LMS SCADAS XS
LMS Smart Scope

LMS SCADAS XS and Smart Scope at a glance

LMS SCADAS XS Hardware overview:

- Modes of Operation
  - Wi-Fi (connected to Smart Scope app)
  - Standalone
  - Front-end (connected to Test.Lab) via USB
- Input channels
  - Binaural headset, SPDIF Binaural input
  - Voltage/ICP, GPS, CAN, Tacho
- Data storage on microSD card

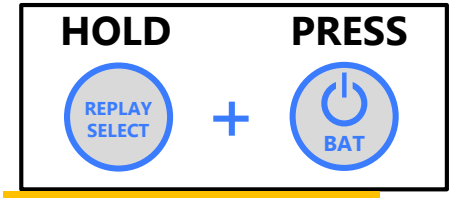
LMS Smart Scope app overview:

- Measurement template
- Measurement control
- Data Processing on tablet

LMS SCADAS XS – Buttons…

LMS SCADAS XS – 3 Operation Modes

To toggle between different modes

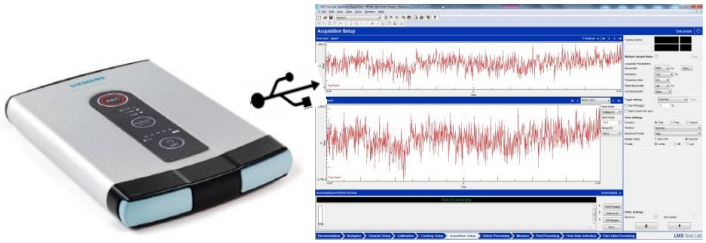


If you Hold BAT, XS will power down!

Wi-Fi Tablet (SmartScope)

Remote Start/Stop Acquisition
Test Setup & Template Selection
Data Verification & Statistics

USB - Front End (Test.Lab)

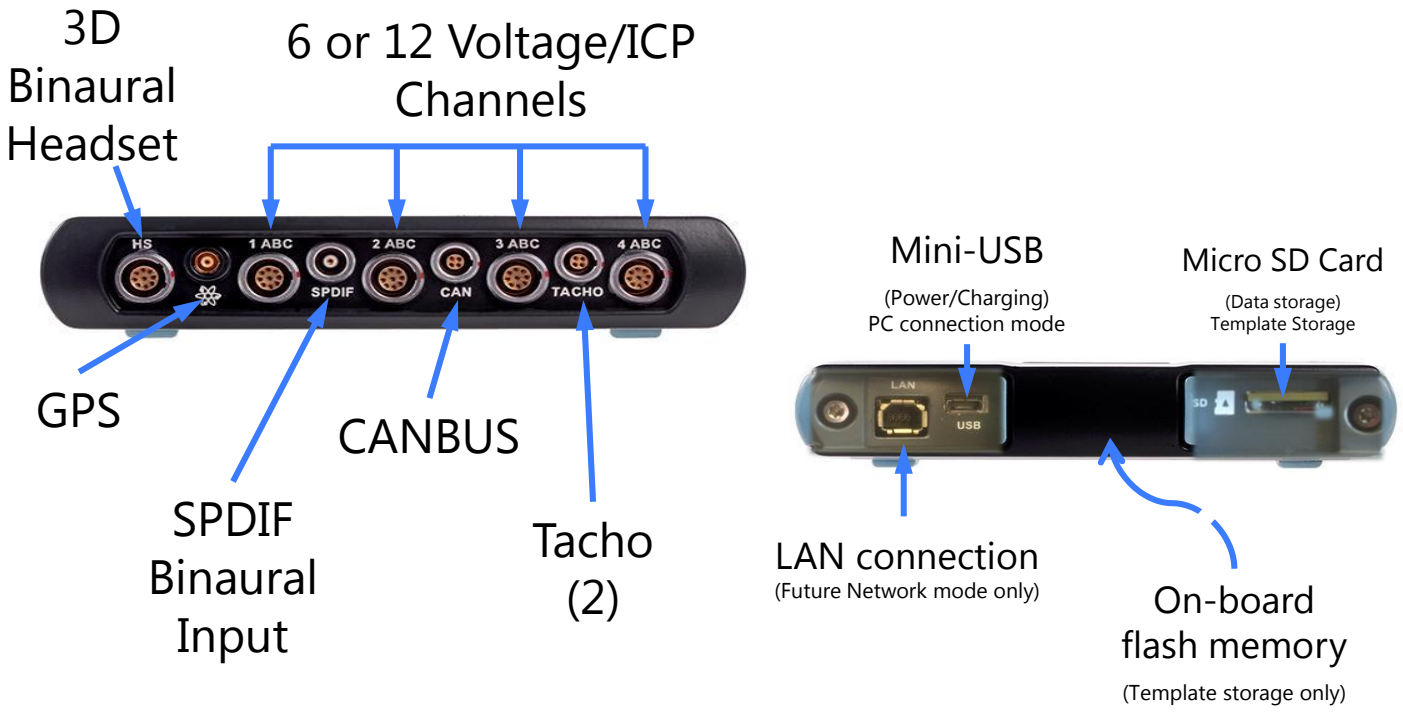


Measurement Start/Stop controlled by Test.Lab software
Data storage on PC disk
Extensive real time and post processing options

Standalone

No tablet required
Uses 1st template (alphabetically) on MicroSD card
Play back last recording (requires headphones)

LMS SCADAS XS – Hardware Overview



Launching LMS SmartScope

Power On
SCADAS XS

HOLD BAT till REC ring starts flashing

Change XS
mode to WLAN

HOLD **PRESS**

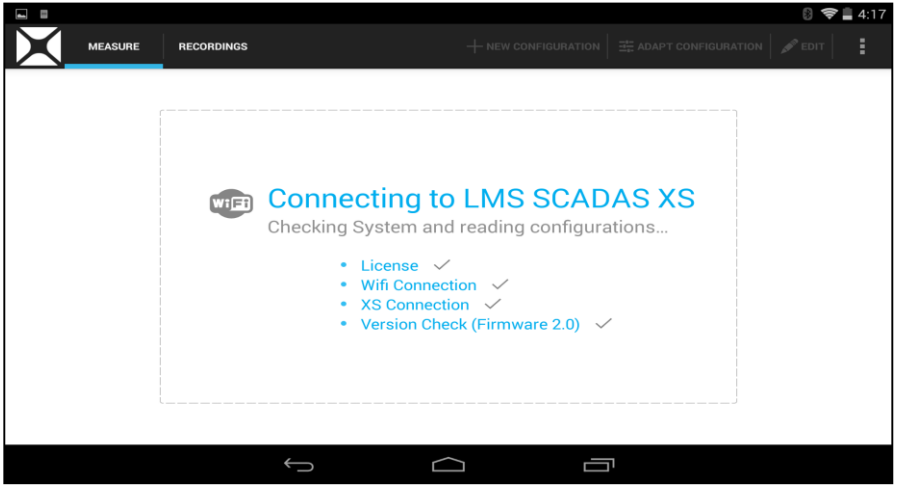
Launch
LMS Smart Scope

Connecting to SCADAS XS via Wi-Fi

Smart Scope app connects automatically to the previously used XS front-end.

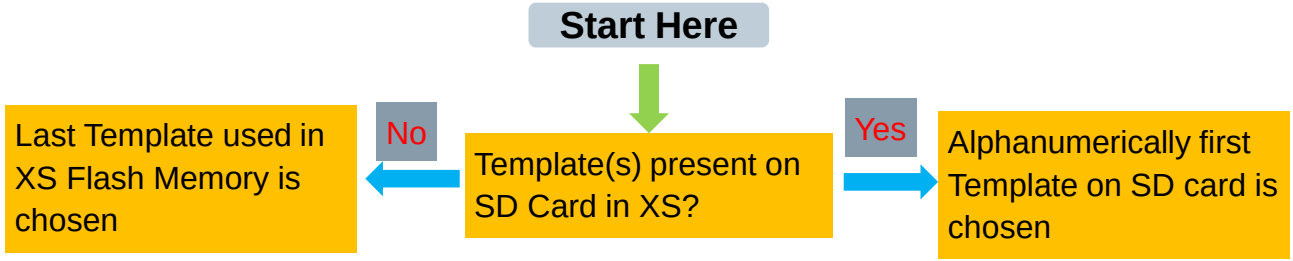
Connecting to a different XS frontend is also possible:

- Select a different front-end in Android settings
  or
- Connect to a different front-end at Smart Scope
  or
- Use “Connect To” option inside the app

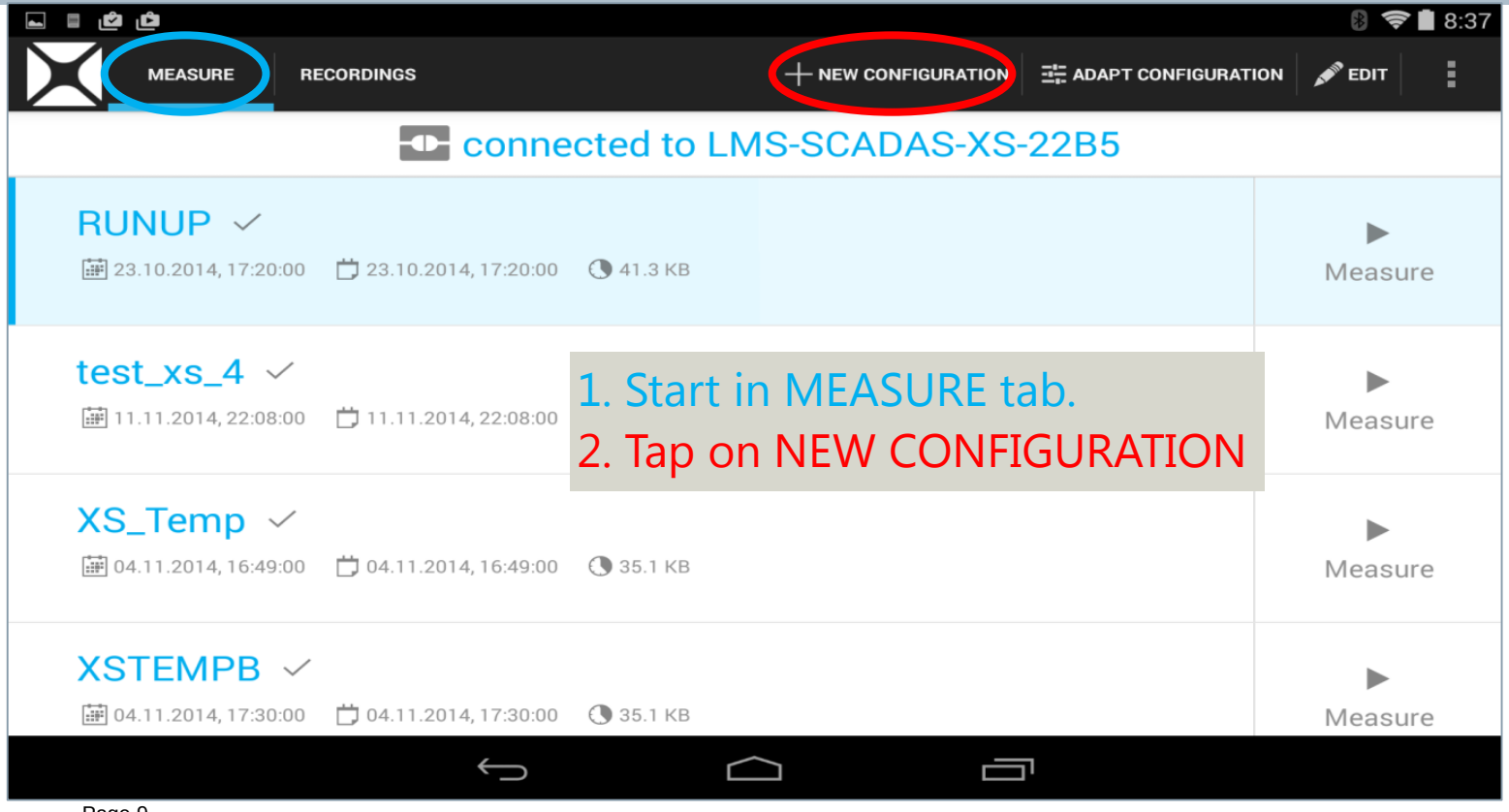


XS Template Selection Logic in Stand-alone Mode

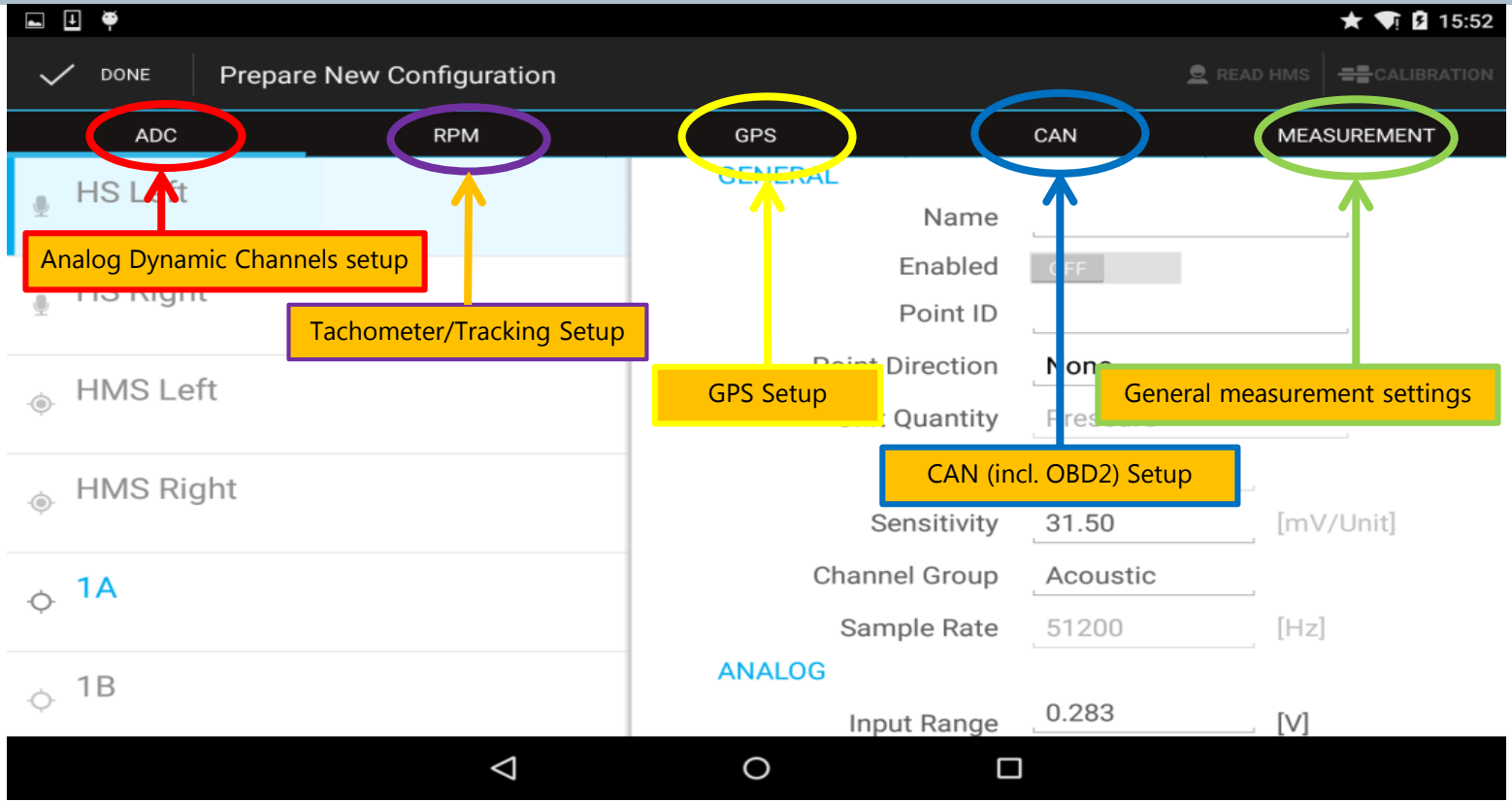
A template or configuration file (extension .xrdf) is required to acquire data with XS. The selection of the template depends on whether one is present on the SD card or not. Multiple templates may also be present on the SD card. The logic is presented below.



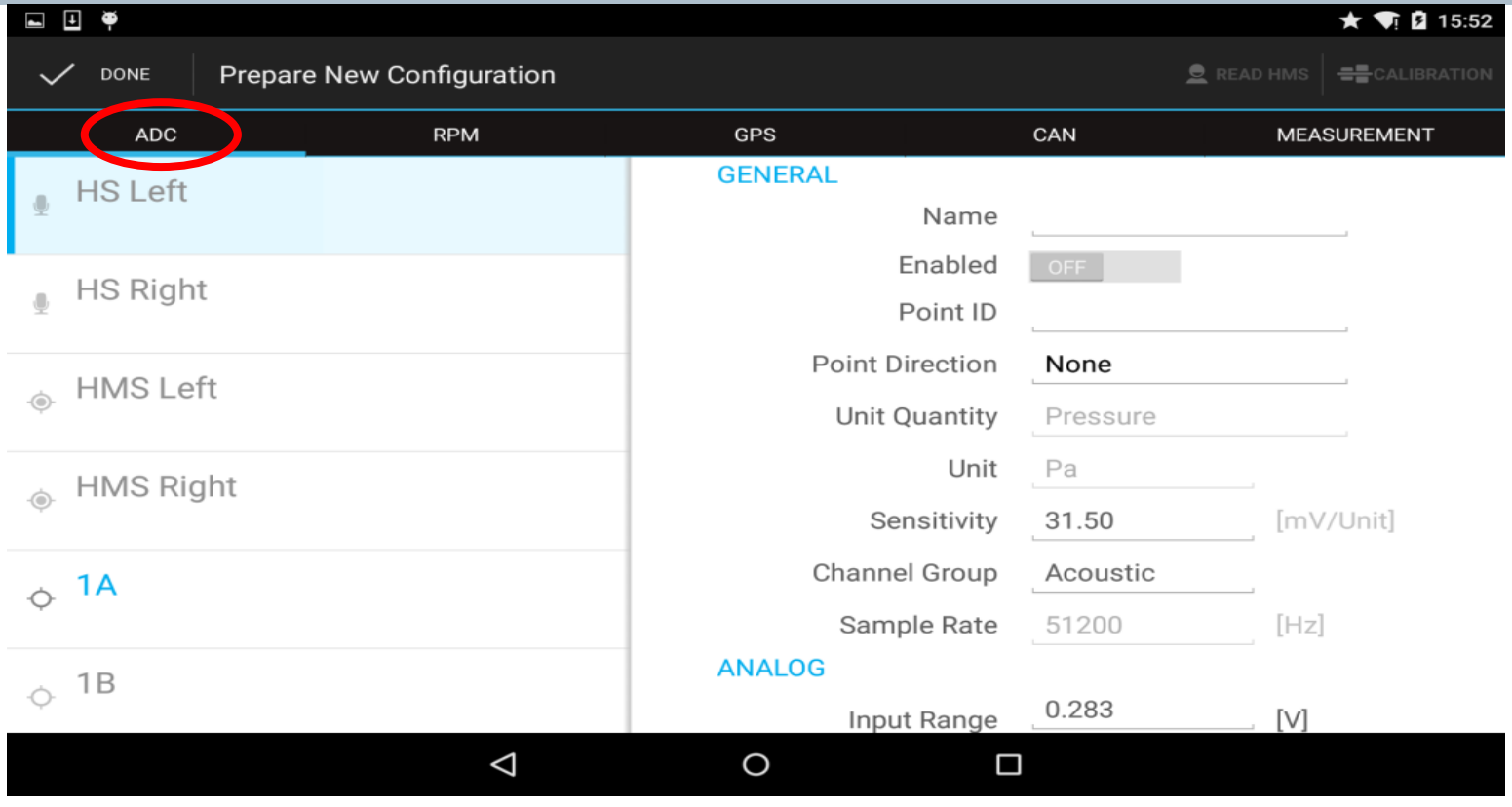
Creating a new measurement template



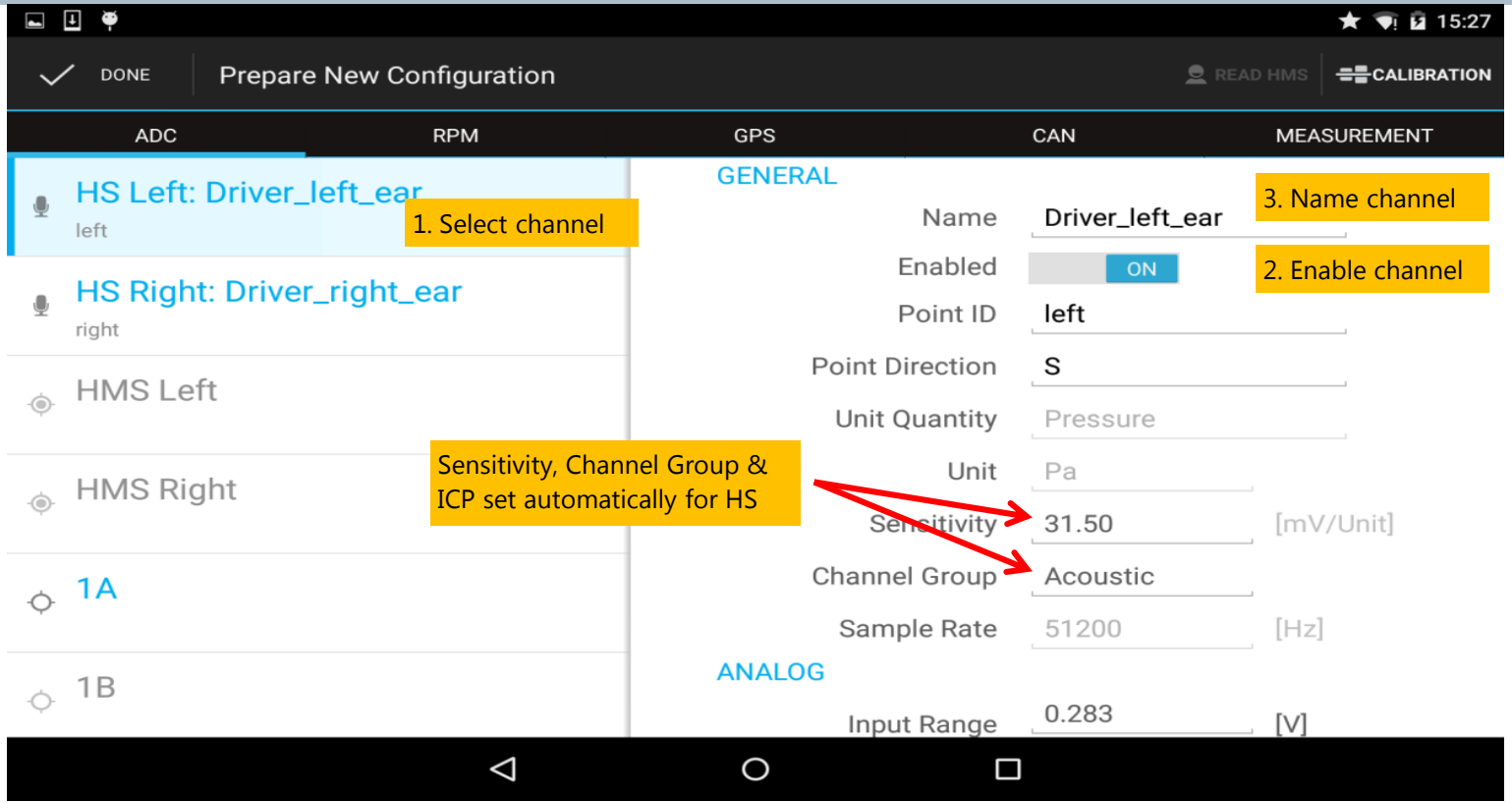
Different pages available for different channel types



