DIMENSION® 2000 AND CUSTOM PBX (CSS-201L) INSTALLATION AND TEST PLANNING

CONTENTS

1. GENERAL

1.1 Purpose

This section provides information to assist in the orderly planning of the Installation and Testing of the CSS-201L PBX.

1.2 Feature Testing Information

Handbook 282 DIMENSION PBX Installation and Test of Auxiliary Equipment and Feature Tests will be used in conjunction with this handbook.

2. INTRODUCTION

2.1 The CSS-201L is an addition to the DIMENSION PBX Product Line for larger line size systems. The standard system, with a capacity of 2000 lines, is referred to as DIMENSION 2000. Systems over 2000 lines are referred to as DIMENSION Custom due to the critical traffic engineering considerations required for each individual system. The term CSS-201L will be used when referring to both the DIMENSION 2000 and DIMENSION Custom.

3. SYSTEM DESCRIPTION

3.1 The CSS-201L System consists of various arrangements of three basic cabinets:

3.11 Common Control Cabinet

3.12 Module Control Cabinet

3.13 Line Cabinet

3.14 These cabinets are identical in appearance to the 5 Carrier CSS-201S (24" deep, 31.5" wide, and 69.5" high).

3.2 The CSS-201L utilizes the same technology as the CSS-201S; however, the system architecture was modified in the design of the network and system control.

3.3 The network, pulse amplitude - time division switching, is designed for a dual bus operation within a network module. Each Module Control Cabinet contains central amplifiers and control logic for one 64 time slot pulse amplitude modulation bus. This effectively allows the use of 128 time slots within a network module for switching PBX traffic. Failure of one Module Control Cabinet does not cause a complete loss of service to stations or trunks in the affected network, but does reduce the traffic capabilities by approximately one-half. When the line size and traffic capacity exceed the capability of a single module, additional network modules can be added and interconnected by audio link circuits. These link circuits are unique to the CSS-201L System.

3.4 The system control includes a faster processor and increased memory capacity. The central processor controls all system activities by executing instructions read from the main program memory. The common control is made up of a single processor and a second common control may be optionally provided for increased reliability. In a duplicated system, only one processor executes on-line call processing instructions. Each common control has a separate I/O channel to each network module. A duplicated control circuit determines which common control is on-line and disables the network I/O channels associated with the off-line control. Self maintenance ensures proper processor operation, and if a fault is detected in the on-line control, a processor transfer is initiated. For a minor fault, the

transfer of control from the on-line to off-line is performed by updating the call status of the off-line memory so that no interruption in service occurs. A major fault may result in an abrupt transfer to the off-line control without an off line memory update. In this case, transient calls may be lost and steady state calls will be established by the processor reading the state of the network.

3.5 Built-in maintenance and testing procedures are:

3.51 Test points on circuit packs.

3.52 Busy/Idle indicators (Light Emitting Diodes - LED's) on-line and trunk circuit packs.

3.53 LED indicators on other circuit packs.

3.54 Indicating type fuses.

3.55 Alarm panel with fault indicators, and controls used for system trouble analysis.

3.6 A Maintenance And Administration Panel (MAAP) provides the main interface between the craftsperson and the CSS-201L. It is used for diagnostic trouble-shooting and for entry of translation and/or patch information. A new larger MAAP has been designed to be used with the CSS-201L system. It provides a 25 digit operational display, an error number display, rearrangement and addition of keys.

3.7 Administrative and maintenance procedures may be accessed through the MAAP. Many procedures are similar to those in the CSS-201S, but an entirely new numbering sequence (000 to 999) has been implemented. Due to the addition of new keys, operation of the MAAP for the CSS-201L differs in many ways from the CSS-201S. Flip-charts are provided for each procedure, and explanatory information is provided above each flip-chart being used.

