tellabs
technical manual
76-8224X
rev B

practice section 8224X

A/O

24X Mounting Assembly

contents

1. description and application

1.01 The Tellabs 24X Mounting Assembly is a prewired, rack-mounted Type 10 Mounting Shelf equipped with a connectorized printed-circuit backplane. The 24X Assembly is specifically designed to accommodate three modular Tellabs systems: the 242 2Wire Distributive Data Bridge (DDB) System, the 244 4Wire DDB System, and the 243 Low-Speed Data Signaling System. One, two, or all three of these Systems can be housed in the same 24X Issue 2 Assembly. The main differences between the 24X Issue 2 Assembly (Tellabs part number 8224X) and its Issue 1 counterpart (which is also known as the 242 Mounting Assembly) are as follows:

★ The Issue 2 Assembly is constructed of weight-saving aluminum rather than steel.

★ The Issue 2 Assembly's printed-circuit backplane contains five 25-pin female cable connectors (instead of four). These connectors will accommodate not only conventional high-profile or low-profile male connectors (through use of the hold-down brackets supplied) but also the newer self-locking plastic cable-connector housings that do not require hold-down brackets.

★ The wire-wrapping terminal blocks on the Issue 2 Assembly contain six pins each (instead of four).

★ The Issue 2 Assembly's backplane contains a 13-pin test-access terminal block (used with the 244 System only) not present on the Issue 1 Assembly.

★ Two additional busses are available on the backplane of the Issue 2 Assembly.

★ The rightmost module position of the Issue 2 Assembly is wired not only to house any standard 242, 243, or 244-System module but also to serve as a dedicated module position for local test access to any 244 DDB Systems housed in the Assembly when the Tellabs 4459 DDB Loopback/Facility Test Module is installed in that position.

1.02 Two versions of the 24X Assembly are available. The 24XA is a 12-position Assembly that mounts in a 19-inch relay rack, and the 24XB is a 14-position Assembly that mounts in a 23-inch relay rack. Both versions occupy 6 inches of vertical rack space.

2. installation

inspection

2.01 The 24X Mounting Assembly should be visually inspected upon arrival in order to find possible damage incurred during shipment. If damage is noted, a claim should immediately be filed with the carrier. If stored, the Assembly should be visually inspected again prior to installation.

mounting

2.02 The 24XA Assembly (12 module positions) mounts in a standard 19-inch relay rack. The 24XB Assembly (14 module positions) mounts in a standard 23-inch relay rack.

installer connections

2.03 All external connections to the modules in a 24X Assembly are made via the five 25-pair cable connectors on the Assembly's backplane. Battery and ground connections to the Assembly are made via a two-position barrier-type terminal strip on the backplane. Section 3 of this Practice contains a complete set of wiring tables for all three Tellabs systems that can be housed in the 24X Assembly. The Tellabs 242, 243, and 244 System Practices also contain this information for their respective Systems.

use of 6-pin and 13-pin blocks on Assembly backplane

2.04 The six-pin wire-wrapping blocks (see figure 1) on the 24X Assembly's backplane are used to expand existing 242, 243, or 244 Systems via jumpering to empty module positions in the same or in a different 24X Assembly. For detailed instructions on using these six-pin blocks, please refer to the Tellabs 242, 243, or 244 System Practice as appropriate.

2.05 The 13-pin block on the 24X Assembly's backplane is used solely to accept a connectorized cable that, in conjunction with a local or remote 4459 module, provides test access to 244 Systems in the Assembly that contain modules whose model numbers end with the letter *A* (e.g., 4451A, 4454A, 4455A). Please refer to the 244 System Practice and the 4459 Module Practice for details.

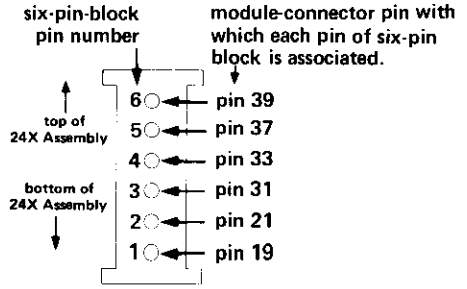

figure 1. Configuration of six-pin blocks on 24X Issue 2 Assembly backplane

optional terminal block for cross-connections

2.06 An optional terminal block (Tellabs part number 80-0088) is available for use as a compact cross-connect frame in conjunction with one 24XA or 24XB Assembly. Connections from the Assembly are made via five 25-pair male Amphenol-type cable connectors on the block. External connections to the block are made via wire-wrapping to the 176 pins also located on the block. The block is typically mounted on a relay rack, but its compact size (about 7.5 inches long, 5.5 inches wide, and 2.6 inches deep) allows it to be mounted in almost any convenient location. Figure 2 shows the wire-wrapping pin arrangement for the 80-0088 block. For additional information, please contact Tellabs Customer Service at your Tellabs regional office or at our U.S. or Canadian headquarters (see paragraph 5.03).

