



**"Results You Can Count On"**

**Model 800-1-212-TP100 Series  
Gfast Single-Channel Local Loop Simulators  
Performance Testing Solution**



**Very Low  
Noise Floor**

**For  
Realistic Testing**

**World's First Passive Gfast Local Loop Simulators for Testing Profile 106 & 212**

The Model 800-1-212-TP100 Series offers the world's first passive local loop simulators designed for testing Gfast. This test solution provides a variety of loop lengths and increments that are perfect for repeatable and configurable Gfast performance testing. The 800-1-212-TP100 series of products integrate with Telebyte's Gfast Physical Layer Testing Solution (see separate datasheets).

**Features Include:**

- Simulation of TP100 as defined by BBF WT-285 issue 2 (Attenuation, Impedance, and Group Delay)
- Maximum Attenuation up to 70dB
- Bandwidth DC to 240 MHz
- Low Noise Floor of  $< -167$  dBm/Hz
- Upgrade Program Available
- Support for Testing of Reverse Power Feeding
- Repeatable, configurable, realistic
- Efficient Automation / Repeatable Testing
- Ethernet Control (CLI or GUI)
- Variety of versions, including several models designed specifically for testing BBF's WT-380 Gfast Performance Test Plan and a version supporting BBF IR-337 Issue 2 Single-Line test cases.



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### **Cable Simulation**

The cable simulated is based upon TP100 which is defined in the Broadband Forum's WT-285, Issue 2, Revision 6, Annex E, August 2018. This product simulates attenuation, impedance, and group delay.

### **Reverse Power Feed**

One important feature of Gfast is the requirement for Reverse Power Feeding for the remote device from the customer's residential gateway. The 800-1-212-TP100 has been designed to support testing of 60 VDC Short Range Reverse Powering per ETSI TS 101 548.

### **Very Low Noise Floor**

Low noise levels are extremely important when the goal is maximum capacity of the local loop. Service Providers have measured background noise levels in their networks as low as -155 dBm/Hz. An active design of a local loop simulator is incapable of achieving such a low level. Conversely, Telebyte's passive design (with a noise floor of less than -167 dBm/Hz) is ideal for Rate-Reach performance testing of Gfast.

## **Available Versions**

- **Model 800-1-212-TP100-200-25\***
  - TP100: 25 to 200m in 25m increments
  - Entry Level
- **Model 800-1-212-TP100-400-25\***
  - TP100: 25 to 400m in 25m increments
- **Model 800-1-212-TP100-600-25\***
  - TP100: 25 to 600m in 25m increments
- **Model 800-1-212-TP100-424-1T**
  - TP100 for WT-380: 25-424m in 1m steps
  - TP100 for TR-114 i3: Simulation of TP100 as defined by ETSI TS 101 270-1 (Attenuation, Impedance) Lengths: 150m, 300m, 450m, 600m, 900m, 1050m, 1200m, 1500m, 2000m, 2500m, 3000m
- **Model 800-1-212-TP100-400-25T\***
  - TP100: 25-400m in 25m steps
  - TP100 for TR-114 i3: Simulation of TP100 as defined by ETSI TS 101 270-1 (Attenuation, Impedance) Lengths: 150m, 300m, 450m, 600m, 900m, 1050m, 1200m, 1500m, 2000m, 2500m, 3000m
- **Model 800-1-212-TP100-224-1\***
  - TP100: 25 to 224m in 1m increments
- **Model 800-1-212-TP100-424-1**
  - TP100: 25 to 424m in 1m increments
  - Designed for testing BBF's WT-380 Gfast Performance Test Plan
- **Model 800-1-212-TP100-624-1**
  - TP100: 25 to 624m in 1m increments
  - Designed for testing BBF's WT-380 Gfast Performance Test Plan
- **Model 800-1-212-TP100-424-1C**
  - TP100: 25-424m in 1m steps
  - CAD55: 20m, 50m, 100m, 200m, 300m, 400m
  - Designed for testing BBF's WT-380 Gfast Performance Test Plan & IR-337 Issue 2 Single-Line test cases.
- **Model 800-1-212-TP100-624-1C**
  - TP100: 25-624m in 1m steps
  - CAD55: 20m, 50m, 100m, 200m, 300m, 400m
  - Designed for testing BBF's WT-380 Gfast Performance Test Plan & IR-337 Issue 2 Single-Line test cases.



