

March 2020



VIAMI Solutions

# OneExpert CATV 630

Extended Quick Start Guide v 5.3

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- Sweep Errors

# Support Links

## Viavi Customer Care:

For questions about warranty information, repair and calibration, Return Material Authorization (RMA) request, services quotation, order status.

T: 1-844 GO VIAVI (+1-844-468-4284)

E: [NAM.CustomerCare@viavisolutions.com](mailto:NAM.CustomerCare@viavisolutions.com)

<https://www.viavisolutions.com/en-us/services-and-support/support-center/customer-care>

## Customer Care Portal Login

<https://www.viavisolutions.com/en-us/services-and-support/support-center/customer-care/customer-portal-login>

## RMA Request Form:

<http://www.viavisolutions.com/en-us/services-and-support/return-material-authorization-rma-request>

## Viavi Technical Support:

Will assist you in using/configuring products or address issues regarding product performance.

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E: [catvsupport@viavisolutions.com](mailto:catvsupport@viavisolutions.com)

## For access to online technical and product support:

<http://support.viavisolutions.com>

## Quick Tip Videos:

<https://www.viavisolutions.com/en-us/support/quick-references/quick-tip-videos>

## Product Focused YouTube Channel:

[ViaviSolutions CIVT](#)



# OneExpert CATV Overview

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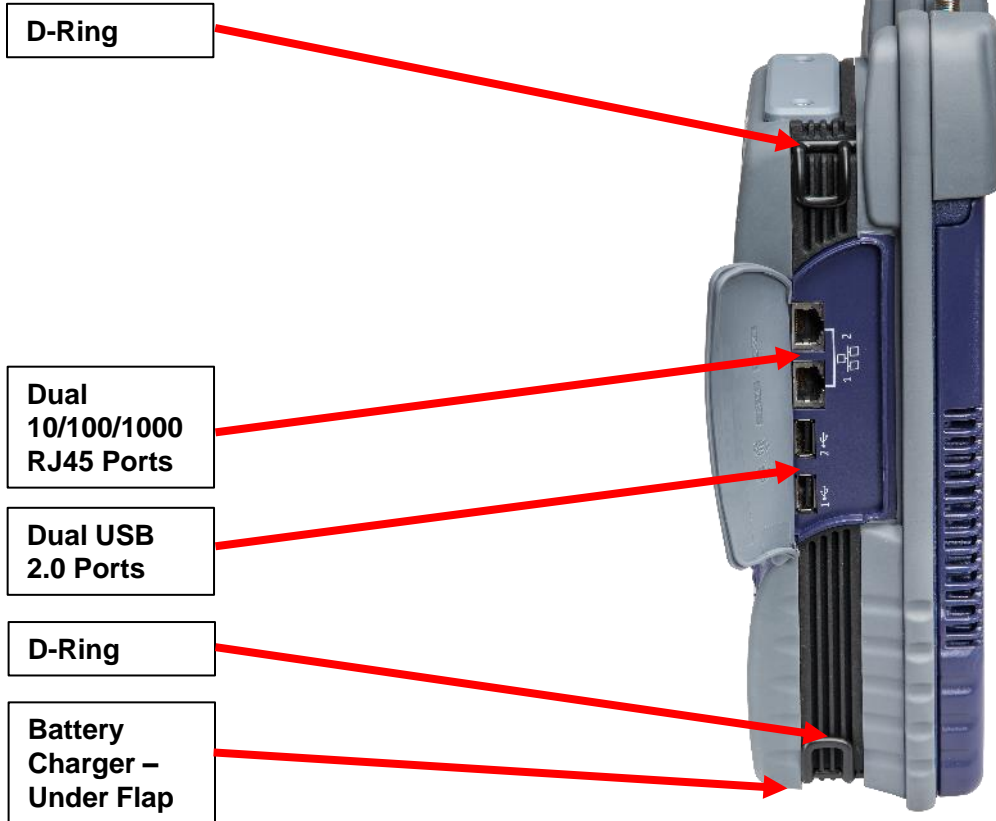
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# OneExpert CATV Overview



# OneExpert CATV Interfaces

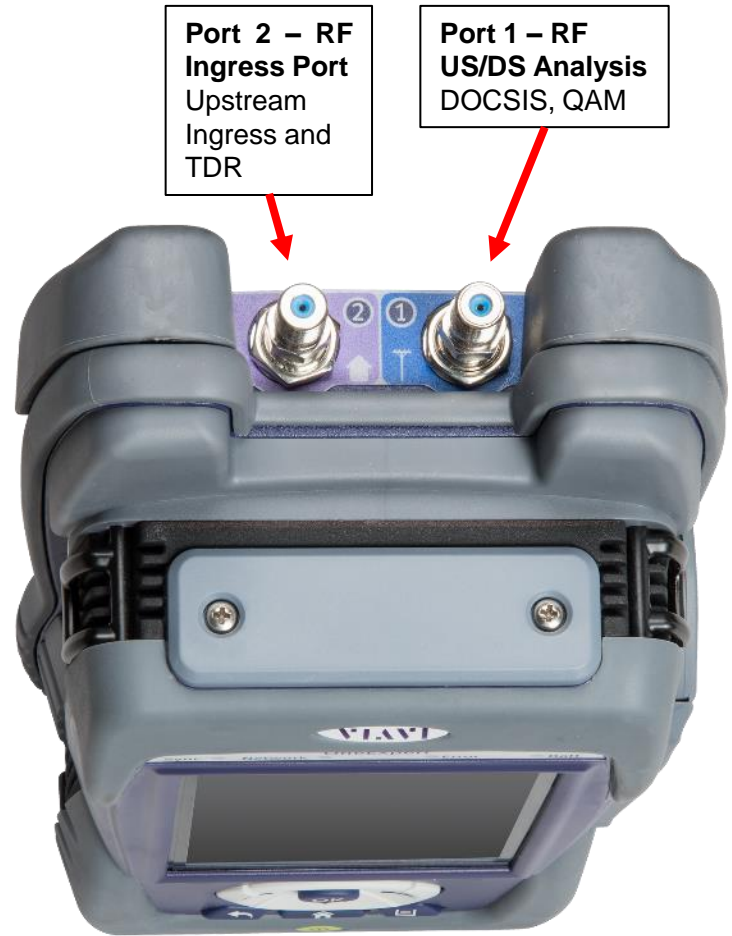


Dual  
10/100/1000  
RJ45 Ports

Dual USB  
2.0 Ports

D-Ring

Battery  
Charger -  
Under Flap



Port 2 - RF  
Ingress Port  
Upstream  
Ingress and  
TDR

Port 1 - RF  
US/DS Analysis  
DOCSIS, QAM



# OneExpert CATV Controls



## AC CHARGER PORT

- **SOLID GREEN** indicates that charging is complete.
- **SLOW FLASHING RED** indicates that the battery charge is critically low, and less than 10%
- **FAST FLASHING RED** indicates that the charging was suspended due to a fault and user intervention is necessary (for example, an incorrect charger is attached)
- **SOLID RED** indicates that the charging was suspended due to overheating
- **SOLID AMBER** indicates that the battery is charging



NETWORK INDICATOR and BATTERY LEDs

LCD Screen

SHORTCUT/SOFT KEYS

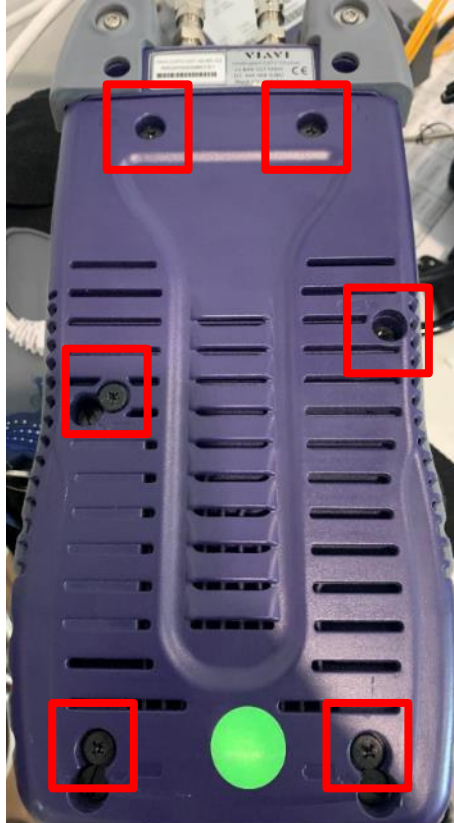
DIRECTIONAL Pad

BACK, HOME and UTILITY Buttons

POWER O/I Button

# Battery Replacement

# Removing and Replacing Battery



Remove OneExpert CATV cloth case and locate the 6 flat-head screws marked with the battery icon

Loosen each screw with a standard slotted screwdriver until they disengage from the MAINFRAME portion of the unit

Note that these 6 screws are designed to remain captive with the MODULE.

Removing the Module will expose a backplane connector that extends from the Mainframe. There is risk of damaging this backplane connector if the unit is pulled apart without exercising the proper caution.

A single screw hold the battery compartment lid in place



# Removing and Replacing Battery





# RF Barrel and Collar Replacement



# OneExpert CATV RF Ports F-81 Adapter Barrel Style Connector



The ONX-CATV has two RF ports with field replaceable barrel style connectors. The ONX ships with two F- 81 splice style adapters rated to 3 GHz. These F-81 adapters are 1.2 in (307mm) long with a 0.5 in (132mm) distance between either end and the tightening nut. They are shipped installed into the RF ports to the recommended torque specification of 20 in-lbs. (1.6 ft-lbs.).

After some use these F-81 adapters may need to be replaced. When replacing these adapters, an F-81 adapter with similar dimensions and specifications is recommended.

# Reason for RF Port Aluminum Collars and F-81 Considerations

Since early 2017 all ONX models are built with aluminum collars around the RF port F-81 barrel-connectors. These collars were added to provide additional mechanical protection from lateral forces which could break the F connector and/or the RF port on the ONX. These collars work by reinforcing the base of the connector and help distribute forces over a bigger area. The height of the collar accommodates the F-81 barrel-connector that was originally shipped with the ONX, but has some margin to accommodate other, similarly sized and rated, F-81 barrel-connectors.

It is important to ensure that ONX RF port F-81 barrel-connector replacements have enough length to pass through the aluminum collar and screw in far enough to close any gaps. Seating the connector properly into the ONX RF port prevents off-air signals from leaking around the F-81 barrel-connector. Also, the F-81 barrel-connector used should not be so long that when tightened it leaves a loose collar. The reinforcing strength provided by the collar requires the collar to be firmly held in place by the F-81 barrel-connector inserted into the ONX's RF ports. A loose collar will not properly strengthen the F-81 barrel-connector, making it more susceptible to breaking when stressed.



*ONX-CATV's RF port aluminum collars*



*RF ports with collars between the F-81 barrel-connectors and ONX body*

# Replacing the F Connector



*F-81 barrel-connectors come in many different forms based on their intended application. The ONX uses an F-81 splice style F connector, like the one shown here on the far-left. It is recommended that replacement F connectors be of similar length to minimize any negative impacts.*



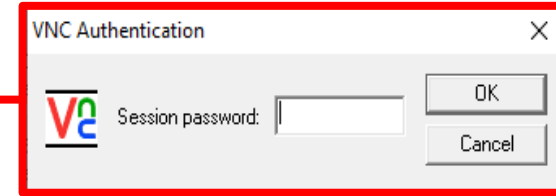
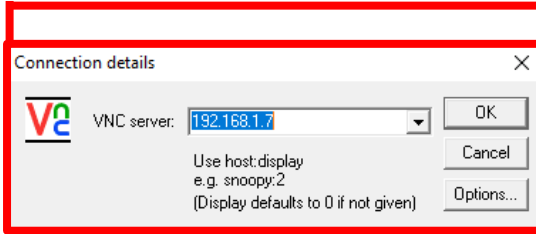
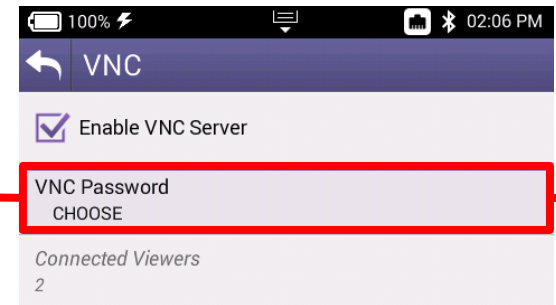
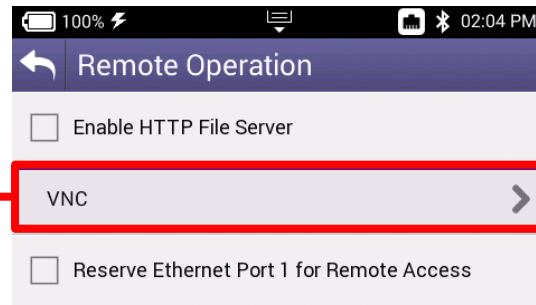
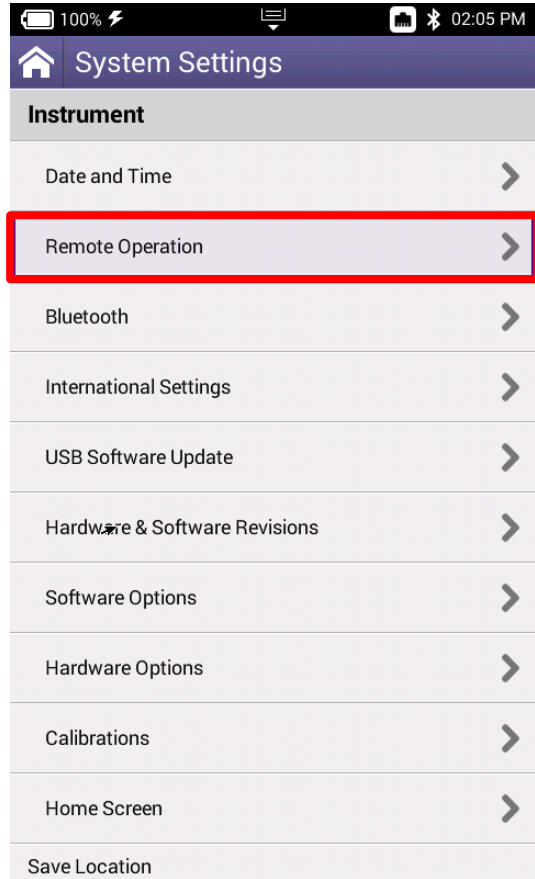
Start by removing the current F-81 adapter and collar (if present). If needed use a 7/16 wrench, turn the F connector counterclockwise until the adapter is completely out of the ONX RF port. Retain the collars if not replacing them with new ones.

Place the new F-81 adapter through the collar and screw the adapter into the ONX RF Port by turning clockwise. Make sure the collar is between the ONX and the F connector nut, as shown in the picture below. Tightening the F-81 adapter into the RF port to the torque specification of 20 in-lbs. (1.6 ft-lbs.) is recommended, which is about hand tight plus another quarter turn.

**WARNING:** Do NOT overtighten the F-81 adapter into the ONX's RF port, this can lead to permanently broken RF ports. Also, it is not recommended to use power tools when removing or replacing the F-81 adapters.

# Remote Access

# Remote Access



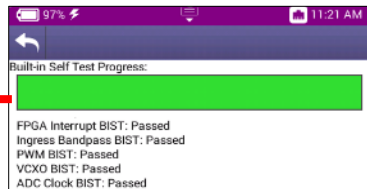
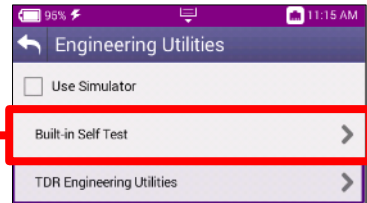
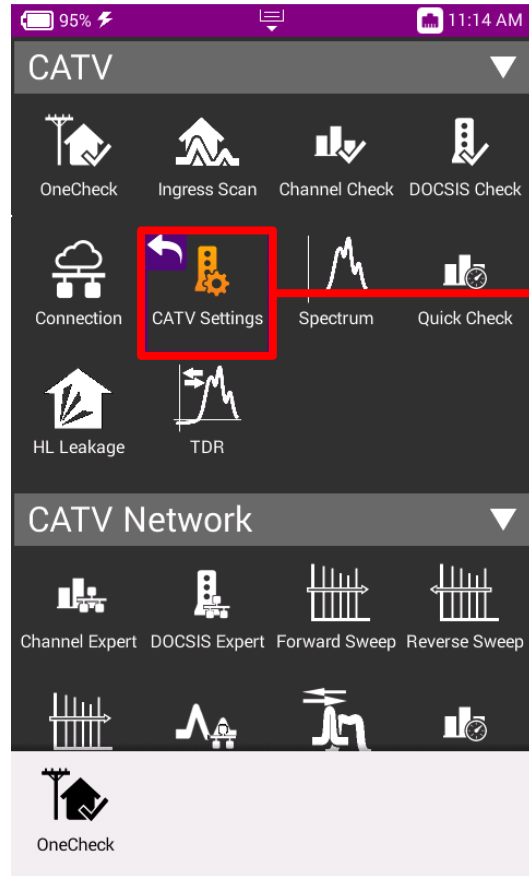


# Engineering Mode

# Engineering Mode



Hold UTILITY KEY simultaneously during POWER button press. Continue to hold UTILITY KEY until LEDs flash ORANGE, then release UTILITY KEY



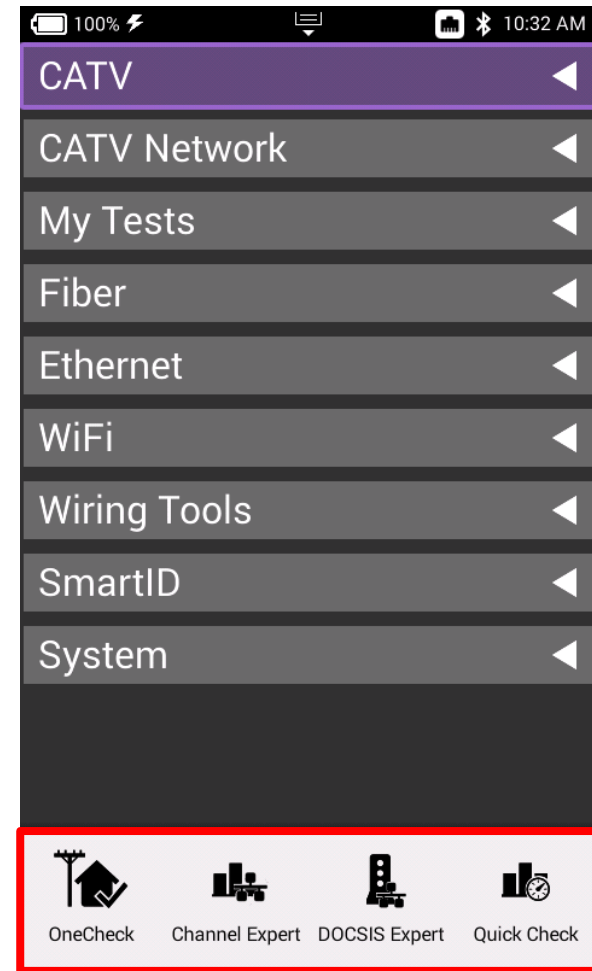
# Home Screen

# Home Screen



**HOME** is the default screen when OneExpert CATV is powered on

- It can be reached by selecting the **HOME** screen button above the On/Off Button
- Back Button from any test also returns the user to the **HOME** screen

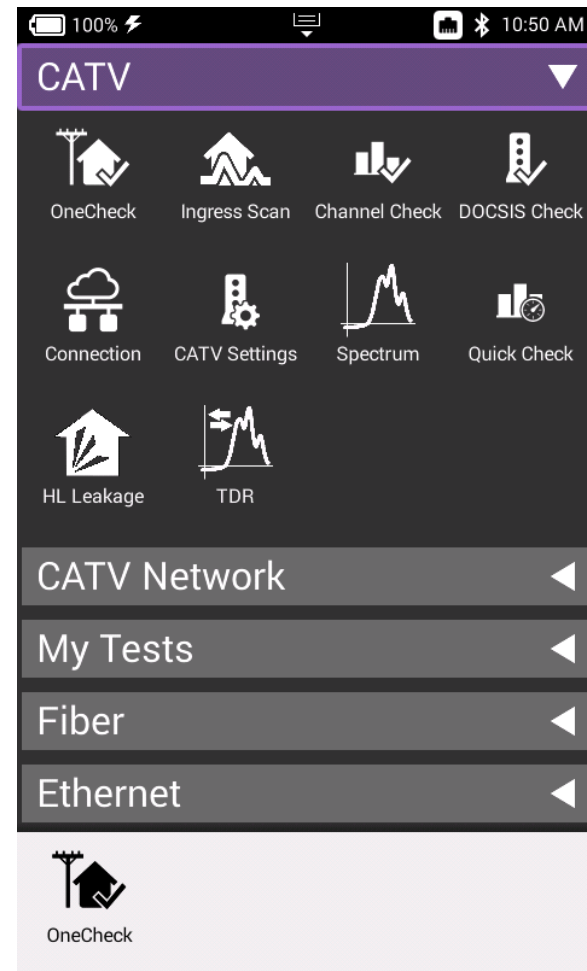
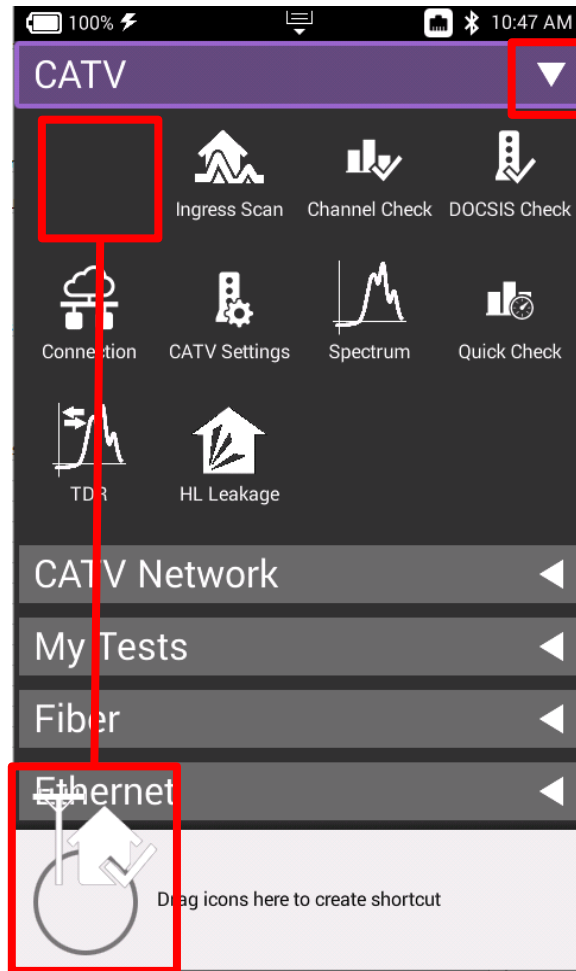


# Home Screen

**SHORTCUTS** can be created by touching and holding a desired function icon and then dragging it to the bottom of the screen

**TEST FUNCTION ICONS** can also be rearranged like a mobile device

Each **MENU** option is labeled and can be opened or collapsed by the triangle buttons to the right





# Utility Menu

# Utility Menu



**SAVE REPORT** – Saves the results to a report. Formats available: XML, PDF, or HTML

**VIEW REPORTS** – Views a saved report

**SCREENSHOT** – Takes a screen capture of the current screen

**NETWORK** – Enables or disables the Ethernet network functions

**BLUETOOTH** – Enables or disables Bluetooth

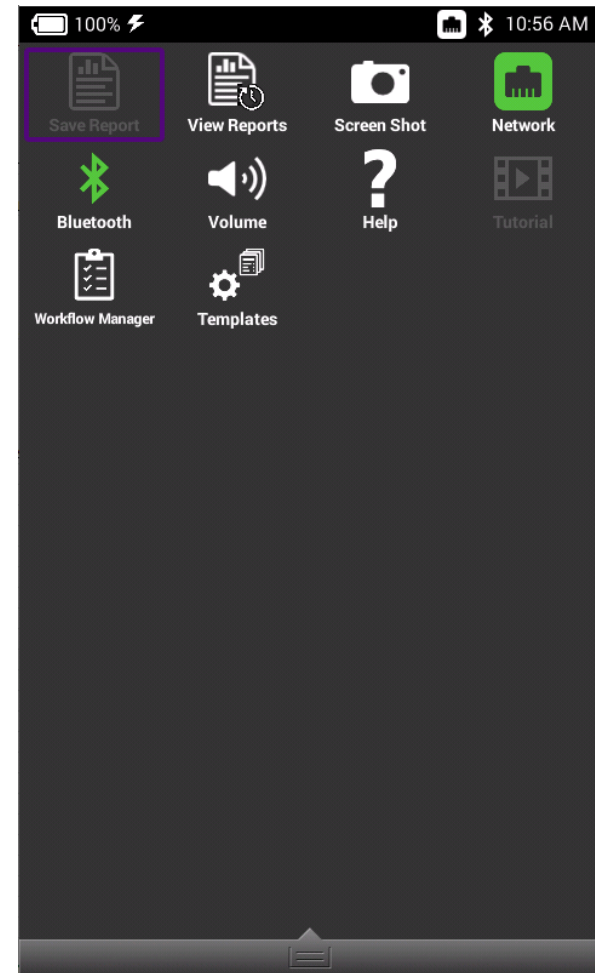
**VOLUME** – Control the device volume

**HELP** – Provides TAC phone numbers

**TUTORIAL** – Future enhancement to delivery video tutorials to the OneExpert CATV

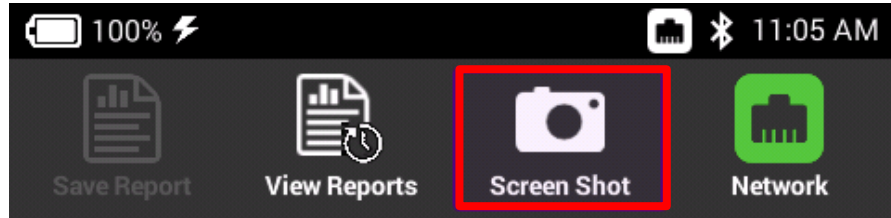
**WORKFLOW MANAGER** - Future enhancement

**TEMPLATES** – Use to switch between multiple templates and configurations

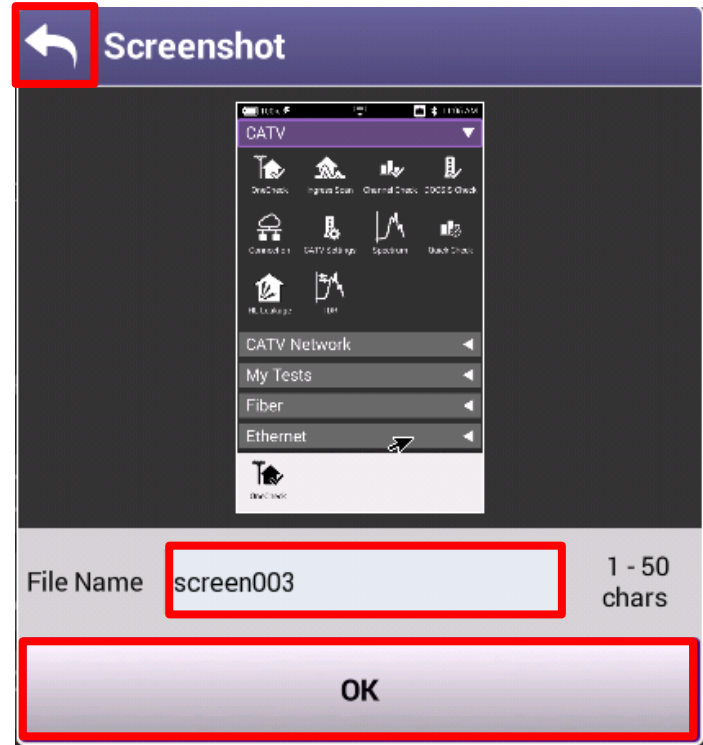


# Utility Menu – Screenshot Creation

Select SCREENSHOT from the UTILITY menu, a prompt to save the screenshot will appear



A long push on UTILITY menu key will also automatically start a screen capture



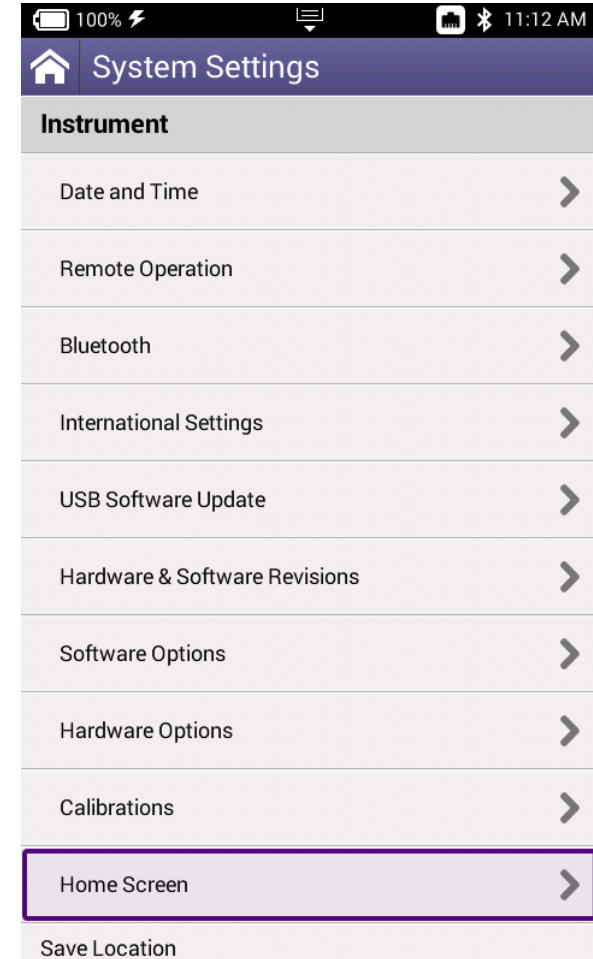
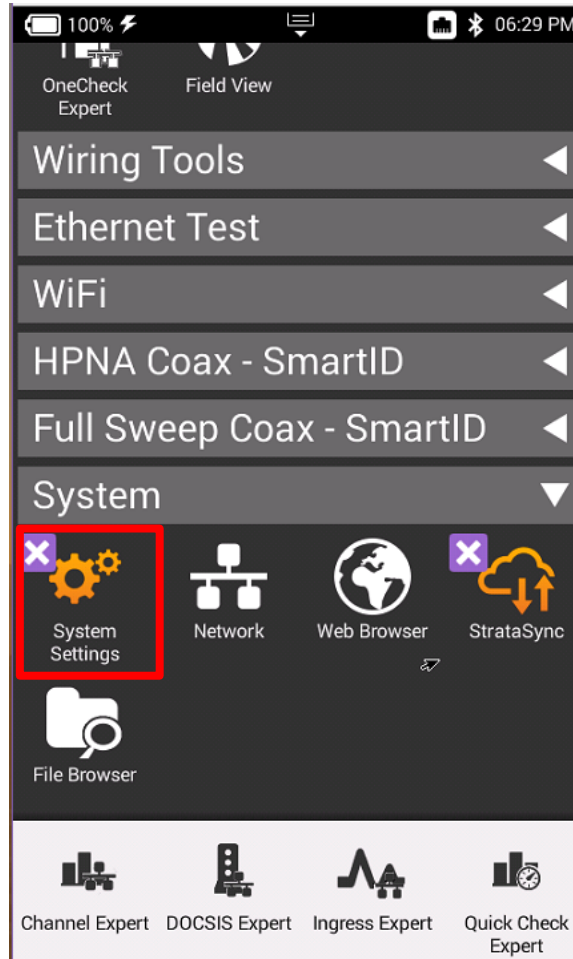
# System Settings

# System Settings

Navigate from the HOME Screen down to the bottom, using the D PAD or swiping with a finger

Select SYSTEM SETTINGS

From SYSTEM SETTINGS, the user can set up the meter a variety of ways

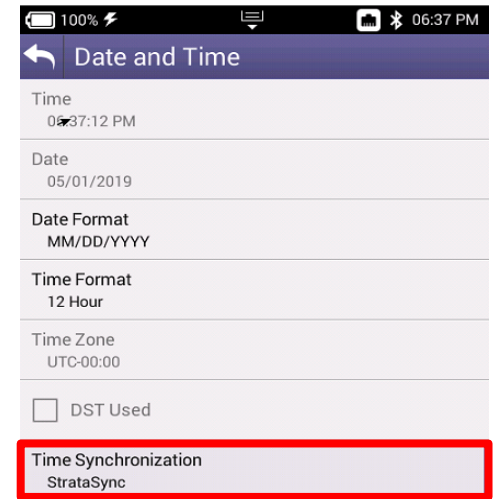
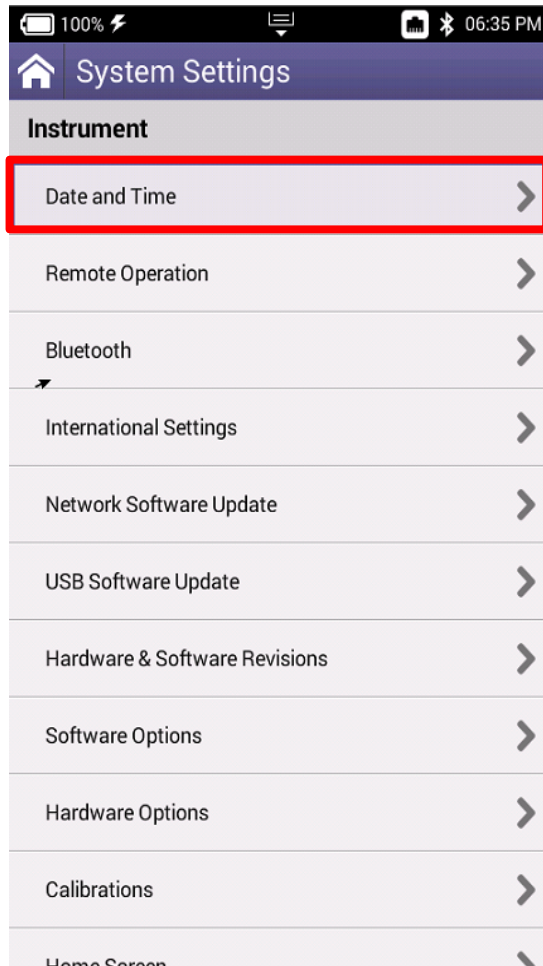




# Date and Time

Select DATE AND TIME and make sure that TIME SYNCHRONIZATION is set to STRATASYNC

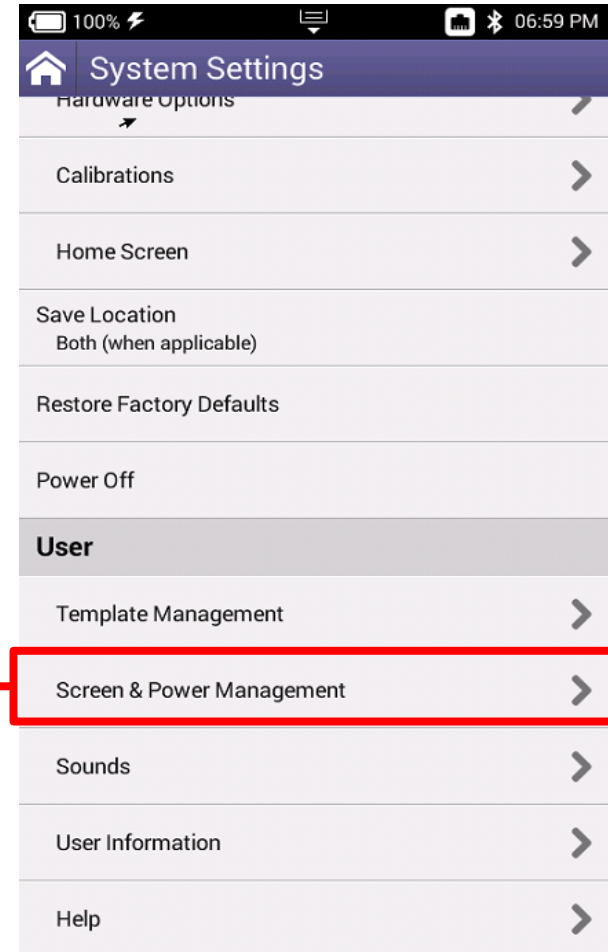
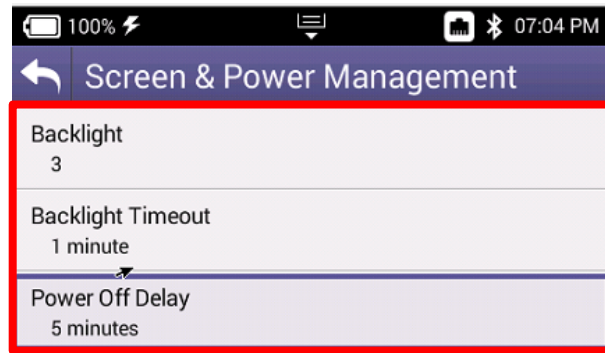
This is important because test data will be time stamped



# Screen and Power Management

Select SCREEN AND POWER MANAGEMENT to better conserve the ONX battery life

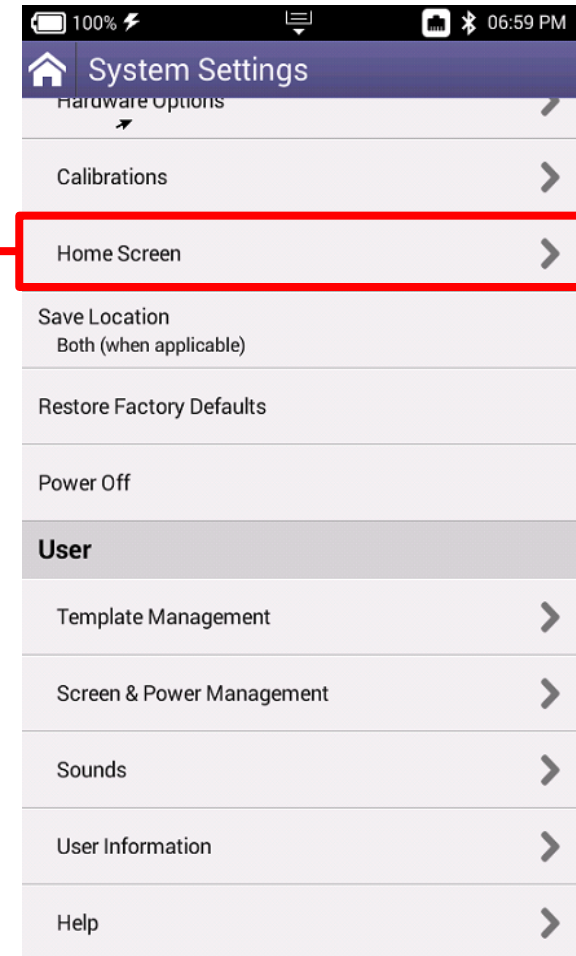
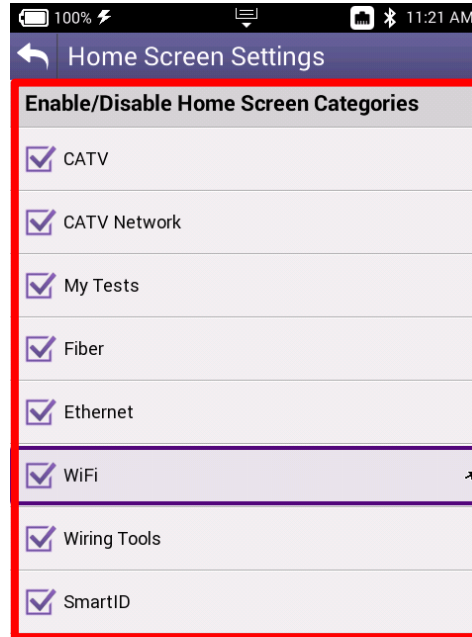
Recommended values are shown to the right. However, if POWER OFF DELAY needs to be set higher in order to accommodate technician's pace, select appropriate time



# Customizing the Home Screen

Select HOME SCREEN to customize which measurement bundles are available on the HOME screen of the OneExpert CATV

Technicians are invited to customize as needed



# Hardware and Software Revisions

Select HARDWARE & SOFTWARE REVISIONS to verify the most up to date FIRMWARE is installed

Additionally, OneExpert CATV Serial Number (listed as Unit ID) and CM MAC Addresses (used in provisioning of the onboard Cable Modem)

CM MAC 1	00:07:11:14:1B:CF
CM MAC 2	00:07:11:14:1B:D0
CM MAC 3	00:07:11:14:1B:D1
CM MAC 4	00:07:11:14:1B:D2
CM MAC 5	00:07:11:14:1B:D3
CPE MAC	00:07:11:10:B6:0F

Meter Model: ONX-620
<b>SW Bundle ONXCBL.3.20.10</b>
Base 4.30.10
Cable 3.20.10
DOCSIS Cable Modem 3390 1.6.607
<b>OneExpert Cable</b>
Unit ID RRQA0023450012
Assembly ID 22089324
MAC Address - Ethernet 00:07:11:10:09:EA
MAC Address - System 00:07:11:10:09:EB
MAC Address - Test 1 00:07:11:10:09:EC
MAC Address - Test 2 00:07:11:10:09:ED

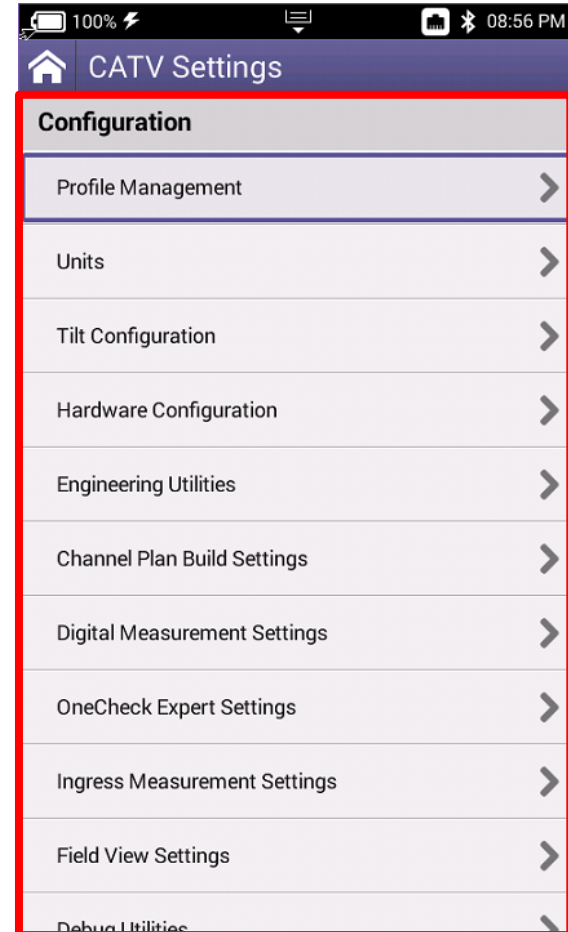
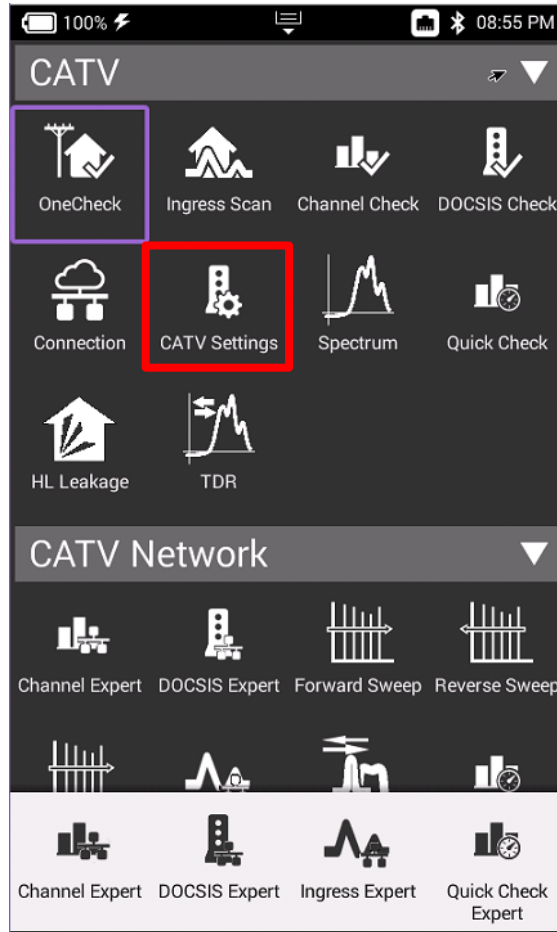
# CATV Settings



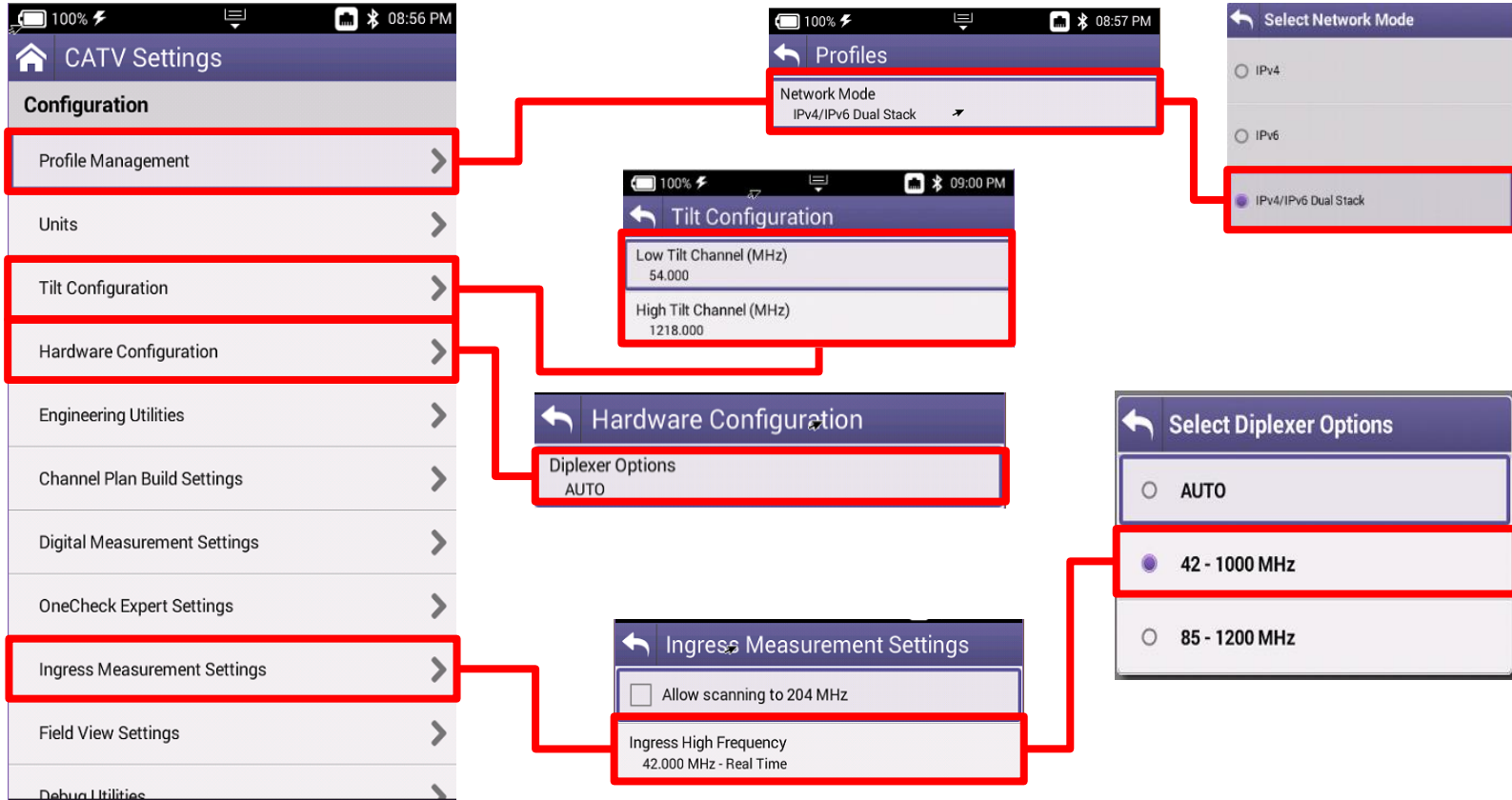
# CATV Settings

Navigate from the HOME screen to CATV SETTINGS

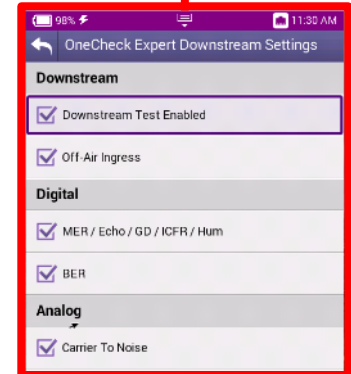
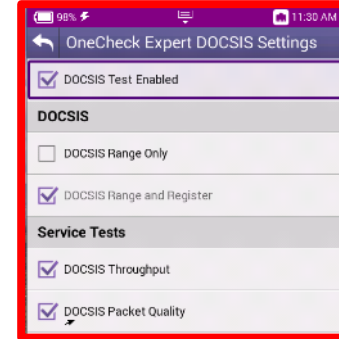
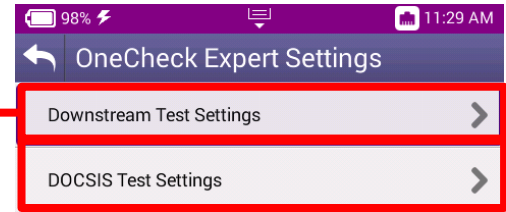
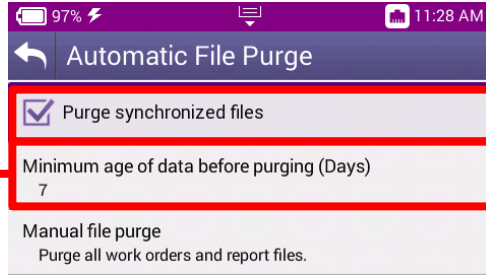
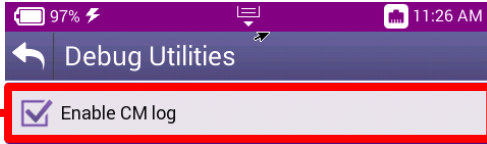
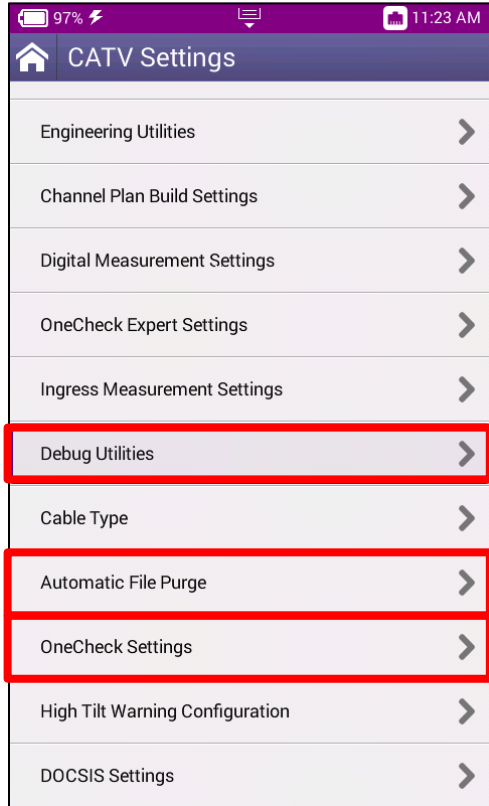
- IPv4 or IPv6
- Tilt
- Sweep
- Diplex
- Digital Measurement
- Channel Plan Build Settings



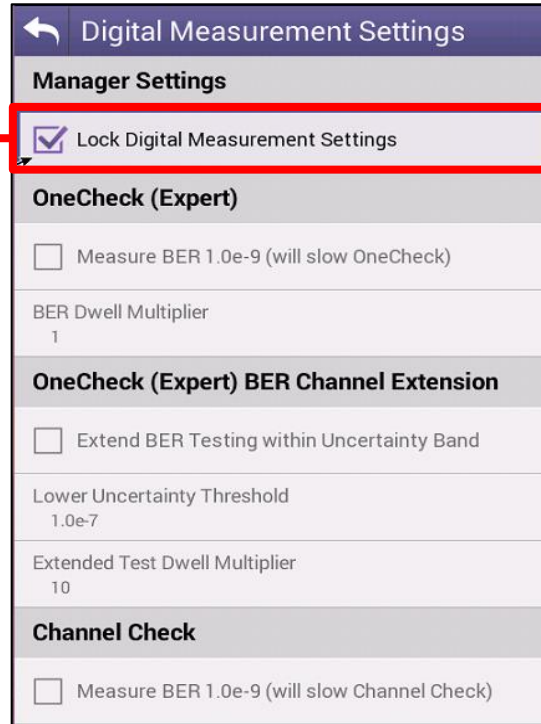
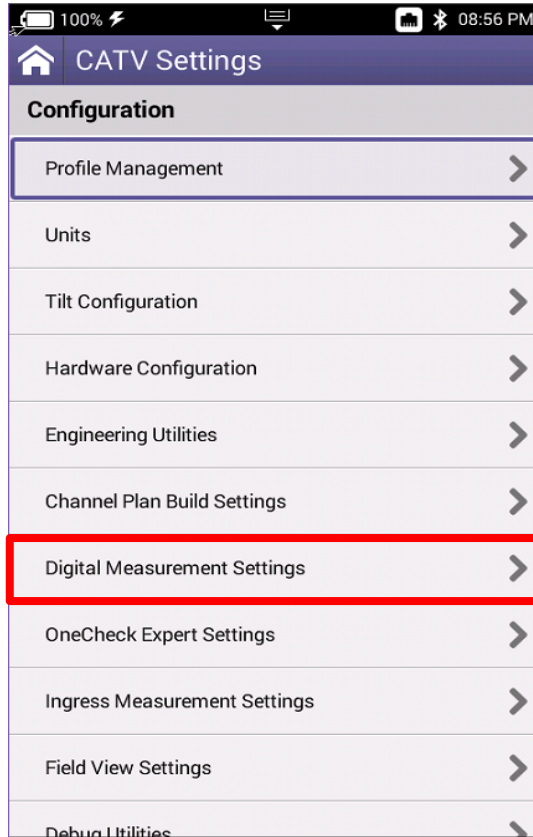
# Advanced CATV Settings



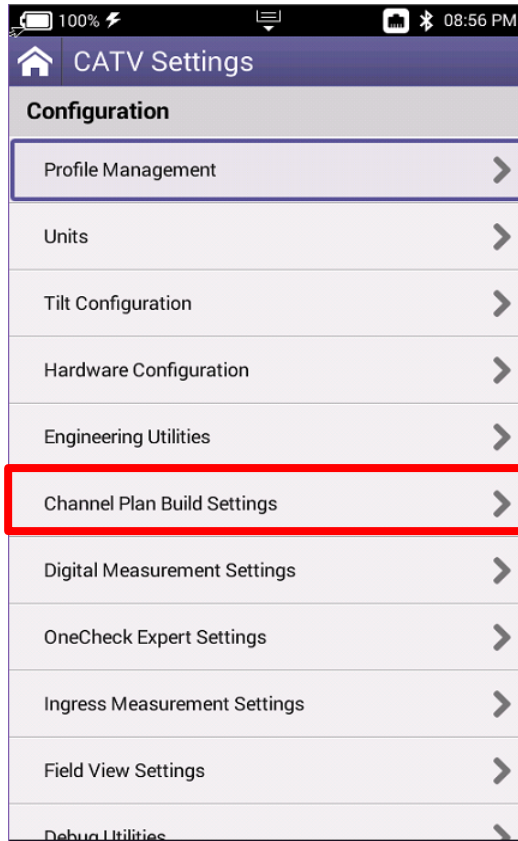
# Advanced CATV Setting



# Advanced CATV Settings



# Advanced CATV Settings



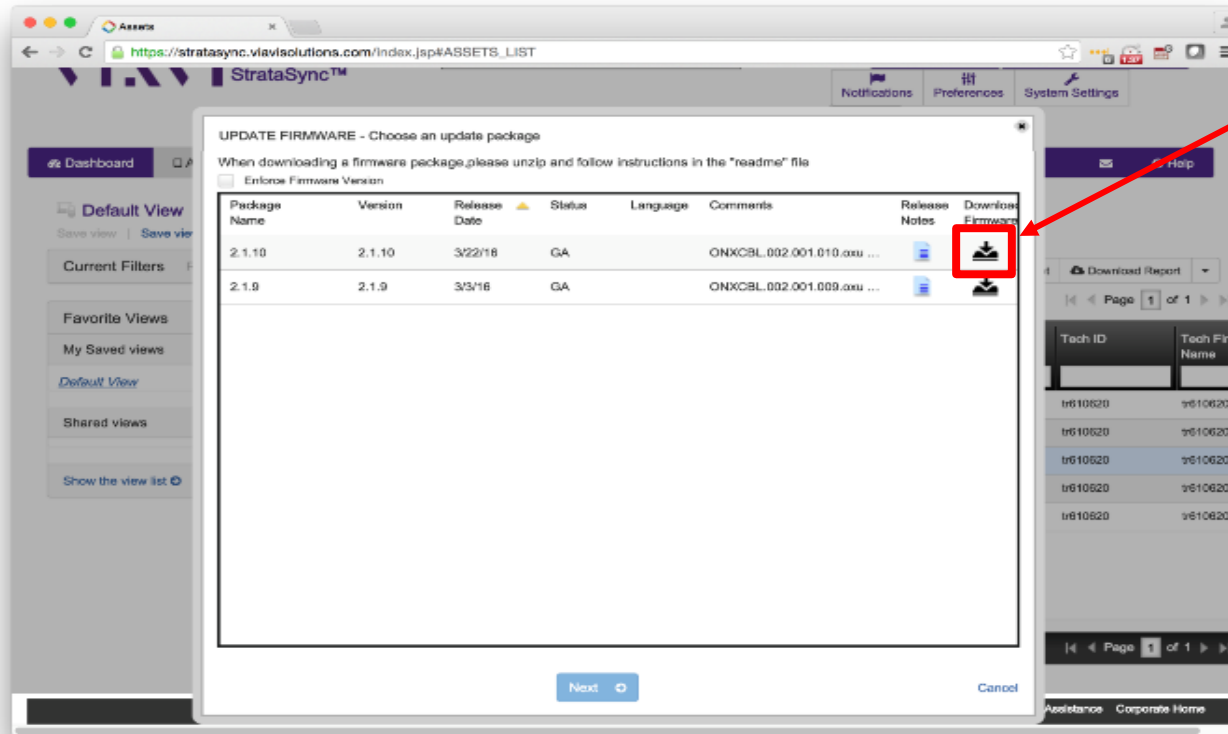


# Software and Firmware Updates

# Software and Firmware Upgrades

- Software (SW) and Firmware (FW) releases are the best way to ensure your VIAVI OneExpert is functioning at its best
- VIAVI delivers SW and FW easily via **StrataSync** and **USB Stick**
- All OneExpert units should be upgraded to the latest production software release – available through StrataSync (or your Viavi representative)
- New SW Version offer substantial operational improvements and enhancements over earlier software releases including the version that shipped with the units initially
- The software will be deployed to the units by the StrataSync Administrator, but each unit needs to be configured to connect with StrataSync
- Follow these steps to ensure your meter is configured correctly and you can connect to StrataSync to receive the latest updates.

