

DS1610 "KingStone" Broadband Network Monitoring System

Key Benefits

- Proactively monitor the broadband network in order to detect problems before it affects customers
- 24/7 monitoring system with alarms and notifications which informs the user immediately when an impairment is detected
- Reduce OPEX by analyzing multiple return and forward paths simultaneously
- Real-time monitoring of the entire network from a PC



The Kingstone monitoring system offers real-time simultaneous signal monitoring and analysis on multiple return and forward paths of HFC networks. The DS1610 system is capable of capturing any transient noise and ingress noise and includes alarm setting, data storage, data analysis, data comparison in 3D and video recording, simplifying the installation, maintenance and troubleshooting of HFC networks. The user is also able to log in through any PC, enabling remote monitoring of the plant.

System Configuration

Standard Configuration	
DS1610	Housing with built-in Local Management Software
	DS1610 Server Software
	DS1610 Client Management Software

Optional Modules	
DS1610-1D	Return Path Monitor Card
DS1615	RF FSK Modulator
DS8831H	Spectrum Analyzer

Software Interface

Real-time Monitoring

3D Monitor

Limit Lines Setup

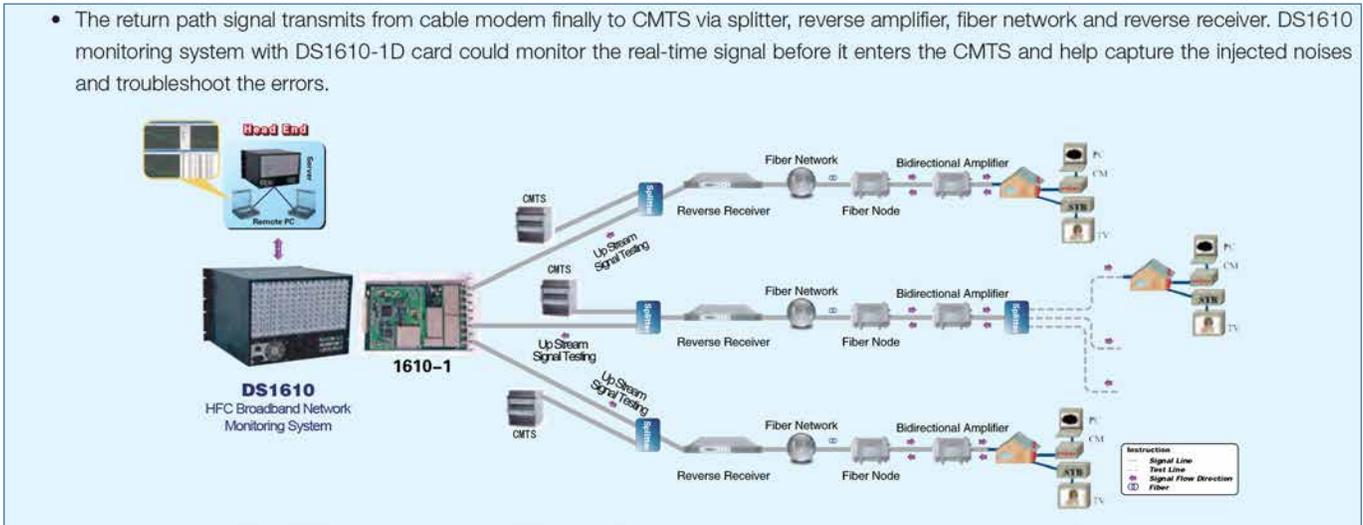
Spectrogram History

Video Timing

Video Replay

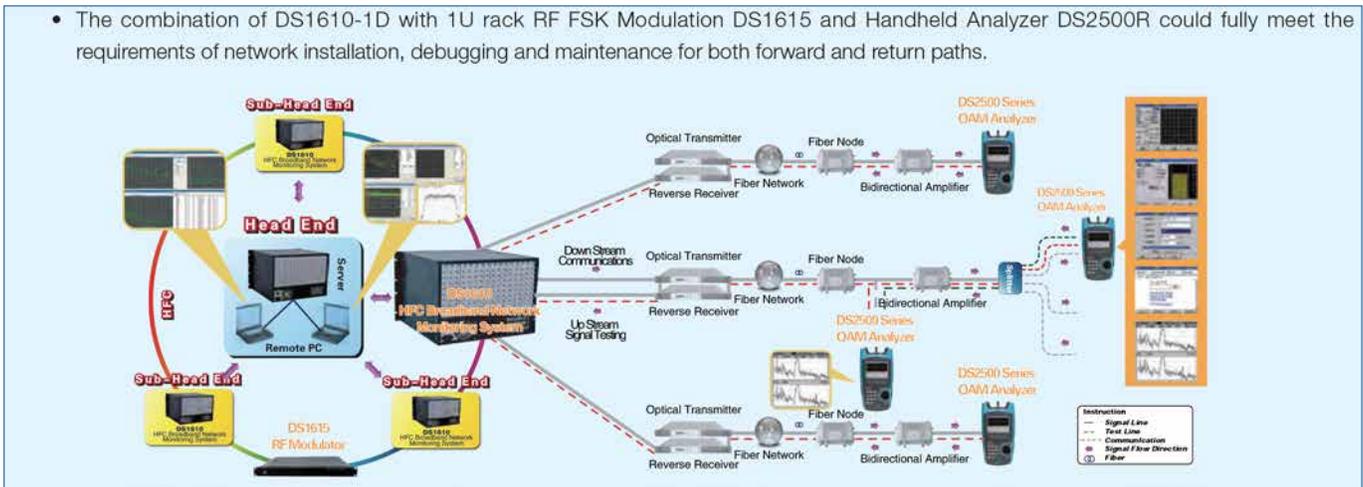
1. Return Path Monitoring Solution

- The return path signal transmits from cable modem finally to CMTS via splitter, reverse amplifier, fiber network and reverse receiver. DS1610 monitoring system with DS1610-1D card could monitor the real-time signal before it enters the CMTS and help capture the injected noises and troubleshoot the errors.