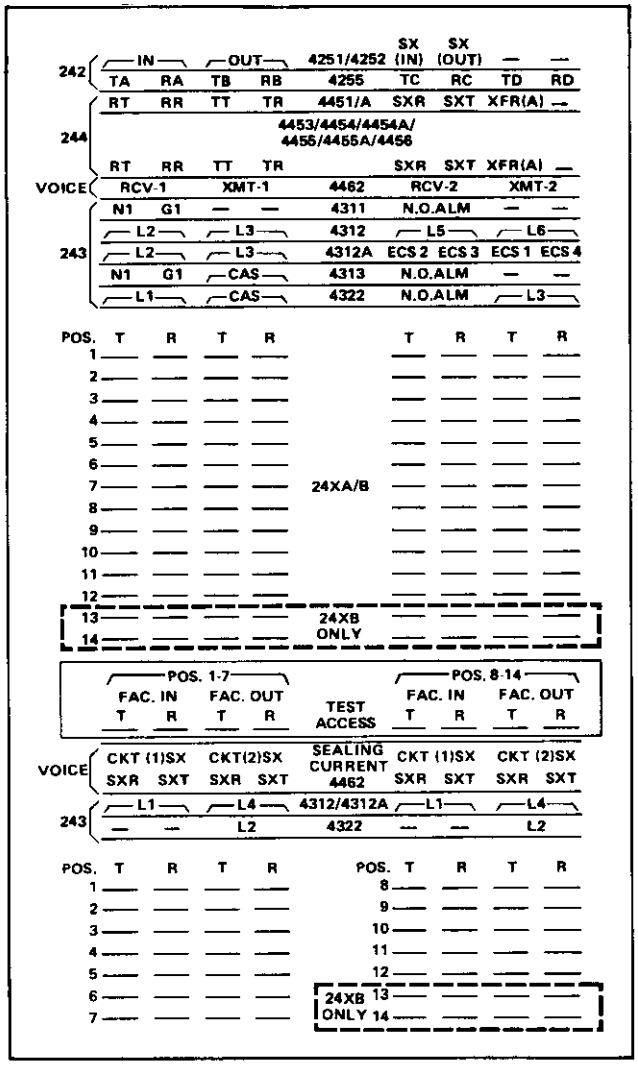

figure 2. Pin arrangement for 80-0088 cross-connect terminal block

3. wiring tables

3.01 Tables 1 through 12 contain wiring information for all three Tellabs Systems – 242, 243, and 244 – that can be used in the 24X Issue 2 Assembly. Although wiring for these Systems can be accomplished with this Practice alone, the appropriate System Practice(s) will also be required for proper System installation, as they contain specific application and alignment information and wiring diagrams not included in this Practice.

3.02 The 12 tables that follow comprise the following:

A. Table 1, which lists the 24X-Assembly cable-connectors that are used for each System or combination of Systems that can be installed in the Assembly.

B. Tables 2 through 11, which contain lead assignments for all modules of all three Systems when used in each position of the 24XA and 24XB Assemblies.

C. Tables 12a and 12b, which list complete input/output connector assignments for the 24XA and 24XB Assemblies.

25-pair cable connector 24X (Issue 2) Assembly backplane					Tellabs Systems that can be accommodated through use of indicated cable connectors
P1	P2	P3	P4	P5	
	X		X		1) 244 Bridge networks only, without capability of remote/local testing via 4459 Loopback/Facility Test Module
	X		X	X	1) 244 Bridge networks only, with remote/local test capability via 4459 module 2) 242 Bridge networks only (for which this is the most economical cabling arrangement) 3) Independent 242 and 244 Bridge networks in same Assembly, without remote/local test capability for 244 networks via 4459 module 4) Tandem bridge arrangements with 242- and 244-System modules intermixed within bridge networks
X	X	X	X		1) 243 Systems only 2) Independent 242 networks, 244 networks, and/or 243 Systems in same Assembly, without remote/local test access for 244 networks via 4459 module 3) Independent tandem bridge arrangements and 243 Systems in same Assembly 4) Tandem bridge arrangements as described above (for which this is a less economical cabling arrangement than that of preceding table entry) 5) 242 Bridge networks only (for which this is a less economical cabling arrangement than that of preceding table entry) 6) 244 Bridge networks only, without remote/local test capability via 4459 module unless special wiring is done at MDF to access 4459 via connectors P1 and P3 (See System wiring diagram in 244 Practice). (Again, this arrangement is less economical than those of first and second table entries.)
X	X	X	X	X	1) Same as items 1 through 6 in preceding table entry, but with remote/local test access via 4459 module for any 244 networks in Assembly

table 1. 24X Issue 2 Assembly backplane connector usage

242-System modules — connector P2

24XA/ 24XB (Issue 2) module position	56-pin module connector pin no.	25-pair cable connector pin no.	lead color	connector P2 lead designations for each module when used in listed module positions: 4251 DDB Combiner module	4252 DDB Splitter module	4255 DDB Quad Termination module
1	43	1	BL-W	out SX	–	line-C R
	9	26	W-BL	–	in SX	line-C T
	13	2	O-W	–	in R	line-A R
	7	27	W-O	–	in T	line-A T
	47	3	G-W	out R	–	line-B R
	41	28	W-G	out T	–	line-B T
2	43	4	BR-W	out SX	–	line-C R
	9	29	W-BR	–	in SX	line-C T
	13	5	S-W	–	in R	line-A R
	7	30	W-S	–	in T	line-A T
	47	6	BL-R	out R	–	line-B R
	41	31	R-BL	out T	–	line-B T
3	43	7	O-R	out SX	–	line-C R
	9	32	R-O	–	in SX	line-C T
	13	8	G-R	–	in R	line-A R
	7	33	R-G	–	in T	line-A T
	47	9	BR-R	out R	–	line-B R
	41	34	R-BR	out T	–	line-B T
4	43	10	S-R	out SX	–	line-C R
	9	35	R-S	–	in SX	line-C T
	13	11	BL-BK	–	in R	line-A R
	7	36	BK-BL	–	in T	line-A T
	47	12	O-BK	out R	–	line-B R
	41	37	BK-O	out T	–	line-B T
5	43	13	G-BK	out SX	–	line-C R
	9	38	BK-G	–	in SX	line-C T
	13	14	BR-BK	–	in R	line-A R
	7	39	BK-BR	–	in T	line-A T
	47	15	S-BK	out R	–	line-B R
	41	40	BK-S	out T	–	line-B T
6	43	16	BL-Y	out SX	–	line-C R
	9	41	Y-BL	–	in SX	line-C T
	13	17	O-Y	–	in R	line-A R
	7	42	Y-O	–	in T	line-A T
	47	18	G-Y	out R	–	line-B R
	41	43	Y-G	out T	–	line-B T
7	43	19	BR-Y	out SX	–	line-C R
	9	44	Y-BR	–	in SX	line-C T
	13	20	S-Y	–	in R	line-A R
	7	45	Y-S	–	in T	line-A T
	47	21	BL-V	out R	–	line-B R
	41	46	V-BL	out T	–	line-B T

table 2. Cable connector P2 lead assignments for 242-System modules in 24X Issue 2 Assembly