# USB Software Upgrade



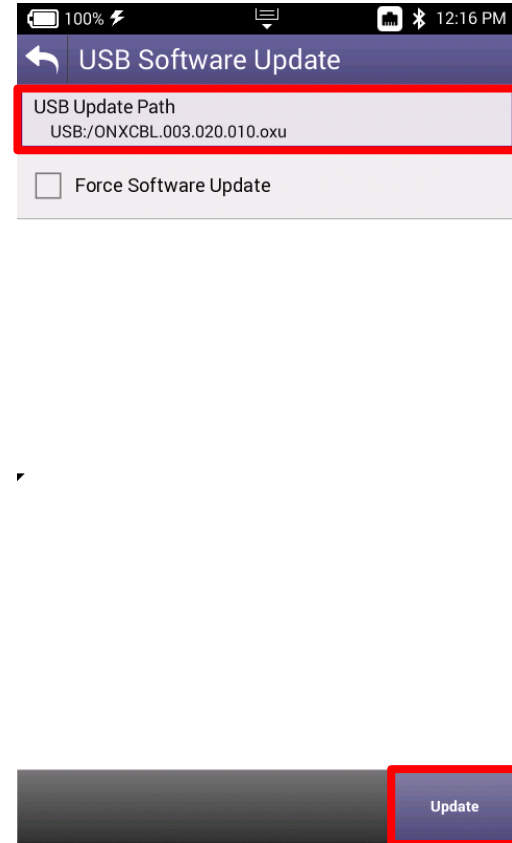
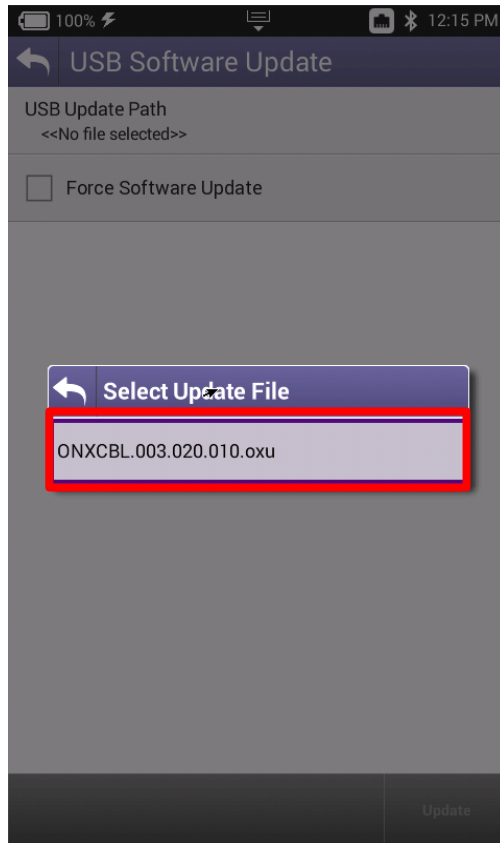
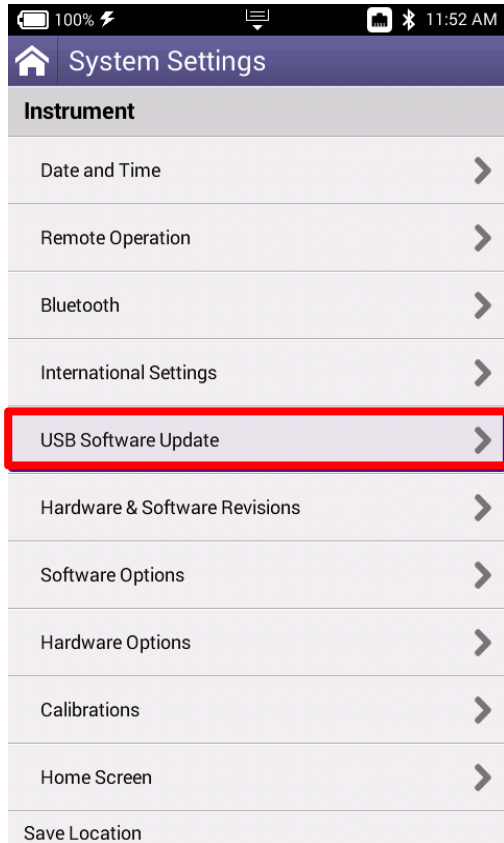
- Click here to download the newest firmware

- Copy the downloaded file ONXCBL.xxx.xxx.xxx.oxu to the root directory of a USB thumb drive.

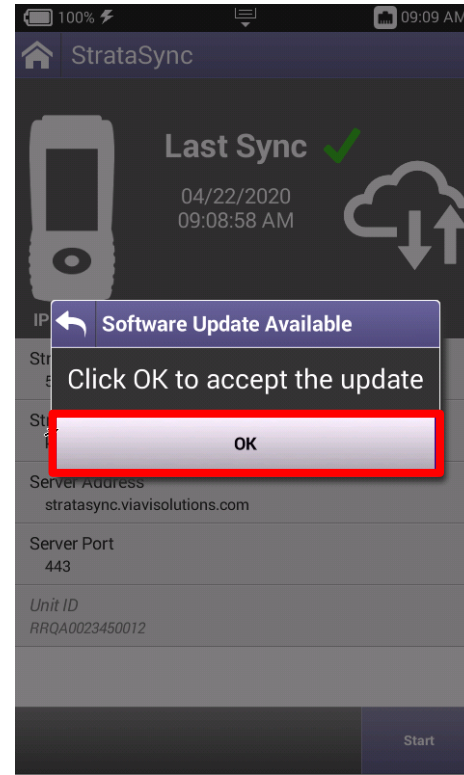
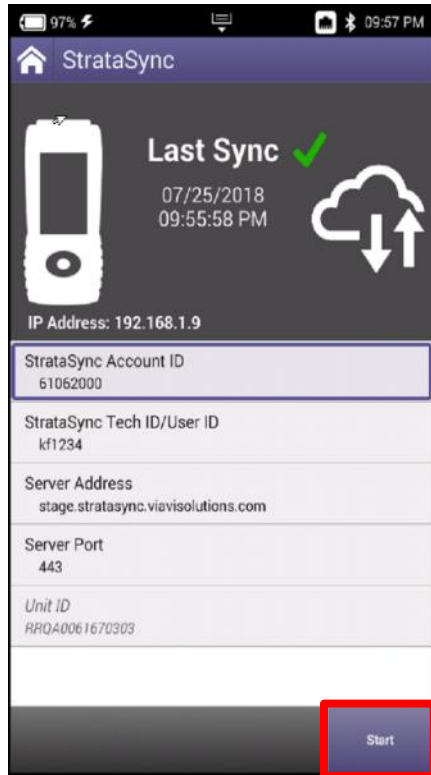
- Press Cancel once the download has completed and you have placed the file on the USB thumb drive.

Note: Firmware must be downloaded from StrataSync first

# USB Software Upgrade



# Ethernet Software Upgrade via StrataSync





# Firmware Recovery Procedure

Place the update image on a USB drive in the root directory (not in any folder on the USB drive). Ensure that it is the only ONX update image on the drive.

Download the latest ONX firmware via StrataSync to get the latest link from Viavi TAC

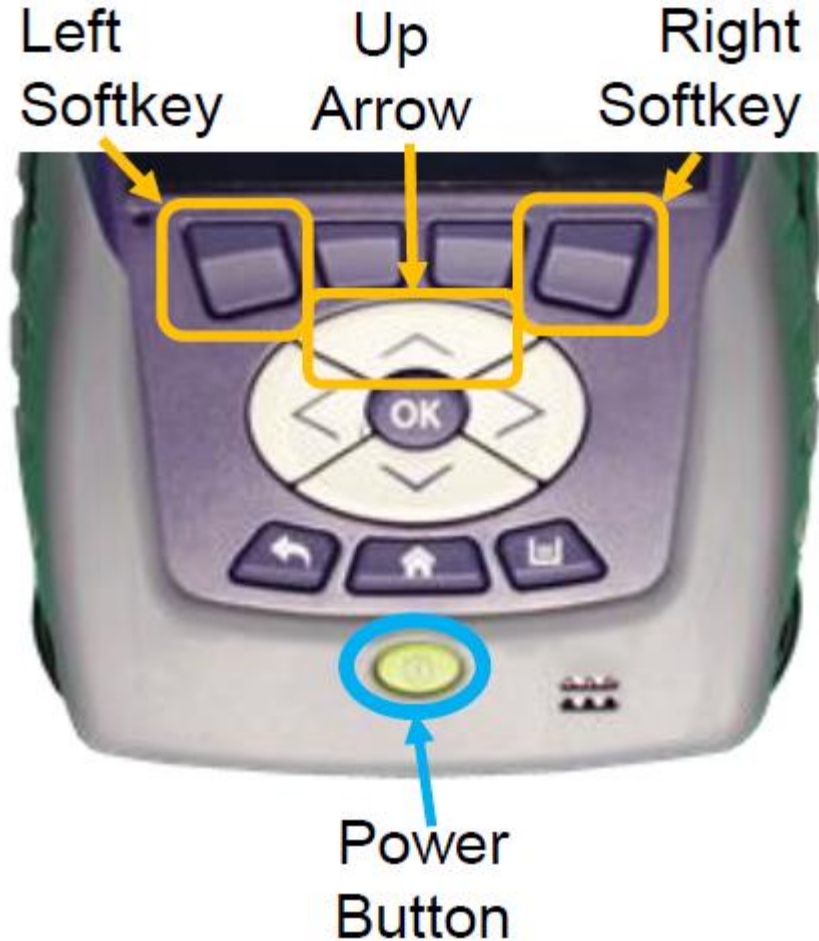
Power off the unit.(If the unit is frozen, press and hold the power key until the ONX powers off ~10-15 seconds)

Attach power charger to the ONX.

Plug the USB drive with the “.oxu” firmware file into one of the ONX USB ports.

Hold down the left softkey+ right softkey+ up arrow. (softkeys are the 4 buttons just below the display)

Press and release power key as normal while continuing to hold down on the left softkey+ right softkey+ up arrow until you see the

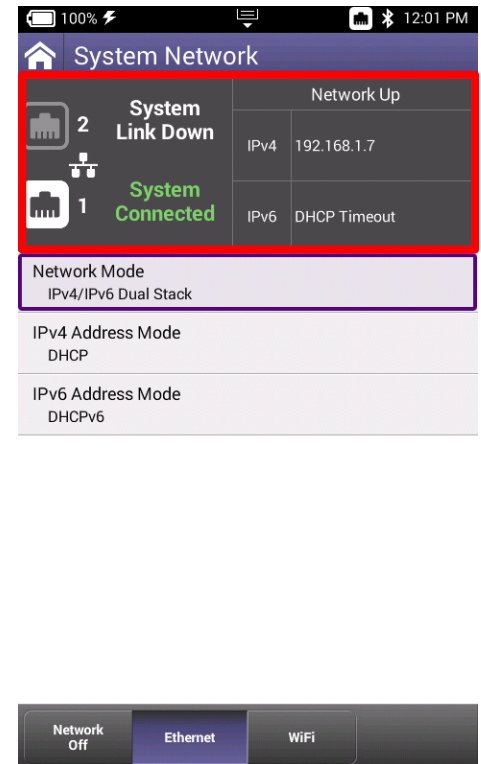
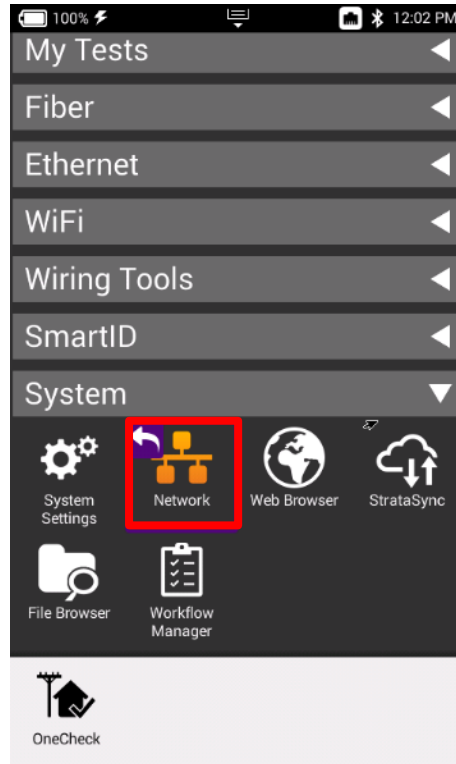


# StrataSync Synchronization

# StrataSync Synchronization - ETHERNET

Note - You can synchronize to StrataSync via RF or WiFi, but this is ONLY for sending test files, receiving configuration information like limit plans, etc. - not for SW/FW upgrades

Connect an Ethernet cable from an active internet connection (Cable Modem or router/gateway) to Port 1 on the ONX



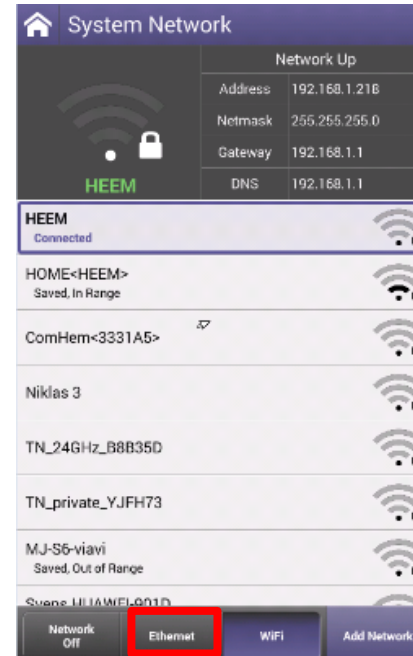
# StrataSync Synchronization - WIFI

Note - **Sync via WiFi** is now supported. Use Network Settings app to configure and join a WiFi network prior to performing sync. You can synchronize to StrataSync via WiFi, but this is **ONLY** for sending test files, receiving configuration information like limit plans, etc.

Connect with WiFi from an active internet connection  
(Cable Modem or router/gateway)

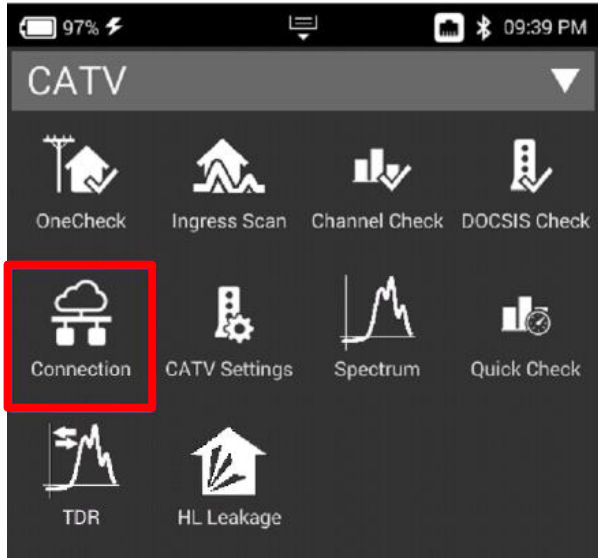


From the ONX home screen navigate to **SYSTEM NETWORK / WIFI** - Verify the ONX has a valid IP address

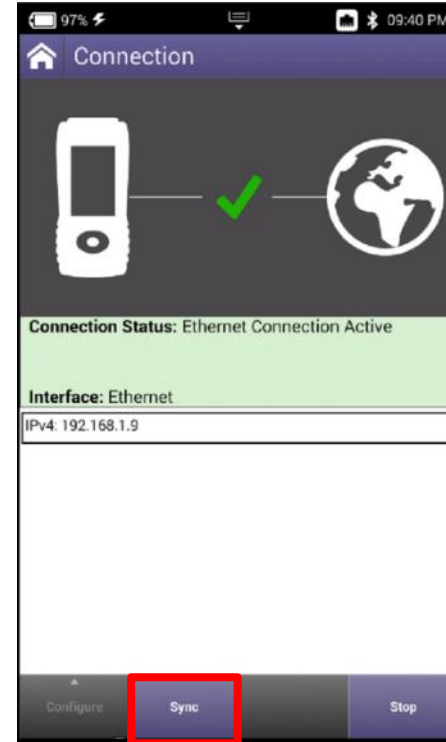


# StrataSync Synchronization - RF

Make sure that CM MAC 1 is provisioned in the billing system  
Select the CONNECTION APP from CATV



Once CONNECTION STATUS reports a GREEN Check mark and  
INTERFACE: RF; IP ADDRESS is shown

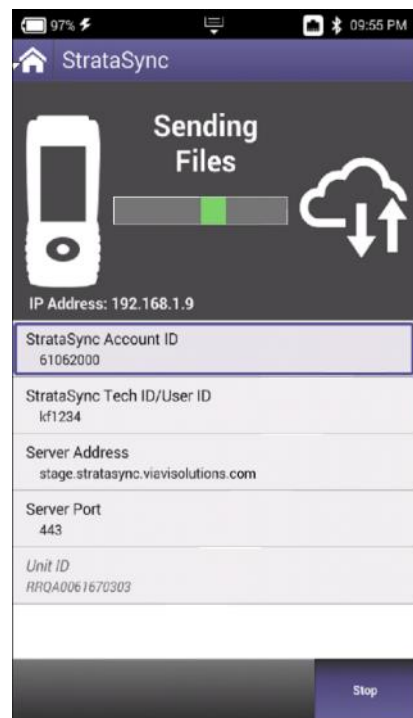




# StrataSync Synchronization – ETHERNET, WIFI and RF



After IP Address verification, navigate to the **SYSTEM** Menu and select **STRATASYNC**



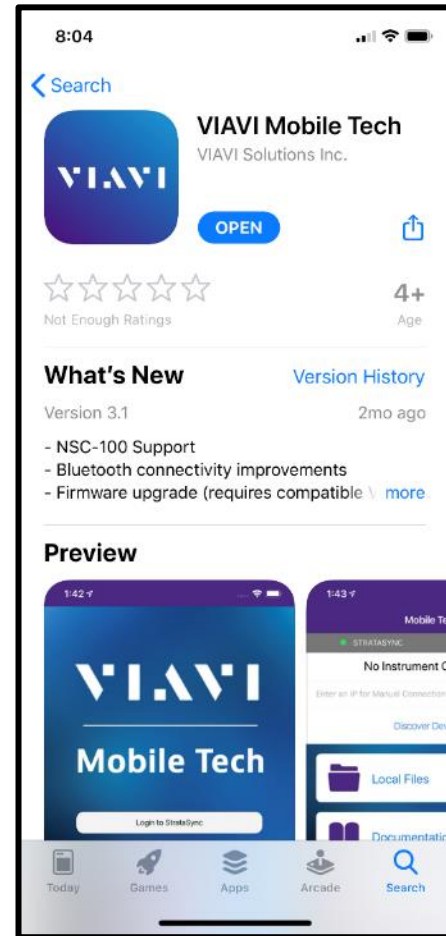
**STRATASYNC ACCOUNT ID** = xxxxxxxxx  
**SERVER ADDRESS** = stratasync.jdsu.com  
(stratasync.viavisolutions.com also works)  
**SERVER PORT** = 443

# Mobile Tech App

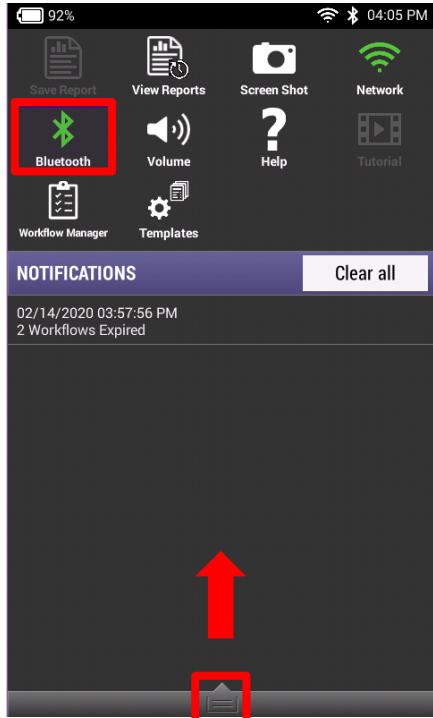
# MOBILE TECH APP

Search for VIAVI and download VIAVI MOBILE TECH v3.1 app

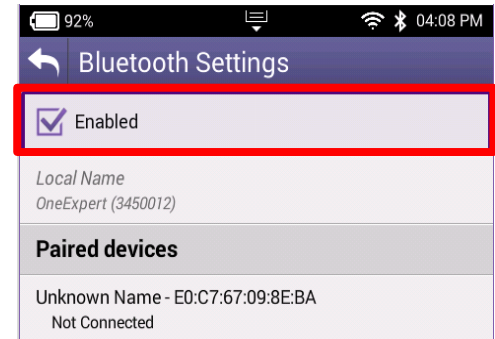
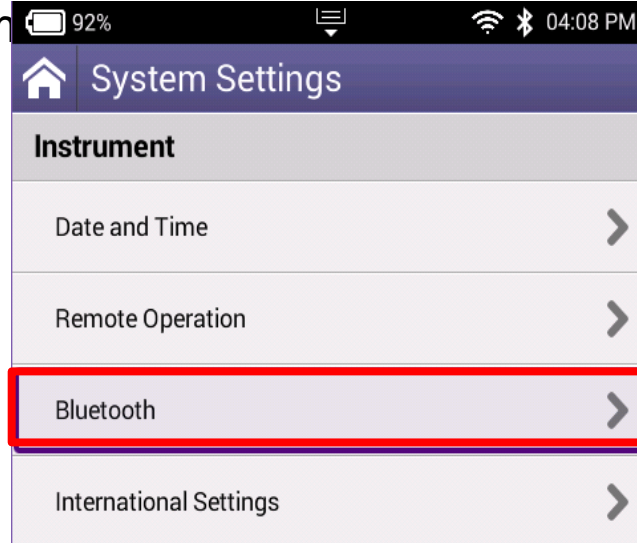
\* Screenshots shown on iPhone, but MOBILE TECH APP on ANDROID is consistent



# MOBILE TECH APP – Set Up



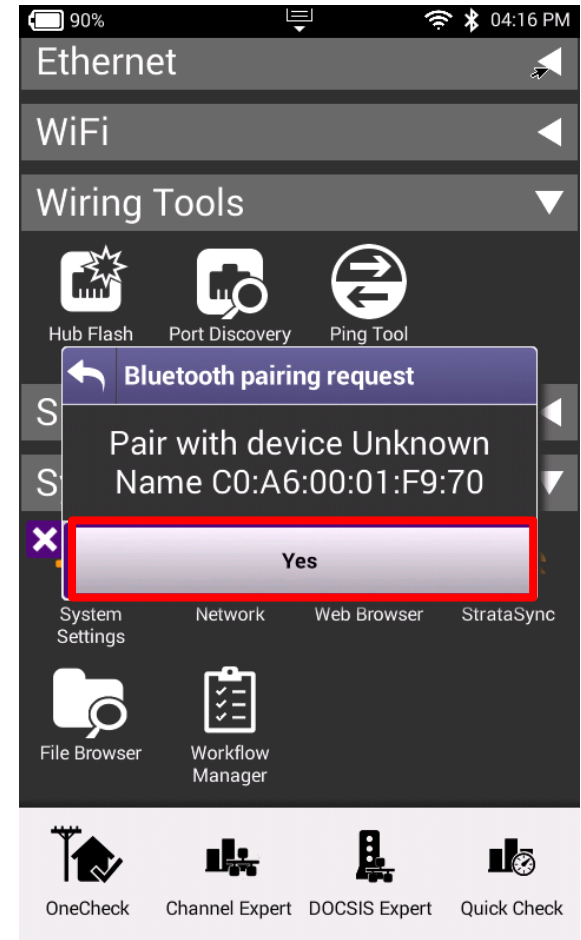
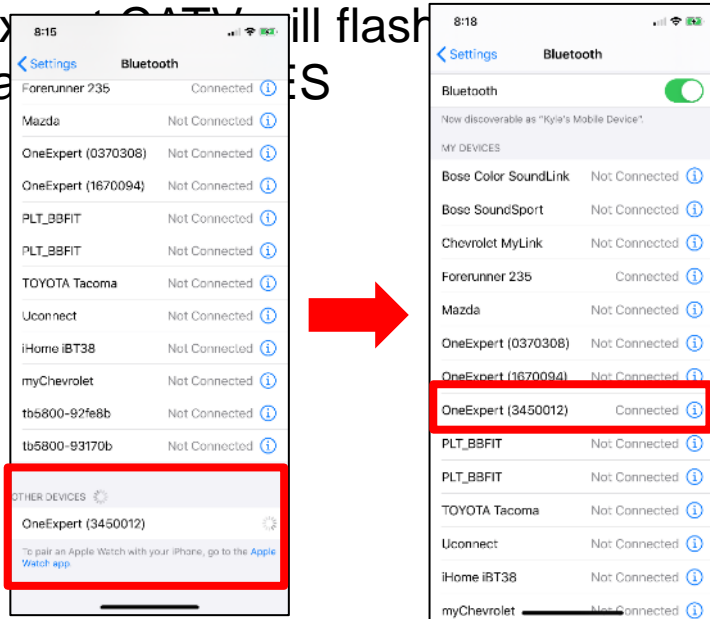
On ONX620 or 630, enable BLUETOOTH by going to SYSTEM SETTINGS->BLUETOOTH SETTINGS or by dragging down the TRAY and selecting BLUETOOTH and



# MOBILE TECH APP – Set Up

Select the appropriate OneExpert CATV serial number from the list of BLUETOOTH CONNECTIONS and pair

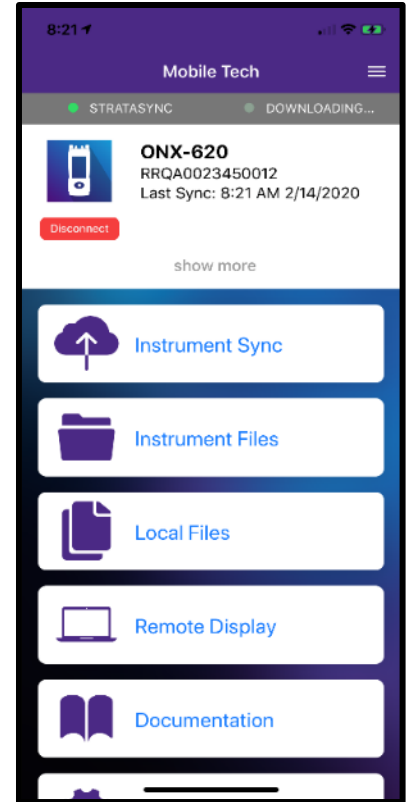
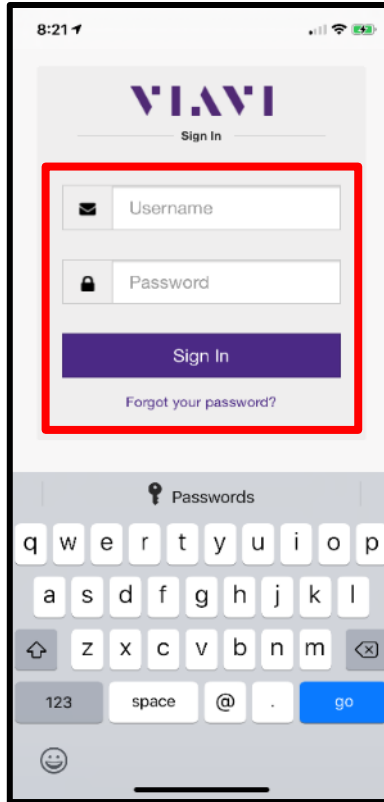
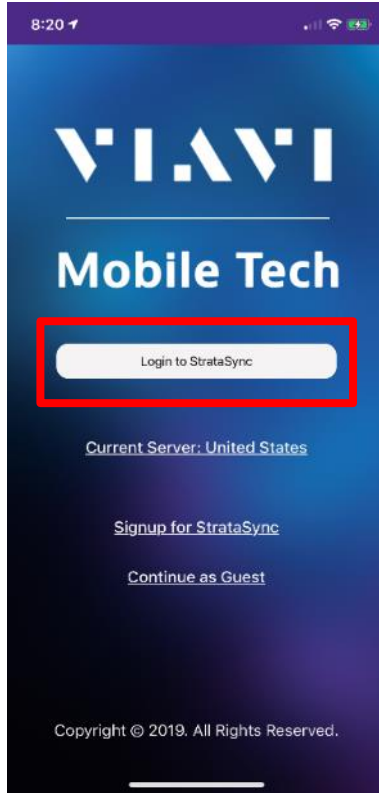
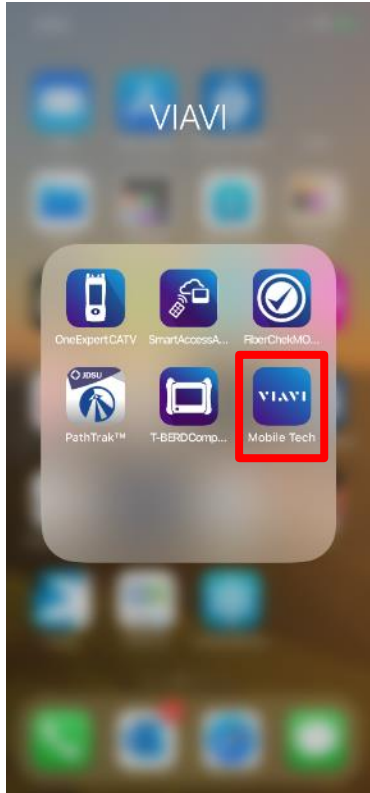
OneExpert CATV will flash a red light and request a pairing message



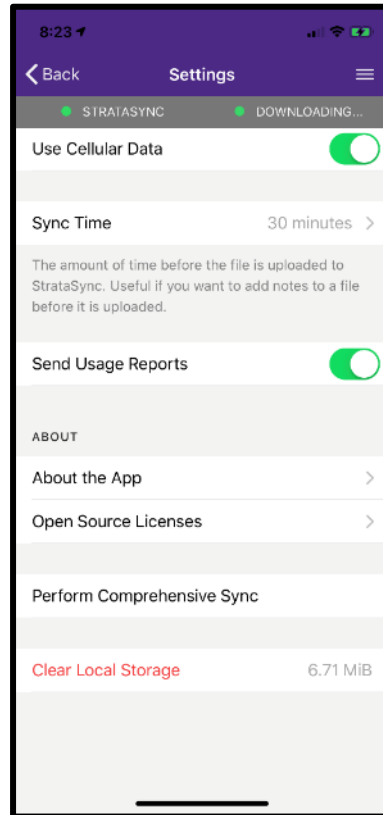
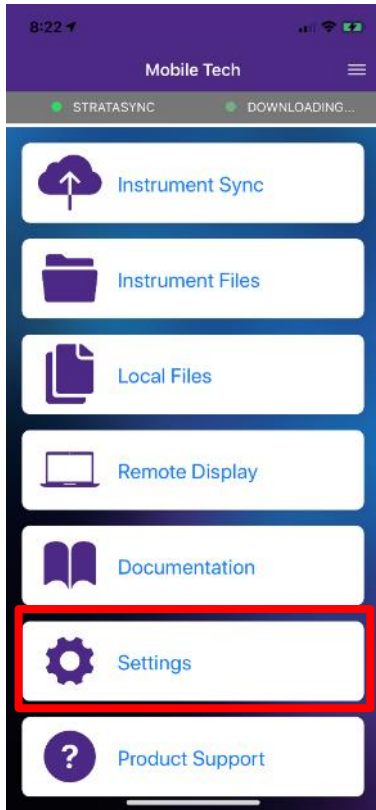


# MOBILE TECH APP – Set Up

Login using USERNAME and PASSWORD  
If user doesn't have login credentials – please reach out to local STRATASYNC ADMINISTRATOR



# MOBILE TECH APP - Synchronization



Select the SETTINGS button and configure MOBILE TECH APP

- Choose how often user desires a SYNC
- Whether the SYNC will require WIFI or may use the LTE connection
- Whether or not to send usage reports
- Comprehensive SYNC (useful for uploading failure logs)
- Clear local Storage on user phone

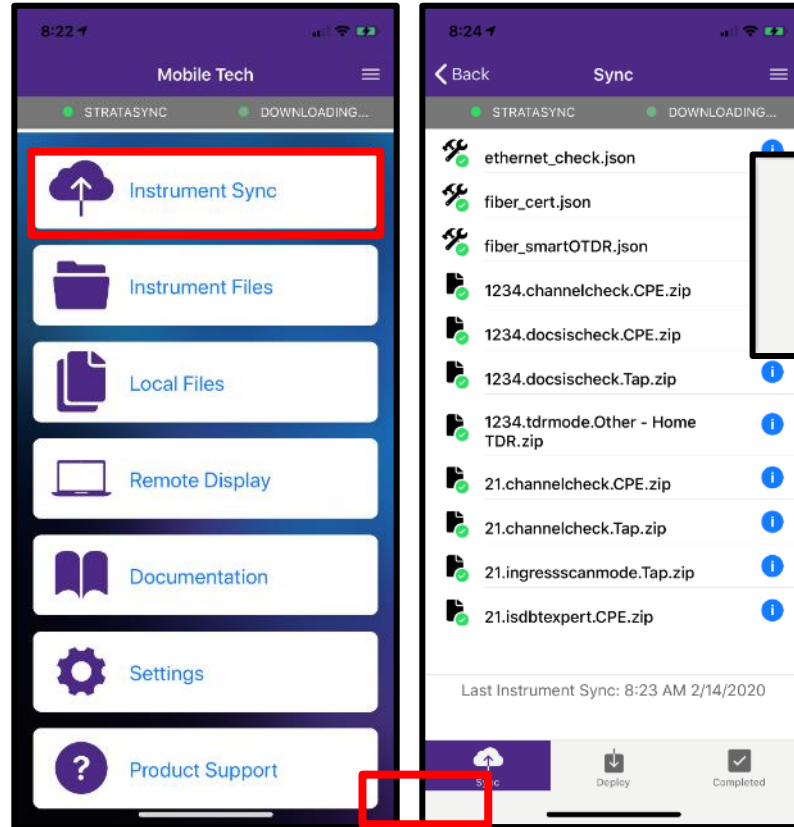
# MOBILE TECH APP - Synchronization

By Selecting INSTRUMENT SYNC from the main menu, the USER can see all test data that has currently been saved to the ONX and is ready for sync

- **Note that only SAVED TEST DATA will migrate to MOBILE TECH APP for synchronization to STRATASYNC**

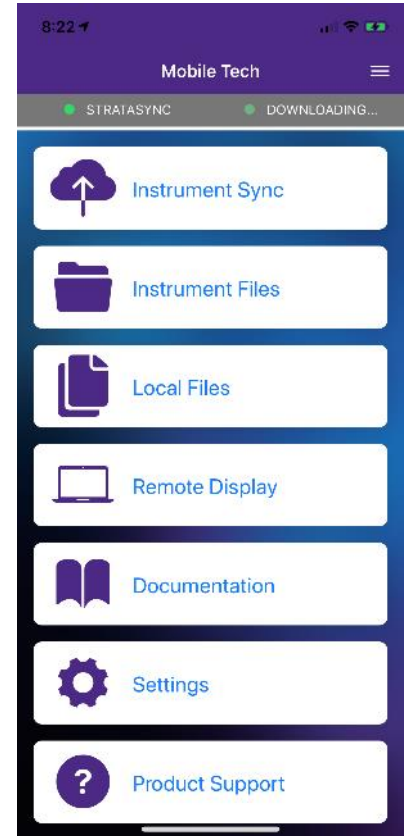
By selecting SYNC – the process will begin immediately

- The user can also rely on the timed sync setting – which allows the MOBILE TECH APP the ability to sync passively in the background are regular intervals



# MOBILE TECH APP

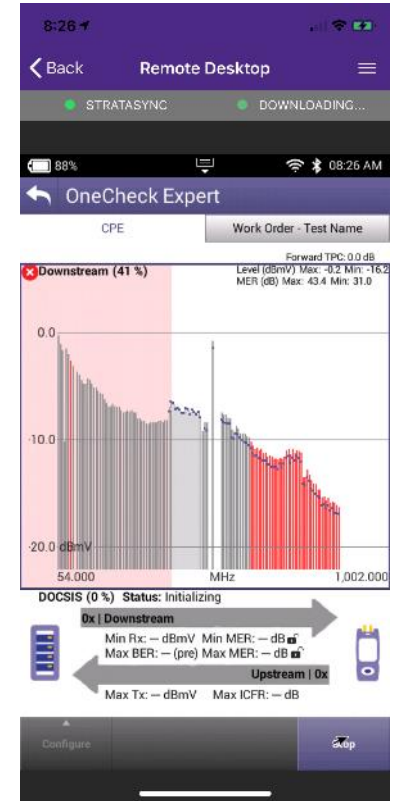
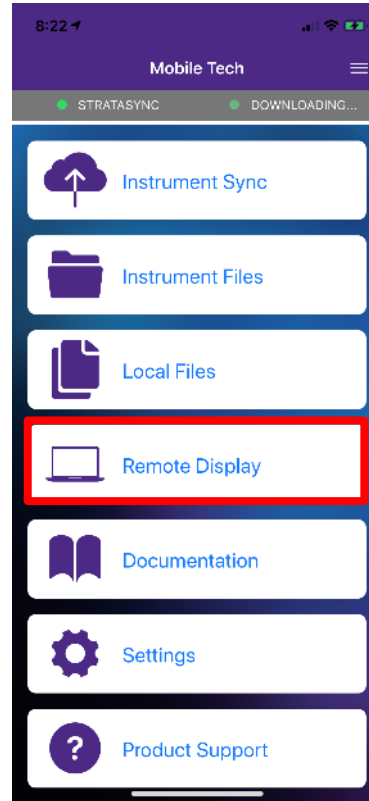
- Beyond streamlined sync to STRATASYNC, the MOBILE TECH APP also provides the following functionality:
- View and manager files on the instrument
- View and manage local files, including craftsmanship photos
- Remote Display and Operation
- IN-APP Support Documentation
- LINK to VIAVI Technical Support
  
- Note – MOBILE TECH APP is interoperable with TB2000, TB4000, TB5800, One EXPERT CATV and a host of other VIAVI Solutions instruments



# MOBILE TECH APP - Remote Display

REMOTE DISPLAY allows the user to control the ONX, via BLUETOOTH, and conduct normal meter functions

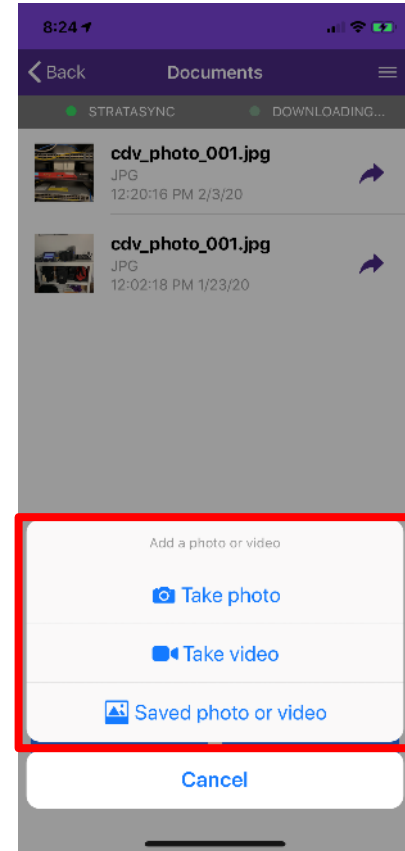
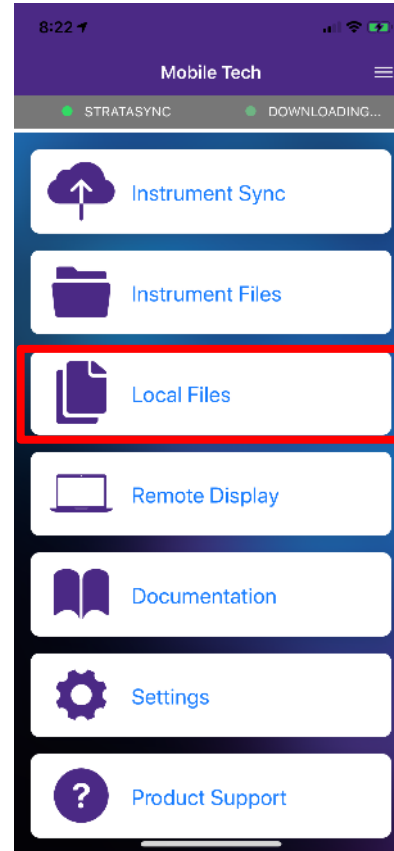
\*Requires SmartAccess Anywhere option



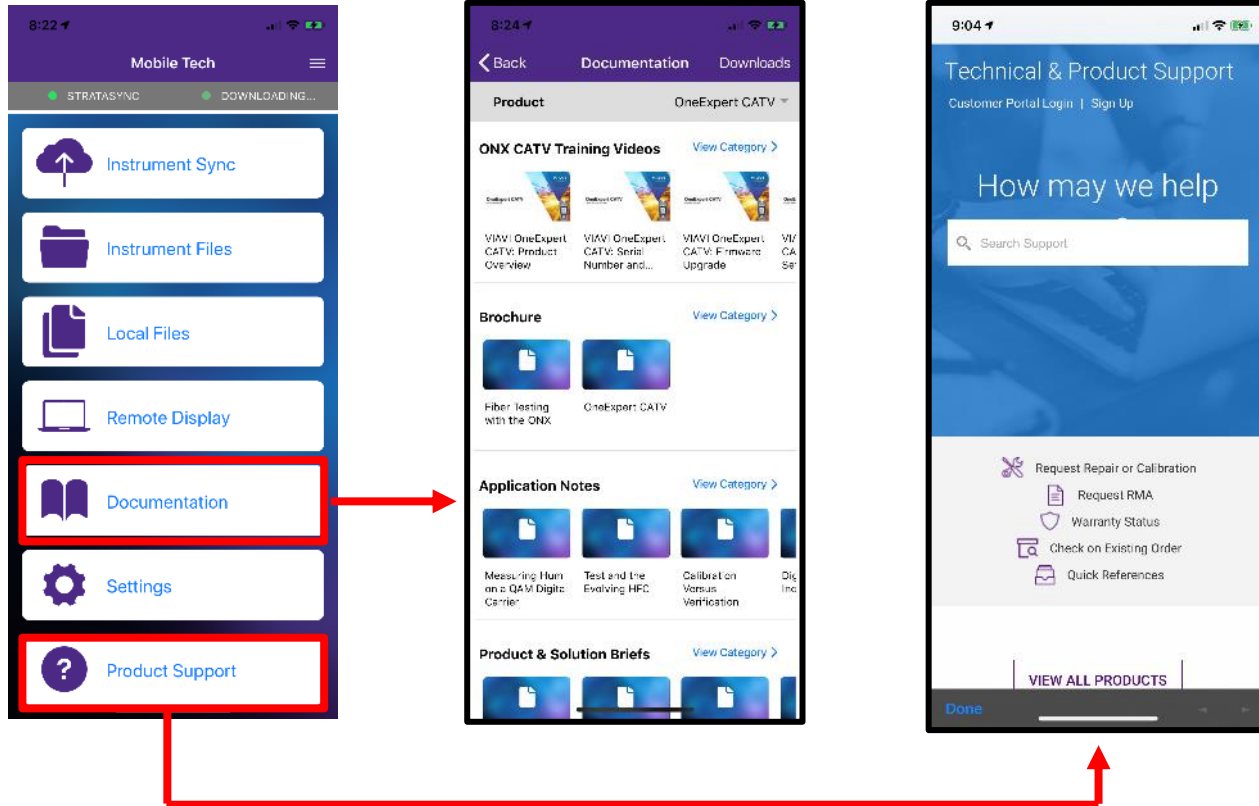


# MOBILE TECH APP - LOCAL FILES

Allows users the ability to take photos or use photos from their mobile device and upload to StrataSync



# MOBILE TECH APP - Product Support and Documentation



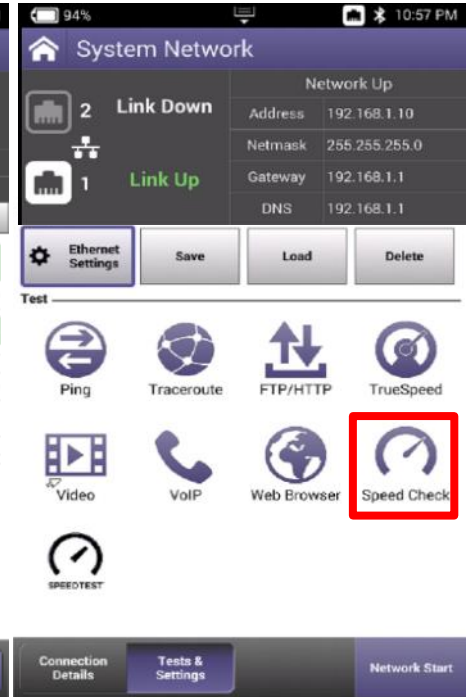
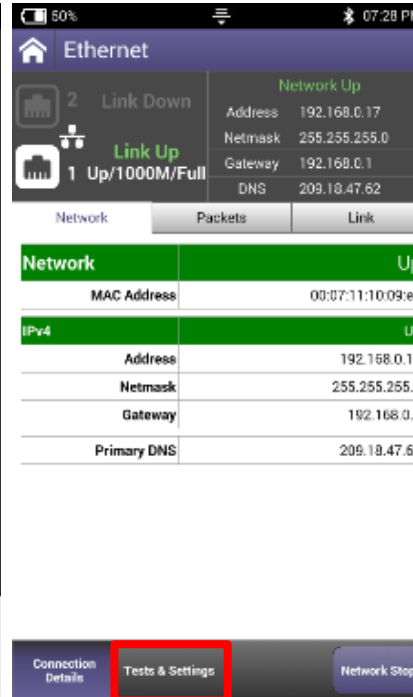
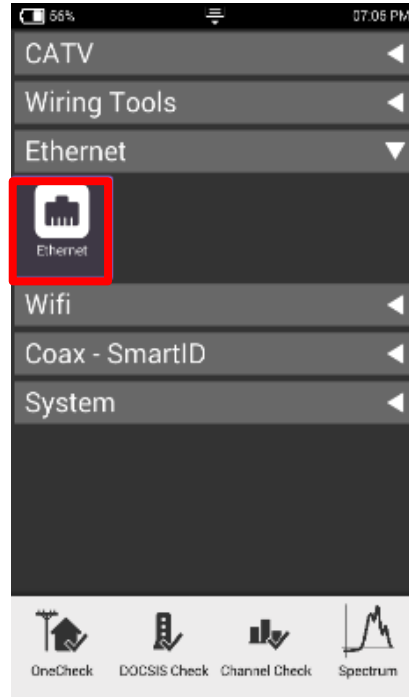
# Ethernet Testing

# Ethernet – Tests and Settings



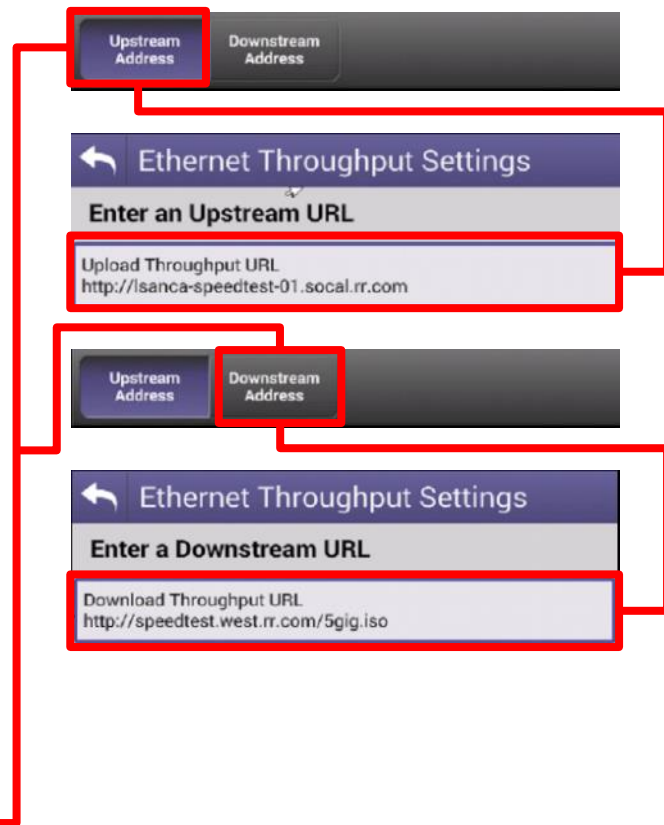
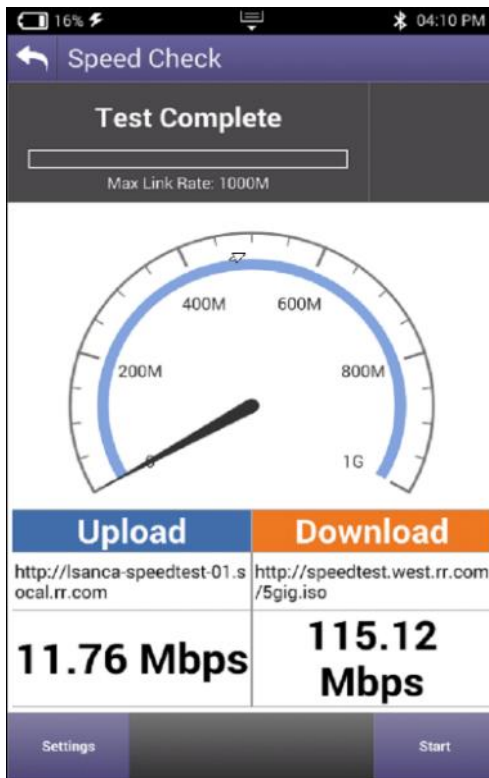
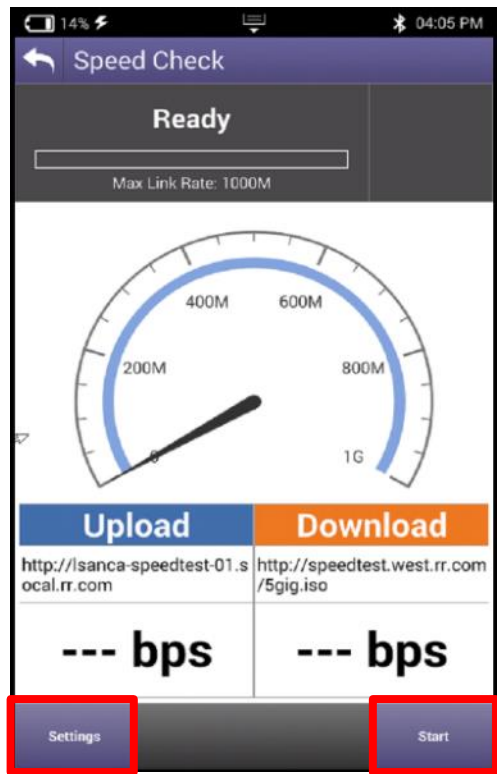
From HOME screen, select ETHERNET

Once NETWORK UP is indicated with green, select TEST AND SETTINGS



# Ethernet – Speed Check

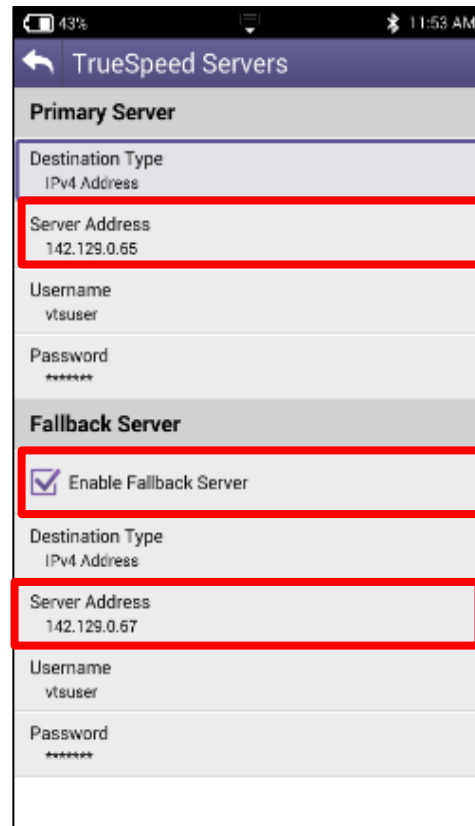
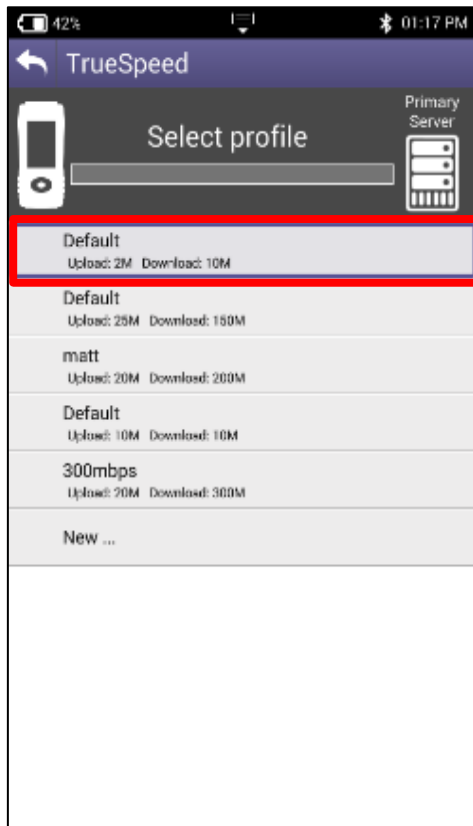
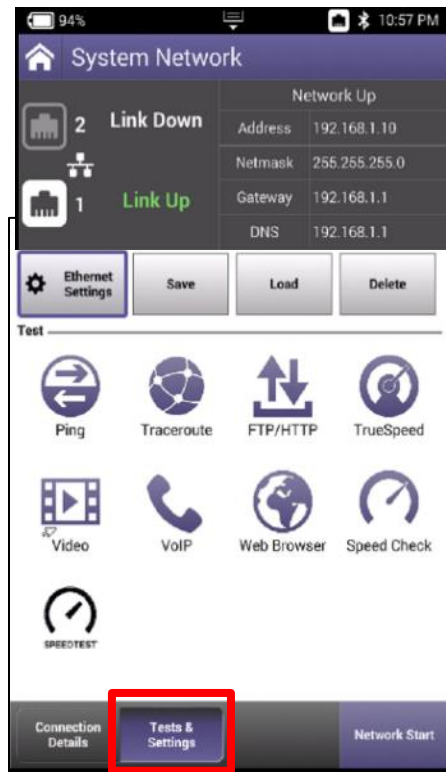
- CATV Ethernet's throughput IP Address/URL is configured in the mode under Settings.
- Default value are for both Downstream/Upstream the same:  
<http://CATVSpeedTest.viavisolutions.com/bigfile.zip>
- If the upstream URL changes, the file name need to be the same: bigfile.zip





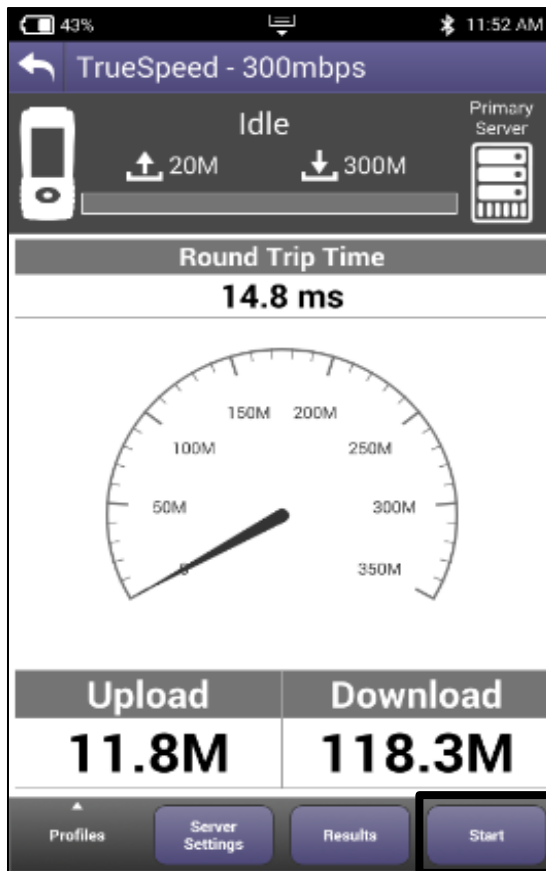
# ETHERNET - TrueSpeed Setup

Select Profile or create a new one  
The test will start automatically after Profile is selected  
Stop Test and choose Server Settings on the bottom and enter the Server IP address and then resume. (Only applicable for first test setup)  
Fallback Server is for second TrueSpeed VNF and can help alleviate queue



# ETHERNET - TrueSpeed Results

After test completes, Results are displayed as either the Speedometer or a simple list



The screenshot shows the TrueSpeed app interface with a list of results. The status bar at the top indicates 43% battery and 11:52 AM. The app title is "TrueSpeed - 300mbps". Below the title, it shows "Idle" status, upload speed of 20M, and download speed of 300M. The results are displayed in a table format.

