

# 9952X Band-Splitting Filter Subassemblies

## 1. description/application

**1.01** The 9952X Band-Splitting Filter Subassemblies are used to establish separate transmission frequency bands for the splitter and combiner channels of a Tellabs 242 (2wire) Distributive Data Bridge System. Eight 9952X subassemblies are available to accommodate the transmit and receive frequencies of a variety of alarm and monitoring systems with which the 242 System is commonly used. Four subassemblies are high-pass filters (9952A, B, C, and J), and four are low-pass filters (9952D, E, G, and H). One subassembly plugs onto each common-port module (4251 DDB Combiner Amplifier and 4252 DDB Splitter Amplifier) of the 242 System. If a high-pass filter subassembly is used on the 4251, a low-pass filter subassembly is used on the 4252, and vice versa.

**1.02** While many applications of the 242 System involve half-duplex operation (i.e., bidirectional transmission but only in one direction at a time), the System can also accommodate full-duplex operation (i.e., simultaneous bidirectional transmission) even though the transmission facilities on the multiple-port side of the bridge are 2wire. Full-duplex operation is made possible (and half-duplex operation is enhanced) through use of a 9952X high-pass and a 9952X low-pass filter subassembly to derive separate splitter and combiner frequencies. By means of these filters, high-frequency signals transmitted in one direction through the Bridge are separated from lower-frequency signals transmitted in the opposite direction. In addition to allowing full-duplex operation, this arrangement helps to isolate the two channels by preventing splitter-channel signals from being reflected back into the combiner channel. This could occur, for example, at the multiple-port facility interfaces as

a result of mismatched impedances between the 4255 DDB Quad Termination multiple-port modules and the multiple-port facilities.

**1.03** As stated previously, the eight 9952X subassemblies afford a choice of band-pass frequencies for compatibility with a number of alarm and monitoring systems commonly served by a 242 Bridge. Table 1 lists the 9952X subassemblies, their band-pass frequencies, and several typical alarm/monitoring systems with which they are used.

## 2. installation

**2.01** Each 9952X Band-Splitting Filter subassembly plugs onto the printed circuit board of its host 4251 or 4252 module by means of four pins that provide both electrical and physical connection. A mounting screw at the center of the subassembly further secures it to the host module. Figure 1 shows the location of the receptacle for the 9952X subassembly on both the 4251 and 4252 modules.

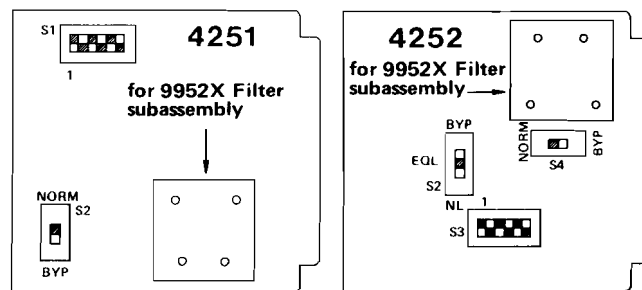


figure 1. Location of receptacles for 9952X subassemblies on 4251 and 4252 modules

**2.02** The 9952X subassemblies have no option switches and require no alignment. Power for the subassemblies is provided via their host modules.

alarm system	max. no. of 2w stations per 4w interface	tone frequencies (Hz)		Tellabs 9952X subassembly required	filter type		cutoff frequency (3dB down)
		from master station	to master station		high pass	low pass	
Larse Corp.	63	360		9952A*		X	400Hz
			1440,1800	9952G**	X		1300Hz
Morse Products	100	1350		9952C*		X	1370Hz
			1750, 2100	9952D**	X		1650Hz
Esterline Security Group	64	2025, 2225		9952E*	X		1925Hz
			1070,1270	9952B**		X	1300Hz
Wells Fargo	127	1070,1270		9952J*		X	1460Hz
			2025, 2225	9952H**	X		1810Hz

\*on 4252 DDB Splitter module \*\*on 4251 DDB Combiner module

**Note:** Although this table is valid as of the date of publication of this Practice (September, 1980), changes to the various alarm systems by their manufacturers may invalidate part or all of the table at any time. Also, because the table is intended to list only typical examples of alarm systems, your particular alarm system may not be included. If, for these or other reasons, you are not certain as to which 9952X Filter subassemblies to use, please consult either the manufacturer of your alarm system, Tellabs' Customer Service Group at (312) 969-8800, or your Tellabs Regional Office.

table 1. Filter subassemblies (9952X) required with various alarm and monitoring systems