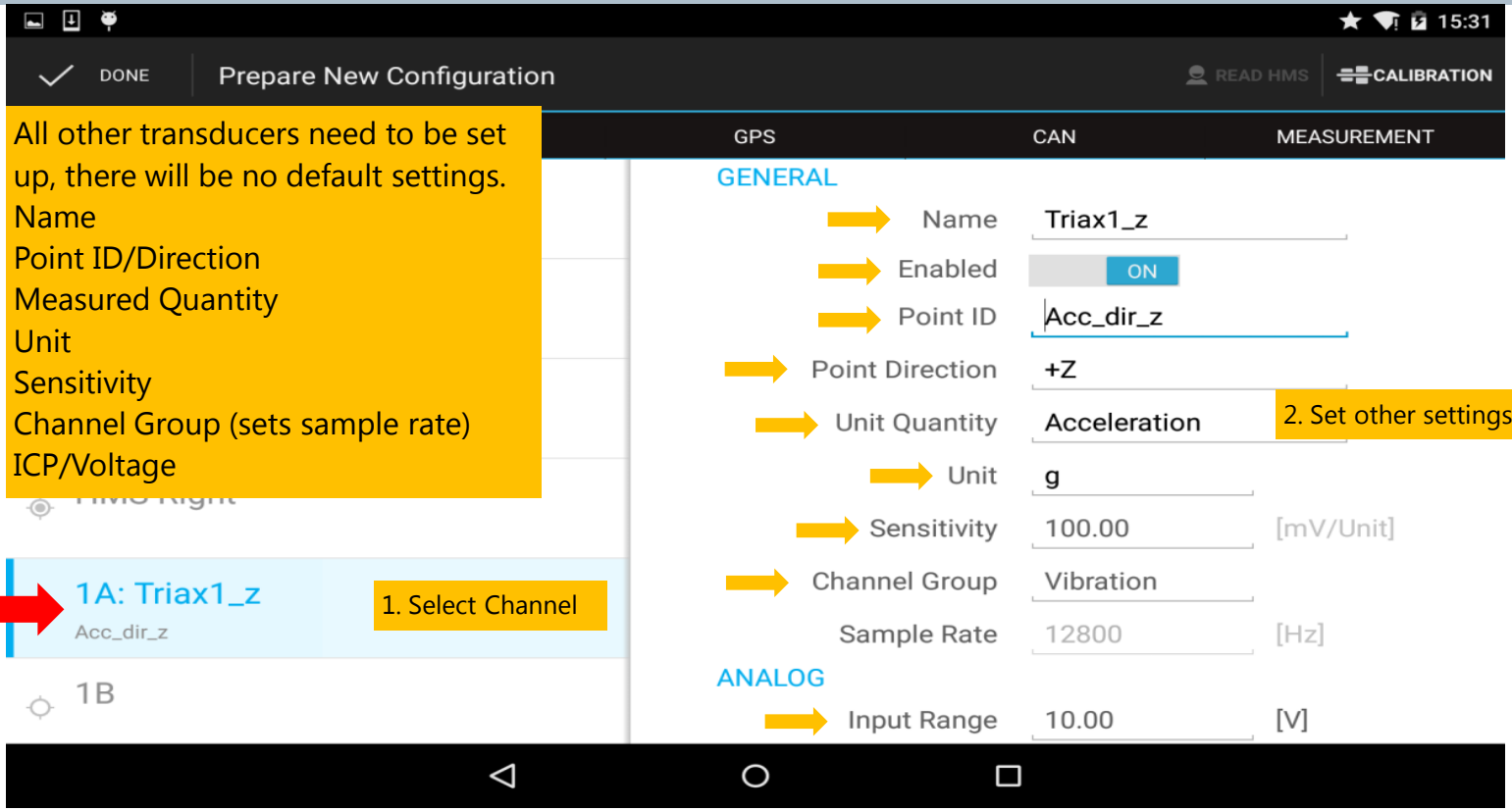
ADC channel definition



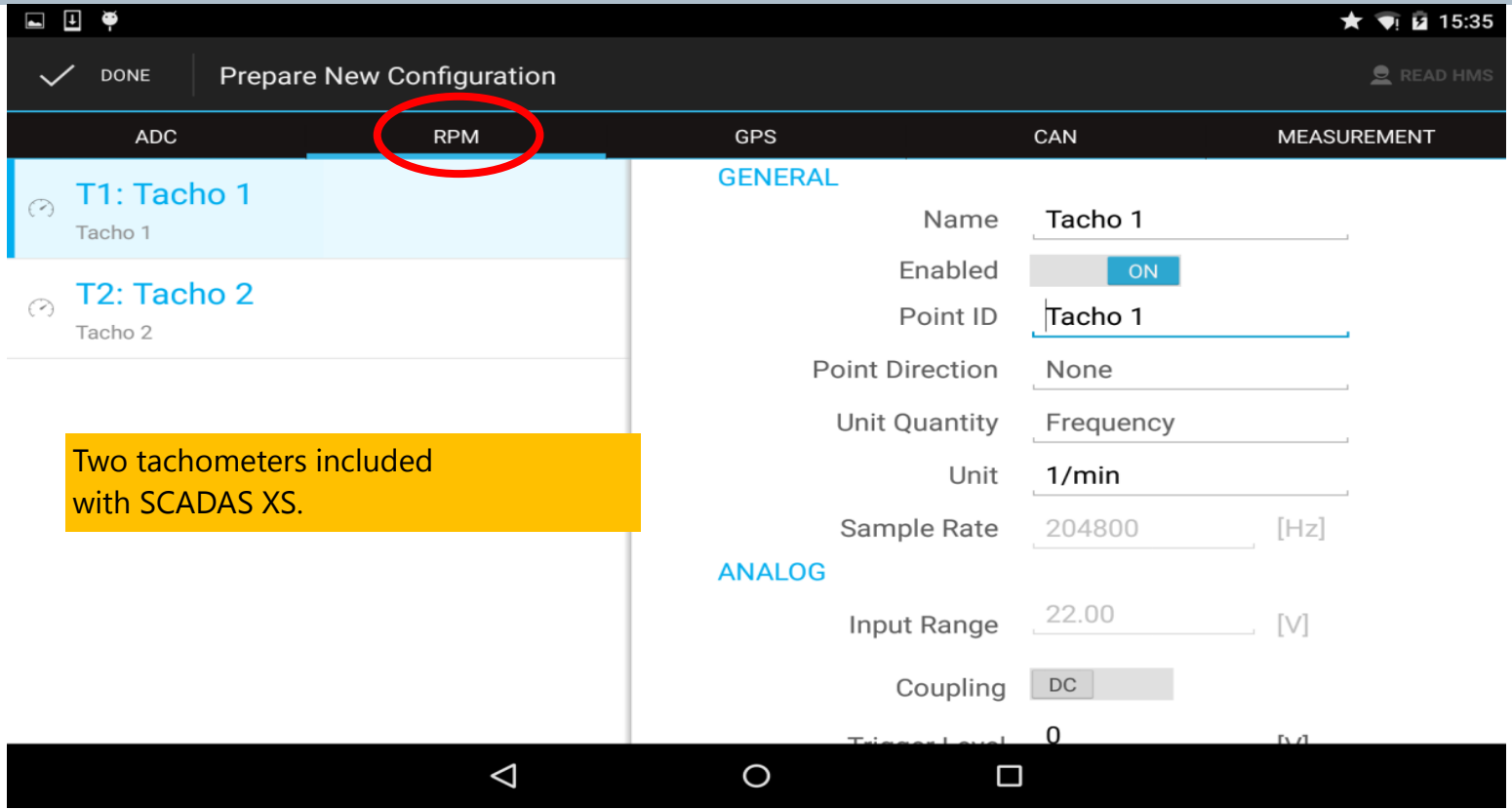
3D Binaural Headset Setup



Tri-axial accelerometer setup

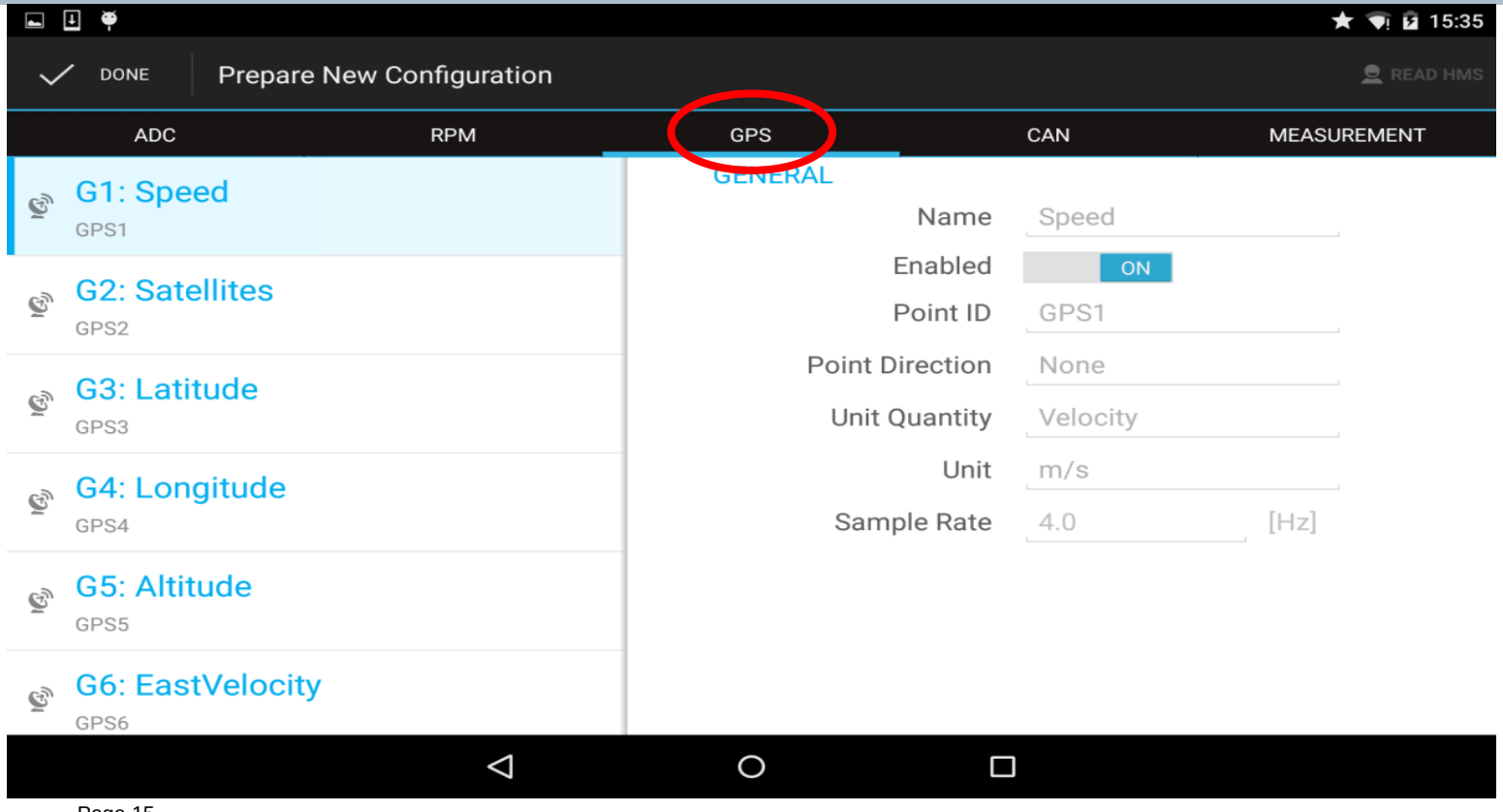


Tacho setup – RPM

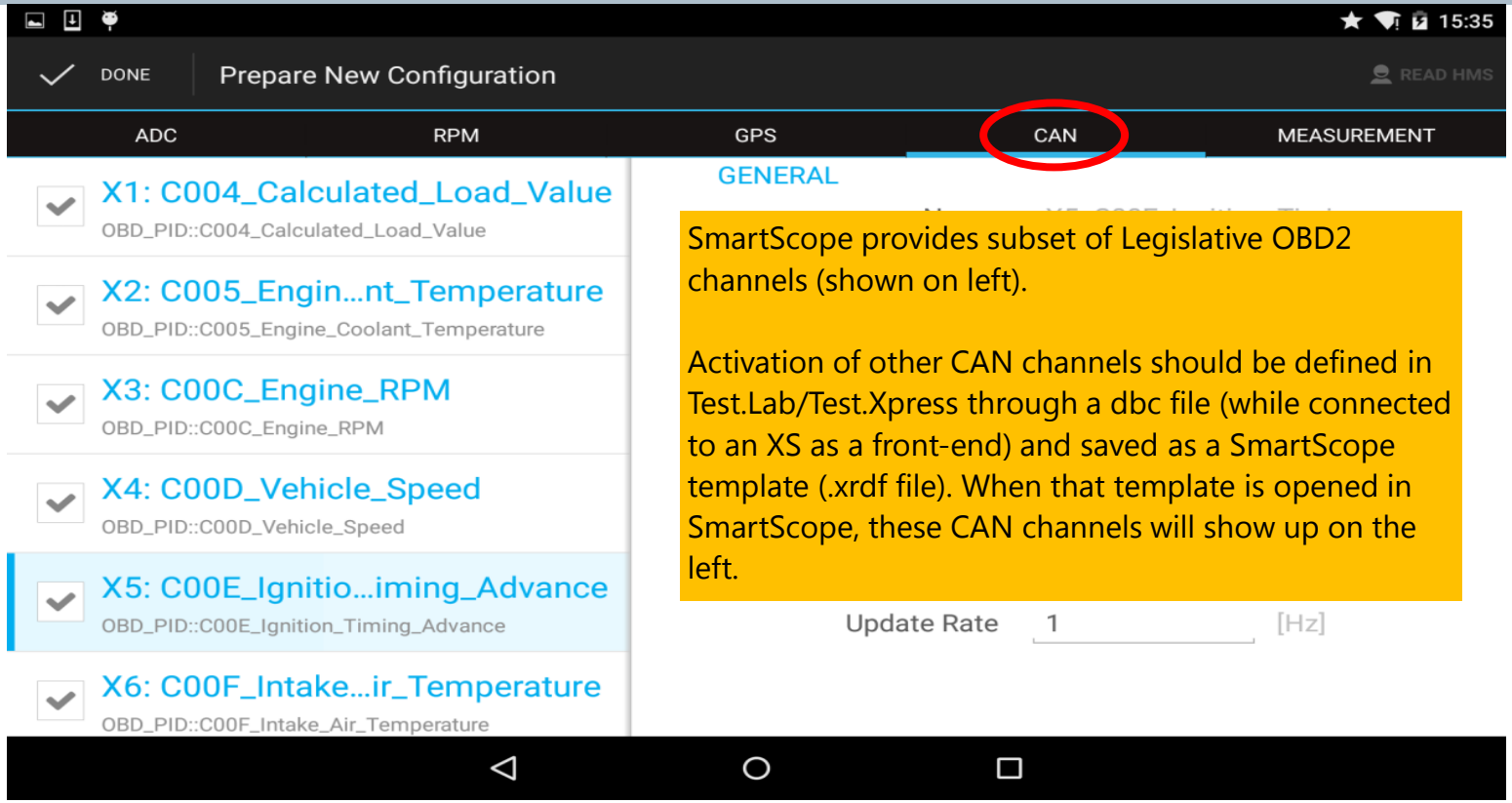


Two tachometers included with SCADAS XS.

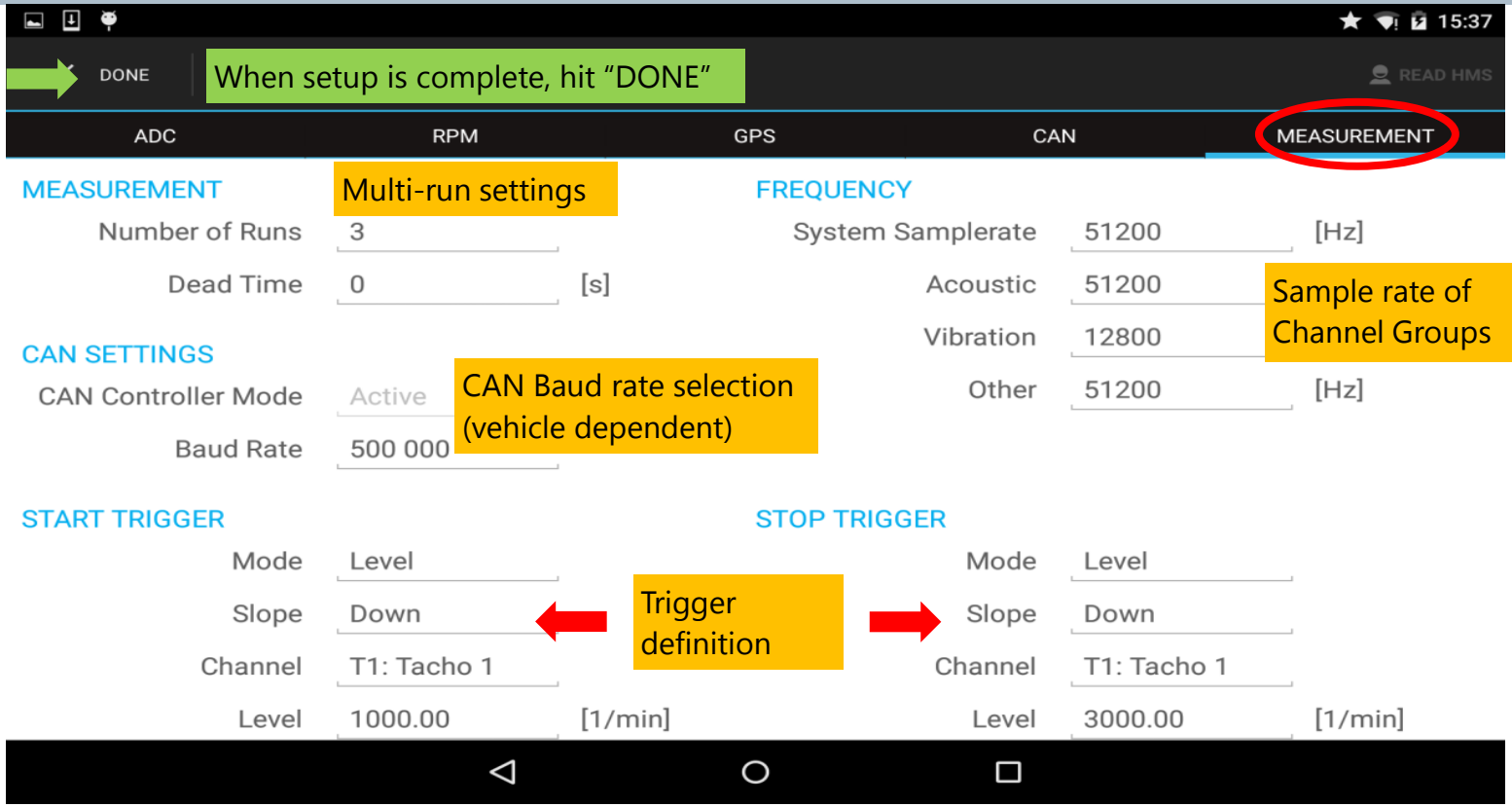
GPS activation



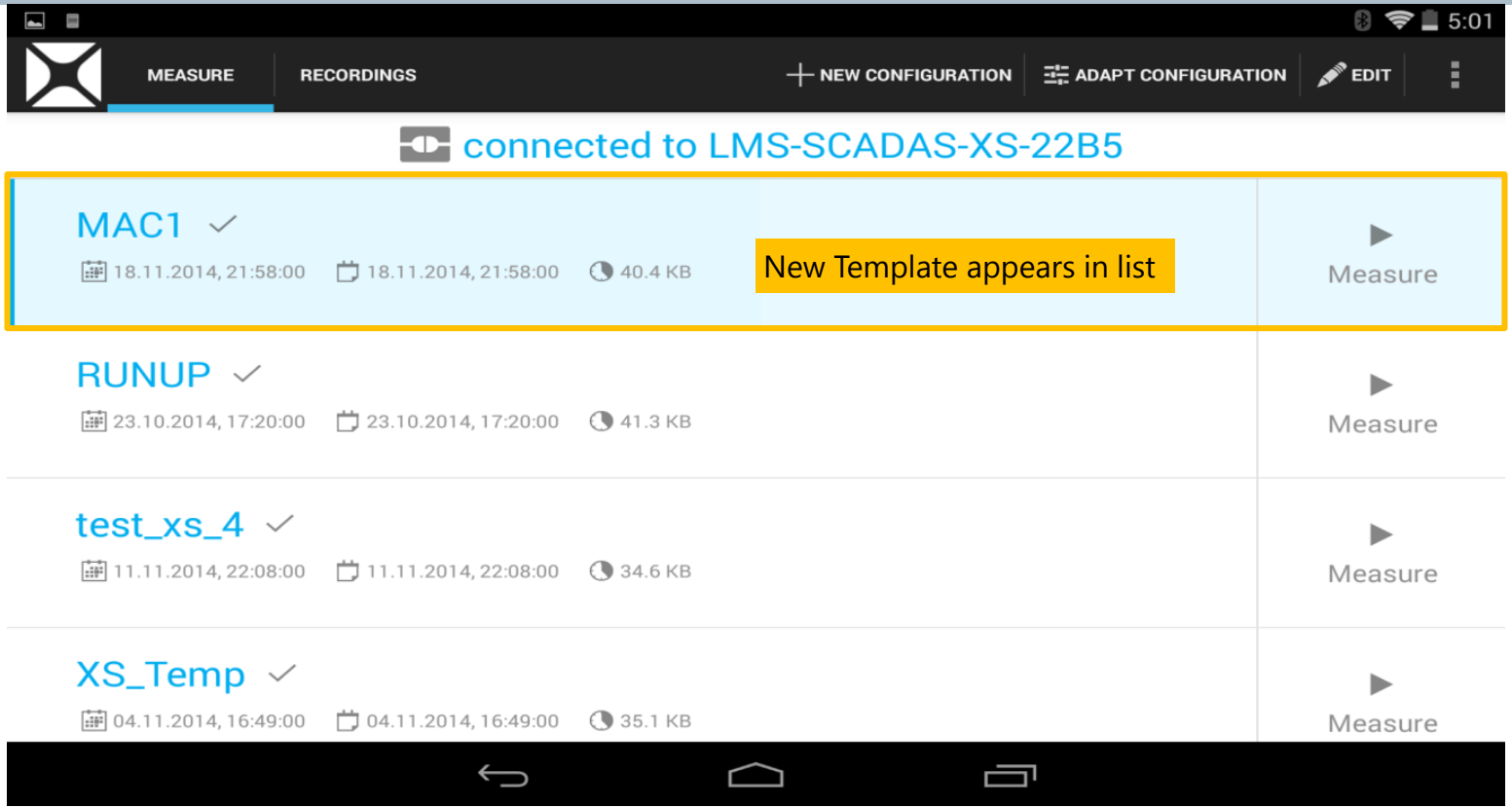
CAN setup


15:35
DONE
Prepare New Configuration
READ HMS
ADC
RPM
GPS
CAN
MEASUREMENT
GENERAL
X1: C004_Calculated_Load_Value
OBD_PID::C004_Calculated_Load_Value
X2: C005_Engin...nt_Temperature
OBD_PID::C005_Engine_Coolant_Temperature
X3: C00C_Engine_RPM
OBD_PID::C00C_Engine_RPM
X4: C00D_Vehicle_Speed
OBD_PID::C00D_Vehicle_Speed
X5: C00E_Ignitio...iming_Advance
OBD_PID::C00E_Ignition_Timing_Advance
X6: C00F_Intake...ir_Temperature
OBD_PID::C00F_Intake_Air_Temperature
SmartScope provides subset of Legislative OBD2 channels (shown on left).
Activation of other CAN channels should be defined in Test.Lab/Test.Xpress through a dbc file (while connected to an XS as a front-end) and saved as a SmartScope template (.xrdf file). When that template is opened in SmartScope, these CAN channels will show up on the left.
Update Rate
1
[Hz]

