

**WIDEBAND REMOTE SWITCH AND
WIDEBAND SUPPLEMENTARY REMOTE SWITCH
FRAMES
EQUIPMENT DESIGN REQUIREMENTS
COMMON SYSTEMS**

1. GENERAL

Scope

1.01 This specification, together with the supplementary information listed herein, is in accordance with SD-27900-01, Issue 4A and covers the equipment design requirements for the framework, equipment, and circuits to be used in the engineering, manufacture, and installation of the wideband remote switch and wideband supplementary remote switch frames.

1.02 The wideband remote switch and wideband supplementary remote switch frames furnish the facilities for remote switching the wideband portion of a PICTUREPHONE® call.

Capacity

1.03 WIDEBAND REMOTE SWITCH FRAME

Line Appearances (11'-6" Frame)	80
Line Appearances (7'-0" Frame)	40
Max. Number of Remote Links	10
Max. Number of Intra- remote Switch Trunks	8

Remote Link and Intra- remote Switch Trunk Appearances	20(10"A"&10"B")
Number of Terminating Test Lines	1
Number of Associated Wideband Line Link Frame Line Switch Groups	1

1.04 WIDEBAND SUPPLEMENTARY REMOTE SWITCH FRAME (7'-0")

Line Appearances	40
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Description

1.05 A wideband remote switch is provided on an optional basis to reduce the number of video loops to the PICTUREPHONE central office. It may function as a switch for 4- or 5-digit intercom calling between customers in a single centrex group or as a remote wideband line concentrator for individual subscriber lines or both. In either case, the audio connection is switched through the PICTUREPHONE central office.

1.06 Control of the wideband remote switch is accomplished over duplicate sets of control leads from the wideband remote switch signal control frame in the PICTUREPHONE central office. Each set of control leads should follow a different route for protection reasons.

1.07 A *wideband remote switch* consists of four or eight 200-point crossbar switches which are multiplied to form a 40 or 80 vertical by 20 horizontal array. Of the 40 or 80 verticals, the

first three are used for test functions. Vertical 00 is assigned to the wideband terminating test line. Vertical 01 is used as an originating test appearance. Access to this vertical is from the portable priming set for use with the wideband trunk test register circuit or from the central office master test frame via vertical 02 (test access vertical). Verticals 03 to 79 are used for customer video appearances.

1.08 The 20 horizontals are used for intraremove switch (IRS) trunk or remote link appearances and are divided into ten "A" appearances and ten "B" appearances. Each IRS trunk requires one "A" appearance and one "B" appearance. Eight or fewer intraremove switch trunks (eight are always provided) may be used to serve the intraremove switch traffic. These trunks are cross-connected to the "A" and "B" appearances. A remote link may be assigned to either an "A" or "B" appearance. A minimum of two and a maximum of ten remote links per WBRS are used to serve the incoming and outgoing traffic from the wideband remote switch. If more than five intraremove switch trunks are used, the maximum number of remote links must be decreased accordingly since there is only a total of 20 appearances available for both IRS trunks and remote links. Each WBRS requires a separate audio intraoffice trunk group in the central office.

1.09 All *remote links* from a particular remote switch must have their central office appearance on verticals of the same wideband line switch group. A maximum of three wideband remote switches may have their remote links assigned to the same wideband line switch group provided that the total number of remote links does not exceed 12.

Equipment Description

1.10 The *wideband remote switch frames* are single-bay, 3-foot 0-1/4-inch wide, bulb angle frames and are available in either 11-foot 6-inch or 7-foot 0-inch frame heights. When a WBRS is required in a central office, the 11-foot 6-inch frame is to be used. The 7-foot 0-inch WBRS frames are for use on customer premises.

- (a) The 11-foot 6-inch wideband remote switch frame, Fig. 1, is arranged to provide either 40 or 80 wideband line appearances, eight

intraremove switch trunks, and one terminating test line.

- (b) The 7-foot 0-inch wideband remote switch frame, Fig. 2, provides 40 wideband line appearances, eight intraremove switch trunks, and one terminating test line.