242-System modules — connector P4

24XA/ 24XB (Issue 2) module position	56-pin module connector pin no.	25-pair cable connector pin no.	lead color	connector P4 lead designations for each module when used in listed module positions: 4251 DDB Combiner module	4252 DDB Splitter module	4255 DDB Quad Termination module
8	43	50	V-S	out SX	–	line-C R
	9	25	S-V	–	in SX	line-C T
	13	49	V-BR	–	in R	line-A R
	7	24	BR-V	–	in T	line-A T
	47	48	V-G	out R	–	line-B R
	41	23	G-V	out T	–	line-B T
9	43	47	V-O	out SX	–	line-C R
	9	22	O-V	–	in SX	line-C T
	13	46	V-BL	–	in R	line-A R
	7	21	BL-V	–	in T	line-A T
	47	45	Y-S	out R	–	line-B R
	41	20	S-Y	out T	–	line-B T
10	43	44	Y-BR	out SX	–	line-C R
	9	19	BR-Y	–	in SX	line-C T
	13	43	Y-G	–	in R	line-A R
	7	18	G-Y	–	in T	line-A T
	47	42	Y-O	out R	–	line-B R
	41	17	O-Y	out T	–	line-B T
11	43	41	Y-BL	out SX	–	line-C R
	9	16	BL-Y	–	in SX	line-C T
	13	40	BK-S	–	in R	line-A R
	7	15	S-BK	–	in T	line-A T
	47	39	BK-BR	out R	–	line-B R
	41	14	BR-BK	out T	–	line-B T
12	43	38	BK-G	out SX	–	line-C R
	9	13	G-BK	–	in SX	line-C T
	13	37	BK-O	–	in R	line-A R
	7	12	O-BK	–	in T	line-A T
	47	36	BK-BL	out R	–	line-B R
	41	11	BL-BK	out T	–	line-B T
13*	43	35	R-S	out SX	–	line-C R
	9	10	S-R	–	in SX	line-C T
	13	34	R-BR	–	in R	line-A R
	7	9	BR-R	–	in T	line-A T
	47	33	R-G	out R	–	line-B R
	41	8	G-R	out T	–	line-B T
14*	43	32	R-O	out SX	–	line-C R
	9	7	O-R	–	in SX	line-C T
	13	31	R-BL	–	in R	line-A R
	7	6	BL-R	–	in T	line-A T
	47	30	W-S	out R	–	line-B R
	41	5	S-W	out T	–	line-B T

*24XB (14-position) Assembly only.

table 3. Cable connector P4 lead assignments for 242-System modules in 24X Issue 2 Assembly

242-System modules — connectors P1 and P3, or P5

module position in 24X Issue 2 Assembly	56-pin module connector pin	4255 DDB Quad Termination module lead designation	connector P1 and P3 pin numbers and lead colors for 4255 module used in listed module positions				alternative to connector P1 and P3 connections: connector P5 pin numbers and lead colors for 4255 module used in listed module positions*	
			connector P1		connector P3		connector P5	
			pin	lead color	pin	lead color	pin	lead color
1	49	line-D R	1	BL-W	–	–	50	V-S
	45	T	26	W-BL	–	–	25	S-V
2	49	line-D R	4	BR-W	–	–	49	V-BR
	45	T	29	W-BR	–	–	24	BR-V
3	49	line-D R	7	O-R	–	–	48	V-G
	45	T	32	R-O	–	–	23	G-V
4	49	line-D R	10	S-R	–	–	47	V-O
	45	T	35	R-S	–	–	22	O-V
5	49	line-D R	13	G-BK	–	–	46	V-BL
	45	T	38	BK-G	–	–	21	BL-V
6	49	line-D R	16	BL-Y	–	–	45	Y-S
	45	T	41	Y-BL	–	–	20	S-Y
7	49	line-D R	19	BR-Y	–	–	44	Y-BR
	45	T	44	Y-BR	–	–	19	BR-Y
8	49	line-D R	–	–	50	V-S	43	Y-G
	45	T	–	–	25	S-V	18	G-Y
9	49	line-D R	–	–	47	V-O	42	Y-O
	45	T	–	–	22	O-V	17	O-Y
10	49	line-D R	–	–	44	Y-BR	41	Y-BL
	45	T	–	–	19	BR-Y	16	BL-Y
11	49	line-D R	–	–	41	Y-BL	40	BK-S
	45	T	–	–	16	BL-Y	15	S-BK
12	49	line-D R	–	–	38	BK-G	39	BK-BR
	45	T	–	–	13	G-BK	14	BR-BK
13**	49	line-D R	–	–	35	R-S	38	BK-G
	45	T	–	–	10	S-R	13	G-BK
14**	49	line-D R	–	–	32	R-O	37	BK-O
	45	T	–	–	7	O-R	12	O-BK

*Connector P5 may be used as an alternative to connectors *P1* and *P3* to provide greater economy in 242 Bridge applications through use of only three cables instead of four. Please be aware, however, that this arrangement completely eliminates the capability of installing both 242 and 244 Bridge networks in the same Assembly. See the 242 DDB System Practice (section 82242) for details.

**24XB (14-position) Assembly only.

table 4. Cable connector P1 and P3, or P5, lead assignments for 242-System modules (4255 only) in 24X Issue 2 Assembly

243-System modules — connector P1

24XA/ 24XB (Issue 2) module position	56-pin module connector pin no.	25-pair cable connector pin no.	lead color	connector P1 lead designations for each module when used in listed module positions: 4311 Data Conversion	4312 Loop Interface	4313 Alarm Sta. Interface	4312A Loop Inftrfc. Rem. Control	4322 Loop Mon./ Interface
1	49	1	BL-W	–	L6 R	–	ECS 1	L3 R
	45	26	W-BL	–	L6 T	–	ECS 4	L3 T
	14	2	O-W	–	L4 R	–	L4 R	L2 R
	8	27	W-O	–	L4 T	–	L4 T	L2 T
	48	3	G-W	–	L1 R	–	L1 R	–
	44	28	W-G	–	L1 T	–	L1 T	–
2	49	4	BR-W	–	L6 R	–	ECS 1	L3 R
	45	29	W-BR	–	L6 T	–	ECS 4	L3 T
	14	5	S-W	–	L4 R	–	L4 R	L2 R
	8	30	W-S	–	L4 T	–	L4 T	L2 T
	48	6	BL-R	–	L1 R	–	L1 R	–
	44	31	R-BL	–	L1 T	–	L1 T	–
3	49	7	O-R	–	L6 R	–	ECS 1	L3 R
	45	32	R-O	–	L6 T	–	ECS 4	L3 T
	14	8	G-R	–	L4 R	–	L4 R	L2 R
	8	33	R-G	–	L4 T	–	L4 T	L2 T
	48	9	BR-R	–	L1 R	–	L1 R	–
	44	34	R-BR	–	L1 T	–	L1 T	–
4	49	10	S-R	–	L6 R	–	ECS 1	L3 R
	45	35	R-S	–	L6 T	–	ECS 4	L3 T
	14	11	BL-BK	–	L4 R	–	L4 R	L2 R
	8	36	BK-BL	–	L4 T	–	L4 T	L2 T
	48	12	O-BK	–	L1 R	–	L1 R	–
	44	37	BK-O	–	L1 T	–	L1 T	–
5	49	13	G-BK	–	L6 R	–	ECS 1	L3 R
	45	38	BK-G	–	L6 T	–	ECS 4	L3 T
	14	14	BR-BK	–	L4 R	–	L4 R	L2 R
	8	39	BK-BR	–	L4 T	–	L4 T	L2 T
	48	15	S-BK	–	L1 R	–	L1 R	–
	44	40	BK-S	–	L1 T	–	L1 T	–
6	49	16	BL-Y	–	L6 R	–	ECS 1	L3 R
	45	41	Y-BL	–	L6 T	–	ECS 4	L3 T
	14	17	O-Y	–	L4 R	–	L4 R	L2 R
	8	42	Y-O	–	L4 T	–	L4 T	L2 T
	48	18	G-Y	–	L1 R	–	L1 R	–
	44	43	Y-G	–	L1 T	–	L1 T	–
7	49	19	BR-Y	–	L6 R	–	ECS 1	L3 R
	45	44	Y-BR	–	L6 T	–	ECS 4	L3 T
	14	20	S-Y	–	L4 R	–	L4 R	L2 R
	8	45	Y-S	–	L4 T	–	L4 T	L2 T
	48	21	BL-V	–	L1 R	–	L1 R	–
	44	46	V-BL	–	L1 T	–	L1 T	–

