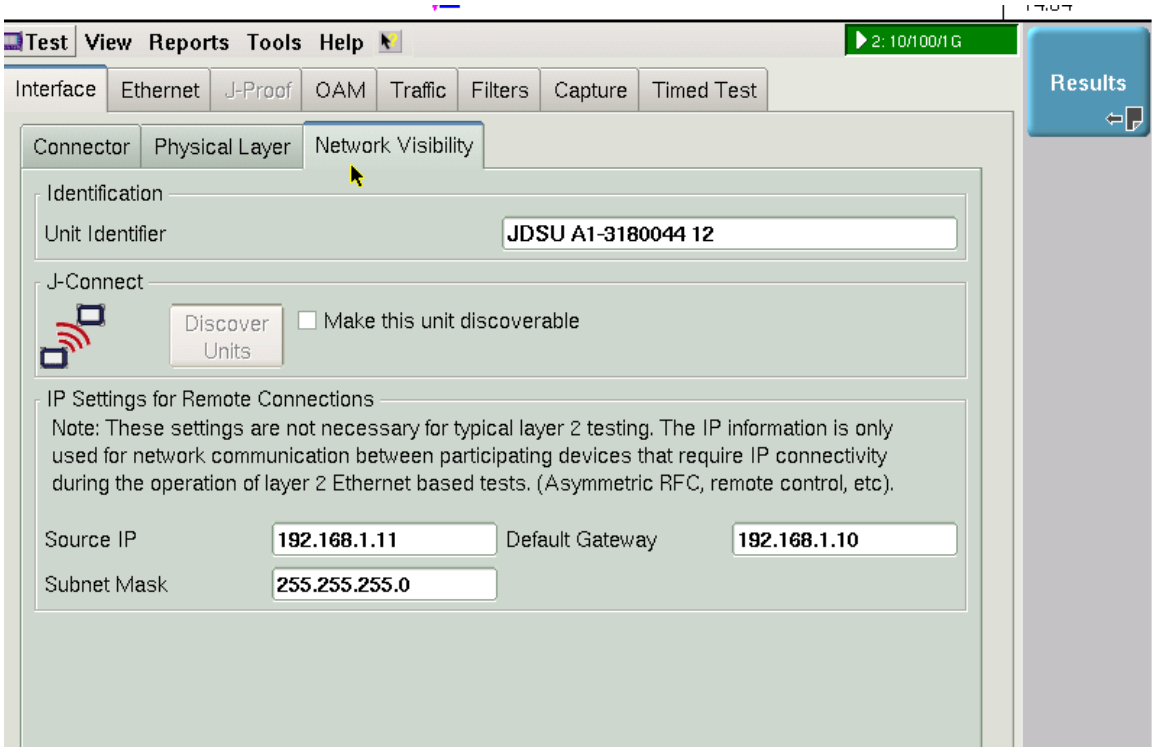
Asymmetrical RFC Layer testing with the TB6000A

Asymetrical RFC testing is required when testing circuits that do not have the same bandwidth capacity in both directions. It requires a testset at each end (TB6000A, TB8000 or HST3000). One test will be the Master unit and execute the RFC script. The far end testset will be the Slave unit and will be remote controlled by the Master unit.

Step 1. Configure both tests to Terminate Layer 2 traffic. Configure each testset for the correct configuration for its end of the circuit (auto negotiation, encapsulation ,etc.). Connect the local cabling and make sure the link at each end acquires physical synchronization.

Step 2. Go into SETUP, on both units, and go to the INTERFACE> NETWORK VISABILITY tab. Each unit needs to be assigned an IP address on the same subnet. You can have the discovery checked but it is not required.

