

263A Data Station Termination Assembly

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1. description and application

1.01 The 263A Data Station Termination (DST) Assembly (figure 1) is a specially equipped and pre-wired Tellabs 1912 Apparatus Case designed to accommodate any one of Tellabs' family of Type 10 DST modules. The 263A Assembly provides enclosed desktop or wall mounting, external connections, and dc power for the associated DST module. The module, in turn, interfaces a 4wire transmission facility with either a 2wire or a 4wire data modem, providing level coordination between the facility and the modem, amplitude equalization in one or both channels, impedance matching at the facility-side ports, and locally or remotely activated loopback. The 263A Assembly can be used in virtually any application where a single modem communicates with other modems or a centrally located computer over voice-grade facilities.

1.02 This practice section is reissued to cover the Issue 5 version of the 263A Data Station Termination Assembly (Tellabs part number 85263A). The Issue 5 263A differs from the Issue 4 version as follows: the loopback indicator on the side of the case has been removed, and the cover has been changed to include a smoke-gray plastic window that allows indicator LEDs on the enclosed module to be seen with the assembly cover on. The number of positions on the barrier-type screw-terminal block on the assembly's backplane has been increased from 15 to 17 to allow connection of the facility-side simplex leads. In addition, an eight-pin modular connector has been added to the case for fast and easy connection to the modem, and a switch has been added to the assembly to select one of two pin arrangements at the assembly's 56-pin card-edge connector to allow the assembly to accept a wider variety of modules.

1.03 The 263A Assembly consists of a mounting chassis, a metal cover, and a printed circuit board. A 56-pin card-edge connector (*J1*), a 17-position barrier-type screw-terminal block (*TB1*), a 50-pin male cable connector (*J2*), an 8-pin modular connector (*J3*), a 2-position switch (*S1*), and power supply circuitry are all mounted on the unit's printed circuit board. External connections to the 4wire facility and to the power supply are made at *TB1*. External connections to the 2wire or 4wire modem are made at *TB1* if the modem has no connectorized cable, at *J2* if the modem is equipped with a

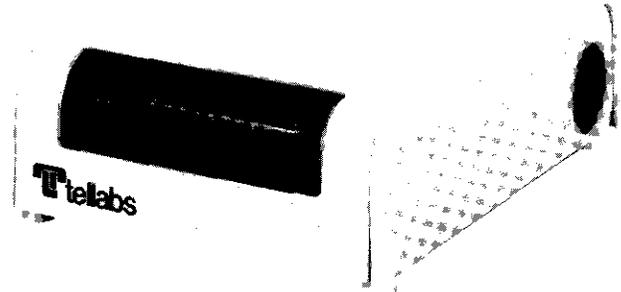


figure 1. 263A DST Assembly

50-pin female cable connector, or at *J3* if the modem is equipped with an 8-pin male modular data connector. All of these connections are extended to the enclosed DST module via printed circuit traces.

1.04 The assembly's power supply provides regulated -48Vdc to the DST module from nominal 26Vac input. The required ac input can be supplied from a commercial 120Vac , 60Hz outlet by using the Tellabs 8015 Transformer. Provision is also made for use of an external -48Vdc supply.

1.05 Switch *S1* selects one of two different pin assignments at the assembly's card edge connector. With switch *S1* in the *SXT normal* position, the assembly accommodates either a 4212A DST module or any of Tellabs' 4412X-series DST modules. In the *SXT transfer* position, the connections between the card-edge connector and the terminal block are rearranged to accept Tellabs' 4416, 4416A, 4417, 4417A, 4418, or 4418A DST modules.

1.06 The application of the 263A depends on the particular DST module used with it. Modules are available to interface a 4wire facility with either a 4wire or 2wire modem. As mentioned above, the DST modules all provide level control and equalization between the facility and modem, as well as impedance matching on the facility side. Table 1 lists the various DST modules and their features. Please refer to the individual Tellabs DST-module practices for detailed descriptions and application information.

1.07 Optional equipment available with the 263A Assembly includes two gas-tube lightning protectors (263A L2) and the 8015 Transformer. Please note that the 8015 Transformer is ordered separately under its own Tellabs model number.