table 5. Cable connector P1 lead assignments for 243-System modules in 24X Issue 2 Assembly

243-System modules — connector P2

24XA/ 24XB (Issue 2) module position	56-pin module connector pin no.	25-pair cable connector pin no.	lead color	connector P2 lead designations for each module when used in listed module positions: 4311 Data Conversion	4312 Loop Interface	4313 Alarm Sta. Interface	4312A Loop Intrfc. Rem. Control	4322 Loop Mon./ Interface
1	43	1	BL-W	N.O. alarm	L5 R	N.O. alarm	ECS 3	N.O. alarm
	9	26	W-BL	N.O. alarm	L5 T	N.O. alarm	ECS 2	N.O. alarm
	13	2	O-W	G1	L2 R	G1	L2 R	L1 R
	7	27	W-O	N1	L2 T	N1	L2 T	L1 T
	47	3	G-W	–	L3 R	CAS R	L3 R	CAS R
	41	28	W-G	–	L3 T	CAS T	L3 T	CAS T
2	43	4	BR-W	N.O. alarm	L5 R	N.O. alarm	ECS 3	N.O. alarm
	9	29	W-BR	N.O. alarm	L5 T	N.O. alarm	ECS 2	N.O. alarm
	13	5	S-W	G1	L2 R	G1	L2 R	L1 R
	7	30	W-S	N1	L2 T	N1	L2 T	L1 T
	47	6	BL-R	–	L3 R	CAS R	L3 R	CAS R
	41	31	R-BL	–	L3 T	CAS T	L3 T	CAS T
3	43	7	O-R	N.O. alarm	L5 R	N.O. alarm	ECS 3	N.O. alarm
	9	32	R-O	N.O. alarm	L5 T	N.O. alarm	ECS 2	N.O. alarm
	13	8	G-R	G1	L2 R	G1	L2 R	L1 R
	7	33	R-G	N1	L2 T	N1	L2 T	L1 T
	47	9	BR-R	–	L3 R	CAS R	L3 R	CAS R
	41	34	R-BR	–	L3 T	CAS T	L3 T	CAS T
4	43	10	S-R	N.O. alarm	L5 R	N.O. alarm	ECS 3	N.O. alarm
	9	35	R-S	N.O. alarm	L5 T	N.O. alarm	ECS 2	N.O. alarm
	13	11	BL-BK	G1	L2 R	G1	L2 R	L1 R
	9	36	BK-BL	N1	L2 T	N1	L2 T	L1 T
	47	12	O-BK	–	L3 R	CAS R	L3 R	CAS R
	41	37	BK-O	–	L3 T	CAS T	L3 T	CAS T
5	43	13	G-BK	N.O. alarm	L5 R	N.O. alarm	ECS 3	N.O. alarm
	9	38	BK-G	N.O. alarm	L5 T	N.O. alarm	ECS 2	N.O. alarm
	13	14	BR-BK	G1	L2 R	G1	L2 R	L1 R
	7	39	BK-BR	N1	L2 T	N1	L2 T	L1 T
	47	15	S-BK	–	L3 R	CAS R	L3 R	CAS R
	41	40	BK-S	–	L3 T	CAS T	L3 T	CAS T
6	43	16	BL-Y	N.O. alarm	L5 R	N.O. alarm	ECS 3	N.O. alarm
	9	41	Y-BL	N.O. alarm	L5 T	N.O. alarm	ECS 2	N.O. alarm
	13	17	O-Y	G1	L2 R	G1	L2 R	L1 R
	7	42	Y-O	N1	L2 T	N1	L2 T	L1 T
	47	18	G-Y	–	L3 R	CAS R	L3 R	CAS R
	41	43	Y-G	–	L3 T	CAS T	L3 T	CAS T
7	43	19	BR-Y	N.O. alarm	L5 R	N.O. alarm	ECS 3	N.O. alarm
	9	44	Y-BR	N.O. alarm	L5 T	N.O. alarm	ECS 2	N.O. alarm
	13	20	S-Y	G1	L2 R	G1	L2 R	L1 R
	7	45	Y-W	N1	L2 T	N1	L2 T	L1 T
	47	21	BL-V	–	L3 R	CAS R	L3 R	CAS R
	41	46	V-BL	–	L3 T	CAS T	L3 T	CAS T

table 6. Cable connector P2 lead assignments for 243-System modules in 24X Issue 2 Assembly

