SpeedSweep System

Signal Analysis System

- Speeds Maintenance and Troubleshooting with Full Sweep, Signal, Spectrum and QAM Analysis
- ONLY Analyzer with an Optional Embedded CableLabs® Certified DOCSIS 3.0 Modem
- DSP Technology Enables Quick, Accurate Measurements
- High Resolution, Fast Forward/Reverse Sweep Update
- Enables Analysis of Service Signals from Analog to Digital, from DOCSIS to VoIP
- Large Easy-to-Read Display Avoids Measurement Interpretation Errors, and Speeds Access to a Wide Range of Measurement Results
- Complete Plant Maintenance Solution with 860 DSPi Field Analyzers
- Comprehensive Best-in-Class Measurement Functionality in a Sweep-Capable Meter

Complete plant maintenance

The Trilithic SpeedSweep™ system extends the 860 DSPi™'s HFC plant maintenance functionality, giving technicians the ability to test forward and reverse RF sweep response, in addition to a wide and growing range of signal analysis features.

The forward sweep is transmitted from the model 8300 FST™ forward sweep transmitter, and the reverse sweep is received by the 8310 RSA™ reverse sweep analyzer.

Existing 860 series analyzers with the SR-1 sweep receiver option can be upgraded with the FS-1 forward speed sweep option by purchasing it and downloading the firmware.

Fast sweeping technology

The forward sweep covers the entire frequency range, updating in just a fraction over one second. The sweep update rate is not slowed by digital channels, actually sampling the response in three data points per 6 MHz digital channel.

The unprecedented sweep speed is made possible through the use of DSP technology – the same technology that gives Trilithic's return band monitoring unparalleled speed and makes the complete system remarkably cost-effective. The reverse sweep is remarkably fast, even at a high frequency resolution with multiple users.

Cost-effective solution

The Trilithic SpeedSweep system provides sweep functionality with a minimal capital investment, putting the sweep troubleshooting/maintenance tool into the hands of more field technicians, and improving their ability to find problems quickly – in many cases before subscribers are affected. This leads to improved system reliability and shorter repair times.

SpeedSweep System

Signal Analysis System

Cost-effective solution

The Trilithic SpeedSweep system provides sweep functionality with a minimal capital investment, putting the sweep troubleshooting/maintenance tool into the hands of more field technicians, and improving their ability to find problems quickly – in many cases before subscribers are affected. This leads to improved system reliability and shorter repair times.

Evergreen technology

With DSP technology and the SpeedSweep system, the 860 DSP series of analyzers offers plant maintenance technicians a complete set of test capabilities and the ability to increase responsibilities without changing meters. As a technician's skill set grows, the analyzer's capabilities can grow with him or her. The full range of features includes digital and analog signal analysis, spectrum analysis (distortion testing), VoIP performance, HSD performance, return path characterization, work force management, and now RF sweep response.

Integrated components

The SpeedSweep system includes the 8300 FST, which generates a sweep stimulus for the downstream measurement; an 860 analyzer with a sweep option FS-1, which receives the forward sweep and with SR-1 option transmits reverse sweep signals for upstream measurements; and the 8310 RSA, which receives the upstream sweep signal generated by the 860 and relays the measurement results back to the 860.

SpeedSweep System

The 8300 FST is an essential part of the system for comprehensive sweep capability in the 860 field analyzer family. The instrument is rack-mounted in the head-end and generates a sweep that steps around system carriers to avoid interference, filling in vacant spectrum areas for a complete view of the network frequency response. An 860 (with option FS-1) receives the sweep and – based on the measured sweep and system carrier levels – plots the frequency response. This response is compared to a stored reference to provide a difference display. With the goal of the network design being unity gain from amplifier output to amplifier output, the ideal response will be as flat as possible. The sweep test provides a measure of the RF transmission characteristics of the network between the transmitter and the receiver, and is used as a day-to-day maintenance tool for the RF portion of the HFC network.

The 8310 RSA continuously monitors the return path spectrum for sweep signals from 860 units in the field. The RSA measures return sweep signals and relays the received level information back to the 860 field analyzer that is generating them. The sweep function is usually performed by a plant maintenance technician, and the installation tests are performed either by system installation technicians or contractors.

860 DSPi

The 860 DSPi Field Analyzer has a remarkably wide range of test capabilities that are especially applicable for the maintenance technician/engineer in addition to sweep response measurement. Tests cover the range of analog and digital signal analysis including QAM constellations, MER, BER over time, equalizer stress, DOCSIS 3 modem statistics, VoIP tests, etc. (please see the 860 DSPi data sheet for more details).

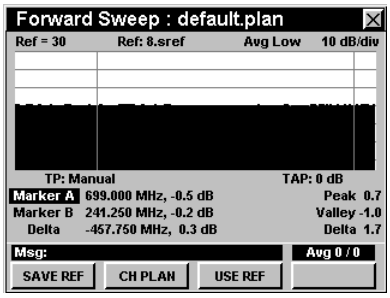
Preliminary

SpeedSweep System

Signal Analysis System

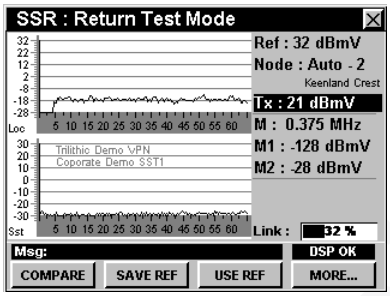
FS-1 Forward Sweep Option

- Enables a forward sweep display
- Compatible with the SpeedSweep System for forward sweep balancing and troubleshooting



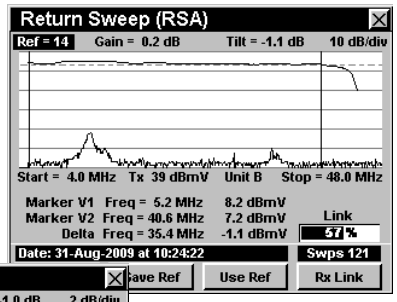
SR-1 Return Test Option

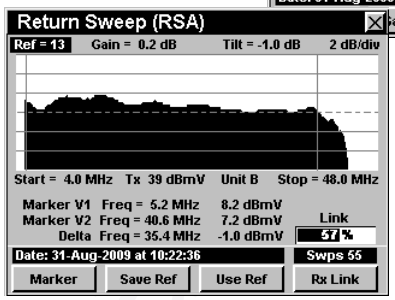
- Compatible with the 9581 SST
- Useful for return path balancing and troubleshooting
- Wide dynamic range for noise/interference analysis



RSA Return Sweep Analysis Feature (SR-1 Option)

- High resolution, high speed reverse path sweep
- Completes full sweep maintenance feature set





RELATED PRODUCTS

8300 FST Forward Sweep Transmitter (P/N 2011072001)

The 8300 FST is rack-mounted in the headend and generates a sweep that steps around system carriers to avoid interference, filling in vacant spectrum areas for a complete view of the network frequency response. An 860 (with FS-1 option) receives the sweep and – based on the measured sweep and system carrier levels – plots the frequency response.

8310 RSA Return Sweep Analyzer (P/N 2011375000)

The 8310 RSA receives a sweep initiated from a field test point by an 860 DSPi and transmits the received sweep level information back to the 860 on a downstream telemetry signal. The 860 DSPi with an SR-1 Option injects an agile sweep signal configured to “step around” active channels, sweeping in unoccupied spectrum areas to a resolution of 100 kHz. The reverse sweep is received by the 8310 RSA and the response information is relayed back to the 860 DSPi on via user configurable frequency agile forward telemetry signal.