	Upload	Download
Actual Rate	11.8M	118.3M
Ideal Rate	19.0M	284.8M
TCP Efficiency	100.00 %	100.00 %
Server	142.129.0.65:8180	
RTT	14.8 ms	
MSS	1460	

# Wiring Tools

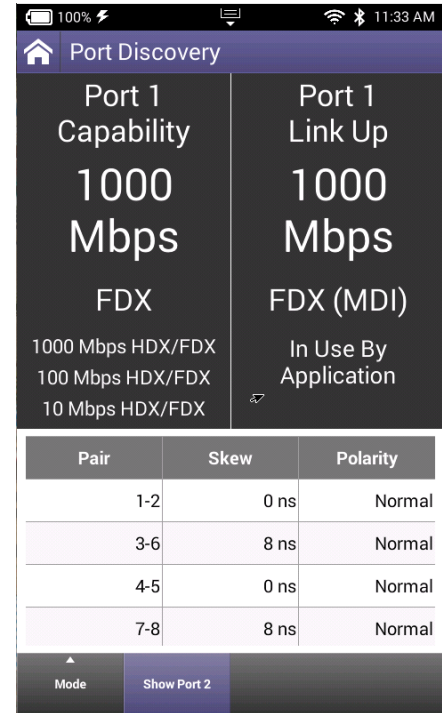
# WIRING TOOLS - Port Discovery

PORT DISCOVERY will allow the technician to verify capabilities of the ELECTRICAL ETHERNET port under test

Useful in determining if a customer's switch or router can handle higher speed

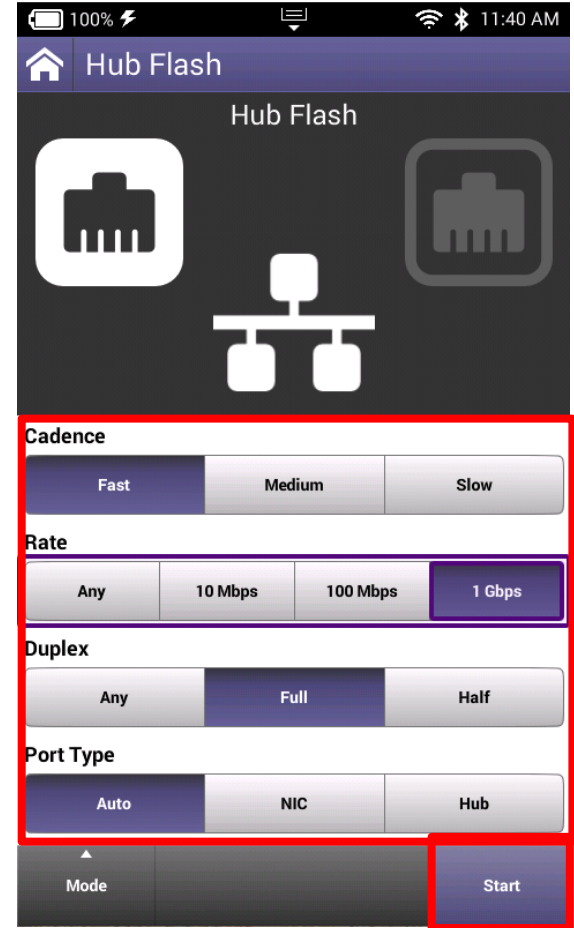


is test



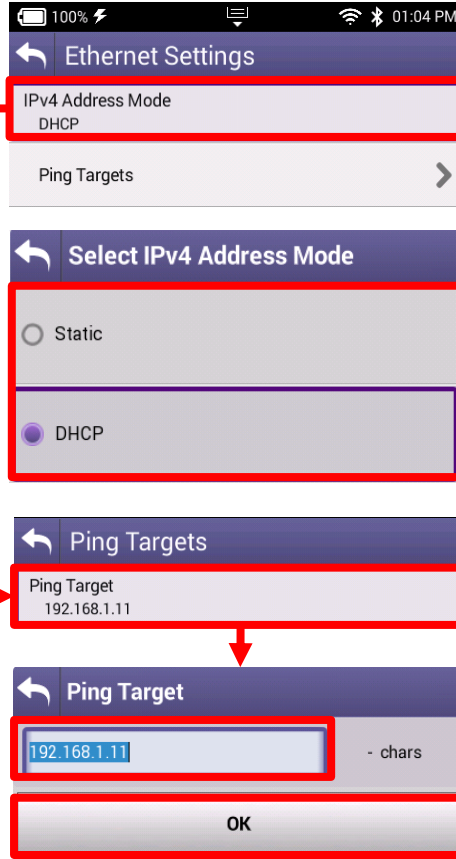
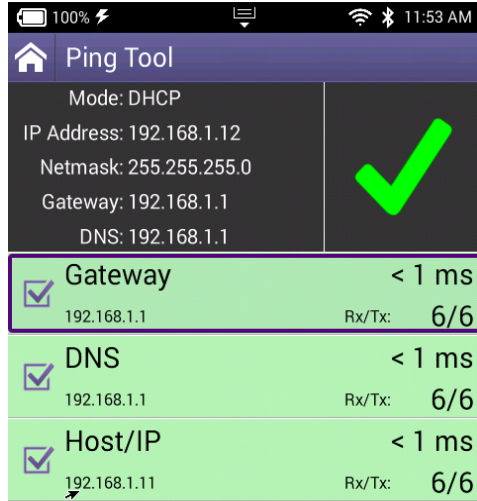
# WIRING TOOLS - Hub Flash

HUB FLASH will allow the technician to “tone” out the ethernet on a far side router or switch using the cadence or speed of the port lights for identification



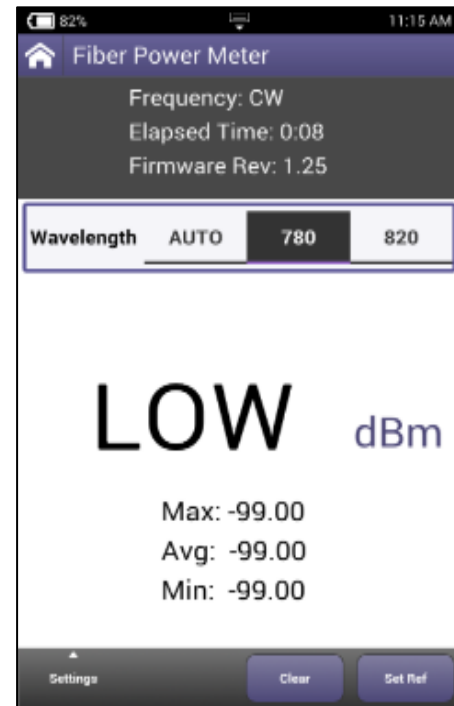


# WIRING TOOLS - Ping Tool

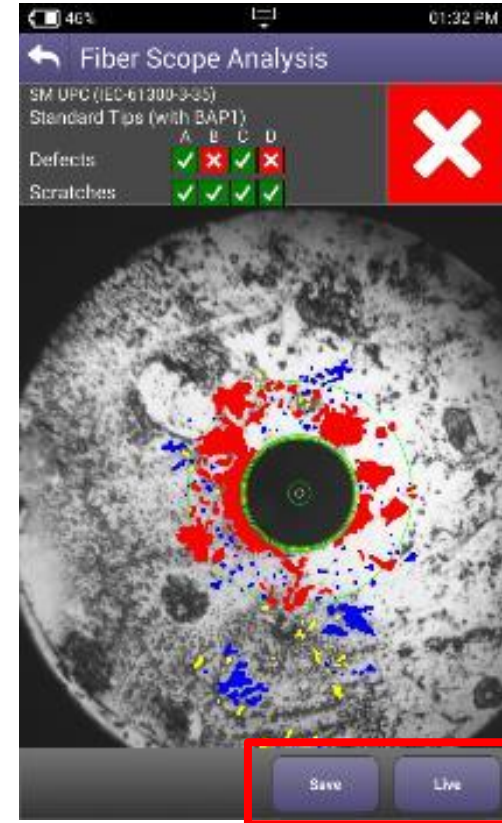
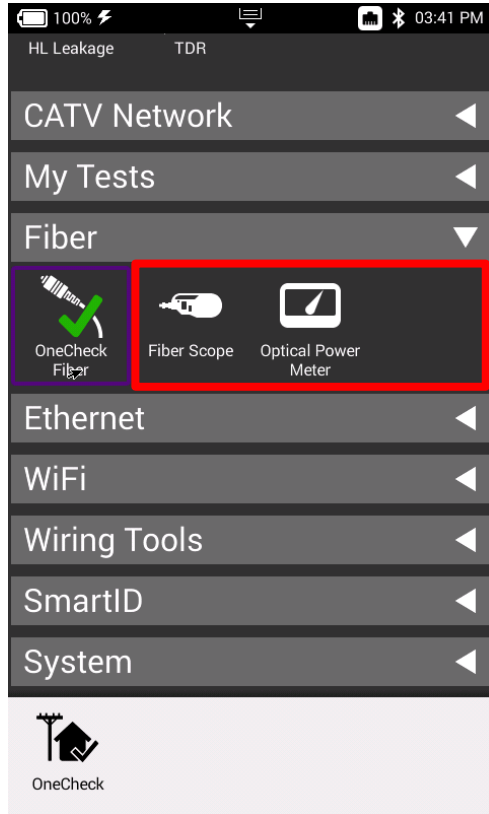


# Fiber Optics

# P5000i Fiber Microscope and MP-60/80 Optical Power Meter



# P5000i Probe Microscope

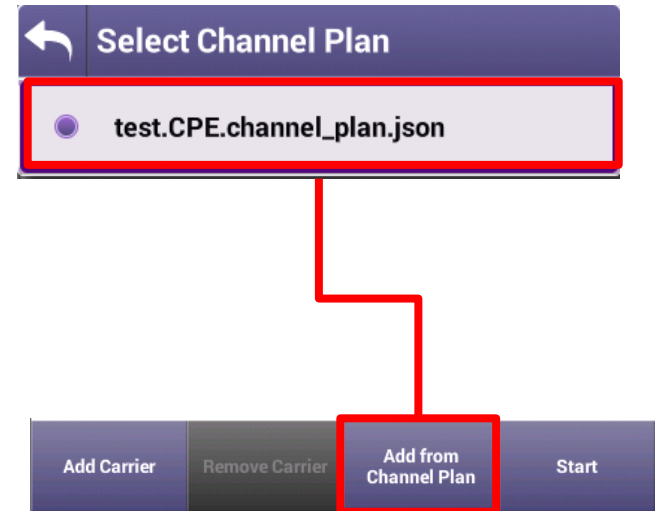
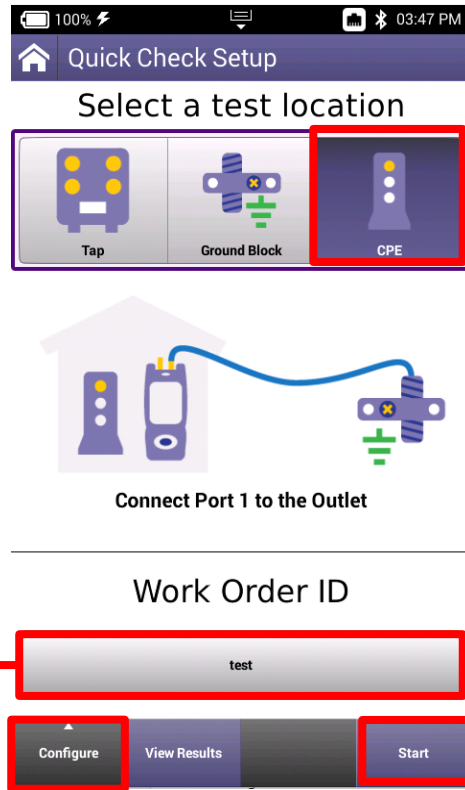
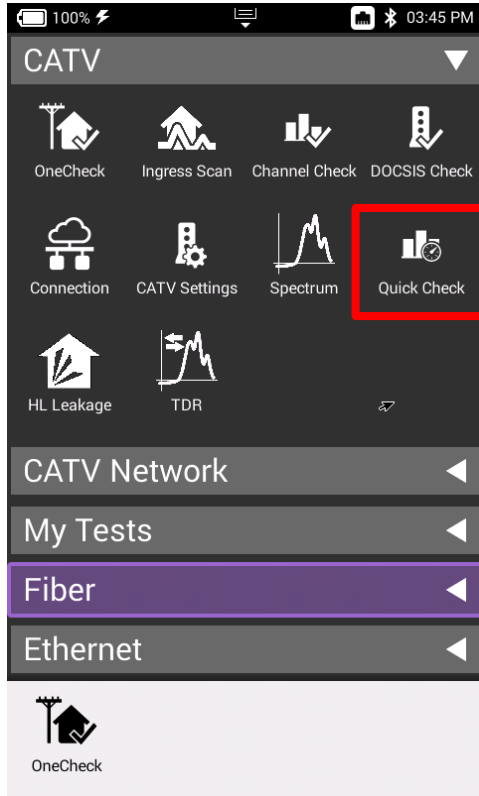




# Quick Check



# Quick Check



# Quick Check

100% 03:55 PM

Add Carrier From Channel Plan

Channel Plan  
test.CPE.channel\_plan.json

**Channels:**

- CH 82 (579.000 MHz)  
Digital - 256QAM - 6.000 MHz - 5.361 Msym/s
- CH 83 (579.000 MHz)  
Digital - 256QAM - 6.000 MHz - 5.361 Msym/s
- CH 84 (585.000 MHz)  
Digital - 256QAM - 6.000 MHz - 5.361 Msym/s
- CH 85 (591.000 MHz)  
Digital - 256QAM - 6.000 MHz - 5.361 Msym/s
- CH 86 (597.000 MHz)  
Digital - 256QAM - 6.000 MHz - 5.361 Msym/s
- CH 87 (603.000 MHz)  
Digital - 256QAM - 6.000 MHz - 5.361 Msym/s
- CH 88 (609.000 MHz)  
Digital - 256QAM - 6.000 MHz - 5.361 Msym/s
- CH 89 (615.000 MHz)  
Digital - 256QAM - 6.000 MHz - 5.361 Msym/s
- CH 90 (621.000 MHz)  
Digital - 256QAM - 6.000 MHz - 5.361 Msym/s

Apply

100% 05:57 PM

Quick Check

Tap Ground Block CPE

34 861.000 MHz | -10.5 dBmV  
24 481.000 MHz | Δ -7.9 dB

TOT: -3.9 dB

Freq (MHz)	Level (dBmV)
57.000	1.3
380.000	-2.6
861.000	-10.5

Save Display Stop

1.0 dB

2.0 dB

5.0 dB

10.0 dB

20.0 dB

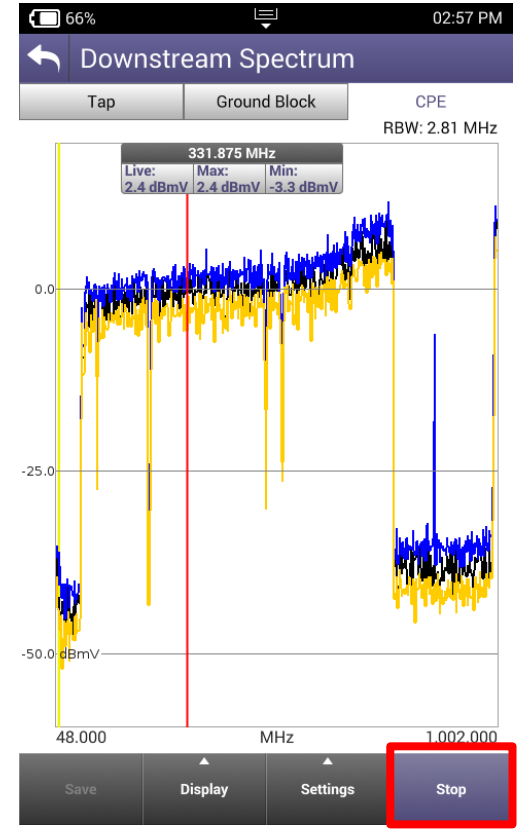
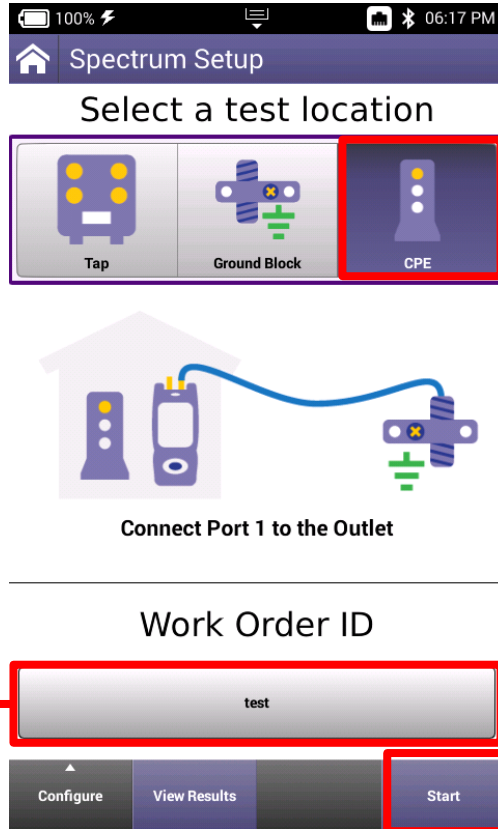
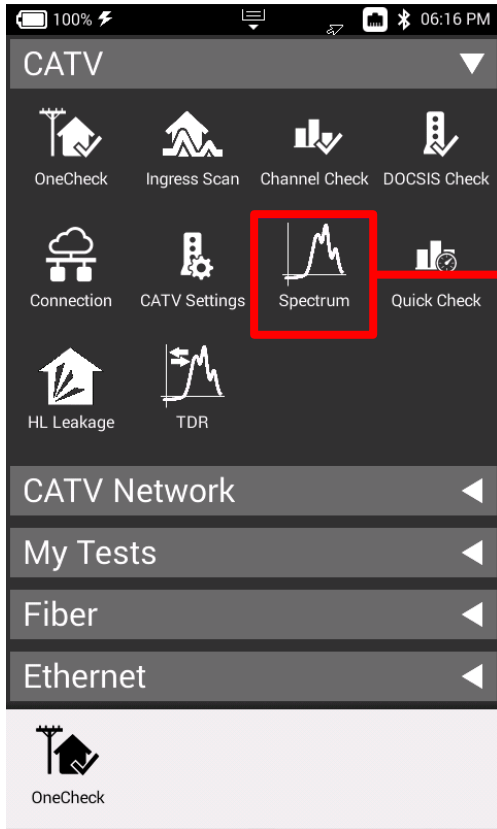
Reference Now

Auto Reference

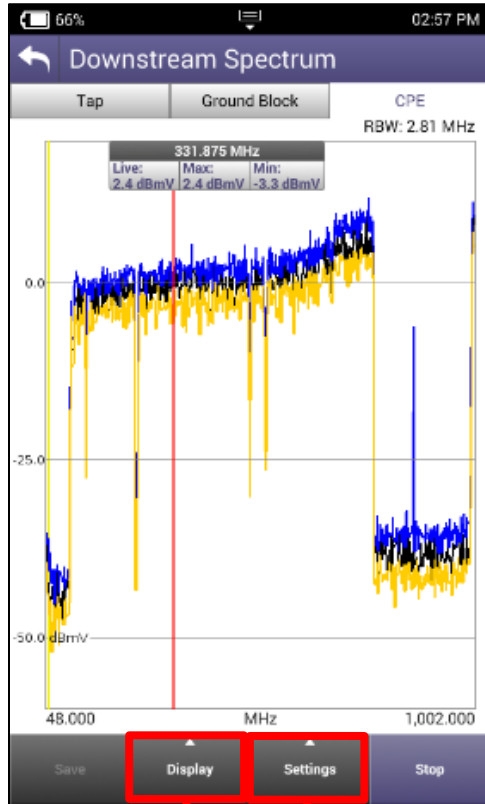
Δ Marker

# Spectrum

# Spectrum



# Spectrum



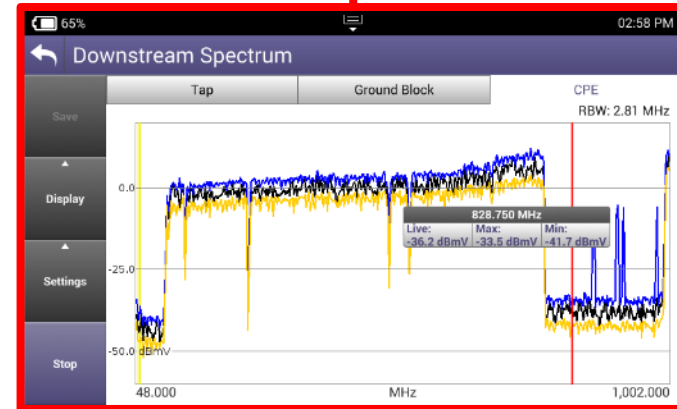
- Auto RBW
- RBW  
2.81 MHz
- Auto AGC
- Re-AGC
- Reset Graph
- Set Diplexer

Rotate Screen  
Portrait

dB/div

Span Start and Stop Frequency  
Start: 48.000 MHz Stop: 1,002.000 MHz

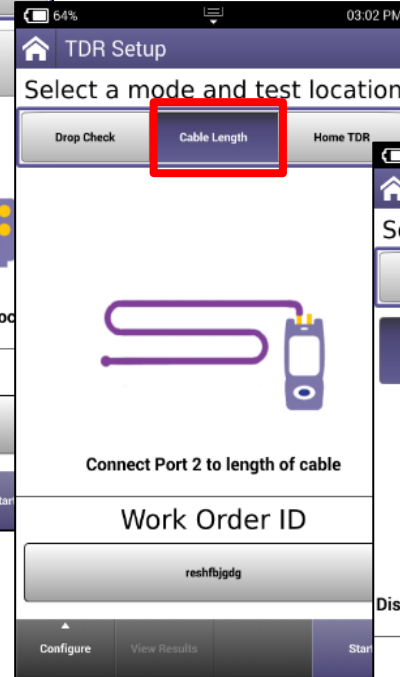
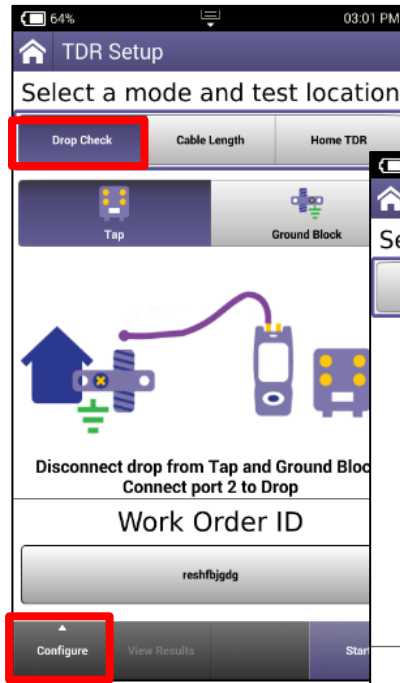
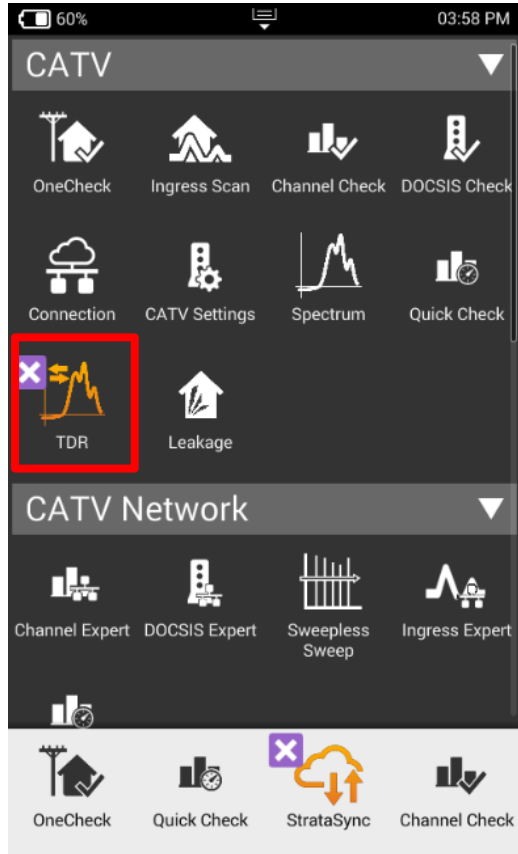
- Live trace
- Max trace
- Min trace



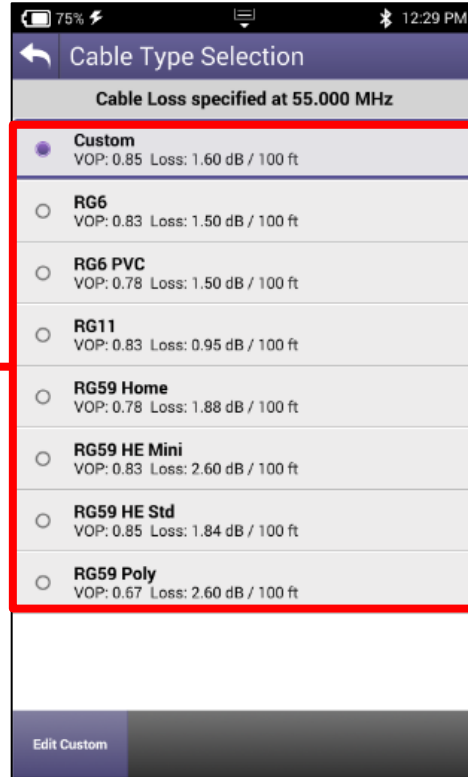
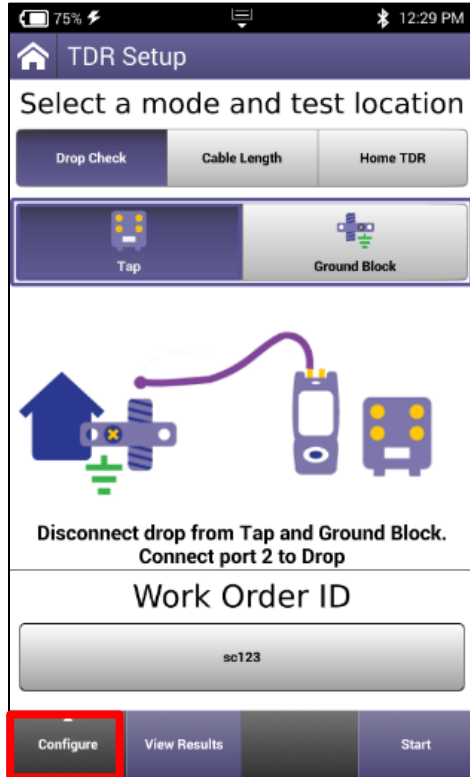
# TDR



# TDR



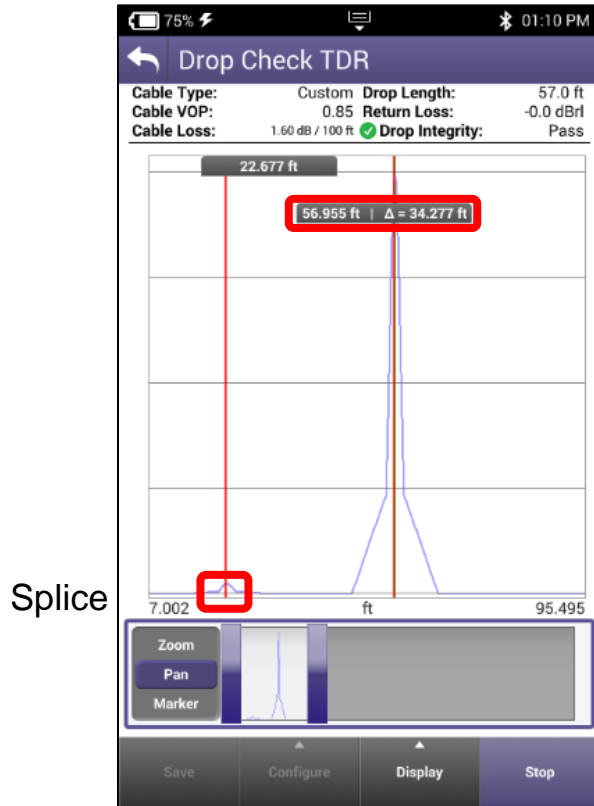
# HOME TDR



A TDR measures reflections based on time. Therefore the correct Velocity of Propagation for the cable to be tested must be chosen first.

VoP is essential for accurate distance measurements

# TDR – DROP CHECK and CABLE LENGTH



DROP CHECK and CABLE LENGTH tabs are identical tests. The DROP CHECK simply reminds the user to disconnect the other end of the drop.

Displayed is a 57' cable with a splice.

The splice is a small reflection at 22' while the open end of the cable is a larger reflection at 57'.

# TDR - HOME TDR

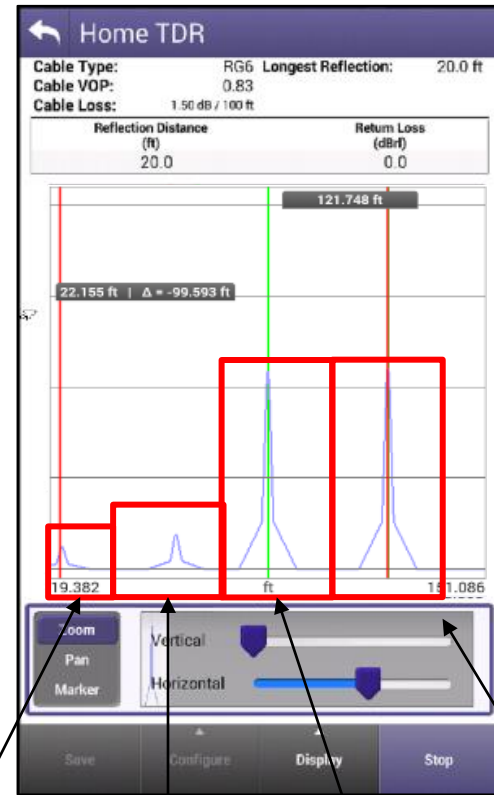
HOME TDR test is designed to display splices, splits and cable lengths.

Example to the left still shows the splice at 22' with a splitter at 57' and 2 cables connected to the splitter with open ends.

HOME TDR displays all 4 events.

Markers can be added for relative distances under from the display button.

Horizontal Zoom and Pan functions are at the bottom of the display



Splice

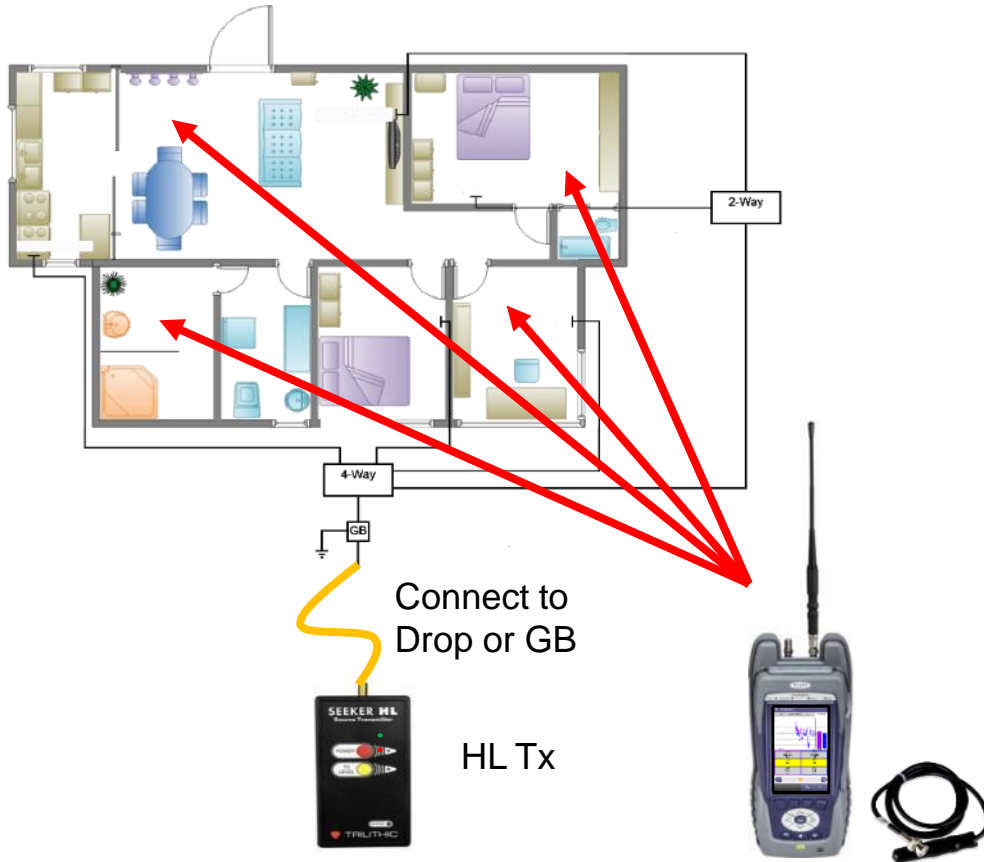
Splitter

Open

Open

# HL Leakage with Transmitter

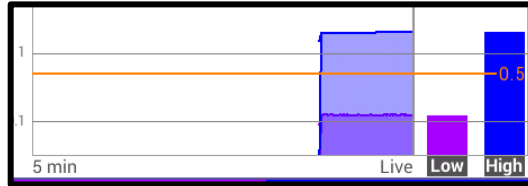
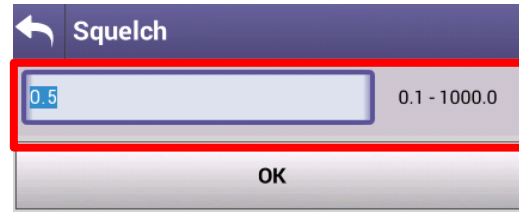
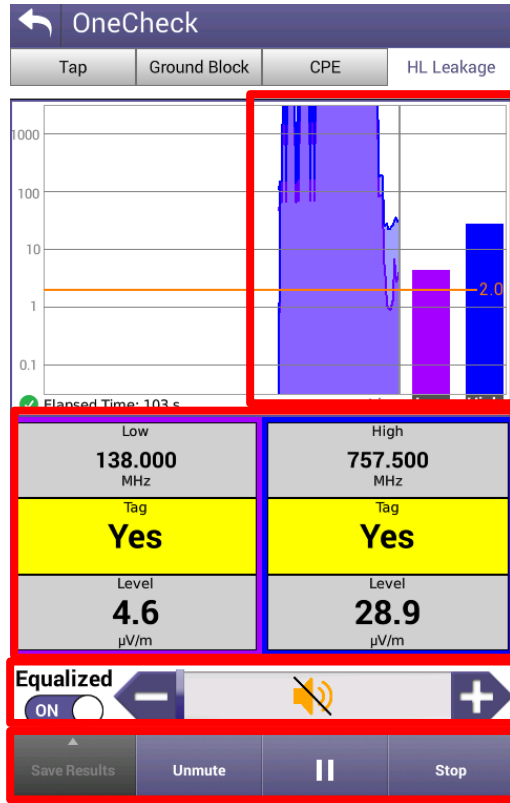
# HL Leakage with Transmitter



- Connect HL TRANSMITTER to GB or DROP and turn unit on.
- Proceed to attach ANTENNA to OneExpert CATV Port 1 and walk around the home or business
- Required Equipment Includes:
  - ONX-620 or ONX-630 with DOCSIS 3.1 hardware
  - HL Leakage software option must be present on the OneExpert CATV
  - HL Leakage Transmitter (60dBmv output [RED LIGHT] and 40dBmv output [GREEN LIGHT])
  - HL Leakage Antennas
    - 4a) Dual band rubber duck antenna
    - 4b) Near-Field Probe antenna
  - Used for detecting leaks when attached to OneExpert CATV
  - Tuned for 138MHz and 757.5MHz



# HL Leakage with Transmitter



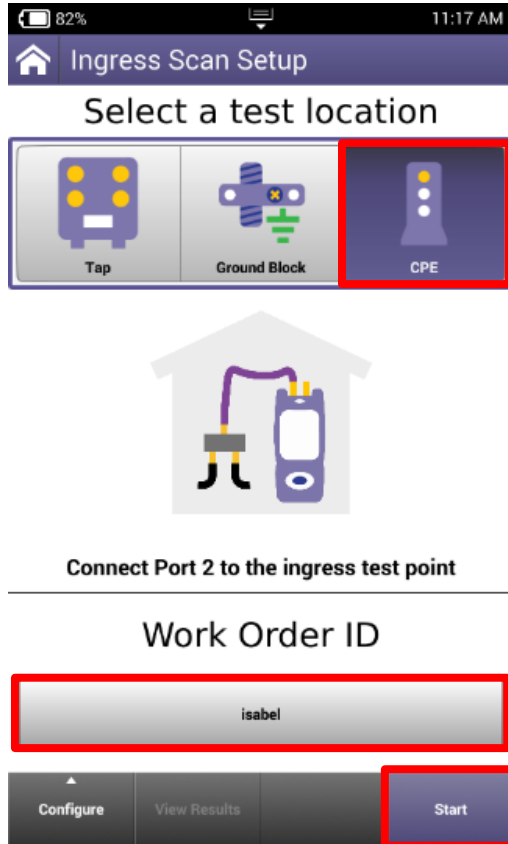
Leaks will be shown over time on the HL LEAKAGE display, while also emitting a siren that will signal proximity to leak

MUTE or UNMUTE and VOLUME controls as well as PAUSE and STOP/RETEST will be displayed across the bottom

Since HL Leakage is LIVE, select STOP before adjusting the SQUELCH limit

# Ingress Scan

# Ingress Scan



82% 11:17 AM

## Ingress Scan Setup

Select a test location

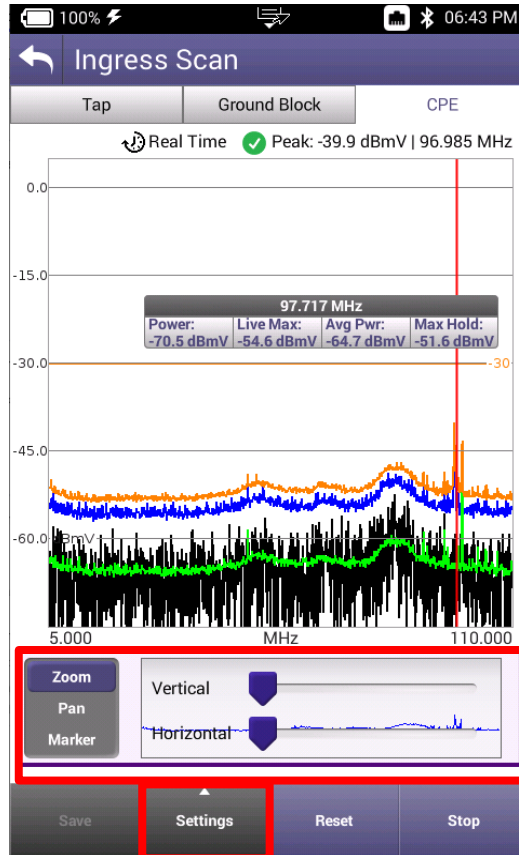
Tap Ground Block CPE

Connect Port 2 to the ingress test point

Work Order ID

isabel

Configure View Results Start



100% 06:43 PM

## Ingress Scan

Tap Ground Block CPE

Real Time Peak: -39.9 dBmV | 96.985 MHz

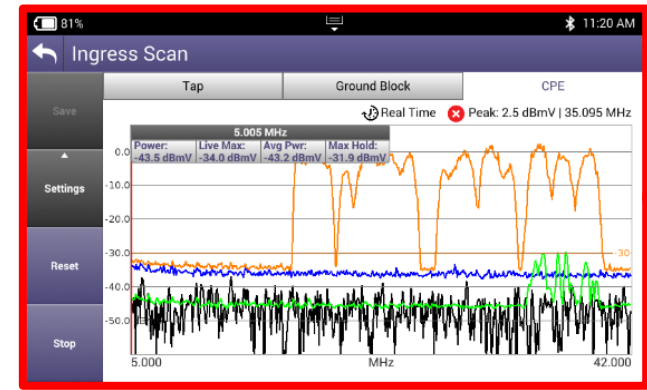
Power:	Live Max:	Avg Pwr:	Max Hold:
-70.5 dBmV	-54.6 dBmV	-64.7 dBmV	-51.6 dBmV

5.000 110.000

Zoom Pan Marker

Vertical Horizontal

Save Settings Reset Stop



81% 11:20 AM

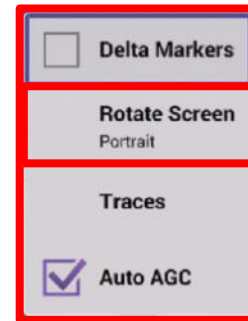
## Ingress Scan

Tap Ground Block CPE

Real Time Peak: 2.5 dBmV | 35.095 MHz

Power:	Live Max:	Avg Pwr:	Max Hold:
-43.5 dBmV	-34.0 dBmV	-43.2 dBmV	-31.9 dBmV

5.000 42.000



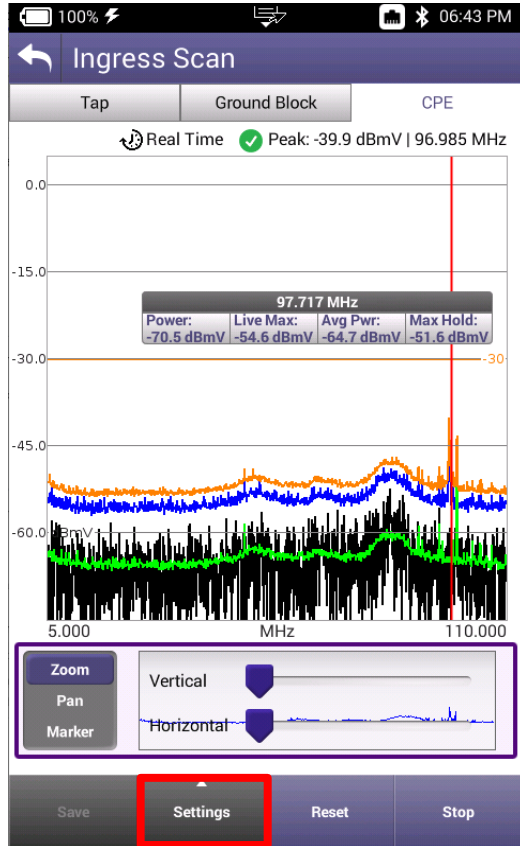
Delta Markers

Rotate Screen  
Portrait

Traces

Auto AGC

# Ingress Scan



Delta Markers

**Rotate Screen**  
Portrait

**Traces**

Auto AGC

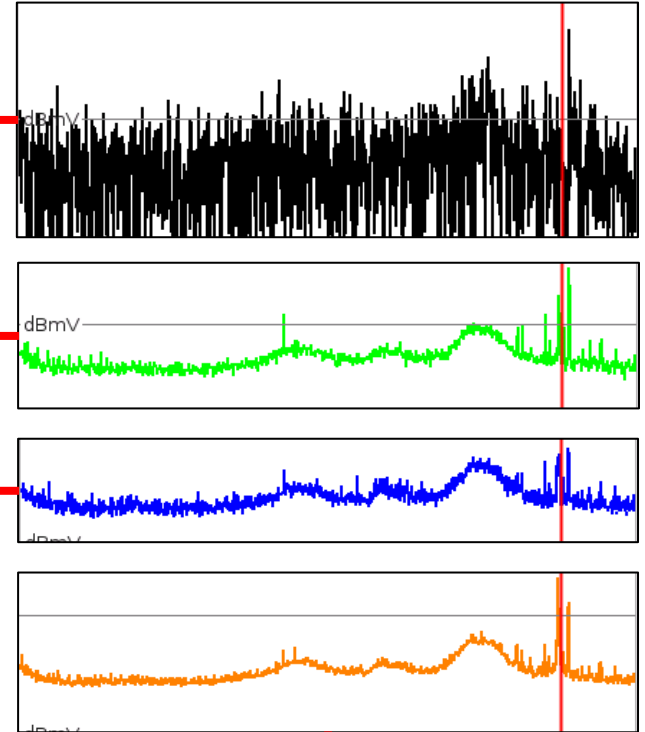
**Display Selection**

Power

Average Power

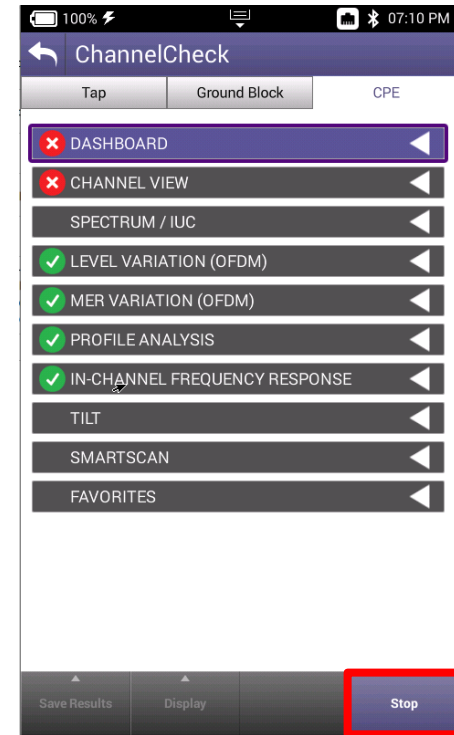
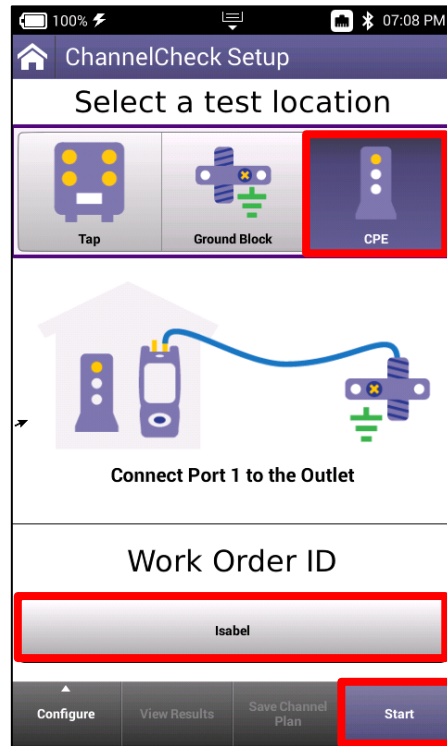
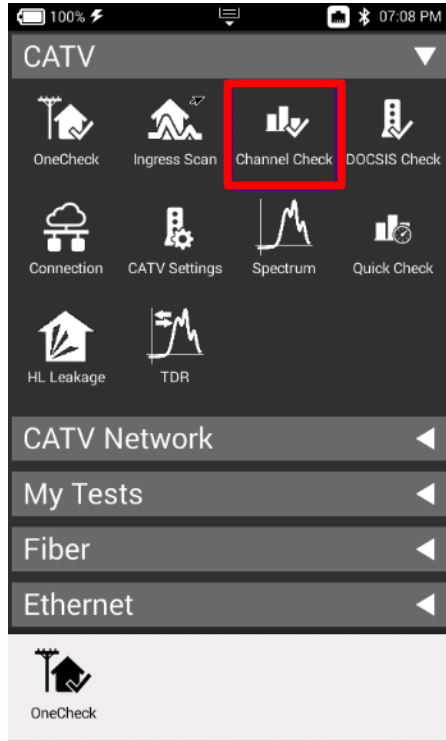
Live Max

Max Hold



# Channel Check

# Channel Check





# Channel Check

Channel	Freq (MHz)	Level (dBmV)	MER (dB)
37	303.000	-4.6	42.5
38	309.000	-4.7	42.5
39	315.000	-4.6	42.6
40	321.000	-4.6	42.5
OFDM 1	380.000	-3.2	--
70	499.250	3.4	--
74	525.000	-2.9	45.8
75	531.000	-3.1	45.8
76	537.000	-3.2	45.6

**DASHBOARD**

**Downstream (96 %)** Level (dBmV) Max: 3.5 Min: -10.2  
MER (dB) Max: 45.9 Min: 30.8

**CHANNEL VIEW**

0.0  
-5.0  
-10.0 dBmV

54.000 MHz 1,002.000

9.0  
-3.5  
-16.0 dBmV

CH 39 CH 40 CH OFDM 1 CH 70 CH 74 CH 75

372.000 MHz - 468.000 MHz | OFDM | BW 96.000 MHz  
PLC 380.000 MHz | 1880 carriers | 50 kHz | CP 5.0 | RP 1.25

✓ PLC Level -2.2 dBmV	✓ PLC MER 41.8 dB	✓ PLC CWE Corr 0.0	✓ PLC CWE Uncorr 0.0
✓ NCP CWE Corr 0.0	✓ NCP CWE Uncorr 0.0	✓ A CWE Corr 0.0	✓ A CWE Uncorr 0.0
✓ Level (Avg) -3.2 dBmV	✓ Level (Max) -2.4 dBmV	✓ Level (Min) -3.7 dBmV	✓ ICFR 0.8 dB
✓ MER (Avg) 41.0 dB	✓ MER (Std Dev) 0.6 dB	✓ MER PCTL (2) 39.9 dB	✓ Echo -39.7 dBc

Channel Freq (MHz) Level (dBmV) MER (dB)

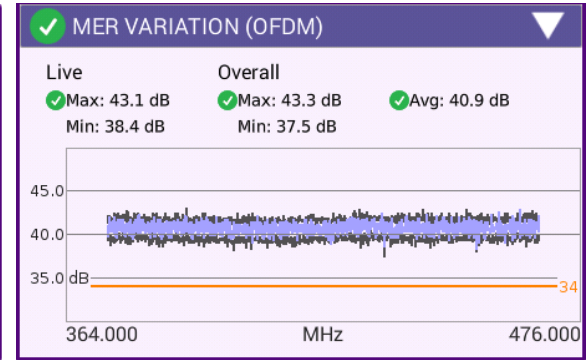
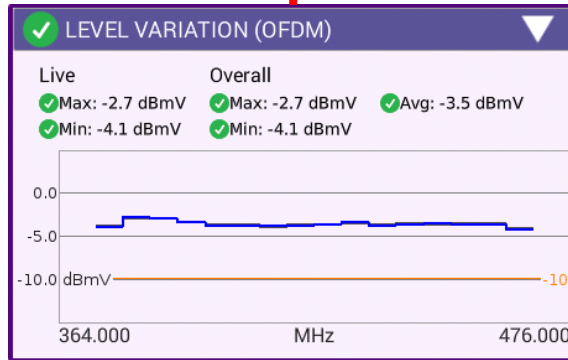
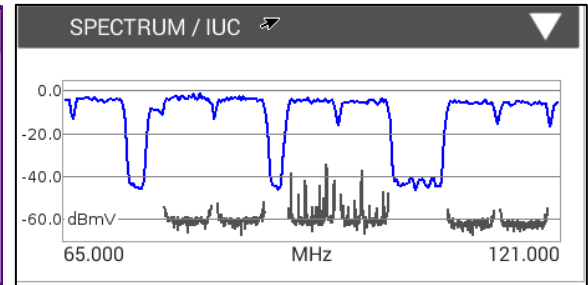
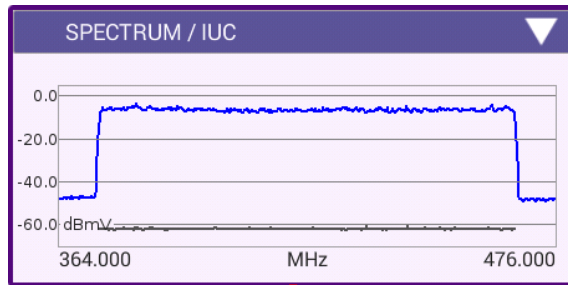
# Channel Check

ChannelCheck

Tap Ground Block CPE

- DASHBOARD
- CHANNEL VIEW
- SPECTRUM / IUC
- LEVEL VARIATION (OFDM)
- MER VARIATION (OFDM)
- PROFILE ANALYSIS
- IN-CHANNEL FREQUENCY RESPONSE
- TILT
- SMARTSCAN
- FAVORITES

Save Results Display Stop



# Channel Check

ChannelCheck

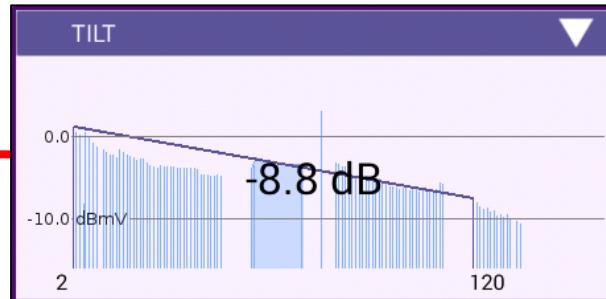
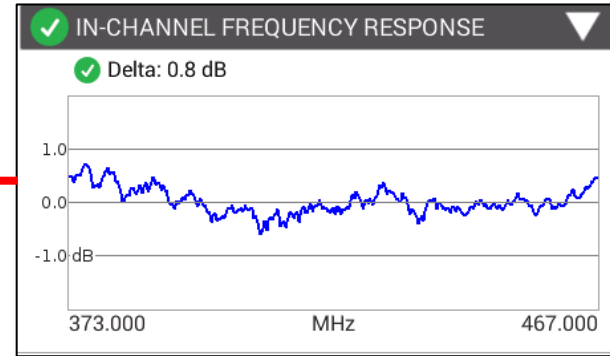
Tap Ground Block CPE

- DASHBOARD
- CHANNEL VIEW
- SPECTRUM / IUC
- LEVEL VARIATION (OFDM)
- MER VARIATION (OFDM)
- PROFILE ANALYSIS
- IN-CHANNEL FREQUENCY RESPONSE
- TILT
- SMARTSCAN
- FAVORITES

Save Results Display Stop

✓ PROFILE ANALYSIS

PROFILE	LOCKED	CWE (Corr)	CWE (Uncorr)	Max Mod
PLC	YES	0.0	0.0	16QAM
NCP	YES	0.0	0.0	16QAM
A	YES	0.0	0.0	256QAM
B	YES	0.0	0.0	1024QAM
C	YES	1.0e+0	0.0	4096QAM



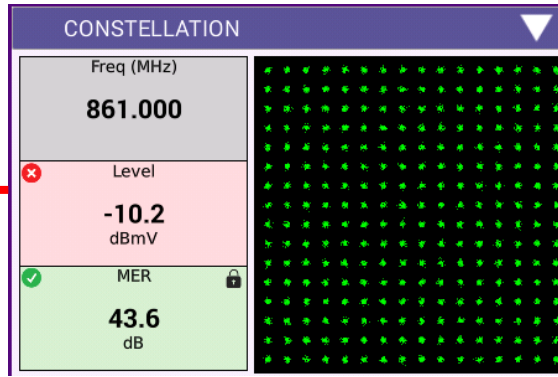
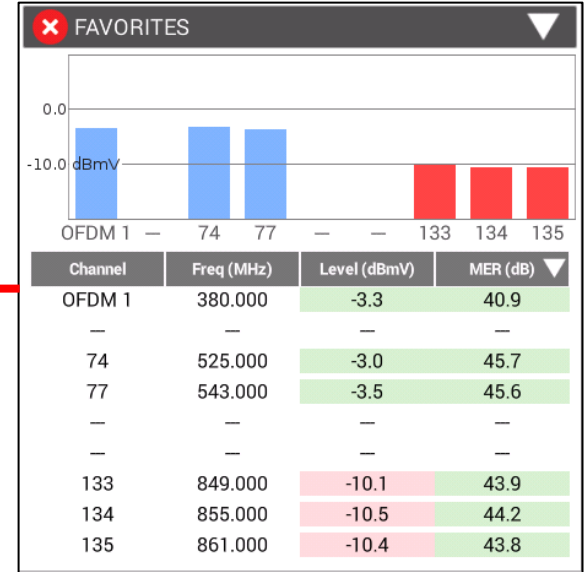
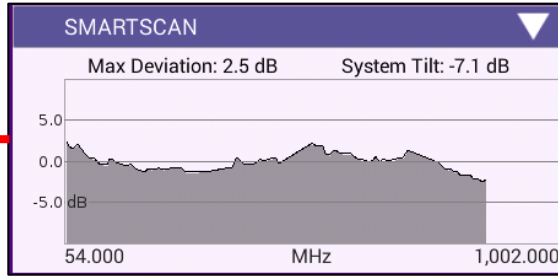
# Channel Check

ChannelCheck

Tap Ground Block CPE

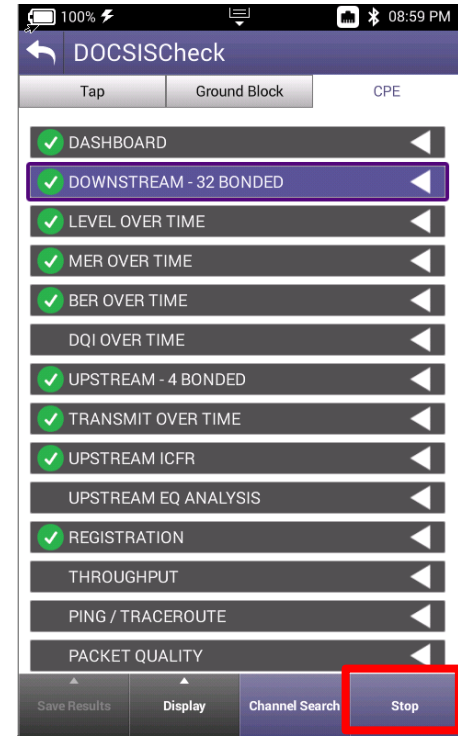
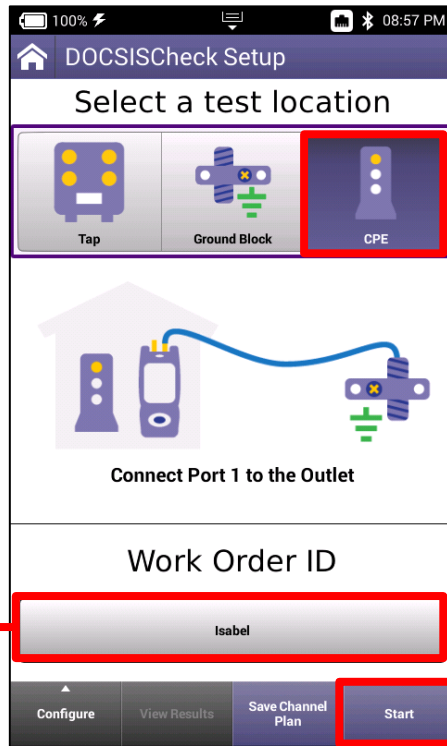
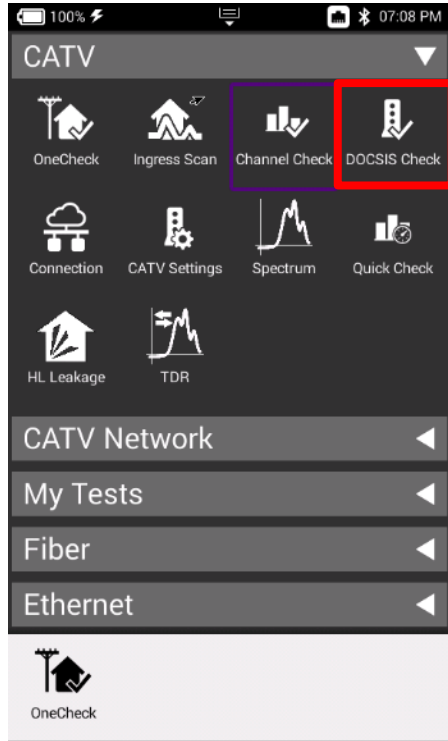
- DASHBOARD
- CHANNEL VIEW
- SPECTRUM / IUC
- LEVEL VARIATION (OFDM)
- MER VARIATION (OFDM)
- PROFILE ANALYSIS
- IN-CHANNEL FREQUENCY RESPONSE
- TILT
- SMARTSCAN
- FAVORITES
- CONSTELLATION