- (c) A 7-foot 0-inch wideband supplementary remote switch frame, Fig. 2, is available to increase the line capacity of the 7-foot 0-inch basic frame from 40 to 80 line appearances. The supplementary frame must be located adjacent and to the left of the wideband remote switch frame since the video transmission portion of the link multiple between frames is provided in local cable arm extensions.

1.11 Due to the frequencies involved in video transmission, the following special precautions have been taken in the design of the wideband remote switch frames:

- (a) **Grounding**—A solid copper ground bus is provided at the top of each frame. A number 6, tinned-copper ground lead is attached to the ground bus and run down the frame upright. All circuit grounds are connected to this ground lead assembly by short horizontal runs.

- (b) **Switchboard Cable**—Transmit and receive leads of the video transmission path are run in separate shielded cables. The cable shields are grounded only at the end terminating on the remote switch frame.

- (c) **Local Cable**—The video transmission path within a frame is run in a local cable consisting of twisted pairs. The twist rate is different for different colors of wire and as many different colors as practical have been used in order to insure a random twist rate for the entire cable. The video transmission lead local cable is located in the opposite upright from the video control lead local cable and cable arms of the two cables are separated by at least 2 inches when they must run parallel.

1.12 The *power supply* for a wideband remote switch frame located in a central office should be derived from a battery control board. No other equipment may be fed from the same fuse or feeder. The power supply for the WBRS