243-System modules — connector P3

24XA/ 24XB (Issue 2) module position	56-pin module connector pin no.	25-pair cable connector pin no.	lead color	connector P3 lead designations for each module when used in listed module positions: 4311 Data Conversion	4312 Loop Interface	4313 Alarm Sta. Interface	4312A Loop Intrfc. Rem. Control	4322 Loop Mon./ Interface
8	49	50	V-S	–	L6 R	–	ECS 1	L3 R
	45	25	S-V	–	L6 T	–	ECS 4	L3 T
	14	49	V-BR	–	L4 R	–	L4 R	L2 R
	8	24	BR-V	–	L4 T	–	L4 T	L2 T
	48	48	V-G	–	L1 R	–	L1 R	–
	44	23	G-V	–	L1 T	–	L1 T	–
9	49	47	V-O	–	L6 R	–	ECS 1	L3 R
	45	22	O-V	–	L6 T	–	ECS 4	L3 T
	14	46	V-BL	–	L4 R	–	L4 R	L2 R
	8	21	BL-V	–	L4 T	–	L4 T	L2 T
	48	45	Y-S	–	L1 R	–	L1 R	–
	44	20	S-Y	–	L1 T	–	L1 T	–
10	49	44	Y-BR	–	L6 R	–	ECS 1	L3 R
	45	19	BR-Y	–	L6 T	–	ECS 4	L3 T
	14	43	Y-G	–	L4 R	–	L4 R	L2 R
	8	18	G-Y	–	L4 T	–	L4 T	L2 T
	48	42	Y-O	–	L1 R	–	L1 R	–
	44	17	O-Y	–	L1 T	–	L1 T	–
11	49	41	Y-BL	–	L6 R	–	ECS 1	L3 R
	45	16	BL-Y	–	L6 T	–	ECS 4	L3 T
	14	40	BK-S	–	L4 R	–	L4 R	L2 R
	8	15	S-BK	–	L4 T	–	L4 T	L2 T
	48	39	BK-BR	–	L1 R	–	L1 R	–
	44	14	BR-BK	–	L1 T	–	L1 T	–
12	49	38	BK-G	–	L6 R	–	ECS 1	L3 R
	45	13	G-BK	–	L4 R	–	L4 R	L2 R
	14	37	BK-O	–	L4 R	–	L4 R	L2 R
	8	12	O-BK	–	L4 T	–	L4 T	L2 T
	48	36	BK-BL	–	L1 R	–	L1 R	–
	44	11	BL-BK	–	L1 T	–	L1 T	–
13*	49	35	R-S	–	L6 R	–	ECS 1	L3 R
	45	10	S-R	–	L6 T	–	ECS 4	L3 T
	14	34	R-BR	–	L4 R	–	L4 R	L2 R
	8	9	BR-R	–	L4 T	–	L4 T	L2 T
	48	36	BK-BL	–	L1 R	–	L1 R	–
	44	8	G-R	–	L1 T	–	L1 T	–
14*	49	32	R-O	–	L6 R	–	ECS 1	L3 R
	45	7	O-R	–	L6 T	–	ECS 4	L3 T
	14	31	R-BL	–	L4 R	–	L4 R	L2 R
	8	6	BL-R	–	L4 T	–	L4 T	L2 T
	48	30	W-S	–	L1 R	–	L1 R	–
	44	5	S-W	–	L1 T	–	L1 T	–

*24XB (14-position) Assembly only.

table 7. Cable connector P3 lead assignments for 243-System modules in 24X Issue 2 Assembly

243-System modules — connector P4

24XA/ 24XB (Issue 2) module position	56-pin module connector pin no.	25-pair cable connector pin no.	lead color	connector P4 lead designations for each module when used in listed module positions: 4311 Data Conversion	4312 Loop Interface	4313 Alarm Sta. Interface	4312A Loop Intrfc. Rem. Control	4322 Loop Mon./ Interface
8	43	50	V-S	N.O. alarm	L5 R	N.O. alarm	ECS 3	N.O. alarm
	9	25	S-V	N.O. alarm	L5 T	N.O. alarm	ECS 2	N.O. alarm
	13	49	V-BR	G1	L2 R	G1	L2 R	L1 R
	7	24	BR-V	N1	L2 T	N1	L2 T	L1 T
	47	48	V-G	–	L3 R	CAS R	L3 R	CAS R
	41	23	G-V	–	L3 T	CAS T	L3 T	CAS T
9	43	47	V-O	N.O. alarm	L5 R	N.O. alarm	ECS 3	N.O. alarm
	9	22	O-V	N.O. alarm	L5 T	N.O. alarm	ECS 2	N.O. alarm
	13	46	V-BL	G1	L2 R	G1	L2 R	L1 R
	7	21	BL-V	N1	L2 T	N1	L2 T	L1 T
	47	45	Y-S	–	L3 R	CAS R	L3 R	CAS R
	41	20	S-Y	–	L3 T	CAS T	L3 T	CAS T
10	43	44	Y-BR	N.O. alarm	L5 R	N.O. alarm	ECS 3	N.O. alarm
	9	19	BR-Y	N.O. alarm	L5 T	N.O. alarm	ECS 2	N.O. alarm
	13	43	Y-G	G1	L2 R	G1	L2 R	L1 R
	7	18	G-Y	G1	L2 R	G1	L2 R	L1 R
	47	42	Y-O	–	L3 R	CAS R	L3 R	CAS R
	41	17	O-Y	–	L3 T	CAS T	L3 T	CAS T
11	43	41	Y-BL	N.O. alarm	L5 R	N.O. alarm	ECS 3	N.O. alarm
	9	16	BL-Y	N.O. alarm	L5 T	N.O. alarm	ECS 2	N.O. alarm
	13	40	BK-S	G1	L2 R	G1	L2 R	L1 R
	7	15	S-BK	N1	L2 T	N1	L2 T	L1 T
	47	39	BK-BR	–	L3 R	CAS R	L3 R	CAS R
	41	14	BR-BK	–	L3 T	CAS T	L3 T	CAS T
12	43	38	BK-G	N.O. alarm	L5 R	N.O. alarm	ECS 3	N.O. alarm
	9	13	G-BK	N.O. alarm	L5 T	N.O. alarm	ECS 2	N.O. alarm
	13	37	BK-O	G1	L2 R	G1	L2 R	L1 R
	7	12	O-BK	N1	L2 T	G1	L2 R	L1 R
	47	36	BK-BL	–	L3 R	CAS R	L3 R	CAS R
	41	11	BL-BK	–	L3 T	CAS T	L3 T	CAS T
13*	43	35	R-S	N.O. alarm	L5 R	N.O. alarm	ECS 3	N.O. alarm
	9	10	S-R	N.O. alarm	L5 T	N.O. alarm	ECS 2	N.O. alarm
	13	34	R-BR	G1	L2 R	G1	L2 R	L1 R
	7	9	BR-R	N1	L2 T	N1	L2 T	L1 T
	47	33	R-G	–	L3 R	CAS R	L3 R	CAS R
	41	8	G-R	–	L3 T	CAS T	L3 T	CAS T
14*	43	32	R-O	N.O. alarm	L5 R	N.O. alarm	ECS 3	N.O. alarm
	9	7	O-R	N.O. alarm	L5 T	N.O. alarm	ECS 2	N.O. alarm
	13	31	R-BL	G1	L2 R	G1	L2 R	L1 R
	7	6	BL-R	N1	L2 T	N1	L2 T	L1 T
	47	30	W-S	–	L3 R	CAS R	L3 R	CAS R
	41	5	S-W	–	L3 T	CAS T	L3 T	CAS T

