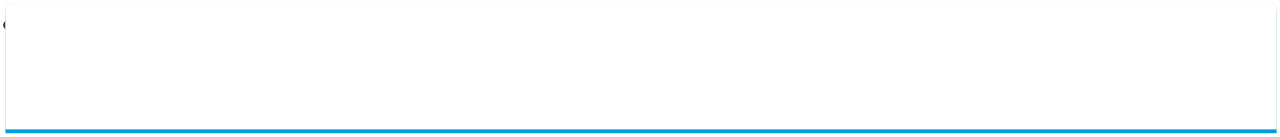

Strata
TOSHIBA
DK-8

Toshiba Strata DK 16 Installation And Maintenance Manual

Toshiba digital key telephone systems installation and maintenance manual

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

319
320
321



-

Table of Contents

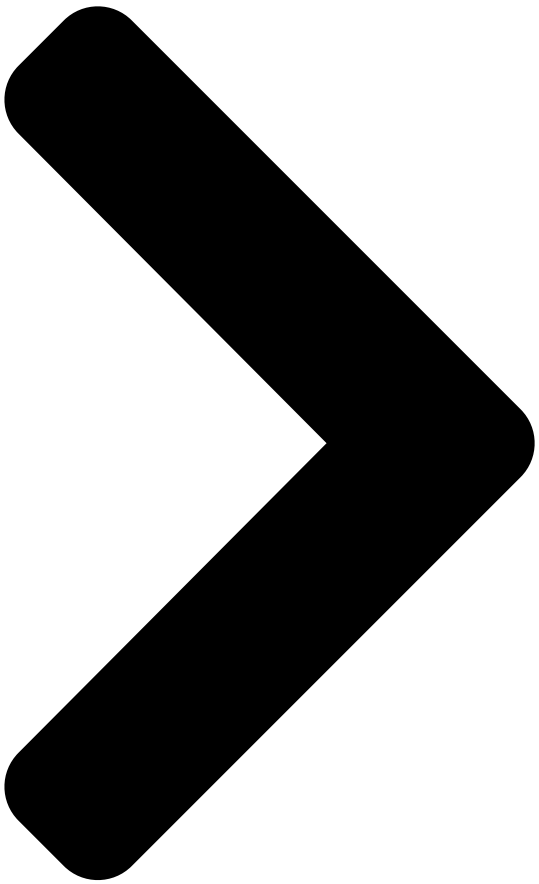
-

Bookmarks

Quick Links

Download this manual

See also: System Administrator Manual , User Manual



Digital Key Telephone Systems
DK8 & DK16
INSTALLATION AND MAINTENANCE MANUAL

TOSHIBA AMERICA INFORMATION SYSTEMS, INC.

Telecommunication Systems Division

Strata DK8 & D

Table of Contents

Next Page

1
2
3
4
5

Chapters

Related Manuals for Toshiba Strata DK 16

Telephone System Toshiba Strata DK8 Installation And Maintenance Manual

Digital key telephone systems (609 pages)

Telephone Toshiba strata DK8 Installation Instructions Manual

(584 pages)

IP Phone Toshiba Strata DK 2000-series User Manual

Toshiba digital telephone user guide (164 pages)

IP Phone Toshiba DK User Manual

Includes lcd, add-on module, and direct station selection console (163 pages)

IP Phone Toshiba CT User Manual

Includes lcd, add-on module, and direct station selection console (136 pages)

Telephone Toshiba Strata DK User Manual

Electronic telephone (134 pages)

Handsets Toshiba Strata AirLink Integrated Wireless Handset User Manual

Toshiba integrated wireless handset user guide (131 pages)

Cordless Telephone Toshiba Strata DK User Manual

Cordless digital telephone (107 pages)

Telephone Toshiba Strata DK8 User Manual

Digital telephone (90 pages)

Telephone Toshiba Strata DK System Administration Manual

(60 pages)

IP Phone Toshiba Strata DK User Manual

Digital single line telephone (60 pages)

Telephone System Toshiba Strata DK14 System Administrator Manual

Strata dk digital business telephone systems (56 pages)

