Digital Instruments

BFI-V01

BF Generator Tuned by GPS

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Overview

BFI-V01 is a generator of low frequency signals (20 Hz to 80 KHz) extremely precise and stable over time. The integrated GPS receiver makes it possible to regulate the internal oscillator providing a high stability frequency reference with a maximum deviation of typical systems enslaved equal to 10-12 / day.

BFI-V01 is also able to generate synchronous burst with the PPS signal provided by the system-GPS UTC adding them, if necessary, to the audio signal coming from the production studio, in a continuous or programmable by the operator without necessarily intervene on the wiring of the chain audio same.

BFI-V01 is used everywhere it is required to insert a synchronization signal to every note. Its main application is identified where it is necessary to evaluate the transit time through a distribution chain of an audio signal. The ability to generate burst isochronous to the PPS signal from the UTC-GPS system ensures the user to be able to derive the transit time from the insertion point to the point of analysis with an accuracy of 10 ns.

BFI-V01 was developed to finalize plants operating in isochronous and isomodulated mode, by inserting the burst signals in the main point of the audio distribution (for example, the production studio) is possible to derive the various sites transmitting the time that the audio signal same employs to reach the place of measurement. The method of measurement is based on the comparison between the instant of arrival of the burst signal and the PPS signal from the GPS receiver. The accuracy of the measurement depends on the instrument used for this assessment. Today, with the use of a common portable digital oscilloscope, you can visually estimate the transit time with an accuracy of better than 100 ns. The hardware platform on which it is implemented BFI-V01 has a very high performance thanks to the use of a triple cluster of 32-bit DSP. On the front panel of the **BFI-V01** is a high-resolution bargraph able to display the sound level according to DIN 45406.

Overview

The scale used has a dual representation very practical in the broadcasting industry, in addition to the traditional representation of logarithmic type, ranging from - 40 dB to + 5 dB, a second staircase allows you to view the signal as a function of the percentage of modulation with the Convention that corresponds to 100% + 6 dBu. On the front panel of the display and the presence of the joystick allows easy navigation of the menus graph acting on the configuration parameters without necessarily the help of the PC. The dynamic range of the BFI-V01 is 96 dB with a bandwidth that extends from 20 Hz to 100 kHz with frequency linearity of the measure in between + / - 0.1 dB. The technology used in **BFI-V01** is fully digital making the apparatus particularly reliable in terms of precision and repeatability, eliminating the drawbacks associated with the traditional analog approach. Phenomena of aging, temperature drift and long term stability are completely overtaken by delegating all computational processes very fast microprocessors.

BFI-V01 has been developed as a platform audio of high performance, the input and the output is stereo Connectorized XLR with transformer coupling. **BFI-V01** is equipped with digital interfacing AES-EBU allowing the insertion of the burst signals directly on the digital format of the audio in transit. BFI-V01 is implemented in rack 19'' 1U, dual power supply (90Vac to 240 Vac) and battery pack (20Vdc to 50 Vdc) ensures operational continuity.

Features

· Internal high stability OCXO aging rate of ± 1*10 -10 /day,

· 12 channels GPS receiver with automatic tracking and timing error management system,

· Display & Keyboard,

· HD bargraph display,

· Headphone jack,

· Size: 1U/19' – depth 300 mm (connector excluded),

· Weight: 1.5 Kg,

· Certification CE.

GPS section

Receiver: 12 Channels L1 1575.42 MHz.
Tracking: correlation over 12 satellites.
PPS precision: < 50 ns on SA.
Antenna connector: TNC.
Capture time: < 4 min.

BF inputs

Bandwidth Analog-Digital: 20 Hz to 100 KHz
Maximum Input Level: 12 dBu (8.7 Vpp)
Maximum Output Level: 20 dBu (22 Vpp)
THD + N: -75 dB at 400 Hz (Input at 0 dB gain)
Background noise: -80 dB (input to 0 dB gain)
Level: -50 dBu (7 mVpp) to 5 dBu (3.9 Vpp) (Input at 0 dB gain)
Linearity: + / - 0.1 dB
Input Connectors: Balanced XLR transformer
Output connector: Balanced XLR transformer

Signaling

Serial connection: RS-232 Connector DB9 Male ± 15 kV (ESD).
Optional: RS-485 Connector DB9 Male ± 15 kV (ESD).

Supply

Network: 95 Vac – 240 Vac, Plug IEC320 integrated, filter EMI/RFI.
Battery: 2 independent power suppliers.

Size

Width: 1 Unity 19".
Depth: 300 mm connectors excluded.
Weight: 1.5 Kg.