4. ATTENDANT CONSOLE

4.1 The types of Attendant Consoles used for the CSS-201L will be the same ones presently used with the CSS-201S.

5. TRANSLATIONS

5.1 The call processing operations and features provided by the system are controlled by the program package provided. The Telephone Company Engineer provides equipment and translation information to Western Electric Company via the DIMENSION PBX order blank. Tape cartridges are provided with the generic program and detailed customer translation information.

5.2 All pertinent job and translation information is contained in the Customer Order Document shipped with the system.

5.3 Standard procedure is for Western Electric Company Installer to receive the system tapes with all translation information recorded. Additions or changes in translation information is billable to the Telephone Company since this additional effort is not included in the standard CSS-201L installation units.

6. CROSS CONNECTIONS

6.1 Cross Connect information must be provided by the Telephone Company. This information is covered in Preinstallation Information, BSP 554-111-101. Completed tables with Cross Connect information should be available when installation begins.

6.2 The Installer is normally responsible for cross connections required within the CSS-201L System.

7. AUXILIARY EQUIPMENT

7.1 Auxiliary Equipment will normally be installed in the Auxiliary Cabinet. The majority of the Auxiliary Equipment will be mounted in the Auxiliary Cabinet by the shop.

7.2 The installer must wire and cable the auxiliary units. The following information is required from the Telephone Company.

7.21 Auxiliary Cabinet equipment layout.

7.22 All Cross Connect information (BSP 554-111-101).

7.23 Switch setting information for MFT circuit packs in CPFT equipment.

7.3 Refer to Handbook 282 for the installation and testing of Auxiliary Equipment.

8. INSTALLATION AND TEST PLANNING

8.1 The CSS-201L installation differs in many ways from the CSS-201S. Primary items to consider are:

8.11 Systems will include a various number of Cabinets (Common Control(s), maximum of five (5) cabinets per module and Auxiliary Cabinets).

8.12 Floor rails for each cabinet must be bolted to the floor.

8.13 Horizontal and vertical cable duct system with cable rack.

8.14 AC Power feeders must be run from the AC/DC Protector Cabinet to each module AC outlet box.

NOTE: If local practice requires an electrician to run these leads, pre-planning is required or the job may be held up due to lack of power.

8.2 The ability to install and test a CSS-201L PBX in a normal installation job interval is influenced by several factors:

8.21 Experience, knowledge, and ability of Installation Personnel.

8.22 Receipt of all material before installation start date. Includes termination field and all associated equipment.

8.23 Receipt of preinstallation strapping worksheets from the Telephone Company Engineer for cross connections to be run by the Installer (BSP 554-111-101).

8.24 Auxiliary cabinet equipment layout and cross connect information. Switch setting for MFT circuit packs if required.

8.25 Installation Personnel must be familiar with MAAP procedures used with CSS-201L.

8.3 Trunk testing is performed using the Trunk Test Set, PBX (ITE-5735). Working ground start cable pairs are required for some feature tests.

8.4 Handbook 282 is required to perform feature testing and to install and test auxiliary equipment. It should be used in conjunction with this handbook.

8.5 The CSS-201L installation job interval (start date to turnover to the Telephone Company) may be divided into five phases of work. Table A identifies the various steps required for each phase of activity.

Phase 1 Cabinets, Cable Ducts, Cabling and Cross Connect Field Installation.

Phase 2 Preliminary and Software Generated Tests.

Phase 3 Call Processing Tests.

Phase 4 Feature Tests.

Phase 5 Miscellaneous Tests and Final Installation.

9. TESTING

9.1 During testing, an Attendant Console is plugged directly into a Line Group Control Carrier to make it easily accessible. When feature testing is completed the console is moved to its permanent location.

9.2 Preplanning is required to determine the features and equipment provided on each job which will indicate the tests required to be performed in Phases 2 to 5. Requirements are determined from the Customer Order Document provided with each individual job. This document also provides specific job information required during testing. Before installation begins, determine the test sections required to be performed for your individual job.