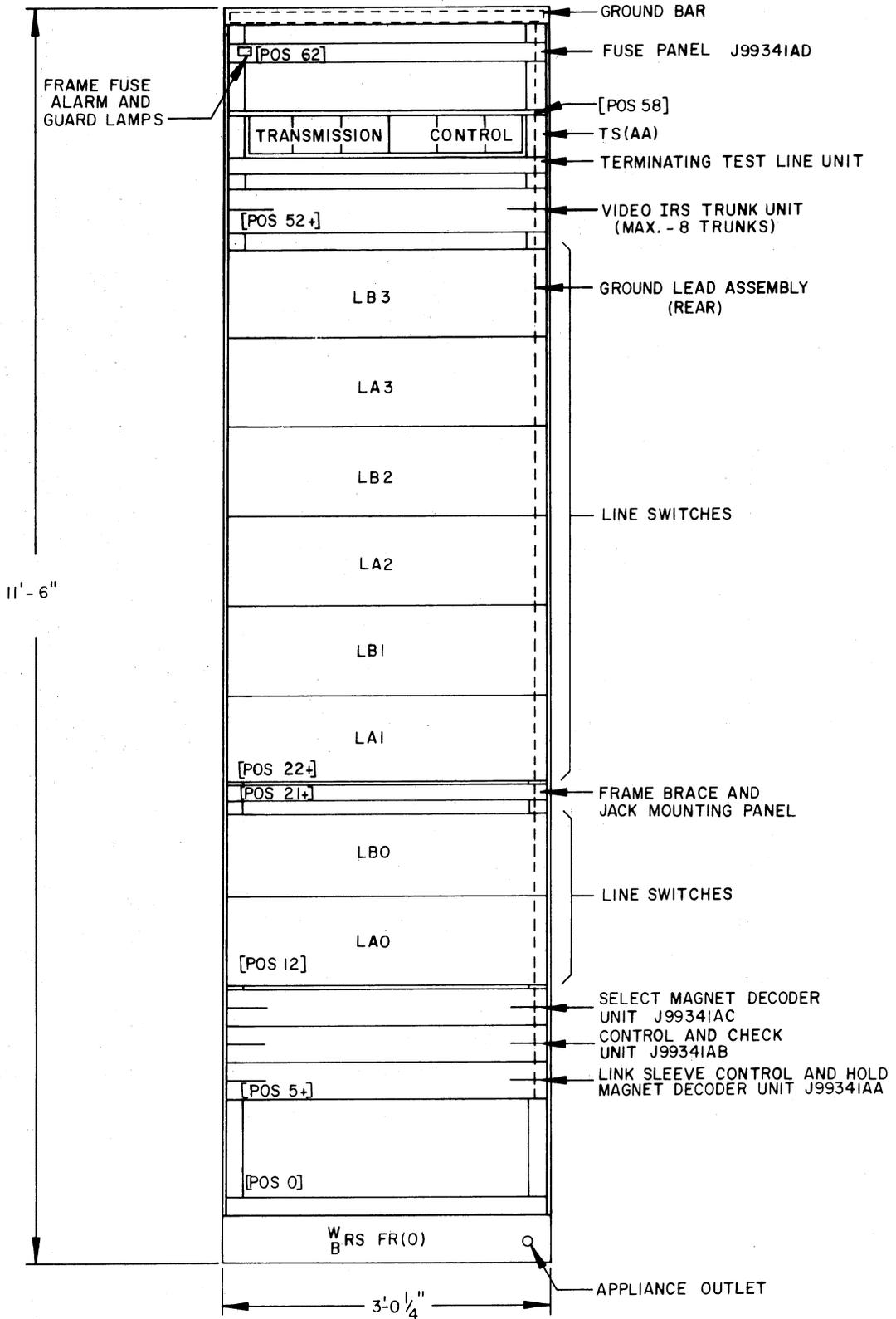


Fig. 1—11-Foot 6-Inch Wideband Remote Switch Frame—J99341A

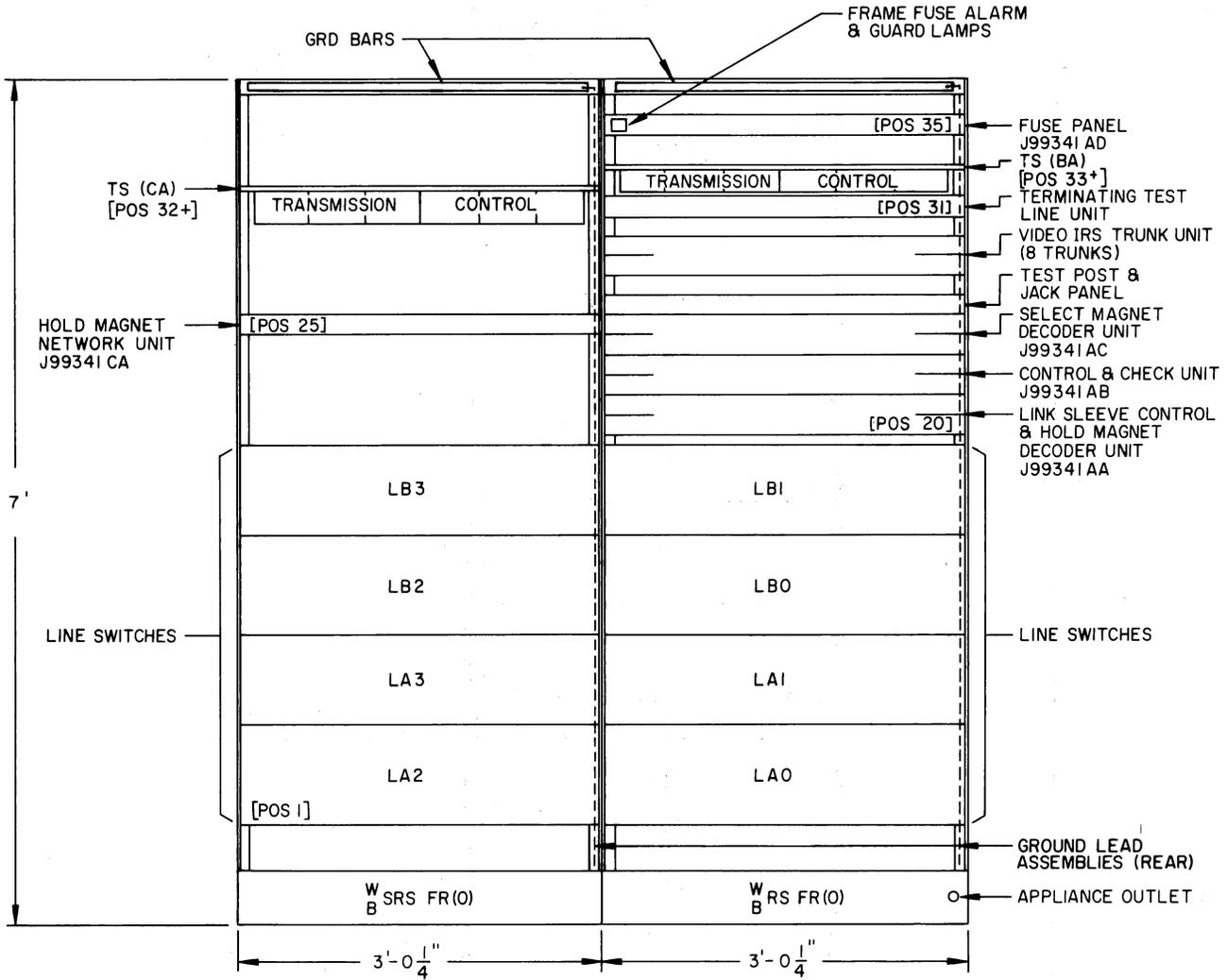


Fig. 2—7-Foot 0-Inch Wideband Remote Switch Frame—J99341B and 7-Foot 0-Inch Wideband Supplementary Remote Switch Frame—J99341C

located on customer premises is indicated in the following paragraph.

1.13 In addition to a wideband remote switch frame, the remote switching feature requires the following equipment at the remote location:

- (a) Wideband cable equalizer bays
- (b) Miscellaneous relay each frame equipped with:
 - (1) Remote Video Supervisory Signal Supply Unit, J27460B-().
 - (2) Milliwatt Reference Generator, J94071A-().
 - (3) WBRS—48-Volt Power Supply, KS-19642, L1 or L2, rectifier and J86808G, L6, capacitor bank when WBRS is located on customer premises.
 - (4) Cable Equalizer —24 Volt Power Supply, J87234C, L1, when WBRS is located on customer premises.

- (5) Intermediate Loop Cable Equalizer ± 130 Volt Power Supplies, KS-15898, L2 or L3, for each polarity when WBRS is located on customer premises.

1.14 The portable priming set, J24763A, and the portable PICTUREPHONE set are required to allow one-man testing from the remote location.

