

The Dynamic Ingress Blocker (dib), is a key component of Proxilliant's Cable Access Management System (CAMS). The dib provides active noise and ingress reduction in the return path and are typically deployed deep into the HFC plant near the last amplifiers.



In combination with the centralized Service Health Manager SW (SHM) the dib's provides real-time monitoring of ingress and network balancing, comprehensive HFC network health monitoring, continuous service verification, while actively suppressing ingress near its source.

Through the real-time, continuous monitoring of the HFC health at clusters of typically 30-40 homes, cable operators can ensure consistent, high-quality service delivery through the entire HFC network.

dib's perform these tasks without impacting the network performance or services. Through the active, continuous suppression of signal-erosive ingress, the increased signal-to-noise ratio reduces packet-loss and provides a more robust network operation and increased upstream bandwidth required for VoIP, commercial services and other advanced two-way services.

SUPPORTED FEATURES

- Ingress and Noise suppression
- Continuous ingress analysis, characterization and fault localization
- Continuous and reliable signal level monitoring
- Loss of signal reporting to CAMS Service Health Manager

Specifications

PHYSICAL

- 14 x 11 x 6 cm

ELECTRICAL

- Downstream (Forward)
 - Frequency range, 54-1000 MHz
 - Insertion loss, 1.3 dB (max) at 54 MHz, 1.1 dB (max) at 60-860 MHz, 1.8 dB (max) at 1000 MHz
 - Return loss, 18 dB @ 54 MHz. Falling 1.5 dB/Octave
- Upstream (Reverse)
 - Detector range, 12-42 alt 12-55 alt 12-65 MHz
 - Through gain (over detector), 0 +/- 1
 - Return loss, 18 dB (typical)
 - Reverse input level, JXP configurable 70 - 88 dBuV rms DOCSIS
- AC Bypass current: 10 A

TRANSPONDER OPTION

- Carrier frequency, forward (also used as pilot): 108-132 MHz
- Input level: 20 - 40 dBmV, recommended -10 dB relative to analog TV
- Measurement accuracy, forward: +/- 2 dB
- Carrier frequency, return (used as pilot): 5-15 MHz
- Output level: JXP configurable 70-82 dBuV
- Allocated bandwidth: 250 kHz; Frequency step size: 100 kHz
- Modulation: FSK
- Data format: Asynchronous, Manchester
- Data rate: 19.2 Kbps

POWER

- Consumption: 1,2 W maximum, 2,5 W maximum with transponder option
- Operating voltage range: 35-60 VAC

ENVIRONMENTAL

- Operating temperature: -40 to 140 degrees F (-40 to 60 degrees C)

Functional description

The basic idea of the DIB solution is to continuously analyze and disconnects the return path when there is no traffic. It connects the cable modems that transmit, while the others are disconnected.

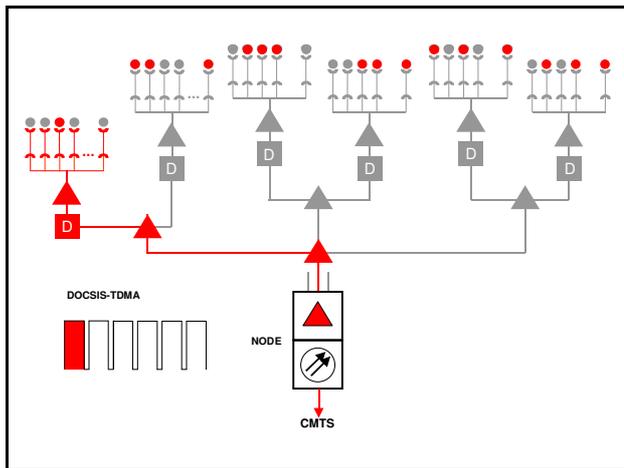


Figure 1 One DOCSIS carrier opens one network leg

The Dynamic Ingress Blocker splits up the return frequency band in several sub bands. The energy level in each of those bands is continuously analyzed. When the energy level above the detection threshold is detected the dib connects the returnpath. A logical circuitry is used to set different conditions for connecting the return path via a fast switch. When the detected signal disappears the return path is disconnected again.

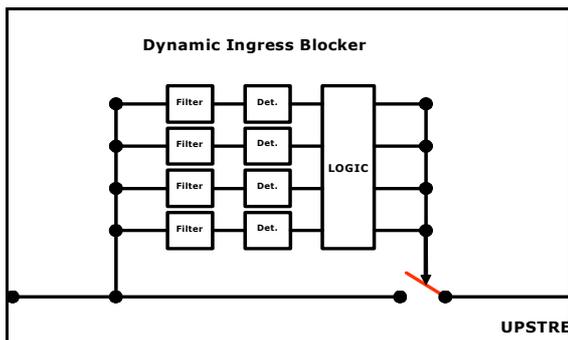


Figure 2 Functional diagram of DIB Basic

As an option the DIB can be upgraded with a plug in transponder. The transponder will add extensive control and measurement features to the DIB.

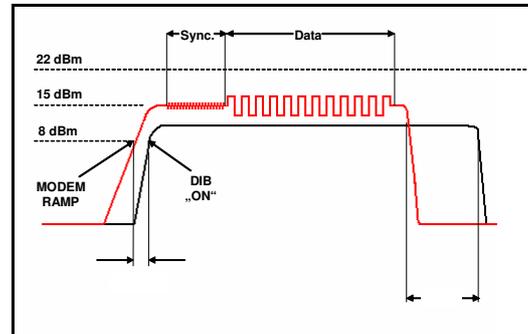


Figure 3 Timing diagram for DIB switching