Save Results Display Stop



# DOCSIS Check

# DOCSIS Check





# DOCSIS Check

DOCSISCheck

Tap   Ground Block   CPE

- ✓ DASHBOARD
- ✓ DOWNSTREAM - 32 BONDED
- ✓ LEVEL OVER TIME
- ✓ MER OVER TIME
- ✓ BER OVER TIME
- DQI OVER TIME
- ✓ UPSTREAM - 4 BONDED
- ✓ TRANSMIT OVER TIME
- ✓ UPSTREAM ICFR
- UPSTREAM EQ ANALYSIS
- ✓ REGISTRATION
- THROUGHPUT
- PING / TRACEROUTE
- PACKET QUALITY

Save Results   Display   Stop

Channel	Freq (MHz)	Level (dBmV)	MER (dB)
103	669.000	-6.1	44.3
104	675.000	-6.3	44.6
105	681.000	-6.2	44.6
106	687.000	-6.3	44.2
107	693.000	-6.0	44.6
108	699.000	-6.2	44.6
109	705.000	-6.0	44.5

✓ DASHBOARD

✓ DOCSIS (100 %) Status: Connected

32x (1x OFDM) | Downstream

Min Rx: -6.3 dBmV   Min MER: 38.1 dB  
Max BER: 1.0e-9 (pre)   Max MER: 45.9 dB

Upstream | 4x

Max Tx: 44.8 dBmV   Max ICFR: 1.4 dB

✓ DOWNSTREAM - 32 BONDED

54.000   750.000  
MHz

693.000 MHz  
Annex B | 256 QAM | 5.361 Msym/s | 6.000 MHz

Level	MER	BER	BER
-6.0 dBmV	44.6 dB	1.0e-9 Pre	1.0e-9 Post
Echo	GD	ICFR	DQI
-35.5 dBc	36 ns	0.7 dB	10.0

Channel   Freq (MHz)   Level (dBmV)   MER (dB)

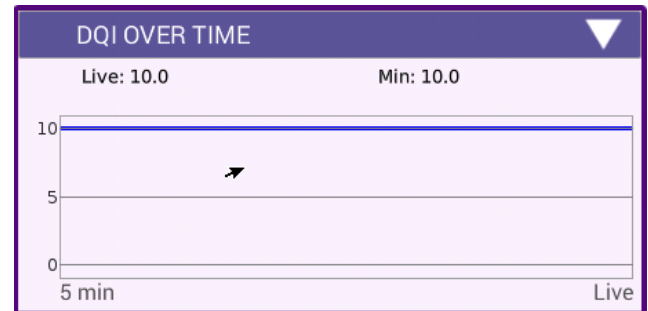
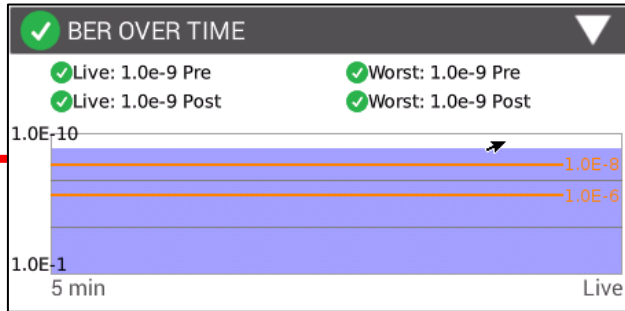
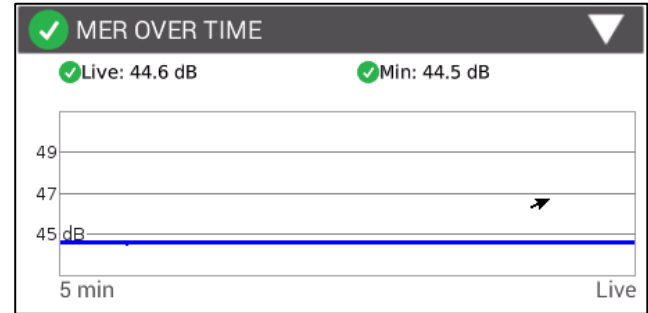
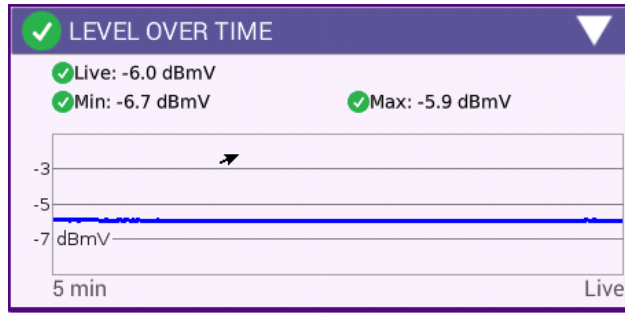
# DOCSIS Check

DOCSISCheck

Tap Ground Block CPE

- ✓ DASHBOARD
- ✓ DOWNSTREAM - 32 BONDED
- ✓ LEVEL OVER TIME
- ✓ MER OVER TIME
- ✓ BER OVER TIME
- DQI OVER TIME
- ✓ UPSTREAM - 4 BONDED
- ✓ TRANSMIT OVER TIME
- ✓ UPSTREAM ICFR
- UPSTREAM EQ ANALYSIS
- ✓ REGISTRATION
- THROUGHPUT
- PING / TRACEROUTE
- PACKET QUALITY

Save Results Display Stop



# DOCSIS Check

100% 09:01 PM

DOCSISCheck

Tap Ground Block CPE

- ✓ DASHBOARD
- ✓ DOWNSTREAM - 32 BONDED
- ✓ LEVEL OVER TIME
- ✓ MER OVER TIME
- ✓ BER OVER TIME
- ✓ DQI OVER TIME
- ✓ UPSTREAM - 4 BONDED
- ✓ TRANSMIT OVER TIME
- ✓ UPSTREAM ICFR
- UPSTREAM EQ ANALYSIS
- ✓ REGISTRATION
- THROUGHPUT
- PING / TRACEROUTE
- PACKET QUALITY

Save Results Display Stop

### ✓ UPSTREAM - 4 BONDED

49.8  
43.1  
36.5 dBmV

17.800 MHz  
64 QAM | 6.400 MHz | ATDMA

✓ TX Level	✓ ICFR
<b>41.5</b> dBmV	<b>1.3</b> dB

UCD	Freq (MHz)	Level (dBmV)	ICFR (dB)
9	17.800	41.5	1.3
10	24.200	42.8	1.2
11	30.600	43.5	1.3
12	37.000	44.8	1.1

### ✓ TRANSMIT OVER TIME

✓ Live: 42.8 dBmV  
✓ Min: 42.8 dBmV  
✓ Max: 43.3 dBmV

46  
44  
42 dBmV

5 min Live

### ✓ UPSTREAM ICFR

Reference bandwidth: Modem Default

46  
44  
42 dBmV

12.000 MHz 42.000

### UPSTREAM EQ ANALYSIS

-10.0  
-20.0  
-30.0  
-40.0  
-50.0  
-60.0  
-70.0 dBc

Channel:	EQ Tap:
<b>Frequency:</b> 17.800 MHz	<b>Time:</b> -1.37 $\mu$ s
<b>TX Level:</b> 41.5 dBmV	<b>Level:</b> -54.2 dBc
<b>Bandwidth:</b> 6.4 MHz	<b>Distance:</b> 558.1 ft
	<b>VOP:</b> 0.830

# DOCSIS Check

The main menu of the DOCSISCheck app. At the top, there are tabs for 'Tap', 'Ground Block', and 'CPE'. Below these are several menu items, each with a green checkmark icon and a right-pointing arrow. The items are: DASHBOARD, DOWNSTREAM - 32 BONDED, LEVEL OVER TIME, MER OVER TIME, BER OVER TIME, DQI OVER TIME, UPSTREAM - 4 BONDED, TRANSMIT OVER TIME, UPSTREAM ICFR, UPSTREAM EQ ANALYSIS, REGISTRATION, THROUGHPUT, PING / TRACEROUTE, and PACKET QUALITY. At the bottom, there are three buttons: 'Save Results', 'Display', and 'Stop'.

The REGISTRATION screen displays the following information:

- REGISTRATION** (checked)
- Service Plan**: -00:07:11:14:1B:CF
- Config File**: 7BEWgIyYABxYUG88KIsDi@CILA4mV4eXC2hq4Y+bmTGm.ZJKTLYf9
- Cable Modem**
  - Provisioning Mode: IPv4 ONLY
  - IPv4 Address: 10.34.192.226
  - IPv4 Gateway Address: 10.34.192.1
  - IPv4 Subnet Mask: 255.255.224.0
  - IPv4 Config File: 7BEWgIyYABxYUG88KIsDi@CILA4mV4eXC2hq4Y+bmTGm.ZJKTLYf9
- CPE**
  - IPv4 Address: 76.175.15.154
  - IPv4 Subnet Mask: 255.255.240.0
  - IPv4 Gateway Address: 76.175.0.1
- Servers**
  - IPv4 TFTP Server: 98.150.3.166
  - IPv4 DHCP Server: 142.254.177.41
  - IPv4 TDD Server: 98.150.3.166

The THROUGHPUT screen displays the following information:

- THROUGHPUT (100%)** (checked)
- Downstream URL**: http://spt01mtpkca.mtpk.ca.charter.com/mtpkr2D2wh3reRuN0w.iso
- Upstream URL**: http://spt01mtpkca.mtpk.ca.charter.com/mtpkr2D2wh3reRuN0w.iso
- 1.19 Gbps** (checked) with **RTT: 19 ms** for Receive
- 42.30 Mbps** (checked) with **RTT: 19 ms** for Send
- Two speedometer gauges: one for Receive (0 to 1.6G) and one for Send (0 to 250M).
- Buttons: **Configure** and **Start Throughput**.

The PING / TRACEROUTE screen displays a table with the following data:

	Current	Minimum	Average	Maximum
<b>Delay (ms)</b>	-	-	-	-
<b>Destination</b>				
<b>Echoes Sent</b>				-
<b>Replies Returned</b>				-
<b>Replies Lost</b>				-
<b>Replies Lost %</b>				-
<b>Error</b>				-

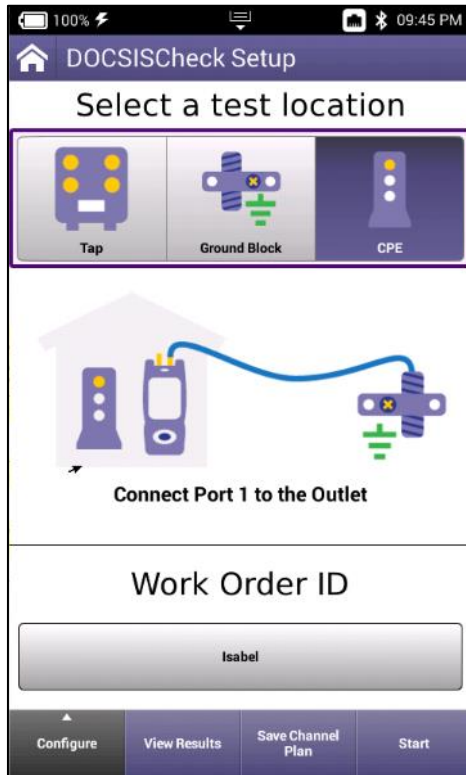
Buttons: **Open Ping**

The PACKET QUALITY screen displays the following information:

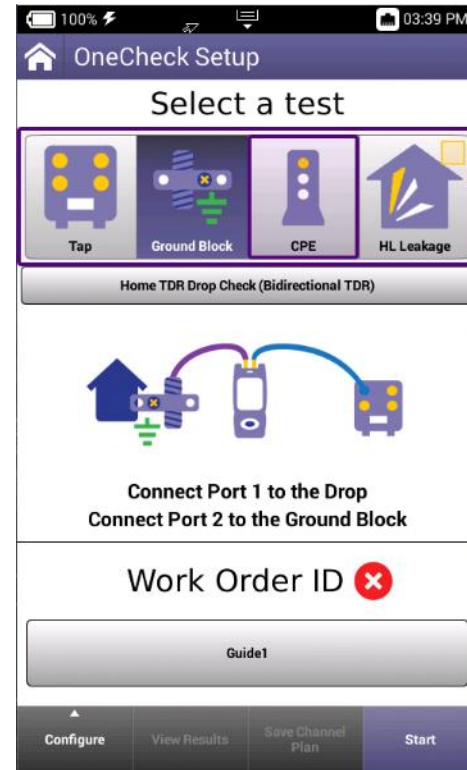
- PACKET QUALITY** (checked)
- Packet Loss**: 299 Sent, 0.0 % Loss (checked)
- Max Round Trip Delay**: 26 ms (checked)
- Max Jitter**: 19 ms (warning icon)
- Buttons: **Stop Packet Quality** and **Start Pass Through Cable Modem**.

# One Check

# One Check



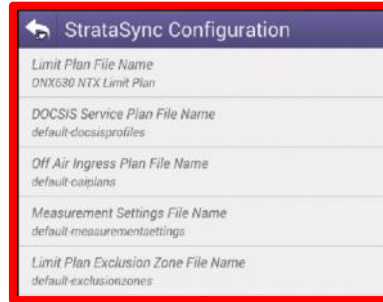
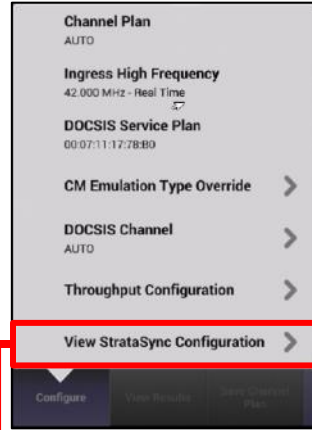
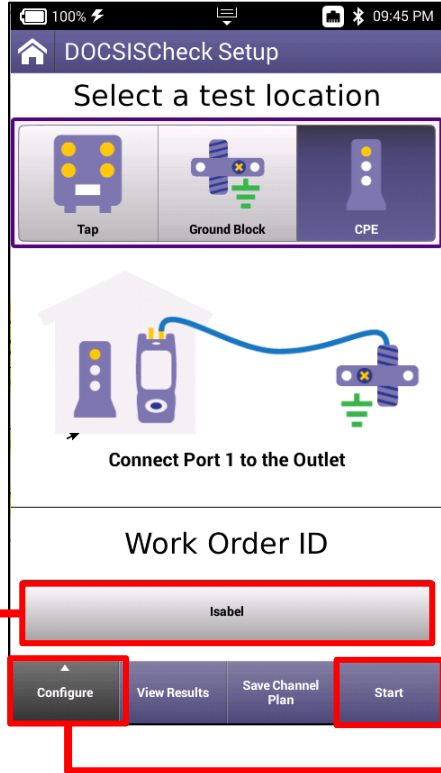
One Check without HL Leakage Requirement (Default)



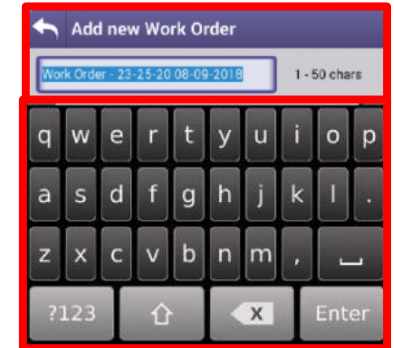
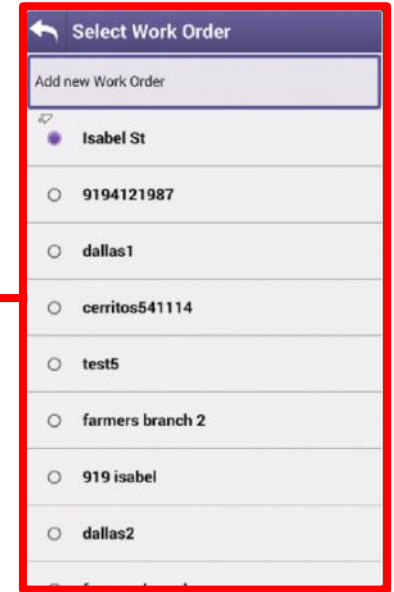
One Check with HL Leakage Requirement



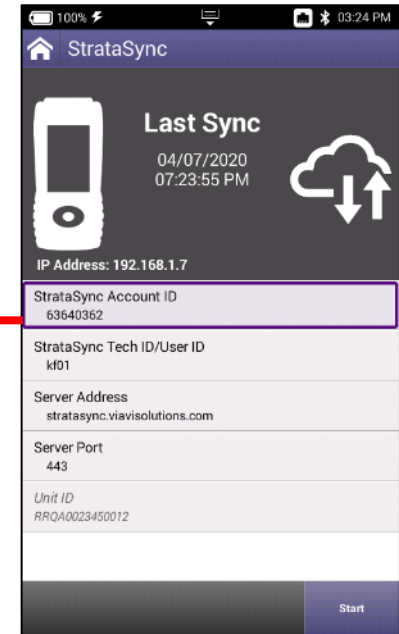
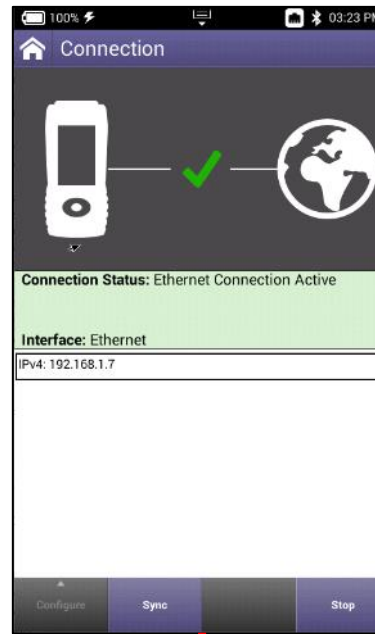
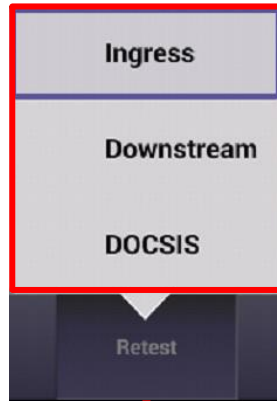
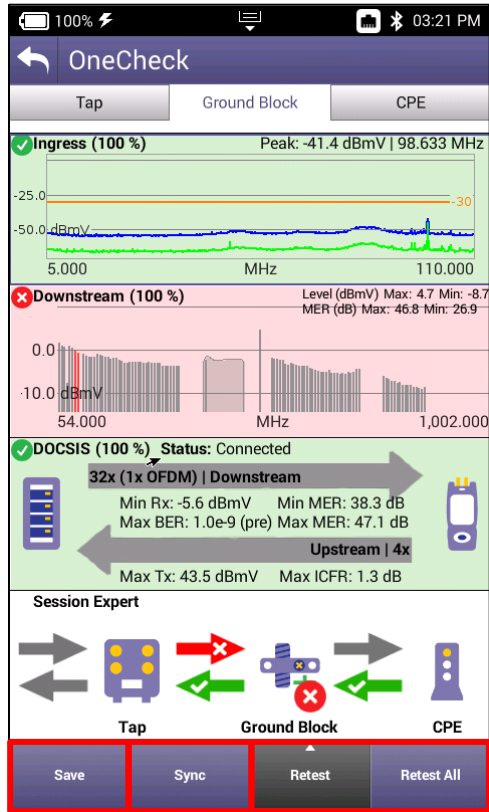
# One Check



User can verify that configurations are correct and up to date by selecting VIEW STRASYNK CONFIGURATION



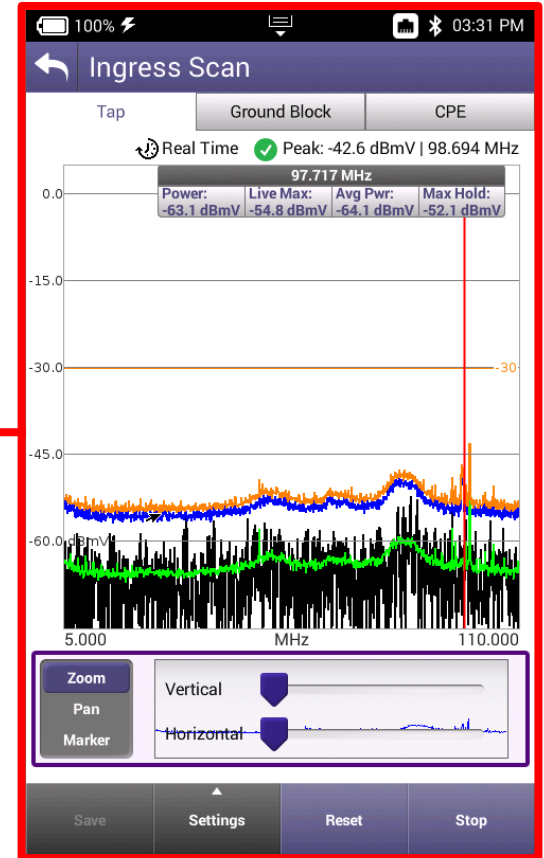
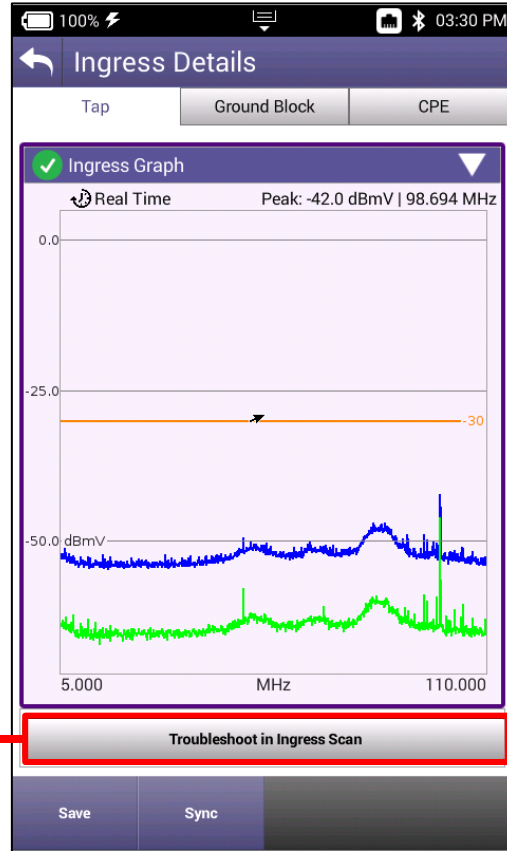
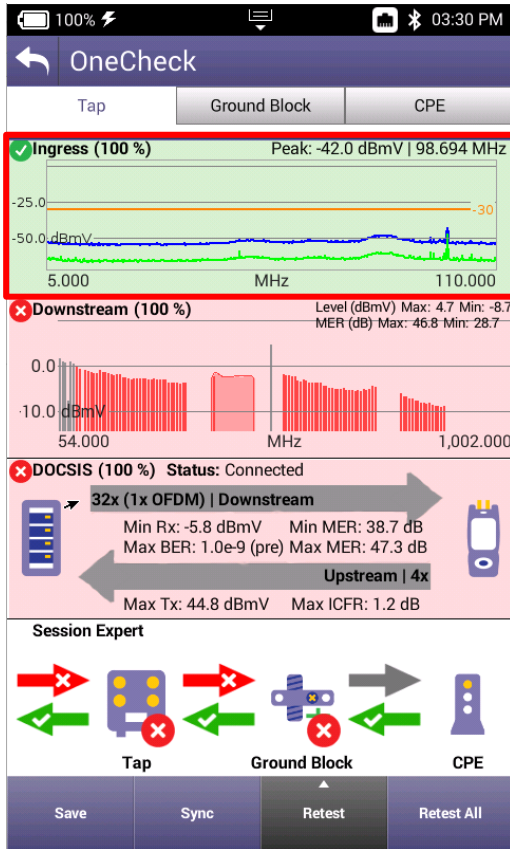
# One Check



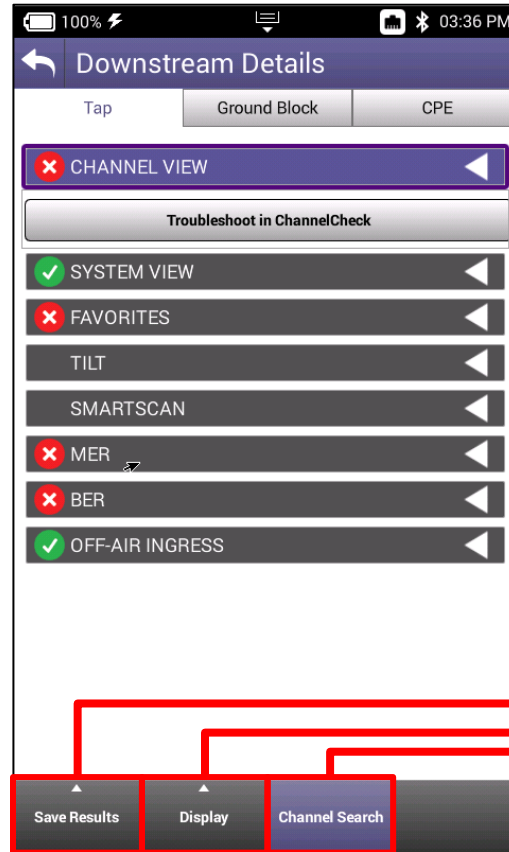
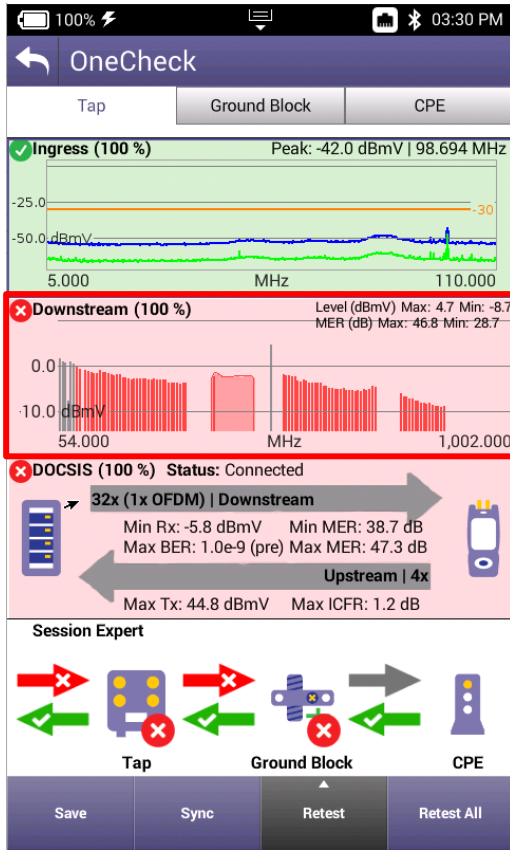
The Save File Name dialog box displays the following information:

- Save File Name** (title bar)
- File Name**: GB Fail (input field)
- Character Count**: 1 - 50 chars
- Save** (button)

# One Check - Ingress



# One Check - Downstream



Save

Sync

Search Channel

Search by Channel Number

Search by Channel Frequency

OK

1.0 dB

2.0 dB

5.0 dB

10.0 dB

20.0 dB

Auto Reference

Save Results

Display

Channel Search

# One Check - Downstream

Downstream Details

Tap Ground Block CPE

**CHANNEL VIEW**

Troubleshoot in ChannelCheck

SYSTEM VIEW

FAVORITES

TILT

SMARTSCAN

MER

BER

OFF-AIR INGRESS

Save Results Display Channel Search

SYSTEM VIEW

Max	Max
13.4 dB	--- dB
dB Delta	Video Delta

FAVORITES

Channel	Freq (MHz)	Level (dBmV)	MER (dB)
OFDM 1	—	—	—
74	525.000	-1.7	46.7
77	543.000	-2.1	46.5
—	—	—	—
133	849.000	-8.5	42.8
134	855.000	-8.7	43.3
135	861.000	-8.5	43.2

CHANNEL VIEW

Annex B | 256 QAM | 5.361 Msym/s | 6.000 MHz

Level	MER	BER Pre	BER Post
-8.5 dBmV	43.2 dB	1.0e-8	1.0e-8
Echo	GD	ICFR	Hum
-32.1 dBc	56 ns	0.8 dB	0.1 %

Channel	Freq (MHz)	Level (dBmV)	MER (dB)
131	837.000	-8.4	43.5
132	843.000	-8.5	43.8
133	849.000	-8.5	42.8
134	855.000	-8.7	43.3
135	861.000	-8.5	43.2

# One Check - Downstream

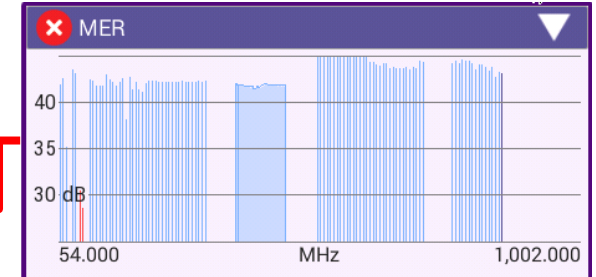
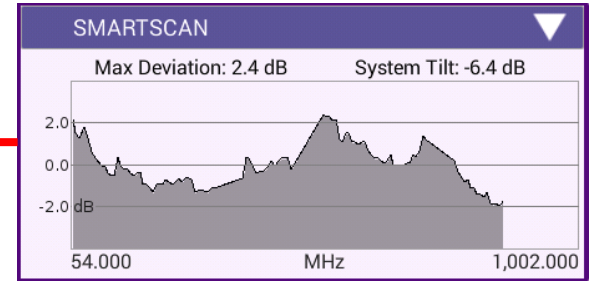
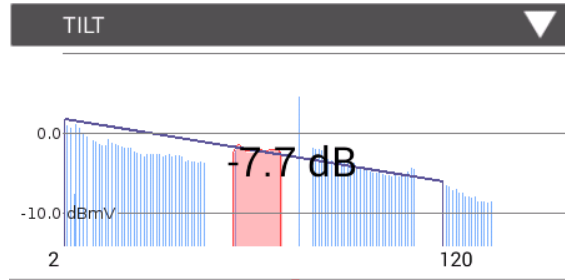
100% 03:36 PM

## Downstream Details

Tap Ground Block CPE

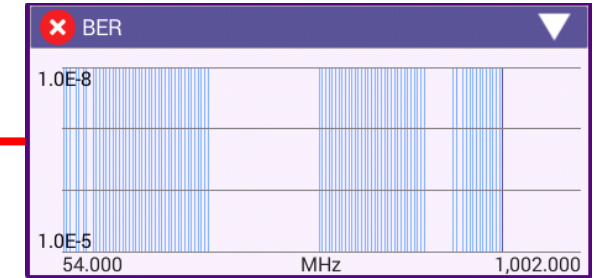
- CHANNEL VIEW
- SYSTEM VIEW
- FAVORITES
- TILT
- SMARTSCAN
- MER
- BER
- OFF-AIR INGRESS

Save Results Display Channel Search



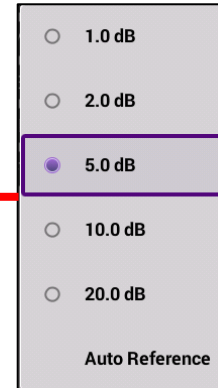
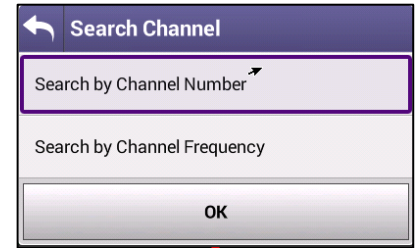
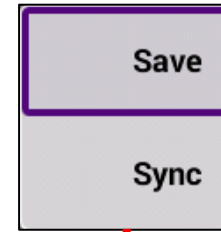
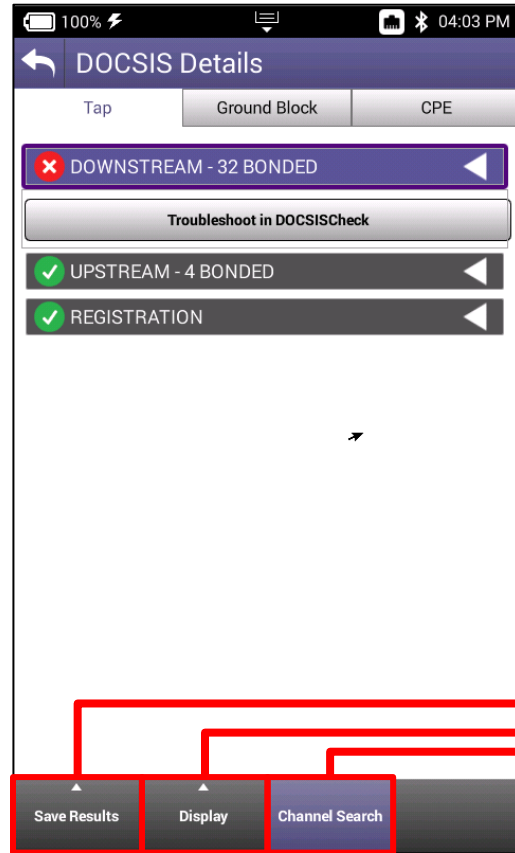
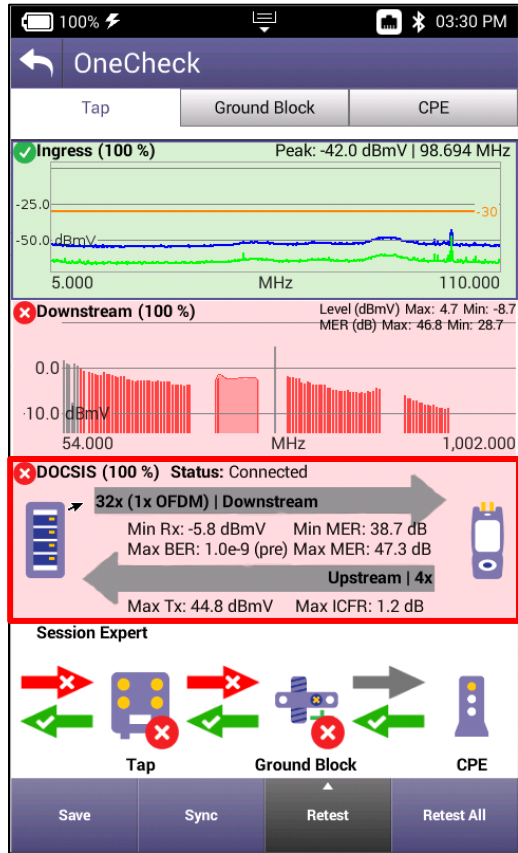
### OFF-AIR INGRESS

Name	Peak (MHz)	Peak (dBmV)
Default Ingress Span	731.988	-47.4





# One Check - Upstream



# One Check - Upstream

100% 04:03 PM

DOCSIS Details

Tap Ground Block CPE

**DOWNSTREAM - 32 BONDED**

Troubleshoot in DOCSISCheck

**UPSTREAM - 4 BONDED**

**REGISTRATION**

THROUGHPUT

PACKET QUALITY

Save Results Display Channel Search

**DOWNSTREAM - 32 BONDED**

54.000 750.000 MHz

681.000 MHz

Annex B | 256 QAM | 5.361 Msym/s | 6.000 MHz

Level	MER	BER Pre	BER Post
-5.7 dBmV	45.4 dB	1.0e-9	1.0e-9
Echo	GD	ICFR	
-36.4 dBc	58 ns	0.6 dB	

Channel	Freq (MHz)	Level (dBmV)	MER (dB)
101	657.000	-5.5	44.3
102	663.000	-5.5	44.2
103	669.000	-5.6	44.3
104	675.000	-5.8	44.4
105	681.000	-5.7	45.4
106	687.000	-5.8	44.4
107	693.000	-5.3	44.1
108	699.000	-5.5	44.3
109	705.000	-5.2	44.1

**UPSTREAM - 4 BONDED**

17.800 MHz

64 QAM | 6.400 MHz | Unknown

TX Level	ICFR
40.5 dBmV	1.0 dB

UCD	Freq (MHz)	Level (dBmV)	ICFR (dB)
9	17.800	40.5	1.0
10	24.200	42.0	1.2
11	30.600	43.3	1.2
12	37.000	44.8	1.2

**REGISTRATION**

Service Plan: Charter Field Ops vKF - 00:07:11:14:1B:CF

Config File: ?  
BEWGlyYABxEUG88KIsDi@CLLA4INpMjuhwLFUIE0BYV0zjkmFD\_

**Cable Modem**

Provisioning Mode: IPv4 ONLY

IPv4 Address: 10.34.192.226

IPv4 Gateway Address: 10.34.192.1

IPv4 Subnet Mask: 255.255.224.0

IPv4 Config: BEWGlyYABxEUG88KIsDi@CLLA4INpMjuhwLFUIE0BYV0zjkmFD\_

**CPE**

IPv4 Address: 76.175.15.154

IPv4 Subnet Mask: 255.255.240.0

IPv4 Gateway Address: 76.175.0.1

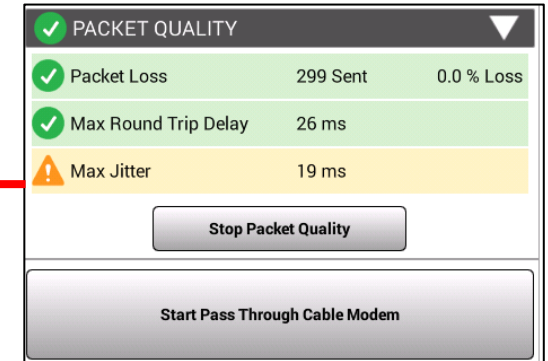
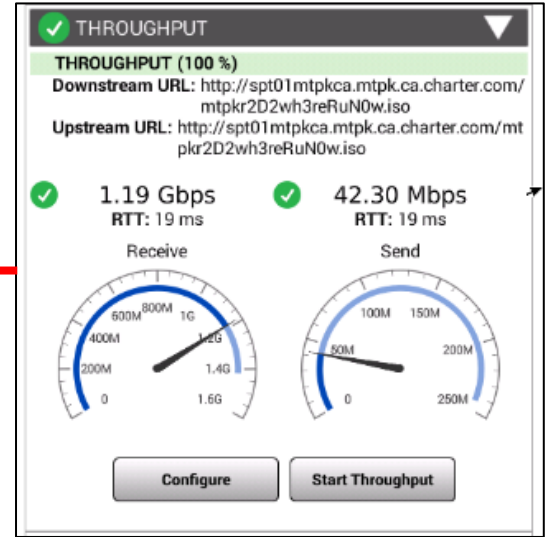
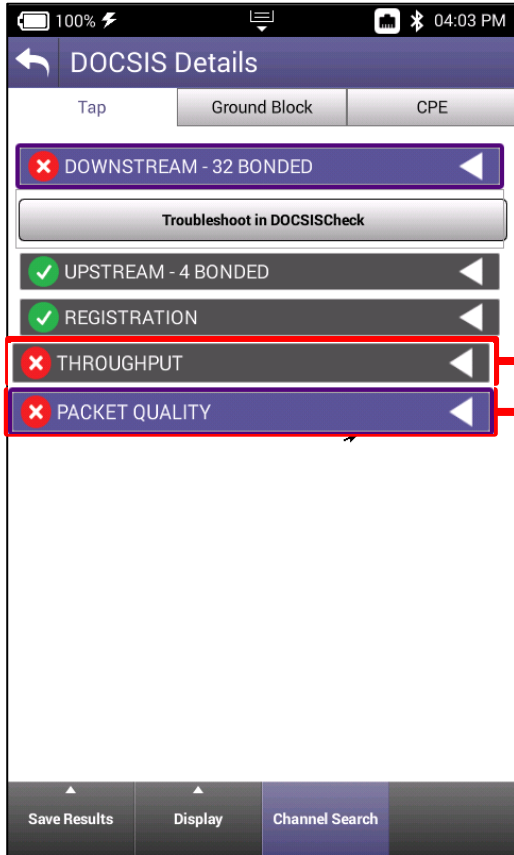
**Servers**

IPv4 TFTP Server: 98.150.3.105

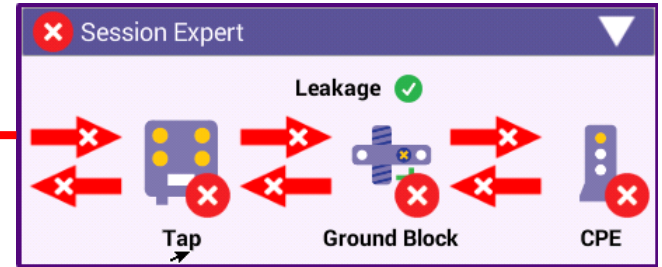
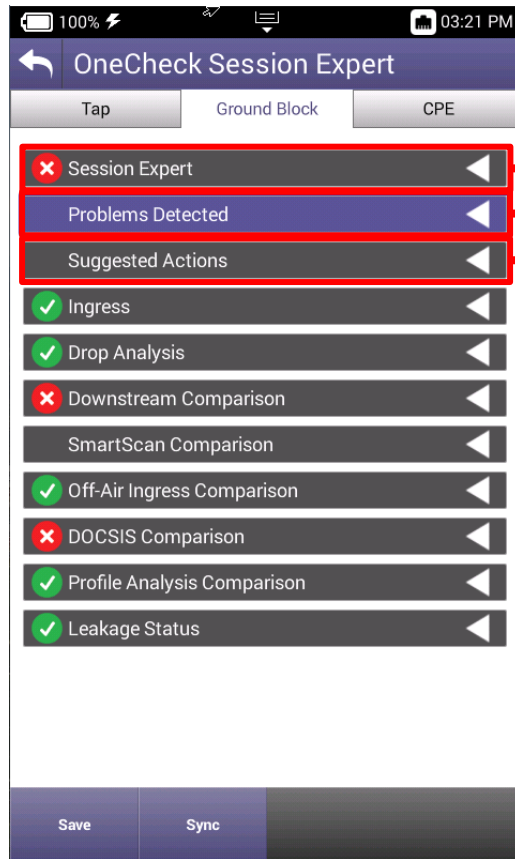
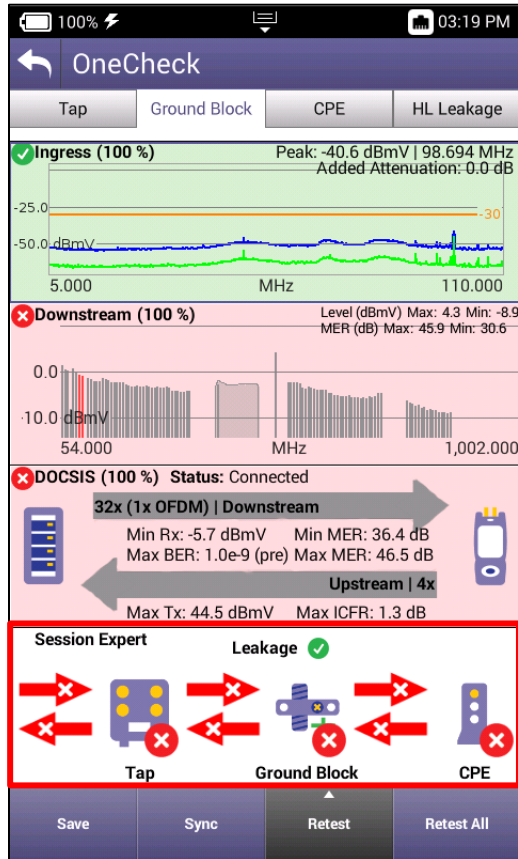
IPv4 DHCP Server: 142.254.177.41

IPv4 TOD Server: 98.150.3.105

# One Check - Upstream



# One Check – Session Expert



- ### Problems Detected
- Signal quality
  - Downstream throughput problem
  - Packet jitter problem
  - Upstream throughput problem
  - Non-unique home detected

### Suggested Actions

▼ Network downstream issue detected. Refer to maintenance

A network downstream issue has been detected. Retest at tap and refer to maintenance if problem persists.

# One Check – Session Expert

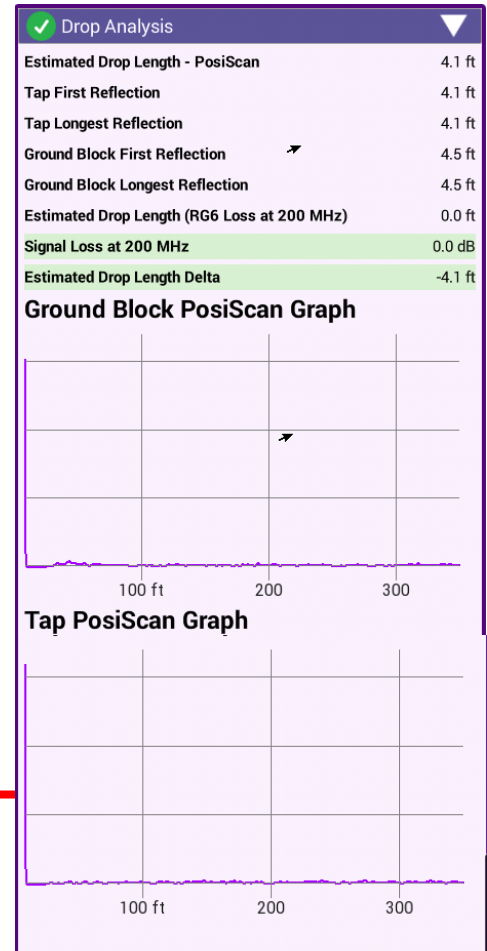
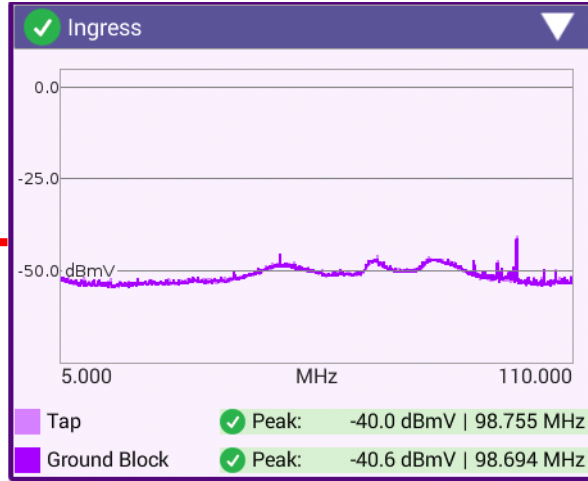
100% 03:21 PM

OneCheck Session Expert

Tap Ground Block CPE

- Session Expert
- Problems Detected
- Suggested Actions
- Ingress**
- Drop Analysis**
- Downstream Comparison
- SmartScan Comparison
- Off-Air Ingress Comparison
- DOCSIS Comparison
- Profile Analysis Comparison
- Leakage Status

Save Sync



# One Check – Session Expert

100% 03:21 PM

OneCheck Session Expert

Tap Ground Block CPE

- Session Expert
- Problems Detected
- Suggested Actions
- Ingress
- Drop Analysis
- Downstream Comparison**
- SmartScan Comparison
- Off-Air Ingress Comparison
- DOCSIS Comparison
- Profile Analysis Comparison
- Leakage Status

Save Sync

Downstream Comparison

	Tap	GB	CPE
<b>Downstream</b>			
Min Analog Level (dBmV)	4.3	4.3	4.3
Max Analog Level (dBmV)	4.3	4.3	4.3
Min Digital Level (dBmV)	-8.9	-8.9	-8.9
Max Digital Level (dBmV)	1.5	1.5	1.4
Min MER(dB)	31.0	30.6	30.0
Max MER (dB)	46.0	45.9	45.6
Max BER (Pre)	1.0e-8	1.0e-8	1.0e-8
Max BER (Post)	1.0e-8	1.0e-8	1.0e-8
Max Echo (dBc)	0.0	0.0	0.0
Max Group Delay (ns)	1.8	1.8	1.7
Max ICFR (dB)	4.5	4.5	4.5
Min Hum (%)	0.1	0.1	0.1
Max Hum (%)	0.3	0.4	0.4
<b>OFDM</b>			
Min Level (dBmV)	-3.1	-3.1	-3.0
Max Level (dBmV)	-1.8	-1.7	-1.8
Min MER PCTL (dB)	37.3	37.2	37.3
Max Stddev MER (dB)	0.6	0.6	0.6
Max ICFR (dB)	0.8	0.8	0.8
Max Echo (dBc)	-43.9	-42.9	-43.3

SmartScan Comparison

	Tap	GB	CPE
System Tilt (dB)	-5.8	-6.1	-5.9
Max Deviation (dB)	2.5	2.5	2.5

Off-Air Ingress Comparison

	Tap	GB	CPE
Default Ingress Span (dBmV)	-44.8	-46.4	-43.6



# One Check – Session Expert

Profile Analysis Comparison

	Tap	GB	CPE
Profile A	Pass	Pass	Pass
Profile B	—	—	—
Profile C	—	—	—
Profile NCP	Pass	Pass	Pass
Profile PLC	Pass	Pass	Pass

Leakage Status

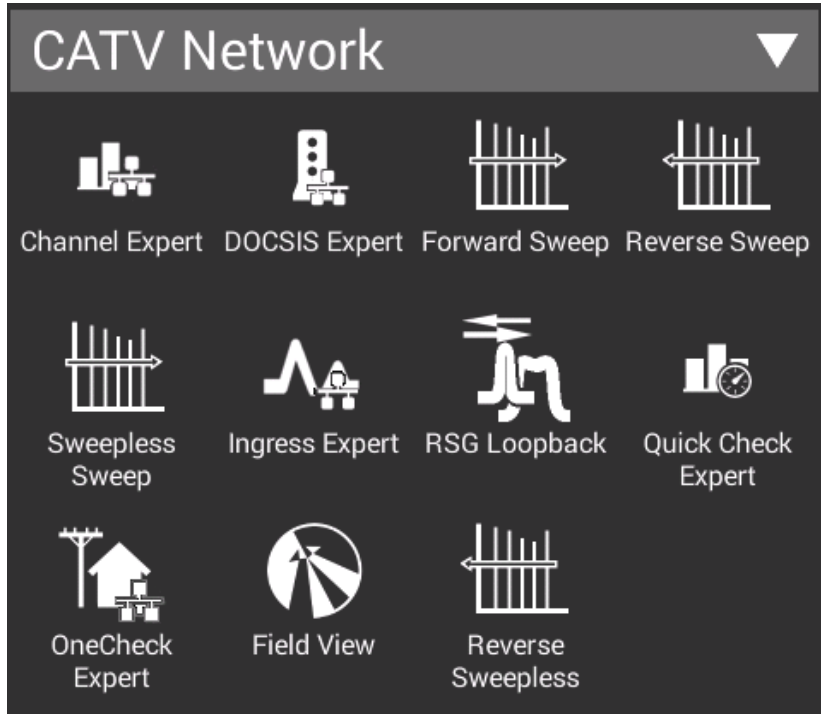
Duration	26 s	100%
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DOCSIS Comparison

	Tap	GB	CPE
<b>Status</b>	Connected	Connected	Connected
<b>Downstream</b>			
Number Bonded	32	32	32
Min Level (dBmV)	-5.7	-5.7	-5.7
Max Level (dBmV)	-2.0	-2.0	-2.0
Min MER (dB)	44.7	44.5	44.5
Max MER (dB)	46.9	46.5	46.5
<b>OFDM</b>			
Min Level (dBmV)	-3.1	-3.0	-3.0
Max Level (dBmV)	-1.8	-1.8	-1.8
Min MER PCTL (dB)	37.2	37.3	37.1
Max Stddev MER (dB)	0.6	0.6	0.6
Max ICFR (dB)	0.9	0.8	0.8
Max Echo (dBc)	-43.2	-43.2	-43.2
<b>Upstream</b>			
Number Bonded	4	4	4
Max Tx Level (dBmV)	44.0	44.5	44.0
Max ICFR (dB)	1.3	1.3	1.3
<b>Services</b>			
DS Throughput (Mbps)	0.0	0.0	0.0
US Throughput (Mbps)	0.0	0.0	0.0
Packet Loss (%)	0.0%	0.0%	0.0%
Max Round Trip Delay (ms)	18	17	17
Max Jitter (ms)	10	10	10

# CATV Network Configurations

# CATV Network



- CATV NETWORK offers 8 test functions
  - Channel Expert
  - DOCSIS Expert
  - Forward Sweep (Active)
  - Reverse Sweep (Active)
  - Sweepless Sweep (Downstream)
  - Ingress Expert
  - Return Signal Generator w/ Loopback
  - Quick Check Expert
  - OneCheck Expert
  - Field View (with Return Signal Generator)
  - Reverse Sweepless (Upstream)

# Quick Check Expert

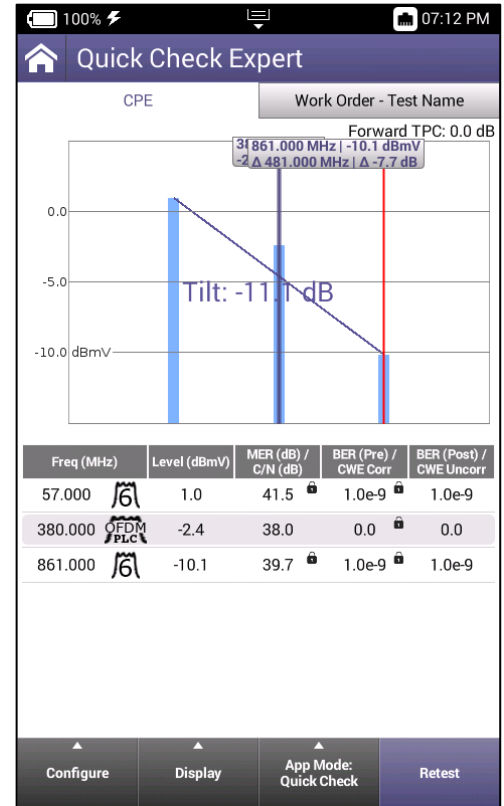
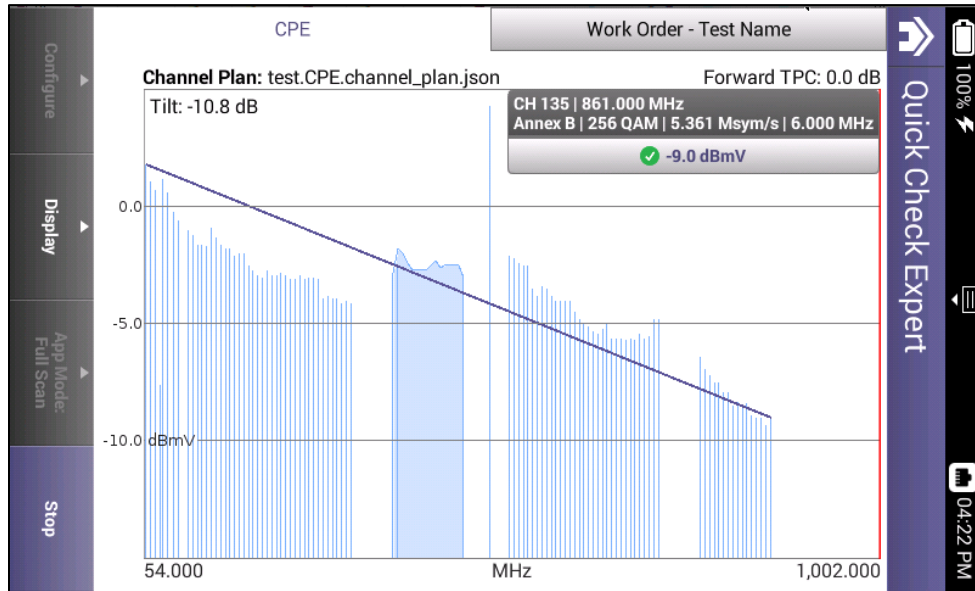
# Quick Check Expert

QuickCheck Expert can be run in two modes

- Quick Check
- Full Scan

To populate the FULL SCAN, user must first save a channel plan in ChannelCheck before loading it in QuickCheck Expert

To populate the QuickCheck mode with channels, user must add them manually

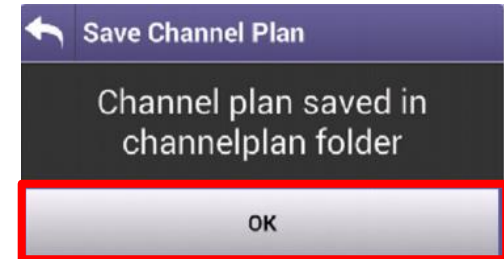
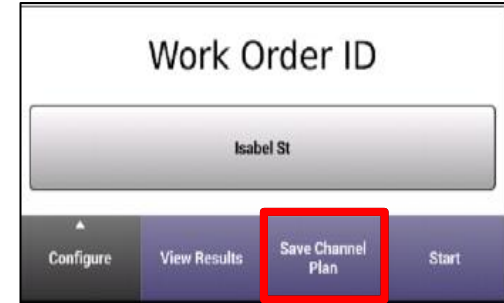
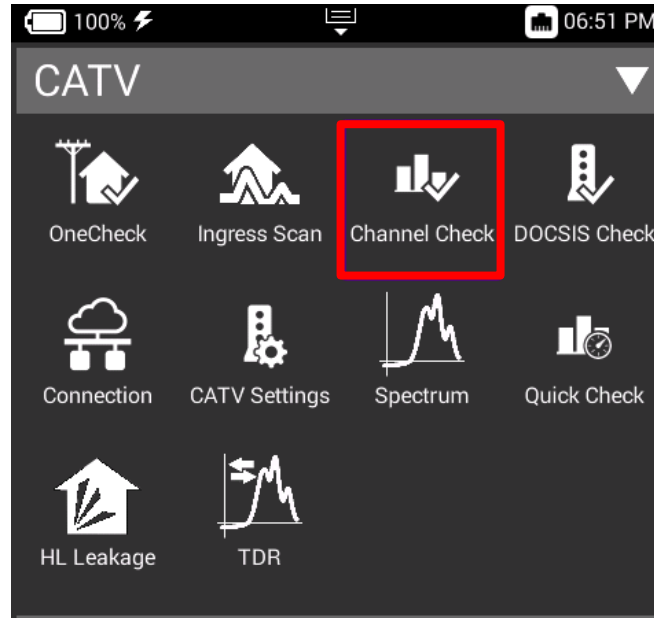


# Quick Check Expert – Saving Channel Plans

To save a Channel Plan, run the CHANNELCHECK test under CATV

After test completes, use the BACK button to return to CHANNELCHECK SETUP

Select SAVE CHANNEL PLAN. A message will display indicating the Channel Plan has been saved. The Channel plan will be named after the WORK ORDER ID





# Quick Check Expert – Loading Channel Plans

Return to QUICKCHECK  
EXPERT under CATV  
NETWORK

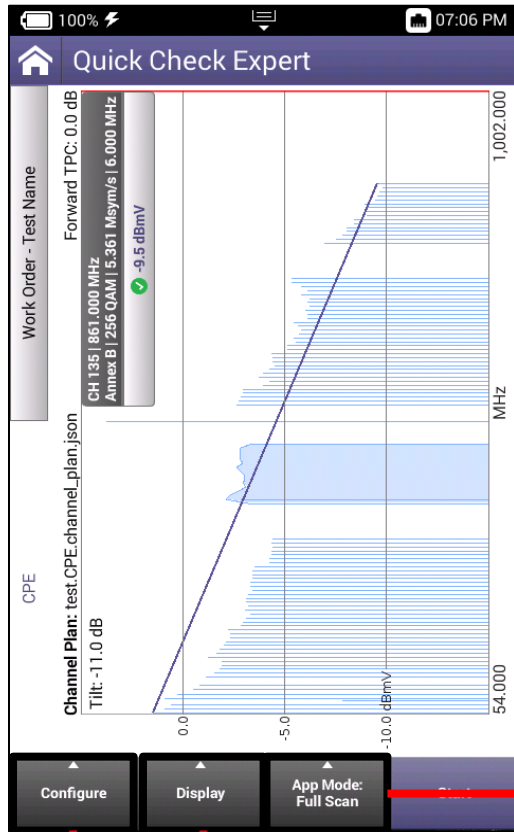
Test will automatically run,  
STOP test and change APP  
MODE to FULL SCAN

Select CONFIGURE and select  
CHANNEL PLAN

Select the appropriate saved  
CHANNEL PLAN

The image shows a mobile application interface for CATV Network. The top status bar shows 100% battery and 06:55 PM. The app title is 'CATV'. Below the title is a dropdown menu for 'CATV Network'. The main screen displays a grid of test options: Channel Expert, DOCSIS Expert, Forward Sweep, Reverse Sweep, Sweepless Sweep, Ingress Expert, RSG Loopback, Quick Check Expert (highlighted with a red box), OneCheck Expert, Field View, and Reverse Sweepless. A red line connects the 'Quick Check Expert' icon to a 'Configure' button in the top right. This button leads to a configuration screen with a top bar containing 'Configure', 'Display', 'App Mode: Full Scan', and 'Start'. The configuration screen has several sections: 'Select Test Point Template' (CPE), 'Channel Plan' (test.CPE.channel\_plan.json, highlighted with a red box), 'Set Diplexer' (42 - 1000 MHz), 'Select Limit Plan' (CPE), 'Save Test' (Save current test to a Work Order), 'View Tests' (View previous tests), and 'View StrataSync Configuration'. A red line also connects the 'Channel Plan' section to a 'Select Channel Plan' dialog box at the bottom, which shows a radio button selected next to 'test.CPE.channel\_plan.json'.

