

# Traffic Shaper

**VoiSmart®**  
IP Telephony & VoIP Solutions

VS-0800-01-TSV



## Quality of Service first!

VoiSmart Traffic Shaper is a revolutionary device, which will allow quality calls to be performed even when a network is overloaded and VoIP calls could not be established.

The result of a joint research project between VoiSmart and Politecnico di Milano, based on a traffic estimation engine and an innovative traffic control algorithm, VoiSmart Traffic Shaper is a Level 2 Bridge for data and a SIP transparent proxy for VoIP calls. It is totally transparent to traffic, and ready to be used: it allocates resources as a function of the measured traffic and of the voice call requests. It also controls a selective attribution of the data (non-voice) traffic, giving the counterpart an indication of the call drop (if any). It can be also used as a measurement tool of the effective bandwidth supplied by the provider.

## Dynamic Bandwidth Management

VoiSmart Traffic Shaper performs a real time analysis of traffic, allocating, as a function of the detected codec, the necessary bandwidth to the new IP call. Call Admission Control inhibits any new call whenever the minimum quality levels cannot be guaranteed. Nonvoice traffic is slowed down, being assigned a lower priority class, but not interrupted. If no IP calls are

present, the full bandwidth is dynamically reassigned to the normal data traffic.

Moreover, it performs bandwidth shaping also within non-voice data traffic (Web, E-mail, SSH etc)

## Features at a glance

- SIP Firewall supported
- All-in-one: no HW or SW to be added
- Easy to install and to integrate
- Astonishing Quality of Service
- Level 2 Bridge
- Embedded Linux OS
- Dynamical evaluation of available bandwidth
- Web interface
- Borrowing as a function of detected Codec and within non-voice traffic
- Multiple Codecs supported
- VoIP optimized CPU
- Use from 640 kbps (ADSL) upwards
- Advanced Call Admission Control: inhibits calls to be issued if adequate band is not available
- Graphic statistics

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## A inner glance

This product's architecture is designed to solve the QoS (Quality of Service) issue on networks, which have no bandwidth allocation device. The most common use of VoiSmart Traffic Shaper is with Wan Link like xDSL, where quality can be poor between the gateway and the provider. Therefore Traffic Shaper must be installed behind the access router on the client and before the Lan.

It's mandatory that all the traffic in / out the Wan Link pass through the Traffic Shaper.

No changes have to be done on the local network as the TS is a pure Level2 Bridge, therefore transparent to integration. Nevertheless TS has its own IP address, which enables the administrator to reach the configuration interface where the available bandwidth is estimated. Therefore TS must have an Internet access.

This is the logic flow of the TS:

- 1- TS estimates in real time the effective available bandwidth on Wan Link
- 2 - When there is a new call inbound, TS analyses the audio Coded. According to the codec and to the bandwidth, the Call Admission Control tool decides whether to get the call or not. If the bandwidth is not enough to guarantee quality standard, the call is refused and the caller gets a notice on a SIP 480 message (the kind of message can be set under configuration)
- 3 - if the call passes through, the TS makes the shaping and starts the TCP-DnD module to keep the remaining non voice traffic under control.

In the setup the following parameters can be set:

- Bandwidth for a single call
- Bandwidth for downlink traffic
- Up-Link / Down-Link bandwidth for data traffic
- Timeout definition for active calls
- SIP 4xx message, for refused calls

## Technical features:

- Size: 13.5x7x3.5 cm
- Weight: 3 kg
- Power supply 110-240 V CA, output +12V CC, 1.2A max (15W max)
- Temperature: 0-45°C
- Humidity: 10-95% non condensing
- Fan less aluminium case
- CE RoHS compliant