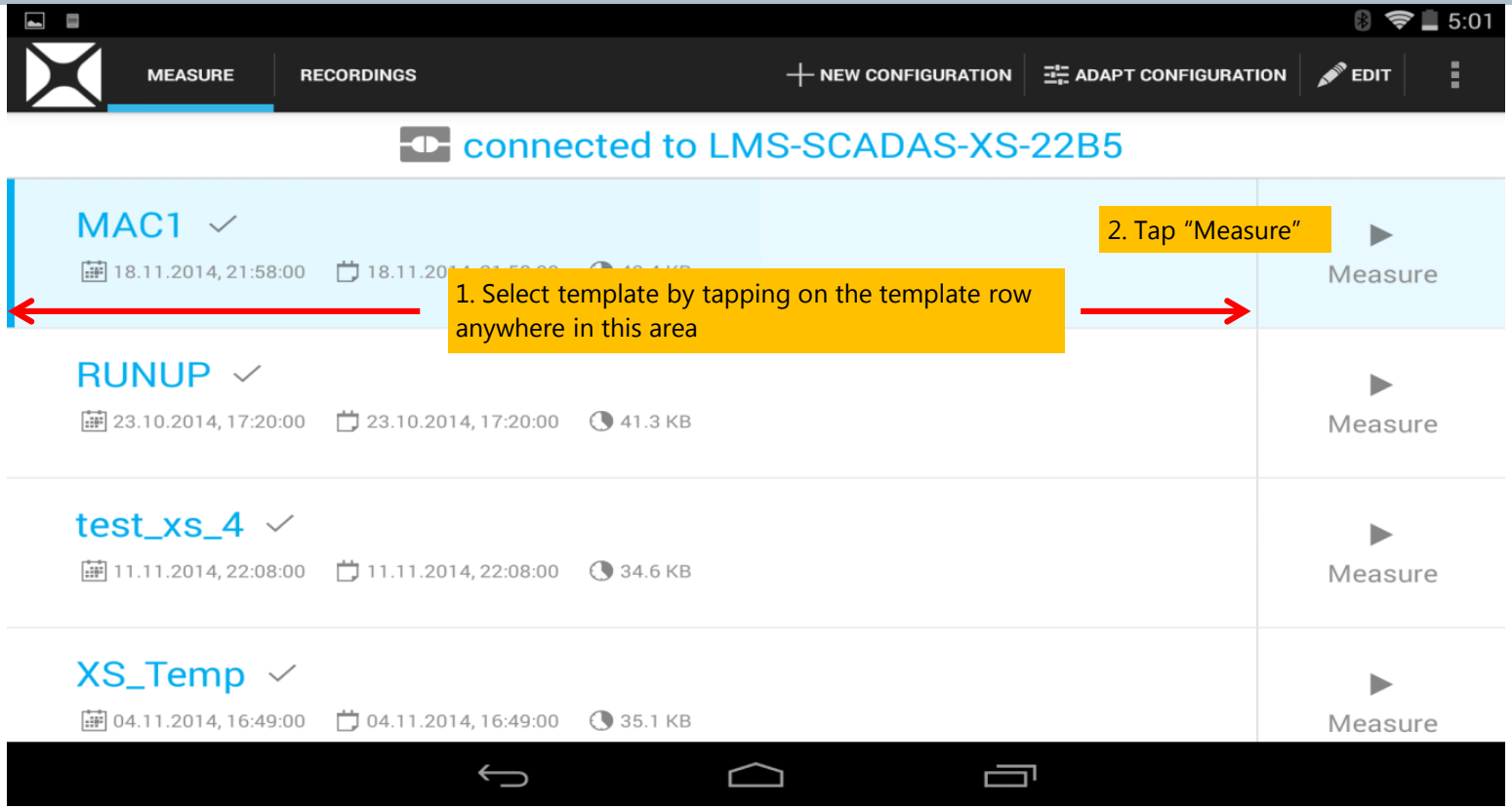
Measurement - general acquisition settings



