Network & Service Companion (NSC-100/200)

QUICK CARD

Network Performance Testing with VIAVI SpeedCheck

This quick card describes how to run an TCP Throughput using the OneCheck Ethernet test. VIAVI SpeedCheck tests against a HTTP server where a test file has been placed.

- Mobile Device (Smartphone or Tablet) with VIAVI Mobile Tech App
- Network & Service Companion equipped with the following:
  - Software release V4.2.5 or greater
  - **NSC-OC-ETHERNET** option for up to 1 Gigabit Ethernet testing
  - **NSC-SPEEDCHECK-1G** option for up to 1 Gigabit Ethernet testing
  - **NSC-SPEEDCHECK-10G** option for 2.5, 5, AND 10 Gigabit Ethernet testing
  - **NSC-OPTICAL-ETHERNET** to perform tests with an Optical Transceiver.
- Optical Transceiver supporting the line rate to be tested:
  - **NSC-SFP-ELEC-10G** 10G Electrical Ethernet SFP+
  - **NSC-SFP-ELEC-1-2.5-5-10G** 1G, 2.5G, 5G and 10G Electrical Ethernet SFP+
  - **NSC-SFP-ELEC-AUTO-10G** 2.5G, 5G and 10G Auto-neg Electrical Ethernet SFP+
  - **NSC-SFP-850-1G-10G** 1G and 10G Optical Ethernet SFP+ 850 nm SR
  - **NSC-SFP-1310-1G-10G** 1G and 10G Optical Ethernet SFP+ 1310 nm LR
  - **NSC-SFP-1550-1G-10G** 1G and 10G Optical Ethernet SFP+ 1550 nm ER
- Cables to match the optical transceiver and the line under test
- Fiber optic inspection microscope (P5000i or FiberChek Probe)
- Fiber optic cleaning supplies

Figure 1: Equipment Requirements

PAIRING THE NSC TO YOUR MOBILE DEVICE

On the Network & Service Companion:

1. Press the Power button 🔘 to turn on the unit. The Power indicator will turn solid green when the NSC is on.

2. Press and hold the Pair button **Pair** on the NSC for 3 seconds to enter pairing mode. The blue Pair indicator blinks.

Power and **Pair** buttons

Power and **Pair** indicators

Service and **Network** indicators

Status indicators

Figure 2: Front View

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On the Mobile Device:

1. Go to the Settings menu, enable Bluetooth, and scan for available devices.
2. Pair with **VIAVI NSC**.
3. Launch the VIAVI Mobile Tech App:
   1. If you are using Stratasync for Asset and Report Management, tap **LOGIN WITH INSTRUMENT**, enter your Tech ID, and tap **LOGIN** when prompted.
   2. If you do not use Stratsync, tap **LOCAL MODE.**
4. Press **CONNECT** to connect to VIAVI NSC.
5. Press **Companion** to view the Companion menu. You can now control the instrument through the **Mobile Tech App** and run all tests on the Companion.
6. Press **<** to exit Job View.
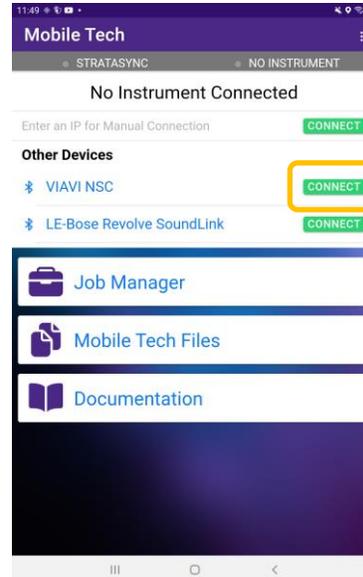
Figure 3: Mobile Tech App
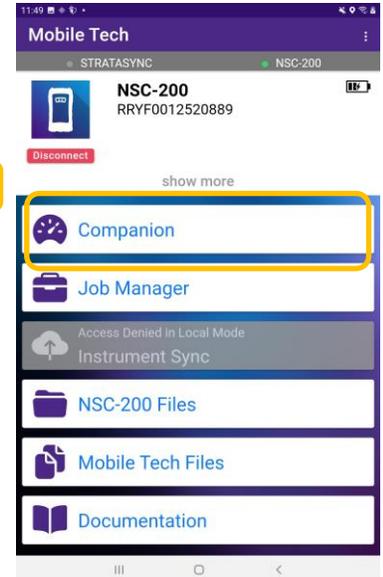
Figure 4: Companion

CONFIGURE PROFILE

► The following Information is needed to configure the Ethernet Profile:

- Interface Type (RJ-45 or SFP)
- Autonegotiation (On or Off)
- Interface Rate (10M, 100M, 1G, 2.5G, 5G, 10G)
- Upload Speed Threshold (Mbps)
- Download Speed Threshold (Mbps)
- URL for test file on web server

1. Press **Profile Manager** to display the Profile Manager screen.
2. Press **CREATE NEW PROFILE** to create a new profile.
3. Select **New Ethernet Profile** and, if prompted, **ACCEPT TERMS OF USE**.