2. installation inspection

2.01 The 263A DST Assembly and its associated module should be visually inspected upon arrival in order to find any damage incurred during ship-

DST module	modem interface	rcv level adjustment range (dB)	xmt level adjustment range (dB)	loopback activation	loopback release	amplitude equalization
4212A	2wire	-15 to +20	0 to -39	tone or dc	second tone or removal of dc	xmt and rcv
4412A	4wire	-15 to +20	0 to -39	tone or dc	second tone or removal of dc	xmt and rcv
4412AS and 4412ASW (w/sealing current)	4wire	-15 to +20	0 to -39	tone or dc	second tone or removal of dc	xmt and rcv
4412B	4wire	-15 to +20	0 to -39	tone or dc	automatic timeout or removal of dc	xmt and rcv
4412C	4wire	-15 to +20	0 to -39	any of 11 tone freq's or dc	second tone or removal of dc	xmt and rcv
4412D	4wire	-15 to +20	0 to -39	any of 11 tone freq's or dc	automatic timeout or removal of dc	xmt and rcv
4412U (w/sealing current)	2wire or 4wire	-24 to +24, prescription set	-24 to +24, prescription set	tone or dc	second tone, automatic timeout, combination of both, or removal of dc	rcv (xmt optional)
4416 and 4416A (w/sealing current)	2wire or 4wire	-24 to +24, prescription set	0 to -24, prescription set	tone or dc	second tone, automatic timeout, combination of both, or removal of dc	rcv only, WEC0 309B type
4417 and 4417A (w/sealing current)	4wire	0 to -24, prescription set	0 to -24, prescription set	tone or dc	same as above	none
4418 and 4418A (w/sealing current)	4wire	-24 to 24, prescription set	0 to -24 prescription set	tone or dc	same as above	rcv only, WEC0 309B type

table 1. DST modules that can be used in 263 Assembly

ment. If damage is found, a claim should immediately be filed with the carrier. If stored, the assembly and module should be visually inspected again prior to installation.

cover removal

2.02 To install the 263A, the protective metal cover enclosing the module must be removed. The cover is held in place by two plastic retainer latches located on each side of the cover. With a screwdriver, turn each latch clockwise approximately 1/2 turn until the latch clears the lip of the chassis. Then remove the cover by lifting it straight upward, and replace it by an opposite motion. Store the cover in a location where it will not be bent or otherwise damaged.

mounting

2.03 The 263A is supplied with four rubber feet for desktop use. If wall mounting is required, remove the rubber feet to allow the case to be mounted flush against the wall. Four mounting screws (not supplied) of a type suitable for the material of the wall on which the 263A will be mounted are required.

Caution: When wall mounted, the 263A must be oriented so that the module's faceplate is not facing downward. Otherwise, the module may work loose from its connector.

options

2.04 The only option switch on the 263A selects the correct connections to the terminal block for

the DST module used. If the 263A is to be used with any of Tellabs' 4412X-series of DSTs, or with the 4212A DST, set switch S1 to the SXT normal position. If the 263A is to be used with the Tellabs 4416, 4416A, 4417, 4417A, 4418 or 4418A DST, set switch S1 to the SXT transfer position. The exact location of this switch on the case's printed circuit board is shown in figure 2. In addition, the optional gas-tube protectors (if supplied) are installed at this time. Simply plug the protectors into the sockets labeled V1 and V2.

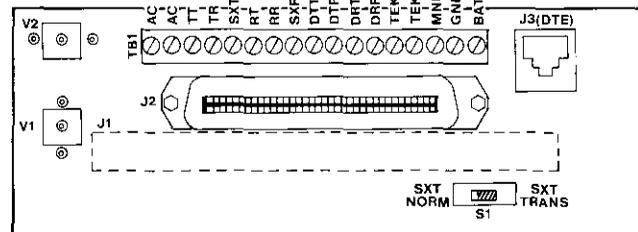


figure 2. 263A option location

installer connections

2.05 Before making any connections to the 263A, make sure that power is off and the module is removed. The module should be installed only after it is properly optioned and after wiring is completed.