2. Return & Forward Path Debugging and Troubleshooting Solution

- The combination of DS1610-1D with 1U rack RF FSK Modulation DS1615 and Handheld Analyzer DS2500R could fully meet the requirements of network installation, debugging and maintenance for both forward and return paths.



Specifications

DS1610-1D8/16/24/32	
Frequency	
Range	0.5 MHz ~ 86 MHz
Span	0 ~ 86 MHz
Sweep Time	≤1 ms (Full Span)
RBW	30 kHz ~ 300 kHz 1-3 Step
VBW	30 kHz ~ 300 kHz 1-3 Step
Amplitude	
Level	
Max. Safe Input	+110 dBμV 25 V DC
Displayed Average Noise Level	≤18 dBμV, 5 MHz ~ 65 MHz(No Input Signal, 0dB Attenuation, 300 kHz RBW, 30 kHz VBW, Sampling Demodulation)
Attenuator	
Range	0 dB ~ 30 dB
Step	1 dB
Spurious Responses	
Second Harmonic	<-55 dBc for +80 dBμV Signal at input mixer
Third Order Intermodulation	<-55 dBc for two +80 dBμV Signals at input mixer with ≥1MHz Separation, Amplifier Off
Display	
Logarithm Scale	0.1 ~ 0.9 dB/div at 0.1 dB Step: 1 ~ 40 dB/div at 1 dB Step
Linear Scale	8 Divisions
Scale Unit	dBm, dBmV, dBμV
Trace Detector	MAX, MIN, Average
Reference Level	0 dBμV ~ +140 dBμV
Level Accuracy	Typical ≤±1.5 dB@+20 °C
Others	
Working Temperature	0 °C ~ +40 °C
Storage Temperature	-10 °C ~ +50 °C
DS1615	
Structure	1U Rack
Power Supply	AC 220 V / 50 Hz
RF Frequency	87 MHz ~ 120 MHz
Output	85 dBuV ~ 110 dBuV, 1 dB Step
Modulation Type	FSK (±67 kHz)
Data Baud Rate	38.4 kbps
Port to connect DS1610	RS232

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