1.15 Either a traffic usage recorder frame, J92604A, or the Traffic Measurement System (TMS) No. 1A is used for traffic usage recording of the wideband remote switch lines. Either may be used with the WBRS frames located in a central office. The TMS No. 1A must be used with the WBRS frames located on customer premises. A remote scanner and encoder unit—portable type, J3B005A, two P50B cords, and a transmitting data set unit—portable type, J3B005D, are required at the WBRS location when the TMS No. 1A is used.

SUBDIVISION OF EQUIPMENT AND DETAILED INDEX

WECo J-drawings should be ordered by referring to the prefix and base number and requesting the current dash (—) number.

EQUIPMENT CODE	RATING	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING
J99341A	AT&TCo Std	Wideband Remote Switch Frame — 11'-6"	J99341A-()	SD-27900-01
J99341B	AT&TCo Std	Wideband Remote Switch Frame — 7'-0"	J99341B-()	SD-27900-01
J99341C	AT&TCo Std	Wideband Supplementary Remote Switch Frame — 7'-0"	J99341C-()	SD-27900-01
J99341AA	AT&TCo Std	Wideband remote Switch Remote Link Sleeve Con- trol and Hold Magnet Decoder Unit	J99341AA-()	SD-27900-01
J99341AB	AT&TCo Std	Wideband Remote Switch Control and Check Unit	J99341AB-()	SD-27900-01
J99341AC	AT&TCo Std	Wideband Remote Switch Select Magnet Decoder Unit	J99341AC-()	SD-27900-01
J99341AD	AT&TCo Std	Wideband Remote Switch Fuse Panel Unit	J99341AD-()	SD-27900-01
J99341CA	AT&TCo Std	Supplementary Wideband Remote Switch Hold Magnet Network Unit	J99341CA-()	SD-27900-01