2.06 All internal connections of the 263A are prewired at the factory. Make external connections to the 263A as directed in table 2 and the 263A

wiring diagram, section 4 of this practice. Normally, all facility connections are made to *TB1*, and all modem connections are made to *TB1* if the modem has no connectorized cable, to *J2* if the modem is supplied with a 50-pin female cable connector, or to *J3* if the modem is supplied with an 8-pin male modular data connector. The *MNLB* terminal of *TB1* is used for connection of a manual loopback key. (This loopback key must provide a ground to the *MNLB* terminal of *TB1* to place the DST module in loopback.)

connect:	to TB1 pin:	J2 pin:	J3 pin:
FACILITY:			
XMT OUT TIP (TT)	TT	—	—
XMT OUT RING (TR)	TR	—	—
XMT OUT SIMPLEX (SXT)	SXT	—	—
RCV IN TIP (RT)	RT	—	—
RCV IN RING (RR)	RR	—	—
RCV IN SIMPLEX (SXR)	SXR	—	—
MODEM:			
DATA XMT TIP (DTT,XMT IN)	DTT	29	2
DATA XMT RING (DTR, XMT IN)	DTR	4	1
DATA RCV TIP (DRT, RCV OUT)	DRT	30	7
DATA RCV RING (DRR, RCV OUT)	DRR	5	8
TEK5 (DATA SET DISABLE)	TEK5	28	3
TEK6 (DATA SET DISABLE)	TEK6	3	6
POWER:			
AC INPUT (nominal 26Vac)	AC	—	—
DC INPUT:			
ground	GND	—	—
—BATT	BATT	—	—
MNLB (manual loopback lead)	MNLB	—	—

table 2. External connections to 263A DST Assembly

power connections

2.07 When ac input is used, connect nominal 26Vac to the AC terminals of *TB1*. The proper ac input can be supplied from a commercial 120Vac, 60Hz outlet by using a Tellabs 8015 Transformer. In this case, connect terminals 1 and 3 of the 8015 to the AC terminals of *TB1* and plug the 8015 into a convenient grounded outlet. When an external source of -48Vdc is used, connect ground to the *GND* terminal of *TB1* and negative battery (-44 to -56Vdc) to the *BATT* terminal of *TB1*. In addition, a solid earth ground should be connected to the ground lug located at the rear of the chassis (directly below male cable connector *J2*). This will prevent excessive damage to the module in the event of a lightning strike, and is essential for proper operation of the optional gas-tube lightning protectors (if used).

3. circuit description

3.01 This circuit description is intended to familiarize you with the 263A DST Assembly for engineering and application purposes only. Attempts to troubleshoot the 263A internally are not recommended. Troubleshooting procedures should be limited to those prescribed in section 6 of this practice. Please refer to the 263A wiring diagram, section 4 of this practice, as an aid in following this circuit description.

3.02 The 263A mounts and powers one Tellabs Type 10 DST module. The DST module plugs into card-edge connector *J1*; printed circuit traces extend the required connections to terminal block *TB1*, to cable connector *J2*, and to modular connector *J3*. All facility and power connections are made at *TB1*. Connections to the modem are made at *TB1* if the modem has no connectorized cable, at *J2* if the modem is equipped with a 25-pair female cable connector, or at *J3* if the modem is equipped with an 8-pin male modular data connector.

3.03 The assembly's *power supply* provides regulated -48Vdc to the DST module from nominal 26Vac input or directly from a -48Vdc input. When ac input is used, a half wave rectifier in the *power supply* rectifies the ac input. A capacitive voltage-doubler and a zener-diode regulator then convert the rectified ac input to -48Vdc . When dc input is used, the *power supply* is bypassed and dc voltage is applied directly to the DST module.

3.04 Switch *S1* selects one of two available pin configurations at the 56-pin card-edge connector (*J1*). In the *SXT normal* mode, the *SXT* terminal of *TB1* is connected to pin 51 of *J1* and the *TEK5* terminal of *TB1* is connected to pins 23 and 43 of *J1*. This provides the proper connections to *TB1* when the 263A is used with any of Tellabs' 4412-series DST modules or with the Tellabs 4212A DST module. In the *SXT transfer* position, *TB1-SXT* is connected to *J1-43* and *TB1-TEK5* connects only to *J1-23*. This allows the 263A to accept Tellabs 4416, 4416A, 4417, 4417A, 4418, or 4418A DST modules.

