

SNV-12™

SIGNAL-AND-NOISE VOTER COMPARATOR



OVERVIEW

The SNV-12 modular analog receiver voting system, long the industry leader for its capability and reliability, expands functionality further with the CPM-5. Like its predecessor the CPM-3, the CPM-5 accepts voting receiver audio backhauled via IP or by analog methods. Going well beyond the 60-site limit of the CPM-3, the new CPM-5 can vote up to 108 sites in a single tier in a three-chassis expanded system. Channel status can be monitored using the new SNMP capability. Additionally, the CPM-5 provides incoming RoIP audio routing, which can send RoIP audio from an external device (NXU-2B, RSP-Z2, etc.) to the selected radio sites.

Commonly used to increase a radio channel's coverage (over distances or in confined spaces), provide smooth handoff, or connect dispatch, the SNV-12 Voter Comparator continuously monitors receiver sites and selects the receiver with the best signal quality. That audio can be forwarded to a repeater for rebroadcast or be monitored by a dispatcher, providing greater talk back range for the radios.

Receiver site audio backhaul to the voter is by analog, IP, or a mix of both methods. SVM-3 modules for IP network backhaul in the voter work in conjunction with remote QMT-1Bs at the receiver sites to reliably handle the challenges such as delay and jitter that are inherent in IP network traffic. Their integration alongside SVM-2s for traditional backhaul such as copper or T1s over microwave creates a flexible, low-cost, and incremental upgrade solution.

SVM-2 ANALOG

The SNV-12 uses a spectral approach to monitor the audio signals from each voting site. These algorithms continuously calculate a 31-discrete step Signal Quality Number for each voting receiver. The SNV-12 monitors all SVMs and votes the site with the best Signal Quality Number. This thorough voting process ensures the best site is voted even if the received signal is transmitted by a vehicle currently moving behind buildings or between remote receiver sites.

SVM-2 modules are used to connect to non-IP legacy backhaul (RT line or phone line, RF link, T1 telco, microwave). One SVM-2 module connects to one receiver site (up to 12 per chassis).

SVM-3 IP BACKHAUL

The SNV-12 IP Backhaul capability is backwards compatible with SNV-12 analog voters already deployed. The SVM-3 module, along with a QMT-1B unit (for Quality Measurement & Transport), allows the use of IP networks for transport of receive and transmit audio.

SVM-3 modules can coexist in an SNV-12 chassis along with SVM-2 modules. The SVM-3 also allows front panel force vote and force disable, just like the SVM-2.

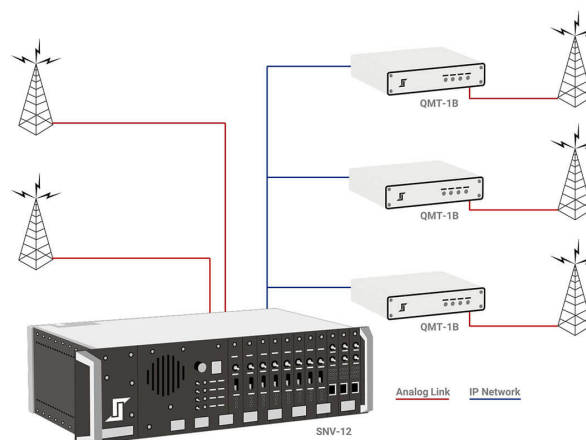
SVM-3 modules can connect to up to three receiver sites, each co-located with a QMT, for a total of 36 sites in a fully-IP chassis. More commonly, SVM-2s and SVM-3s reside together in an SNV-12 chassis.

KEY BENEFITS

- + Enables the creation of extremely flexible, cost-effective radio voting networks
- + If leased lines are no longer available, allows existing SNV-12 voters to be upgraded to use existing private networks
- + Brings audio to/from your remote sites using your IP network, IP microwave, or conventional analog backhaul
- + Automatically synchronizes all incoming audio
- + Accurately captures receiver's audio and noise qualities at remote site prior to encoding into RoIP
- + Expandable to 108 sites
- + Continuously monitors IP links; loss triggers a fault and removes site from voting consideration until link is restored
- + System statistics and ability to monitor voted audio available via IP
- + SNMP for remote monitoring

APPLICATIONS

SNV-12 Voters are in use by entities as diverse as emergency response, utility management, and train/rail transport. When costly leased lines are replaced, or when RF coverage is limited – by distance, by obstacles like mountains, or even just thick walls – or when a smooth handoff to dispatch is required, the SNV-12 reliably expands radio system coverage.



THE ROLE OF THE QMT-1B/SVM-3

Network delays and jitter create challenges to traditional analog voting which requires time-synchronized signals from multiple voting receivers. These challenges are capably handled by the combination of the QMT-1B and the SVM-3, in conjunction with the new CPM-5 Control Processor Module or updated software in the CPM-3.

When an unsquelch condition occurs, the QMT-1B measures signal quality and converts the analog audio to IP for transfer to the SVM-3. The SVM-3 works in conjunction with the CPM-5 or the CPM-3 to monitor arrival timing of incoming audio. This allows the voted signals to be resynchronized for accurate voting and switching between sites during a voting sequence. The QMT-1B is available in single-channel or rackmount multi-circuit versions.



SPECIFICATIONS

Size

5.25”H x 19” W x 11” D (13.3 x 48.3 x 28 cm)

Voting

SVM-2 implements both Lowest Noise (FM) and Highest Signal-to-Noise (AM or HF) voting. SVM-3 implements Lowest Noise (FM) voting.

Input Power

115 or 230 VAC +/- 15%, 47-63 Hz, 130 VA maximum for ‘fully loaded’ chassis; +11 to +15 VDC @5A nominal

Network Interface

RJ-45 Connector; 10/100 Base-T Ethernet, Web Configuration, Telnet

