

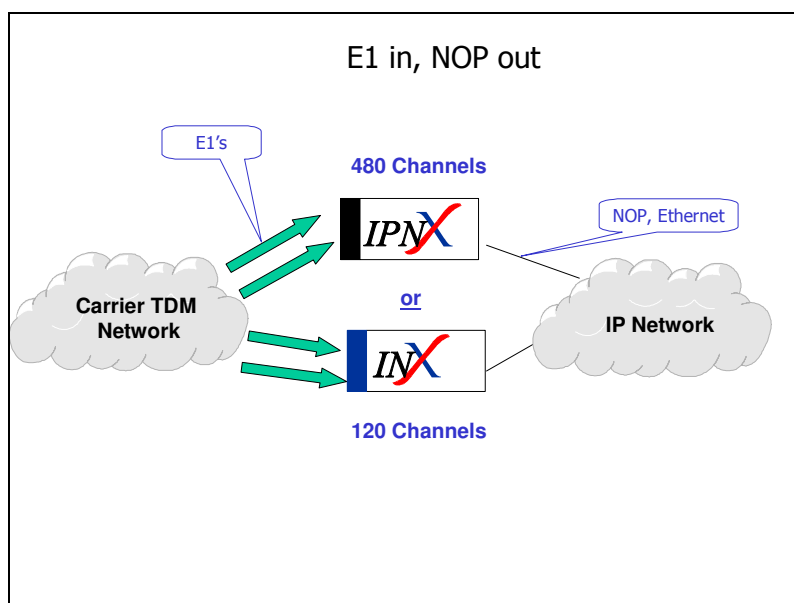
## No. 19 – VoIP Compression Capacity

### VoIP Compression

WTL equipment is able to handle Voice over IP in one of 2 ways a) as standards-based H323/SIP or b) as NOP (Network Optimisation Protocol) to make VoIP more efficient.

There are three main configurations for this in real networks:

1. Uncompressed TDM traffic enters the equipment on E1 ports. The voice is packetised using standard algorithms and then the packets are optimised using NOP. This method is available in the INx and IPNx (but obviously not the PVx which has no E1s). In these cases the capacity is governed by the number of physical E1s that are offered. This is shown in the table as 'E1 in, NOP out'.



2. It may be necessary for reasons of compatibility with other networks to take TDM traffic in on E1s and to transmit the calls as H323/SIP formatted VoIP. This is less efficient and therefore takes more processing power. As a result the switch capacity is lower for this type of configuration. This is shown in the table below as 'E1 in, H323/SIP out'.
3. Partially compressed H323/SIP traffic enters the equipment on an Ethernet port. This voice traffic has already been packetised using one of the standard algorithms by another piece of equipment. The WTL equipment then applies the NOP optimisation to this packet stream. This method is the only mode of operation for the PVx but is also available as standard in the INx and IPNx. The capacity in this case is the amount of processor power required to apply NOP to every incoming H323/SIP packet. The capacity varies according to the number of packets generated by the H323/SIP calls. The number of packets is governed by a) the codec used, b) the number of voice

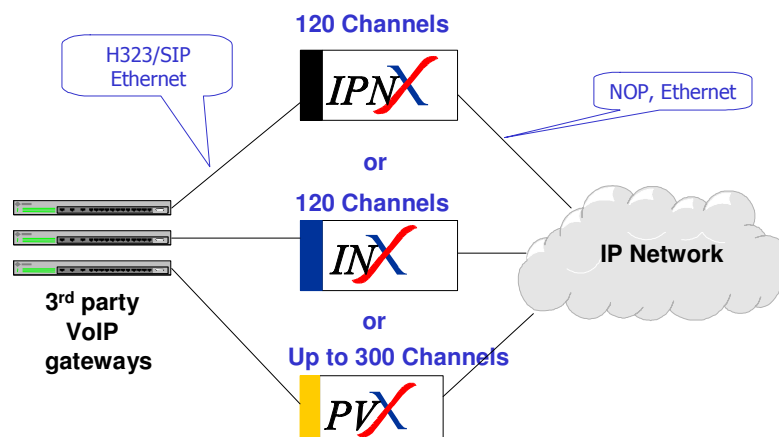
samples per H323/SIP packet and c) whether silence suppression is in use. This is shown by two lines in the table as 'H323/SIP in, NOP out high quality and reduced quality'.

'High quality' = G729 codec, 1 sample per packet and no silence suppression

'Reduced quality' = G723.1, 2 samples per packet and no silence suppression

4. H323/SIP in, H323/SIP Out may be useful when the WTL switch is routing traffic between multiple VoIP carriers. In this case the rules are the same as Case 3 above.

### H323/SIP in, NOP out



The above two configurations may be mixed on the same switch. This is shown in the bottom line of the table.

**Number of simultaneous channels supported:**

	<b>PVx</b>	<b>Super PVx</b>	<b>IPNx</b>	<b>New IPNx</b>	<b>SoIP</b>
E1 in, NOP out	na	na	480 (16E1)	960 (32E1)	960 (32E1)
E1 in H323/SIP out	na	na	960 (32E1)	1920 (64E1) 3780 (2 STM-1)	960 (32E1)
H323/SIP in, NOP out	300	1000	120	960	960
H323/SIP in, H323/SIP out	Up to 300	1000	120	960	960
Mixed H323/SIP and E1 in, NOP out	na	na	480	960	960

**Note:** Figures show number of calls supported. Number of call legs is 2 x figures shown. So, for example, Super PVx supports 1000 SIP calls inbound + 1000 outbound

If more than 1000 channels of H323/SIP to NOP compression are required then multiple PVx may be stacked.