# Quick Check Expert – Full Scan Mode



Quick Check

Full Scan

Full Screen

Marker

dB/div  
5.0 dB

Reference Now

Select Test Point Template  
CPE

Channel Plan ↗  
test.CPE.channel\_plan.json

Set Diplexer  
42 - 1000 MHz

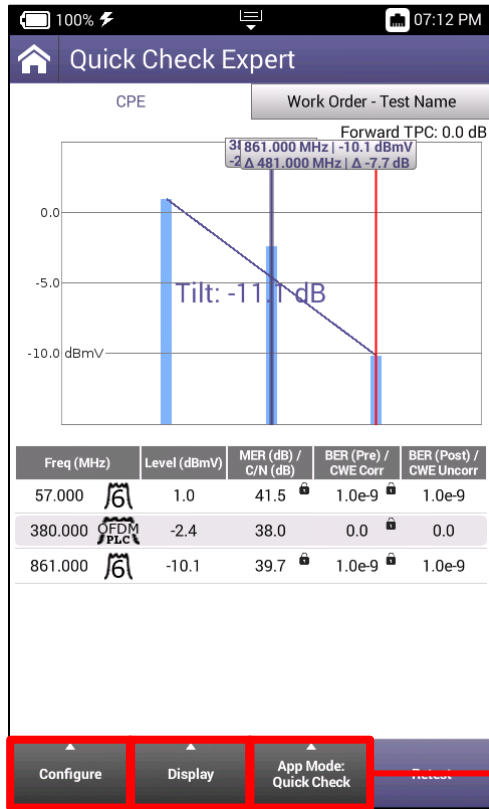
Select Limit Plan  
CPE

Save Test  
Save current test to a Work Order

View Tests  
View previous tests

View StrataSync Configuration >

# Quick Check Expert – Quick Check Mode



Quick Check  
 Full Scan

1.0 dB  
 2.0 dB  
 5.0 dB  
 10.0 dB  
 20.0 dB

Reference Now

Auto Reference  
 Δ Marker

Select Test Point Template  
CPE

Carrier Configuration >

Channel Plan  
test.CPE.channel\_plan.json

Set Diplexer  
42 - 1000 MHz

MER  
 BER / OFDM CWE  
 Carrier To Noise

Save Test  
Save current test to a Work Order

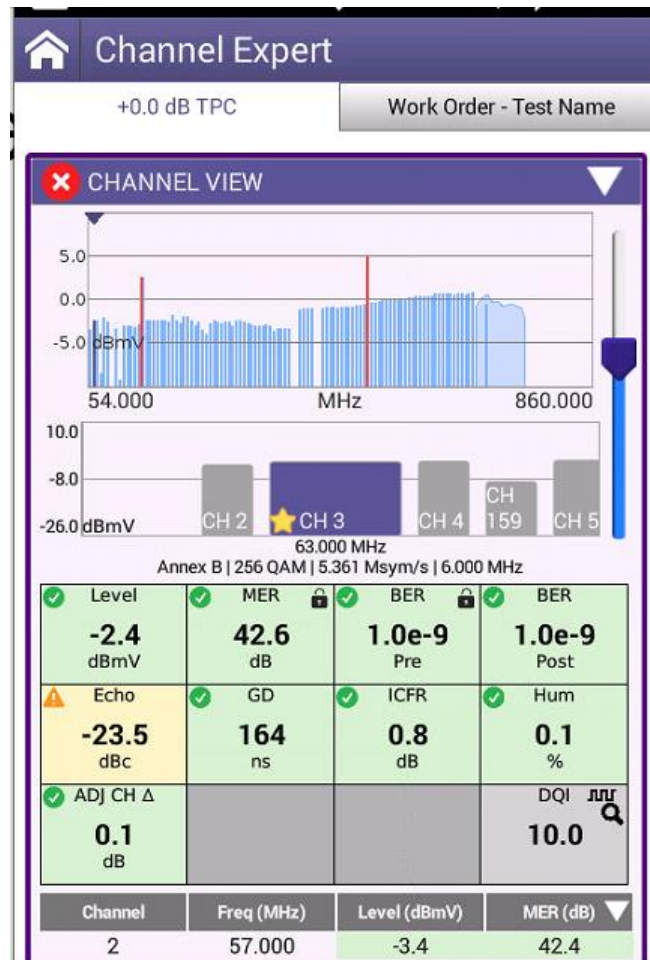
View Tests  
View previous tests

View StrataSync Configuration >

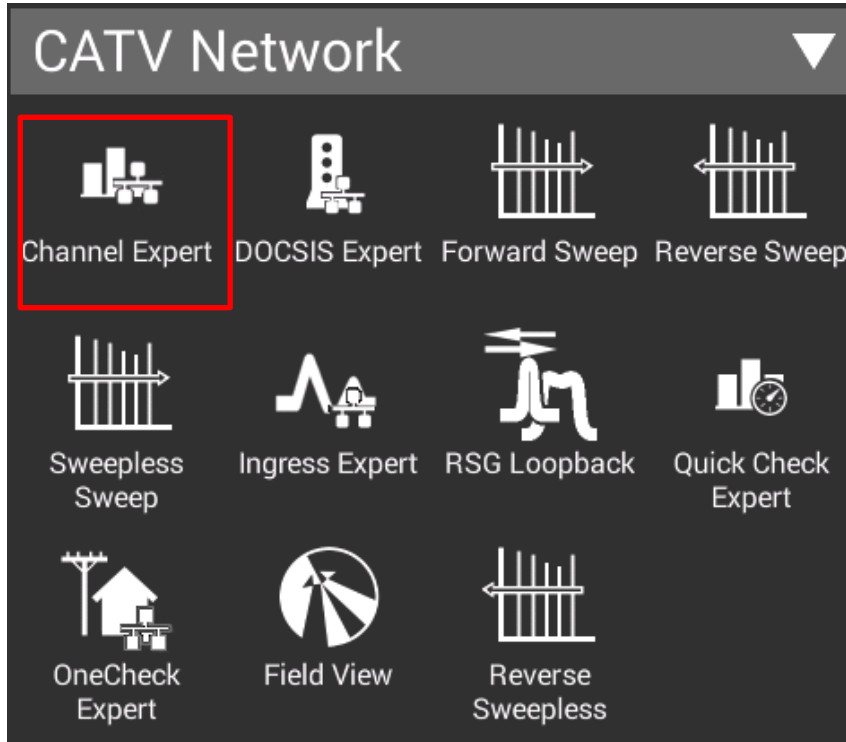
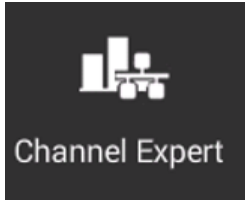
# Channel Expert

# Channel Expert Measurements

- Channel Scan no need for Channel plan
- Measures Video, QAM, OFDM
- Typical QAM Measurements include Level, MER, Pre and Post BER
- Measures Echo, GD, ICFR (This is an Adaptive Equalizer Test)
- Hum (Less than 1000 kHz)
- DQI ( Digital Quality Index)
- Ingress Under Carrier
- ADJ Channel Delta



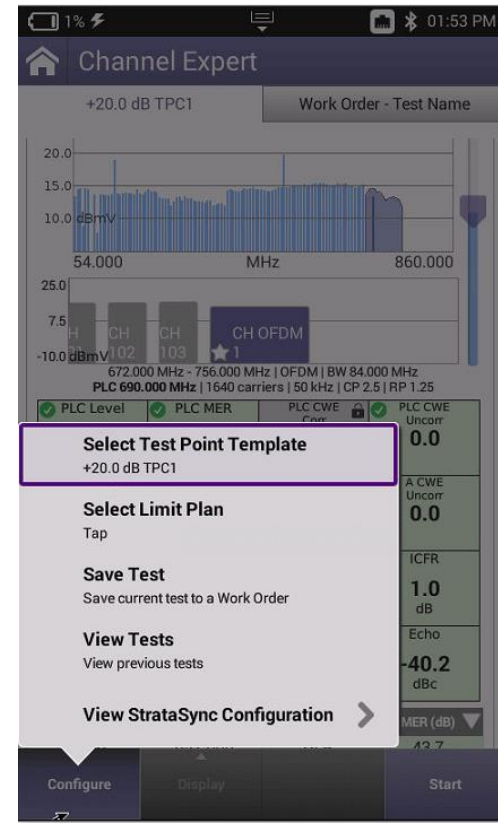
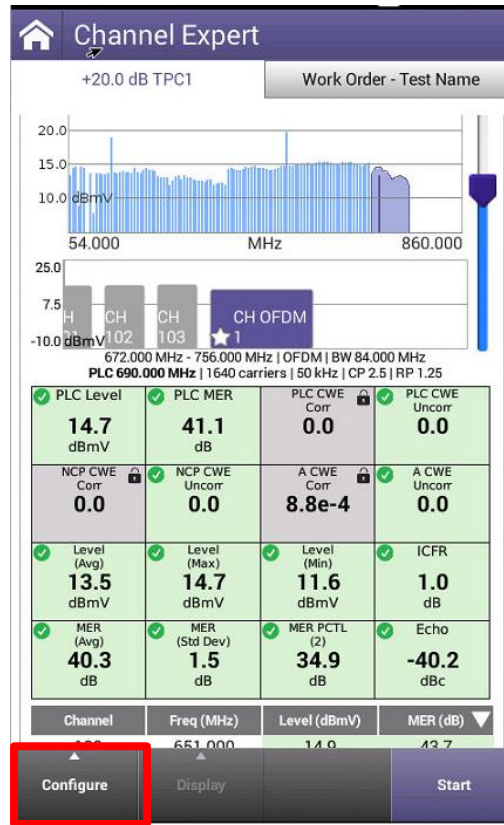
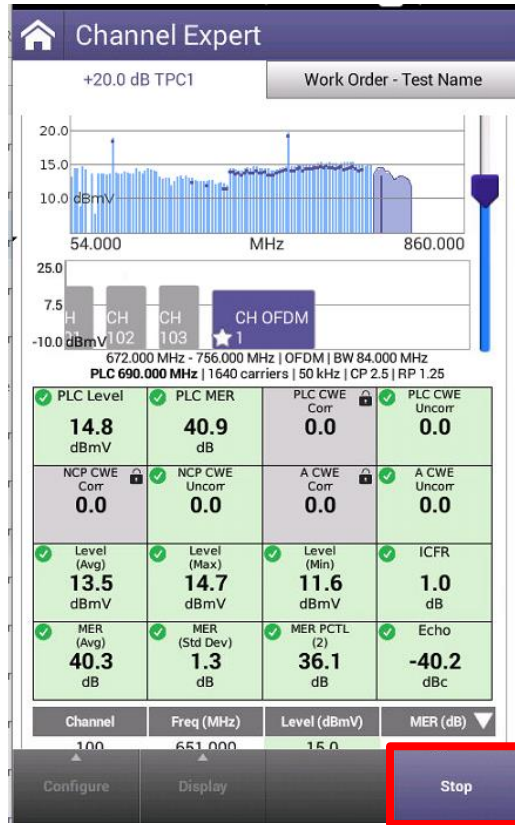
# Channel Expert





# Channel Expert Configure

- All EXPERT test functions will feature a CONFIGURE button when the STOP function is pressed
- All new test functions are LIVE tests so to access CONFIGURE, test must be stopped first



# Channel Expert Configure Test point

31% 03:03 PM

Channel Expert

+0.0 dB TPC Work Order - Test Name

CHANNEL VIEW

5.0  
0.0  
-5.0  
-10.0  
-26.0 dBmV

54.000 MHz 860.000

63.000 MHz

Annex B | 256 QAM | 5.361 Msym/s | 6.000 MHz

Level	MER	BER	BER
-2.5 dBmV	42.6 dB	1.0e-9 Pre	1.0e-9 Post
Echo	GD	ICFR	Hum
-23.5 dBc	168 ns	0.8 dB	0.2 %
ADJ CH Δ			DQI
0.1 dB			10.0

Channel Freq (MHz) Level (dBmV) MER (dB)

2 57.000 -3.5 42.3

Configure Display Channel Search Start

Select Test Point Template

+0.0 dB TPC

Select Limit Plan

Tap

Save Test

Save current test to a Work Order

View Tests

View previous tests

View StrataSync Configuration

Select Test Point Template

+0.0 dB TPC

+20.0 dB TPC

View Delete Copy Done

New Custom Template

+20 dB TPC1 1 - 40 chars

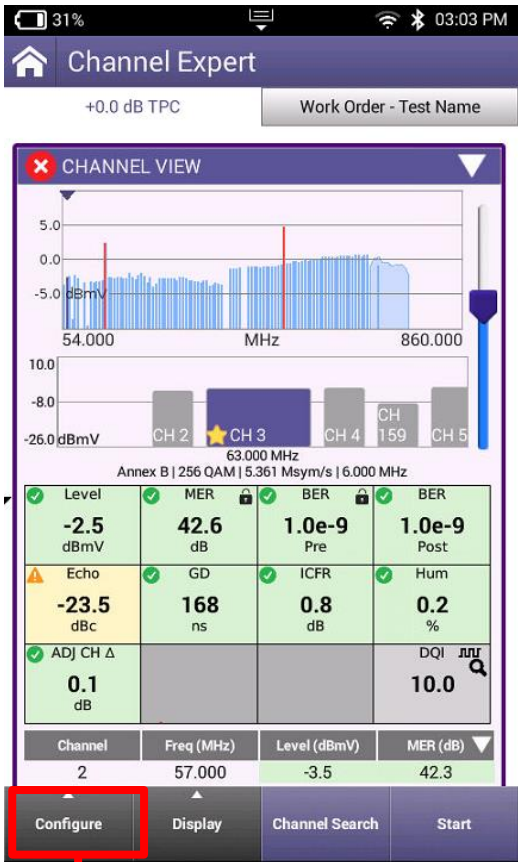
Save

Select Test Point Template

+0.0 dB TPC

+20 dB TPC1

# Channel Expert Configure



Select Test Point Template  
+0.0 dB TPC

Select Limit Plan  
Tap

Save Test  
Save current test to a Work Order

View Tests  
View previous tests

View StrataSync Configuration

Select Limit Plan

Tap

Ground Block

CPE

View Test Results

Tests for Current Work Order:

H12345

StrataSync Configuration

Test Point Templates File Name  
default-testpoint-templates

Limit Plan File Name  
Thome1

Limit Plan Exclusion Zone File Name  
default-exclusionzones

# Channel Expert Configure Save Test

31% 03:03 PM

Channel Expert

+0.0 dBm TPC

Work Order - Test Name

CHANNEL VIEW

Level	MER	BER	BER
-2.5 dBmV	42.6 dB	1.0e-9 Pre	1.0e-9 Post
-23.5 dBc	168 ns	0.8 dB	0.2 %
ADJ CH Δ 0.1 dB			DQI 10.0

Channel: 2, Freq (MHz): 57.000, Level (dBmV): -3.5, MER (dB): 42.3

Buttons: Configure, Display, Channel Search, Start

1% 01:53 PM

Channel Expert

+20.0 dBm TPC1

Work Order - Test Name

Select Test Point Template  
+20.0 dB TPC1

Select Limit Plan  
Tap

**Save Test**  
Save current test to a Work Order

View Tests  
View previous tests

View StrataSync Configuration

Buttons: Configure, Display, Start

100% 04:13 PM

Save Test

Save Test to Work Order

Test Name  
Isabel 20191

Work Order ID  
Guide1

Buttons: Set Name to Current Date, Save

Test Name

Isabel 20191 1 - 50 chars

OK

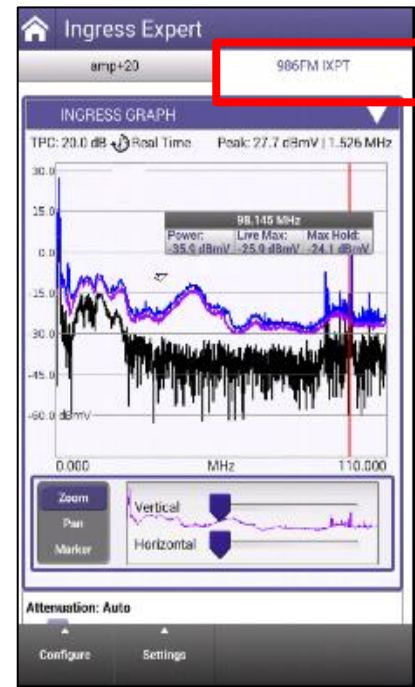
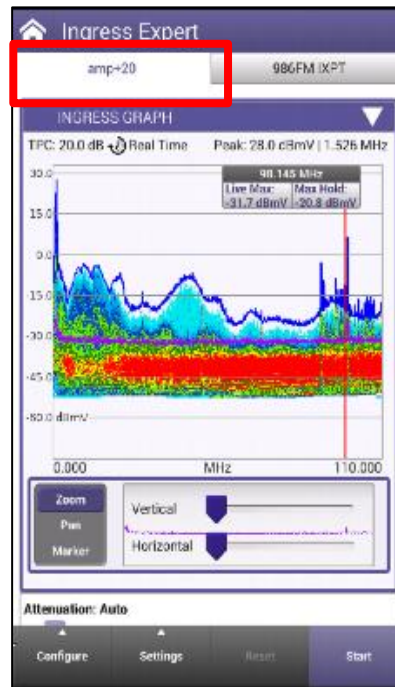
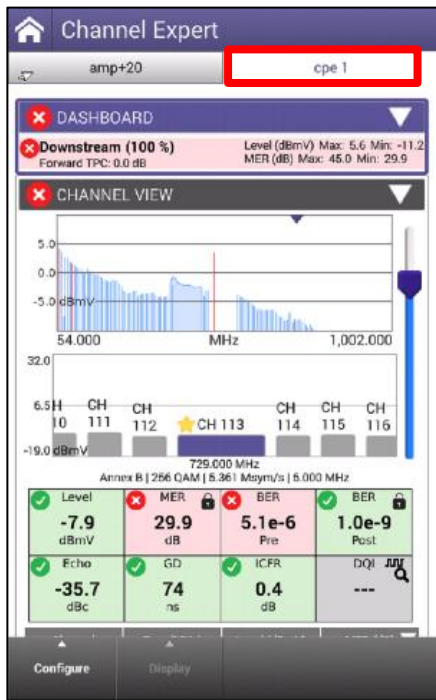
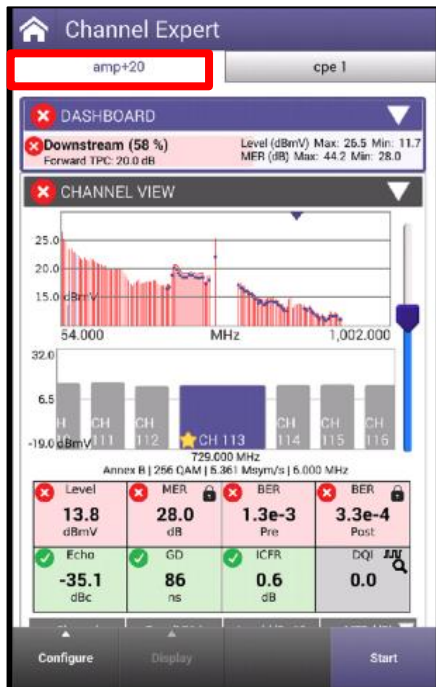
Select Work Order

New Work Order ...

- Guide1
- T3
- T2
- T1
- test2
- Chaplin
- Charlie
- Isabel



# Configure – View Test – Delta Tab



# Channel Expert Configure

31% 03:03 PM

Channel Expert

+0.0 dB TPC Work Order - Test Name

CHANNEL VIEW

54.000 MHz 860.000

26.0 dBmV

63.000 MHz

Annex B | 256 QAM | 5.361 Msym/s | 6.000 MHz

Level	MER	BER	BER
-2.5 dBmV	42.6 dB	1.0e-9 Pre	1.0e-9 Post
Echo -23.5 dBc	GD 168 ns	ICFR 0.8 dB	Hum 0.2 %
ADJ CH Δ 0.1 dB			DQI 10.0

Channel	Freq (MHz)	Level (dBmV)	MER (dB)
2	57.000	-3.5	42.3

Configure Display Channel Search Start

Select Test Point Template

+0.0 dB TPC

Select Limit Plan

Tap

Save Test

Save current test to a Work Order

View Tests

View previous tests

View StrataSync Configuration

1.0 dB

2.0 dB

5.0 dB

10.0 dB

20.0 dB

Auto Reference

Select Limit Plan

Tap

Ground Block

CPE

Save Test

Save Test to Work Order

Test Name

Work Order ID

Work Order - 16-49-00 08-05-2020

View Test Results

Tests for Current Work Order:

H12345

StrataSync Configuration

Test Point Templates File Name

default-testpoint-templates

Limit Plan File Name

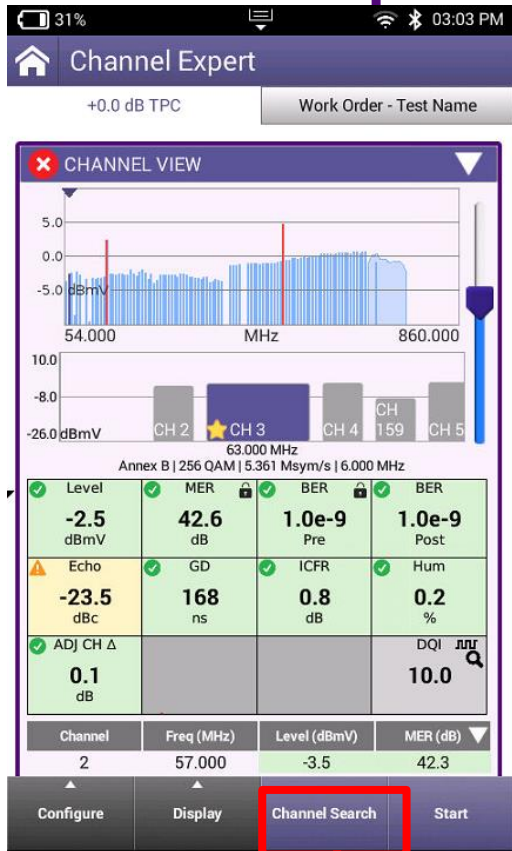
Thome1

Limit Plan Exclusion Zone File Name

default-exclusionzones



# Channel Expert Configure



The 'Search Channel' dialog box has a title bar with a back arrow and the text 'Search Channel'. It contains two main options, each in a separate box:

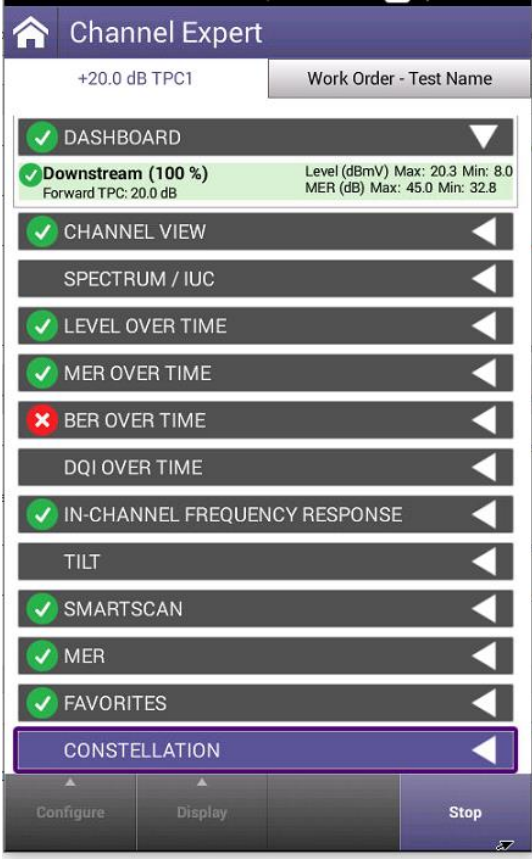
- Search by Channel Number
- Search by Channel Frequency

At the bottom of the dialog is an 'OK' button.

The 'Enter Channel Number' dialog box has a title bar with a back arrow and the text 'Enter Channel Number'. It features a text input field containing the number '2' and a 'Find Channel' button at the bottom.

The 'Enter Channel Frequency' dialog box has a title bar with a back arrow and the text 'Enter Channel Frequency'. It features a text input field containing the number '57' and a 'Find Channel' button at the bottom.

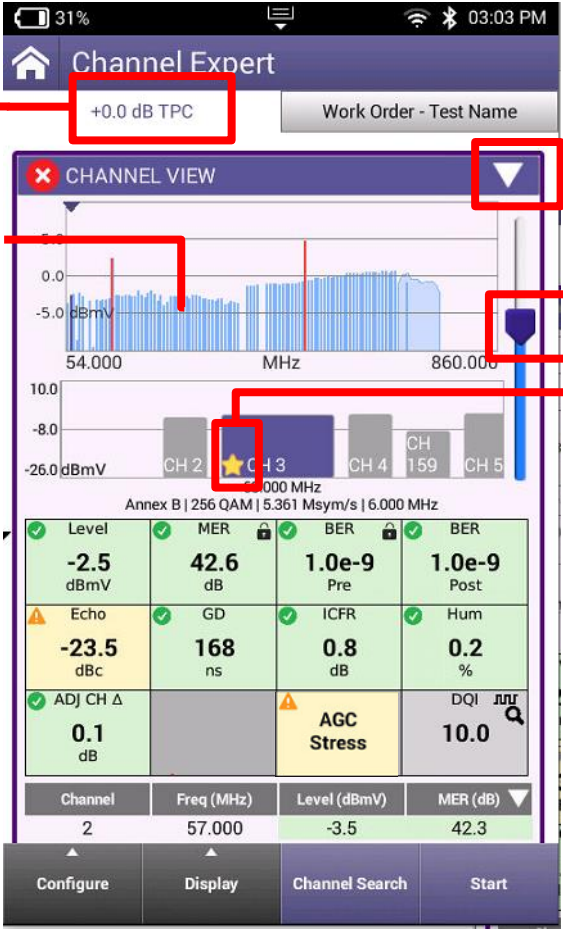
# Channel Expert QAM



Test Point Compensation

+0.0 dB TPC

Select Channel



Open/close window

Reference

Press star to turn to gold color for marking as favorite channel

Slide left or right to change channel

# Channel Expert QAM

Channel	Freq (MHz)	Level (dBmV)	MER (dB)
2	57.000	-3.5	42.3

Selected Channel

Level  
-2.5  
dBmV

Channel RF power Level

MER  
42.6  
dB

Modulation Error Ratio

Like Carrier to Noise Ratio  
Composite Second Order and  
Composite Third Order

BER  
1.0e-9  
Pre

Bit error rate that are  
detected

BER  
1.0e-9  
Post

Bit error rated that pass  
through

Adaptive Equalizer Measurements

Echo  
-23.5  
dBc

Highest tap stress level of  
reflection

GD  
168  
ns

Highest delay of a group  
of signals

ICFR  
0.8  
dB

In Channel Peak to Valley  
measurement of a QAM  
carrier

Colors represent the Limit set value

Pass Warning Fail No limit

# Channel Expert QAM

Channel Expert

+20.0 dB TPC1 Work Order - Test Name

- ✓ DASHBOARD
- ✓ Downstream (100 %) Level (dBmV) Max: 20.3 Min: 8.0 Forward TPC: 20.0 dB MER (dB) Max: 45.0 Min: 32.8
- ✓ CHANNEL VIEW
- SPECTRUM / IUC
- ✓ LEVEL OVER TIME
- ✓ MER OVER TIME
- ✗ BER OVER TIME
- DQI OVER TIME
- ✓ IN-CHANNEL FREQUENCY RESPONSE
- TILT
- ✓ SMARTSCAN
- ✓ MER
- ✓ FAVORITES
- CONSTELLATION

Configure Display Stop

Channel Expert

+0.0 dB TPC Work Order - Test Name

CHANNEL VIEW

54.000 860.000 MHz

63.000 MHz

Annex B | 256 QAM | 5.361 Msym/s | 6.000 MHz

✓ Level	✓ MER	✓ BER	✓ BER
-2.5 dBmV	42.6 dB	1.0e-9 Pre	1.0e-9 Post
⚠ Echo	✓ GD	✓ ICFR	✓ Hum
-23.5 dBc	168 ns	0.8 dB	0.2 %
✓ ADJ CH Δ		⚠ AGC Stress	DQI
0.1 dB			10.0

Channel	Freq (MHz)	Level (dBmV)	MER (dB)
2	57.000	-3.5	42.3

Configure Display Channel Search Start

Selected Channel

✓ Hum

**0.2**  
%

Hum is a signal impairment which causes the amplitude of a modulated carrier to vary

✓ ADJ CH Δ

**0.1**  
dB

Adjacent Channel video is the delta of the RF carrier that is next to it.

DQI

**10.0**

Digital Quality Index is the value assigned to show how good the RF signal is performing

⚠ AGC Stress

Automatic Gain Control level of the channel is not consistent and is varying in amplitude in milliseconds

Colors represent the Limit set value

Pass Warning Fail No limit

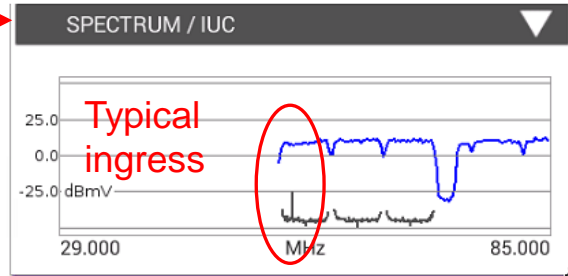
# Channel Expert QAM

Channel Expert

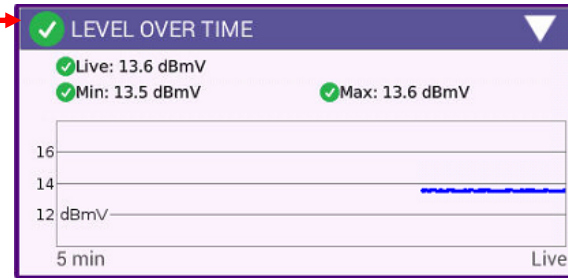
+20.0 dB TPC1    Work Order - Test Name

- ✓ DASHBOARD
- ✓ Downstream (100 %)    Level (dBmV) Max: 20.3 Min: 8.0  
Forward TPC: 20.0 dB    MER (dB) Max: 45.0 Min: 32.8
- ✓ CHANNEL VIEW
- SPECTRUM / IUC
- ✓ LEVEL OVER TIME
- ✓ MER OVER TIME
- ✗ BER OVER TIME
- DQI OVER TIME
- ✓ IN-CANNEL FREQUENCY RESPONSE
- TILT
- ✓ SMARTSCAN
- ✓ MER
- ✓ FAVORITES
- CONSTITUTION

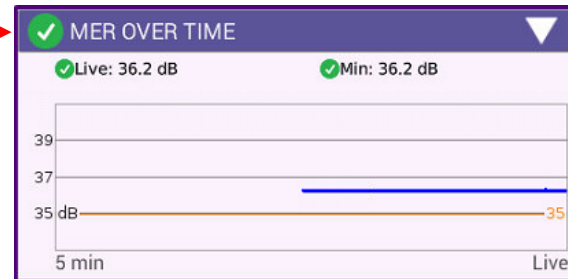
Configure    Display    Stop



Spectrum/ICU  
9 Channel Spectrum view of  
Ingress under the carrier



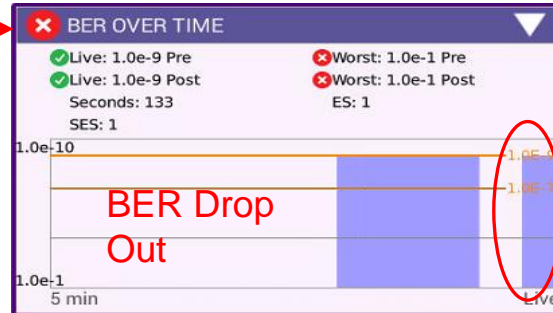
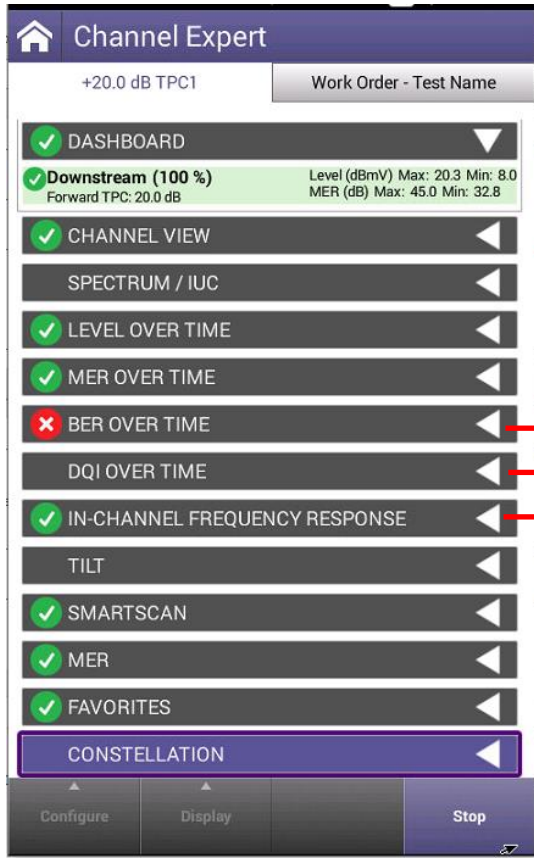
Measures the Level of  
selected channel in a 5-minute  
window



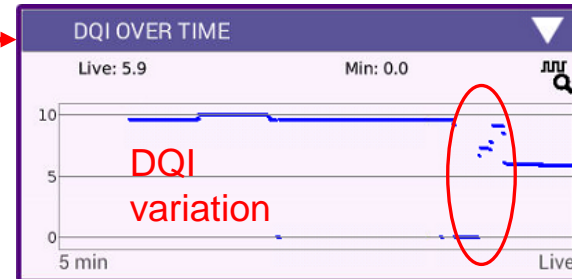
Measures the MER of  
selected channel in a 5-  
minute window



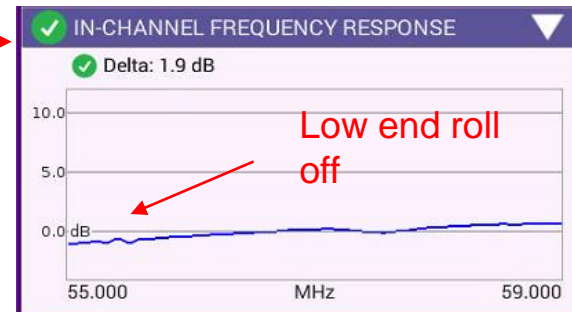
# Channel Expert QAM



Measures the BER of selected channel in a 5-minute window



Measures the DQI of selected channel in a 5-minute window



Measures the In-channel frequency response level of a QAM carrier

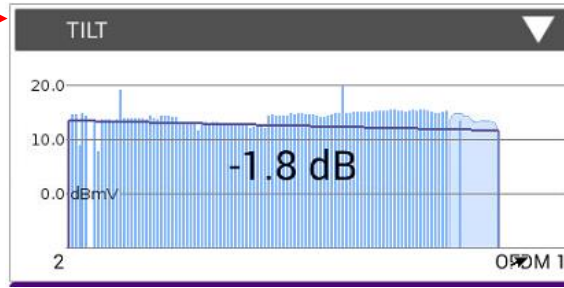


# Channel Expert QAM

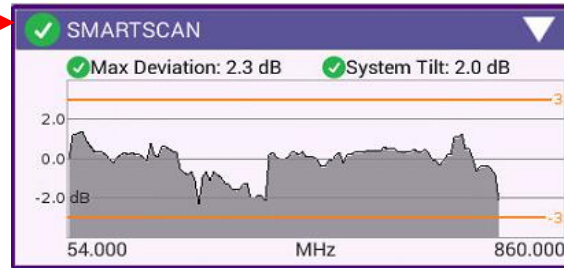
The interface shows a sidebar menu with the following items:

- Dashboard
- Downstream (100 %) - Level (dBmV) Max: 20.3 Min: 8.0, Forward TPC: 20.0 dB, MER (dB) Max: 45.0 Min: 32.8
- Channel View
- Spectrum / IUC
- Level Over Time
- MER Over Time
- BER Over Time
- DQI Over Time
- In-Channel Frequency Response
- TILT
- SMARTSCAN
- MER
- Favorites
- Constellation

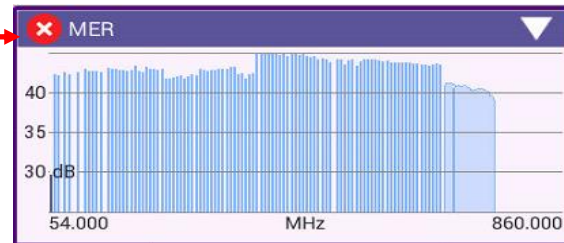
Buttons at the bottom: Configure, Display, Stop



Tilt Measures the Difference in RF level or Delta between the lowest and highest channels



Smart scan removes the over all tilt to show typical deviation in a graph



MER shows the value of all the QAM channels in the system in a bar graph

# Channel Expert QAM

Channel Expert

+20.0 dB TPC1 Work Order - Test Name

- ✓ DASHBOARD
- ✓ Downstream (100 %) Level (dBmV) Max: 20.3 Min: 8.0 Forward TPC: 20.0 dB MER (dB) Max: 45.0 Min: 32.8
- ✓ CHANNEL VIEW
- SPECTRUM / IUC
- ✓ LEVEL OVER TIME
- ✓ MER OVER TIME
- ✗ BER OVER TIME
- DQI OVER TIME
- ✓ IN-CHANNEL FREQUENCY RESPONSE
- TILT
- ✓ SMARTSCAN
- ✓ MER
- ✓ FAVORITES
- CONSTELLATION

Configure Display Stop

FAVORITES

20.0  
10.0  
0.0  
dBmV

Channel	Freq (MHz)	Level (dBmV)	MER (dB)
2	57.000	13.4	34.9
3	63.000	14.6	42.5
5	79.000	14.8	42.7
6	85.000	14.5	42.5
96	99.000	13.8	42.5
97	104.250	7.8	—
98	111.000	13.8	43.1
99	117.000	13.8	42.9
14	123.000	13.7	42.9
34	285.000	12.9	42.2
73	519.000	15.1	43.7
74	525.000	15.0	44.2

Up to 15 favorite channel can be selected by pressing the white star in the channel view and turning it gold

CONSTELLATION

Freq (MHz)  
57.000

Level  
13.4  
dBmV

MER  
34.9  
dB

See the Constellation of the selected channel

# Channel Expert OFDM

Channel Expert

+20.0 dB TPC1      Work Order - Test Name

- DASHBOARD
- Downstream (100 %)      Level (dBmV) Max: 15.3 Min: -3.7  
Forward TPC: 20.0 dB      MER (dB) Max: 45.7 Min: 26.5
- CHANNEL VIEW
- SPECTRUM / IUC
- LEVEL VARIATION (OFDM)
- MER VARIATION (OFDM)
- PROFILE ANALYSIS
- IN-CHANNEL FREQUENCY RESPONSE
- TILT
- SMARTSCAN
- MER
- FAVORITES

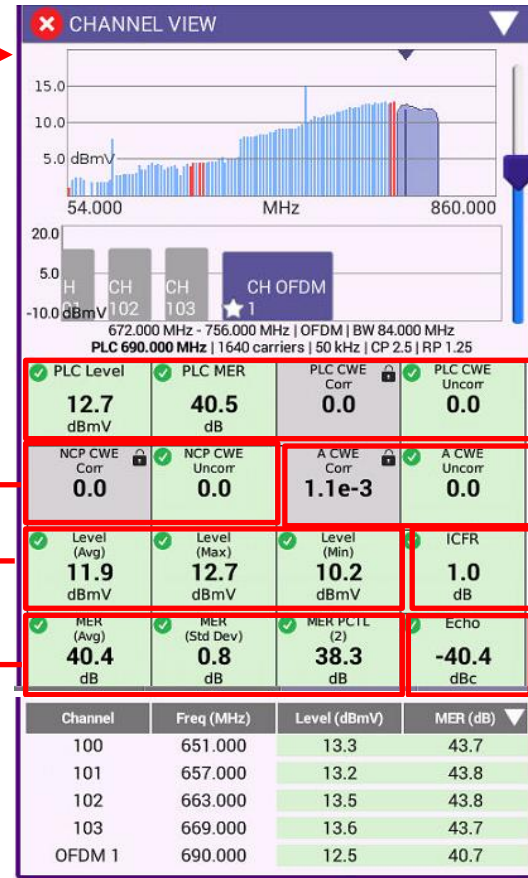
Configure    Display    Channel Search    Stop

NCP Next Codeword Pointer  
Tells the modem which codeword and present and in which profile

Level measurements of all the carriers based on 6 MHz

Average MER of all the QAM carriers.

MER Std Deviation  
MER a 2%



PLC PHY Link Channel  
Contains critical OFDM signal information

Codeword errors of profile A

ICFR- In Channel Frequency Response

Adaptive equalizer worst case stress tap

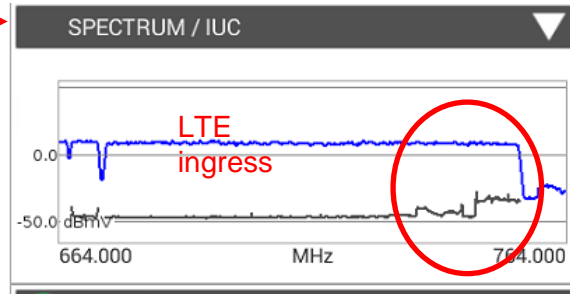
Level and MER of 4 adjacent SC-QAM and OFDM

# Channel Expert OFDM

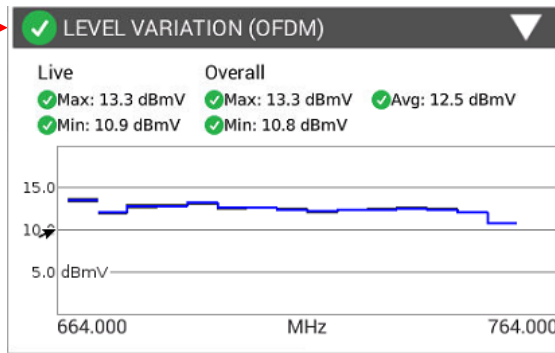
Channel Expert  
+20.0 dB TPC1    Work Order - Test Name

- DASHBOARD
- Downstream (100 %)    Level (dBmV) Max: 15.3 Min: -3.7  
Forward TPC: 20.0 dB    MER (dB) Max: 45.7 Min: 26.5
- CHANNEL VIEW**
- SPECTRUM / IUC
- LEVEL VARIATION (OFDM)
- MER VARIATION (OFDM)
- PROFILE ANALYSIS
- IN-CHANNEL FREQUENCY RESPONSE
- TILT
- SMARTSCAN
- MER
- FAVORITES

Configure    Display    Channel Search    Stop



IUC Ingress under carrier



Level of OFDM  
carries measures at  
6 MHz spacing

# Channel Expert OFDM

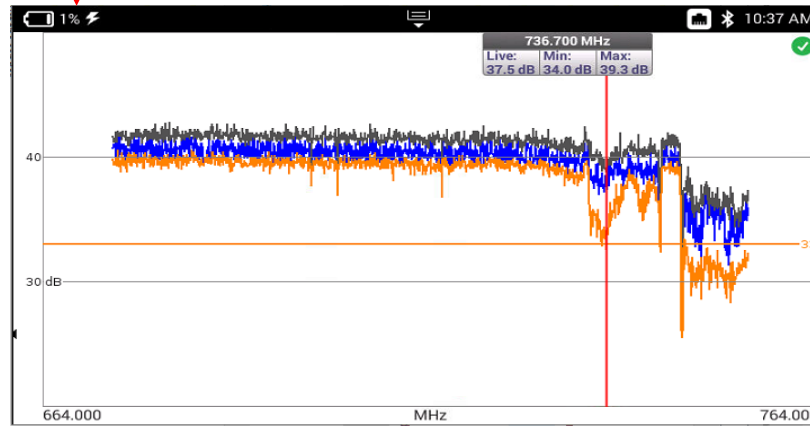
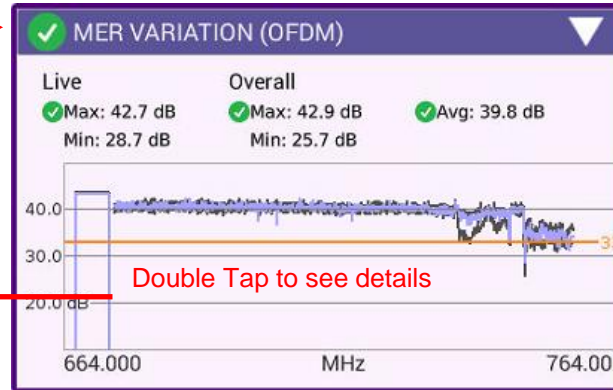
Channel Expert

+20.0 dB TPC1      Work Order - Test Name

- DASHBOARD
- Downstream (100 %)      Level (dBmV) Max: 15.3 Min: -3.7  
Forward TPC: 20.0 dB      MER (dB) Max: 45.7 Min: 26.5
- CHANNEL VIEW
- SPECTRUM / IUC
- LEVEL VARIATION (OFDM)
- MER VARIATION (OFDM)
- PROFILE ANALYSIS
- IN-CHANNEL FREQUENCY RESPONSE
- TILT
- SMARTSCAN
- MER
- FAVORITES

Configure    Display    Channel Search    Stop

MER graph of OFDM



Can use marker to see exact frequencies of carriers and MER values

# Channel Expert OFDM

Channel Expert

+20.0 dB TPC1      Work Order - Test Name

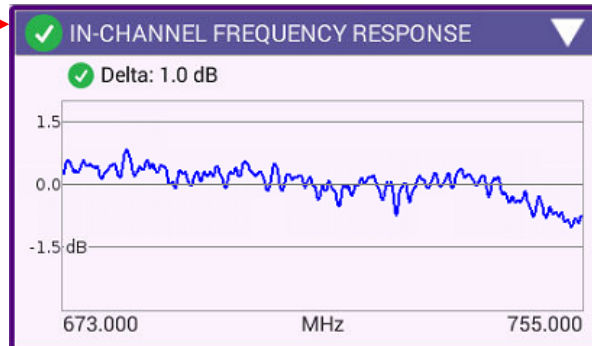
- DASHBOARD
- Downstream (100 %)      Level (dBmV) Max: 15.3 Min: -3.7  
Forward TPC: 20.0 dB      MER (dB) Max: 45.7 Min: 26.5
- CHANNEL VIEW
- SPECTRUM / IUC
- LEVEL VARIATION (OFDM)
- MER VARIATION (OFDM)
- PROFILE ANALYSIS
- IN-CHANNEL FREQUENCY RESPONSE
- TILT
- SMARTSCAN
- MER
- FAVORITES

Configure    Display    Channel Search    Stop

PROFILE	LOCKED	CWE (Corr)	CWE (Uncorr)	Max Mod
PLC	YES	0.0	0.0	16QAM
NCP	YES	0.0	0.0	16QAM
A	YES	3.9e-1	0.0	256QAM
B	YES	1.7e-1	0.0	1024QAM
C	YES	9.8e-1	0.0	2048QAM
D	YES	9.9e-1	3.4e-5	2048QAM

Profile View of Cable modem.

Helps determine how well the network is performing at this location

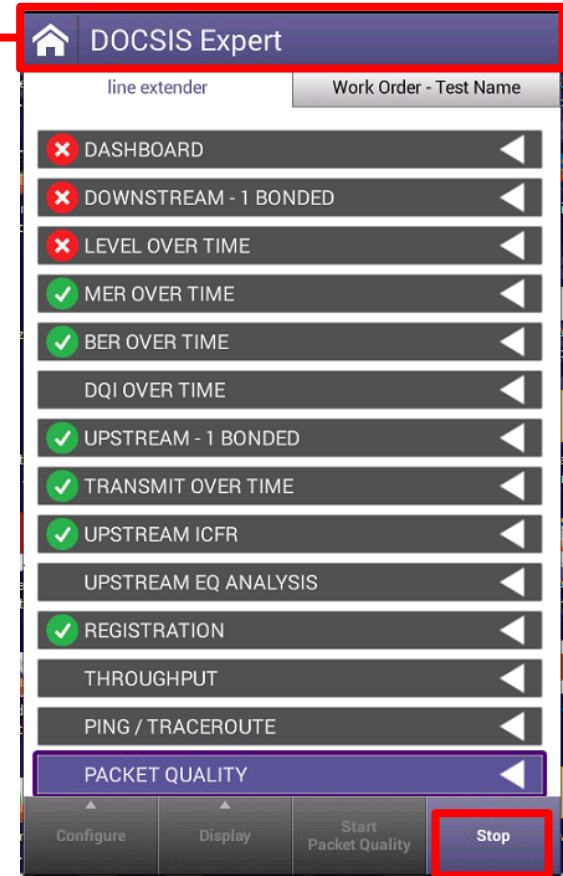
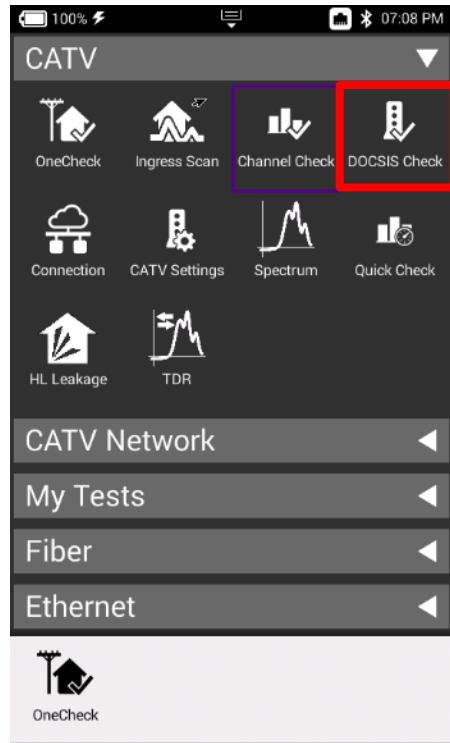


In channel Frequency Response across a OFDM band can help determine if a reflection or roll off is occurring



# DOCSIS Expert

# DOCSIS Check



# DOCSIS Check

DOCSIS Expert

+0.0 dB TPC    Work Order - Test Name

- ✓ DOWNSTREAM - 32 BONDED
- ✓ LEVEL OVER TIME
- ✓ MER OVER TIME
- ✓ BER OVER TIME
- DQI OVER TIME
- ✓ UPSTREAM - 5 BONDED
- ✓ TRANSMIT OVER TIME
- ✓ UPSTREAM ICFR
- UPSTREAM EQ ANALYSIS
- ✓ REGISTRATION
- THROUGHPUT
- PING / TRACEROUTE
- PACKET QUALITY

Configure    Display    Channel Search    Stop

Channel	Freq (MHz)	Level (dBmV)	MER (dB)
67	483.000	12.1	42.4
68	489.000	12.5	42.2
69	495.000	12.6	41.9
71	507.000	12.9	42.7
72	513.000	12.9	42.7
73	519.000	13.2	42.2
74	525.000	13.2	42.5
75	531.000	13.1	42.7
76	537.000	13.2	42.0

DOCSIS Expert

✓ DASHBOARD

✓ DOCSIS (100 %) Status: Connected

32x (1x OFDM) | Downstream

Forward TPC: 0.0 dB  
Min Rx: 12.1 dBmV    Min MER: 35.9 dB  
Max BER: 1.0e-9 (pre)    Max MER: 43.8 dB

Upstream | 5x

Max Tx: 46.8 dBmV    Max ICFR: 1.4 dB

+0.0 dB TPC    Work Order - Test Name

✓ DOWNSTREAM - 32 BONDED

15.0  
10.0  
5.0  
dBmV

54.000    MHz    860.000

21.0  
14.0  
7.0  
dBmV

513.000 MHz

Annex B | 256 QAM | 5.361 Msym/s | 6.000 MHz

✓ Level	✓ MER	✓ BER	✓ BER
13.0 dBmV	42.7 dB	1.0e-9 Pre	1.0e-9 Post
✓ Echo	✓ GD	✓ ICFR	DQI
-42.4 dBc	24 ns	0.3 dB	10.0

Channel    Freq (MHz)    Level (dBmV)    MER (dB)

Stop

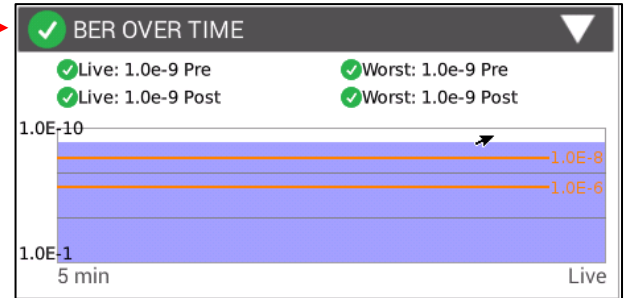
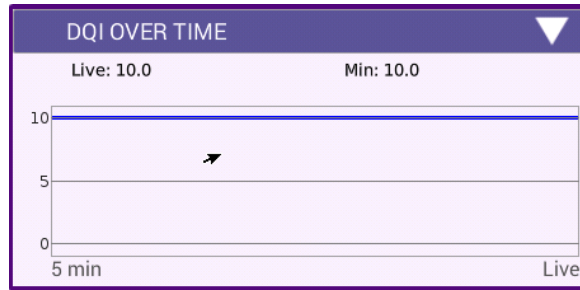
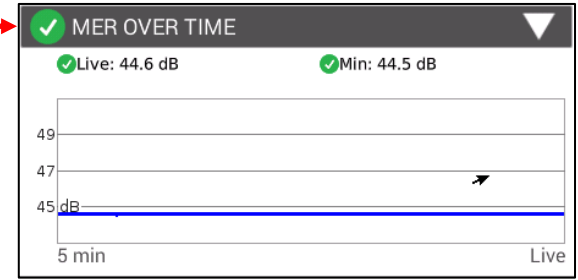
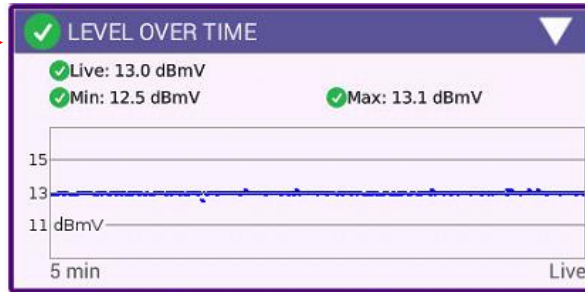
# DOCSIS Expert

DOCSIS Expert

+0.0 dB TPC      Work Order - Test Name

- ✓ DOWNSTREAM - 32 BONDED
- ✓ LEVEL OVER TIME
- ✓ MER OVER TIME
- ✓ BER OVER TIME
- ✓ DQI OVER TIME
- ✓ UPSTREAM - 5 BONDED
- ✓ TRANSMIT OVER TIME
- ✓ UPSTREAM ICFR
- UPSTREAM EQ ANALYSIS
- ✓ REGISTRATION
- THROUGHPUT
- PING / TRACEROUTE
- PACKET QUALITY

Configure    Display    Channel Search    **Stop**



# DOCSIS Expert

DOCSIS Expert

+0.0 dB TPC    Work Order - Test Name

- DOWNSTREAM - 32 BONDED
- LEVEL OVER TIME
- MER OVER TIME
- BER OVER TIME
- DQI OVER TIME
- UPSTREAM - 5 BONDED
- TRANSMIT OVER TIME
- UPSTREAM ICFR
- UPSTREAM EQ ANALYSIS
- REGISTRATION
- THROUGHPUT
- PING / TRACEROUTE
- PACKET QUALITY

Configure    Display    Channel Search    Stop

UPSTREAM - 5 BONDED

Reference bandwidth: Modem Default

UCD 4 | 16.400 MHz  
64 QAM | 6.400 MHz | ATDMA

UCD	Freq (MHz)	Level (dBmV)	ICFR (dB)
4	16.400	46.5	0.8
3	22.800	46.8	0.8
2	29.200	46.3	0.6
1	35.600	45.8	0.7
9	39.600	46.5	1.4

TRANSMIT OVER TIME

Live: 46.5 dBmV  
Min: 46.5 dBmV    Max: 46.5 dBmV

5 min    Live

UPSTREAM EQ ANALYSIS

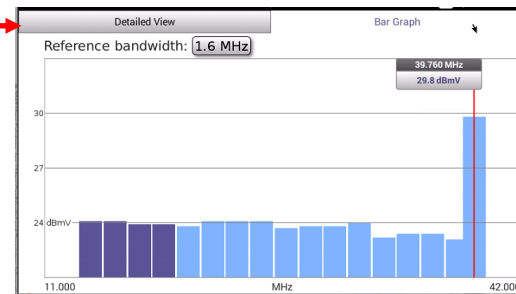
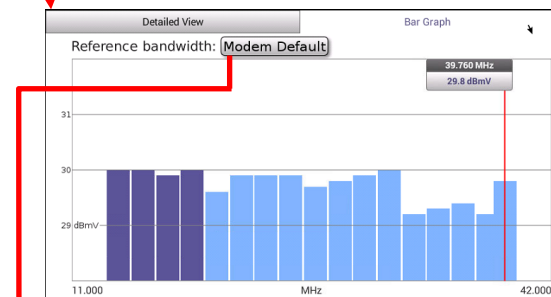
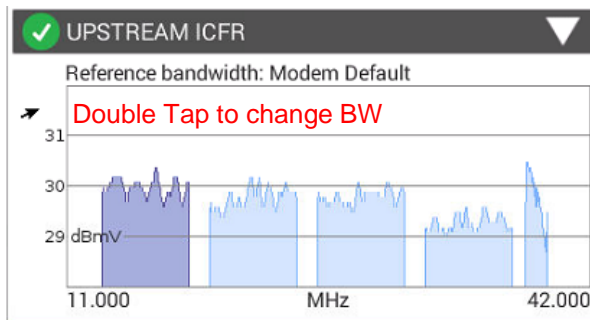
Channel:		EQ Tap:	
Frequency:	16.400 MHz	Time:	0.20 $\mu$ s
TX Level:	46.5 dBmV	Level:	-29.8 dBc
Bandwidth:	6.4 MHz	Distance:	79.7 ft
		VOP:	0.830

# DOCSIS Expert

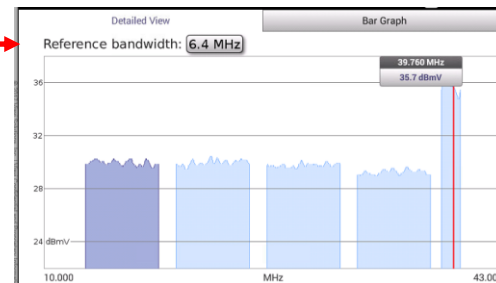
The main menu of the DOCSIS Expert application. It features a home icon, the title 'DOCSIS Expert', and a 'Work Order - Test Name' field. Below this is a list of menu items, each with a status indicator (checkmark) and a left-pointing arrow. The 'UPSTREAM ICFR' item is highlighted with a red box. At the bottom, there are four buttons: 'Configure', 'Display', 'Channel Search', and 'Stop', with the 'Stop' button also highlighted by a red box.