5. specifications

power input

ac: nominal 26Vac (this can be supplied from commercial 120Vac when the optional Tellabs 8015 Transformer is used. The 8015 supplies 26Vac at 7.5VA)

dc: filtered, ground referenced -22 to -56Vdc .
Maximum current required is 200mA.

power output

voltage: -44 to -52Vdc (no-load output: -56Vdc)

current: 120mA maximum

ripple: 70mV peak-to-peak maximum

operating environment

20° to 130°F ($-7°$ to $54°C$), humidity to 95% (no condensation)

dimensions

2.75 inches (6.99cm) high

8.30 inches (21.10cm) deep

6.80 inches (17.27cm) wide

weight

1 pound 7 ounces (652 grams)

mounting

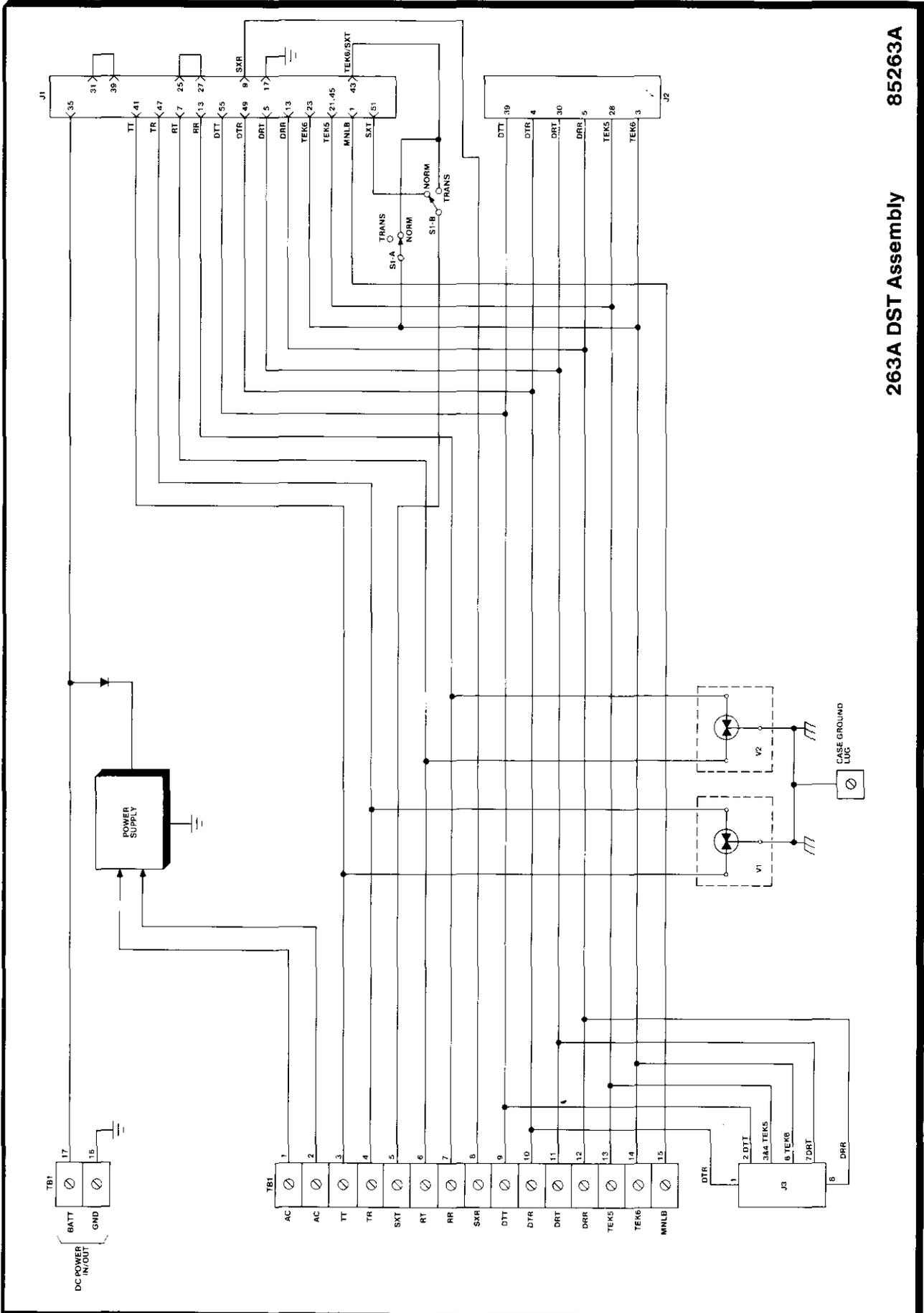
wall mounted via four screws; also provided with rubber feet for desktop placement