Figure 5: Work Order
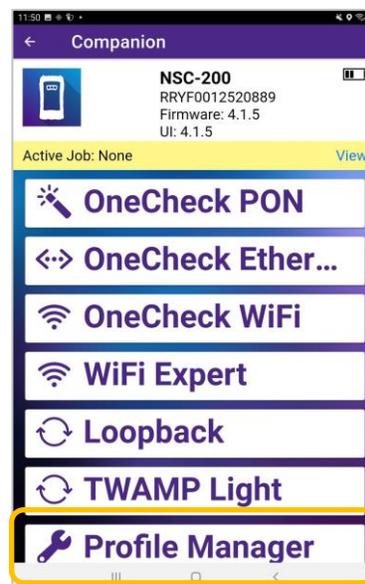

Figure 6: Profile Manager
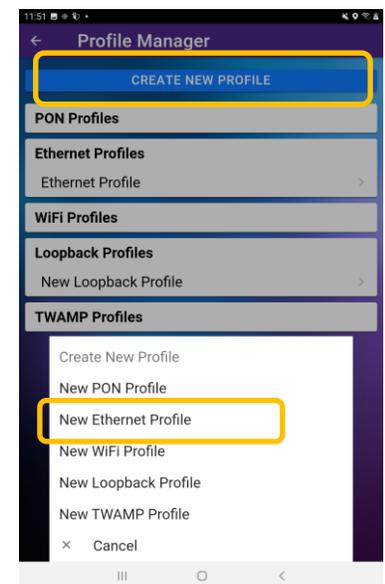
Figure 7: Create New Profile

QUICK CARD

CONFIGURE PROFILE (Continued)

4. Enter a **Profile Name**.
5. Slide controls to the right ⬤ to enable **Run Ping Test** and **Run SpeedCheck**. Slide all other General controls to the left ⬤.
6. Swipe up screen to view **Interface Configuration** and **Data Interface** settings.
7. Configure **Interface Type** as follows:

Port	Interface Type
1Gig Electrical	RJ45
2.5Gig Electrical	SFP
5Gig Electrical	SFP
10Gig Electrical	SFP
1Gig Optical	SFP
10Gig Optical	SFP

8. Configure other interface settings to match the port under test on your network equipment:
   - ► **Autonegotiation**: On or Off (typically, on)
   - ► **Interface Rate**: 10M, 100M, 1G, 2.5G, 5g, or 10G (Only needed if Autonegotation is Off)

9. If a Static IP Address if required, change the **Address Type** to "**Static**" and enter IPv4 Address, Gateway, and Subnet Mask.

10. Swipe up screen to view **Ping** settings.
   - ► In the **Server** section, enter the DNS name or IP Address of your Web Server.

11. Swipe up screen to view **SpeedCheck Test** settings.
   - ► Enter the URL of the SpeedCheck test file.
   - ► Enter **Upload** and **Download** Pass/Fail **Thresholds**.

