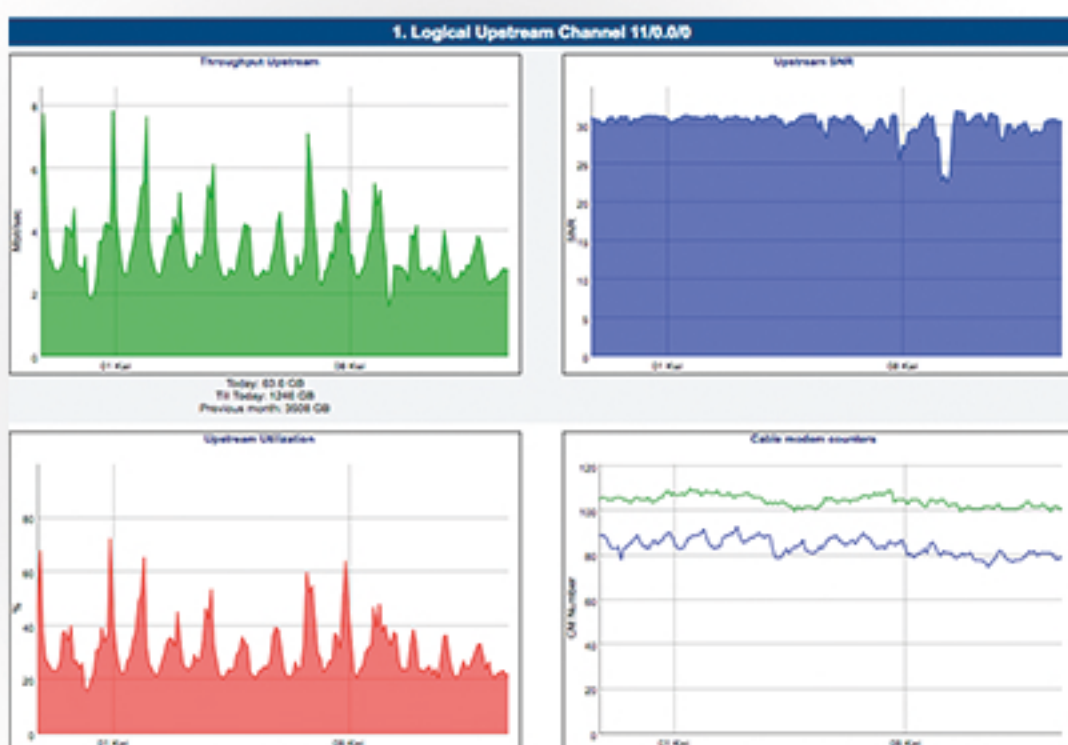


## HFC MONITORING

### A modern solutions for cable TV with Proactive Network Maintenance (PNM)

HFC MONITORING with unique PNM functionality is an analytical system that has been developed for many years and which main goal is the complex monitoring of HFC infrastructure. The system allows the cable operator to quickly detect problems with HFC infrastructure or even predict them in advance.



#### The main functions of the system are:

- monitoring of HFC network elements in a continuous mode,
- collecting historical data from all monitored elements of the HFC network, ie CMTS and cable modems,
- presenting alarm about current failures,
- presenting trends related to the efficiency of HFC infrastructure,
- numerous analyzes and reports



#### Precise faults locating

Thanks to Proactive Network Maintenance (PNM), each cable modem becomes a very precise diagnostic probe. The PNM function helps to accurately identify changes and impairments of HFC network. This function presents a place in the network where impairment occur. Thanks to the quick diagnosis, finding problems through PNM feature reduces network maintenance costs.

#### Business analysis

The system presents numerous reports about customer services. Among others: analysis of clients' bandwidth usage, analysis of problems related to wifi services, current and historical technical condition of the entire HFC plant, overbooking of cable interfaces.



## Alerts

The system provides information for NOC operators in a continuous mode (24x7x365) about occurring failures, both network and end devices (CM) along with a full history of events.

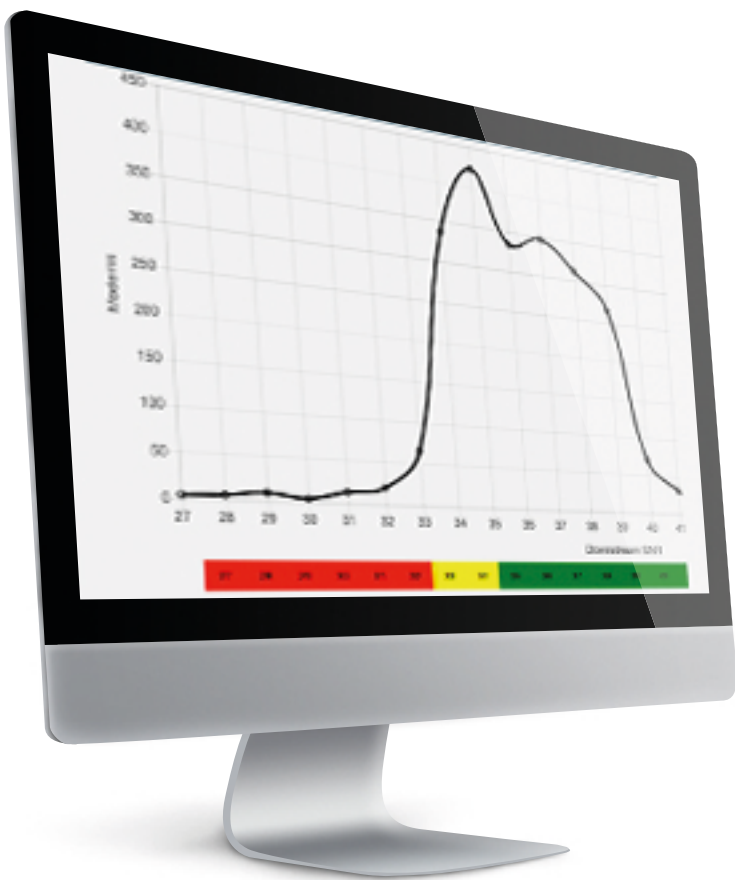
CMTS				Cable modems		Upstream SNR Statistics			Parameters Statistics	
CMTS	Firmware	Uptime	Model			<28	<29.6	>29.6	Warning	Error
Bydgoszcz	CASA DCTS smm HW=CASA- C100G	170 days	CASA DCTS sm	other	2008	878	498	12619	2475 (17%)	3624 (24%)
Downstreams: 1440 / 1440 Upstreams: 768 / 768 MAC-Domains: 35				All modems	15368	6.27%	3.56%	90.17%	9.3 / 10	

## Complex end-to-end service monitoring available for Call Center employees

Call Center employees can verify the status of CM at any time without involving NOC teams in these activities. They are also able to observe the historical operating parameters of all devices.

## Reducing customer migration - low churn

The use of the HFC MONITORING methods reduces the number of unforeseen failures of Internet access services. This directly increases customer loyalty and thus limits their migration to the competition.



## Lowering costs

Implementation of HFC MONITORING significantly reduces costs of NOC teams and number of unfounded customers calls to allegedly faulty equipment. The number of service activities of the technician in the field is reduced. This translates directly to lower of all operating and maintenance costs

**The multi-module HFC MONITORING system supports the work of NOC employees, Help Desk, installers, and people responsible for planning the development of HFC infrastructure.**

Quality and price count for customers! Thanks to HFC MONITORING with PNM you will increase the quality of Internet services provided by ISP. Our solution gives ISP's subscribers High Quality service, Reliability and Responsiveness