*24XB (14-position) Assembly only.

table 8. Cable connector P4 lead assignments for 243-System modules in 24X Issue 2 Assembly

244-System modules — connector P2

24XA/ 24XB (Issue 2) module position	56-pin module connector pin no.	25-pair cable connector pin no.	lead color	connector P2 lead designations for each module when used in listed module positions: 4451/4451A DDB common module	4453/4454/4454A/4455/4455A DDB Termination module
1	43	1	BL-W	comb out SX	facility out SX
	9	26	W-BL	split in SX	facility in SX
	13	2	O-W	split in R	facility in R
	7	27	W-O	split in T	facility in T
	47	3	G-W	comb out R	facility out R
	41	28	W-G	comb out T	facility out T
2	43	4	BR-W	comb out SX	facility out SX
	9	29	W-BR	split in SX	facility in SX
	13	5	S-W	split in R	facility in R
	7	30	W-S	split in T	facility in T
	47	6	BL-R	comb out R	facility out R
	41	31	R-BL	comb out T	facility out T
3	43	7	O-R	comb out SX	facility out SX
	9	32	R-O	split in SX	facility in SX
	13	8	G-R	split in R	facility in R
	7	33	R-G	split in T	facility in T
	47	9	BR-R	comb out R	facility out R
	41	34	R-BR	comb out T	facility out T
4	43	10	S-R	comb out SX	facility out SX
	9	35	R-S	split in SX	facility in SX
	13	11	BL-BK	split in R	faicility in R
	7	36	BK-BL	split in T	facility in T
	47	12	O-BK	comb out R	facility out R
	41	37	BK-O	comb out T	facility out T
5	43	13	G-BK	comb out SX	facility out SX
	9	38	BK-G	split in SX	facility in SX
	13	14	BR-BK	split in R	facility in R
	7	39	BK-BR	split in T	facility in T
	47	15	S-BK	comb out R	facility out R
	41	40	BK-S	comb out T	facility out T
6	43	16	BL-Y	comb out SX	facility out SX
	9	41	Y-BL	split in SX	facility in SX
	13	17	O-Y	split in R	facility in R
	7	42	Y-O	split in T	facility in T
	47	18	G-Y	comb out R	facility out R
	41	43	Y-G	comb out T	facility out T
7	43	19	BR-Y	comb out SX	facility out SX
	9	44	Y-BR	split in SX	facility in SX
	13	20	S-Y	split in R	facility in R
	7	45	Y-S	split in T	facility in T
	47	21	BL-V	comb out R	facility out R
	41	46	V-BL	comb out T	facility out T

table 9. Cable connector P2 lead assignments for 244-System modules in 24X Issue 2 Assembly

Note: This diagram shows the 24XB (14-position, 23-inch) Assembly backplane. The 24XA (12-position, 19-inch) Assembly lacks module positions 13 and 14. The dotted lines s
last mo
position (position 12) on the 24XA back to the busses. Also, the 24XA version lac
t where this note is referenced in the diagram show the paths from the last mo
TC1 sho
module position 14 is located at module position 12 on the 24XA Assembly.
ock TC4 at module position 12. Instead, local-test-access terminal block

6. schematic diagram of 24X Mounting Assembly backplane

244-System modules — connector P4

24XA/ 24XB (Issue 2) module position	56-pin module connector pin no.	25-pair cable connector pin no.	lead color	connector P4 lead designations for each module when used in listed module positions: 4451/4451A DDB common module	4453/4454/4454A/4455/4455A DDB Termination module
8	43	50	V-S	comb out SX	facility out SX
	9	25	S-V	split in SX	facility in SX
	13	49	V-BR	split in R	facility in R
	7	24	BR-V	split in T	facility in T
	47	48	V-G	comb out R	facility out R
	41	23	G-V	comb out T	facility out T
9	43	47	V-O	comb out SX	facility out SX
	9	22	O-V	split in SX	facility in SX
	13	46	V-BL	split in R	facility in R
	7	21	BL-V	split in T	facility in T
	47	45	Y-S	comb out R	facility out R
	41	20	S-Y	comb out T	facility out T
10	43	44	Y-BR	comb out SX	facility out SX
	9	19	BR-Y	split in SX	facility in SX
	13	43	Y-G	split in R	facility in R
	7	18	G-Y	split in T	facility in T
	47	42	Y-O	comb out R	facility out R
	41	17	O-Y	comb out T	facility out T
11	43	41	Y-BL	comb out SX	facility out SX
	9	16	BL-Y	split in SX	facility in SX
	13	40	BK-S	split in R	facility in R
	7	15	S-BK	split in T	faiclity in T
	47	39	BK-BR	comb out R	facility out R
	41	14	BR-BK	comb out T	facility out T
12	43	38	BK-G	comb out SX	facility out SX
	9	13	G-BK	split in SX	facility in SX
	13	37	BK-O	split in R	facility in R
	7	12	O-BK	split in T	facility in T
	47	36	BK-BL	comb out R	facility out R
	41	11	BL-BK	comb out T	facility out T
13*	43	35	R-S	comb out SX	facility out SX
	9	10	S-R	split in SX	faciity in SX
	13	34	R-BR	split in R	facility in R
	7	9	BR-R	split in T	facility in T
	47	33	R-G	comb out R	facility out R
	41	8	G-R	comb out T	facility out T
14*	43	32	R-O	comb out SX	facility out SX
	9	7	O-R	split in SX	facility in SX
	13	31	R-BL	split in R	facility in R
	7	6	BL-R	split in T	facility in T
	47	30	W-S	comb out R	facility out R
	41	5	S-W	comb out T	facility out T

*24XB (14-position) Assembly only.

table 10. Cable connector P4 lead assignments for 244-System modules in 24X Issue 2 Assembly