6.01 testing and troubleshooting

6.01 The *testing guide checklist* in this section may be used to assist in the installation, testing, or troubleshooting of the 263A DST Assembly. The checklist is intended as an aid in the localization of trouble to a specific unit. If a unit is suspected of



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4. wiring diagram
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being defective, a new one should be substituted and the test conducted again. If the substitute unit operates correctly, the original unit should be considered defective and returned to Tellabs for repair or replacement. We strongly recommend that no internal (component-level) testing or repairs be attempted on the unit. Instead, a malfunctioning unit should be returned to Tellabs for repair or replacement as directed below. Unauthorized testing or repairs may void the unit's warranty. Also, if the unit is part of a registered system, unauthorized repairs will result in noncompliance with Part 68 of the FCC Rules and Regulations.

Note: *Warranty service does not include removal of permanent customer markings on the covers of Tellabs products, although an attempt will be made to do so. If a unit must be marked **defective**, we recommend that it be done on a piece of tape or on a removable stick-on label.*

6.02 If a situation arises that is not covered in the checklist, contact Tellabs Customer Service as follows (telephone numbers are given below):

USA customers: Contact Tellabs Customer Service at your Tellabs Regional Office.

Canadian customers: Contact Tellabs Customer Service at our Canadian headquarters in Mississauga, Ontario.

International customers: Contact your Tellabs distributor.

- US central region: (312) 969-8800
- US northeast region: (412) 787-7860
- US southeast region: (305) 645-5888
- US western region: (702) 827-3400
- Canada: (416) 624-0052

6.03 If a unit is diagnosed as defective, follow the *replacement* procedure in paragraph 6.04 when a critical service outage exists (e.g., when a system or a critical circuit is down and no spares are available). If the situation is not critical, follow the *repair and return* procedure in paragraph 6.05.

replacement

6.04 To obtain a replacement unit, notify Tellabs via letter or telephone (see addresses and numbers below) or via TWX (910-695-3530 in the USA, 610-492-4387 in Canada). Be sure to provide all relevant information, including the 8X263A part number that indicates the issue of the unit in question. Upon notification, we shall ship a replacement unit to you. If the unit in question is in warranty, the replacement will be shipped at no charge. Pack the defective unit in the replacement unit's carton, sign the packing slip included with the replacement, and enclose it with the defective unit (this is your return authorization). Affix the preaddressed label provided with the replacement unit to the carton being returned, and ship the unit prepaid to Tellabs.

repair and return

6.05 Return the defective unit, shipment prepaid, to Tellabs (attn: repair and return).
in the USA: Tellabs, Inc.

4951 Indiana Avenue
Lisle, Illinois 60532
telephone (312) 969-8800

in Canada: Tellabs Communications Canada, Ltd.
1200 Aerowood Drive, Unit 39
Mississauga, Ontario, Canada L4W 2S7
telephone (416) 624-0052

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

testing guide checklist

test	test procedure	normal result	if normal conditions are not met, verify:
power to module in assembly	Using VOM or voltmeter, measure voltage across pins 17 and 35 of J1.	Measured voltage is -47 to -56Vdc <input type="checkbox"/> .	Broken wires or connector pins <input type="checkbox"/> . Loose power connections to terminals on TB1 <input type="checkbox"/> . Faulty transformer or external source <input type="checkbox"/> . Replace assembly and re-test <input type="checkbox"/> .
Note: For testing and troubleshooting information on the modules used in the 263A DST Assembly, please refer to the Tellabs practices on those modules. If trouble is encountered with a module mounted in the 263A, verify that all connections are correct and secure and that the module is plugged completely into the connector.			