- DOWNSTREAM - 32 BONDED
- LEVEL OVER TIME
- MER OVER TIME
- BER OVER TIME
- DQI OVER TIME
- UPSTREAM - 5 BONDED
- TRANSMIT OVER TIME
- UPSTREAM ICFR**
- UPSTREAM EQ ANALYSIS
- REGISTRATION
- THROUGHPUT
- PING / TRACEROUTE
- PACKET QUALITY

Buttons: Configure, Display, Channel Search, **Stop**



A dialog box titled 'Select Reference Bandwidth' with three radio button options: '1.6 MHz', '6.4 MHz', and 'Modem Default'. The 'Modem Default' option is selected. Red arrows point from this dialog to the 'UPSTREAM ICFR' menu item and the two detailed view graphs.





# DOCSIS Expert

DOCSIS Expert

+0.0 dB TPC    Work Order - Test Name

- DOWNSTREAM - 32 BONDED
- LEVEL OVER TIME
- MER OVER TIME
- BER OVER TIME
- DQI OVER TIME
- UPSTREAM - 5 BONDED
- TRANSMIT OVER TIME
- UPSTREAM ICFR
- UPSTREAM EQ ANALYSIS
- REGISTRATION
- THROUGHPUT
- PING / TRACEROUTE
- PACKET QUALITY

Configure    Display    Channel Search    Stop

REGISTRATION

Service Plan: 00:07:11:1F:8C:12  
Config File: d11\_walledgarden\_v6.cm

**Cable Modem**

Provisioning Mode: IPV6 ONLY  
 IPv6 Address: 2001:558:40a2:42:207:11ff:fe1f:8c12/128  
 IPv6 Gateway Address: fe80::201:5cff:feb2:3046  
 IPv6 Config File: d11\_walledgarden\_v6.cm

**CPE**

IPv4 Address: 98.226.73.212  
 IPv4 Subnet Mask: 255.255.248.0  
 IPv4 Gateway Address: 98.226.72.1

**Servers**

IPv6 TFTP Server: fe80::201:5cff:feb2:3046  
 IPv6 DHCP Server: fe80::201:5cff:feb2:3046  
 IPv6 TOD Server: fe80::201:5cff:feb2:3046

THROUGHPUT

THROUGHPUT (100 %)

Downstream URL: http://spt01mtpkca.mtpk.ca.charter.com/mtpkr2D2wh3reRuN0w.iso  
 Upstream URL: http://spt01mtpkca.mtpk.ca.charter.com/mtpkr2D2wh3reRuN0w.iso

1.19 Gbps    42.30 Mbps  
 RTT: 19 ms    RTT: 19 ms

Receive    Send

Configure    Start Throughput

PING / TRACEROUTE

	Current	Minimum	Average	Maximum
Delay (ms)	0	0	0	0
Destination	98.226.72.1			
Echoes Sent	10			
Replies Returned	0			
Replies Lost	10			
Replies Lost %	100.00%			
Error				

PACKET QUALITY

- Packet Loss: 299 Sent, 0.0 % Loss
- Max Round Trip Delay: 26 ms
- Max Jitter: 19 ms

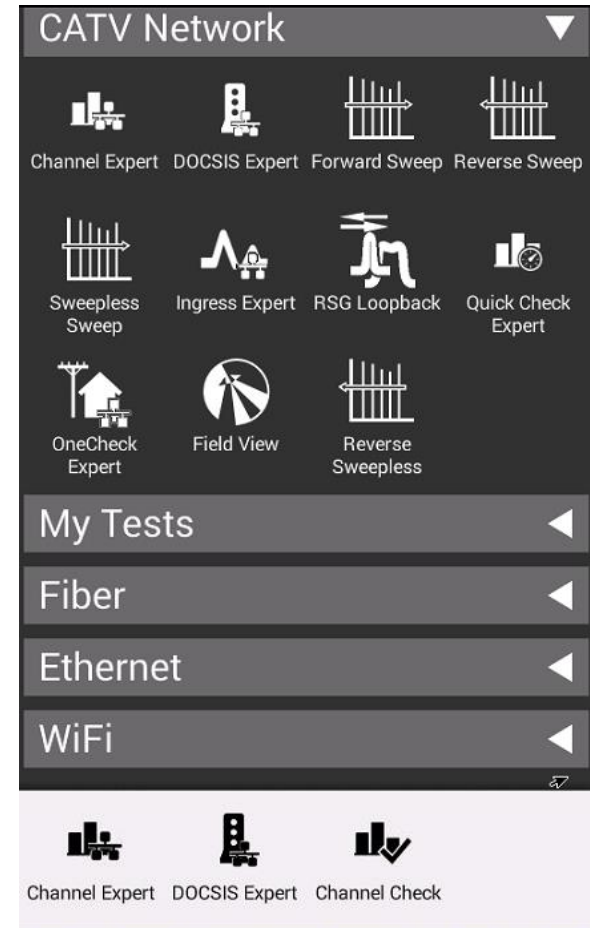
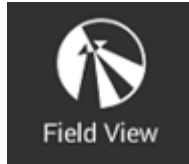
Stop Packet Quality

Start Pass Through Cable Modem

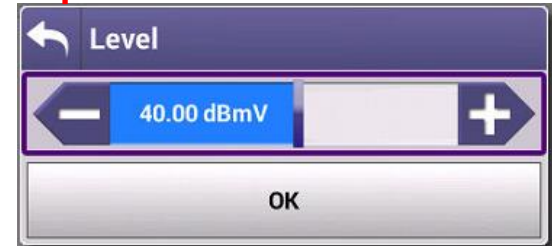
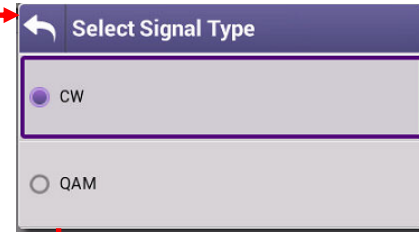
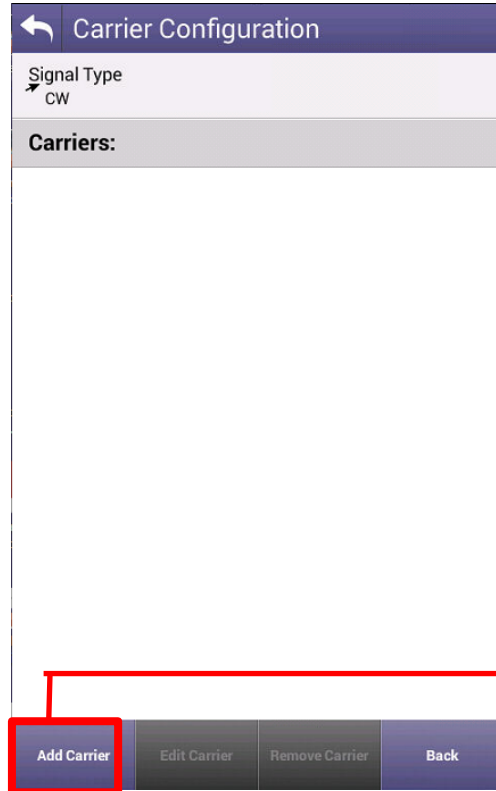
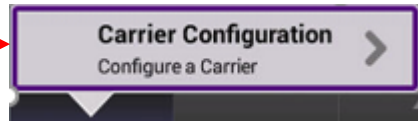
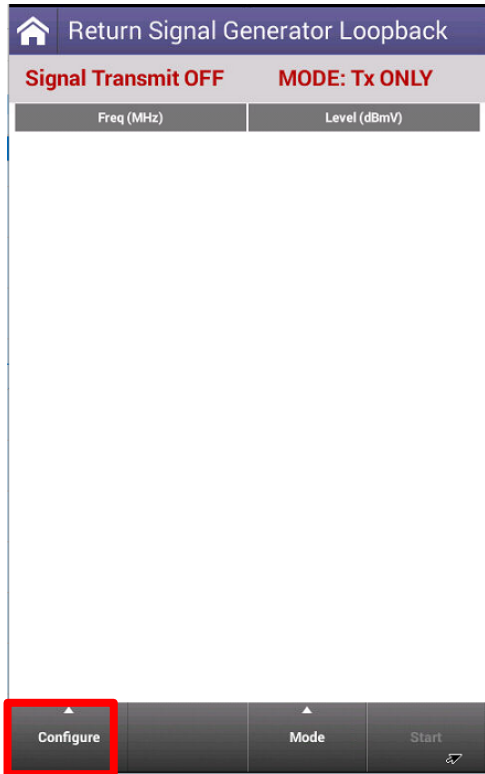
# Return Signal Generator (RSG) w/ Loopback

# Getting Started with RSG Loopback

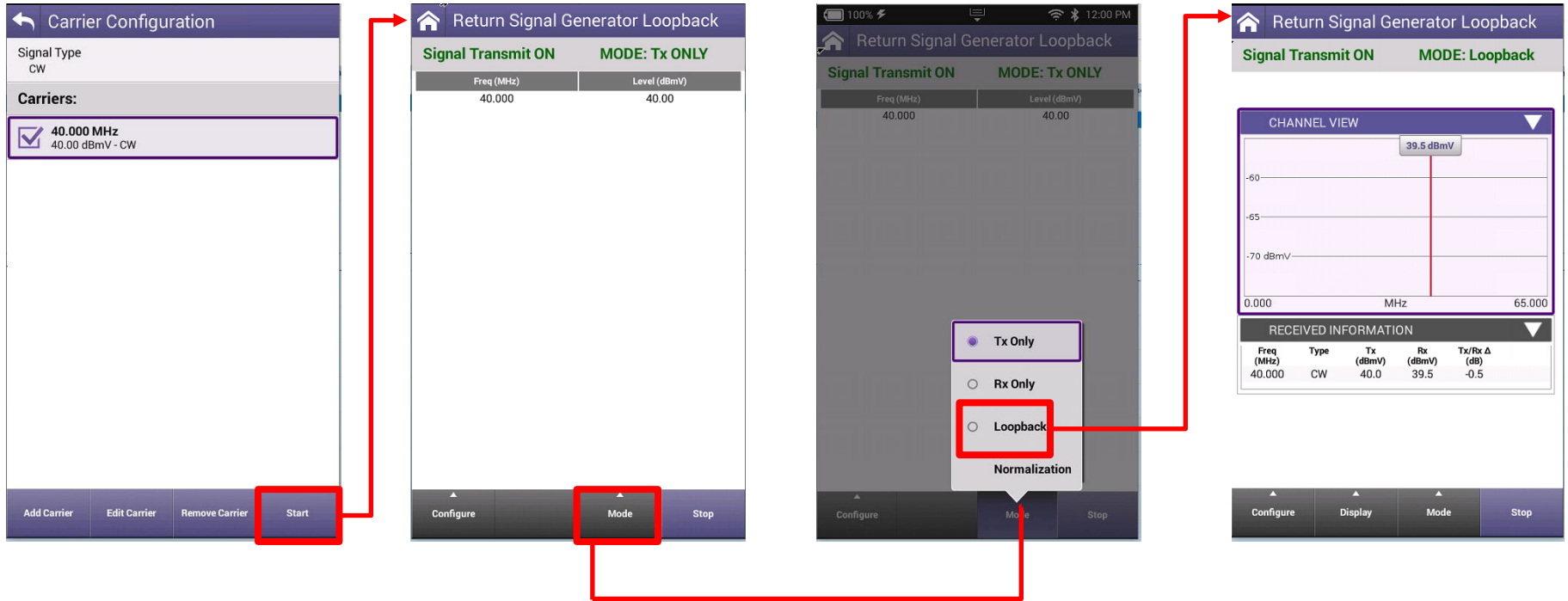
- RFG Loopback mode will appear in the CATV Network section on the ONX home screen
- To enter the mode press, or select, the RFG Loopback icon



# RSG Loopback



# RSG Loopback

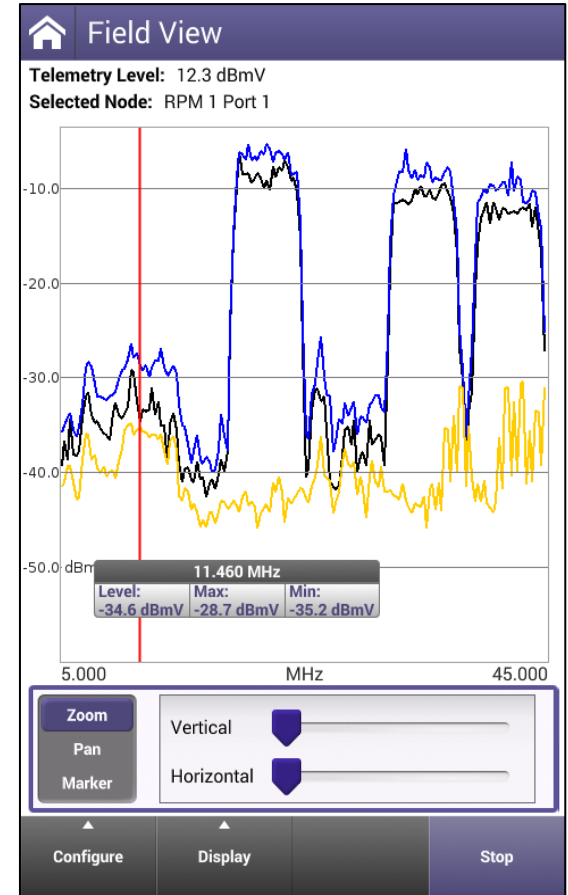


# Field View with RSG



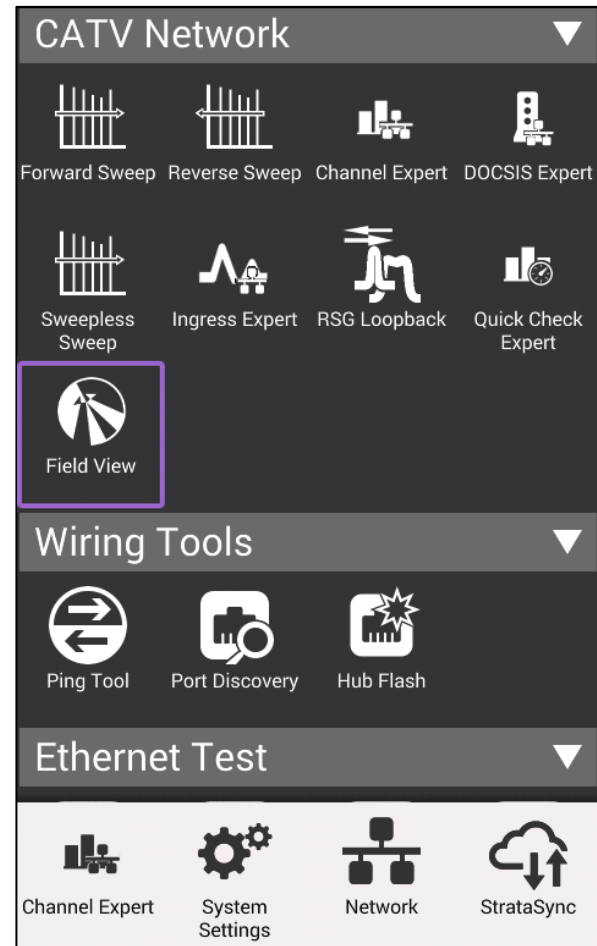
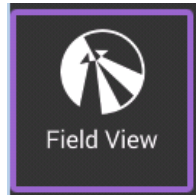
# Ingress/Noise Mitigation Test Process

- Ingress/noise in the upstream path is very common and impacts subscriber services
- Ingress/noise can be constant, or intermittent
  - If ingress/noise is constant, and tech fixes an issue at a local test point, did that clean up the ingress/noise received in the headend, or is there still another issue at some other point in the network?
  - If ingress is intermittent, and spectrum is clean, tech doesn't know whether there is no ingress at this particular point, or the ingress isn't happening at this time
- Meter spectrum mode enables tech to test upstream spectrum only at their local test point



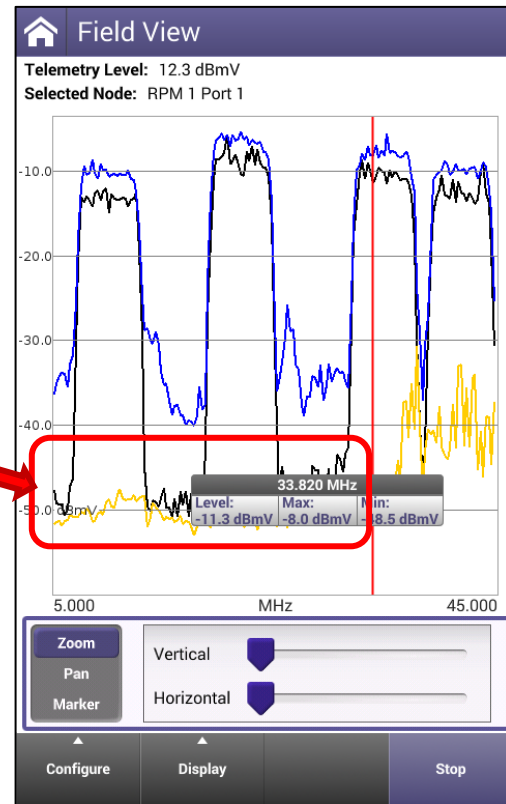
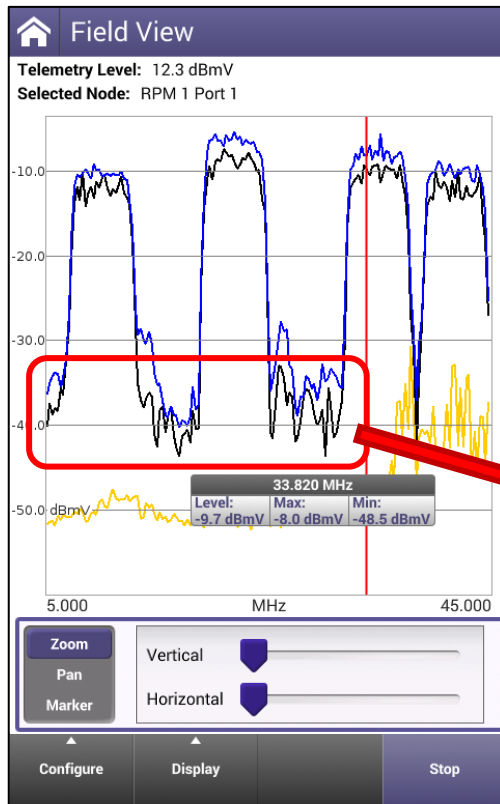
# Getting Started with Field View

- If enabled on the ONX, Field View mode will appear in the CATV Network section on the ONX home screen
- To enter the mode press, or select, the Field View icon



# Using Field View

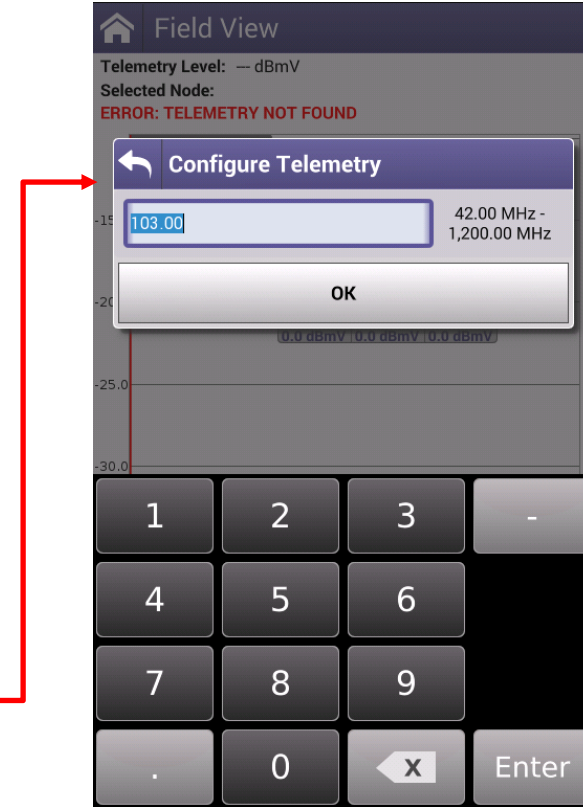
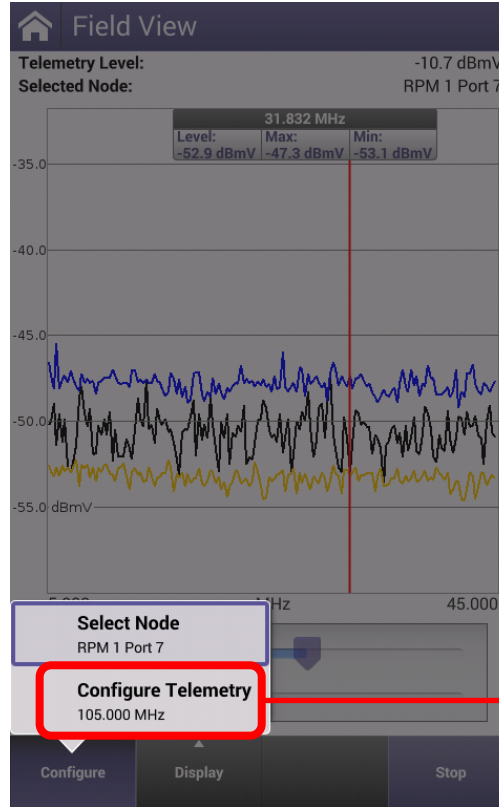
- Field View is the remote view of the headend return path on an instrument located in the field
- Isolates the noise source
- Using the remote display of the headend the tech can quickly confirm if actions taken are improving the network or if additional work is needed
- When an interfering ingress source is removed, the noise present at the headend will drop out revealing a lower noise floor at the headend
- A lower system noise floor eases demodulation of upstream carriers for the CMTS and leads to a better quality of experience for subscribers



**Left:** Noise visible between the active upstream carriers  
**Right:** Noise source cleaned up reveals a much lower system noise floor

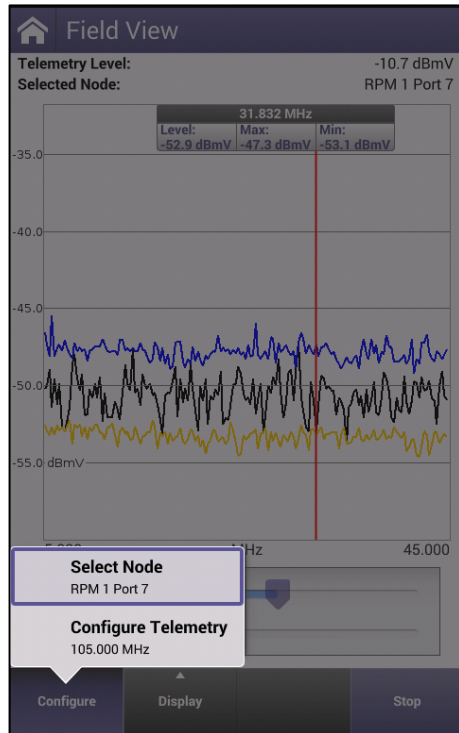
# Setting Field View Telemetry Receive Frequency

- An HSM connected to PathTrak at the headend is required for Field View
- The HSM sends a telemetry signal downstream for field devices, like the ONX or DSAM, providing visibility of the return spectrum remotely
- The telemetry receive frequency is entered on the ONX by pressing the Configure button then selecting “Configure Telemetry”
- This will bring up an entry box where the telemetry frequency can be entered



# Field View Node Selection and Information

- Users can select the desired node from the list of actively broadcasting nodes from the PathTrak system
- Users can also get details of the specific broadcasting nodes

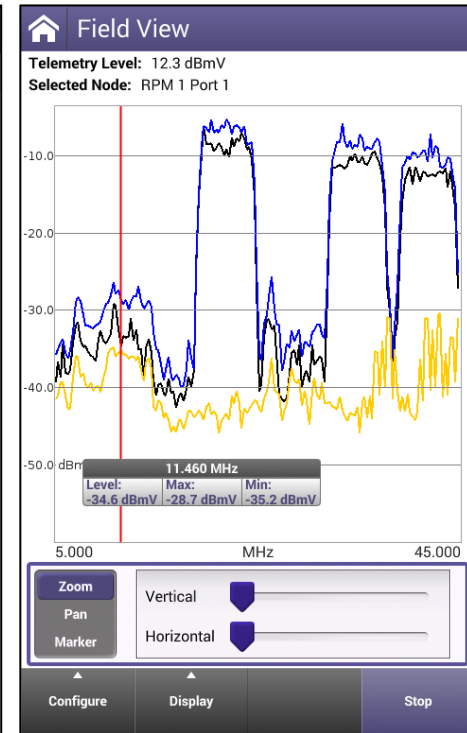


The screenshot shows the 'All Nodes' list. The nodes are listed with their status: RPM 1 Port 2 (Inactive), RPM 1 Port 3\_renamed (Active), RPM 1 Port 4 (Inactive), RPM 1 Port 5 (Active), RPM 1 Port 6 (Inactive), RPM 1 Port 7 (Active and selected with a checkmark), RPM 1 Port 8 (Inactive), RPM 2 Port 1 (Inactive), RPM 2 Port 2 (Inactive), RPM 2 Port 3 (Inactive), RPM 2 Port 4 (Inactive), and RPM 2 Port 5 (Inactive). The bottom navigation bar includes 'Node Info', 'Show Active Nodes', and 'Select Node' buttons.

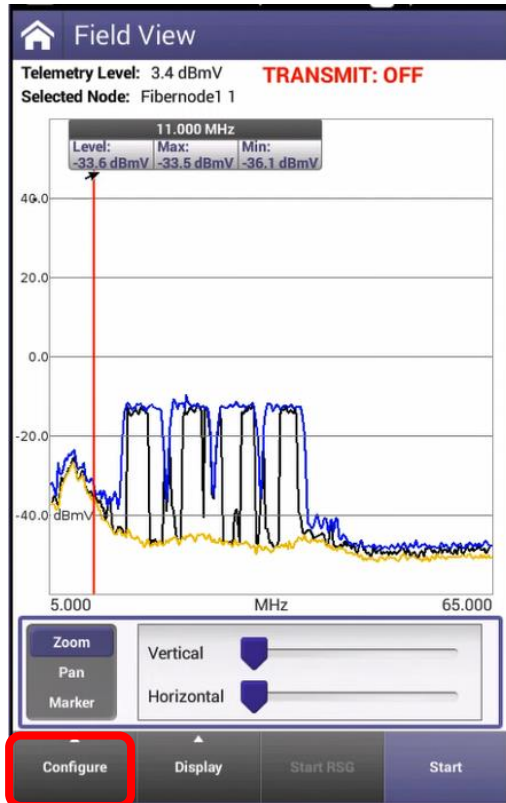
Node Name	Status
RPM 1 Port 2	Inactive
RPM 1 Port 3_renamed	Active
RPM 1 Port 4	Inactive
RPM 1 Port 5	Active
RPM 1 Port 6	Inactive
✓ RPM 1 Port 7	Active
RPM 1 Port 8	Inactive
RPM 2 Port 1	Inactive
RPM 2 Port 2	Inactive
RPM 2 Port 3	Inactive
RPM 2 Port 4	Inactive
RPM 2 Port 5	Inactive

The screenshot shows the 'Node Information' screen for the selected node, RPM 1 Port 7. The status is 'Broadcasting'. The table below provides technical details:

Broadcasting	
Name	RPM 1 Port 7
UID	332
Center Frequency	25.000 MHz
Span	40.000 MHz
Dwell	100 $\mu$ s
Points	161
VBW	100 KHz
RBW	300 KHz



# FieldView RSG Transmit Carriers



- Select Node
- Configure Telemetry  
103.000 MHz
- Carrier Configuration**  
Configure transmit carriers
- Normalize  
Perform Normalization

Carrier Configuration

Signal Type  
CW

Carriers:

- 5.000 MHz  
15.00 dBmV - CW

Buttons: Add Carrier, Edit Carrier, Remove Carrier, Done

Add Carrier

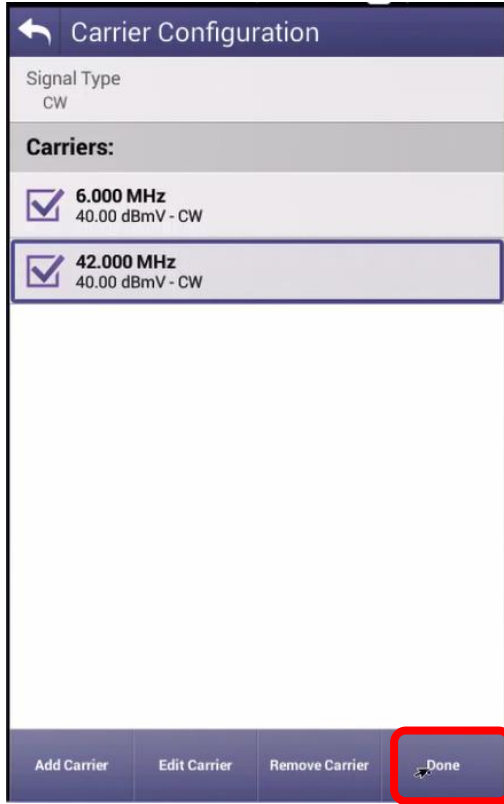
Frequency  
42.000 MHz

Level  
40.00 dBmV

OK



# Field View RSG Transmit Carriers



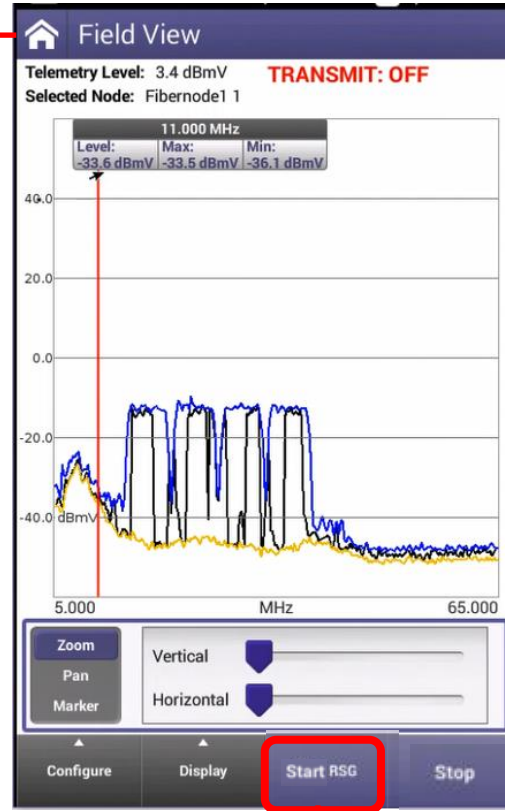
Carrier Configuration

Signal Type  
CW

**Carriers:**

- 6.000 MHz  
40.00 dBmV - CW
- 42.000 MHz  
40.00 dBmV - CW

Buttons: Add Carrier, Edit Carrier, Remove Carrier, Done



Field View

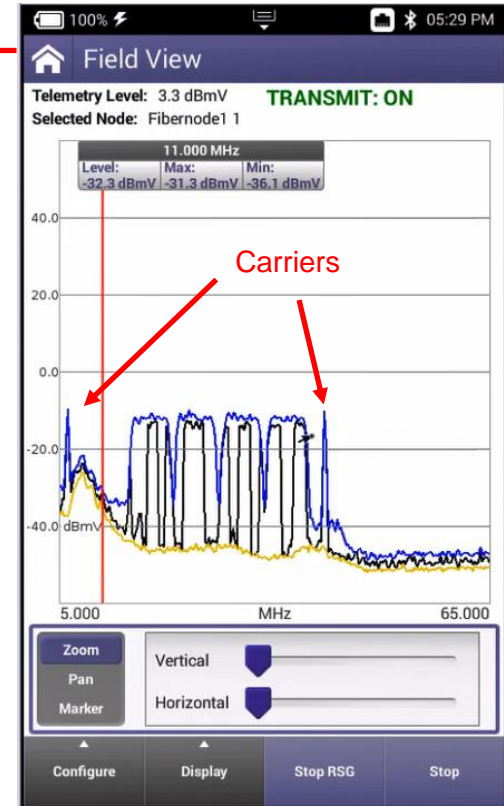
Telemetry Level: 3.4 dBmV **TRANSMIT: OFF**

Selected Node: Fibernode1 1

11.000 MHz		
Level:	Max:	Min:
-33.6 dBmV	-33.5 dBmV	-36.1 dBmV

Graph: dBmV vs MHz (5.000 to 65.000)

Buttons: Zoom, Pan, Marker, Vertical, Horizontal, Configure, Display, Start RSG, Stop



Field View

Telemetry Level: 3.3 dBmV **TRANSMIT: ON**

Selected Node: Fibernode1 1

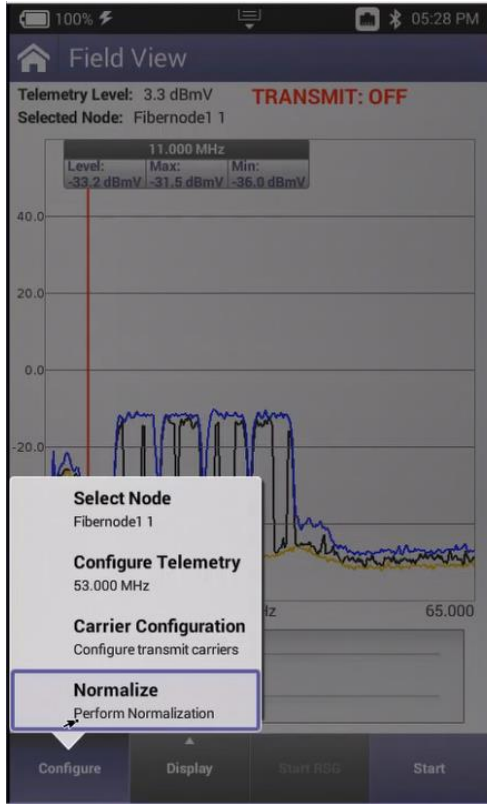
11.000 MHz		
Level:	Max:	Min:
-32.3 dBmV	-31.3 dBmV	-36.1 dBmV

Graph: dBmV vs MHz (5.000 to 65.000)

Annotations: Red arrows labeled "Carriers" pointing to the signal peaks.

Buttons: Zoom, Pan, Marker, Vertical, Horizontal, Configure, Display, Stop RSG, Stop

# Field View Normalization



The screenshot shows the 'Normalization' screen. At the top, it says 'Normalization'. Below this, it displays the status:

Status:  
Last Normalization Time:  
January 02, 2019 02:37:24 PM

In the center, there is a diagram of a purple handheld meter with a loop antenna. Below the diagram, the text reads:

Normalization is required for accurate results.  
Connect a short cable between port 1 and port 2 of the meter and press Start.

At the bottom right, there is a 'Start' button.

The screenshot shows the 'Normalization' screen. At the top, it says 'Normalization'. Below this, it displays the status:

Status: Completed Successfully  
Last Normalization Time:  
September 25, 2020 02:13:28 PM

In the center, there is a diagram of a purple handheld meter with a loop antenna. Below the diagram, the text reads:

Normalization is required for accurate results.  
Connect a short cable between port 1 and port 2 of the meter and press Start.

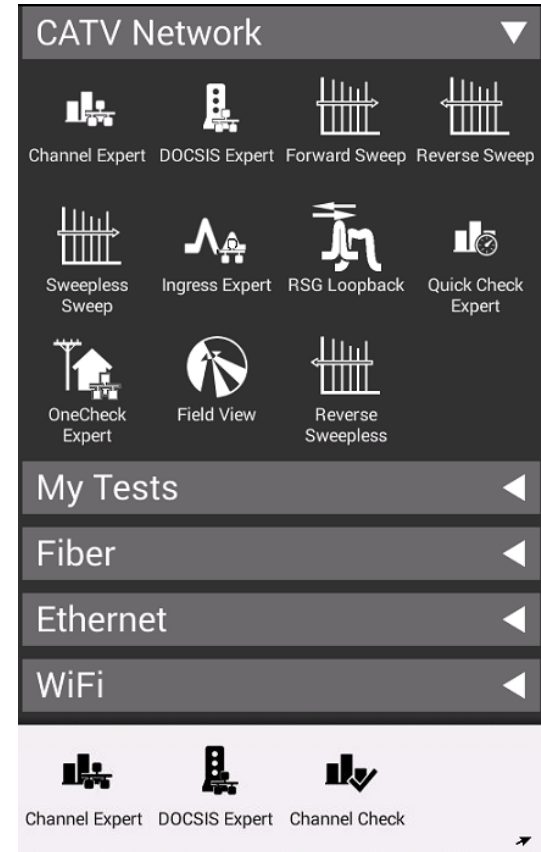
At the bottom right, there is a 'Start' button.

# OneCheck Expert

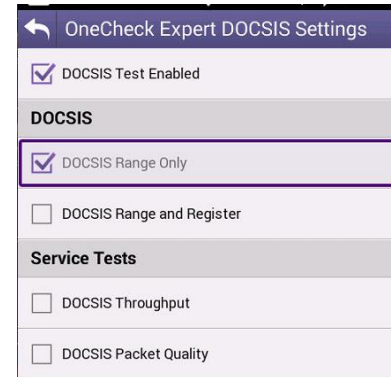
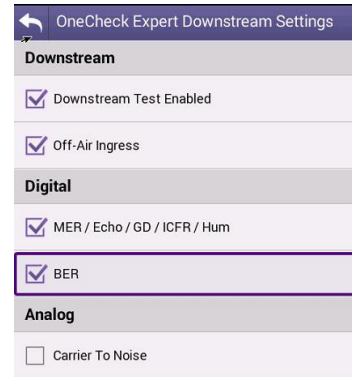
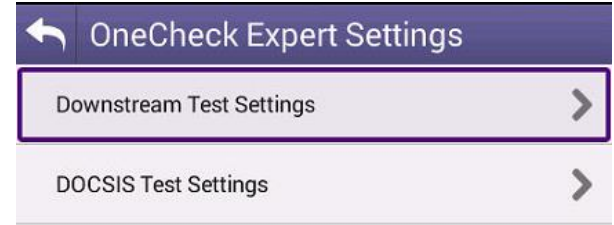
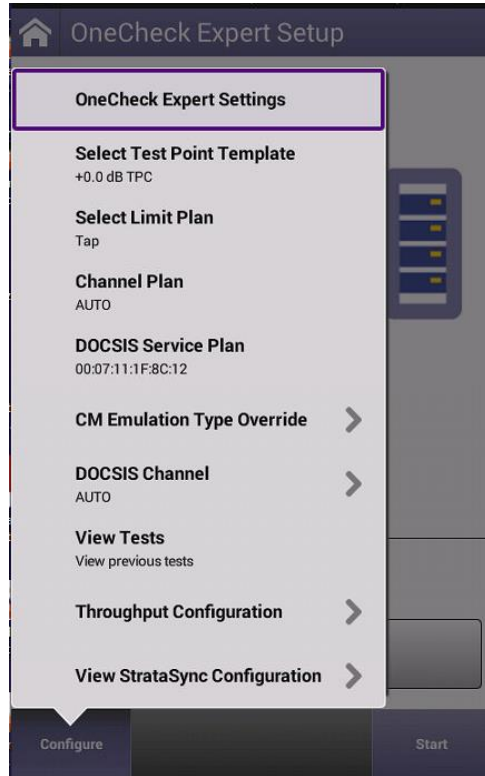
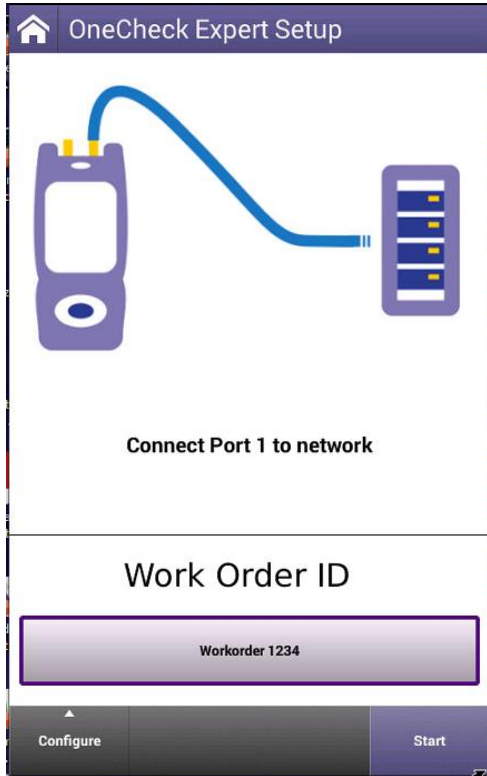
# Getting Started with OneCheck Expert

OneCheck Expert mode will appear in the CATV Network section on the ONX home screen

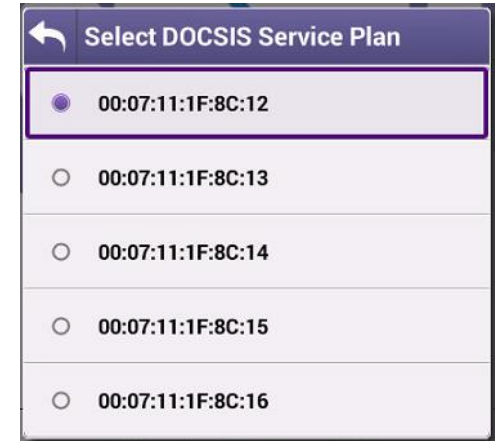
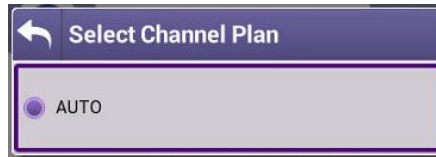
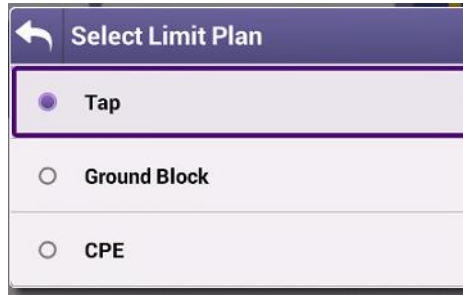
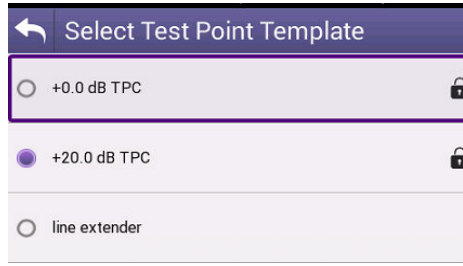
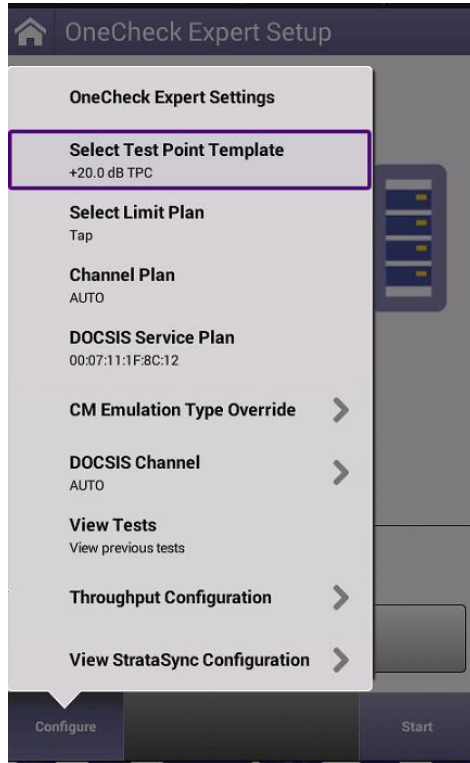
To enter the mode press, or select, the Field View icon



# OneCheck Expert

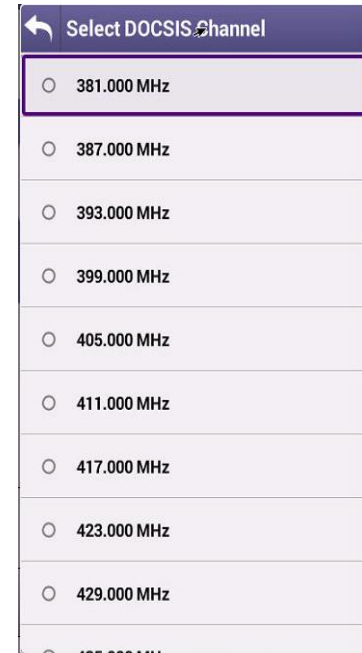
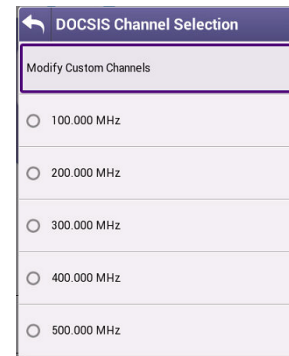
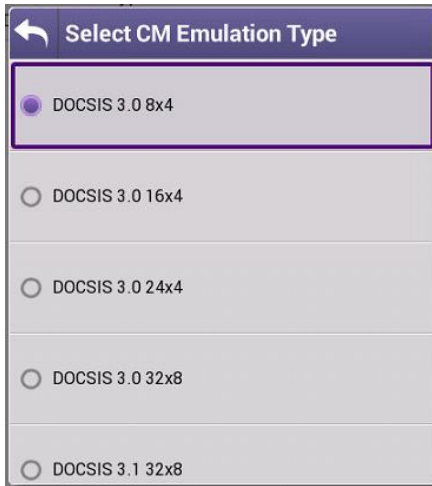
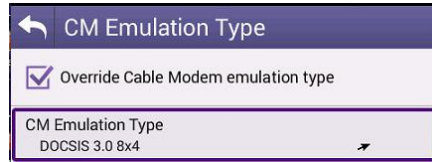
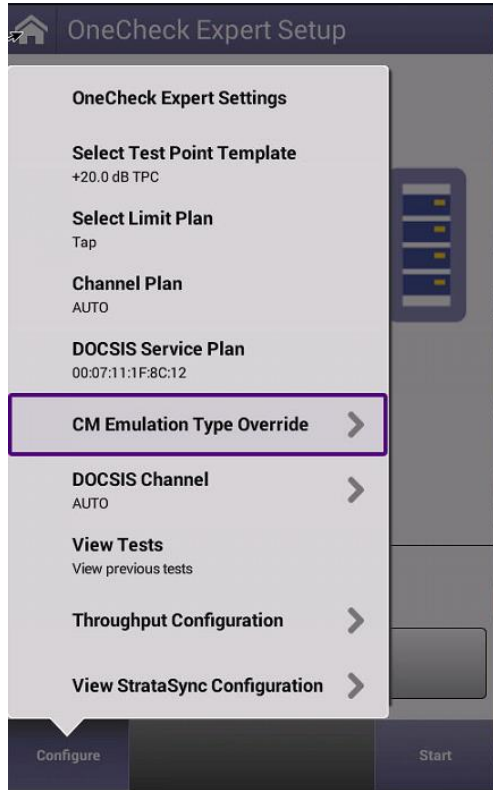


# OneCheck Expert

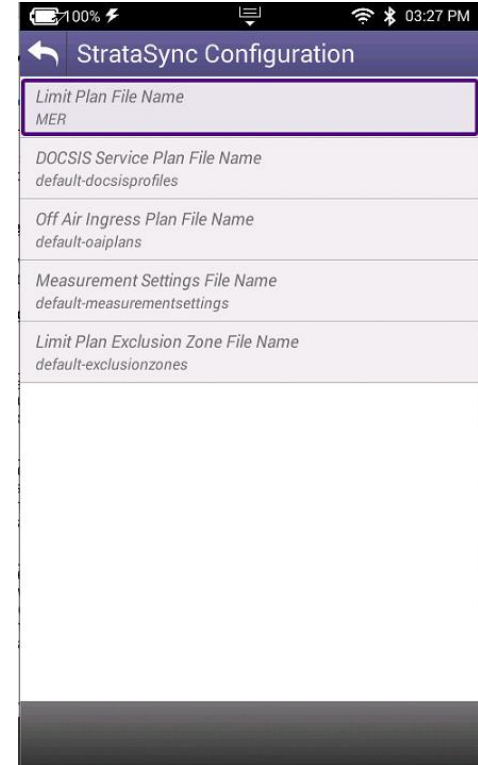
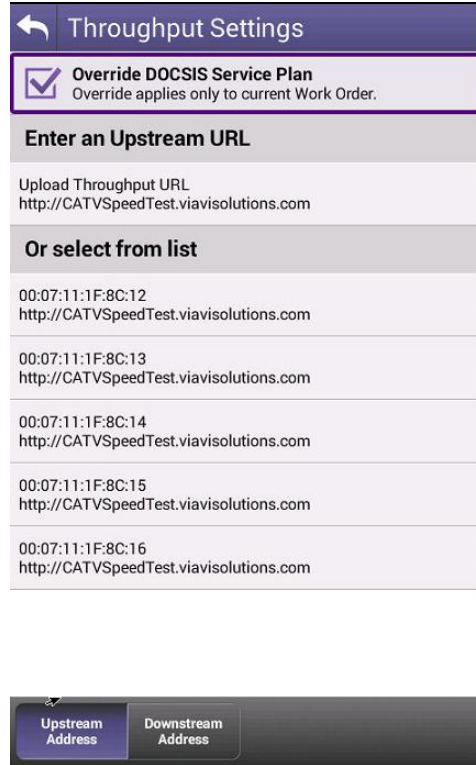
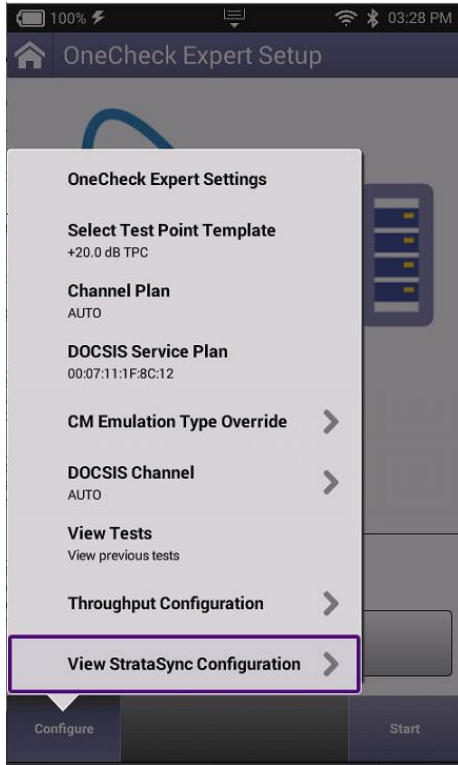




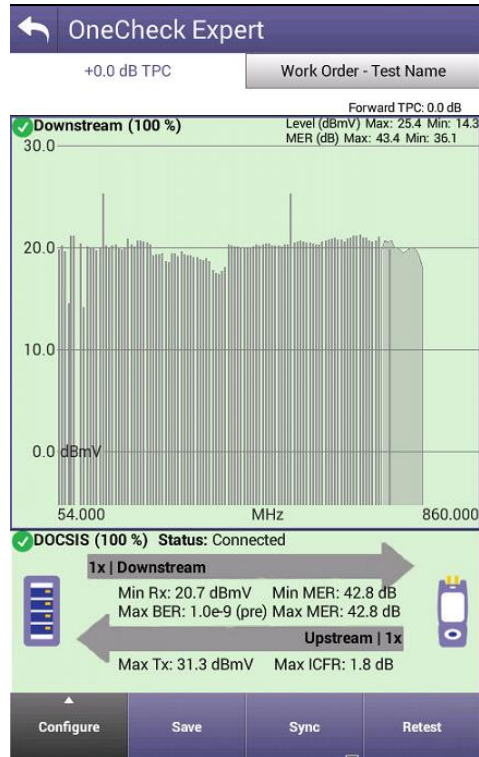
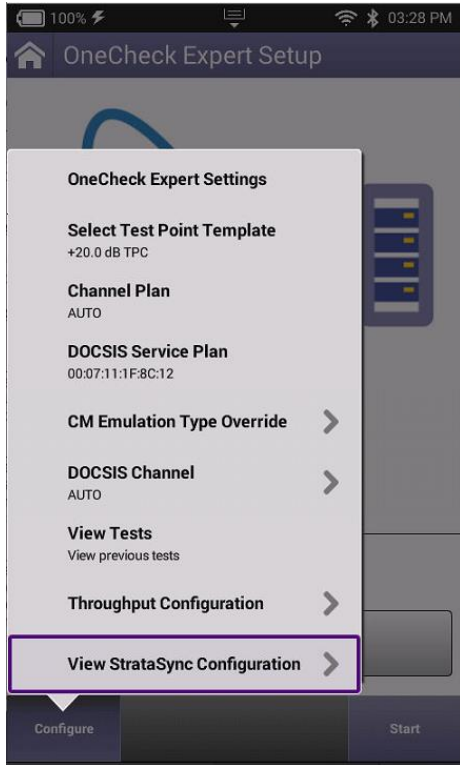
# OneCheck Expert



