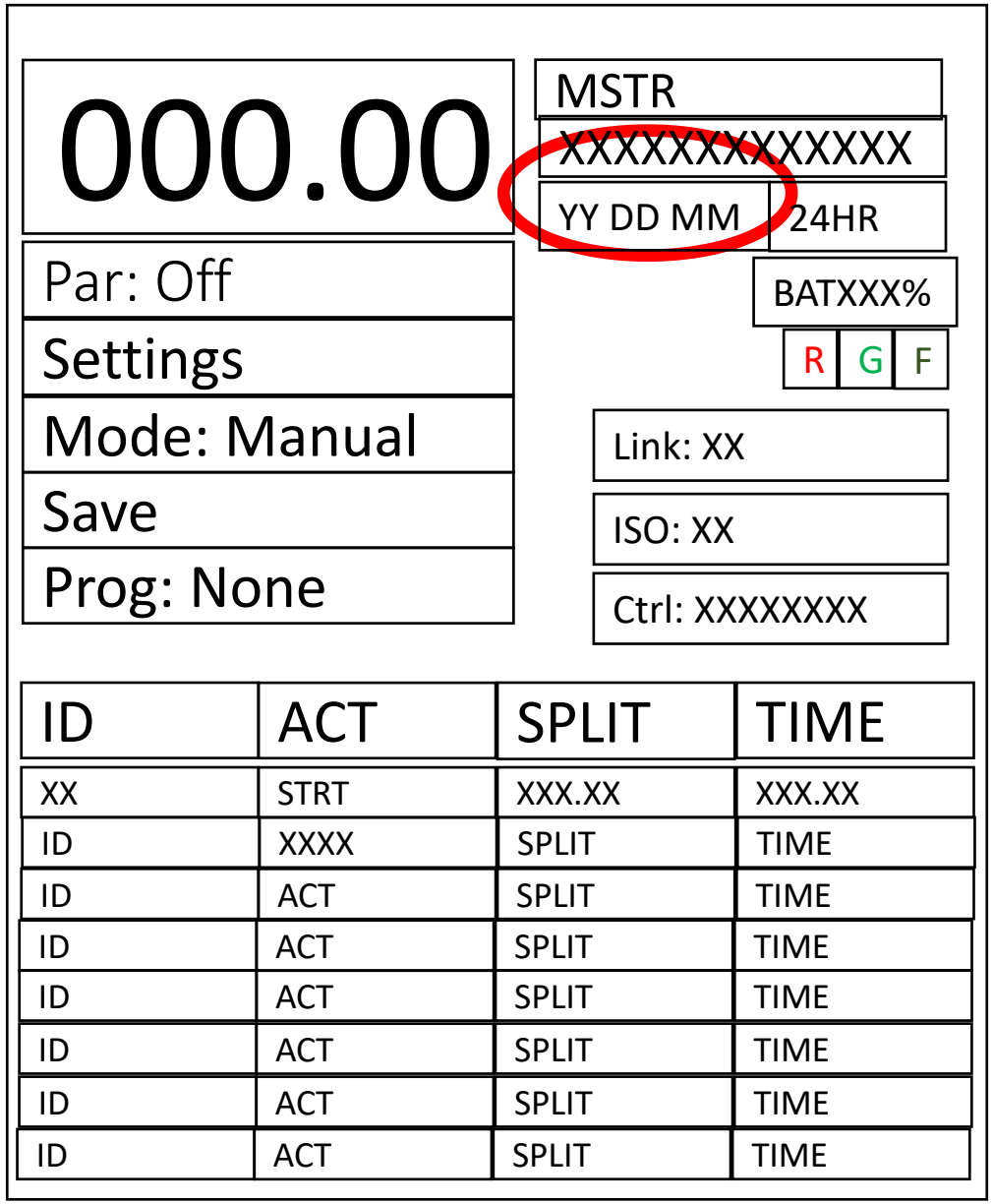
Displays the device configuration currently in use along with the device name (below).