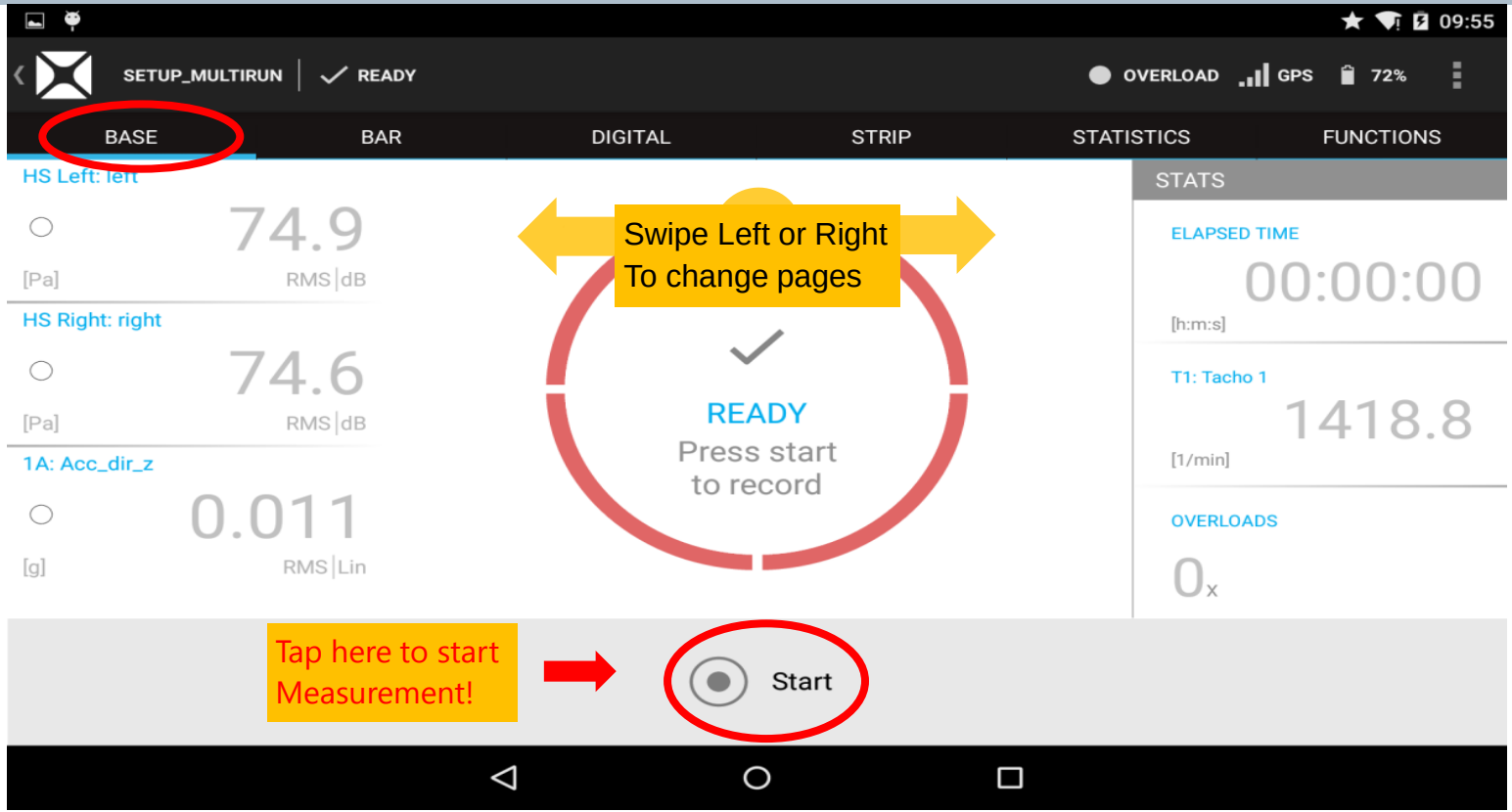
Creating a new measurement template



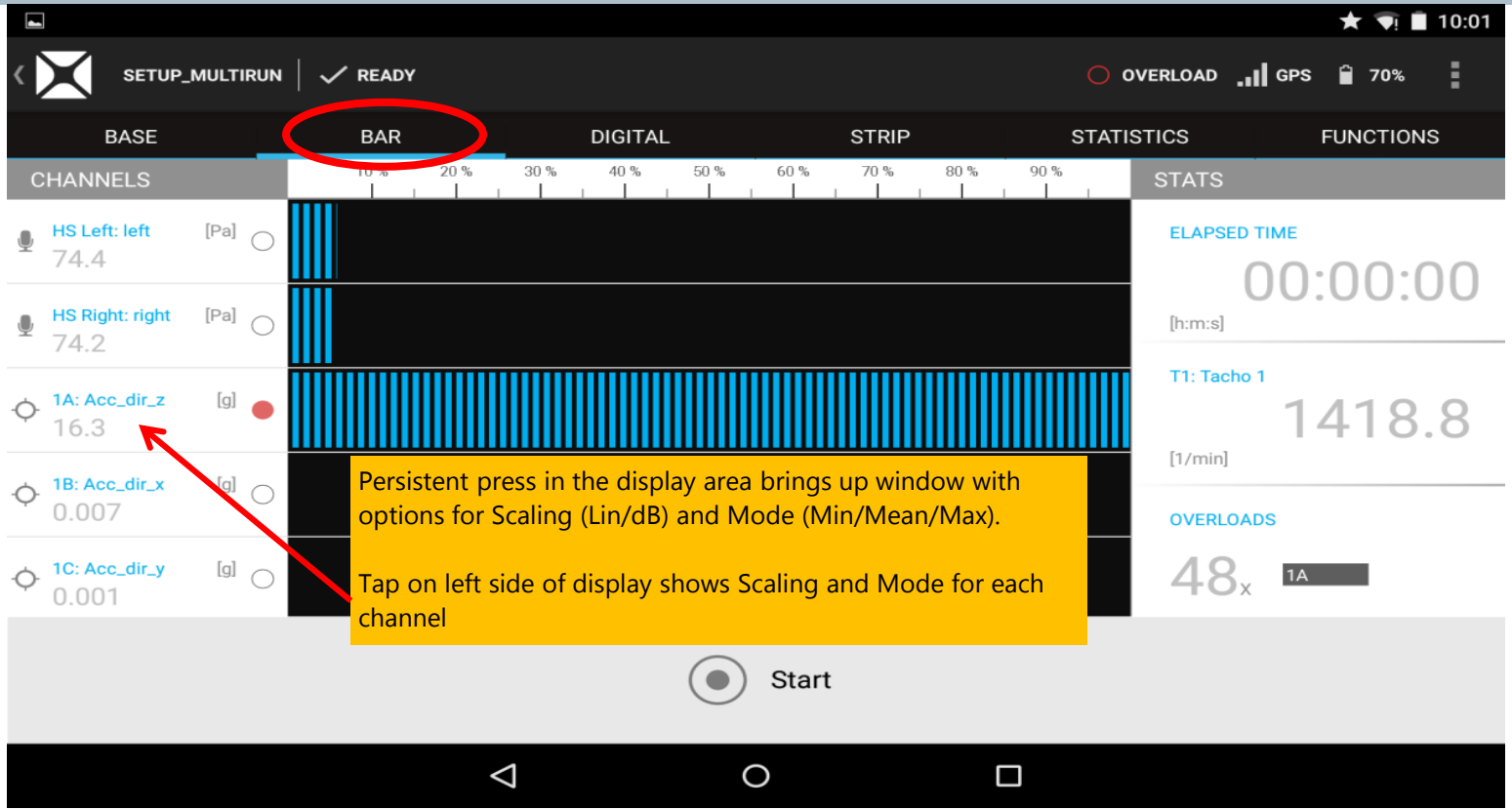
Making a Measurement



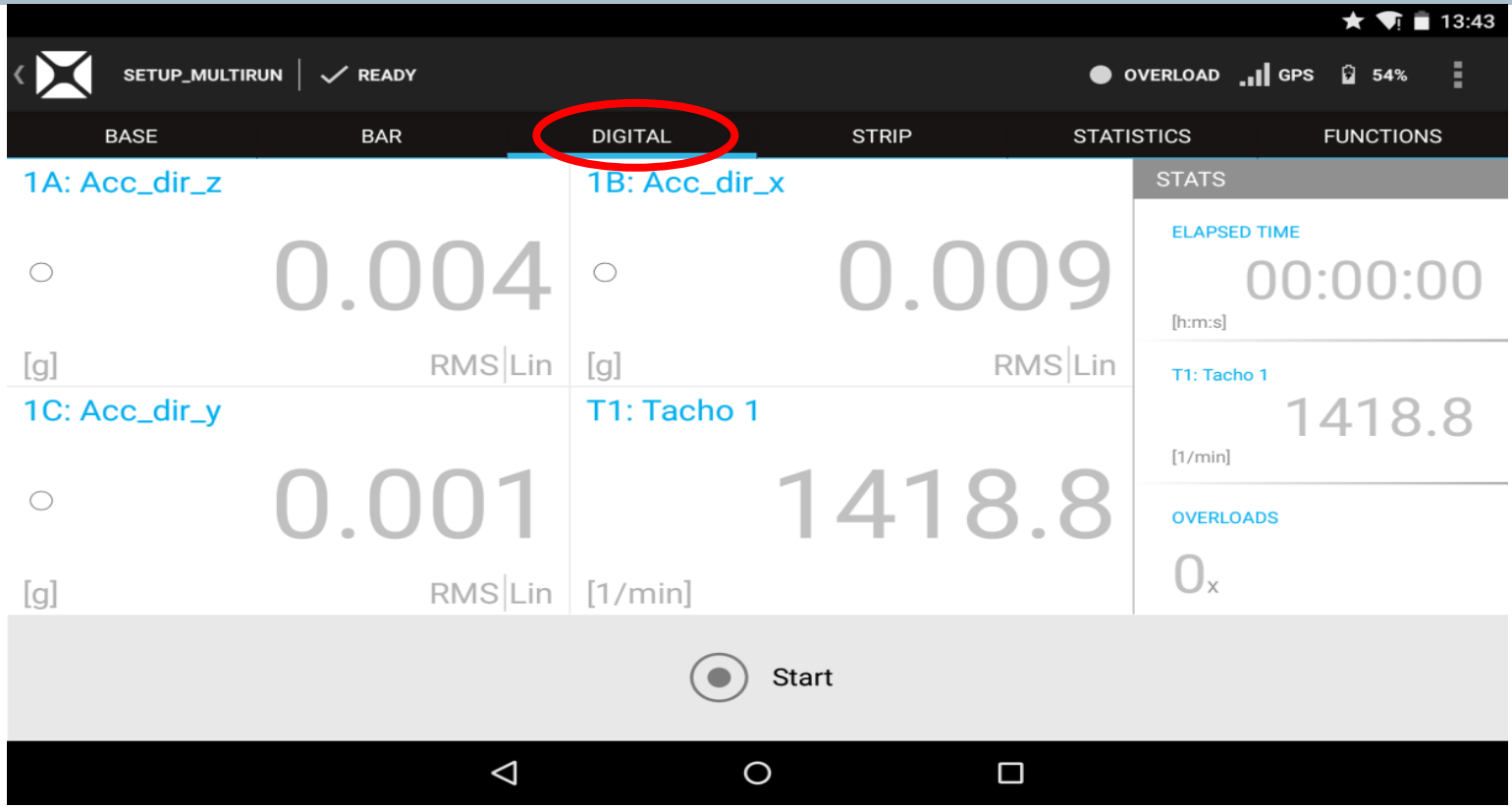
Starting a Measurement – BASE view



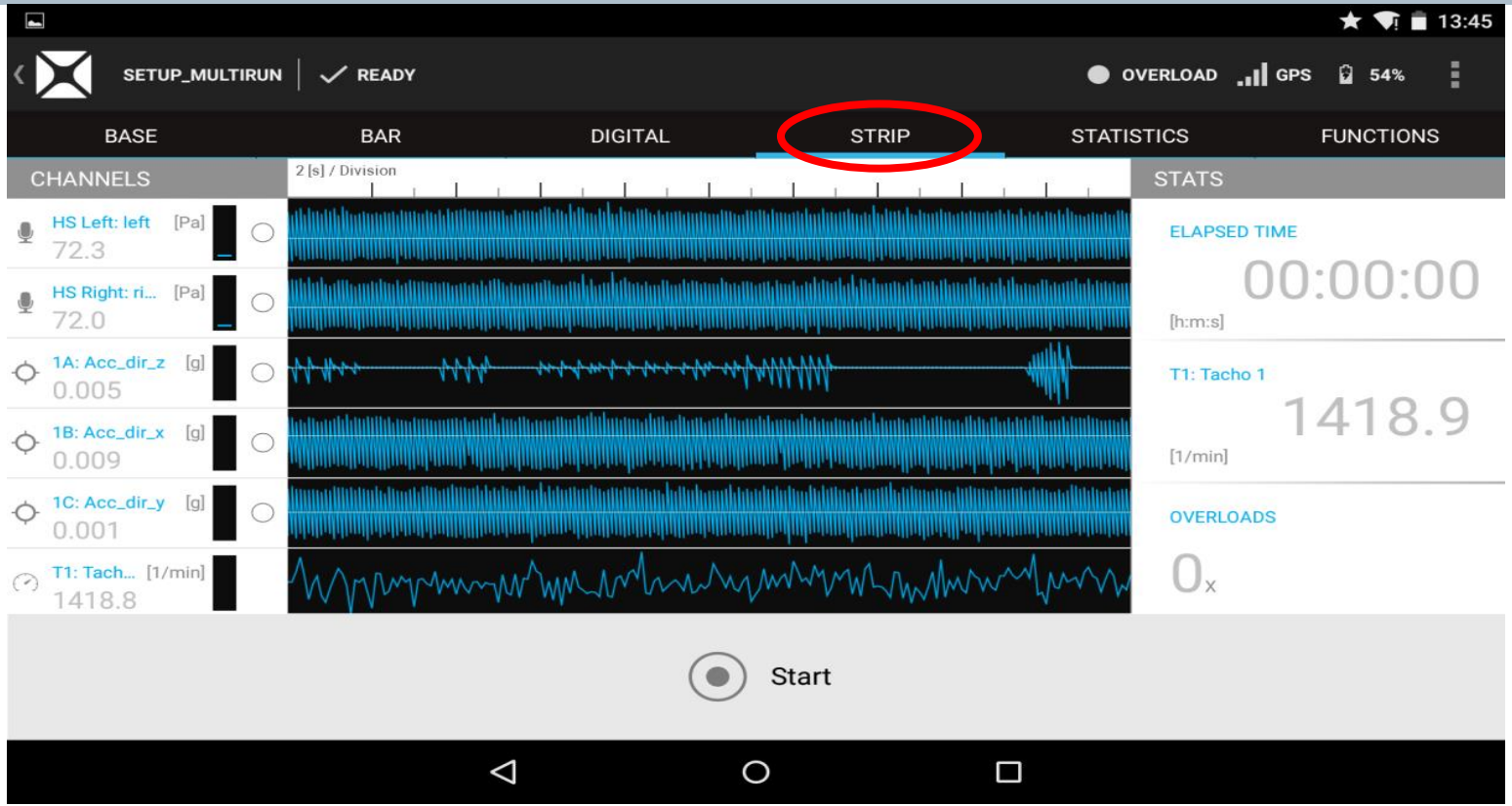
Bar chart display



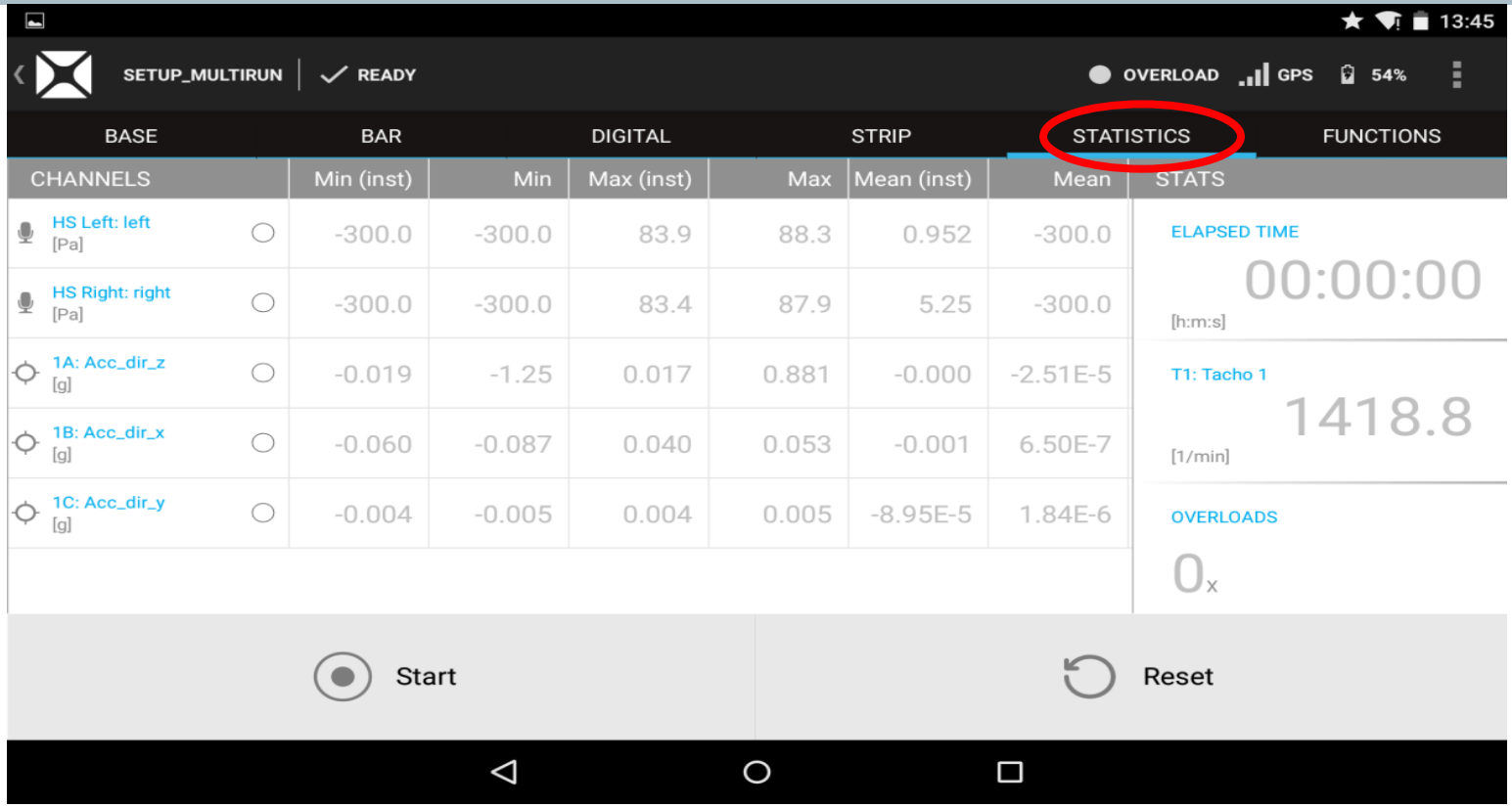
Digital display



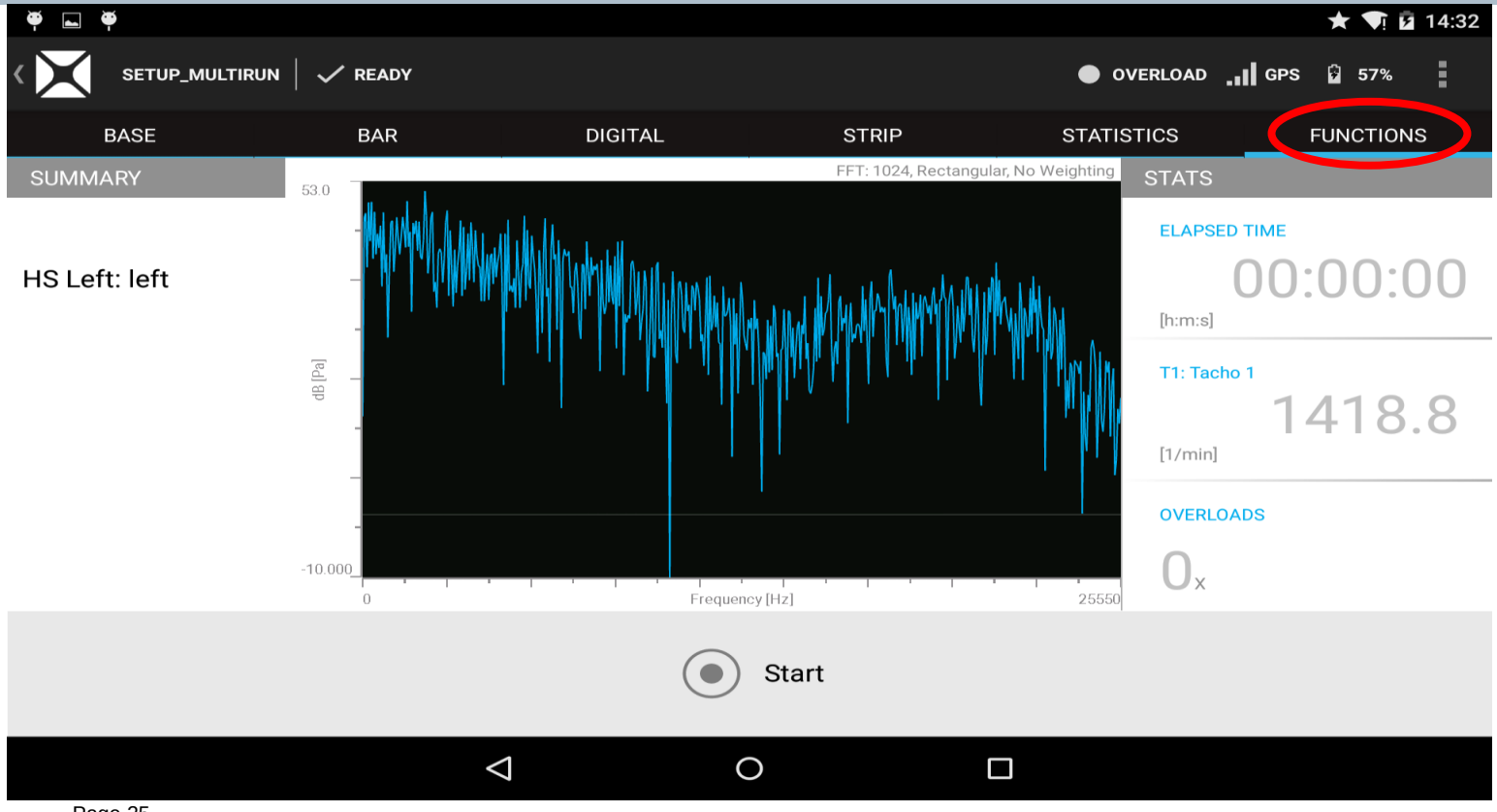
Strip chart display



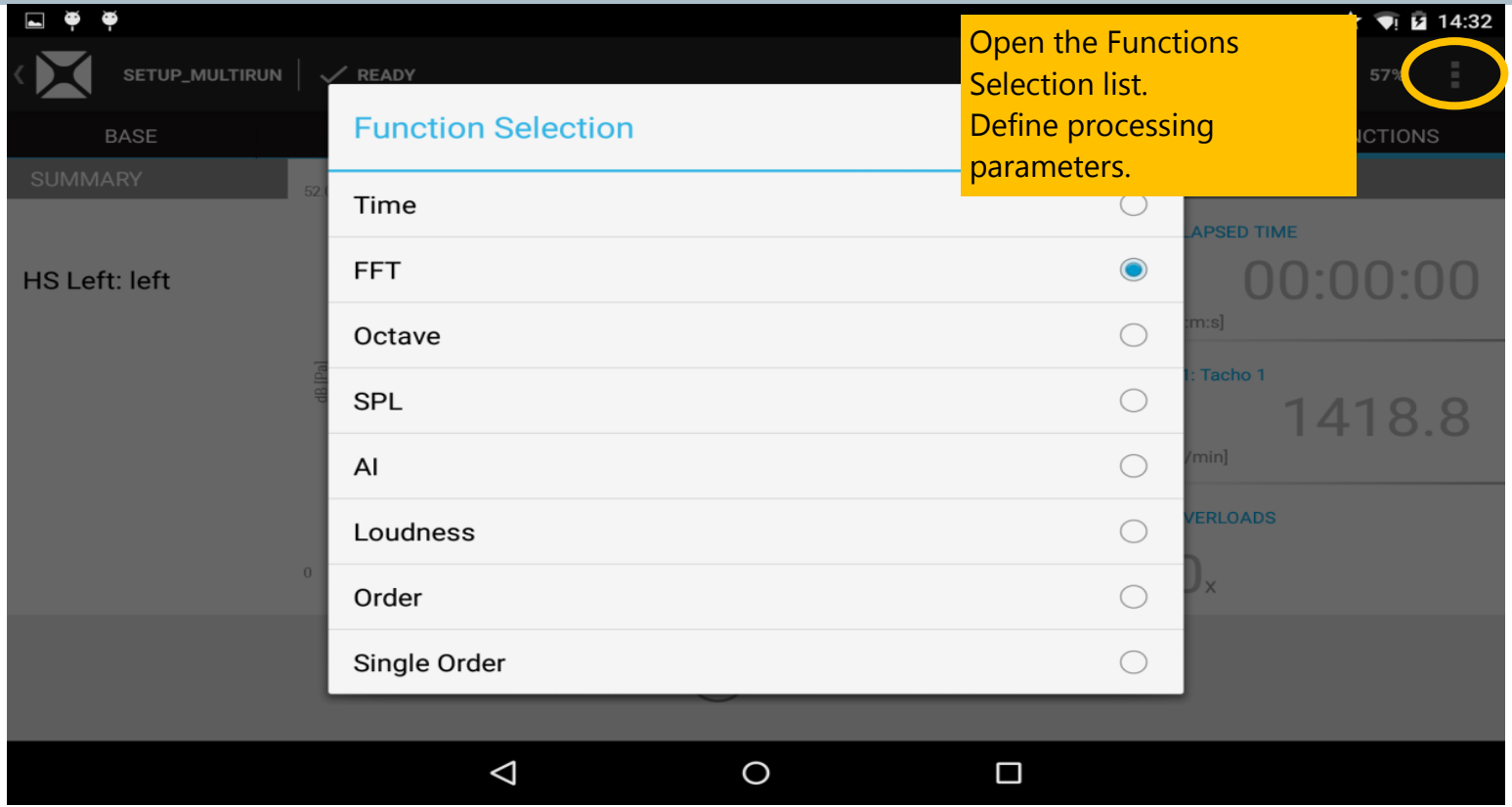
Statistics display