2. SUPPLEMENTARY INFORMATION

819-000-000—No. 5 Crossbar System Index	Units
800-600-000—List of General Equipment Requirements Section	J27460—819-062-150—Miscellaneous Electronic Frames and Units
801-000-000—Equipment Design and General Equipment Requirements and Engineering Information—Common Systems	J29259—819-005-150—General Outline—No. 5 Crossbar System
J3B005—822-110-150—Traffic Measurement System No. 1A—Traffic management Systems	J92604—822-105-150—Traffic Usage recorder Frame—Traffic Usage Recorder Control Panels—Common Systems
J23071—819-613-150—Wideband, Associated Audio, and Maintenance Trunks	J97025—801-006-155—Relay Rack—Angle Type—Framework and Cabling—Common Systems
J24763—819-733-150—Priming Set for Trunk Test Register—No. 5 Crossbar System	Current Drain Data—SD-25760-02—No. 5 Crossbar System
J27459—819-200-153—Wideband Link Frames and	Floor Plan Data—Section 7.1—Wideband Remote Switch Frames and Wideband Supplementary Remote Switch Frames

3. DRAWINGS

For additional drawings forming a part of this specification see listing under Subdivisions of Equipment and Detailed Index.

Keysheet

SD-25760-01—No. 5 Crossbar System

Circuits

- SD-27900-01—Wideband Remote Switch Circuit
- SD-27930-01—Wideband Remote Switch Terminating Test Line Circuit
- SD-27923-01—Wideband Intraremote Switch Trunk Circuit
- SD-27898-01—Milliwatt Generator Impedance Converter Circuit

Equipment

- ED-94821-01—Common Systems—Design Requirements for Molded Component Assemblies
- ED-94823-()—Common Systems—Amplas Component Assemblies—Wire-in
- ED-27724-()—Molded Component Assembly for 326-Type Relay
- ED-92744-01—Common Systems—Bulb-Angle Frame Assembly
- ED-95131-()—Common Systems—Modular Fuse Blocks and Accessories for Fuse Panel Arrangements Adapted for .090 Thick Mounting Plates and 70-Type Fuses
- ED-25021-()—Frame Support Bar Jack Panel
- ED-91210-()—Frame Grounds and Appliance Outlets
- ED-81770-()—Power Systems—Appliance Outlets and Commercial Service Supplying Power to Operate Relay Rack and Frame Mounted Equipment
- ED-97270-()—Cable Shield Terminations

Wiring and Cabling

- ED-27774-()—Switchboard Cable Plan and Details for Wideband Remote Switch Frame (11 feet - 6 inches)
- ED-27775-()—Switchboard Cable Plan and Details for Wideband Remote Switch Frame (7 feet - 0 inches)
- ED-27776-()—Switchboard Cable Plan and Details for Wideband Supplementary Remote Switch Frame (7 feet - 0 inches)
- ED-27777-()—Local Cable Plan for Wideband

Remote Switch Frame (11 feet - 6 inches)

ED-27778-()—Local Cable Plan for Wideband Remote Switch Frame (7 feet - 0 inches)

ED-27779-()—Local Cable Plan for Wideband Supplementary Remote Switch Frame (7 feet - 0 inches)

4. EQUIPMENT

J99341A—AT&T Co Std—Wideband Remote Switch Frame - 11 feet - 6 inches

Equipment—J99341A-()

List 1—Framework, assembly, equipment, and wiring for one wideband remote switch frame arranged for 80 lines and equipped for 40 lines (lines 00-39).