Devices can be in one of three configurations

- **Master** – for standalone device use or, alternatively, allows the device to be the central node / control station / data hub for an array of subservient devices. **This is limited to [1]MSTR/[4]SUB**.
- **MSTR *New***
- **Repeater3** – For use in networking with a limited number of devices using soft networking via the wifi chip's limited connection points. This limits to [1]RPR3/[3]SUB/[1]Control App
- **RPR3*New***
- **Repeater** – For use in group training settings. The device will function either alone or as the central node / control station/ data hub for an array of subservient devices. However, the device in repeater configuration will be subservient to, and pass data to, a mobile control device running an application (such as a tablet or phone).
- **RPTR *New***
- **Sub** – Device functions as a projector / noise emitter only based control or programs received from either a master or repeater device. Displays Sub Identifier??
- **SUBXX *New***
- **Master WLAN –** for integration of a Wireless LAN into device only operations. *Future Dev past MVP*
- **MLAN *New***

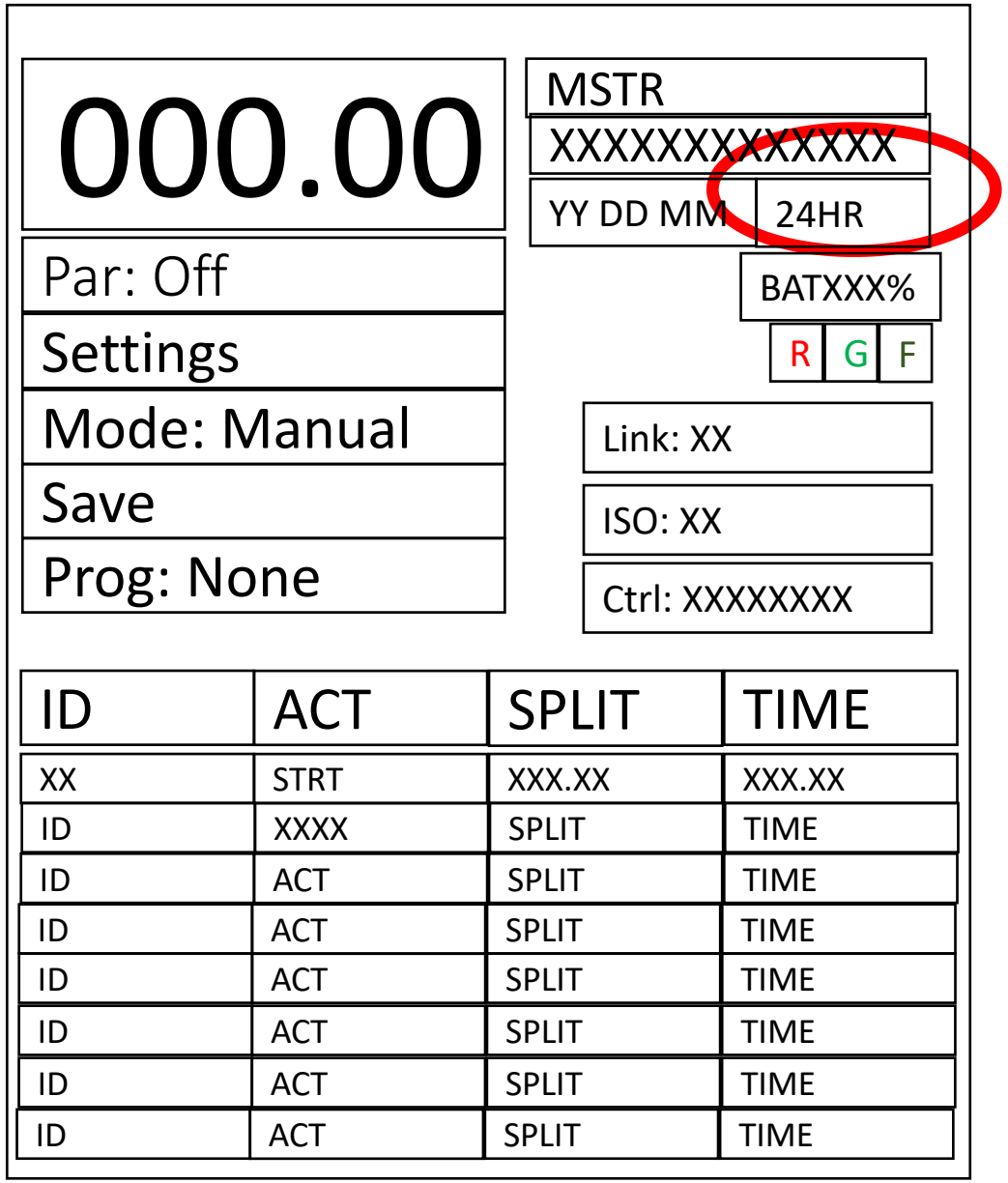
~~Configuration of the device is changed in the settings menu.~~