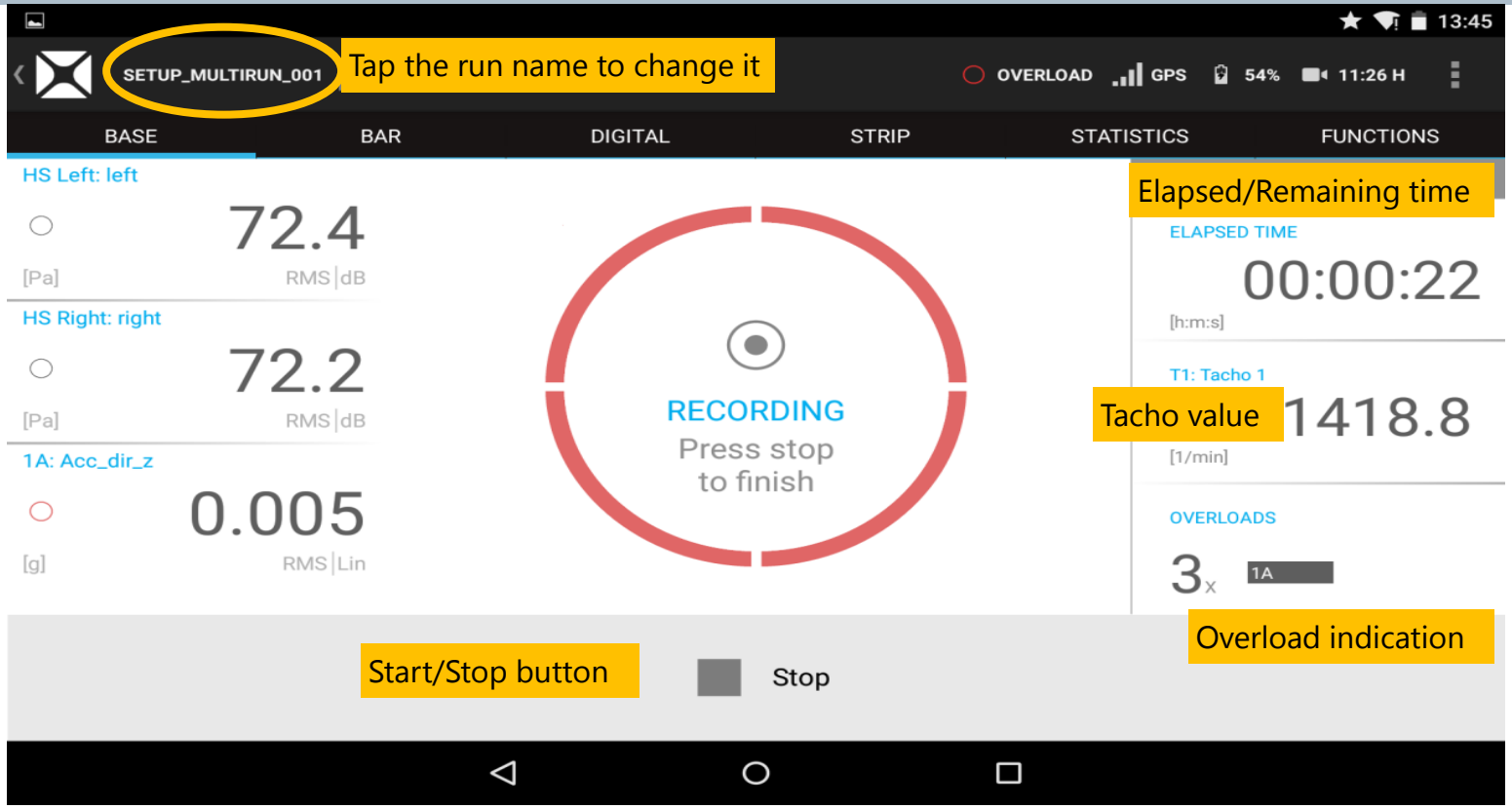
FUNCTIONS in real time



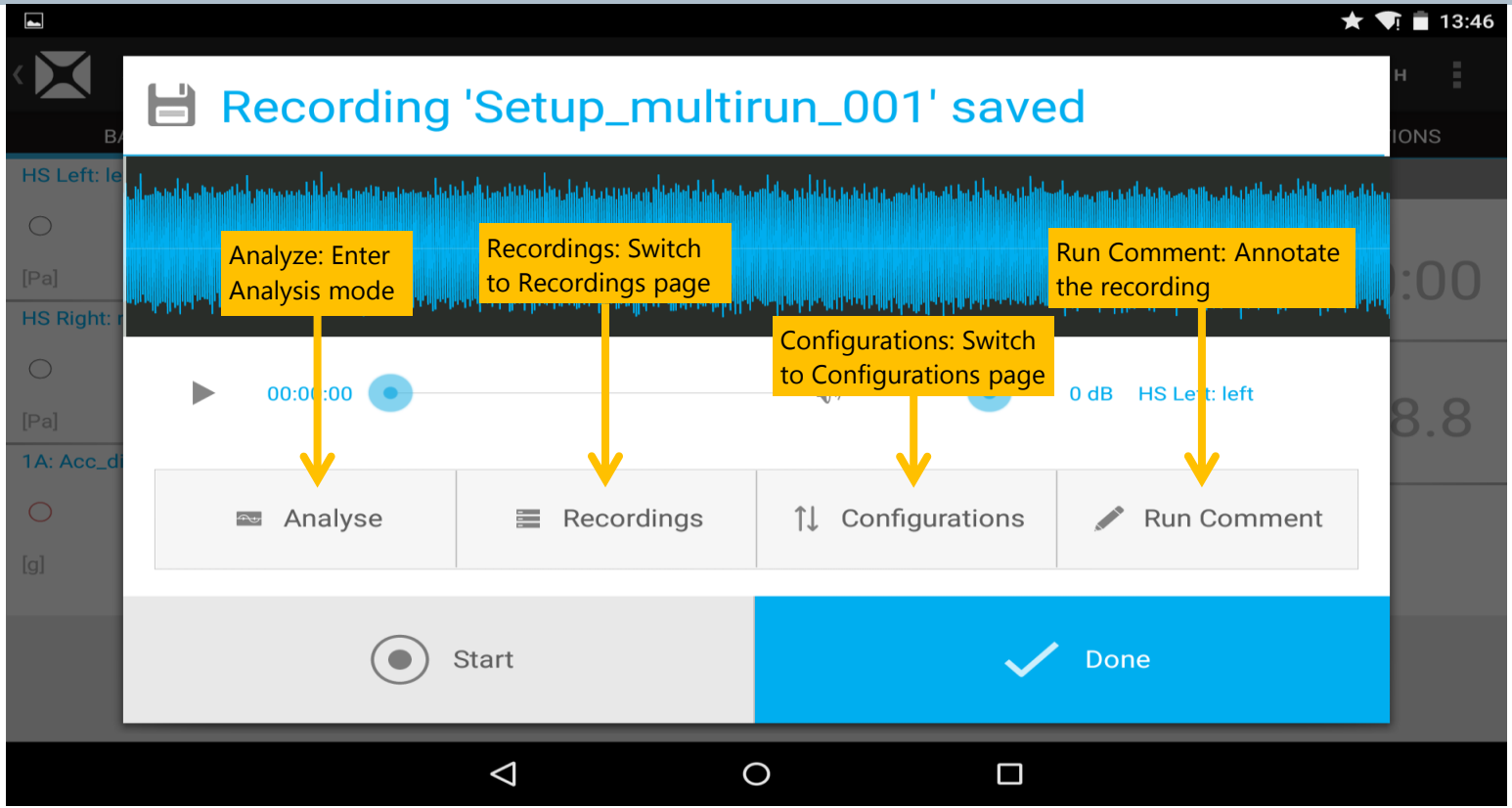
FUNCTIONS in real time



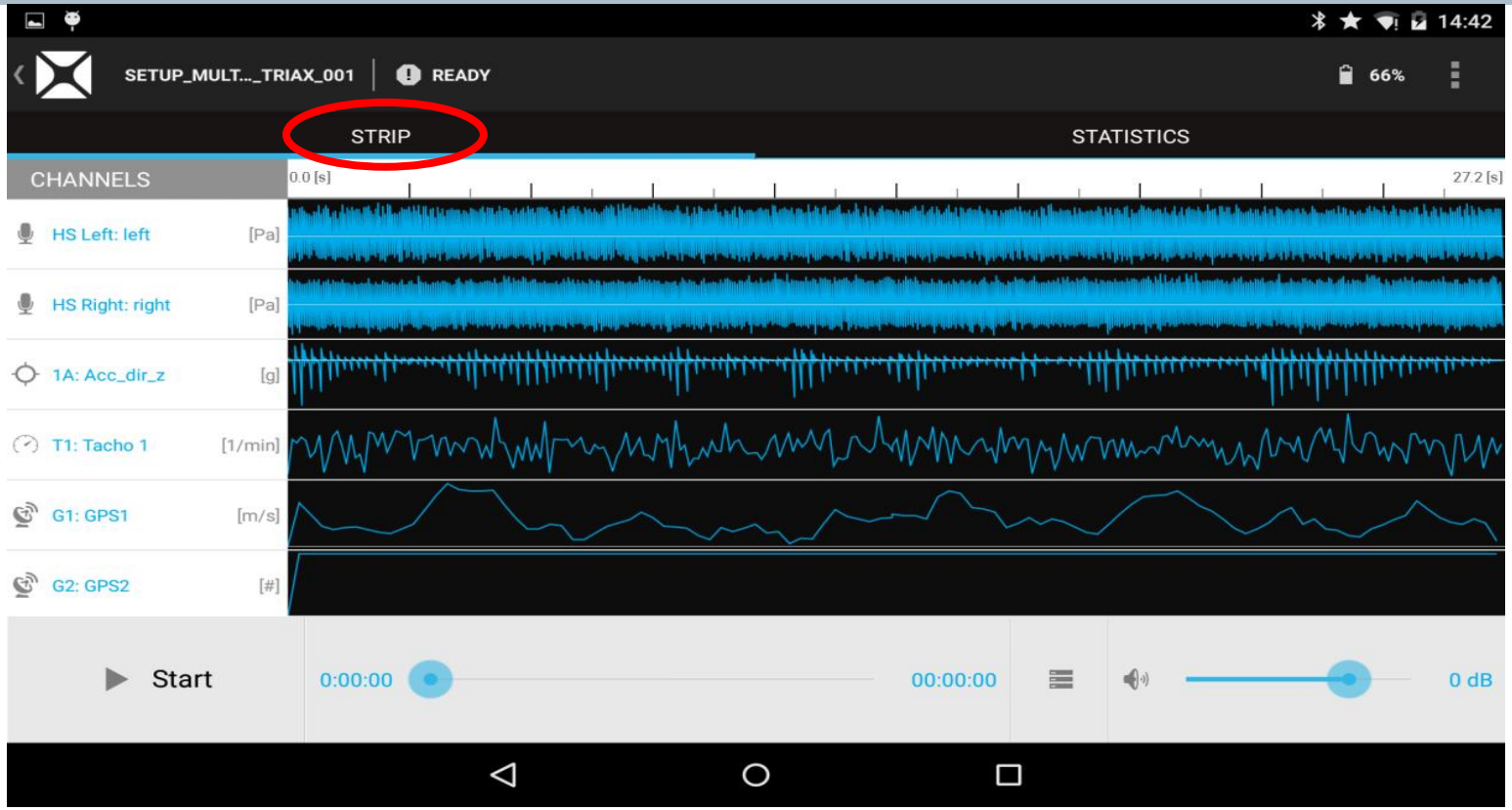
While Monitoring a Recording



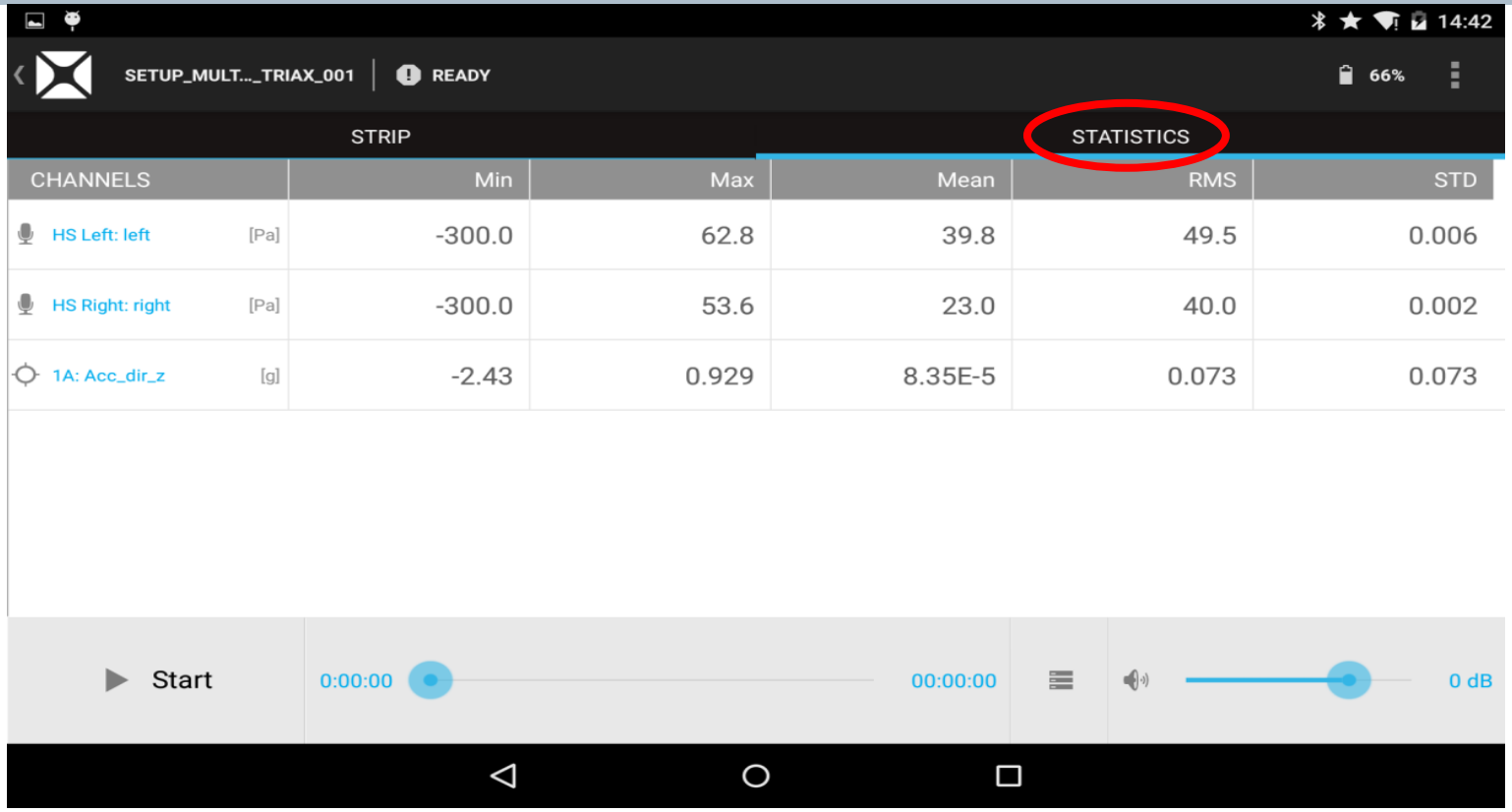
Saving a measurement



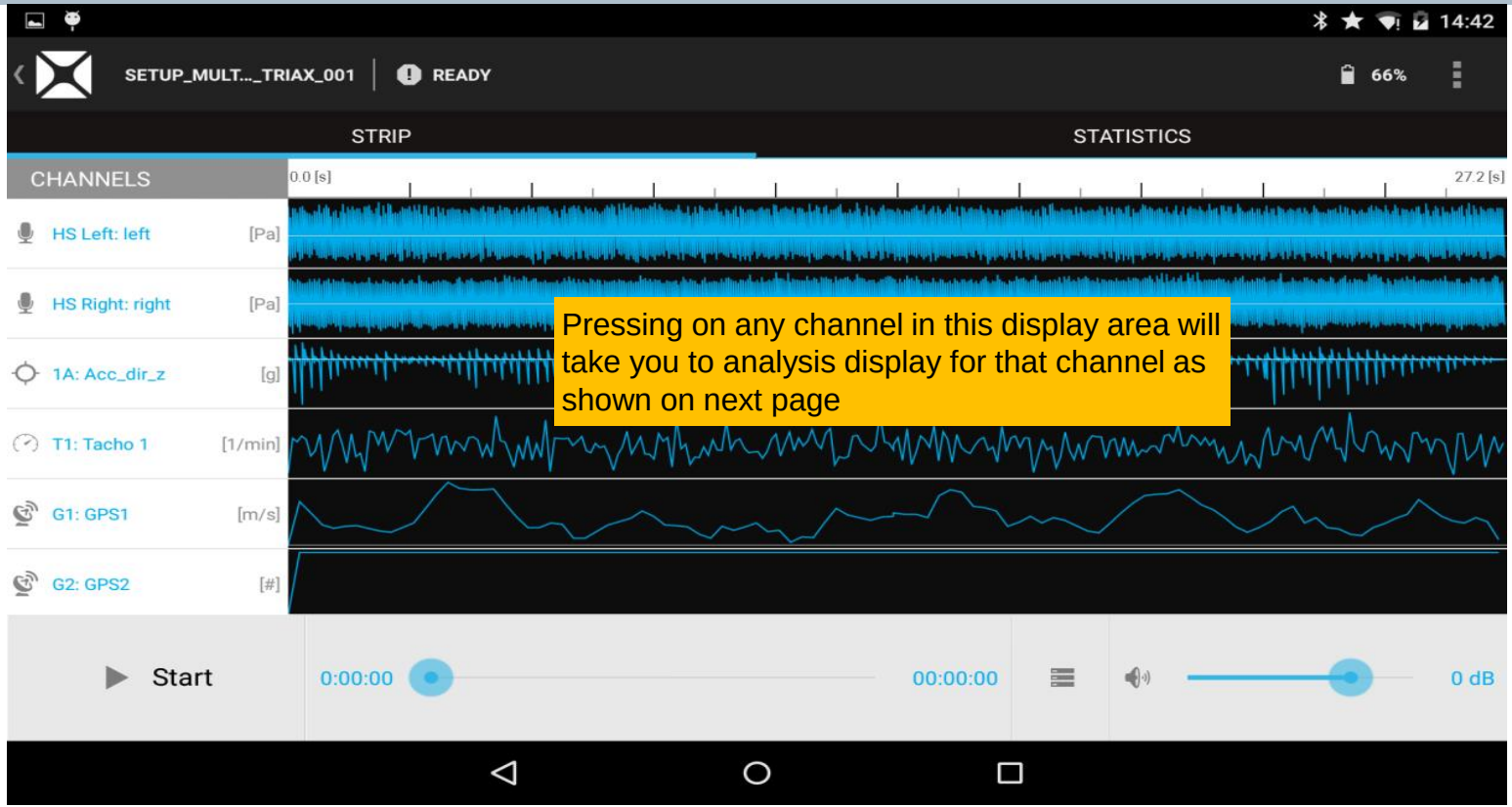
Analyze – strip chart



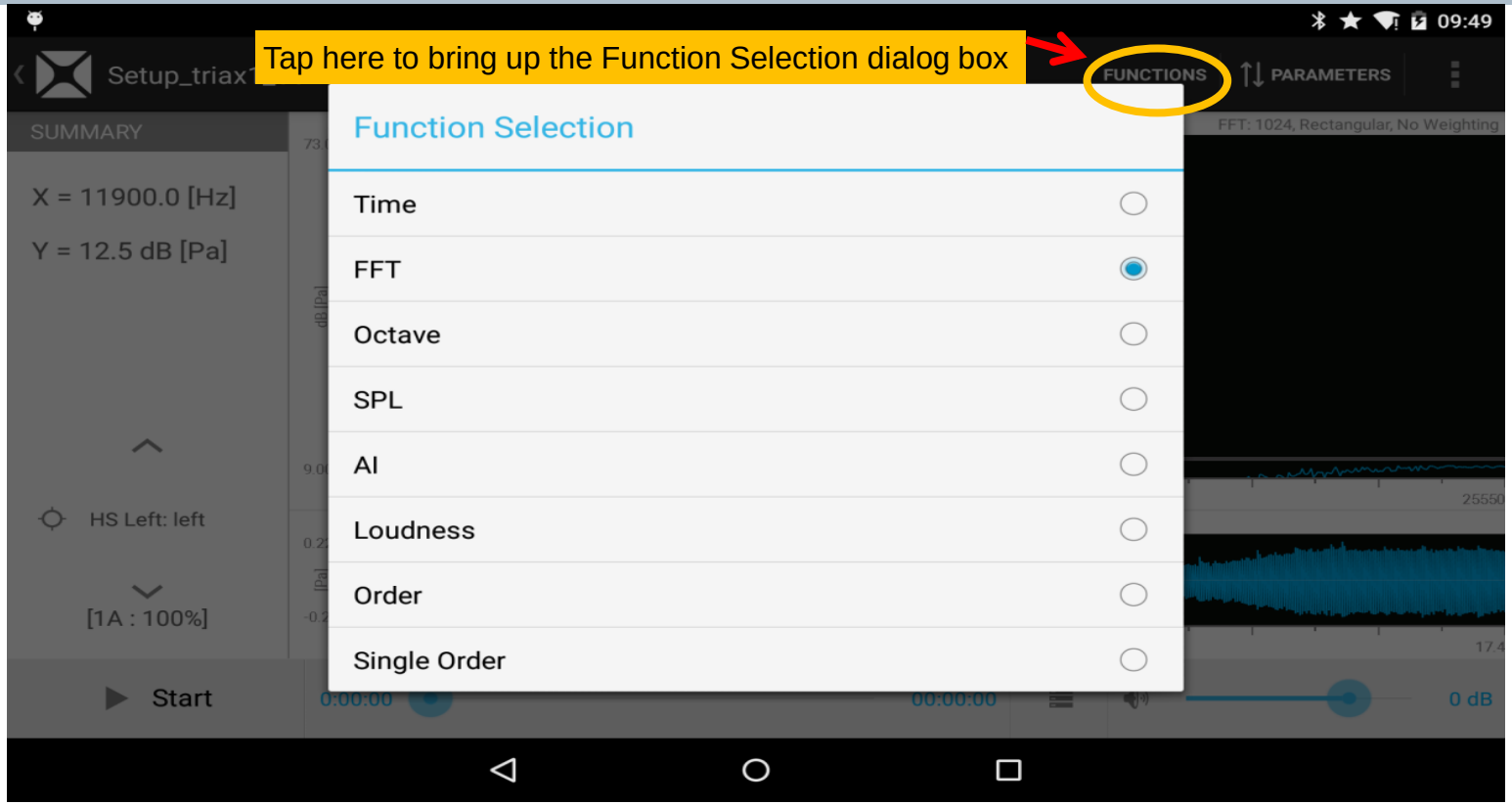
Analyze – statistics table



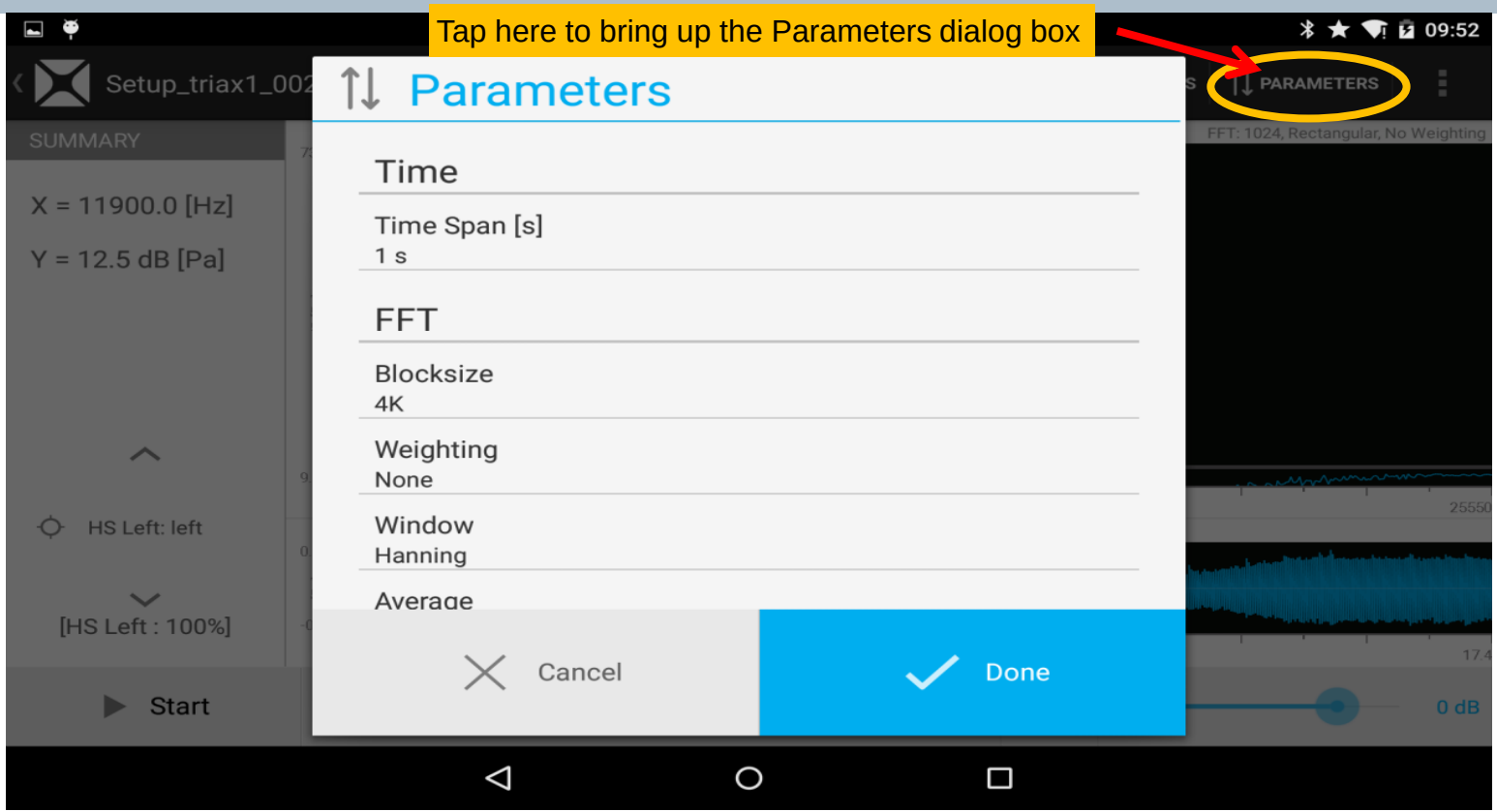
Entering Functions (processing) mode