# OneCheck Expert



# OneCheck Expert



Save Test

Save Test to Work Order

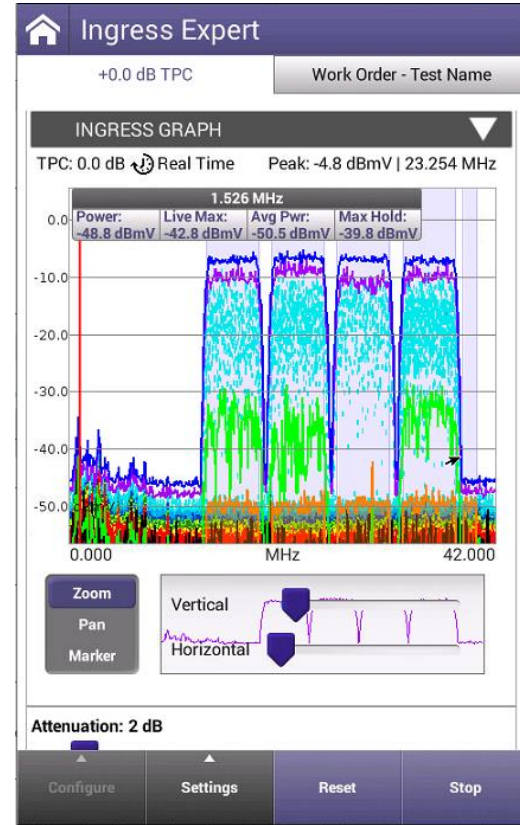
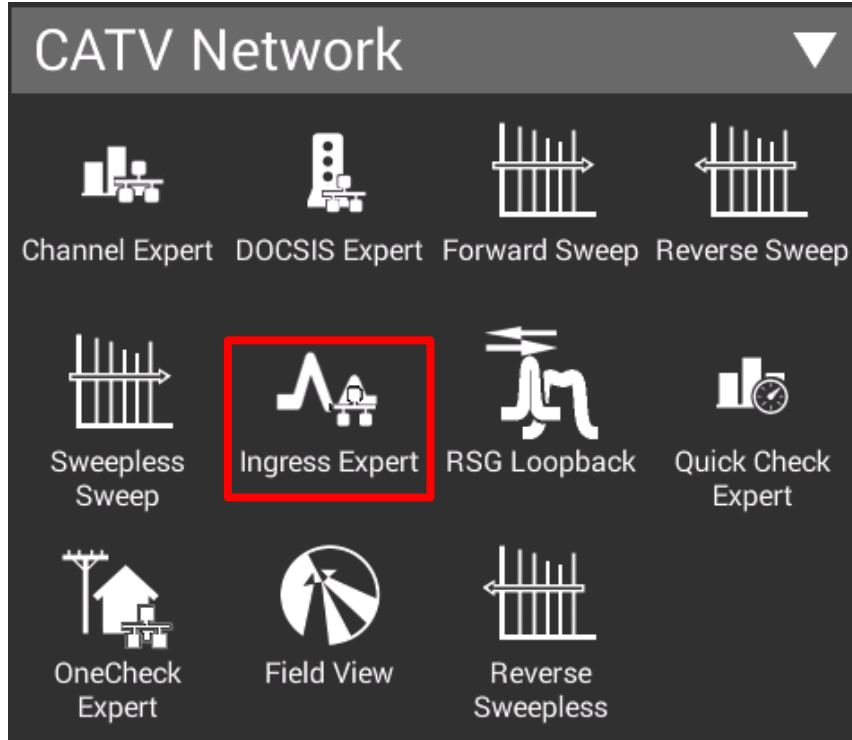
Test Name  
save1

Work Order ID  
Workorder 1234

Set Name to Current Date Save

# Ingress Expert

# Ingress Expert



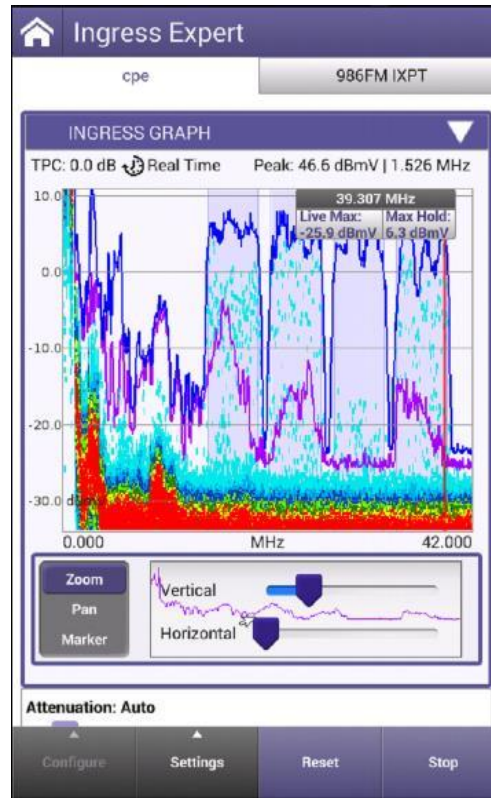
# INGRESS EXPERT

INGRESS EXPERT is based on powerful OneExpert CATV HyperSpectrum technology (Real Time Spectrum Analyzer)

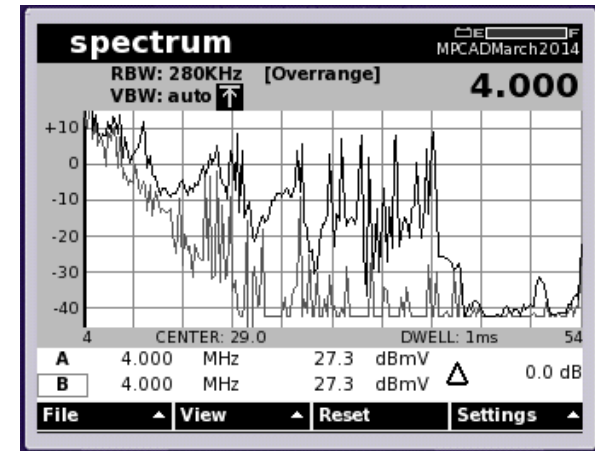
Innovative overlapping FFT (Fast Faurier transform) measures all transient interfering signals

INGRESS EXPERT is different from Swept Spectrum Analyzers (DSAM and Pathtrak) – its more accurate and has thousands of samples a second

Overlapping options provide additional detail



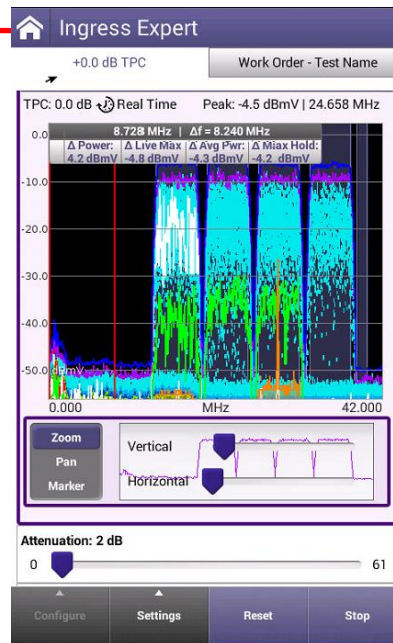
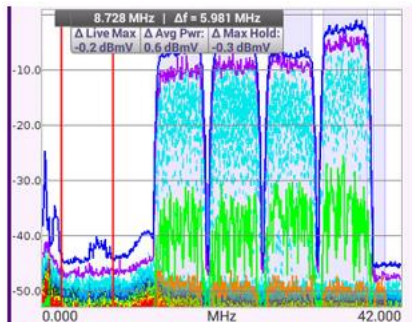
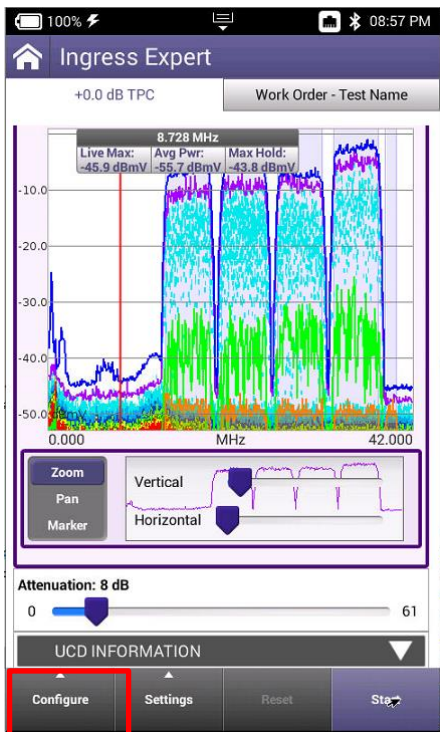
ONX630



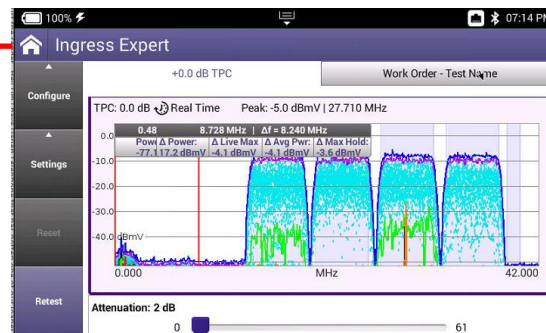
DSAM6300



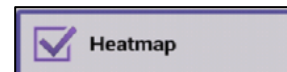
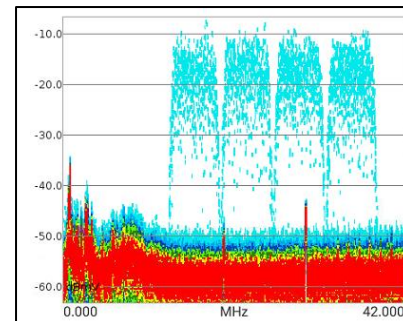
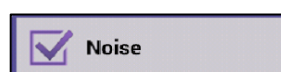
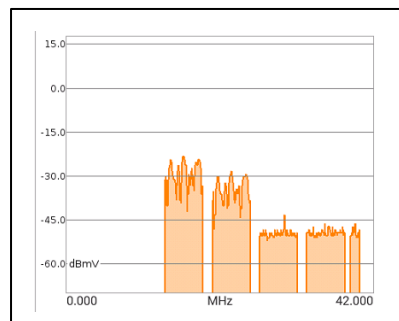
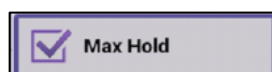
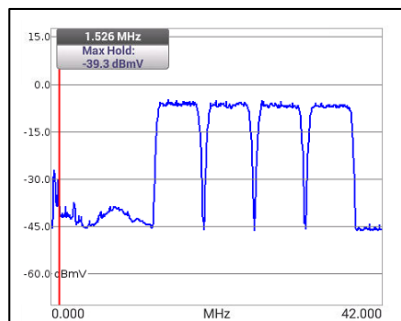
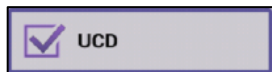
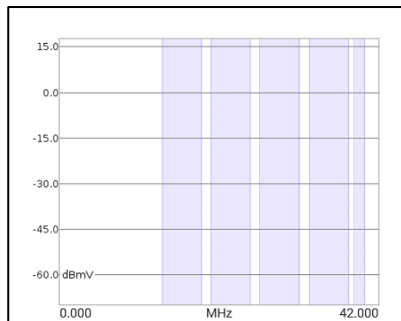
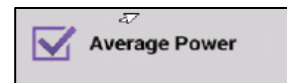
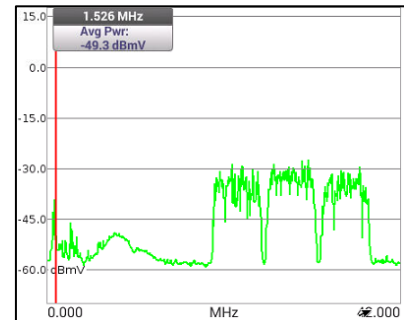
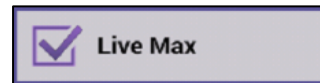
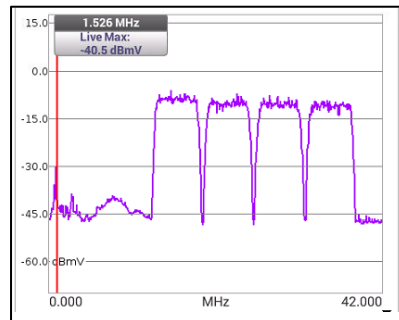
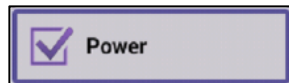
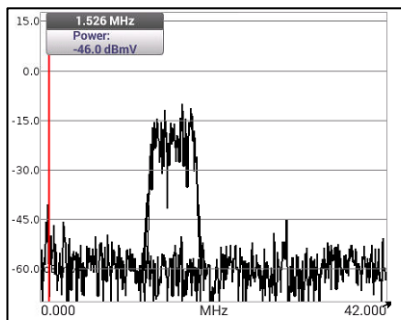
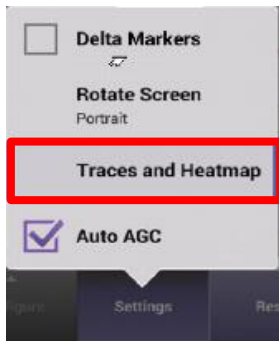
# INGRESS EXPERT - CONFIGURE



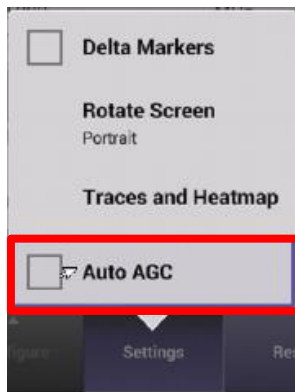
- Delta Markers
- Dark Mode
- Rotate Screen  
Portrait
- Traces and Heatmap
- Auto AGC



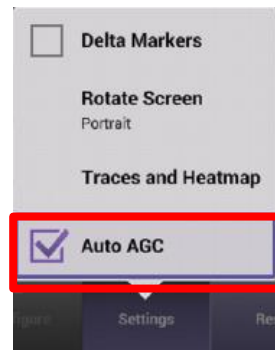
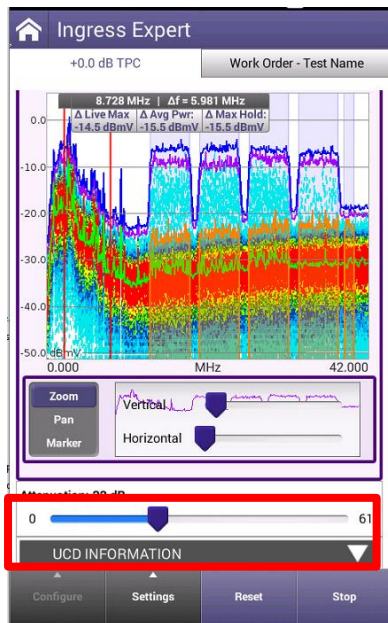
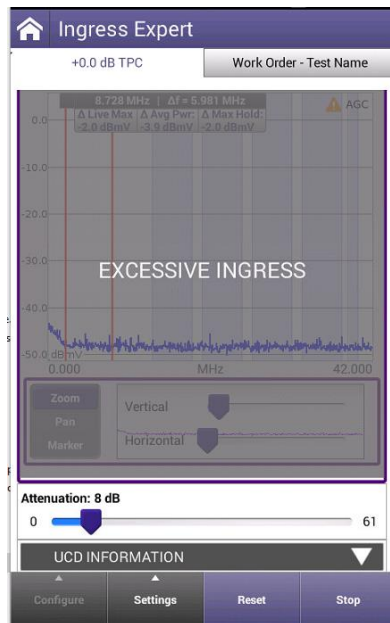
# INGRESS EXPERT – HEATMAP OVERLAYS



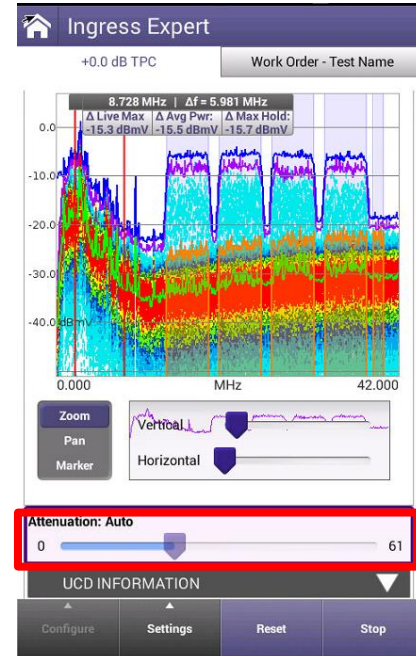
# INGRESS EXPERT – AUTO-ACG



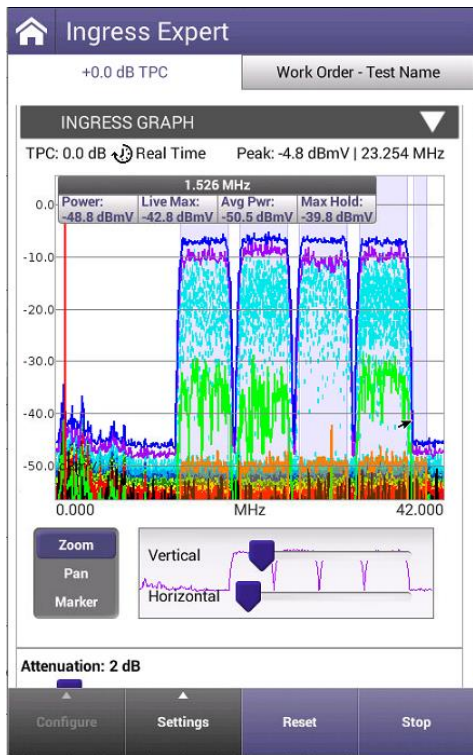
- DISABLING AUTO AGC requires the user manually attenuates the signal to prevent OVERRANGE
- NOTE: The spectrum Specification is 120 MHZ



- AUTO AGC will attempt keep spectrum view references, up to 60dB dynamic range
- NOTE: The Attenuation scale is disabled when AGC is checked



# INGRESS EXPERT - CONFIGURE



**Select Test Point Template**  
+0.0 dB TPC

**Select High Frequency**  
42.000 MHz - Real Time

**Select Heatmap Persistence**  
Low

**Save Test**  
Save current test to a Work Order

**View Tests**  
View previous tests

**View StrataSync Configuration** >

**View Test Results**

Tests for Current Work Order:  
Tap noise

+0.0 dB TPC

+20.0 dB TPC

line extender

**Select Span High Frequency**

42.000 MHz  
Real Time

65.000 MHz  
Real Time

85.000 MHz  
Real Time

110.000 MHz  
Real Time

**Select Heatmap Persistence**

Low

Medium

High

**Save Test**

**Save Test to Work Order**

Test Name  
Tap noise

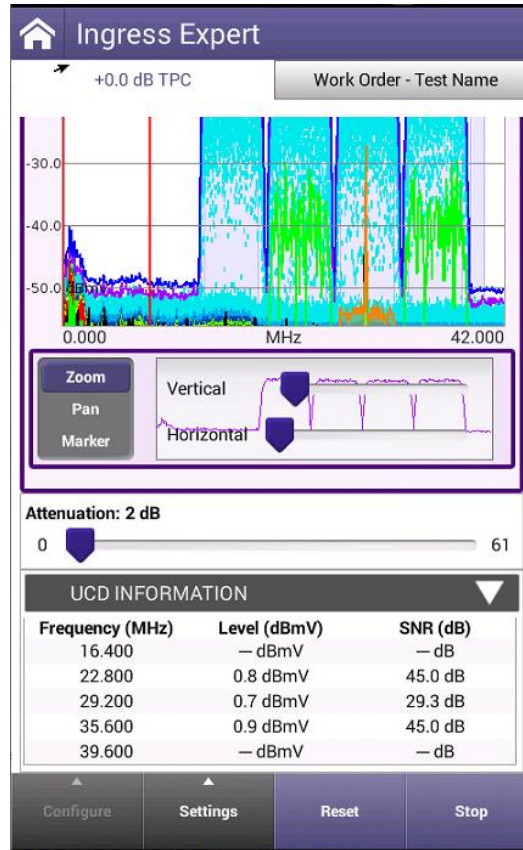
Work Order ID  
Workorder 1234

**StrataSync Configuration**

Test Point Templates File Name  
default-testpoint-templates

# INGRESS EXPERT – SNR and NOISE

- The NOISE setting will allow users to see the noise floor under the upstream carriers
- If the user performs a DOCSIS EXPERT test before INGRESS EXPERT, UCDs will match that of the network and give clear indication of the carriers width and location
- Additionally, UCDs will be demodulated with FREQUENCY, LEVEL and SNR calculated and displayed





**Sweep & Plant Maintenance System  
ONX-630 & SCU-1800**



# SCU-1800

# Advanced System Sweep

- **Fast** — Sweep, align, and troubleshoot faster than ever
- **Stealth Sweep™** with integrated Tilt/Align quickly validates amps and HFC networks faster than any other test
- Complete a downstream scan including MER/ BER in about 60 seconds
- **AutoChannel™** instantly identifies the channel lineup and eliminates guesswork
- **Powerful** — Designed to find difficult problems
- Combined DOCSIS 3.1 and sweep testing validates the complete HFC network
- **Ingress Expert** with Hyper Spectrum™ catches difficult return noise problems
- **Expert modes** with advanced parallel processing find hidden problems and root causes
- **Flexible** — Ready for your changing network needs
- The ONX-630's **dual diplexer** 42/85 or 65/204 with 1.2GHz supports next generation networks
- The ONX-630 is compatible with DSAM-6300 and SDA-55XX providing seamless transition
- Common sweep reporting for ONX-630 and DSAM ensures consistency via **StrataSync™**

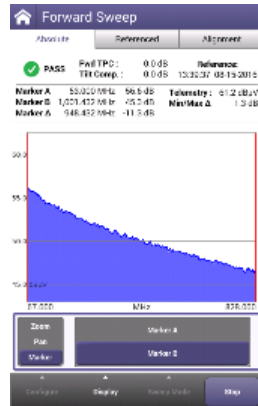
# Next Generation Sweep Gear

## OneExpert CATV ONX-630

- Field upgradable: Sweep + DOCSIS 3.1 module
- Reverse Sweep capable to 204MHz  
→ compatible with SDA-5500/5510
- Extended Forward Sweep range to 1.2GHz with new SCU-1800



ONX-630



## Sweep Control Unit SCU-1800

- 1RU unit with Ethernet interface (web browser/remote)
- Compatible with DSAM-6300
- Forward TX to 1.2GHz with ONX
  - HW capable up to 1.8GHz
  - 50dB Spurious Free Range
  - Narrow Sweep Pulses – fit between carriers
- Sixteen switchable return sweep ports (sw optional)
- Flexible mode of operation
  - Forward Tx only (5500)
  - Forward + Single User Reverse (5500)
  - Multi-User Reverse (5510)

# SCU-1800 Appearance



## SCU-1800 Sweep Transmitter/Receiver

- The headend/hub rack-mounted SCU-1800 Sweep Control Unit provides non-interfering downstream sweep to 1.218 GHz and upstream sweep to 204 MHz on up to 16 ports.
- The sweep is remotely configurable via Ethernet and browser, and a sweep plan can be built from imported information from the **OneExpert ONX**
- Additionally, there is an auto-fill capability in which the sweep points are automatically injected in unoccupied spectrum areas.

# SCU-1800 Field Unit Compatibility

## SDA / DSAM sweep type

### Forward Sweep

- 50 to 1000 MHz

### Reverse Sweep

- 5 to 85 MHz
- Single User Reverse
- Multi User Optional

## ▪ ONX sweep type

### Forward sweep

- 54 to 1218 MHz
- -20 to +20 dBmV input range

### Reverse Sweep

- 5 to 204 MHz frequency Range
- -20 to +20 dBmV input level range

## SCU - Forward Sweep

- Uses downstream plant and inserted carriers
- Up to 500 sweep points
- Future proof with 1800 MHz capable hardware
- SDA Protocol

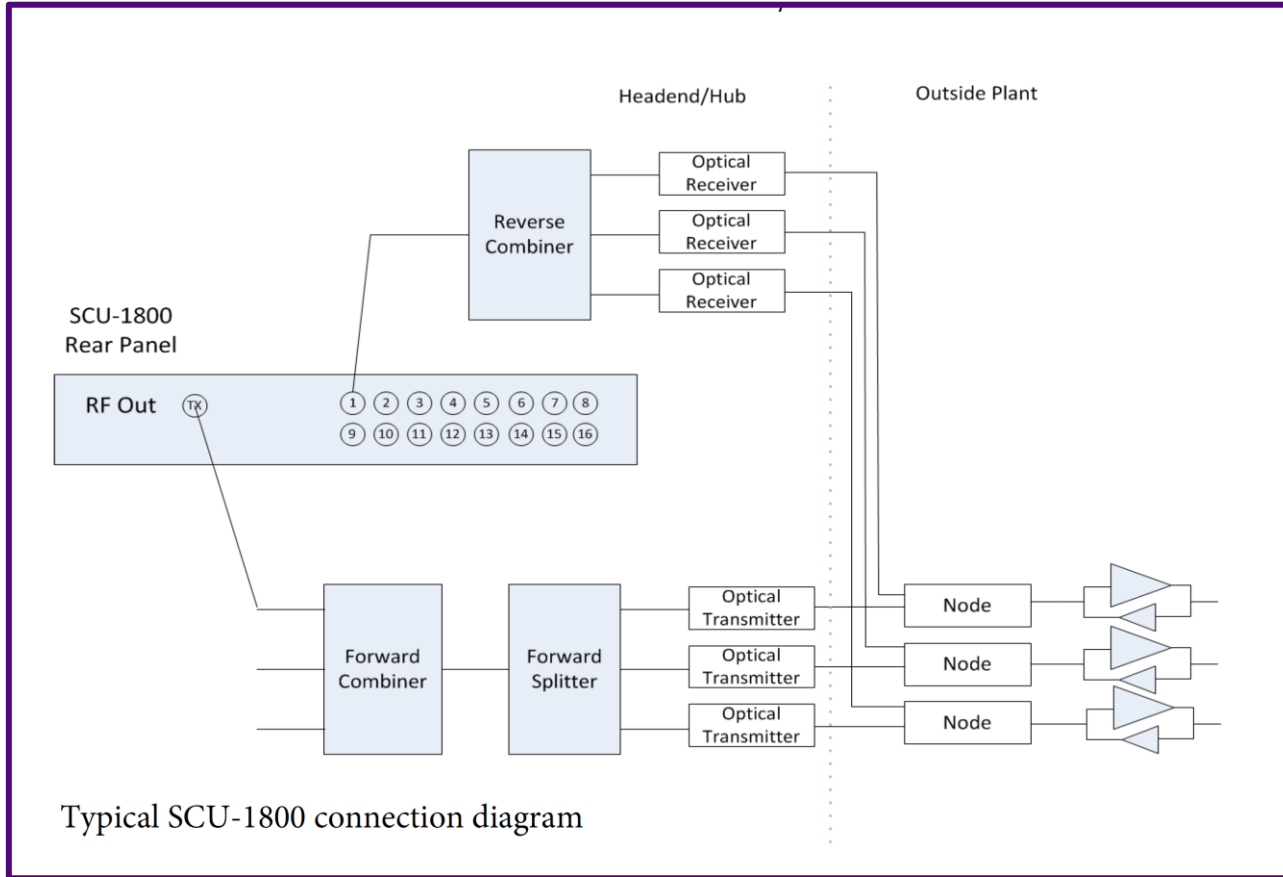
## SCU - Reverse Sweep Inputs

- 16 isolated inputs
- Manual select standard
- Optional Auto input select

## Frequency Range

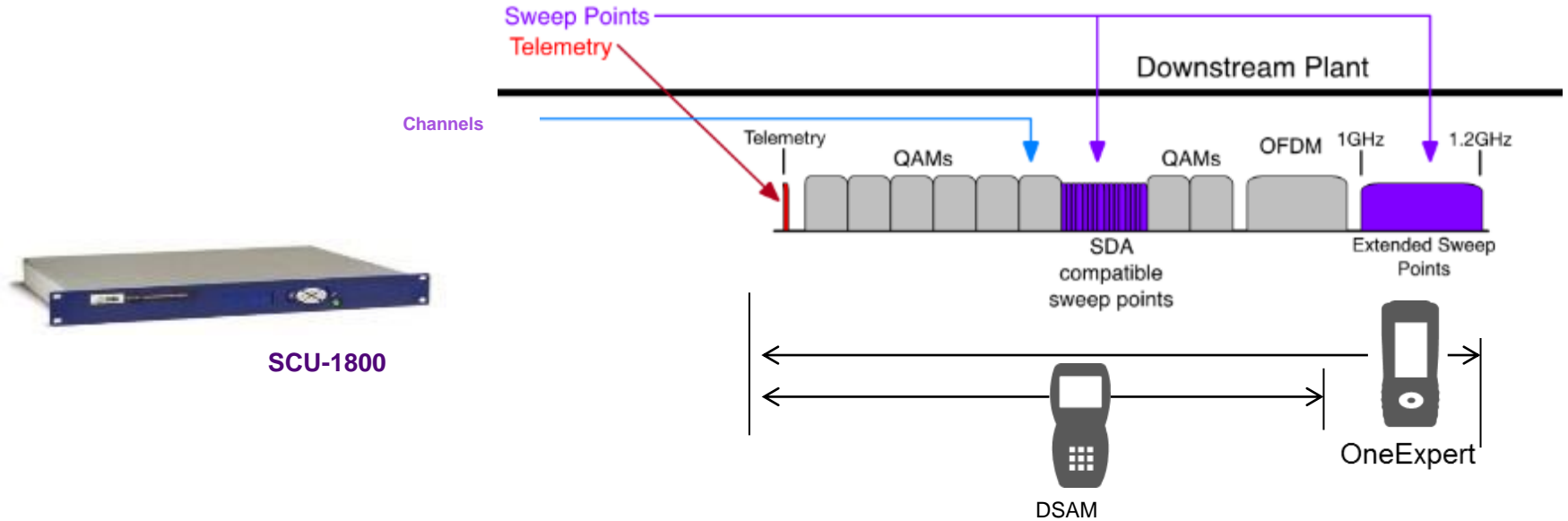
- 5 to 204 MHz
- SDA Protocol

# Typical SCU-1800 Connection diagram





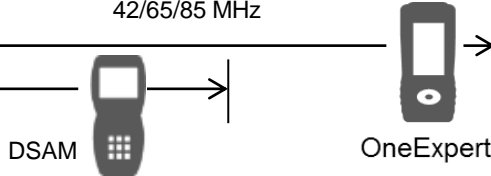
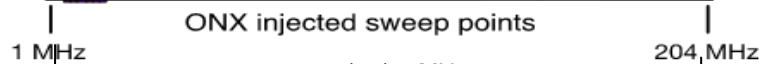
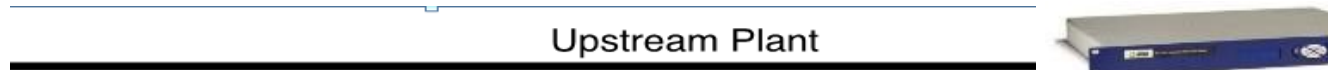
# Sweep Beyond 1GHz



- ONX coupled with new Sweep Control unit can provide sweep to 1.2GHz and beyond
- DSAM units on same system are still compatible up to 1GHz.

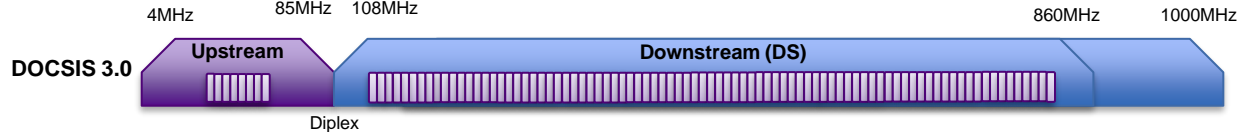
# (New) Reverse Sweep to 204 MHz

SCU-1800

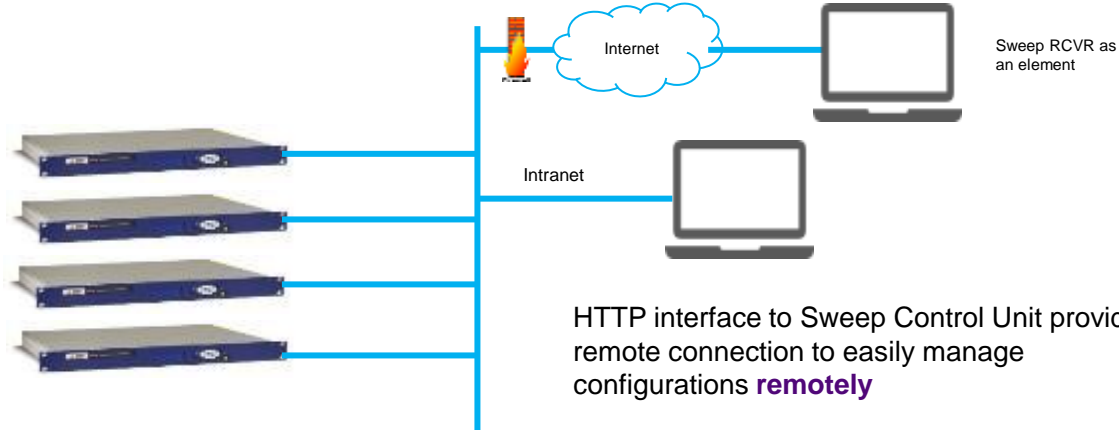


OneExpert's flexible architecture allows sweeping on existing infrastructure or expanded infrastructure up to 204MHz (or anywhere in between)

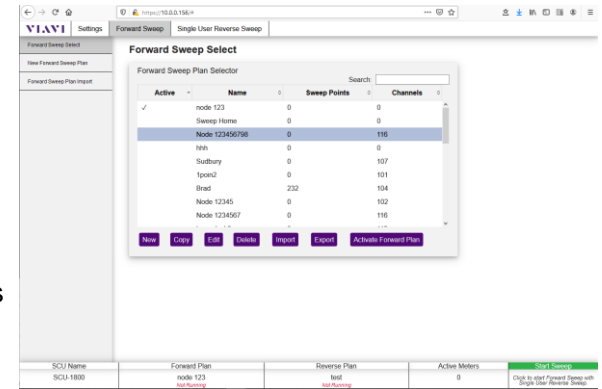
- 42MHz 54MHz
- 65MHz 85MHz
- 85MHz 108MHz



# Configure Sweep Remotely



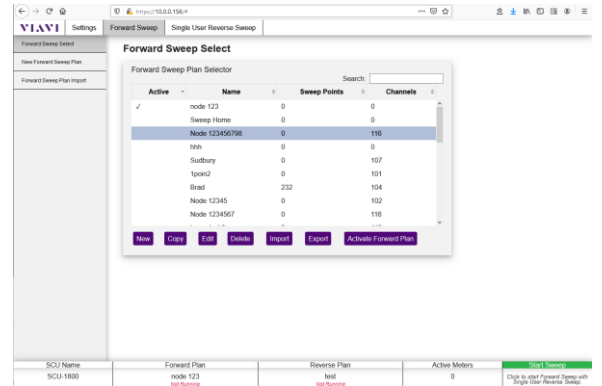
HTTP interface to Sweep Control Unit provides remote connection to easily manage configurations **remotely**



# Configure Sweep Locally from a laptop

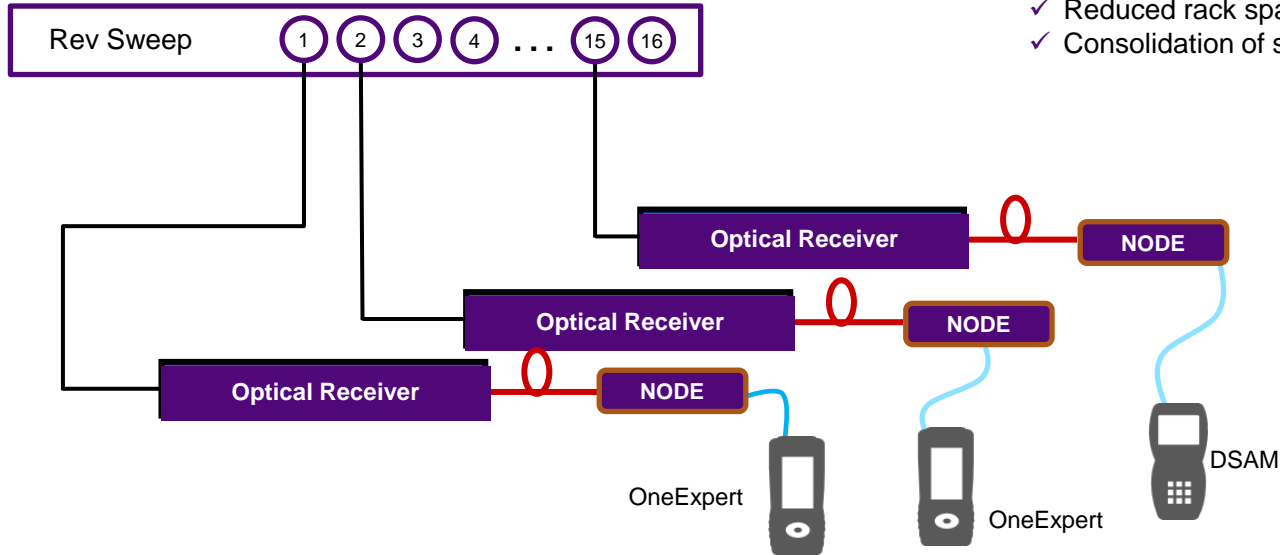


HTTP interface to Sweep Control Unit provides easy access to configurations **locally**



# Multiple reverse sweep input ports

## Reduces costs and improves performance



- ✓ Integrated 16 port capability (SW optional)
- ✓ Provides improved performance
  - ✓ Less combining
  - ✓ Improved noise floor
- ✓ Saves costs
  - ✓ Reduced rack space
  - ✓ Consolidation of sweep receivers

# Sweep Specifications

- **Telemetry**

- Frequency Range: 42 to 1,218 MHz
- Frequency Resolution: 10 kHz
- Modulation FSK :  $\pm 100$  kHz deviation; 65 kbps
- Output Level: +20 to +50 dBmV, 1 dB resolution, 0.5dB accuracy typical, 1 dB accuracy over temp
- Spectral Purity: 50 dBc harmonics and spurious; recommend 1 MHz space from SC QAM edge

- **Sweep Pulse**

- Frequency Range: 42 to 1,218 MHz
- Bandwidth: <5 kHz @ 3dB BW; <50 kHz @ 50dB BW
- Frequency Resolution: 10 kHz
- Level : +20 to +50 dBmV, 1 dB resolution, 0.5dB accuracy typical, 1 dB accuracy over temp
- Spectral Purity: 50 dBc harmonics and spurious; recommend 1 MHz space from SC QAM edge

- **Forward Sweep**

- Telemetry frequency: Diplexer dependent 50-1,218MHz
- Forward sweep outputs: Up to 500 sweep points
- Supported Sweep Plan Active Carrier types (for reference and measurement by the field instrument) Analog (NTSC, PALB, PAL GH, PAL I, PAL DK,) Digital (6 or 8MHz), OFDM (24-192MHz),

- **Reverse Sweep**

- Frequency Range: 5 to 204 MHz
- Recommended input level: 0 dBmV
- Input range and accuracy:  $\pm 20$  dBmV allowable input range;  $\pm 0.75$  dB typical;  $\pm 2$  dB over temp
- Minimum Signal-to-Noise Ratio: 20 dB signal-to-noise ratio required on received reverse telemetry from field meters
- Reverse Sweep points injection: +20 to+50 dBmV
- Reverse Telemetry Level: +20 to+50 dBmV

# SCU-1800 Settings

**Test Point Compensation**

Reverse Sweep Test Point Compensation

Port	TPC(dB)
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0

Apply TPC to Reverse Telemetry Level

[Submit Query](#)

**Sweep Settings**

Forward Telemetry Frequency (MHz) 51

Forward Telemetry Level (dBmV) 20

Forward Sweep Level (dBmV) 20

Reverse Telemetry Frequency (MHz) 10

Automatically start sweep at power on

[Submit Query](#)

**Firmware**

Firmware Package Version  
5.0.391

Firmware Details

Firmware Upgrade

[Browse...](#) No file selected.

[Upgrade Firmware](#)

**General Settings**

Signal Level Units dBmV

Device Name SCU-1800

HTTPS Enabled

Demo Mode Forward Sweep

[Submit Query](#)



# SCU-1800 Settings

## Options

Current Options

Catalog Number	Option Name	Option Type	Expiration
SCU-1800-SW-FWD	SCU-1800 Forward Sweep	perm	
SCU-1800-SW-REV-SWP	SCU-1800 Reverse Sweep Single User	perm	
SCU-1800-SW-REV-16PORT	SCU-1800 Enable 16 port Reverse Sweep	perm	
SCU-1800-SW-REV-SWP-MU	SCU-1800 Reverse Sweep Multi User	perm	

Deploy Option File

No file selected.

The screenshot shows a web browser window with the URL <https://10.0.0.156/#>. The page title is "Settings" and the breadcrumb is "Forward Sweep > Single User Reverse Sweep". The left sidebar contains a menu with the following items: Sweep Settings (selected), General Settings, Test Point Compensation, Firmware, Options, Login Settings, and About. The main content area is titled "Sweep Settings" and contains the following configuration options:

- Forward Telemetry Frequency (MHz): 51
- Forward Telemetry Level (dBmV): 20
- Forward Sweep Level (dBmV): 20
- Reverse Telemetry Frequency (MHz): 10
- Automatically start sweep at power on:

A "Submit Query" button is located at the bottom right of the settings panel.

## About

Model Number  
SCU-1800

Serial Number  
0143469

SCU Receiver Calibration Date  
4/3/2020

SCU Transmitter Calibration Date  
2020-04-03 17:45:02

## Login Settings

New Username

New Password

Confirm Password

# Edit Channel Plan

## Forward Sweep Select

### Forward Sweep Plan Selector

Search:

Active	Name	Sweep Points	Channels
<input checked="" type="checkbox"/>	node 123	0	0
	Sweep Home	0	0
	Node 123456798	0	116
	hhh	0	0
	Sudbury	0	107
	1poin2	0	101
	Brad	232	104
	Node 12345	0	102
	Node 1234567	0	116

## Forward Sweep Edit

Plan Name:  
Node 123456798

[Back](#)

### Sweep Points List

Search:

Type	Frequency (MHz)	Span (MHz)	Level (dBmV)	Info
Channel	57.000	6	9.99	DIGITAL
Channel	63.000	6	10.80	DIGITAL
Channel	69.000	6	11.13	DIGITAL
Channel	75.250	1.536	6.93	DIGITAL
Channel	79.000	6	13.96	DIGITAL
Channel	85.000	7	13.90	DIGITAL
Channel	99.000	6	14.20	DIGITAL
Channel	104.250	1.536	7.93	DIGITAL
Channel	111.000	6	13.84	DIGITAL

Note: Point Count: 116

Use level from channel plan build

### Define Active Carriers in system which will be used as sweep points

Note: These carriers are not generated by the SCU but will be measured by the field instrument

#### Add Individual Active Channels to be used as sweep points

Note: These are active carriers that are to be used as measured sweep points by the field instrument but were not included in the channel plan import

Channel Type:  Center Frequency (MHz):  Channel Bandwidth:  Level (dBmV):

### Define carriers to be injected by the SCU-1800

Note: These are pulsed sweep points generated by the SCU-1800 in unoccupied spectrum

#### Add Multiple Sweep Injection Points

Note: This function inserts a sweep point at the start frequency given and will inject a sweep point every XX MHz defined by the Sweep Carrier Spacing up to and including the Stop Frequency if the Stop Frequency lands on the spacing boundary. This function utilizes a 500kHz guard band spacing and will only insert sweep points where there is at least 500kHz available from any previously defined carrier or sweep point.

Valid Frequency Range: 42 - 1210 MHz Valid Carrier Spacing Range: 1 - 8 MHz

Start Frequency (MHz):  Stop Frequency (MHz):  Sweep Carrier Spacing (MHz):

#### Add Individual Sweep Injection Points

Note: These are pulsed sweep points injected by the SCU-1800. Recommended to have 500kHz available spacing for each point.

Center Frequency (MHz):

# New Channel Plan from ONX

VIavi Settings Forward Sweep Single User Reverse Sweep

Forward Sweep Select

New Forward Sweep Plan

Forward Sweep Plan Import

### Forward Sweep Select

Forward Sweep Plan Selector

Search:

Active	Name	Sweep Points	Channels
✓	node 123	0	0
	Sweep Home	0	0
	Node 123456798	0	116
	hhh	0	0
	Sudbury	0	107
	1poin2	0	101
	Brad	232	104
	Node 12345	0	102
	Node 1234567	0	116

New Copy Edit Delete Import Export Activate Forward Plan

## New Forward Sweep Plan

Step 1: Plan Name

Plan Name:

## File Upload

← → ↑ This PC Desktop Search Desktop

Organize New folder

- Saved Games
- Searches
- Tims Presos
- Trips
- Videos

Name

- Node 8888.Ground Block.channel\_plan.json
- Node 5555.Ground Block.channel\_plan.json
- node 4444.Tap.channel\_plan.json

File name:  All Files (\*.\*)

## New Forward Sweep Plan

Step 2: Import Channel Plan

Node 8888.Ground Block.channel\_plan.json

# New Channel Plan

**Forward Sweep Select**

Forward Sweep Plan Selector

Search:

Active	Name	Sweep Points	Channels
✓	node 123	0	0
	Sweep Home	0	0
	Node 123456798	0	116
	hhh	0	0
	Sudbury	0	107
	1pin2	0	101
	Brad	232	104
	Node 12345	0	102
	Node 1234567	0	116

## New Forward Sweep Plan

Step 3: Add any additional sweep points.

Plan Name:

**Sweep Points List**

Search:

Type	Frequency (MHz)	Span (MHz)	Level (dBmV)	Info
Channel	57.000	6	9.99	DIGITAL
Channel	63.000	6	10.80	DIGITAL
Channel	69.000	6	11.13	DIGITAL
Channel	75.250	1.536	6.93	DIGITAL
Channel	79.000	6	13.96	DIGITAL
Channel	85.000	7	13.90	DIGITAL
Channel	99.000	6	14.20	DIGITAL
Channel	104.250	1.536	7.93	DIGITAL
Channel	111.000	6	13.84	DIGITAL

Point Count: 116

Use level from channel plan build

**Define Active Carriers in system which will be used as sweep points**  
 Note: These carriers are not generated by the SCU but will be measured by the field instrument

**Add Individual Active Channels to be used as sweep points**  
 Note: These are active carriers that are to be used as measured sweep points by the field instrument but were not included in the channel plan import.

Channel Type: 
 Center Frequency (MHz): 
 Channel Bandwidth: 
 Level (dBmV):

**Add Individual Sweep Injection Points**  
 Note: These are pulsed sweep points injected by the SCU-1800. Recommended to have 500kHz available spacing for each point.

Center Frequency (MHz):

**Define carriers to be injected by the SCU-1800**  
 Note: These are pulsed sweep points generated by the SCU-1800 in unoccupied spectrum

**Add Multiple Sweep Injection Points**  
 Note: This function inserts a sweep point at the start frequency given and will inject a sweep point every XX MHz defined by the Sweep Carrier Spacing up to and including the Stop Frequency if the Stop Frequency lands on the spacing boundary. This function utilizes a 500kHz guard band spacing and will only insert sweep points where there is at least 500kHz available from any previously defined carrier or sweep point.

Valid Frequency Range: 42 - 1218 MHz
 Valid Carrier Spacing Range: 1 - 8 MHz

Start Frequency (MHz): 
 Stop Frequency (MHz): 
 Sweep Carrier Spacing (MHz):

# Export and Import Channel Plan

VIavi Settings Forward Sweep Single User Reverse Sweep

Forward Sweep Select

New Forward Sweep Plan

Forward Sweep Plan Import

### Forward Sweep Select

Forward Sweep Plan Selector

Search:

Active	Name	Sweep Points	Channels
✓	node 123	0	0
	Sweep Home	0	0
	Node 123456798	0	116
	hhh	0	0
	Sudbury	0	107
	1point	0	101
	Brad	232	104
	Node 12345	0	102
	Node 1234567	0	116

New Copy Edit Delete Import Export Activate Forward Plan

Save As

This PC > Documents

Search Documents

Organize New folder

Name	Date modified	Type
reflector.txt	5/14/2018 10:47 PM	Text Document
SDA Sweep Doc	10/30/2020 5:18 PM	File folder

File name: SweepPlan-3.json

Save as type: Text Documents (\*.txt)

Encoding: UTF-8

Save Cancel

## Forward Sweep Plan Import

Browse... SweepPlan-3.json

Import Forward Plan

Browse... SweepPlan-3.json

Import Forward Plan

# Reverse Channel Plan

VIavi Settings Forward Sweep Single User Reverse Sweep

Reverse Sweep Select

New Reverse Sweep Plan

Reverse Sweep Plan Import

Reverse Sweep Active Meters

### Reverse Sweep Select

Reverse Sweep Plan Selector

Search:

Active	Name	Sweep Points
✓	test	43
	Sudbury Rtn Mid-Split	177

Enable Reverse Sweep

## New Reverse Sweep Plan

Step 1: Enter a name for the new reverse plan.

Plan Name:

### Define carriers to be injected by the field meter

Note: These are pulsed sweep points generated by the field meter in unoccupied spectrum

Warning: SDA-5000 units may function incorrectly when the plan contains points below 5 MHz.

#### Add Multiple Sweep Injection Points

Note: This function inserts a sweep point at the start frequency given and will inject sweep points at the interval given.

Valid Frequency Range:

4 - 204 MHz

Start(MHz):  Stop(MHz):  Step Size(MHz):

## New Reverse Sweep Plan

Step 2: Add any additional reverse sweep points.

Plan Name:

### Sweep Points List

Search:

Type	Frequency (MHz)
Sweep Point	4.000
Sweep Point	5.000
Sweep Point	6.000
Sweep Point	7.000
Sweep Point	8.000
Sweep Point	9.000
Sweep Point	10.000
Sweep Point	11.000
Sweep Point	12.000
Sweep Point	13.000

Point Count: 42

### Add Individual Sweep Injection Points

Note: These are pulsed sweep points injected by the field meter. Recommended to have 500kHz available spacing for each point.

Center(MHz):



# Export and Import Reverse Channel Plan

VIavi Settings Forward Sweep Single User Reverse Sweep

Reverse Sweep Select

Reverse Sweep Plan Import

Reverse Sweep Active Meters

### Reverse Sweep Select

Reverse Sweep Plan Selector

Search:

Active	Name	Sweep Points
✓	test	43
	Sudbury Rtn Mid-Split	177

Enable Reverse Sweep

Save As

← → ↑ This PC > Documents Search Documents

Organize New folder

Name	Date modified	Type
reflector.txt	5/14/2018 10:47 PM	Text D
SDA Sweep Doc	10/30/2020 5:18 PM	File fol

File name: SweepPlan-7.json

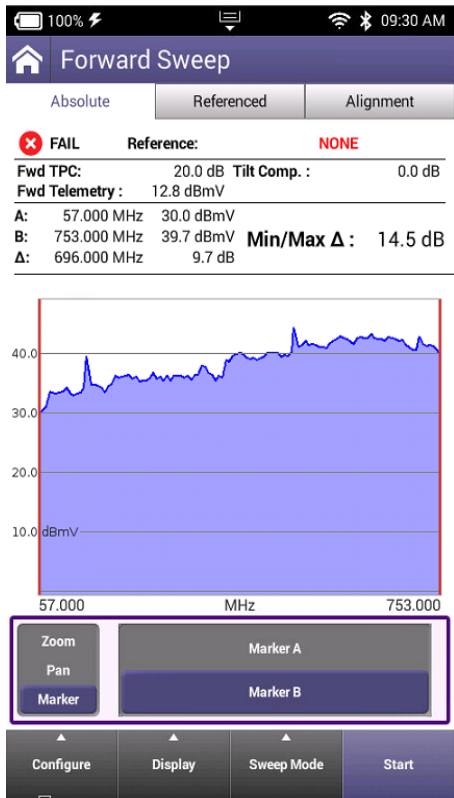
Save as type: Text Documents (\*.txt)

Encoding: UTF-8

## Reverse Sweep Plan Import

SweepPlan-7.json

# Forward Sweep



**Sweep Config**  
 Modify Sweep Configuration

**Configure Test Point**  
 +20.0 dB TPC1

**Alignment Carrier Configuration**  
 Add/Remove Carriers for Alignment

**Choose Reference**  
 Set reference sweep data

**Save Test/Reference**  
 Save current test to a Work Order

**View Tests**  
 View previous tests

**Configure Sweep**

**Changes will restart test**

SDA 5500 Telemetry Frequency  
 51.000 MHz

SDA 5510 Telemetry Frequency  
 52.000 MHz

Reverse Sweep User Mode  
 Single User

Enable Sweep Limit

Digital carrier bandwidth  
 6.000 MHz

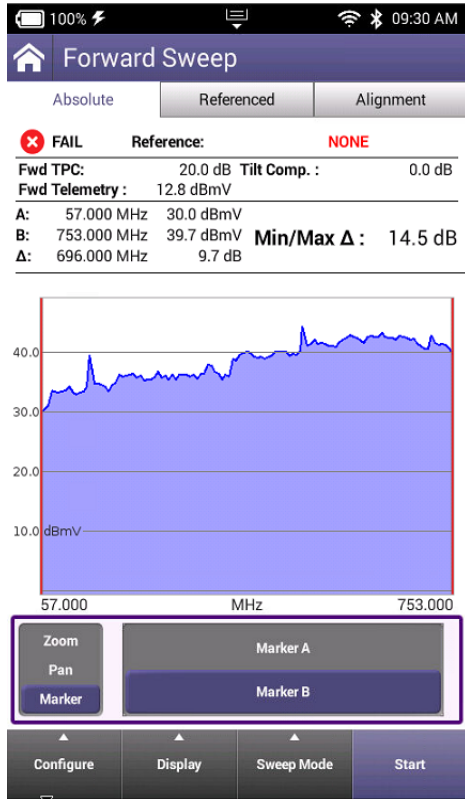
Sweep Limit  
 4.0 dB

**Select Reverse Sweep User Mode**

Single User

Multi User

# Forward Sweep Test Point



**Sweep Config**  
Modify Sweep Configuration

**Configure Test Point**  
+20.0 dB TPC1

**Alignment Carrier Configuration**  
Add/Remove Carriers for Alignment

**Choose Reference**  
Set reference sweep data

**Save Test/Reference**  
Save current test to a Work Order

**View Tests**  
View previous tests

Select Test Point Template

+0.0 dB TPC

+20.0 dB TPC

View Delete Copy Done

New Custom Template

+20.0 dB TPC 1 1 - 40 chars

Save

Configure Test Point Template

**+20.0 dB TPC 1**

Forward Test Point Compensation  
20.0 dB

Reverse Test Point Compensation  
20 dB

Reverse Sweep Injection  
8.0 dBmV

Reverse Telemetry Level  
20.0 dBmV

Forward Tilt Compensation  
0.0 dB

Forward Low Tilt Frequency  
5.000 MHz

Forward High Tilt Frequency  
800.000 MHz

Reverse Port Mode  
Single Port

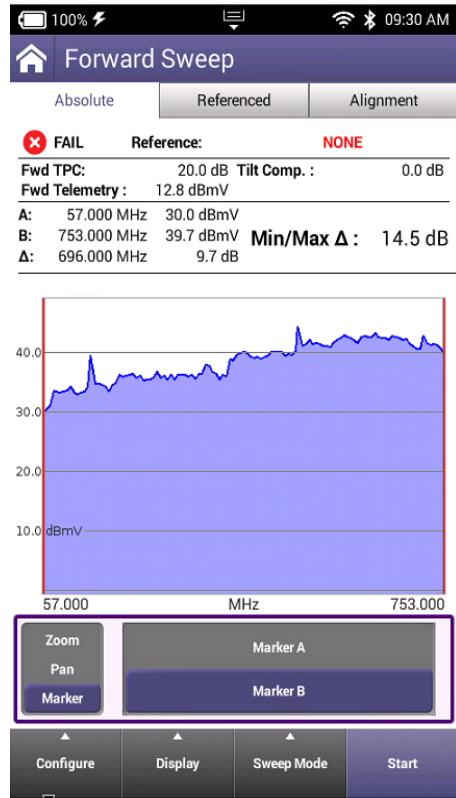
High Power Environment

Select Reverse Port Mode

Single Port

Dual Port

# Forward Sweep Alignment



**Sweep Config**  
Modify Sweep Configuration

**Configure Test Point**  
+20.0 dB TPC 1

**Alignment Carrier Configuration**  
Add/Remove Carriers for Alignment

**Choose Reference**  
Set reference sweep data

**Save Test/Reference**  
Save current test to a Work Order

**View Tests**  
View previous tests

A red arrow points from the 'Alignment Carrier Configuration' option in this menu to the 'Alignment Carrier Configuration' screen.

**Alignment Carrier Configuration**

Forward Sweep | Reverse Sweep

57.000 MHz

747.000 MHz

Add Carrier | Remove Carrier | Load Defaults

A red arrow points from the 'Add Carrier' button at the bottom to the 'Add Carrier' screen.

**Add Carrier**

Carrier Frequency (MHz)  
747.000

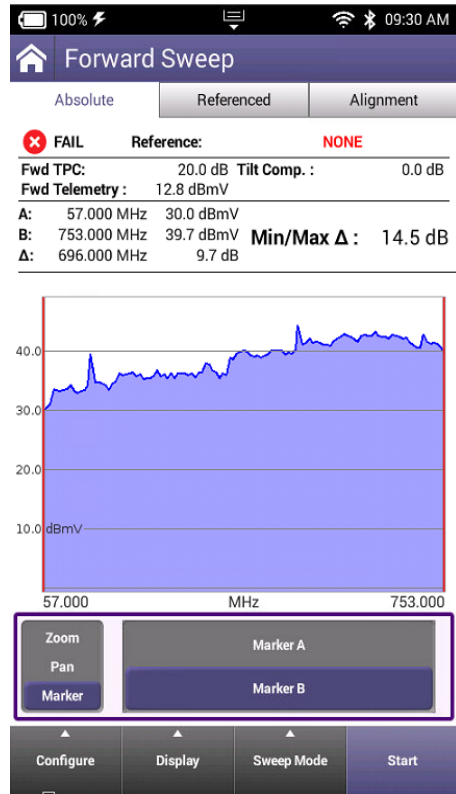
**Frequency (MHz)**

747.000 | 48.000 - 1002.000

OK

A red arrow points from the 'Add Carrier' screen to the 'Frequency (MHz)' screen.