Main Display



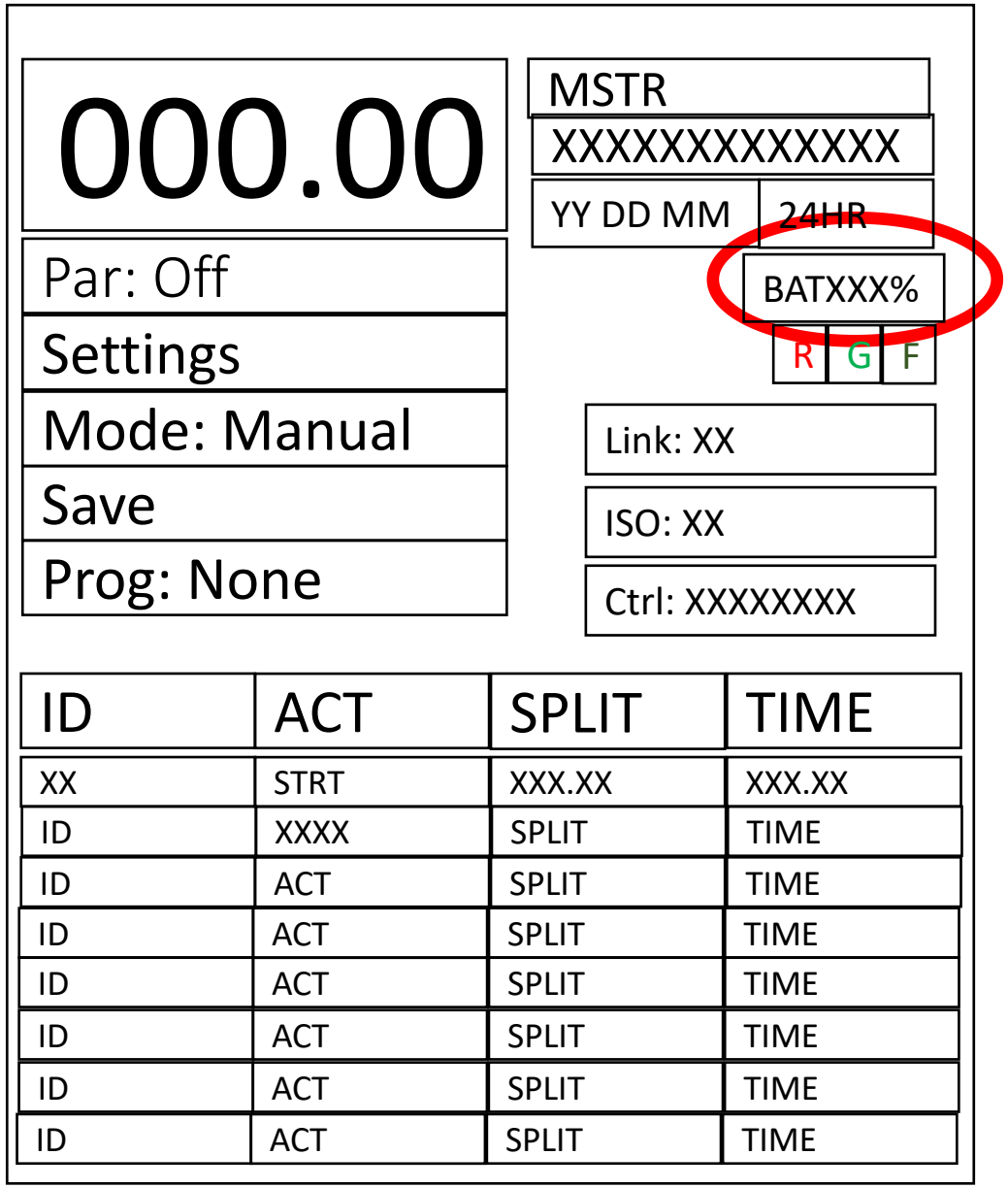
Displays current date. Configured manually in settings upon device setup.

Main Display



Displays current time. Configured manually in settings upon device setup.