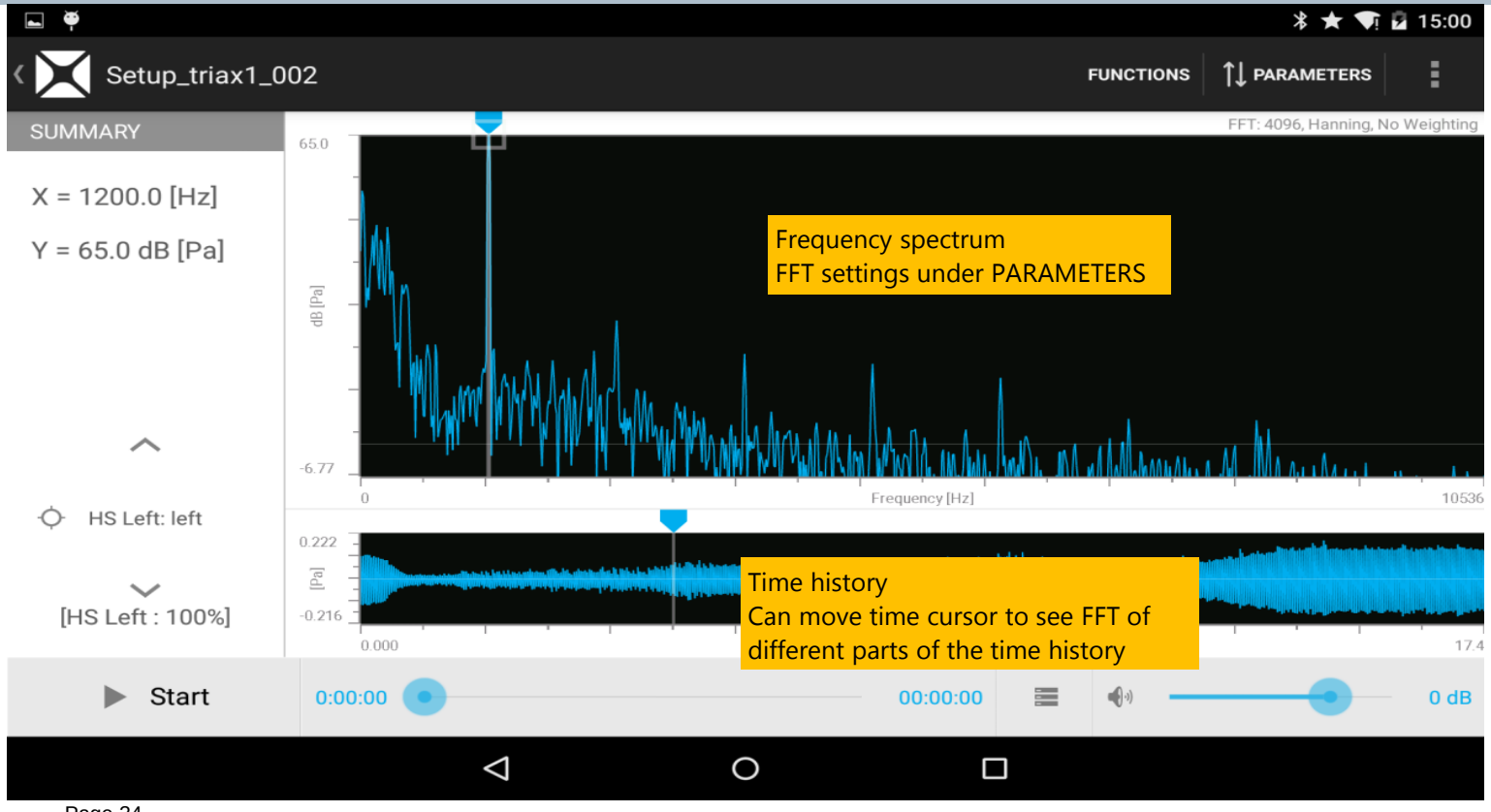
Function selection



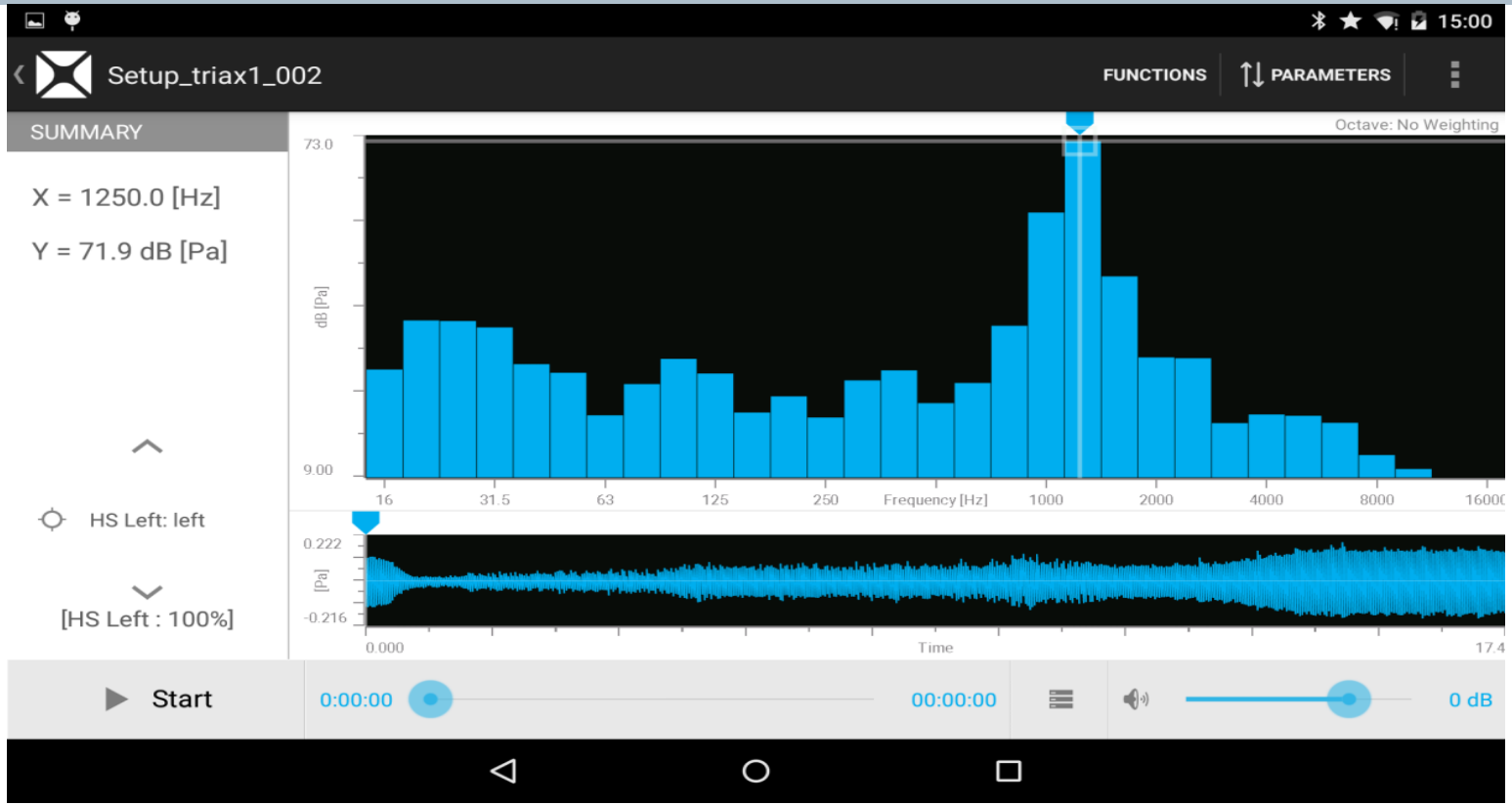
Parameters selection



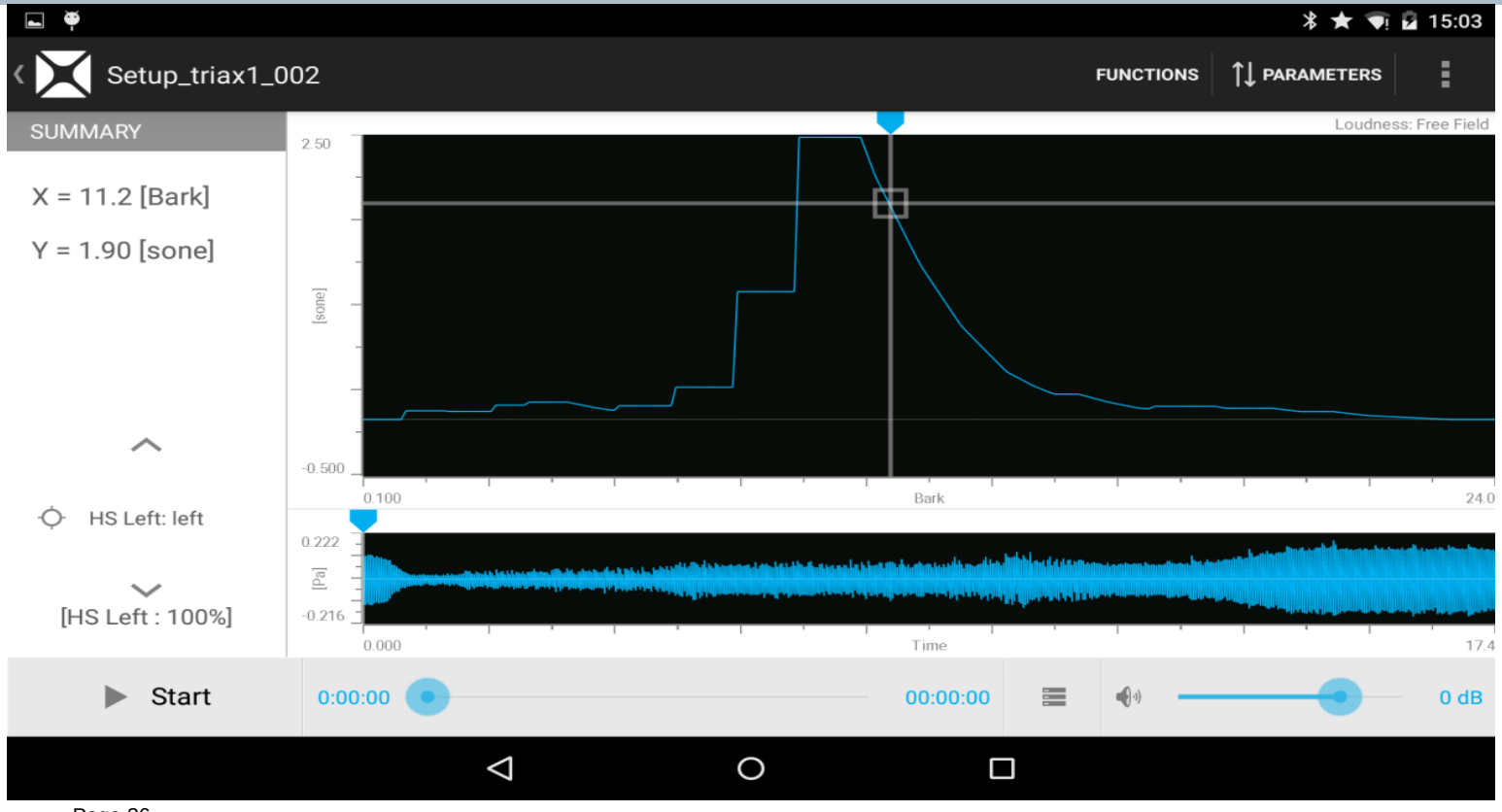
FUNCTIONS: FFT



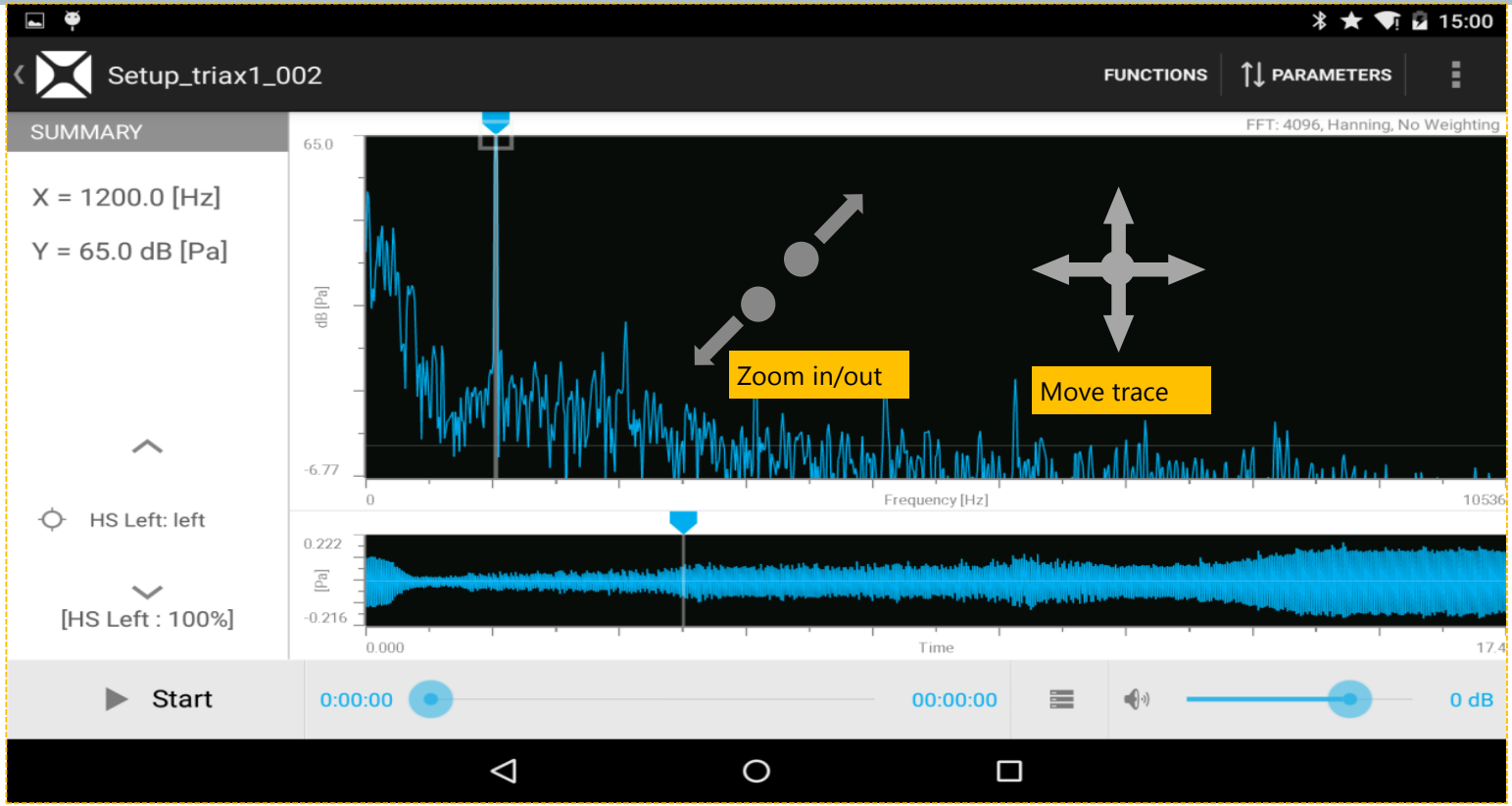
FUNCTIONS: Octaves



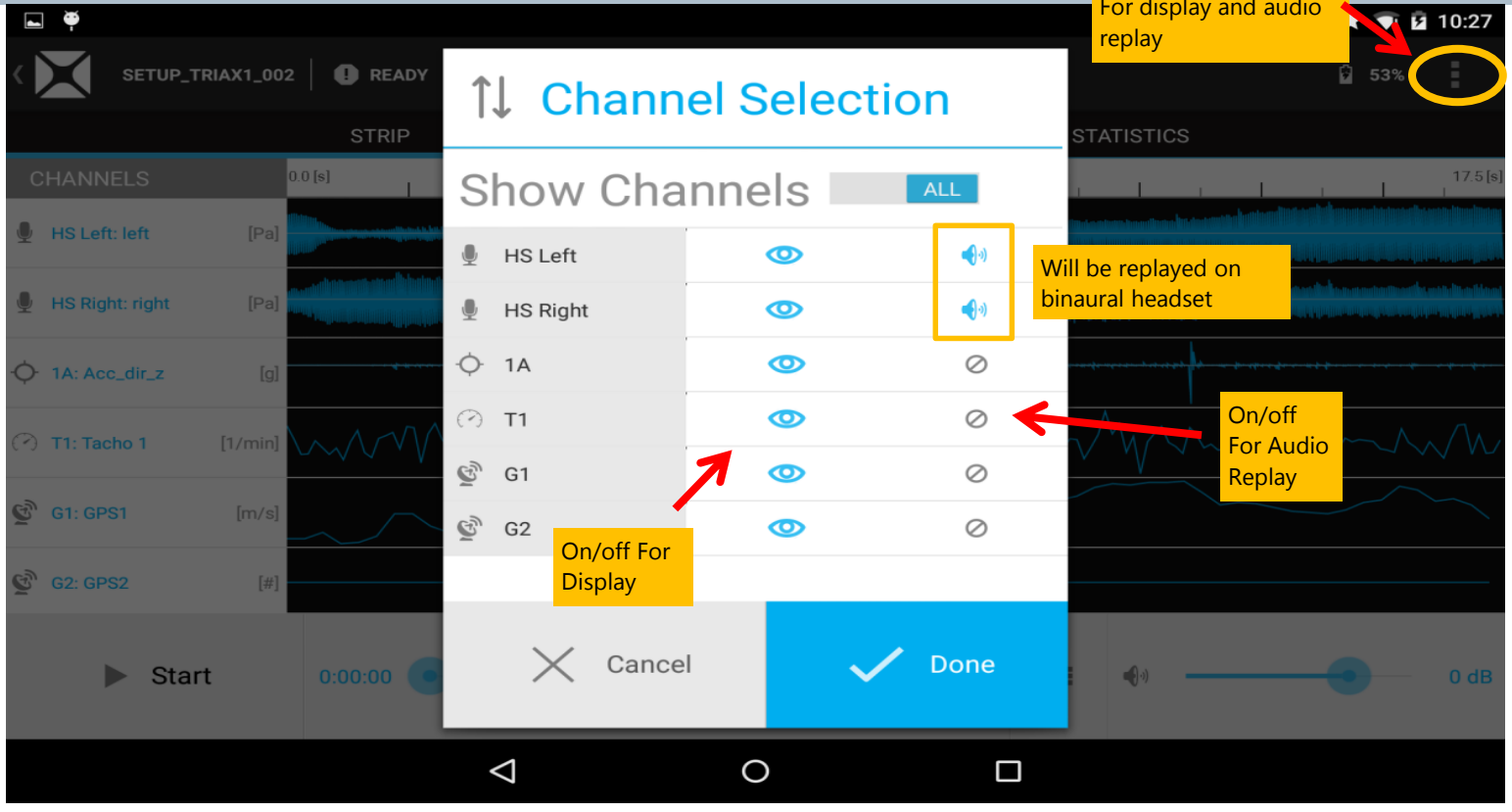
FUNCTIONS: Loudness



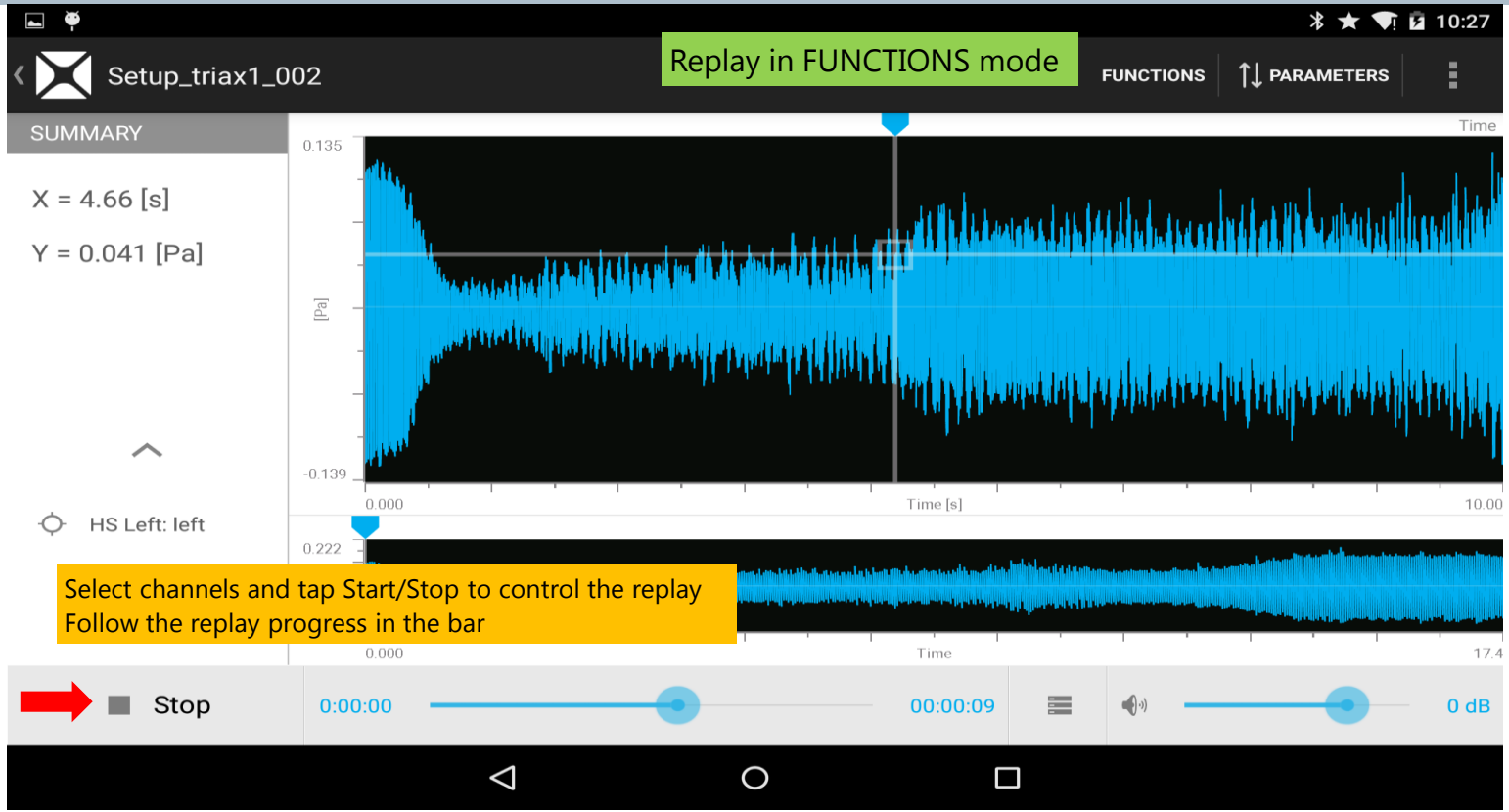
Zooming in Functions



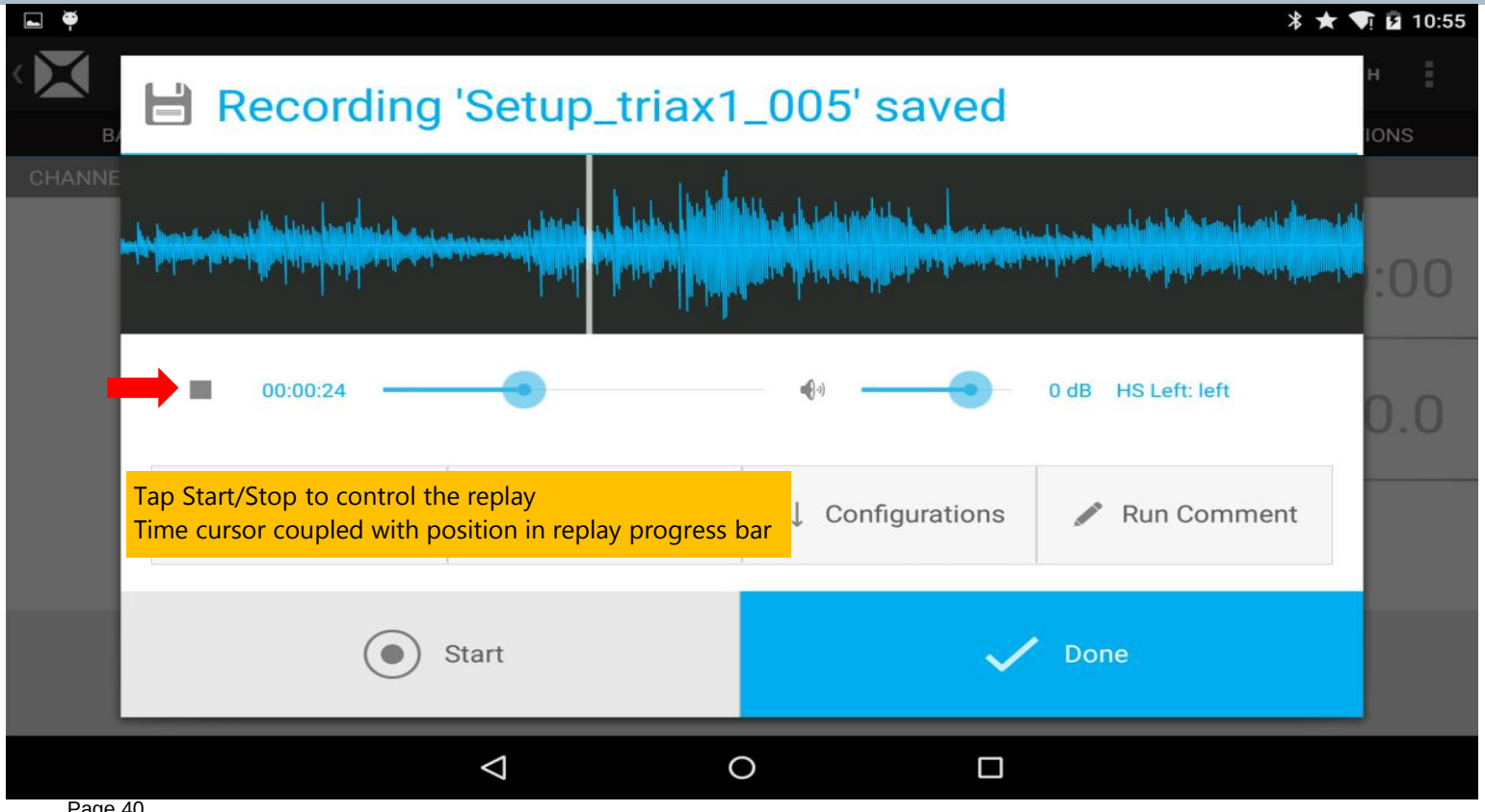
Channel selection for Display and Audio Replay