\*This version does not support WT-380

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## Specifications

Local Loop Simulation Specification	
<b>Simulation</b>	<ul style="list-style-type: none"><li>• TP100<ul style="list-style-type: none"><li>○ Simulates TP100 as defined in Broadband Forum's WT-285, Issue 2, Revision 5, Annex E, June 2018</li><li>○ Simulates attenuation, impedance, and group delay</li></ul></li><li>• CAD55<ul style="list-style-type: none"><li>○ Simulates CAD55 as defined in Broadband Forum's WT-285, Issue 2, Revision 5, Annex A, June 2018</li><li>○ Simulates attenuation, impedance, and group delay</li></ul></li></ul>
<b>Bandwidth</b>	DC to 240 MHz
<b>Average Noise Floor</b>	< -167 dBm/Hz
<b>Attenuation (Insertion Loss)</b>	MAE < 1.0dB (2MHz to 212MHz) Maximum Attenuation up to 70dB
<b>Impedance</b>	Complex, varies over frequency with length
<b>Group Delay</b>	Better than 5%
<b>System Specifications</b>	
<b>DC Rating</b>	± 60 V between Tip and Ring and 350mA
<b>DPU/Modem Connection</b>	1 CAT6A RJ45 Connector CO side of loop 1 CAT6A RJ45 Connector CPE side of loop
<b>Control</b>	802.3 Ethernet, including high-level command set for remote control, OR a web-based Graphic User Interface (GUI)
<b>Power Supply</b>	88 to 264 VAC, 50 or 60 Hz
<b>Dimensions</b>	[4U] W 19 in x H 7 in x D 25 in (W 482 mm x H 178 mm x D 635 mm)
<b>Mounting options</b>	Mountable in 19" rack

Specifications are subject to change without notice. Made in USA.



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Continued

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## Ordering Options

Model Number	Description
<b>800-1-212-TP100-200-25*</b>	Entry Level Gfast Single-Channel Local Loop Simulator Line Lengths: 25m to 200m in 25m increments
<b>800-1-212-TP100-400-25*</b>	Gfast Single-Channel Local Loop Simulator Line Lengths: 25m to 400m in 25m increments
<b>800-1-212-TP100-400-25T*</b>	Single-Channel Local Loop Simulator: TP100 for testing G.fast: 25m to 400m in 25m increments TP100 for testing TR-114i3 (150m, 300m, 450m, 600m, 900m, 1050m, 1200m, 1500m, 2000m, 2500m, 3000m)
<b>800-1-212-TP100-600-25*</b>	Gfast Single-Channel Local Loop Simulator Line Lengths: 25m to 600m in 25m increments
<b>800-1-212-TP100-224-1*</b>	Gfast Single-Channel Local Loop Simulator Line Lengths: 25m to 224m in 1m increments
<b>800-1-212-TP100-424-1</b>	Gfast Single-Channel Local Loop Simulator Line Lengths: 25m to 424m in 1m increments Supports WT-380 Performance Testing
<b>800-1-212-TP100-424-1T</b>	Dual-Standard Gfast Single-Channel Local Loop Simulator: WT-380 (424m in 1m increments) and TR-114i3 (150m, 300m, 450m, 600m, 900m, 1050m, 1200m, 1500m, 2000m, 2500m, 3000m)
<b>800-1-212-TP100-624-1</b>	Gfast Single-Channel Local Loop Simulator Line Lengths: 25m to 624m in 1m increments Supports WT-380 Performance Testing
<b>800-1-212-TP100-424-1C</b>	Multi-Wire Type Gfast Single-Channel Local Loop Simulator: TP100 (25-424m in 1m increments) and CAD55 (20m, 50m, 100m, 200m, 300m, 400m) Supports WT-380 Performance Testing Supports IR-337 Issue 2 Single-Line Testing
<b>800-1-212-TP100-624-1C</b>	Multi-Wire Type Gfast Single-Channel Local Loop Simulator: TP100 (25-624m in 1m increments) and CAD55 (20m, 50m, 100m, 200m, 300m, 400m) Supports WT-380 Performance Testing Supports IR-337 Issue 2 Single-Line Testing

\*NOTE: This model does not support WT-380

## Upgrade Program

Telebyte has a factory upgrade program for several of these models.  
Please contact Telebyte sales for further details.