

VSBP Chassis & Operator Jack



System Overview

In spite of all the built-in redundancy in Voice Switching systems used for ATC communications unfortunately some times these systems go down, resulting in a total loss of communications. The problem may be the operating software, common hardware, AC power or UPS. Vital communications with the airplanes and other facilities may be lost. A situation like this at an air traffic control center or an airport may cause a serious safety problem and may result in an accident. Digital Signal Products, Inc. has designed Model 2040 Voice Switch By-Pass (VSBP) system to alleviate such situations. The Model 2040 VSBP is designed to provide ATC controllers a direct access to radios (A/G Communications) for primary frequencies assigned to that position in the event of the failure of the Voice Switch. The Model 2040 operates totally independent of existing voice switches, such as ETVS, ICSS, IVSR, NVS, RDVS, VSCS, etc. The VSBP system is automatically activated when an air traffic controller inserts a headset/handset into the VSBP Jack installed in the operator console. The VSBP operator jacks are equipped with orange color face plate for clear and unambiguous identification. For enhanced safety and security the VSBP system is powered from a separate circuit breaker and comes equipped with its own Uninterruptible Power Supply (UPS). The system can be configured to provide two A/G frequencies to each operator, or two operators can share two frequencies. When VSBP is activated all ATC communications is automatically recorded on their normally assigned recorder channels.

VSBP Chassis & Circuit Cards

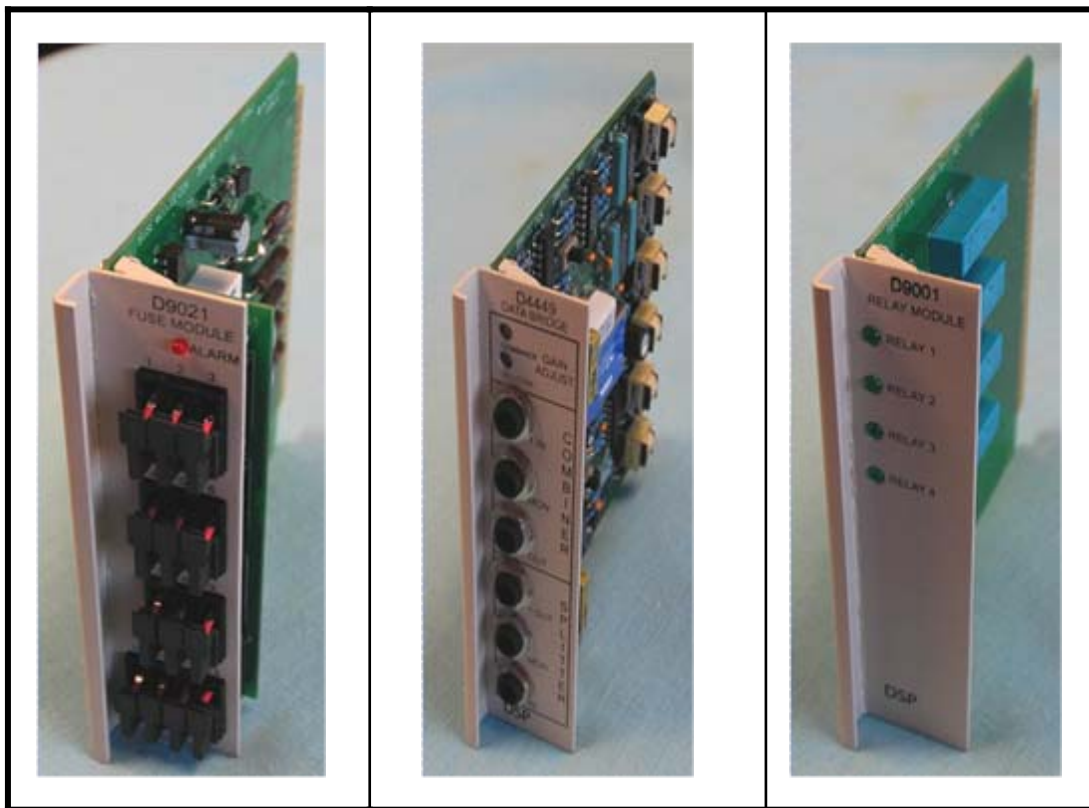
The VSBP chassis is 19-inch rack mountable, 4U high, and it can accommodate up to six radio-channels which can be assigned to three or four ATC operators, as required. Each ATC operator is provided with a Headset/Handset Jack Module. The Jack Module is powered from the Power Supply located in the VSBP chassis. One 7-pair cable connects the Jack Module to the VSBP chassis. A front panel located dual-volume control provides adjustments for receive audio and sidetone levels. Operator uses Push-to-Talk (PTT) switch to key radios assigned to that ATC position. Receive audio is muted when PTT is active. Built-in receive/transmit AGC and level limiting features provide audio enhancements and protection for ATC operator's ear. The Model 2040 Jack Module comes with built-in ESD and transient protection for superior performance and long operating life.

Combination of a Bridge card and two Relay cards provide all the necessary audio and control circuitry required for an operator to use the VSBP switch. The Relay card transfers necessary audio and radio control circuits from the normally used voice switch to the VSBP switch when an operator plugs headset/headset into the VSBP Jack. The circuits transferred include radio transmit audio, receive audio, transmit & receive main/standby antenna controls, PTT controls and the position recorder. The Bridge card performs summing of two incoming receive radio audio into one headset output port. It also splits operator transmit audio to two radios transmitters while maintaining 600 Ohms impedance. The Bridge Module is provided with front panel jacks for audio monitoring and test tone insertion.

The VSBP chassis is powered from a built-in 110/220 VAC Power Supply. The Power Supply provides 24V DC output for the VSBP system. Separate fuses are used for powering each ATC position circuit. An alarm is generated for any fuse failure. DSP's Model 2040 VSBP provides the best cost effective ATC backup solution for applications where reliability, quality, efficiency and economy counts. It comes with 3-year warranty.

Voice Switch By-Pass System Specifications

Transmit Radio Audio Output: 0dBm @ 600 Ohms	Transmit AGC: +/- 8dB
Receive Radio Audio Input: -16 to +8dBm typical @ 600 Ohms	Receive AGC: +/- 8dB
Headset Audio Output: -40 to -16dBm, adjustable @ 600 Ohms	Max Headset Audio Output: - 13dBm
Side-tone Level: -35 to -26dBm, adjustable	PTT Contact Rating: 1A @ 30VDC
Nominal Microphone Audio Input: -10dBm @ 50 Ohms	Contact Protection: RC + Limiting Diode
Recorder Audio Output: -10dBm nominal @ 600 Ohms	Distortion: Less than 2%
End-to-End Frequency Response: +/-2dB w.r.t. 1000 Hz	Crosstalk Isolation: Better than 60dB
Operator Jack: 5.25-inch wide, 1.75-inch high	UPS: 1 Hour minimum
AC Input Voltage: 95 to 260VAC, 47-63 Hz Power Consumption per chassis: 100 Watts Max.	Chassis Dimensions: Width: 19.0-inch, Height: 7.0-inch, Depth: 7.5-inch
Antenna Controls: Transmit and Receive Main/Standby Keying options: Contact closure or external voltage	Full Chassis Configuration: Power Supply: 1 Fuse Module: 1, Bridge Modules: 3, Relay Modules: 6, Jack Modules: 3 or 4



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