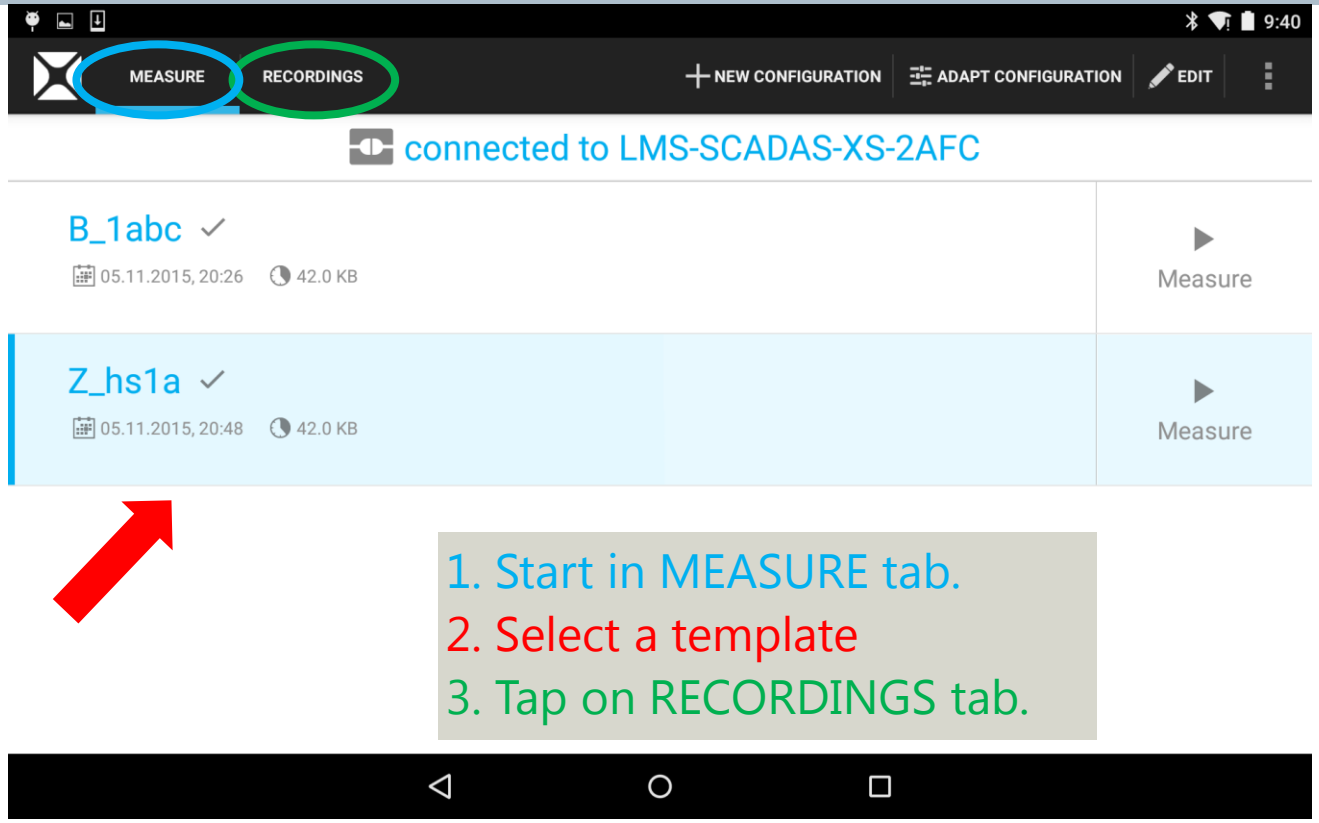
Audio Replay Control



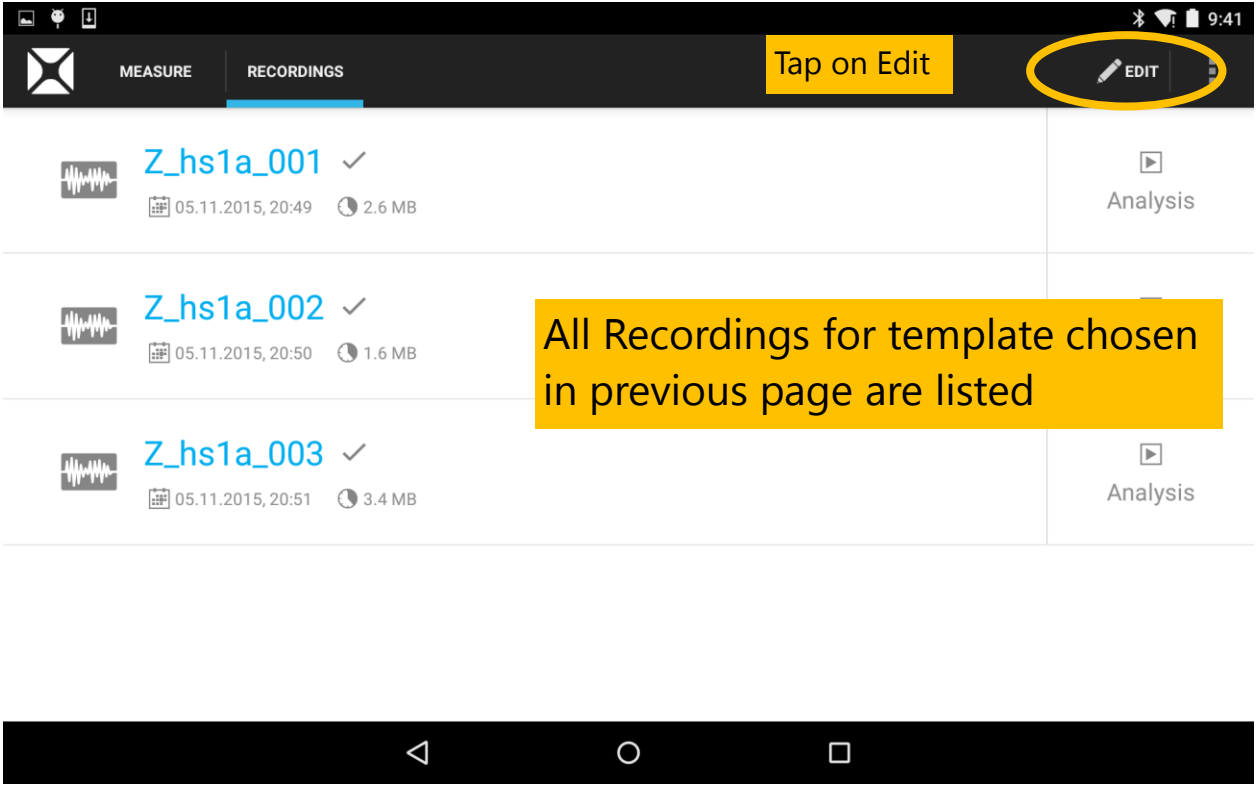
Post-recording Audio Replay



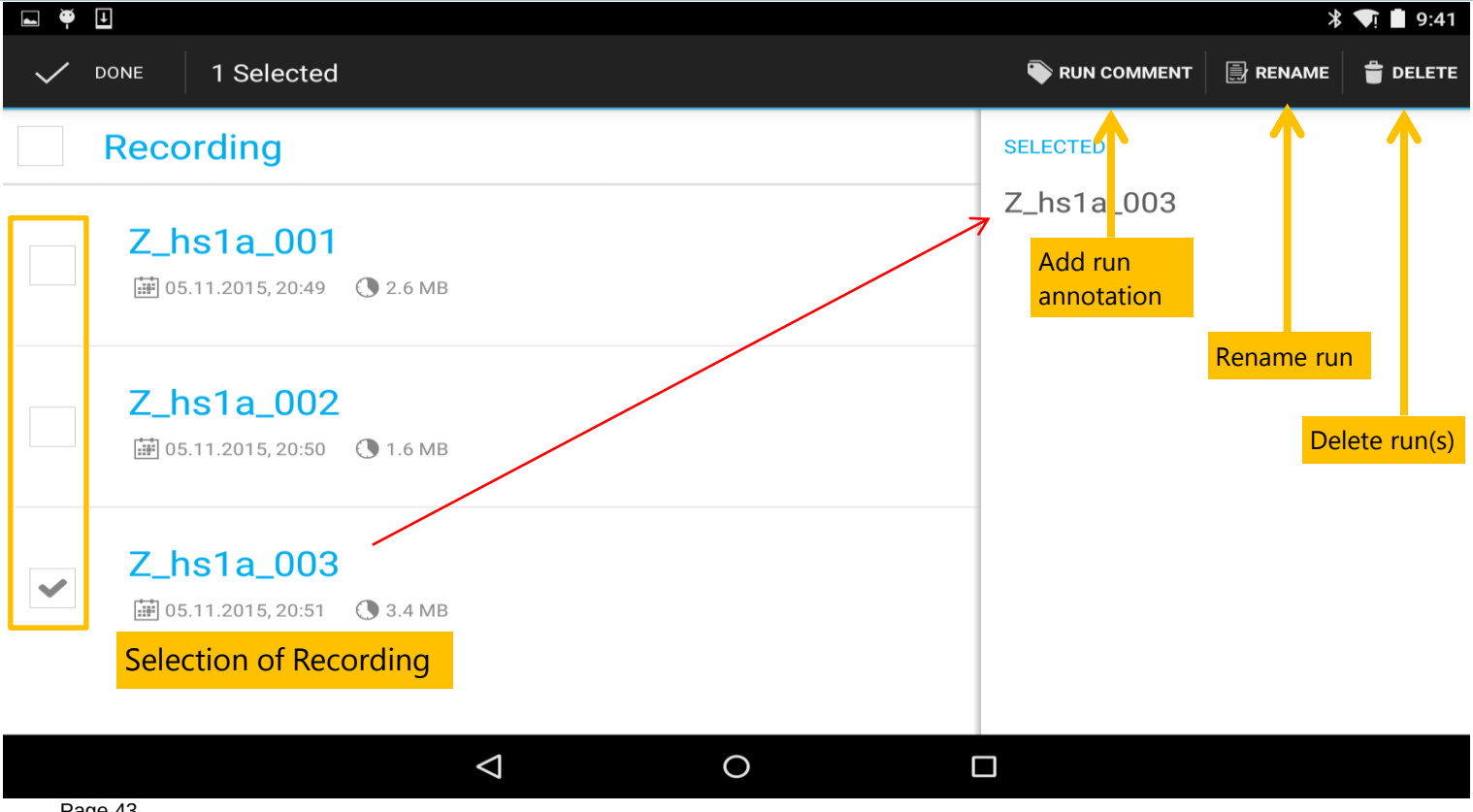
Managing Recordings



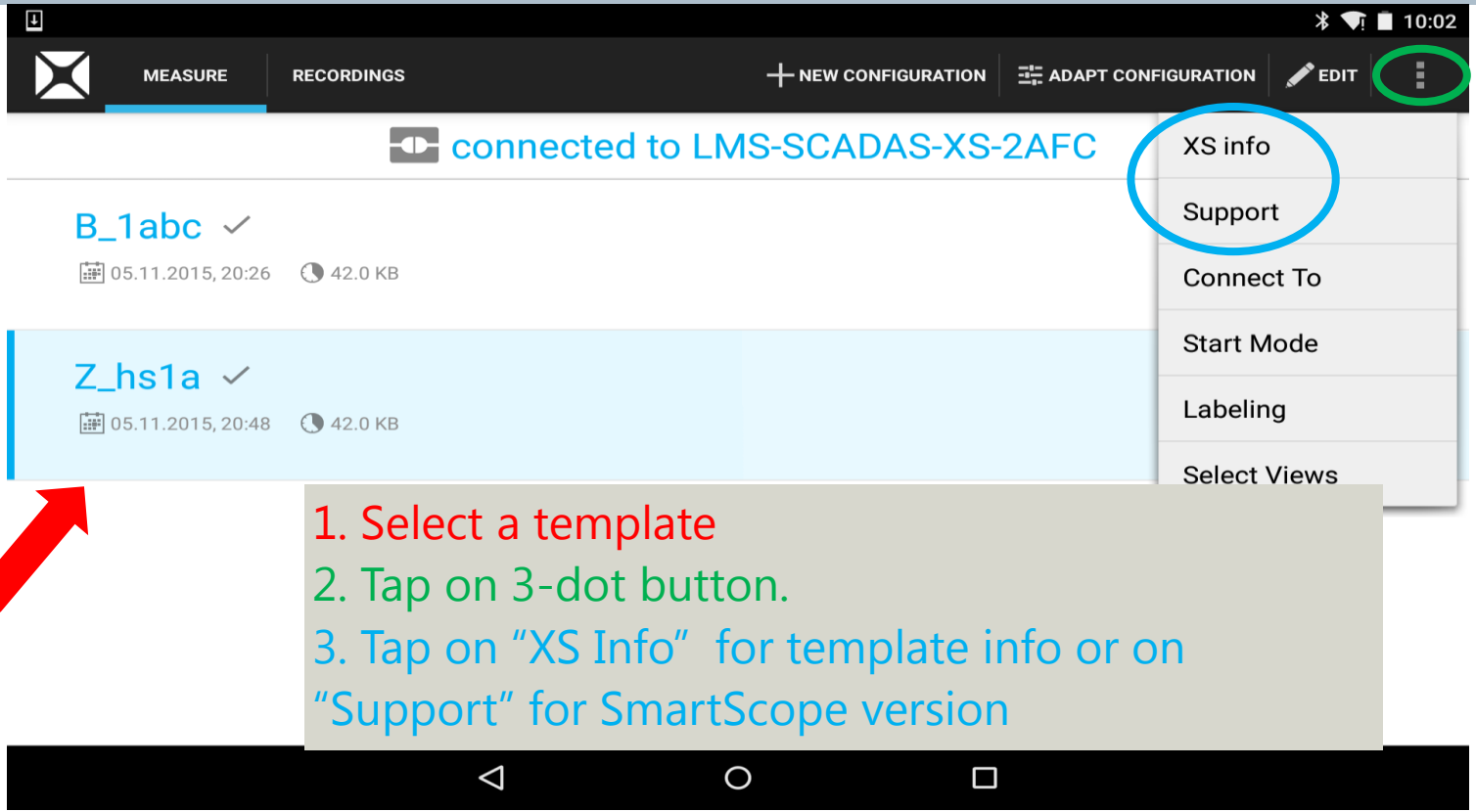
Managing Recordings



Managing Recordings

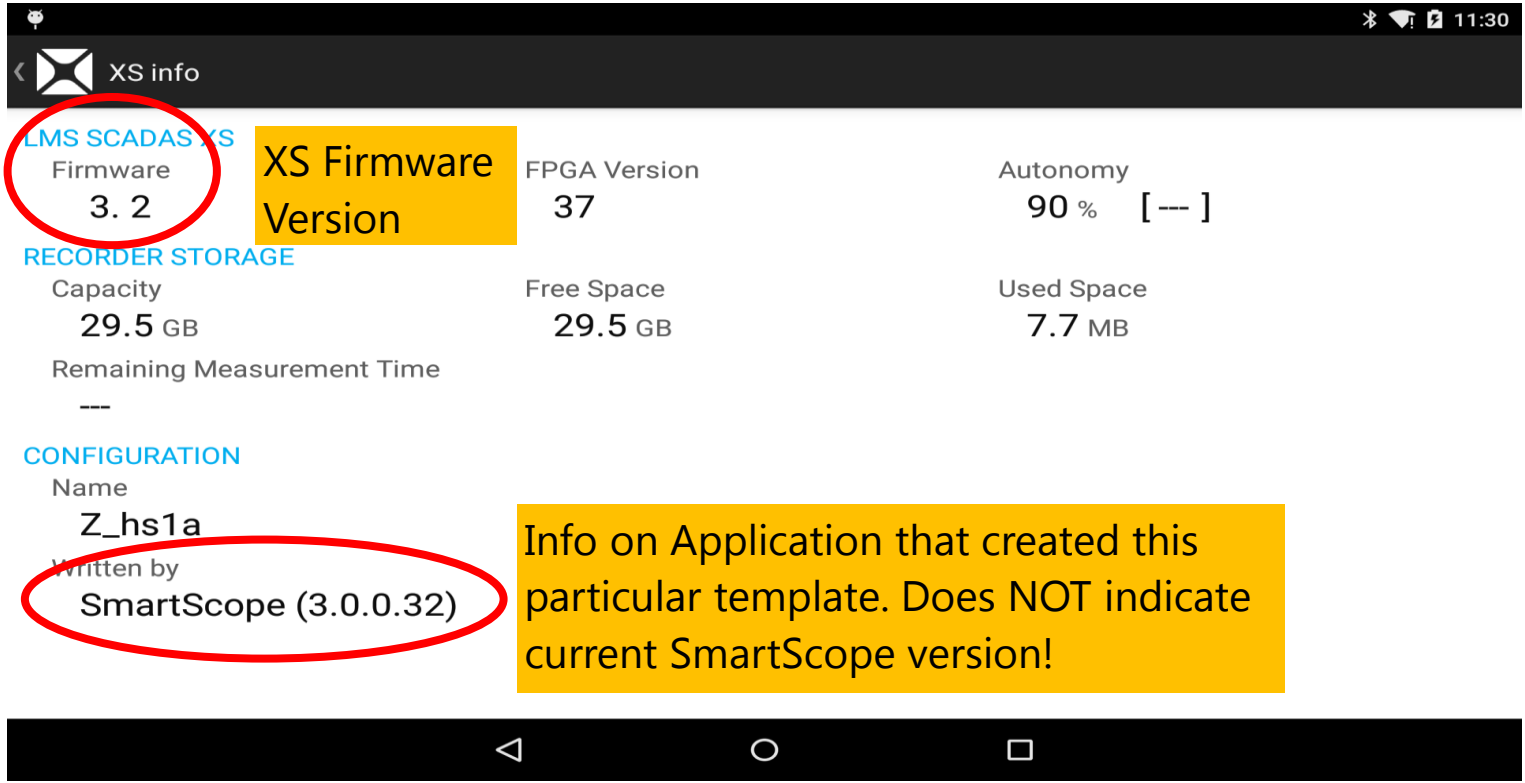


Accessing Software and Firmware Version Info

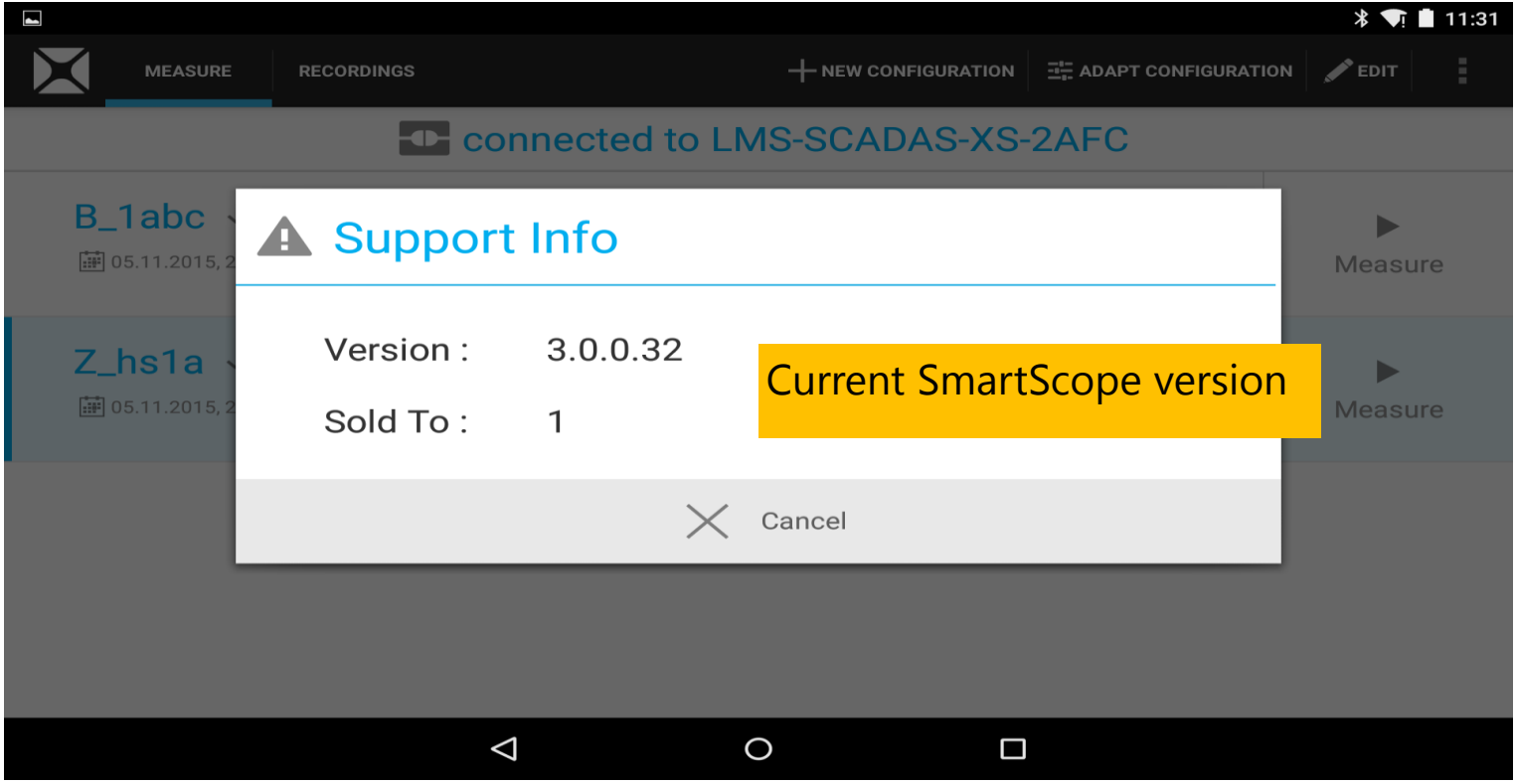


1. Select a template
2. Tap on 3-dot button.
3. Tap on “XS Info” for template info or on “Support” for SmartScope version

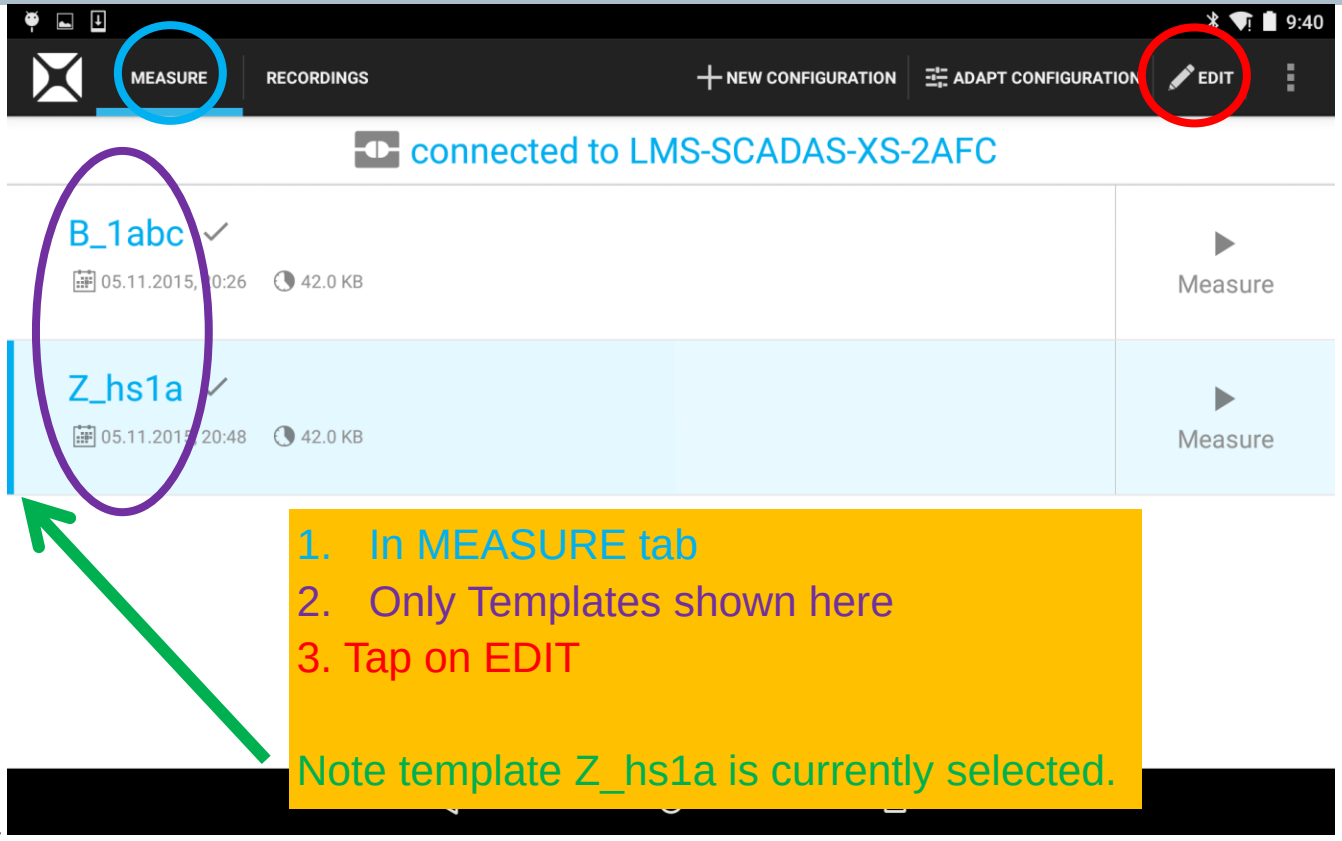
XS Info --Template Information



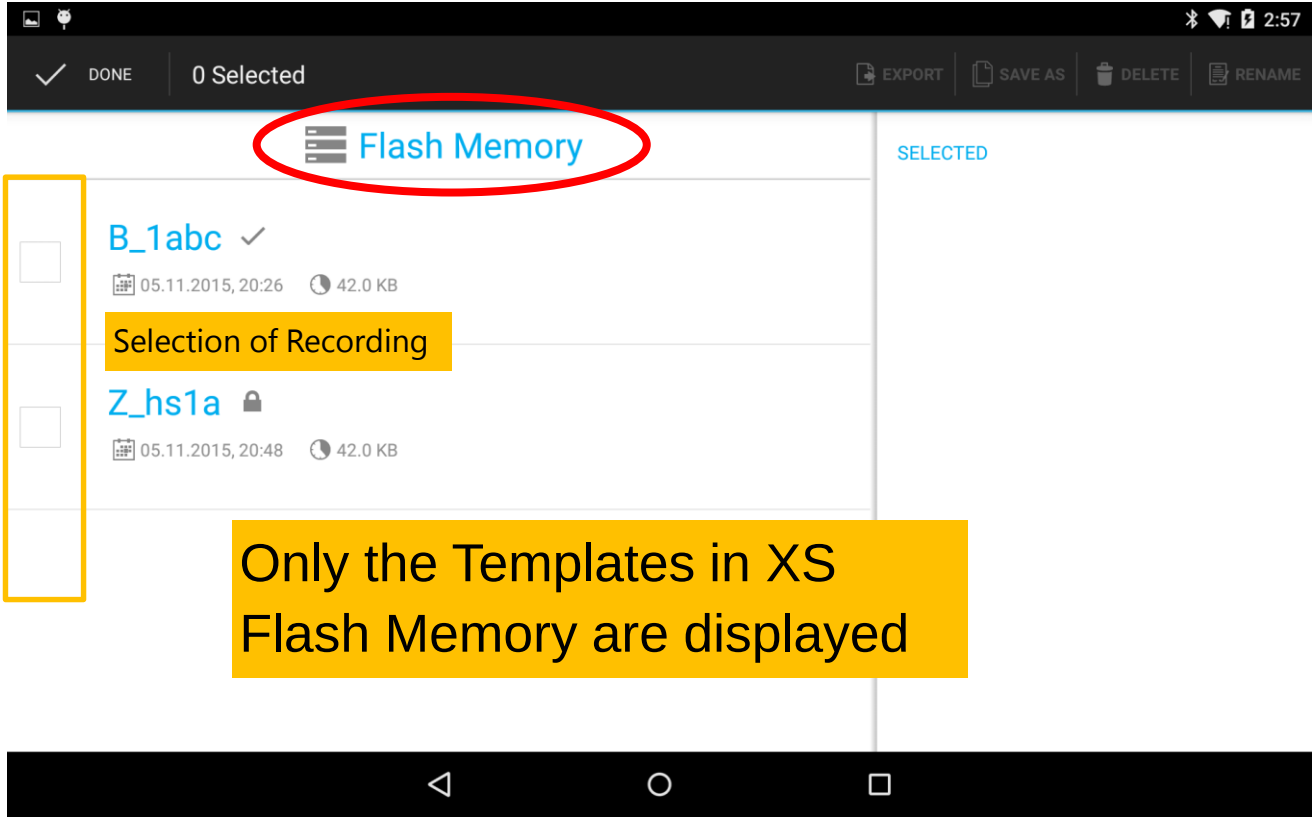
Support Info



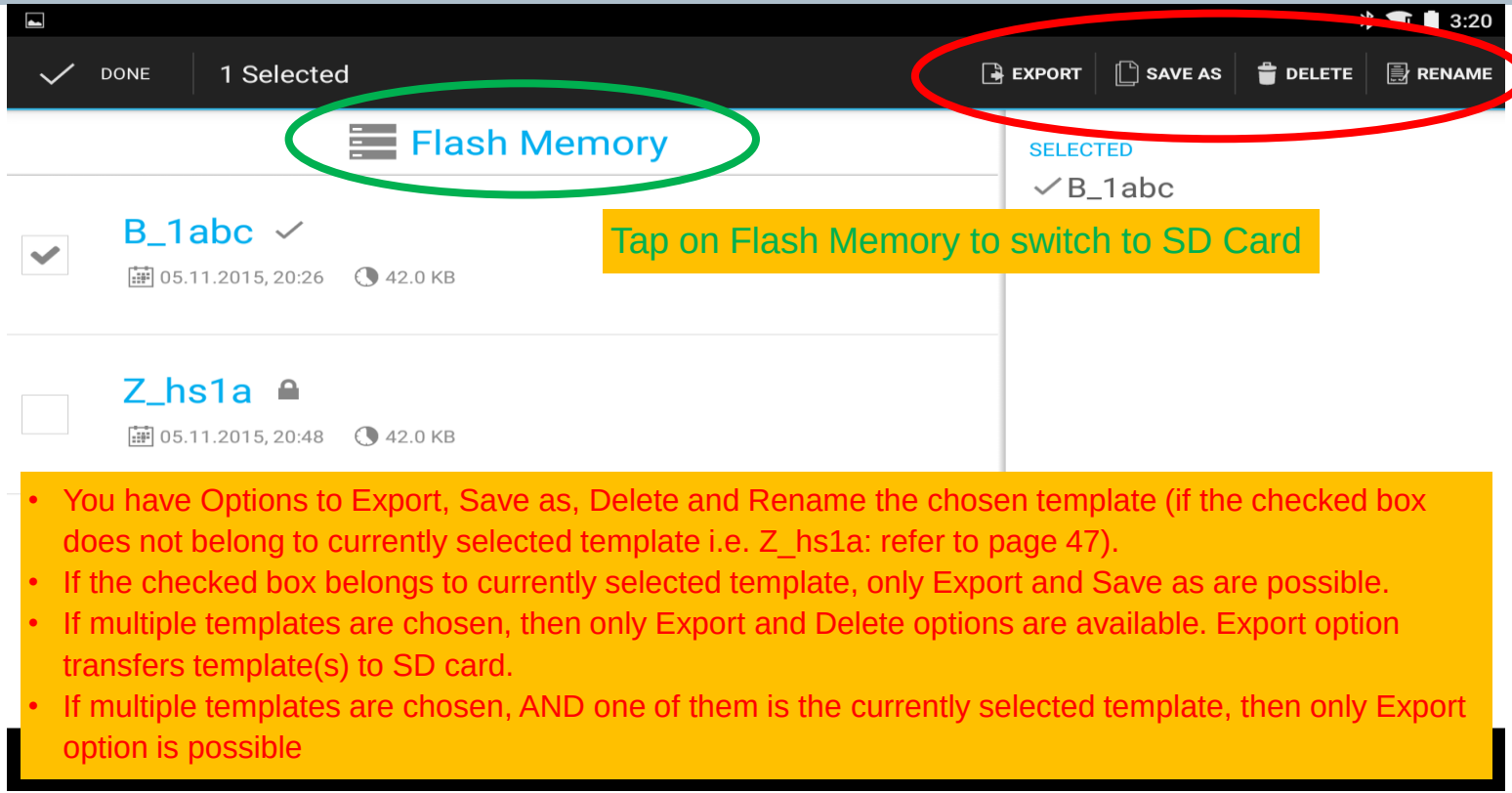
Managing Templates on XS Flash Memory and SD card



Managing Templates on XS Flash Memory and SD card

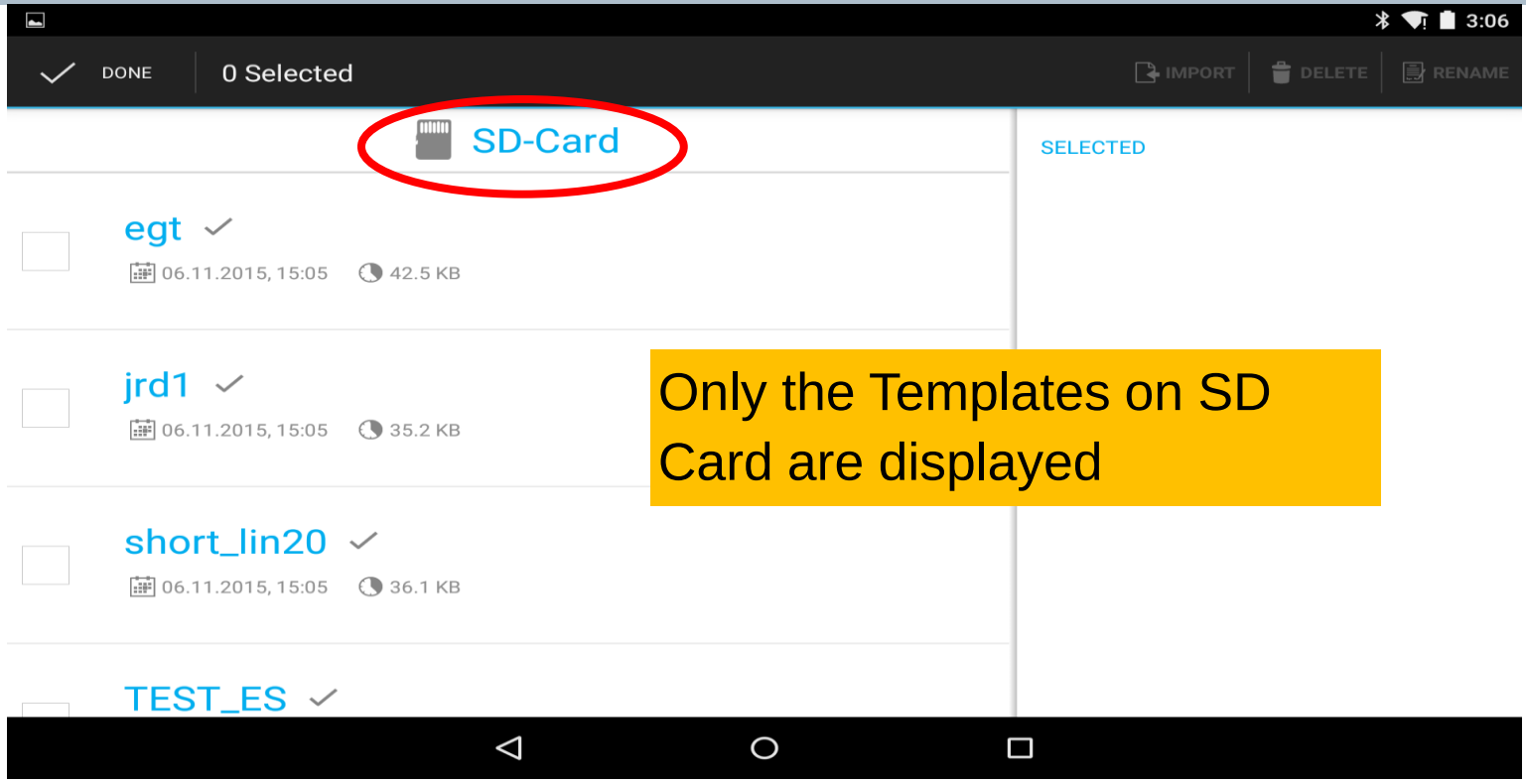


Managing Templates on XS Flash Memory and SD card

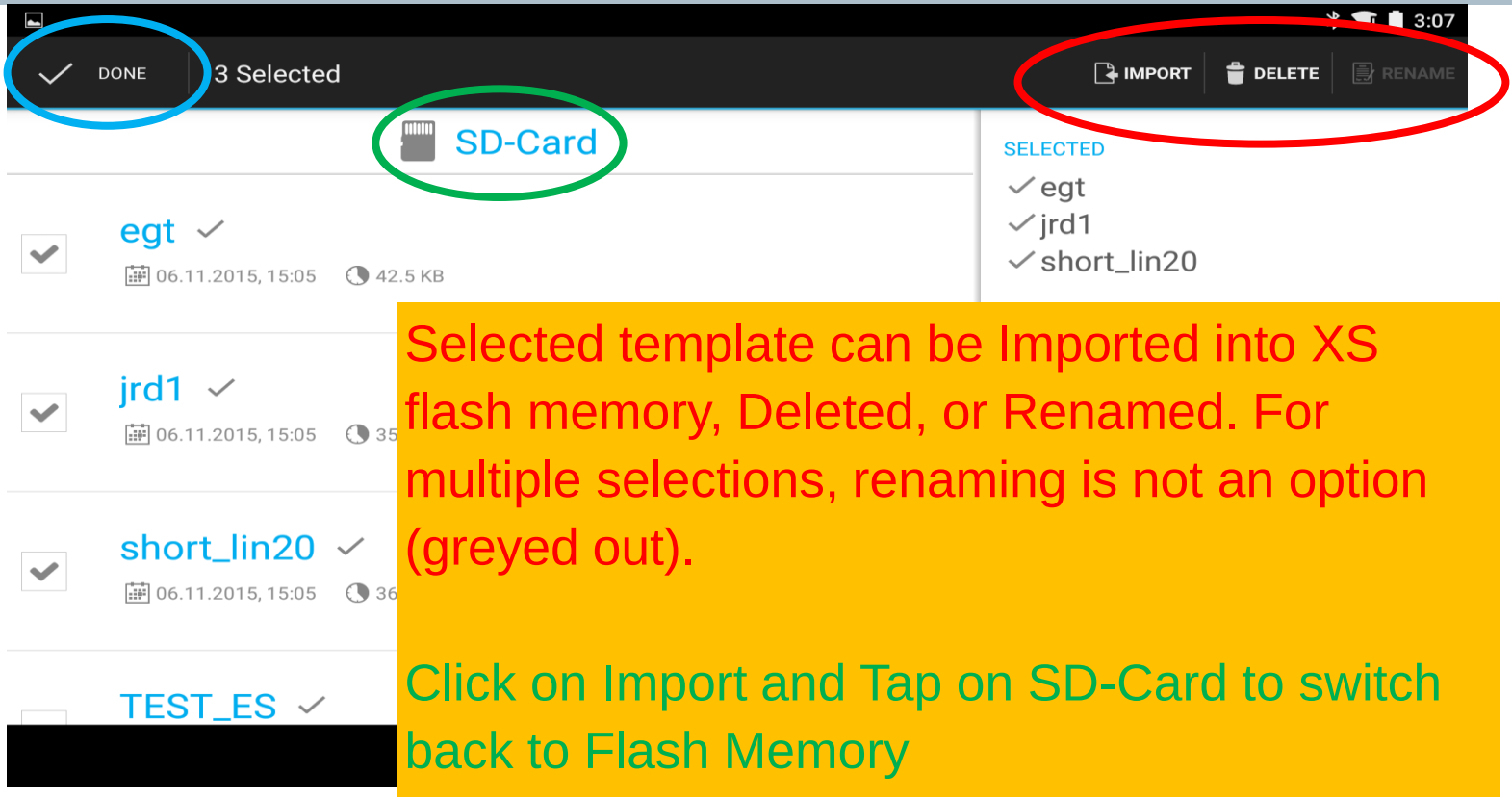


- You have Options to Export, Save as, Delete and Rename the chosen template (if the checked box does not belong to currently selected template i.e. Z_hs1a: refer to page 47).
- If the checked box belongs to currently selected template, only Export and Save as are possible.
- If multiple templates are chosen, then only Export and Delete options are available. Export option transfers template(s) to SD card.
- If multiple templates are chosen, AND one of them is the currently selected template, then only Export option is possible

