POST OF AUDIO CONTROL OF HF FREQUENCY BAND «VOSTOK-SP»

- **Multichannel reception, demodulation and signal decoding;**
- **Soft scanning over the frequency list;**
- **Digital signal recording;**
- **Measurement of signal parameters;**
- **Audio and visual control of signals;**
- **Data accumulation of records, sessions, commands of posts**

GENERAL INFORMATION

Stationary post of audio control "Vostok-SP" is designed for reception, surveillance, processing and recoding of signals within the frequency band from 1.0 to 30 MHz and also for informational interaction with products from the composition of complex "Vostok".

Equipment of the post includes the following: receiving equipment (two professional receivers "Voshod"), operational control board, workstation with special digital demodulation, decoding and recording software (W-CODE)) is placed at the work place of receiving radio center.

Power supply of the post is provided from industrial network 220 V, 50 Hz via uninterruptible power supply system. Time of autonomous operation from UPS comprises 10…15 min.

Software is developed implementing cutting edge computer technologies and functions under Windows 7. Due to visual interfaces (virtual panels) equipment operation doesn't require high qualification and special knowledge of operator and built-in fault-detection system detects faulty unit up to replaceable assembly part.

PURPOSE

Post of audio control "Vostok-SP" provides the following:

- Reception, surveillance, processing and registration of HF band signals (1-30 MHz);
- Demodulation, decoding of signals on preset frequencies;
- Soft scanning by through over preset frequencies involving two tracking receivers (up to 1000 frequencies in the list of each receiver);
- Classification of transmission types and measurement of signal parameters in the channels under monitoring;
- Signals recording at the audio and IF outputs of tracking receivers;
- Conducting of technical analysis of RES signals in real time mode;
- Audio control of received signal at LF outputs of tracking receivers;
- Informational interaction with external stations of radiomonitoring and control of "Vostok" complex via LAN Ethernet;
- Receiving of commands from system of detection and post of bearing collection of "Vostok" complex via LAN Ethernet;
- Issuing of commands to post of bearing collection of "Vostok" complex and orientation of RDF stations;
- Issuing of commands into the system of technical analysis of "Vostok" complex (command **Analysis**);

- Automatic processing and documenting of data recorded in monitored channels;
- Network access to the DB of commands and to the files of recorded IF signals for the following analysis and play back.

COMPOSITION

1) Receiver «Voshod» – 2 pcs;
2) Control board on the base of industrial computer;
3) Operational control board;
4) Demodulation and decoding HF band signals software W-CODE (option);
5) Matching device for connecting to AFS symmetric coaxial line;
6) UPS 1000 VA;
7) Complete set of mounting parts and connecting cables;
8) Operational and maintenance documentation (Operating Guides and Instructions);
9) Special software (two installation CDs).

TECHNICAL PARAMETERS

• Numbers of receiving channels	**2 surveillance channels**
• Operating frequency band	**1.0-30 MHz**
• Sensitivity of receiving sections (ΔF=3 kHz SNR=10 dB)	
In the frequency band: from 1 to 3 MHz	**0.5 μV**
from 3 to 30 MHz	**0.4 μV**
• Dynamic range by 3^d order intermodulation	**> 90 dB**
• Dynamic range of received signal levels	**> 130 dB**
• Tuning time of frequency synthesizer of receiver	**5 ms**
• Frequency tuning step	**1 Hz**
• Bandwidth of simultaneous frequency analysis	**0.3 - 12 kHz**
• Digital processing of radio emissions with modulation	**CW, AM, FM, FSK, PSK, SSB**
• Instrumental accuracy of automatic signal classification by modulation type (SNR=15 dB)	**not less than 0.9**
• Accuracy of signal parameters measurement (manipulation rate, frequency spacing)	**not more than 5 %**

GENERAL REQUIREMENTS

• Power supply from single-phase network	**220 V±22%, 50 Hz**
• Total consumed power	**500 VA**
• Minimal necessary space	**3 m^2**
• Operating temperature range	**+ 10 °C ... + 40 °C**

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