244-System modules — connector P5

24XA/ 24XB (Issue 2) module position	56-pin module connector pin no.	25-pair cable connector pin no.	lead color	connector P5 lead designations for each module when used in listed module pos.: 4454A/4455A DDB Termination module with transfer relay and 4451A DDB common module with transfer relay
1	49	50	V-S	–
	45	25	S-V	transfer relay control
2	49	49	V-BR	–
	45	24	BR-V	transfer relay control
3	49	48	V-G	–
	45	23	G-V	transfer relay control
4	49	47	V-O	–
	45	22	O-V	transfer relay control
5	49	46	V-BL	–
	45	21	BL-V	transfer relay control
6	49	45	Y-S	–
	45	20	S-Y	transfer relay control
7	49	44	Y-BR	–
	45	19	BR-Y	transfer relay control
8	49	43	Y-G	–
	45	18	G-Y	transfer relay control
9	49	42	Y-O	–
	45	17	O-Y	transfer relay control
10	49	41	Y-BL	–
	45	16	BL-Y	transfer relay control
11	49	40	BK-S	–
	45	15	S-BK	transfer relay control
12	49	39	BK-BR	–
	45	15	BR-BK	transfer relay control
13*	49	38	BK-G	–
	45	13	G-BK	transfer relay control
14*	49	37	BK-O	–
	45	12	O-BK	transfer relay control
1 through 7	42	30	W-S	facility out test access T
	50	5	S-W	facility out test access R
	5	29	W-BR	facility in test access T
	12	4	BR-W	facility in test access R
	37	33	R-G	–
	39	8	G-R	–
8 through 14*	42	27	W-O	facility out test access T
	50	2	O-W	facility out test access R
	5	26	W-BL	facility in test access T
	12	1	BL-W	facility in test access R
	37	32	R-O	–
	39	7	O-R	–

*Module positions 13 and 14 on 24XB Assembly only.

table 11. Cable connector P5 local/remote-test-access lead assignments for 244-System modules in 24X Issue 2 Assembly

4. specifications

capacity
24XA: 12 Type 10 modules (19-inch relay rack)
24XB: 14 Type 10 modules (23-inch relay rack)

construction
brushed aluminum

module connectors
56-pin, with bifurcated, gold-plated contacts

weight
24XA: 5.5 pounds (2.5kg)
24XB: 6 pounds (2.7kg)

dimensions
height (24XA and 24XB): 5.92 inches (15.04cm)
depth (24XA and 24XB): 7.31 inches (18.57cm)
width (excluding mounting ears):
24XA: 17.50 inches (44.45cm)
24XB: 20.40 inches (51.82cm)

5. testing and troubleshooting

5.01 If trouble is encountered with a Tellabs 242, 243, or 244 System housed in a 24X Mounting Assembly and neither physical damage to nor manufacturing defects in the Assembly are visible upon inspection, proceed as follows: Ensure that all modules are properly seated in their positions, that battery and ground are properly connected to the Assembly, and that all cable connectors are fully plugged in and secured. If the problem persists, check all associated wiring external to the Assembly (e.g., between the Assembly and the distributing frame; see note below). If the problem still exists, perform the troubleshooting procedures in the appropriate system and module Practices.

Note: *A special Tellabs module, the 4050 Cable Diagnostic Module, can be used to verify input/output circuit continuity from each of the 18 prewired pins of each module connector in the 24X Assembly, through the associated 25-pair cable connector on the Assembly's backplane, to the user-wired distributing frame where the leads from the Assembly's cable connectors are terminated. See the 4050 Module Practice for details.*

5.02 If none of the above procedures locates and eliminates the problem and a second 24X Assembly is available, substitute the second Assembly for the one suspected of being defective. If the system or systems in the second Assembly operate properly, the original Assembly should be considered defective and returned to Tellabs for repair or replacement. In all cases, however, no Assembly should be assumed to be defective until it is determined that no problems exist either with the modules in the Assembly or with the wiring both at and external to the Assembly. Tellabs strongly recommends that no internal (component-level) testing or repairs be attempted on the 24X Assembly. Unauthorized testing or repairs may void its warranty.

24X-Assembly input/output connector assignments

24X Issue 2 Assembly module position	connector P1: 56-pin module conn. pin	connector P1: 25-pair cable conn. pin	connector P1: lead color	connector P2: 56-pin module conn. pin	connector P2: 25-pair cable conn. pin	connector P2: lead color	connector P5: 56-pin module conn. pin	connector P5: 25-pair cable conn. pin	connector P5: lead color
1	49	1	BL-W	43	1	BL-W	49	50	V-S
	45	26	W-BL	9	26	W-BL	45	25	S-V
	14	2	O-W	13	2	O-W	–	–	–
	8	27	W-O	7	27	W-O	–	–	–
	48	3	G-W	47	3	G-W	–	–	–
	44	28	W-G	41	28	W-G	–	–	–
2	49	4	BR-W	43	4	BR-W	49	49	V-BR
	45	29	W-BR	9	29	W-BR	45	24	BR-V
	14	5	S-W	13	5	S-W	–	–	–
	8	30	W-S	7	30	W-S	–	–	–
	48	6	BL-R	47	6	BL-R	–	–	–
	44	31	R-BL	41	31	R-BL	–	–	–
3	49	7	O-R	43	7	O-R	49	48	V-G
	45	32	R-O	9	32	R-O	45	23	G-V
	14	8	G-R	13	8	G-R	–	–	–
	8	33	R-G	7	33	R-G	–	–	–
	48	9	BR-R	47	9	BR-R	–	–	–
	44	34	R-BR	41	34	R-BR	–	–	–
4	49	10	S-R	43	10	S-R	49	47	V-O
	45	35	R-S	9	35	R-S	45	22	O-V
	14	11	BL-BK	13	11	BL-BK	–	–	–
	8	36	BK-BL	7	36	BK-BL	–	–	–
	48	12	O-BK	47	12	O-BK	–	–	–
	44	37	BK-O	41	37	BK-O	–	–	–
5	49	13	G-BK	43	13	G-BK	49	46	V-BL
	45	38	BK-G	9	38	BK-G	45	21	BL-V
	14	14	BR-BK	13	14	BR-BK	–	–	–
	8	39	BK-BR	7	39	BK-BR	–	–	–
	48	15	S-BK	47	15	S-BK	–	–	–
	44	40	BK-S	41	40	BK-S	–	–	–
6	49	16	BL-Y	43	16	BL-Y	49	45	Y-S
	45	41	Y-BL	9	41	Y-BL	45	20	S-Y
	14	17	O-Y	13	17	O-Y	–	–	–
	8	42	Y-O	7	42	Y-O	–	–	–
	48	18	G-Y	47	18	G-Y	–	–	–
	44	43	Y-G	41	43	Y-G	–	–	–
7	49	19	BR-Y	43	19	BR-Y	49	44	Y-BR
	45	44	Y-BR	9	44	Y-BR	45	19	BR-Y
	14	20	S-Y	13	20	S-Y	–	–	–
	8	45	Y-S	7	45	Y-S	–	–	–
	48	21	BL-V	47	21	BL-V	–	–	–
	44	46	V-BL	41	46	V-BL	–	–	–
1 through 7	42	24	BR-V	–	–	–	42	30	W-S
	50	49	V-BR	–	–	–	50	5	S-W
	5	25	S-V	–	–	–	5	29	W-BR
	12	50	V-S	–	–	–	12	4	BR-W
	37	23	G-V	–	–	–	37	33	R-G
	39	48	V-G	–	–	–	39	8	G-R