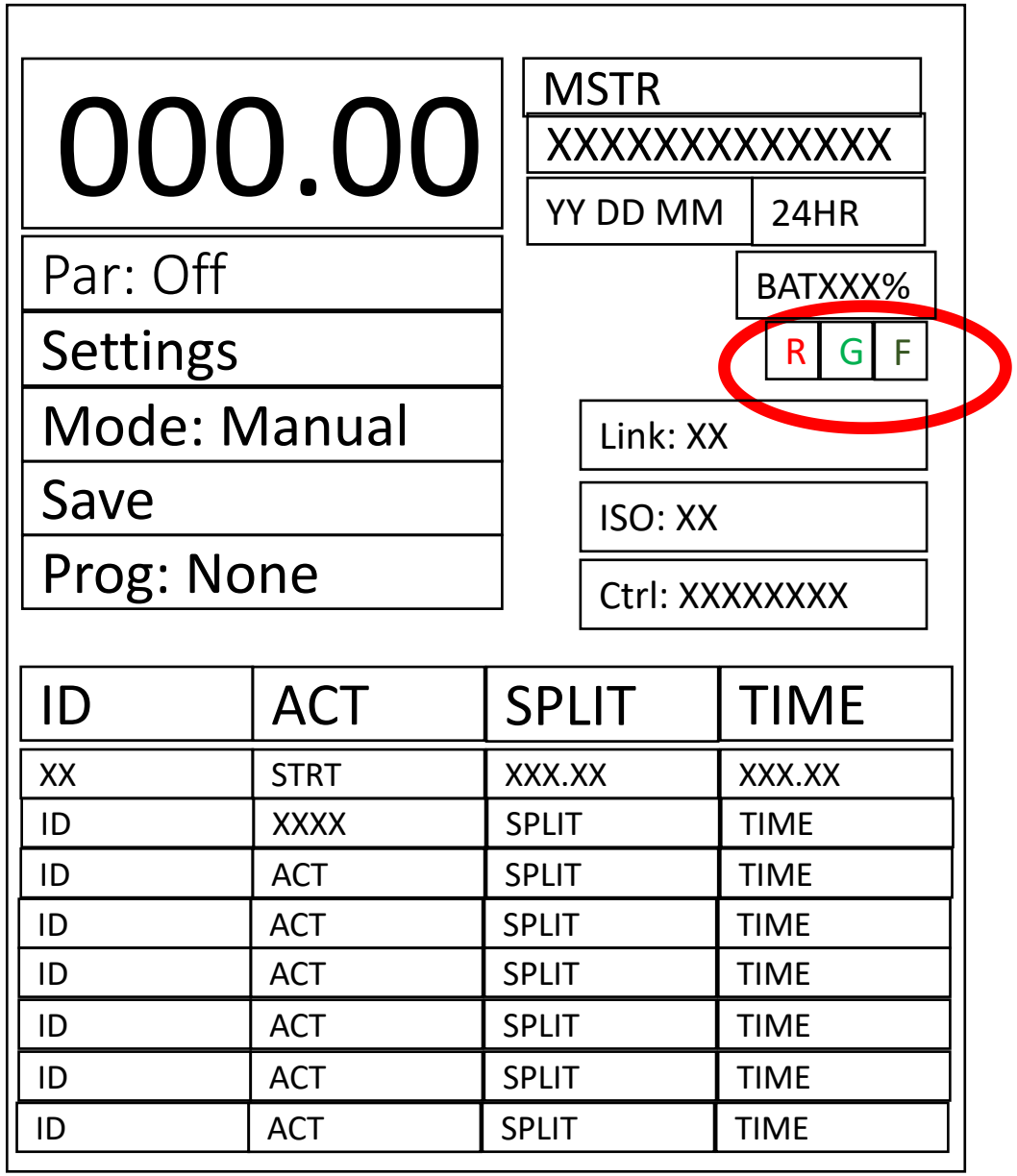
Main Display



Displays current estimated battery life remaining.

Alternatively the conventional method of showing a graphic battery with bars or a level in this space is acceptable.

Main Display



Indicators showing the status of the three laser modules. If the letter is displayed, the laser is on. If the letter is not displayed, the laser is off. The letter should blink if the “on” mode of the laser is set to blinking.

Main Display

000.00	MSTR
	XXXXXXXXXXXXX
	YY DD MM | 24HR
	BATXXX%
	R G F
Par: Off	Link: XX
Settings	ISO: XX
Mode: Manual	Ctrl: XXXXXXXX
Save	
Prog: None	

ID	ACT	SPLIT	TIME
XX	STRT	XXX.XX	XXX.XX
ID	XXXX	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME
ID	ACT	SPLIT	TIME

A par set, within a firearms training context, is a defined time period for specific skill performance. For example, a parset time for drawing a weapon from the holster and firing two rounds might be 1.5 seconds.

