z Series

DOCSIS 3.1 Tester System

zSeries DOCSIS 3.1 is a complete fully-integrated hardware and software test solution for Cable Modem Production testing and verification. DOCSIS 3.1 covers all current D3.0 and future D3.1 mass production tests.

Key Specifications

- 500 MHz generator bandwidth for interoperability & impairment tests
- Single 1.25 GHz wide capture bandwidth & advanced triggering for spurious emissions tests
- Expandable from single-DUT to multi- DUT
- Single-insertion US & DS
- Clock error estimation and correction
- Off-line test to reduce test time
  - 100X faster than on-line testing with CMTS in mass production

Software

- zSignal DOCSIS
- C and LabVIEW Driver API

zSignal DOCSIS

- Spectrum & ACP
- PVT
- Channel Power
- Frequency Error
- Clock Error
- MER
- MER of Minislot
- Time-capture plot
- Constellation
- Spurious Emissions

LITEPOINT
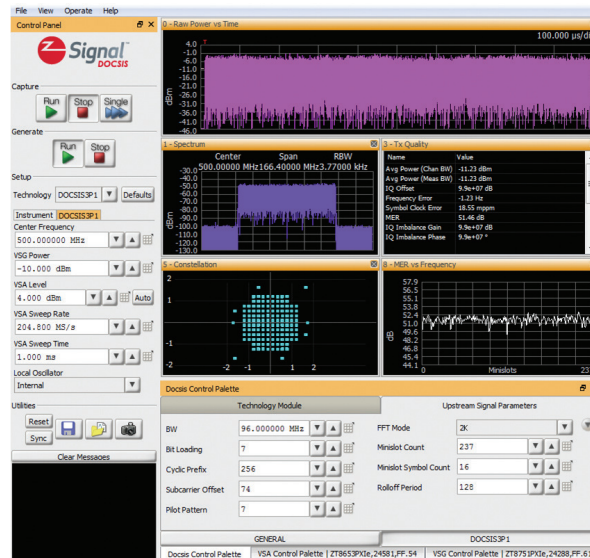
Modules

- z8815 DOCSIS Signal Conditioning Module = z47524 + z8811 x 2+ z8816
- z8453 IF Digitizer
- z8751 Vector Signal Generator
- z3975 Embedded Controller

Offline testing

- Multi DUT Asynchronous Parallel Testing reduces time-to-test
- Ensure maximum operator efficiency
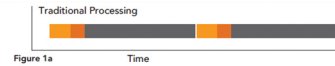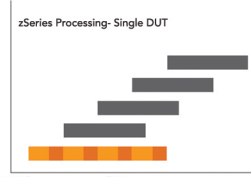- Application driver does not need synchronization, works with 1 to multiple DUTs
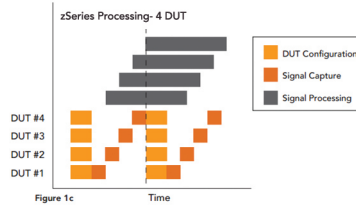

Figure 1a

Figure 1b

Figure 1c

Clock error estimation & correction

- Clock error estimation and correction feature allows you to measure the actual DUT performance.
- A symbol clock frequency error can reduce/increase OFDMA subcarrier spacing

Specifications

Component/System	Specifications
z8453 IF digitizer	5-204 MHz upstream testing
z8751 VSG	47-1794 MHz downstream testing
DS: z8751 VSG+ z8811A RF Signal Conditioning	High band, 250 MHz to 6 GHz, -105 dBm to +16 dBm Low band, 5 MHz to 250 MHz, -60 dBm to +24 dBm Modulation bandwidth up to 500 MHz
US: z8453 Digitizer + z8811A RF Signal Conditioning	5 MHz to 1.25 GHz, -20 dBm to +30 dBm reference level Analysis bandwidth 1.25 GHz -165 dBm/Hz noise floor
US Loopback Residual MER	52.5 dB @ 40 dBmV, 4096 QAM

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