

# **ACS Report: 06-0357-15C-PC**

Revision A

**Manufacturer: Arris Group, Inc.**

**Model: SD300**

## **Appendix E: Theory of Operation**

- a. **Brief product description:** The SD-Series Access Appliance is a modem allowing high-speed Internet connectivity over existing in building coaxial distribution networks. It consists of a full duplex QPSK cable transceiver, some control logic circuitry and a digital interface to the user's computer.
  
- b. **Theory of operation:** The user's computer is connected to the Access Appliance through its Ethernet port. After processing by the digital section, the data from the user's computer is BPSK or QPSK modulated on a 915MHz carrier. The resulting upstream signal is amplified, filtered and then transmitted over the coaxial cable. The upstream symbol rate is 12MS/s. Simultaneously the access appliance receives and demodulates the downstream signal from Arris cXm's broadband gateway. The 22.5MS/s QPSK downstream signal is centered at 976MHz. The demodulated data is decoded by the Access appliance digital section and sent to the user's computer via the Ethernet interface.