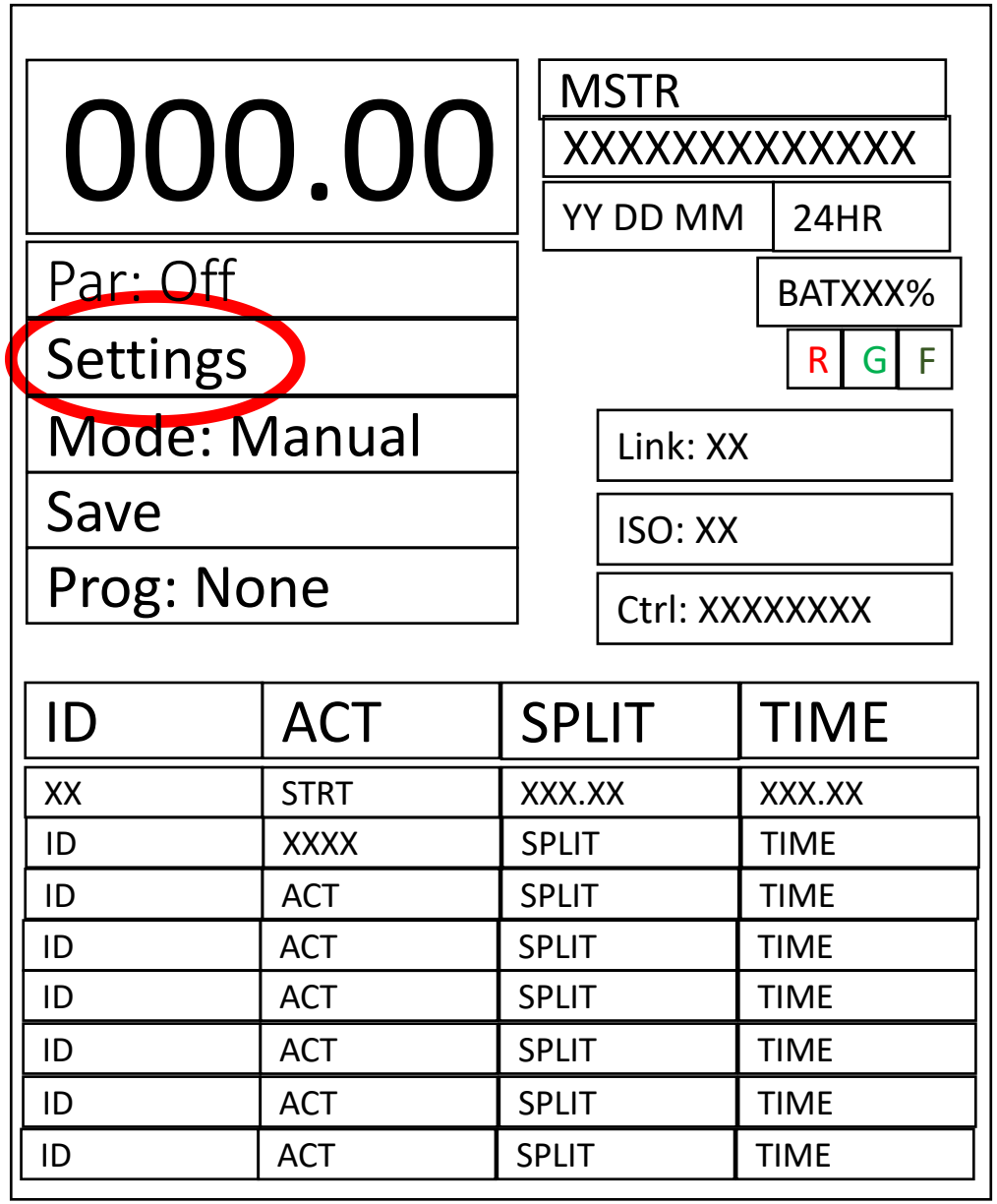
In modern training, this is typically measured based on a shooter's response time from an audible "beep" produced by a shot timer. We want to leave this same basic functionality and training capability in the NURO™ device. Therefore the device will have a par "mode". We also want the user to be able to manually define the stimulus used for the par, along with other parameters such as duration and start time after initiation etc. (this will all occur in the settings menus).

Par sets are generally used for some very specific training reasons, mostly (though not always) in non-live-fire settings so this will often simply display "off". If the device reads IS set in par mode, this will display the stimulus (only one stimulus applies to the par set) and the time period defined by the user.

Par: X XXX.XX For example, the following would indicate a 2.5 sec par time being set for the buzzer (audible). If nothing is programmed X 000.00 work fine as default place holders.

Par: A 002.50

Main Display



Settings menu will take the user away from this main display page to the settings main menu page.

FCC Information and Copyright

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates,
uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference
to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does
cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is
encouraged to try to correct the interference by one or more of the following measures:
—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help.

15.19 Labelling requirements.
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1)This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC RF warning statement: the device has been evaluated to meet general RF exposure requirement , The device can be used in portable exposure condition without restriction.