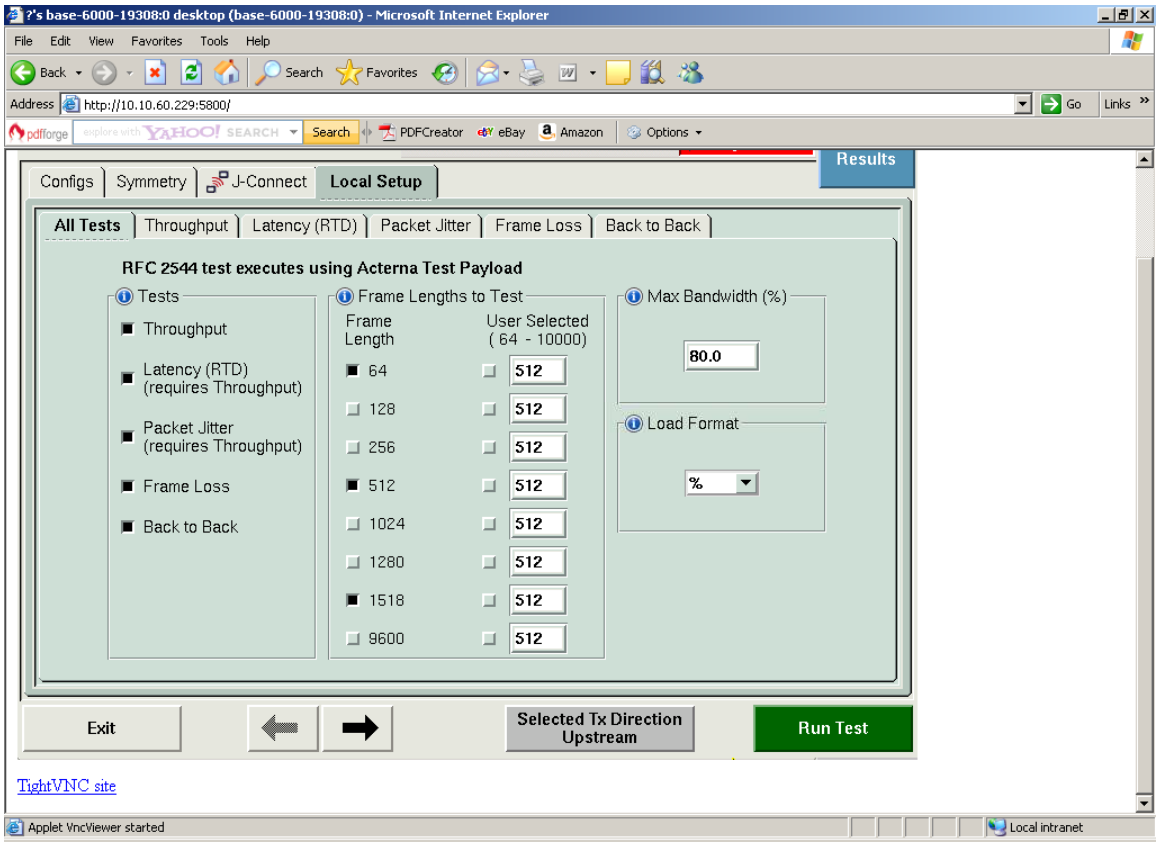


Step 3. Launch the Expert RFC on the Master unit. Do NOT launch the RFC on the Slave unit. Go the Symmetry tab and select Asymmetric from the RFC 2544 Mode drop down box. To test both sides of the circuit, select Combined from the TX Direction drop down box. Under Remote IP Address, enter the IP address of the Slave unit (from step 2) . This is the address the Master unit will use to remote control the Slave unit.

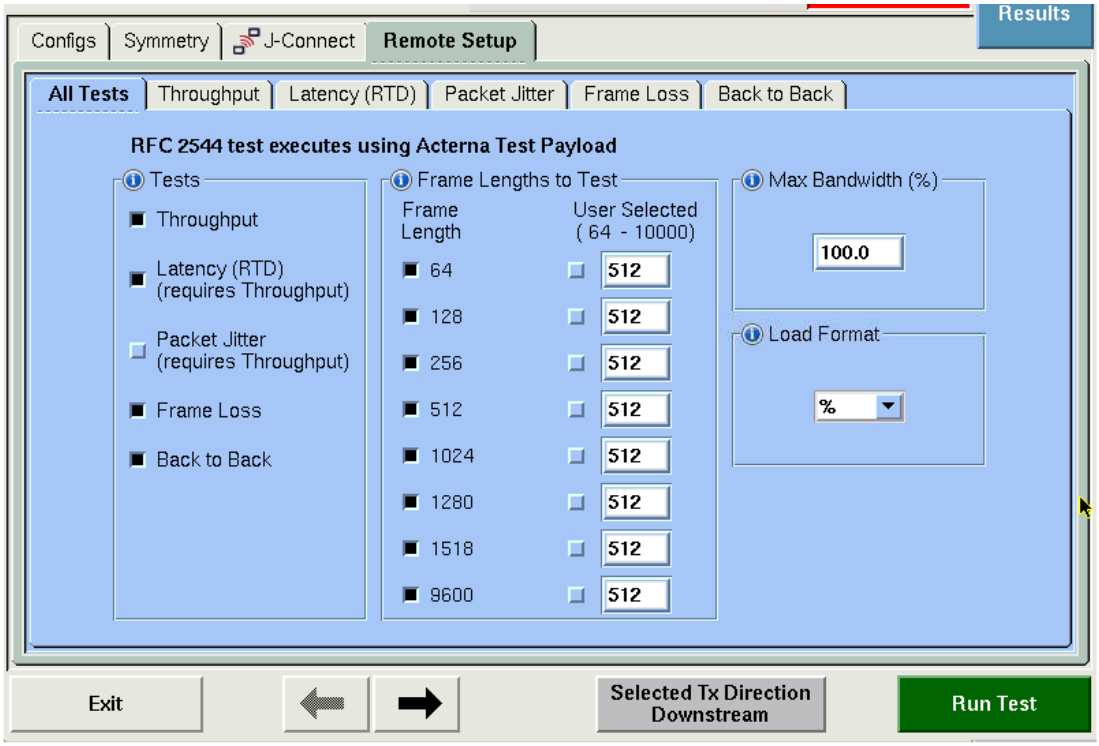
Step 4. The next step is to configure the test setup for upstream direction. The upstream direction is from the local/master towards the remote and shows on the RFC setup as LOCAL SETUP. Go through the various tabs filling out the normal fields for the desired tests. Under Max Bandwidth be sure to specify the bandwidth that is correct for upstream side (transmit out of the local/master unit towards the remote/slave unit).