	WIRE	EQPT	NOTE
Wideband Remote Switch Ckt, SD-27900-01:			
Switch Ckt, Fig. 1	4	2	
Hold Mag Start and Sel Mag Cont Ckt, Fig. 2	1	0	B
Remote Link Sleeve Cont Ckt, Fig. 3	1	0	B
Test Line Cont & Check Signal Cont Ckt, Fig. 4	1	0	B
Select Mag Decoder Ckt, Fig. 5	1	0	B
Hold Mag Decoder Ckt, Fig. 6	2	0	B
Miscellaneous Ckt, Fig. 10 and Fig. 7 with T & S Options	1	0	B
Fig. 9 with R Option	1	1	
Switch Network & Resistor Ckt, Fig. 8	4	0	B
Wideband Terminating Test Line Ckt, SD-27930-01:			
Terminating Test Line Ckt, Fig. 1	1	0	B
Terminating Test Line Jack Ckt., Fig. 2	1	1	
Wideband Intraremote Switch Trunk Ckt, SD-27923-01:			
Trunk Ckt, Fig. 1 & 3	8	0	B

List 2—Equipment required in addition to list 1 to provide 40 additional lines (lines 40 to 79) per SD-27900-01, two Fig. 1.

List 3—Equipment and supplementary local cable required in addition to list 1 when Traffic Measurement System No. 1A is used for traffic usage recording of wideband remote switch lines per SD-27900-01, Fig. 12.

Notes

A. Reserved.

B. The wideband remote switch frame (11 feet - 6 inches) shall be equipped with units as follows:

UNIT	J CODE	QUANTITY		FRAME POSITION
		ALWAYS PROVIDED	FOR OPTION INDICATED	
WBRS Remote Link Sleeve Cont & Hold Magnet Decoder Unit	J99341AA,L1	1		5+
WBRS Cont & Check Unit	J99341AB,L1	1		7+
	J99341AB,L3		1-When WBRS is in a CO to prevent alarm sending for an un-attended CO	
WBRS Select Magnet Decoder Unit	J99341AC,L1	1		9+
	J99341AC,L2		1-When WBRS is equipped for 80 lines	
WBRS Fuse Panel Unit	J99341AD,L1	1		62
WB Intraremote Switch Trunk Unit	J23071AE,L1		1 unit provides 8 IRS trunks	52+
WBRS Terminating Test Line Unit	J23071KG,L1	1		57

J99341B—AT&T Co Std—Wideband Remote Switch Frame—7 feet - 0 inches

List 1—Framework, assembly, equipment, and wiring for one wideband remote switch frame equipped for 40 lines (lines 00-39).

Equipment—J99341B()

**J99341B—AT&TCo Std—Wideband Remote Switch
Frame—7 feet - 0 inches**

Equipment—J99341B-()

List 1—Framework, assembly, equipment, and wiring for one wideband remote switch frame equipped for 40 lines (lines 00-39).

	WIRE	EQPT	NOTE
Wideband Remote Switch Ckt, SD-27900-01:			
Switch Ckt, Fig. 1	2	2	
Hold Mag Start & Sel Mag Cont Ckt, Fig. 2	1	0	B
Remote Link Sleeve Cont Ckt, Fig. 3	1	0	B
Test Line Cont & Check Signal Cont Ckt, Fig. 4	1	0	B
Select Mag Decoder Ckt, Fig. 5	1	0	B
Hold Mag Decoder Ckt, Fig. 6	2	0	B

	WIRE	EQPT	NOTE
Miscellaneous Ckt, Fig. 10 and Fig. 7 with X Option	1	0	B
Fig. 9 with V Option	1	1	
Traffic Usage Recording Ckt, Fig. 12	1	1	
Wideband Terminating Test Line Ckt, SD-27930-01:			
Terminating Test Line Ckt, Fig. 1	1	0	B
Terminating Test Line Jk Ckt, Fig. 2	1	1	
Wideband Intraremote Switch Trunk Ckt, SD-27923-01:			
Trunk Ckt, Fig. 1 & 3	8	0	B

Notes

A. Reserved.

B. The wideband remote switch frame (7 feet - 0 inches) shall be equipped with units as follows:

UNIT	J CODE	QUANTITY		FRAME POSITION
		ALWAYS PROVIDED	FOR OPTION INDICATED	
WBRS Remote Link Sleeve Cont & Hold Magnet Decoder Unit	J99341AA,L1	1		20
WBRS Cont & Check Unit	J99341AB,L1 &2	1		22
WBRS Select Magnet Decoder Unit	J99341AC,L1	1		24
WBRS Fuse Panel Unit	J99341AD,L1	1		35
WB Intraremote Switch Trunk Unit	J23071AE,L1		1 unit provides 8 IRS trunks	28
WBRS Terminating Test Line Unit	J23071KG,L1	1		31

J99341C—AT&T Co Std—Wideband Supplementary Remote Switch Frame—7 feet - 0 inches

Notes

Equipment—J99341C-()

A. Reserved.

List 1—Framework, assembly, wiring, and equipment for one wideband supplementary remote switch frame for lines 40-79. (See Note B.)