Note: There are no connector-P3 or connector-P4 assignments for module positions 1 through 7.

table 12a. Input/output connector assignments for 24X Assembly, module positions 1 through 7

24X Issue 2 Assembly module position	connector P3: 56-pin module conn. pin	connector P3: 25-pair cable conn. pin	connector P3: lead color	connector P4: 56-pin module conn. pin	connector P4: 25-pair cable conn. pin	connector P4: lead color	connector P5: 56-pin module conn. pin	connector P5: 25-pair cable conn. pin	connector P5: lead color
8	49	50	V-S	43	50	V-S	49	43	Y-G
	45	25	S-V	9	25	S-V	45	18	G-Y
	14	49	V-BR	13	49	V-BR	–	–	–
	8	24	BR-V	7	24	BR-V	–	–	–
	48	48	V-G	47	48	V-G	–	–	–
	44	23	G-V	41	23	G-V	–	–	–
9	49	47	V-O	43	47	V-O	49	42	Y-O
	45	22	O-V	9	22	O-V	45	17	O-Y
	14	46	V-BL	13	46	V-BL	–	–	–
	8	21	BL-V	7	21	BL-V	–	–	–
	48	45	Y-S	47	45	Y-S	–	–	–
	44	20	S-Y	41	20	S-Y	–	–	–
10	49	44	Y-BR	43	44	Y-BR	49	41	Y-BL
	45	19	BR-Y	9	19	BR-Y	45	16	BL-Y
	14	43	Y-G	13	43	Y-G	–	–	–
	8	18	G-Y	7	18	G-Y	–	–	–
	48	42	Y-O	47	42	Y-O	–	–	–
	44	17	O-Y	41	17	O-Y	–	–	–
11	49	41	Y-BL	43	41	Y-BL	49	40	BK-S
	45	16	BL-Y	9	16	BL-Y	45	15	S-BK
	14	40	BK-S	13	40	BK-S	–	–	–
	8	15	S-BK	7	15	S-BK	–	–	–
	48	39	BK-BR	47	39	BK-BR	–	–	–
	44	14	BR-BK	41	14	BR-BK	–	–	–
12	49	38	BK-G	43	38	BK-G	49	39	BK-BR
	45	13	G-BK	9	13	G-BK	45	14	BR-BK
	14	37	BK-O	13	37	BK-O	–	–	–
	8	12	O-BK	7	12	O-BK	–	–	–
	48	36	BK-BL	47	36	BK-BL	–	–	–
	44	11	BL-BK	41	11	BL-BK	–	–	–
13*	49	35	R-S	43	35	R-S	49	38	BK-G
	45	10	S-R	9	10	S-R	45	13	G-BK
	14	34	R-BR	13	34	R-BR	–	–	–
	8	9	BR-R	7	9	BR-R	–	–	–
	48	33	R-G	47	33	R-G	–	–	–
	44	8	G-R	41	8	G-R	–	–	–
14	49	32	R-O	43	32	R-O	49	37	BK-O
	45	7	O-R	9	7	O-R	45	12	O-BK
	14	31	R-BL	13	31	R-BL	–	–	–
	8	6	BL-R	7	6	BL-R	–	–	–
	48	30	W-S	47	30	W-S	–	–	–
	44	5	S-W	41	5	S-W	–	–	–
8 through 14*	42	27	W-O	–	–	–	42	27	W-O
	50	2	O-W	–	–	–	50	2	O-W
	5	26	W-BL	–	–	–	5	26	W-BL
	12	1	BL-W	–	–	–	12	1	BL-W
	37	28	W-G	–	–	–	37	32	R-O
	39	3	G-W	–	–	–	39	7	O-R

Note: There are no connector-P1 or connector-P2 assignments for module positions 8 through 14.
*Module positions 13 and 14 on 24XB Assembly only.

table 12b. Input/output connector assignments for 24X Assembly, module positions 8 through 14

5.03 If a situation arises that is not covered in paragraphs 5.01 and 5.02, contact Tellabs Customer Service at your Tellabs Regional Office or at our Lisle, Illinois, or Mississauga, Ontario, Headquarters. Telephone numbers are as follows:

US central region: (312) 969-8800
US northeast region: (412) 787-7860
US southeast region: (305) 645-5888
US western region: (213) 595-7071
Lisle Headquarters: (312) 969-8800
Mississauga Headquarters: (416) 624-0052

5.04 If a 24X Assembly is diagnosed as defective, the situation may be remedied by either *replacement* or *repair and return*. Because it is more expedient, the *replacement* procedure should be followed whenever time is a critical factor (e.g., service outages, etc.).

replacement

5.05 To obtain a replacement 24X Assembly, notify Tellabs via letter (see addresses below), telephone (see numbers above), or twx (910-695-3530 in the USA, 610-492-4387 in Canada). Be sure to provide all relevant information, including the 8X24X part number that indicates the issue of the Assembly in question. Upon notification, we shall ship a replacement to you. If the Assembly in question is in warranty, the replacement will be shipped at no charge. Pack the defective Assembly in the replacement Assembly's carton, sign the packing slip included with the replacement, and enclose it with the defective Assembly (this is your return authorization). Affix the preaddressed label provided with the replacement Assembly to the carton being returned, and ship the Assembly prepaid to Tellabs.

repair and return

5.06 Return the defective 24X Assembly, shipment prepaid, to Tellabs (attn: repair and return).

in the USA: Tellabs Incorporated
4951 Indiana Avenue
Lisle, Illinois 60532

in Canada: Tellabs Communications Canada, Ltd.
1200 Aerowood Drive, Unit 11
Mississauga, Ontario, Canada L4W 2S7

Enclose an explanation of the Assembly's problem. Follow your company's standard procedure with regard to administrative paperwork. Tellabs will repair the Assembly and ship it back to you. If the Assembly is in warranty, no invoice will be issued.