As latency is a round trip test, it is performed to a loopback and cannot be done head to head as the other asymetrical tests are performed. You can choose not to run the latency test or accept the the round trip result. The unit will loopup the far end unit when the latency test executes. The other tests will be performed head to head.

Once the local setup has been completed press the SELECTED TX DIRECTION UPSTREAM button at the bottom of the screen. It will change to SELECTED TX DIRECTION DOWNSTREAM and the local setup tab will change to REMOTE SETUP.



Step 5. The next step is to configure the test for the downsteam direction. This is from the remote/slave testset to the local/master testset.



Make sure the Max Bandwidth reflects the correct amount for this side of the circuit. Once all fields have been set to the desired values press the RUN TEST button in the bottom right hand corner to start the test.

The following is an example of what is viewed during the asymetrical RFC execution. For this example, the upstream maximum bandwidth was set for 100% and the downstream maximum bandwidth was set for 40%. This is observed from the local/master unit. The remote/slave unit would be in the normal test results screen with periodic chanages in status as it is commanded to change states by the loca/master unit.

```
Asymmetric RFC 2544 Test
  Selected Tx Direction: Combined

  Initializing communication with 192.168.1.3 ..............
    Communication successfully established with the far end

  Remote Test Instrument Name:               T-BERD/MTS 8000
         Remote Serial Number:                       V2-6167
      Remote Software Version:                     BERT 8.0

  Configuration Name:
     asydown

  Transmitting Upstream

  Verifying that link is active...
    Link Found


  Throughput and Packet Jitter Tests

    256 byte frames
  Attempting                              100.000%
  Maximum throughput measured:            100.000%
  Now verifying                           100.000%
     This will take 5 seconds.

  Avg Packet Jitter:                       0.00 us
  Max Avg Packet Jitter:                   0.00 us




  Throughput Test Results:
  Frame       Cfg        Pass        Pass        Pass           Pause
  Length      Rate       Rate        Rate        Rate
Detected
  (Bytes)     (Mbps)     (Mbps)      (%)         (frms/sec)

     256    1000.000    999.900      99.990        452853          No

  Avg and Max Avg Pkt Jitter Test Results:
   Frm      Pkt Jitter  Measured    Measured    Measured     Pause
   Length   -Avg        Rate        Rate        Rate         Detected
            -Max Avg
```

```
   (Bytes)  (us)        (Mbps)      (%)         (frm/sec)
   ---------------------------------------------------------------------
-
     256           0     999.90      99.990       452853         No
                   0


  Frame Loss Test (RFC 2544)

    256 byte frames
  Running test at   100.000% load.  This will take 5 seconds.
  Running test at    90.000% load.  This will take 5 seconds.

  Frame Loss Test Results:

    256 byte frames:
  Cfg              Throughput       Frame Loss     Frames         Pause
  Rate(%)          Rate(%)          Rate(%)        Lost
Detected

    100.000           99.990            0.00             0        No
     90.000           90.000            0.00             0        No




  Back to Back Frames Test

    256 byte frames
  Trial 1:
      905797 frame burst: pass

  Back to Back Frames Test Results:
  Frame Length        Average Burst       Average Burst
  (Bytes)             (frms)              (secs)

     256                905797              2.000




  Transmitting Downstream


  Throughput and Packet Jitter Tests

    256 byte frames
  Attempting                              40.000%
  Maximum throughput measured:            40.000%
  Now verifying                           40.000%
     This will take 5 seconds.

  Avg Packet Jitter:                      0.00 us
  Max Avg Packet Jitter:                  0.00 us
```

```
  Throughput Test Results:
  Frame       Cfg        Pass        Pass        Pass           Pause
  Length      Rate       Rate        Rate        Rate
Detected
  (Bytes)     (Mbps)     (Mbps)      (%)         (frms/sec)

     256     400.000    400.000      40.000        181160          No

  Avg and Max Avg Pkt Jitter Test Results:
   Frm      Pkt Jitter  Measured    Measured    Measured     Pause
   Length   -Avg        Rate        Rate        Rate         Detected
            -Max Avg
   (Bytes)  (us)        (Mbps)      (%)         (frm/sec)
  ------------------------------------------------------------------
-
     256           0     400.00      40.000       181160         No
                   0


  Frame Loss Test (RFC 2544)

    256 byte frames
  Running test at    40.000% load.  This will take 5 seconds.
  Running test at    30.000% load.  This will take 5 seconds.

  Frame Loss Test Results:

    256 byte frames:
  Cfg              Throughput       Frame Loss     Frames         Pause
  Rate(%)          Rate(%)          Rate(%)        Lost
Detected

     40.000           40.000            0.00             0        No
     30.000           30.000            0.00             0        No




  Back to Back Frames Test

    256 byte frames
  Trial 1:
      905797 frame burst: pass

  Back to Back Frames Test Results:
  Frame Length        Average Burst       Average Burst
  (Bytes)             (frms)              (secs)

     256                905797              2.000
```

Test Complete