9.3 For installation and testing of auxiliary equipment and feature testing, refer to Handbook 282.

9.4 In the Table of Contents Section, numbers designated with a "T" contain troubleshooting or diagnostic information. Tests or instructions outlined in these sections are not to be performed as a part of normal installation effort, but are to be used only to locate and correct problems encountered during testing.

9.5 Each feature is verified that it operates correctly. Since translation information has been verified, we do not check every line for every feature. The feature tests in Phase 4 (Handbook 282) are performed once per system.

ATTACHMENT:

Table A on Pages 5 through 7

→ Arrows indicate new or changed information.
Reason for Reissue:
Update Table A

Manager, Denver PBX PECC

TABLE A

All section numbers refer to Handbook 281, unless specified otherwise in remarks.

PHASE 1

Title	Section	Remarks
Identification of Circuit Pack Option Arrangements	10	Information
Installation of Cabinets, Cable Ducts, AC Wiring and System Cables	100	Always Required
System Ground Arrays	101	Always Required
Cross Connect Field	110	Always Required
Mounting, Wiring and Cabling of Auxiliary Equipment	250 Series	Handbook 282
Console Preparation for Testing	260	Handbook 282
PHASE 2		
Prepower Inspection and Application of Power, Non-Reserve Systems	300	As Required
Prepower Inspection and Application of Power, Reserve System	301	As Required (NA)
Electronic Telephone Controller Pre-Power Inspection and Power Application	302	Feature Option
Prepower Inspection and Application of Power for SMDR	303	Feature Option
→ Application of Power for 102C1-A, 102D1-A, and 102E1-A Units and Printer	304	Feature Option
Microdiagnostic Tests	310-319	Always Required
X-Ray Tests	400	Always Required
PHASE 3		
Pre-Call Processing Tests	490	Always Required (NA)
→ Common Control I/O Alarm (PROC 501)	501T	Trouble Shooting
Network Over Temperature Alarms (PROC 502)	502T	Trouble Shooting
Network Fuse Failures (PROC 503)	503T	Trouble Shooting
Network Power Failures (PROC 504)	504T	Trouble Shooting
Network I/O Tests (PROC 505)	505T	Trouble Shooting
Scan/Distributor Test (PROC 506)	506T	Trouble Shooting

NA = Test Section Not Available

TABLE A

PHASE 3 (Cont'd)

Network Failure History (PROC 507)	507T	Trouble Shooting
PAM Amplifier Test (Part 1) (PROC 508)	508T	Trouble Shooting
Alarm Cause (PROC 515)	515	Always Required
Initialization Causes (PROC 520)	520	Always Required
DCTS Controller Test	523	Feature Option
MAAP Test (PROC 526)	526	As Required
Periodic Peg Counts (PROC 561)	561	Always Required (NA)
PAM Amplifier Tests (Part 2) (PROC 580)	580T	Trouble Shooting
Network Indicator and Test (PROC 581)	581T	Trouble Shooting
Class of Service Assignments	5300	Always Required
Class of Service Assignments to Station Lines	5310	Always Required
Trunk to Trunk Verification	5320	Feature Option
DCTS Translation Verification	5330	Feature Option
Tone Tests	5350	Always Required
TOUCH-TONE ® Register Test	5360	Feature Option
Station to Station Test (Without DSS)	5400*	Required if Attendant DSS is Not Provided
Station Test Using Attendant DSS	5500*	Required if Attendant DSS is Provided
CO, FX and WATS Trunk Testing	5600	Feature Option
DID Trunk Testing	5700	Feature Option
Tie Trunk and CCSA Tests	5800	Feature Option

NA = Test Section Not Available
* Perform Sec. 540 or 550 as required per remarks

PHASE 4

Select feature provided with System and refer to Handbook 282 for Feature Tests.

PHASE 5

Install and Test Console(s) at Permanent (Day and Night)	8700	Always Required
Test Auxiliary Equipment	87XX	Handbook 282
Power Down Test (Memory Holdover)	8780	Always Required
Test Tape Recorder	8790	Always Required
→ Wrap-Up	8800	Always Required