12. Press **SAVE AND RUN** to initiate the test.
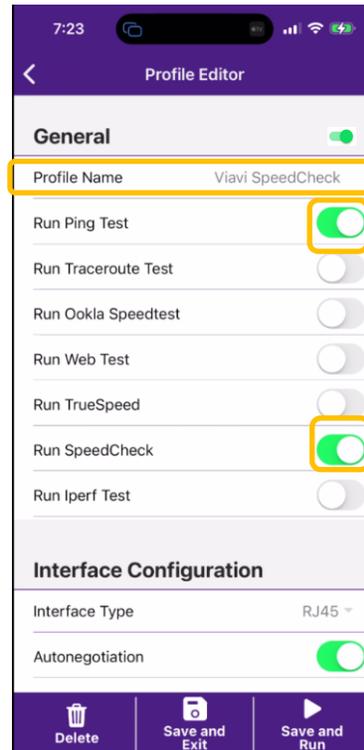
Figure 8: Profile Editor
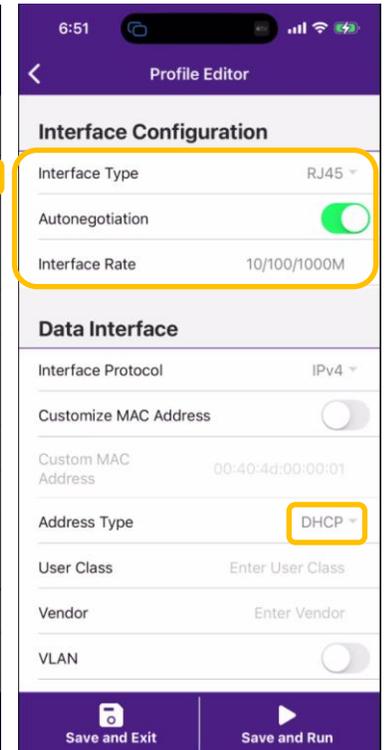
*Figure 9: Interface Configuration*
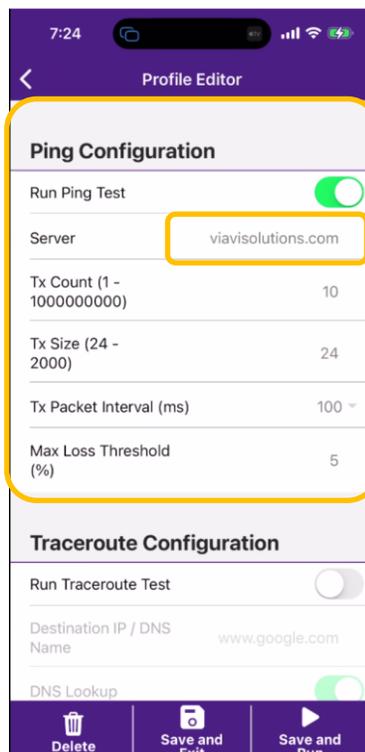
Figure 10: Ping Configuration
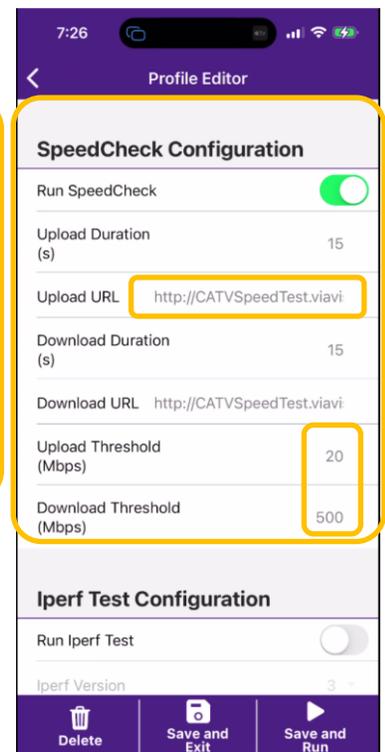
Figure 11: SpeedCheck Config

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CONNECT TO LINE UNDER TEST

► **For 1G Electrical RJ45 interfaces**:
1. Connect the **RJ45** jack to the port under test using **CAT 5E** or better cable..

► **For Multigig Electrical SFP interfaces**:
1. Insert desired Multigig Electrical SFP into the SFP cage on the bottom of the NSC.
2. Connect the SFP to the port under test using **CAT 6A** or better cable..

RJ45 Jack

SFP Cage

► **For Optical Interfaces:**
1. Insert desired Optical Transceiver into the SFP port on the bottom of the NSC.

Figure 12: Network and Service Companion Interfaces

2. Use the VIAVI P5000i or FiberChek Probe microscope to inspect both sides of every connection being used (SFP, attenuators, patch cables, bulkheads)
   - Focus the fiber on the screen.
   - If it appears dirty, clean the fiber end-face and re-inspect.
   - If it appears clean, run the inspection test.
   - If it fails, clean the fiber and re-run inspection test. Repeat until it passes.
3. Connect the SFP to the port under test using a jumper cable compatible with the line under test..

Figure 13: Inspect Before You Connect

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RUN TEST

1. In the **Select a Location** window, tap **Select** and select the location for your test.

2. Press ▶ START

3. Tap ⤢ to zoom in on **SpeedCheck** results and view progress.

4. When the test completes, verify that all results pass ✅ and that Download and Upload speeds meet or exceed pass/fail thresholds.