B. This frame must be located adjacent and to the right of the wideband remote switch frame, J99341B, in order to connect the link multiple local cables.

	WIRE	EQPT	NOTE
Wideband Remote Switch Ckt, SD-27900-01:			
Switch Circuit, Fig. 1	2	2	
Switch Network and Resistor Ckt, Fig. 8	2	0	C

C. The wideband supplementary remote switch frame shall be equipped with units as follows.

UNIT	J CODE	QUANTITY		FRAME POSITION
		ALWAYS PROVIDED	FOR OPTION INDICATED	
WBRS Hold Magnet Network Unit	J99341CA,L1	1		25

J99341AA—AT&T Co Std—Wideband Remote Switch Remote Link Sleeve Control and Hold Magnet Decoder Unit

Equipment—J99341AA-()

List 1—Assembly, equipment, and wiring for one link sleeve and hold magnet decoder unit per SD-27900-01, Fig. 3 and two Fig. 6.

J99341AB—AT&T Co Std—Wideband Remote Switch Control and Check Unit

Equipment—J99341AB-()

List 1—Assembly, equipment, and wiring for one control and check unit per SD-27900-01, Fig. 2, 4, and 7.

List 2—Equipment and wiring required in addition to list 1 when wideband remote switch frame is on customer premises per SD-27900-01, X option.

List 3—Equipment and wiring required in addition to list 1 when wideband remote switch frame is in a central office to prevent alarm sending for an unattended central office per SD-27900-01, S option.

J99341AC—AT&T Co Std—Wideband Remote Switch Select Magnet Decoder Unit

Equipment—J99341AC-()

List 1—Assembly, equipment, and wiring for one select magnet decoder unit per SD-27900-01,

Fig. 5 and two Fig. 8.

List 2—Equipment and wiring required in addition to list 1 when the wideband remote switch frame, J99341A, 11 feet—6 inches, is equipped for lines 40-79 per SD-27900-01, two Fig. 8.

J99341AD—AT&T Co Std—Wideband Remote Switch Fuse Panel

Equipment—J99341AD-()

List 1—Assembly, equipment, and wiring for one fuse panel per SD-27900-01, Fig. 10.

J99341CA—AT&T Co Std—Supplementary Wideband Remote Switch Hold Magnet Network Unit

Equipment—J99341CA-()

List 1—Assembly, equipment, and wiring for one hold magnet network unit per SD-27900-01, two Fig. 8.

5. GENERAL NOTES

5.01 All transmission switchboard cable is CA3217-001 for 10 pair size and CA3217-002 for 50 pair size. Transmit leads must be in separate cables from receive leads. The cable shields for these cables are terminated only at the wideband remote switch frame end.

5.02 The number of 1P12A cords (SD-27900-01, Fig. 11) required for traffic usage recording of wideband remote switch lines is determined as follows:

WIDEBAND REMOTE SWITCH LOCATION	TRAFFIC MEASUREMENTS TAKEN WITH		NUMBER OF WIDEBAND REMOTE SWITCHES AT THIS LOCATION	NUMBER OF 1P12A CORDS REQUIRED *
	TRAFFIC USAGE RECORDER	TRAFFIC MEASUREMENT SYSTEM NO. 1A		
Central Office	✓		One	0
			More Than One	48 or 80†
		✓	One or More	20‡
Customers Premises		✓	One or More	

* The total quantity of cords required will be specified by the telephone company.

† The number of cords required is equal to the line size of the largest wideband remote switch in the central office.

‡ Twenty cords are required per Traffic Measurement System No. 1A used for traffic usage recording of wideband remote switch lines.

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