Managing Templates on XS Flash Memory and SD card



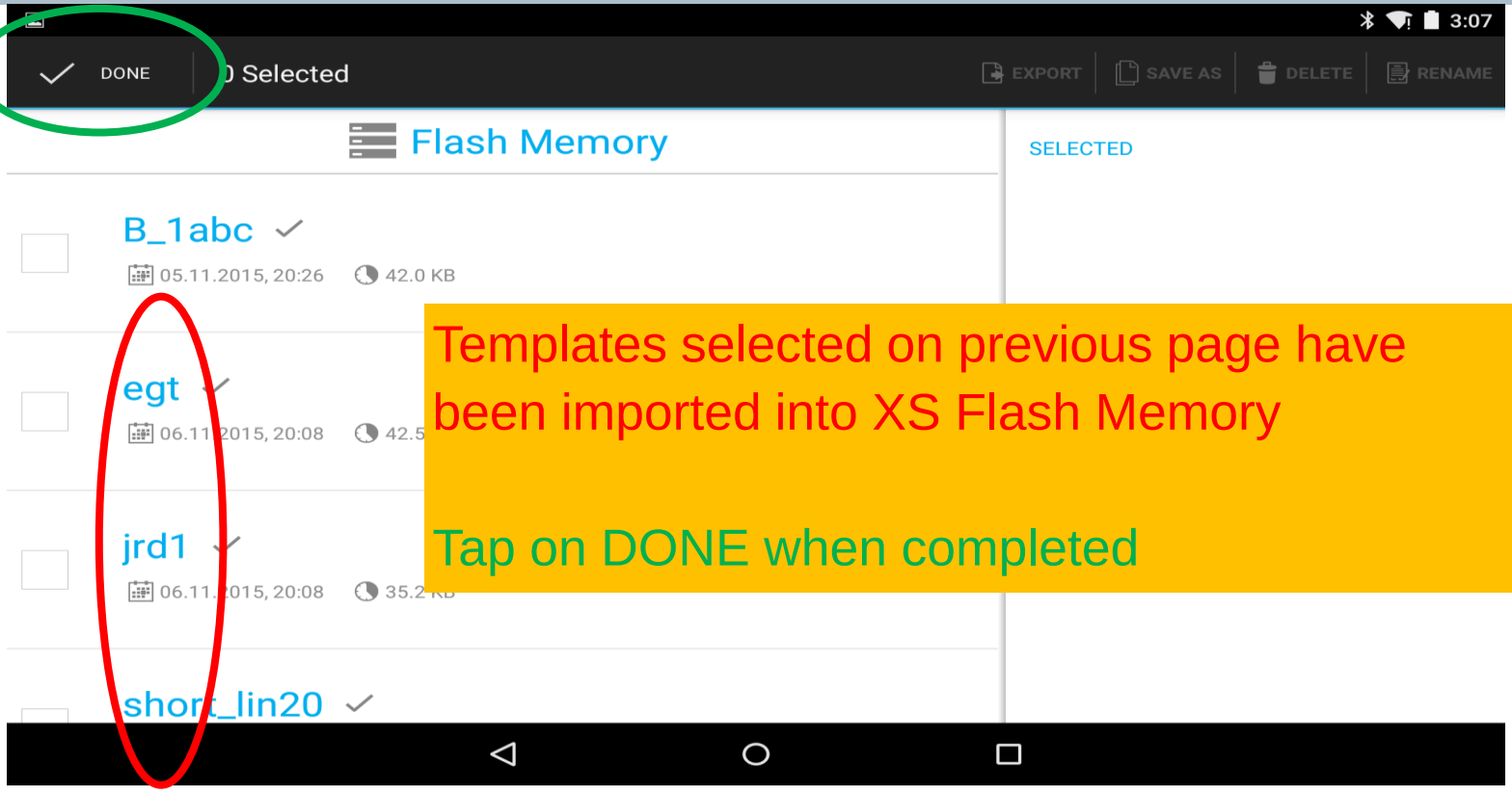
Managing Templates on XS Flash Memory and SD card



Selected template can be Imported into XS flash memory, Deleted, or Renamed. For multiple selections, renaming is not an option (greyed out).

Click on Import and Tap on SD-Card to switch back to Flash Memory

Managing Templates on XS Flash Memory and SD card



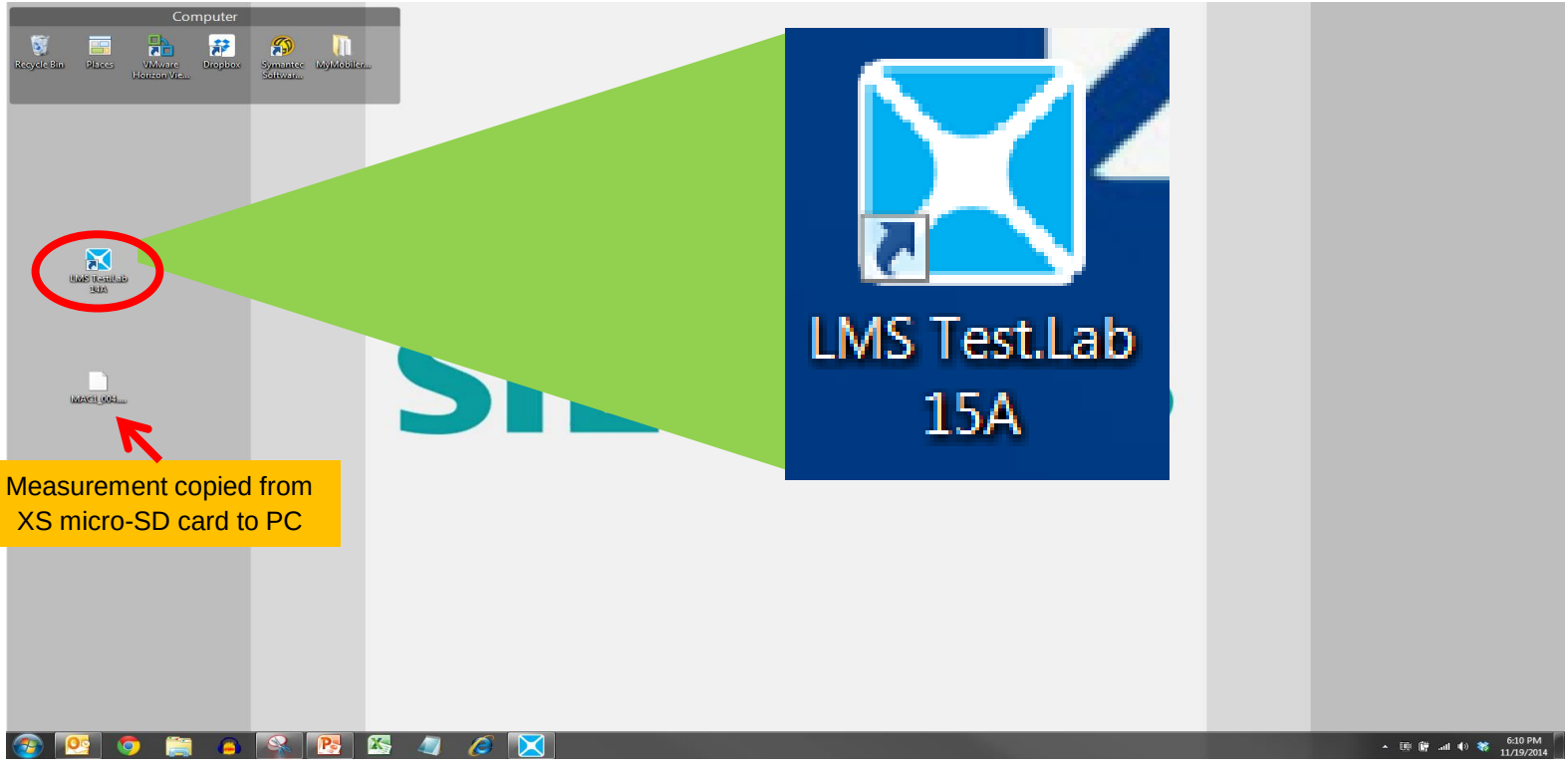
Importing time history data

In order to import the raw time-histories for further processing, we will use LMS Test.Lab Desktop:

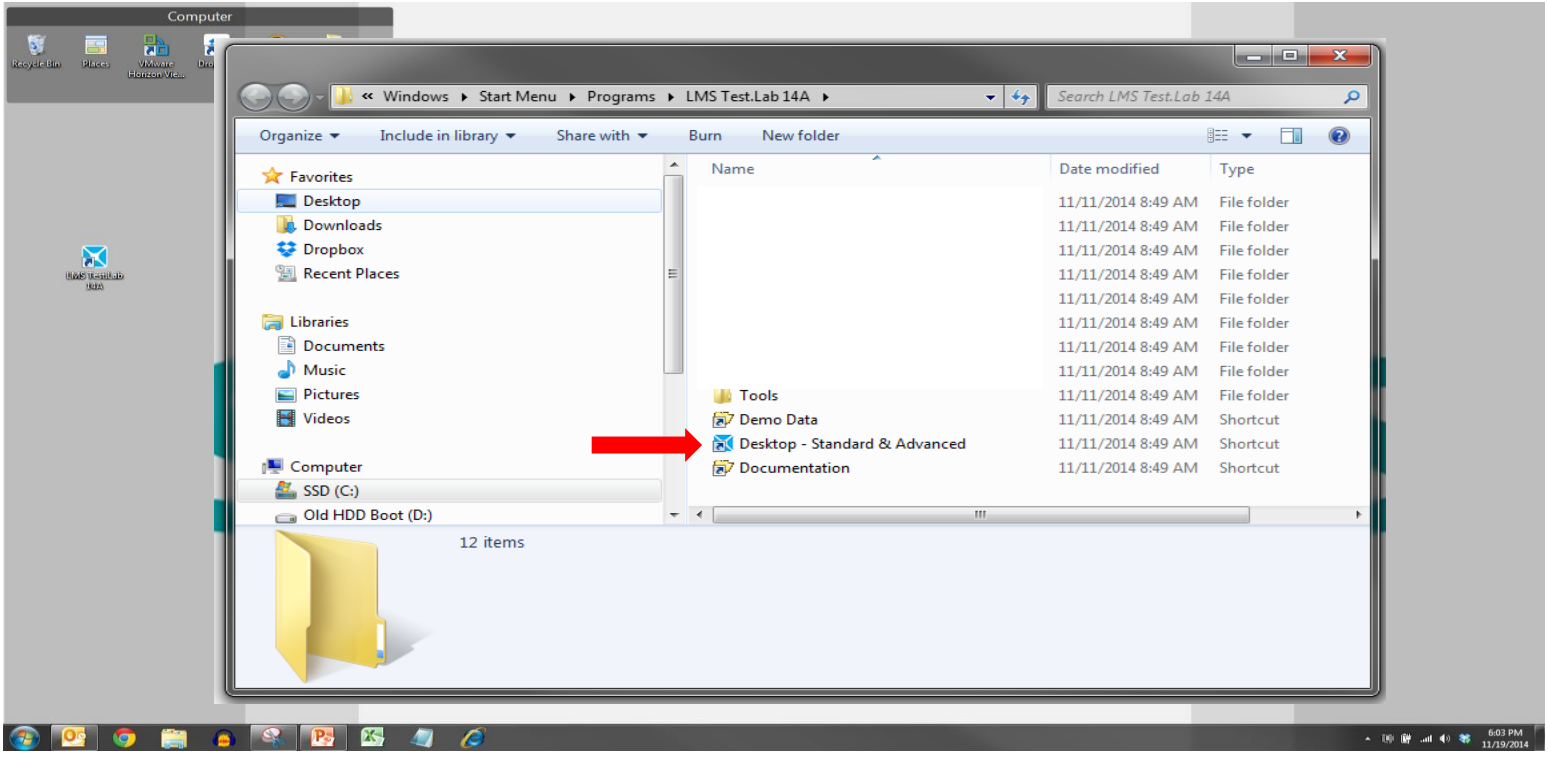
1. Remove micro-SD card from SCADAS XS
2. Insert micro-SD card into SD Card reader (provided)
3. Insert SD card reader into PC, copy or move files to PC
4. Launch LMS Test.Lab Desktop
5. Import files to active project (translates files into LMS “LDSF” file type)
6. Export channels as Universal, Matlab, SDF, WAV, etc.

Steps 4-6 are outlined in the following pages

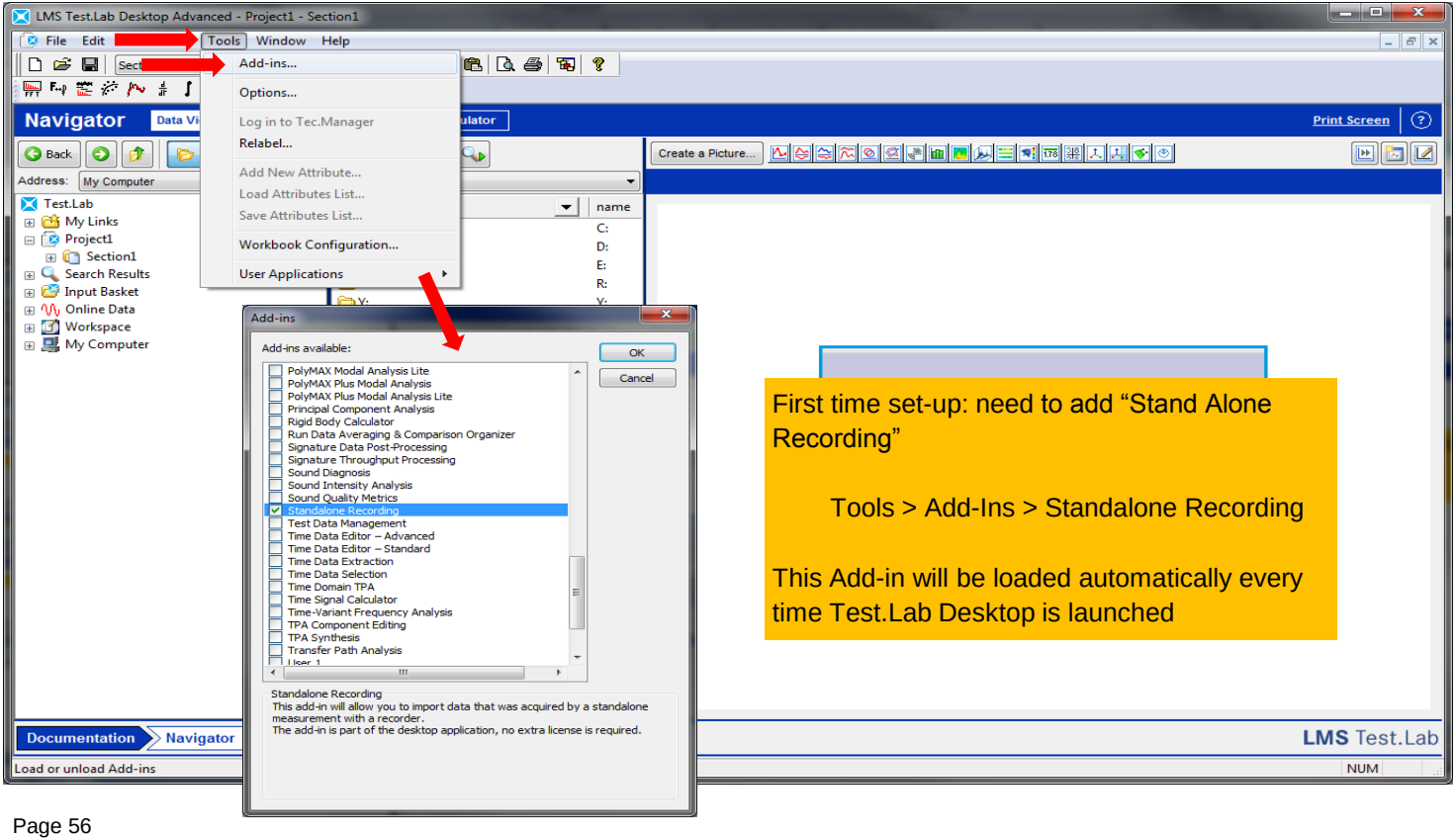
Open LMS Test.Lab Applications Folder



Launch LMS Test.Lab Desktop



Add-in Required

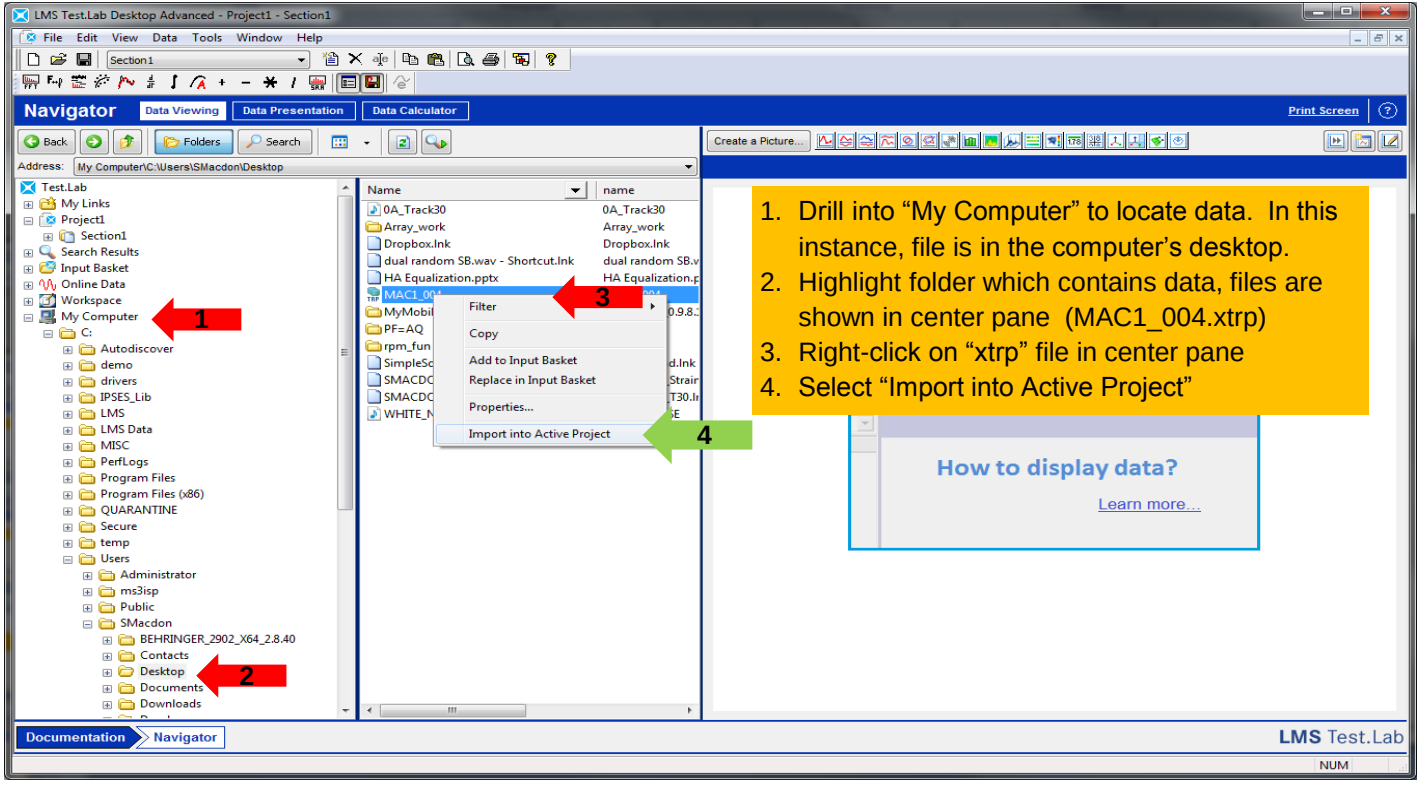


First time set-up: need to add “Stand Alone Recording”

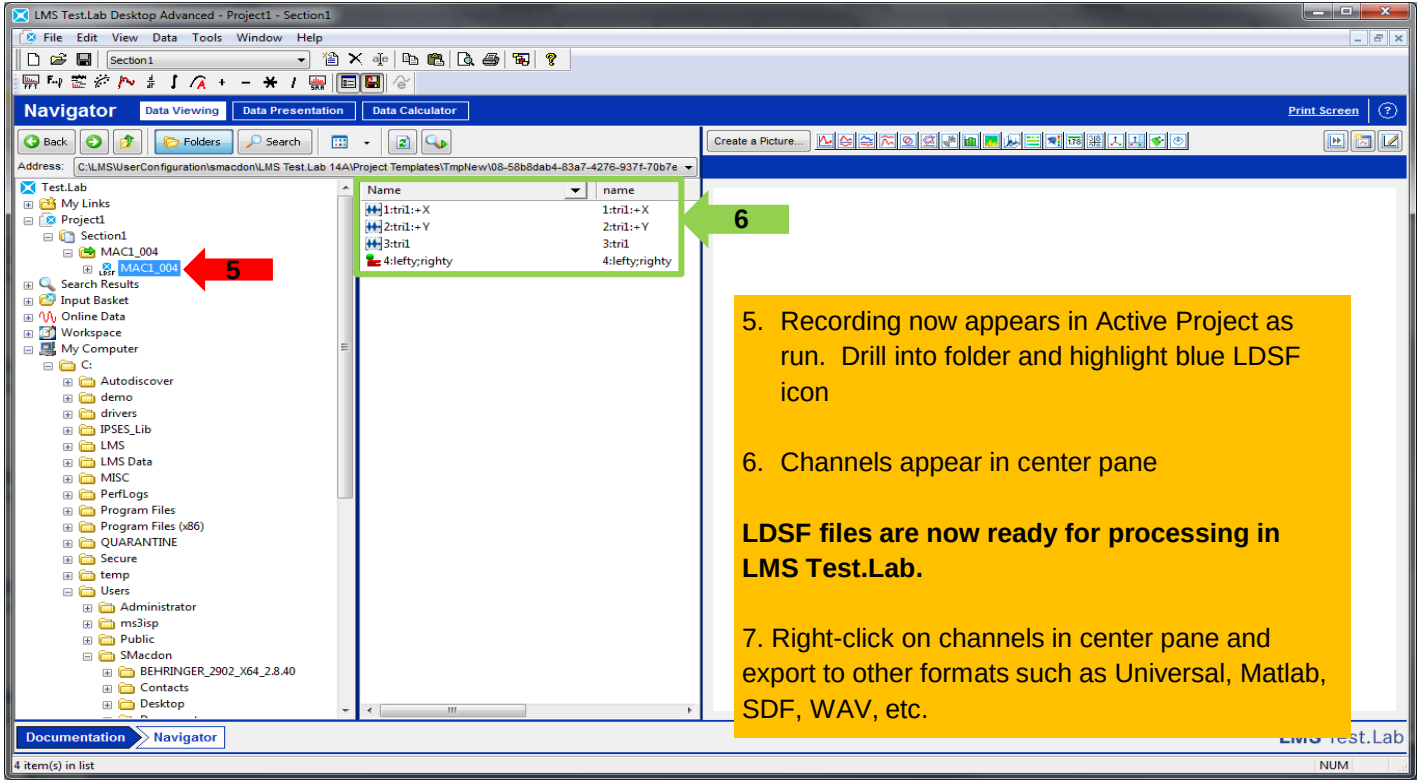
Tools > Add-Ins > Standalone Recording

This Add-in will be loaded automatically every time Test.Lab Desktop is launched

Importing time history data



Importing time history data



5. Recording now appears in Active Project as run. Drill into folder and highlight blue LDSF icon

6. Channels appear in center pane

LDSF files are now ready for processing in LMS Test.Lab.

7. Right-click on channels in center pane and export to other formats such as Universal, Matlab, SDF, WAV, etc.