5. Tap ⤢ to return to the summary view.
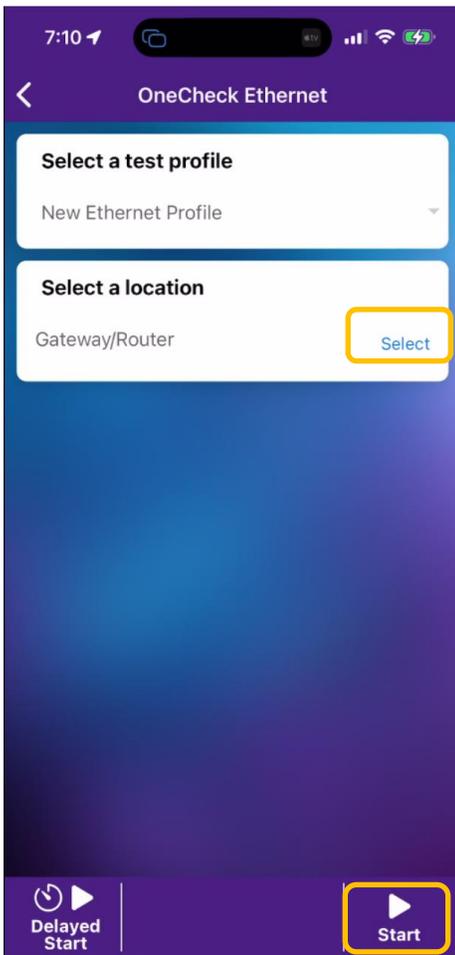

Figure 14: Select Location and Start
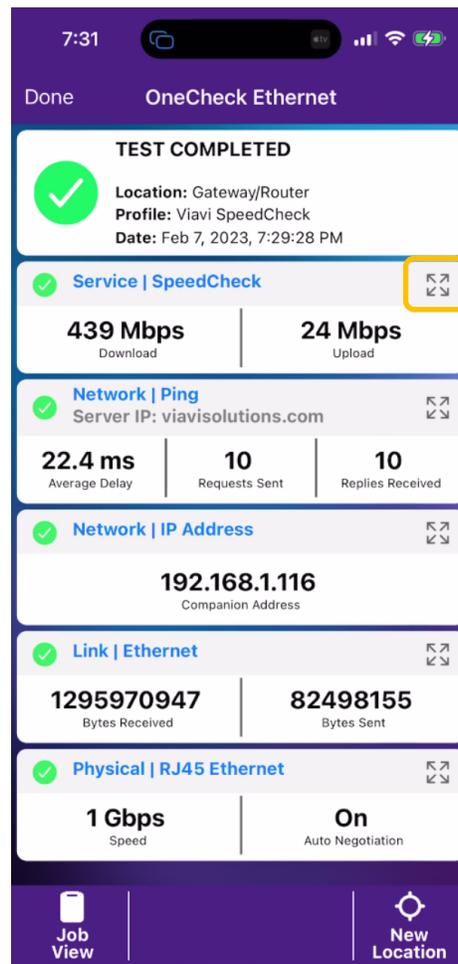
Figure 15: Summary Results
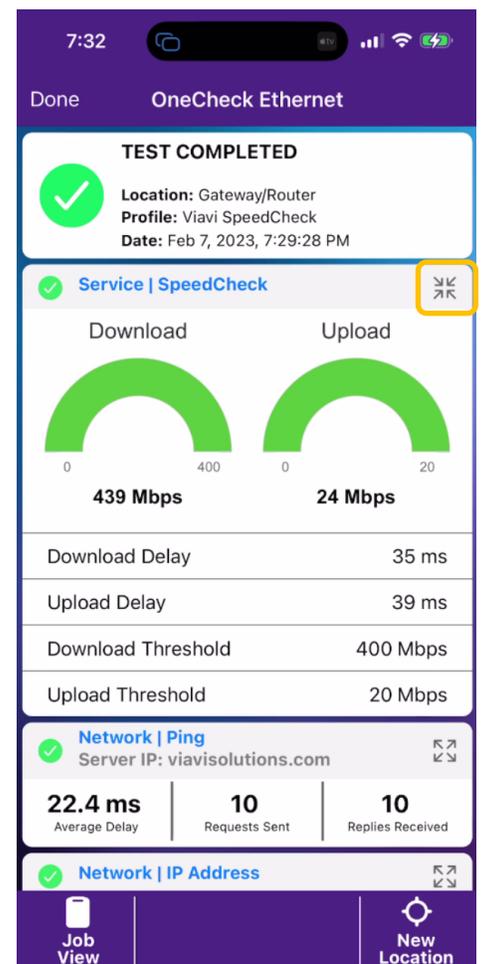
Figure 16: SpeedCheck Results

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