# Forward Sweep Point Clear Reference



**Sweep Config**  
Modify Sweep Configuration

**Configure Test Point**  
+20.0 dB TPC 1

**Alignment Carrier Configuration**  
Add/Remove Carriers for Alignment

**Choose Reference**  
Set reference sweep data

**Save Test/Reference**  
Save current test to a Work Order

**View Tests**  
View previous tests

**Forward Sweep Reference**

Work Order | Recent References

Forward Reference: **NONE**

From Work Order:

Tests for Current Work Order:

Work Order ID

Node 8888

Clear Reference | Set Reference

**Select Work Order**

New Work Order ...

- Node 8888
- Node 5555
- node 4444
- Node 123
- Work Order - 10-22-39 10-25-2020



# Forward Sweep Point Save Reference



The screenshot shows the 'Sweep Config' menu. The options are:

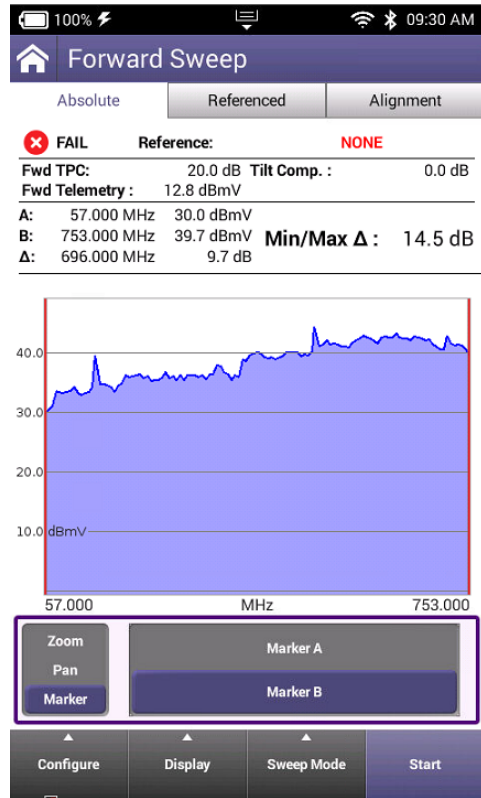
- Sweep Config (Modify Sweep Configuration)
- Configure Test Point (+20.0 dB TPC 1)
- Alignment Carrier Configuration (Add/Remove Carriers for Alignment)
- Choose Reference (Set reference sweep data)
- Save Test/Reference** (Save current test to a Work Order) - This option is highlighted with a purple box.
- View Tests (View previous tests)

The screenshot shows the 'Save Forward Sweep Test' dialog. The options are:

- Save Test to Work Order
- Test Name (Node 123 Port 2)
- Work Order ID (Node 8888)
- Set as Reference - This checkbox is checked and highlighted with a purple box.

At the bottom, there are three buttons: 'Set Name to Current Date', 'Save', and 'Save'.

# Forward Sweep Review Test



**Sweep Config**  
Modify Sweep Configuration

**Configure Test Point**  
+20.0 dB TPC 1

**Alignment Carrier Configuration**  
Add/Remove Carriers for Alignment

**Choose Reference**  
Set reference sweep data

**Save Test/Reference**  
Save current test to a Work Order

**View Tests**  
View previous tests

Detailed description: This is a menu for configuring the sweep test. It includes options for 'Sweep Config', 'Configure Test Point', 'Alignment Carrier Configuration', 'Choose Reference', 'Save Test/Reference', and 'View Tests'. The 'View Tests' option is highlighted with a red box, and a red arrow points from it to the 'Forward Sweep Tests' screen.

**Forward Sweep Tests**

Tests for Current Work Order:

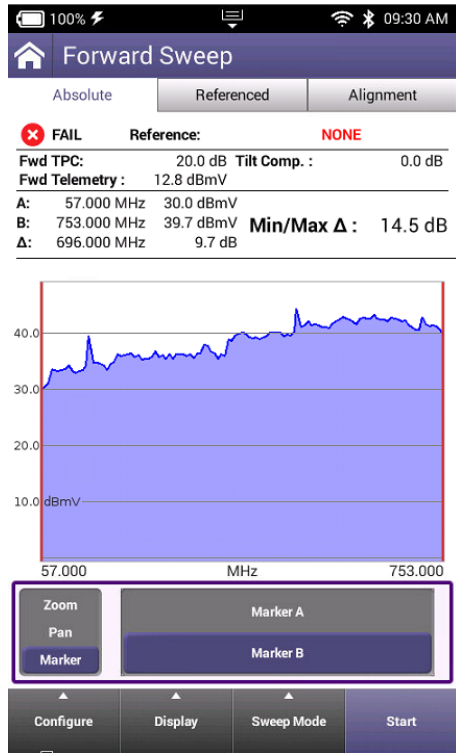
Node 123 Port 2

**Work Order ID**  
Node 8888

View Results

Detailed description: This screen displays the results of the forward sweep test. It shows the test name 'Forward Sweep Tests' and the specific test configuration 'Node 123 Port 2'. Below this, the 'Work Order ID' is listed as 'Node 8888'. A 'View Results' button is located at the bottom right of the screen.

# Forward Sweep Test Markers



**Auto Reference**

dB/div  
10.0 dB

**Marker Frequencies**  
A: 57.00 MHz B: 753.00 MHz

**Rotate Screen**  
Portrait

**Marker Frequencies**

Marker A  
57.000 MHz

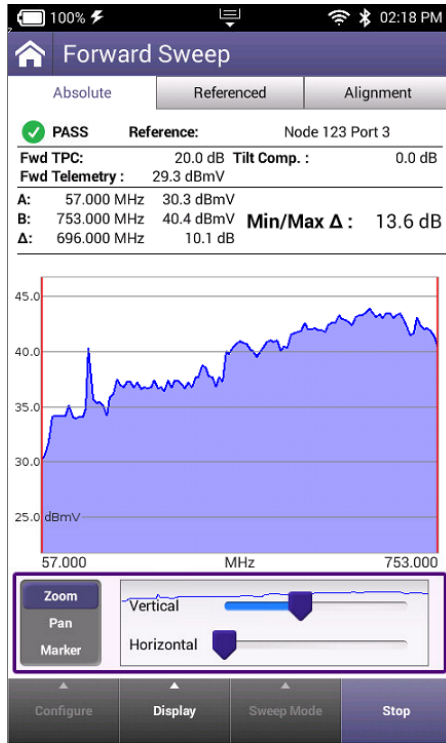
Marker B  
753.000 MHz

OK

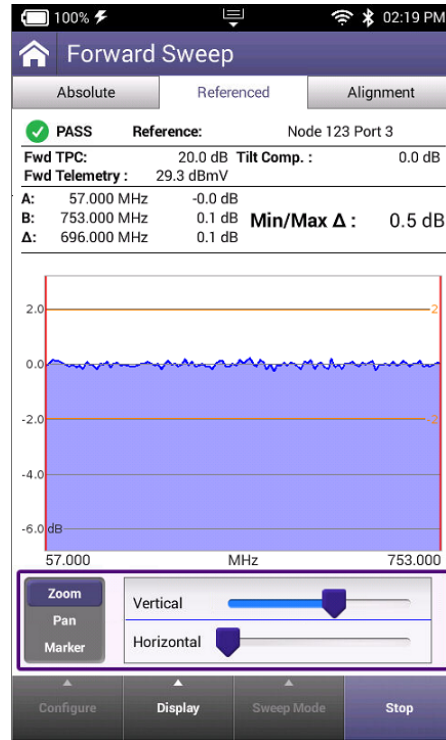


# Forward Sweep Screens

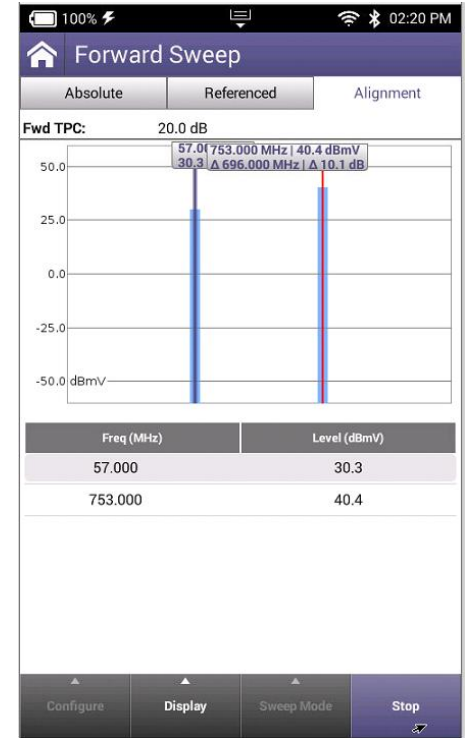
## Absolute "Raw"



## Referenced



## Alignment



# Return Sweep

# Reverse Sweep Configure

**Reverse Sweep**

Absolute   Referenced   Alignment

**PASS**   Reference:   Node 123 Port 3

Rev Telem RX:	1.4 dBmV	Rev TPC:	20.0 dB
Rev Telem TX:	17.0 dBmV	Fwd Telemetry :	30.1 dBmV
Rev Telem Δ:	-15.6 dB		

Marker A	0.5 dBmV	Headend	1.9 dBmV	Marker B
4.000	17.0 dBmV	Meter	17.0 dBmV	41.500
MHz	-16.5 dB	Delta	-15.1 dB	MHz

Zoom  
Pan  
Marker

Vertical  
Horizontal

Configure   Display   Sweep Mode   Start

Forward Sweep

Reverse Sweep

Reverse Sweepless Sweep

**Configure Sweep**

Changes will restart test

SDA 5500 Telemetry Frequency  
51.000 MHz

SDA 5510 Telemetry Frequency  
52.000 MHz

Reverse Sweep User Mode  
Single User

Enable Sweep Limit

Digital carrier bandwidth  
6.000 MHz

Sweep Limit  
4.0 dB

**Select Reverse Sweep User Mode**

Single User

Multi User

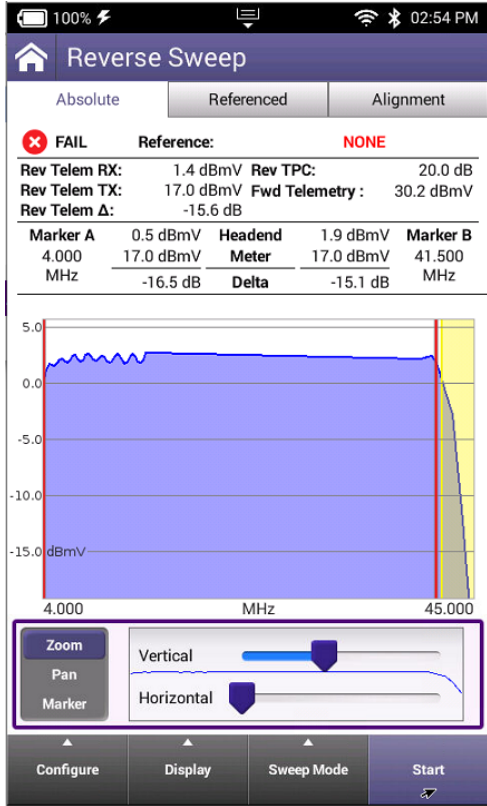
**Select Digital carrier bandwidth**

6.000 MHz

8.000 MHz



# Reverse Sweep Configure Test Point



**Sweep Config**  
Modify Sweep Configuration

**Configure Test Point**  
+20.0 dB TPC1

**Alignment Carrier Configuration**  
Add/Remove Carriers for Alignment

**Choose Reference**  
Set reference sweep data

**Save Test/Reference**  
Save current test to a Work Order

**View Tests**  
View previous tests

**Select Test Point Template**

+0.0 dB TPC

+20.0 dB TPC

View | Delete | Copy | Done

**New Custom Template**

+20.0 dB TPC 1 1 - 40 chars

Save

**Configure Test Point Template**

**+20.0 dB TPC 1**

Forward Test Point Compensation  
20.0 dB

Reverse Test Point Compensation  
20 dB

Reverse Sweep Injection  
8.0 dBmV

Reverse Telemetry Level  
20.0 dBmV

Forward Tilt Compensation  
0.0 dB

Forward Low Tilt Frequency  
5.000 MHz

Forward High Tilt Frequency  
800.000 MHz

Reverse Port Mode  
Single Port

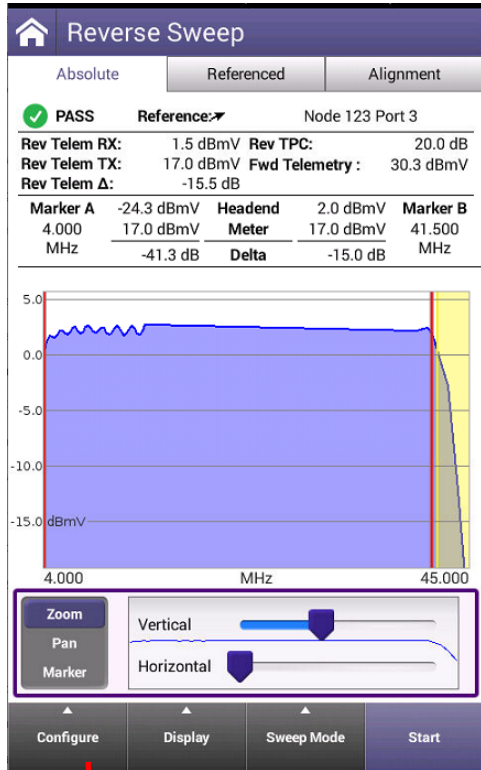
High Power Environment

**Select Reverse Port Mode**

Single Port

Dual Port

# Reverse Sweep Configure Test Point Injection



**Sweep Config**  
Modify Sweep Configuration

**Configure Test Point**  
+20.0 dB TPC1

**Alignment Carrier Configuration**  
Add/Remove Carriers for Alignment

**Choose Reference**  
Set reference sweep data

**Save Test/Reference**  
Save current test to a Work Order

**View Tests**  
View previous tests

**Select Test Point Template**

- +0.0 dB TPC
- +20.0 dB TPC
- +20.0 dB TPC 1

View / Edit    Delete    Copy    Done

**New Custom Template**

+20.0 dB TPC 1    1 - 40 chars

Save

**Configure Test Point Template**

Forward Test Point Compensation  
20.0 dB

Reverse Test Point Compensation  
20 dB

Reverse Sweep Injection  
17.0 dBmV

Reverse Telemetry Level  
17.0 dBmV

Forward Tilt Compensation  
0.0 dB

Forward Low Tilt Frequency  
54.000 MHz

Forward High Tilt Frequency  
860.000 MHz

Reverse Port Mode  
Single Port

High Power Environment

The sum of Reverse Test Point Compensation and Reverse Sweep Injection must be less than or equal to 53.0 dBmV for valid results.

**Reverse Sweep Injection**

17.0 dBmV

OK

**Reverse Telemetry Level**

17.0 dBmV

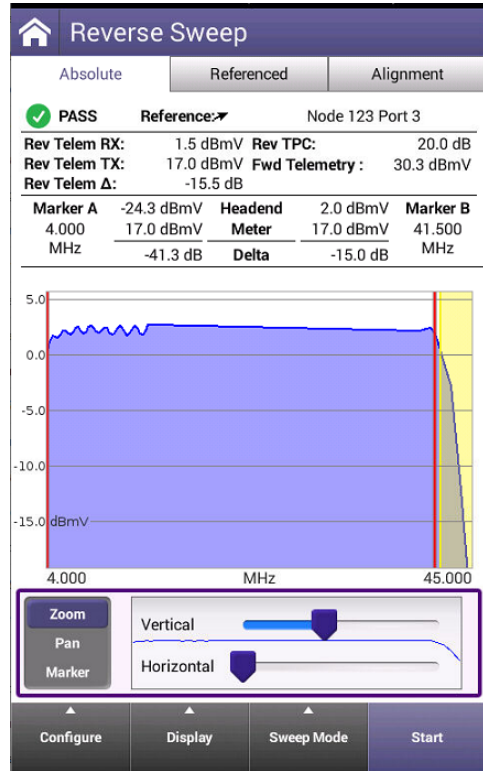
OK

**Select Reverse Port Mode**

Single Port

Dual Port

# Reverse Sweep Alignment



**Sweep Config**  
Modify Sweep Configuration

Configure Test Point  
+20.0 dB TPC 1

**Alignment Carrier Configuration**  
Add/Remove Carriers for Alignment

Choose Reference  
Set reference sweep data

Save Test/Reference  
Save current test to a Work Order

View Tests  
View previous tests

**Alignment Carrier Configuration**

Forward Sweep | Reverse Sweep

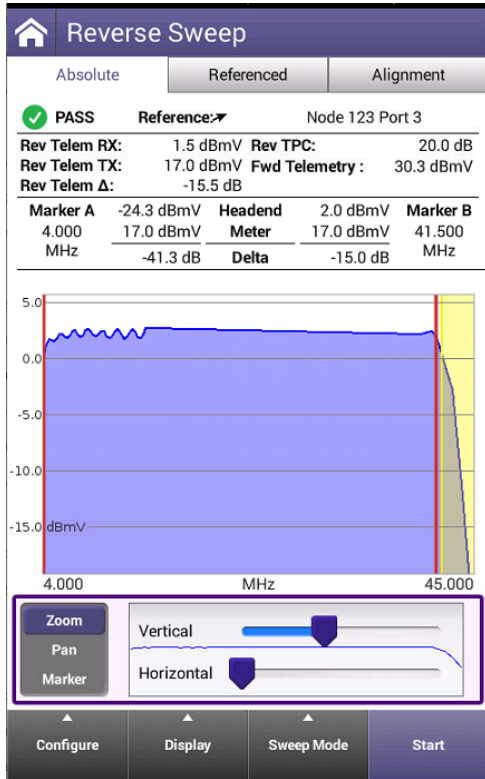
- 5.000 MHz
- 14.000 MHz
- 41.500 MHz

Add Carrier | Remove Carrier | Load Defaults

**Add Carrier**  
Carrier Frequency (MHz)  
41.500

**Frequency (MHz)**  
41.500 | 4.000 - 204.000  
OK

# Reverse Sweep Clear Or Choose Reference



**Sweep Config**  
Modify Sweep Configuration

**Configure Test Point**  
+20.0 dB TPC 1

**Alignment Carrier Configuration**  
Add/Remove Carriers for Alignment

**Choose Reference**  
Set reference sweep data

**Save Test/Reference**  
Save current test to a Work Order

**View Tests**  
View previous tests

**Reverse Sweep Reference**

Work Order | Recent References

Reverse Reference: Node 123 Port 3  
From Work Order: 5678

Tests for Current Work Order:

Node 123 Port 3

Work Order ID: 5678

Clear Reference | Set Reference

**Reverse Sweep Reference**

Work Order | Recent References

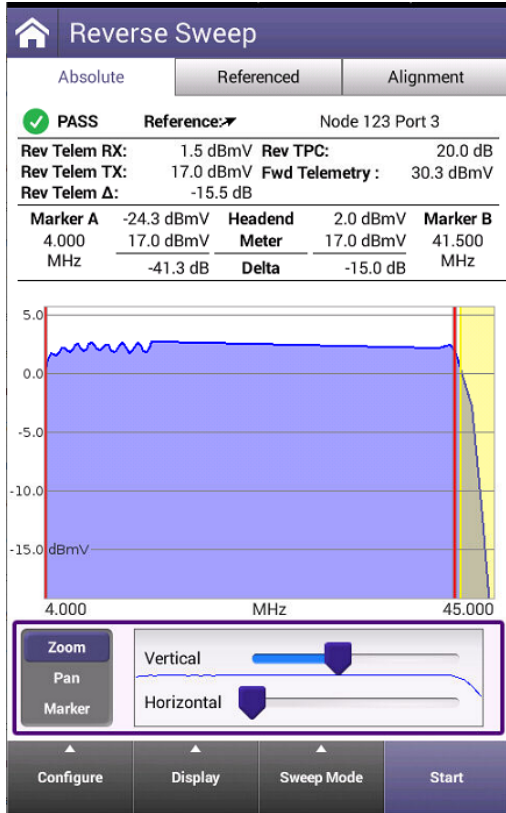
Reverse Reference: Node 123 Port 3  
From Work Order: 5678

Recently Used References:

- Node 123 Port 3  
5678
- Node 123 Port 2  
Node 123
- node 123 port3  
home8542
- node 123 port3  
node 12345
- node 123 port1r  
node 12345
- node 123 rev  
node 123
- node333p1  
node333
- node23noderet  
node23

Clear Reference | Set Reference

# Reverse Sweep Save Reference



**Sweep Config**  
Modify Sweep Configuration

**Configure Test Point**  
+20.0 dB TPC 1

**Alignment Carrier Configuration**  
Add/Remove Carriers for Alignment

**Choose Reference**  
Set reference sweep data

**Save Test/Reference**  
Save current test to a Work Order

**View Tests**  
View previous tests

Save Reverse Sweep Test

**Save Test to Work Order**

Test Name  
Node 123 Port 3

Work Order ID  
5678

Set as Reference

Reverse Sweep Tests

Tests for Current Work Order:

Node 123 Port 3

# Reverse Sweep Display Settings

**Reverse Sweep**

Absolute Referenced Alignment

**PASS** Reference: Node 123 Port 3

Rev Telem RX: 1.5 dBmV Rev TPC: 20.0 dB  
 Rev Telem TX: 17.0 dBmV Fwd Telemetry: 30.3 dBmV  
 Rev Telem Δ: -15.5 dB

A: 4.000 MHz 0.0 dB  
 B: 41.500 MHz 0.1 dB **Min/Max Δ: 0.1 dB**  
 Δ: 37.500 MHz 0.1 dB

4.000 MHz 45.000

Zoom Pan Marker

Vertical

Horizontal

Configure Display Sweep Mode Start

**Auto Reference**

**dB/div**  
2.0 dB

**Marker Frequencies**  
A: 4.00 MHz B: 41.50 MHz

**Rotate Screen**  
Portrait

**dB/div**

1.0 dB

2.0 dB

5.0 dB

10.0 dB

20.0 dB

**Marker Frequencies**

Marker A  
4.000 MHz

Marker B  
41.500 MHz

OK

**Reverse Sweep**

Absolute Referenced Alignment

**PASS** Reference: Node 123 Port 3

Rev Telem RX: 1.5 dBmV Rev TPC: 20.0 dB  
 Rev Telem TX: 17.0 dBmV Fwd Telemetry: 30.3 dBmV  
 Rev Telem Δ: -15.5 dB

A: 4.000 MHz 0.0 dB  
 B: 41.500 MHz 0.1 dB **Min/Max Δ: 0.1 dB**  
 Δ: 37.500 MHz 0.1 dB

Sweep Mode

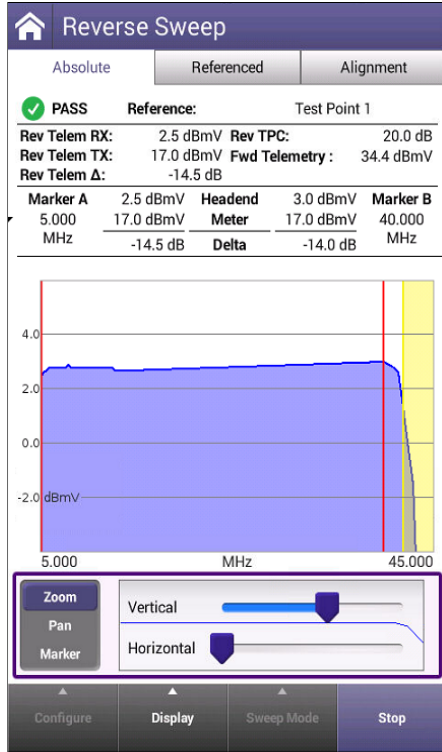
4.000 MHz 45.000

Stop

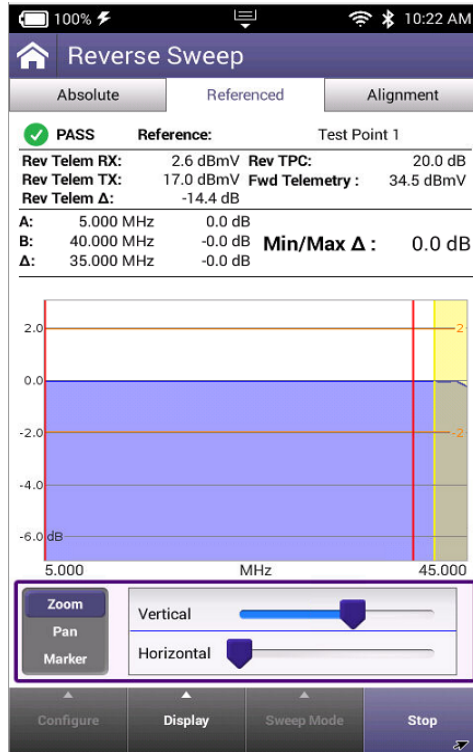


# Reverse Sweep Screens

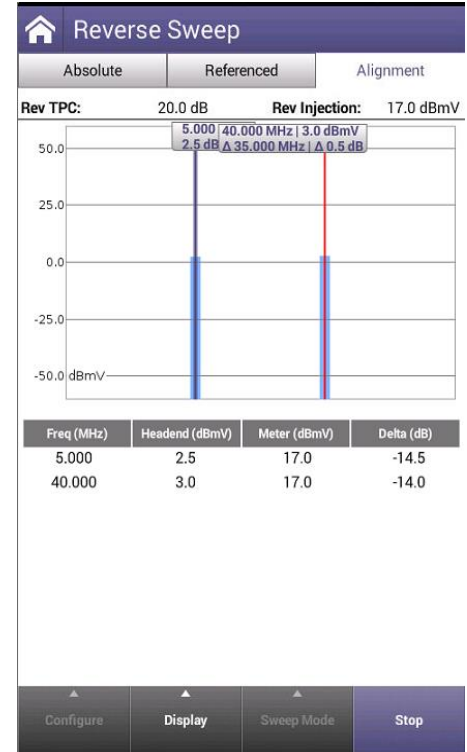
## Absolute "Raw"



## Referenced

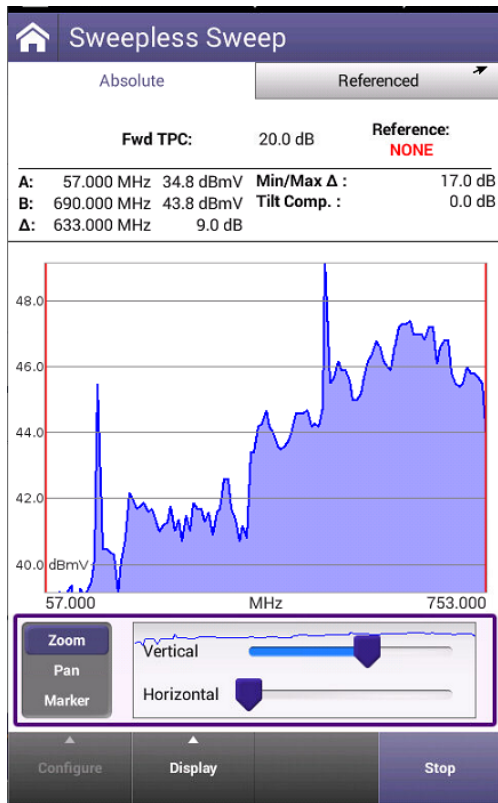


## Alignment



# Sweepless Sweep

# Sweepless Sweep Configure



**Sweep Config**  
Modify Sweep Configuration

**Configure Test Point**  
+20.0 dB TPC 1

**Choose Reference**  
Set reference sweep data

**Save Test/Reference**  
Save current test to a Work Order

**View Tests**  
View previous tests

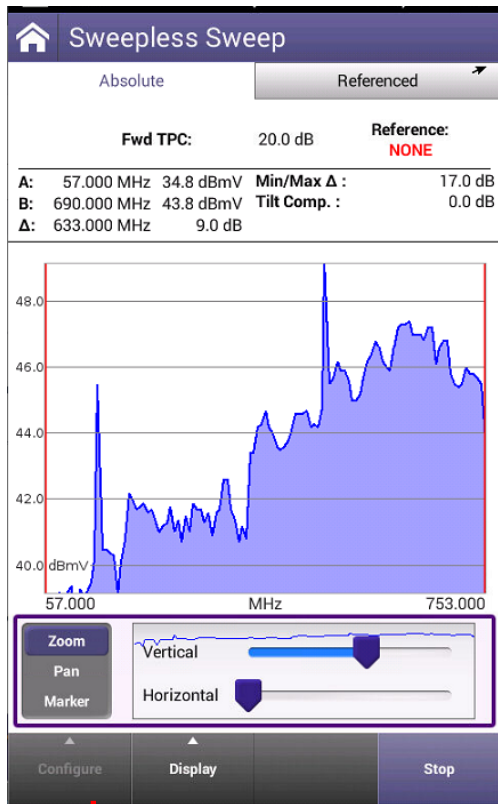
**Configure Sweep**

Changes will restart test

Enable Sweep Limit

Sweep Limit  
4.0 dB

# Sweepless Sweep Configure



The 'Sweep Config' menu is shown, with the following options:

- Sweep Config**  
Modify Sweep Configuration
- Configure Test Point**  
+20.0 dB TPC 1
- Choose Reference**  
Set reference sweep data
- Save Test/Reference**  
Save current test to a Work Order
- View Tests**  
View previous tests

The 'Select Test Point Template' menu is shown, with the following options:

- +0.0 dB TPC
- +20.0 dB TPC
- +20.0 dB TPC 1

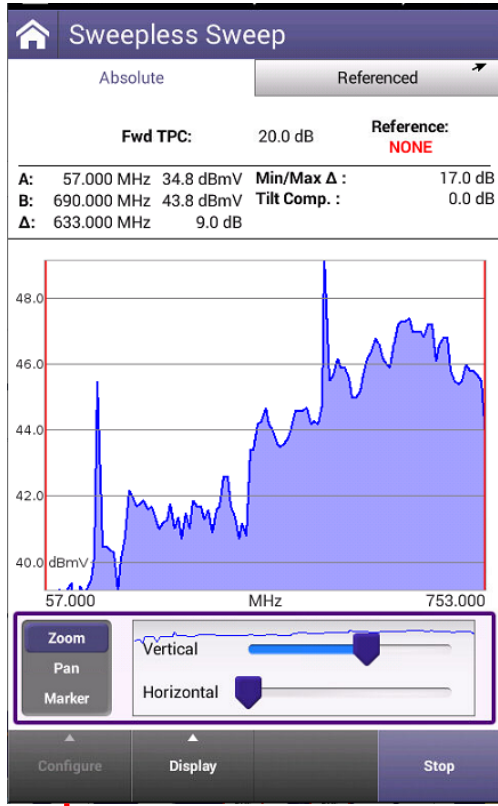
The 'Configure Test Point Template' menu is shown, with the following options:

- Configure Test Point Template**  
+20.0 dB TPC 1
- Forward Test Point Compensation**  
20.0 dB
- Forward Tilt Compensation**  
0.0 dB
- Forward Low Tilt Frequency**  
54.000 MHz
- Forward High Tilt Frequency**  
860.000 MHz

The bottom control panel is shown, with the following buttons:

- View / Edit
- Delete
- Copy
- Done

# Sweepless Sweep Clear Reference



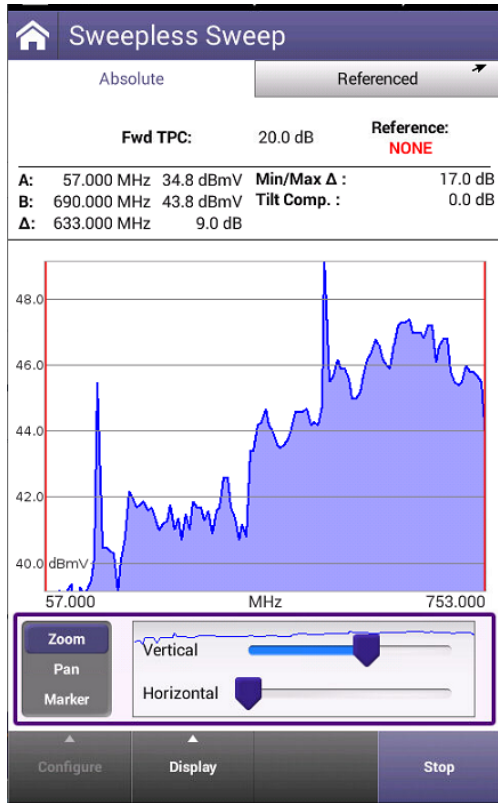
A menu overlay titled 'Sweep Config' with the following options:

- Sweep Config  
Modify Sweep Configuration
- Configure Test Point  
+20.0 dB TPC 1
- Choose Reference**  
Set reference sweep data
- Save Test/Reference  
Save current test to a Work Order
- View Tests  
View previous tests

A menu overlay titled 'Sweepless Sweep Reference' with the following options:

- Work Order
- Recent References
- Reverse Reference: NONE
- From Work Order:
- Tests for Current Work Order:
- Work Order ID: 44
- Clear Reference**
- Set Reference

# Sweepless Sweep Save File or Reference



The 'Sweep Config' menu is shown, containing the following options:

- Sweep Config**: Modify Sweep Configuration
- Configure Test Point**: +20.0 dB TPC 1
- Choose Reference**: Set reference sweep data
- Save Test/Reference**: Save current test to a Work Order
- View Tests**: View previous tests

Red arrows indicate the flow from the 'Sweepless Sweep' interface to this menu, and from the 'Save Test/Reference' option to the 'Save Sweepless Sweep Test' screen.

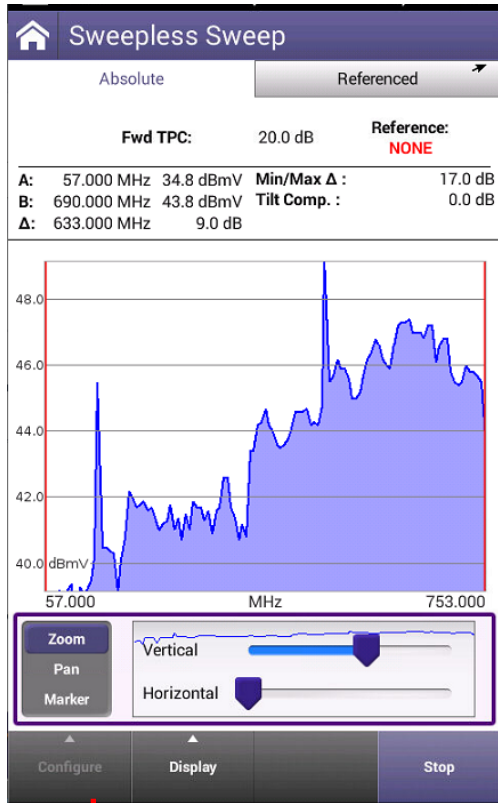
The 'Save Sweepless Sweep Test' dialog is shown, containing the following information:

- Save Test to Work Order**
- Test Name: node333refforward
- Work Order ID: 44
- Set as Reference

At the bottom, there are buttons for 'Set Name to Current Date' and 'Save'. A red arrow points from the 'Save' button back to the 'Sweepless Sweep' interface.



# Sweepless Sweep Configure



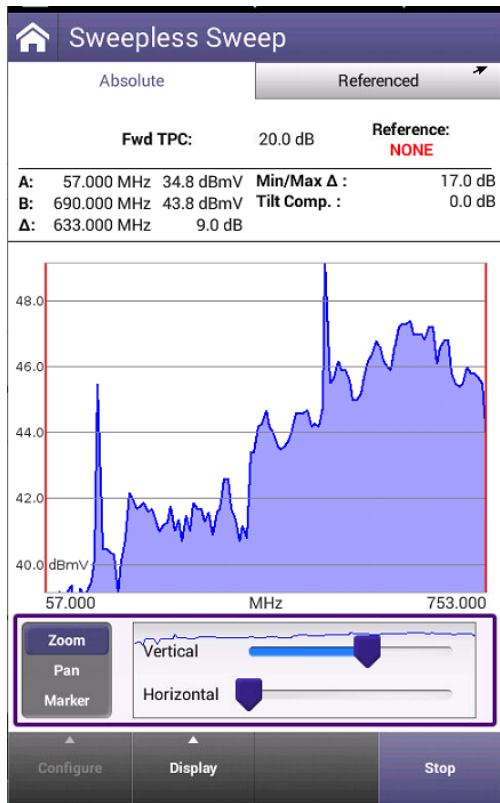
The screenshot shows the 'Sweep Config' menu with the following options:

- Sweep Config**  
Modify Sweep Configuration
- Configure Test Point**  
+20.0 dB TPC 1
- Choose Reference**  
Set reference sweep data
- Save Test/Reference**  
Save current test to a Work Order
- View Tests**  
View previous tests

The 'View Tests' option is highlighted with a red box, and a red arrow points from it to the 'Sweepless Sweep Tests' screen.

The screenshot shows the 'Sweepless Sweep Tests' screen. At the top, there is a back arrow and the title 'Sweepless Sweep Tests'. Below this is the text 'Tests for Current Work Order:'. The main area is empty. At the bottom, there is a 'Work Order ID' field with the value '44' displayed. A 'View Results' button is located at the bottom right.

# Sweepless Sweep Configure



**Auto Reference**

**dB/div**  
2.0 dB

**Marker Frequencies**  
A: 57.00 MHz    B: 757.25 MHz

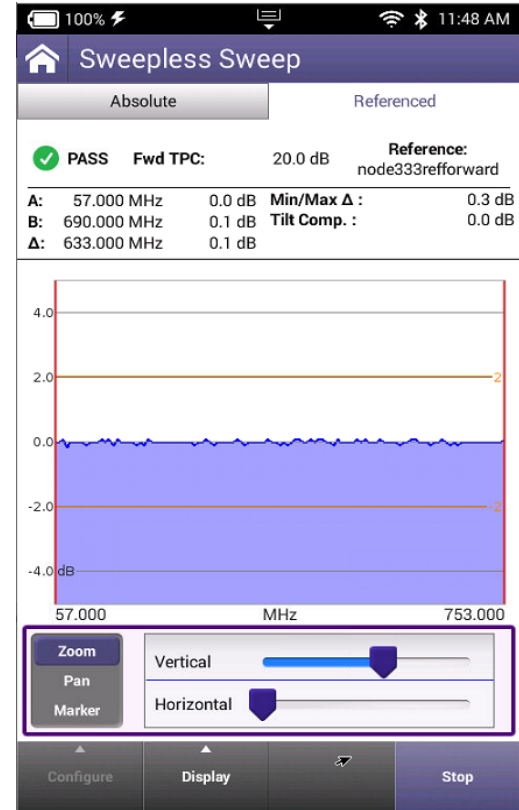
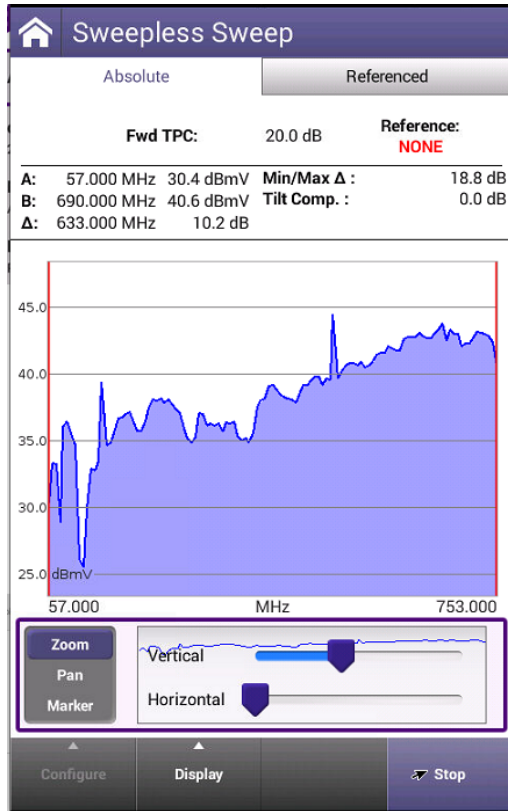
**Rotate Screen**  
Portrait

← dB/div

- 1.0 dB
- 2.0 dB
- 5.0 dB
- 10.0 dB
- 20.0 dB

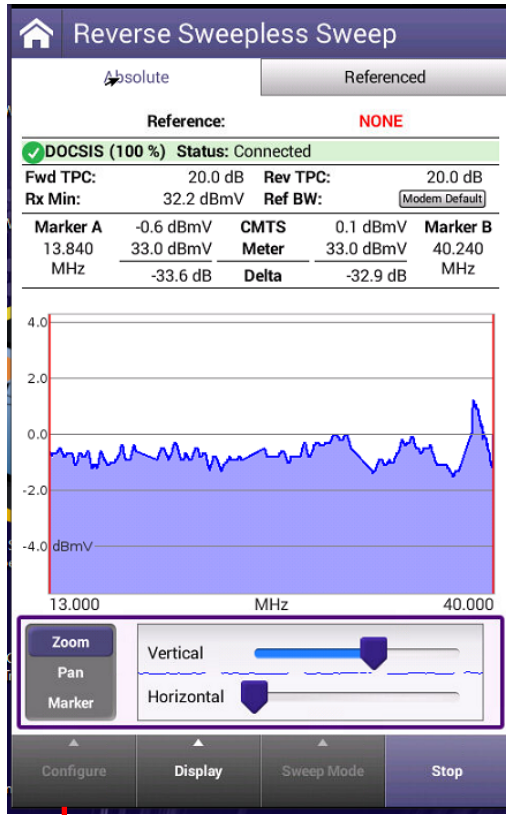


# Sweepless Sweep Absolute and Referenced



# Sweepless Return Sweep

# Reverse Sweepless Sweep Configure and Test Point



**Sweep Config**  
Modify Sweep Configuration

**Configure Test Point**  
+20.0 dB TPC 1

**DOCSIS Service Plan**  
00:07:11:1F:8C:12

**Choose Reference**  
Set reference sweep data

**Save Test/Reference**  
Save current test to a Work Order

**View Tests**  
View previous tests

**Select Test Point Template**

- +0.0 dB TPC
- +20.0 dB TPC
- +20.0 dB TPC 1

View Delete Copy Done

**Configure Sweep**

Changes will restart test

Enable Sweep Limit

Sweep Limit  
4.0 dB

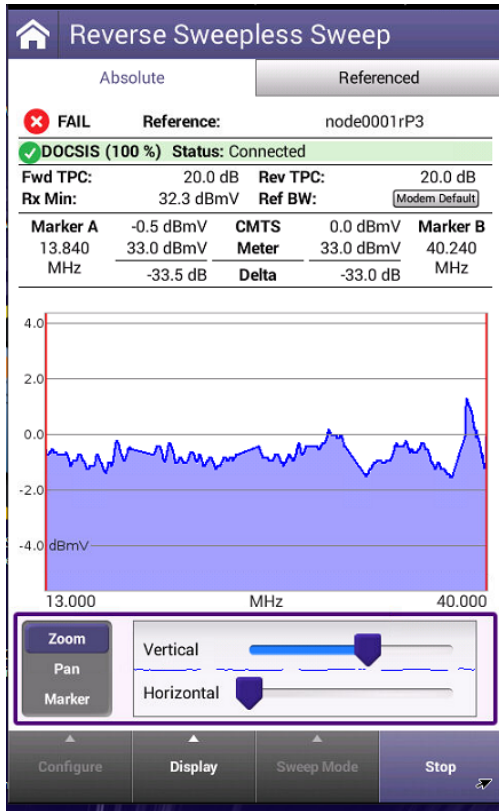
**Configure Test Point Template**

**+20.0 dB TPC 1**

Forward Test Point Compensation  
20.0 dB

Reverse Test Point Compensation  
20 dB

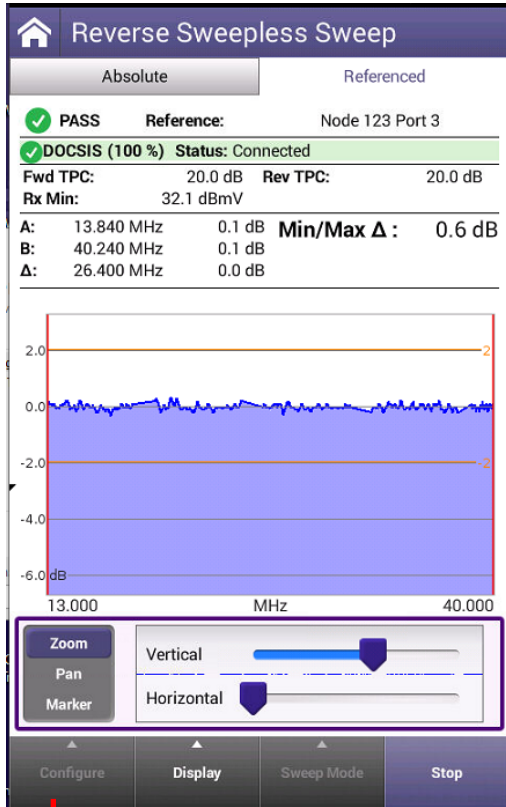
# Reverse Sweepless Service plan Select



- Sweep Config  
Modify Sweep Configuration
- Configure Test Point  
+20.0 dB TPC 1
- DOCSIS Service Plan**  
00:07:11:1F:8C:12
- Choose Reference  
Set reference sweep data
- Save Test/Reference  
Save current test to a Work Order
- View Tests  
View previous tests



# Reverse Sweepless Sweep Reference



Sweep Config  
Modify Sweep Configuration

Configure Test Point  
+20.0 dB TPC 1

DOCSIS Service Plan  
00:07:11:1F:8C:12

Choose Reference  
Set reference sweep data

Save Test/Reference  
Save current test to a Work Order

View Tests  
View previous tests

Reverse Sweep Reference

Work Order Recent References

Reverse Reference NONE

From Work Order:

Tests for Current Work Order:

Work Order ID  
3434

Clear Reference Set Reference

Save Reverse Sweep Test

Save Test to Work Order

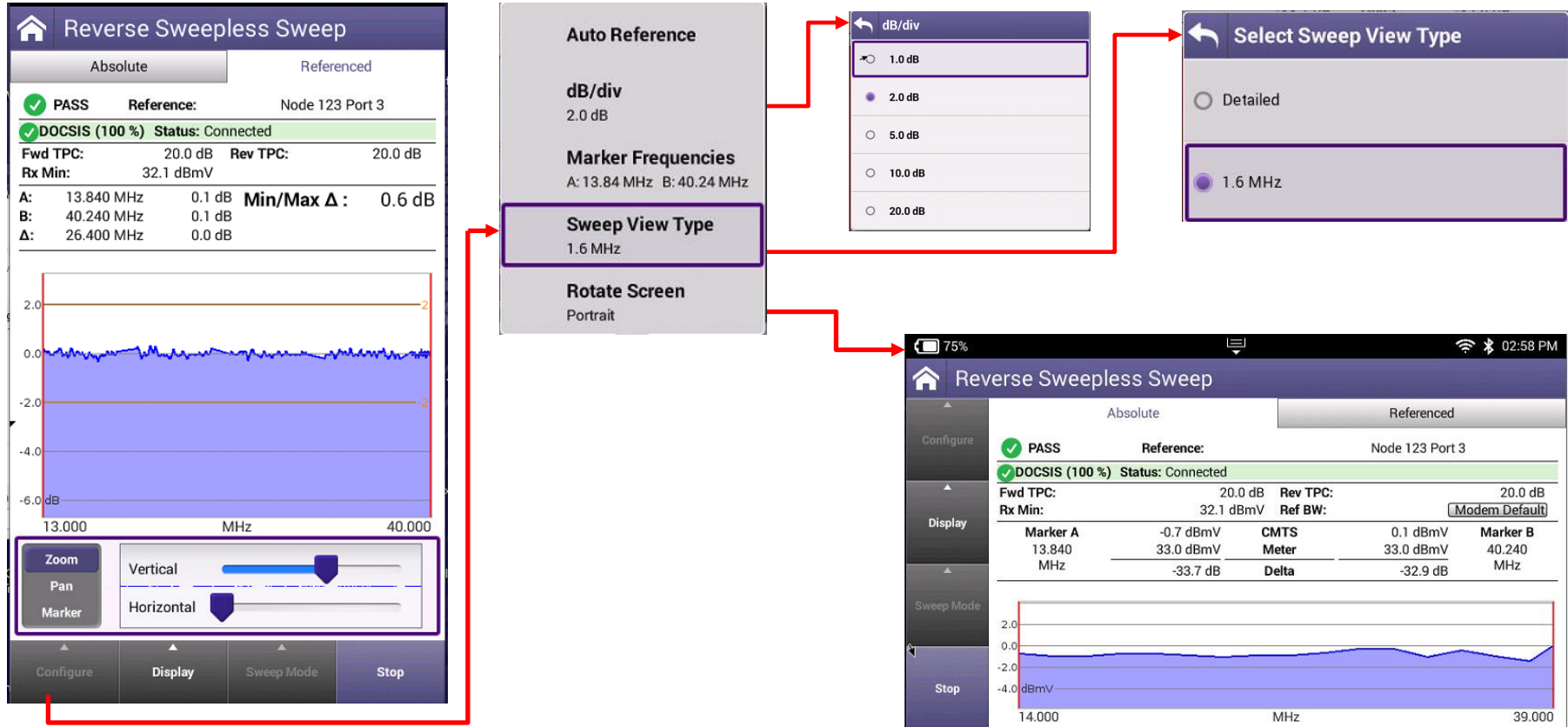
Test Name  
Node 123 Port 3

Work Order ID  
3434

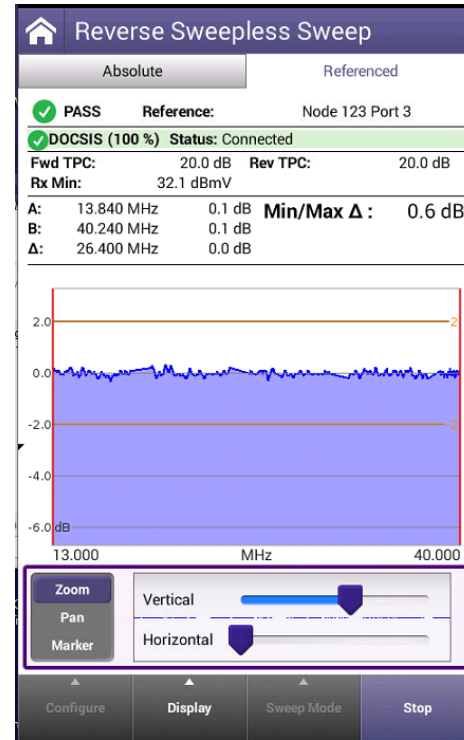
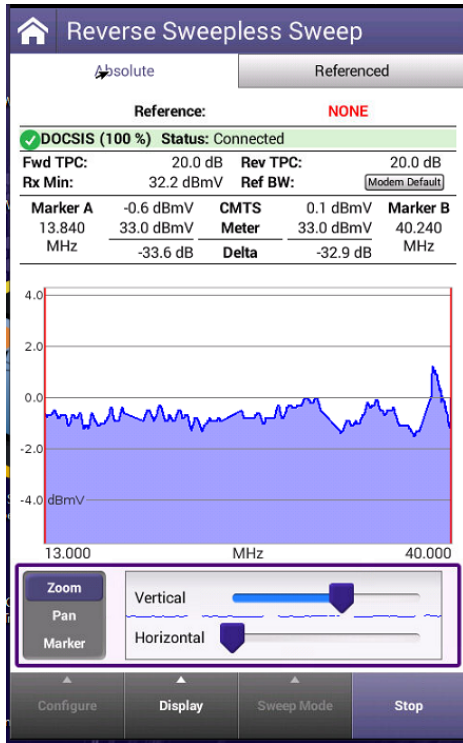
Set as Reference

Set Name to Current Date Save

# Reverse Sweepless Sweep Type



# Reverse Sweepless Sweep Absolute and Referenced

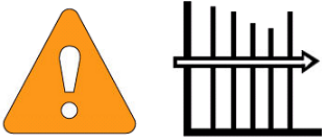


# Typical Reverse Sweep Errors

# Telemetry not found

### Sweep Error

## Telemetry Not Found



Sweep was not able to obtain telemetry.  
Check if telemetry frequency is configured correctly  
If signal levels are high, configure your test point for High Power Environment

Stop   Retry

### Sweep Settings

Forward Sweep | Single User Reverse Sweep

Forward Telemetry Frequency (MHz)

Forward Telemetry Level (dBmV)

Forward Sweep Level (dBmV)

Reverse Telemetry Frequency (MHz)

Automatically start sweep at power on

Submit Query

### Sweep Settings

Multi User Reverse Sweep

Forward Telemetry Frequency (MHz)

Forward Telemetry Level (dBmV)

Reverse Telemetry Frequency (MHz)

Automatically start sweep at power on

Submit Query

### Configure Sweep

Changes will restart test

SDA 5500 Telemetry Frequency  
52.000 MHz

SDA 5510 Telemetry Frequency  
53.000 MHz

Reverse Sweep User Mode  
Single User

Enable Sweep Limit

Digital carrier bandwidth  
6.000 MHz

Sweep Limit  
3.0 dB

### Configure Sweep

Changes will restart test

SDA 5500 Telemetry Frequency  
52.000 MHz

SDA 5510 Telemetry Frequency  
53.000 MHz

Reverse Sweep User Mode  
Multi User

Enable Sweep Limit

Digital carrier bandwidth  
6.000 MHz

Sweep Limit  
3.0 dB

# Invalid Telemetry

## Invalid Telemetry

•3 possibilities

•#1. Using the multiple user frequency when sweeping the forward sweep single sweep or when sweeping forward. using multiple users frequency

Verify correct telemetry.

•#2. The input level is of telemetry exceed +25 dBmV into ONX

•#3. RF channel power into the ONX exceeds 20 dBmV.

Check the High Power Environment in the Test Point template

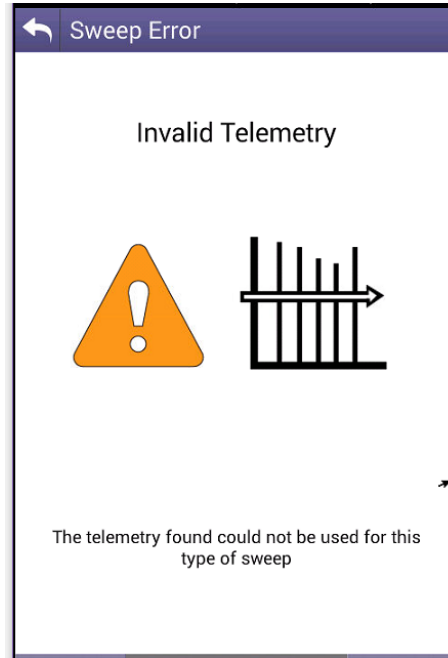


Figure 4: High Power setting

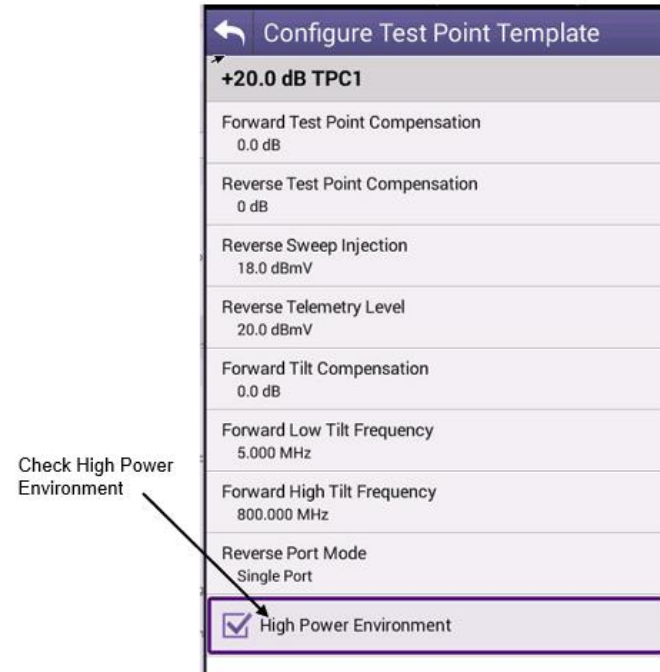


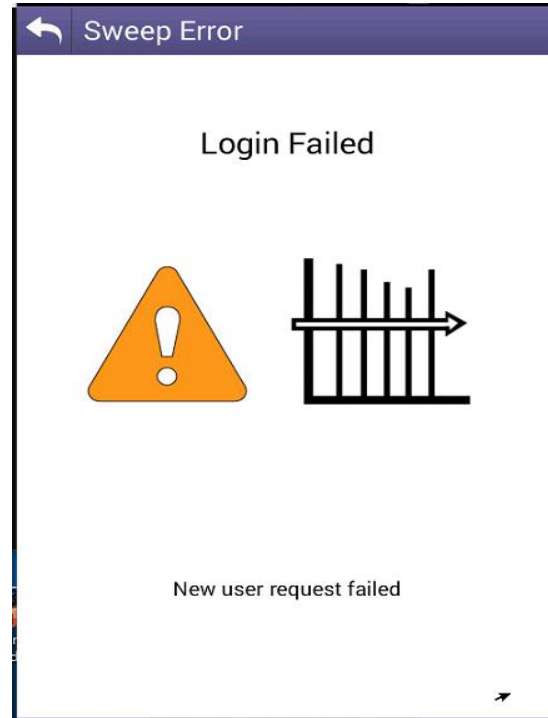
Figure 5: High Power setting



# Login Failure

## Return Sweep Error

- Login Failure
- Typically cause by the return Telemetry level is to low for the SCU-1800 to decode or not present at the SCU-1800
- Return Telemetry > 30 dB to the input of the SCU-1800
- Too much return RF power into the SCU-1800



# Sweep Offline

- Sweep Offline
- Verify Reverse Sweep is check on SDA 5500 return sweep is on
- Too much return RF power. Verify out put on ONX is not too high.
- **Please Review SCU-1800 Getting Started Guide**





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