Telephone Toshiba Strata DK8 User Manual

Dk digital lcd telephone (48 pages)

Telephone System Toshiba Strata DK8 General Description Manual

Digital key telephone system (46 pages)

Telephone Toshiba Strata DK16 User Manual

Add-on module and direct station selection console (18 pages)

Telephone Toshiba Strata DK8 Quick Reference Manual

Business telephone (9 pages)

Summary of Contents for Toshiba Strata DK 16

Page 1 DK8 & DK16 INSTALLATION AND MAINTENANCE MANUAL © COPYRIGHT 1993 TOSHIBA AMERICA INFORMATION SYSTEMS, INC. Telecommunication Systems Division All rights reserved. No part of this manual, covered by the copyrights hereon, may be reproduced in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or information retrieval systems—with the exception of the System Record forms, without written...

Page 3 TOSHIBA SYSTEM PRACTICES DIGITAL KEY TELEPHONE SYSTEMS Chapter One — Introduction Chapter Two — Site Requirements Chapter Three — System Configuration Chapter Four — DK8 KSU and PCB Installation Chapter Five — DK16 KSU and PCB Installation Chapter Six — Station Apparatus Installation Chapter Seven —...

Page 4 INSTALLATION-INTRODUCTION SECTION 100-016-201 NOVEMBER 1992...

Page 5 INSTALLATION-INTRODUCTION TOSHIBA SYSTEM PRACTICES DIGITAL KEY TELEPHONE SYSTEMS SECTION 100-816-201 MARCH 1993 INSTALLATION CHAPTER ONE INTRODUCTION...

Page 6: Table Of Contents

PARAGRAPH PURPOSE ... ORGANIZATION ... REFERENCE DOCUMENTATION ... 3.10 General Description ... 3.20 Programming ... 3.30 User Guides ... 3.40 Fault Finding Procedures ... 3.50 Remote Maintenance and Administration... SYSTEM MNEMONICS/TERMS ... 4.10 Use of Notes, Important Notes, Cautions, and Warnings ... TABLE OF CONTENTS SUBJECT INSTALLATION-INTRODUCTION...

Page 7: Purpose

2000-series Digital Telephones in the system. Attaches to the tele- phone and uses the same port assigned to the telephone. ADM buttons are fixed and cannot be changed in system programming. BPS: Bits Per Second—Unit of measure that re- fers to the transmission speed (baud rate) of electronic signals.

Page 8 HVSU2 subassembly or the combined HVSU/ HVSI subassemblies. FCC: Federal Communication Commission—The telecommunication industry’s federal regulatory agency. All Toshiba hardware is FCC listed or approved. HESB: External Speaker Box—A speaker/ampli- fier that can be configured with the system and telephones to provide a variety of functions.

Page 9 KCDU: CO Line/Digital Telephone Interface Unit (STRATA DK16 only)—Optional printed circuit board providing two loop start CO line circuits and four digital telephone circuits that can be installed in the Expansion Unit. The digital tele- phone circuits support the same devices as the PDKU except for the DDSS console.

Page 10 Logical ports are mobile. They can be moved from one physical port to another. PBTC: A Toshiba-supplied cable used to connect customer-supplied batteries to the power sup- ply in the DKSUB for emergency reserve power.

Page 11: Use Of Notes, Important Notes, Cautions, And Warnings

ROM: Read Only Memory—Refers to the type of system memory that holds static software that comprises the mechanics of the features’ func- tions. ROM is only revised by Toshiba software engineers. 4.10 Use of Notes, Important Notes, Cautions, and Warnings 4.11 Notes call attention to specific items to elabo-...

Page 13: Site Requirements

TOSHIBA SYSTEM PRACTICES SYSTEMS DIGITAL KEY TELEPHONE INSTALLATION SITE REQUIREMENTS INSTALLATION-SITE REQUIREMENTS CHAPTER TWO SECTION 100-816-202 MARCH 1993...

Page 14 PARAGRAPH GENERAL ... INPUT POWER REQUIREMENTS ... SITE CONSIDERATIONS ...

3.00 Clearance and Location Requirements ... 3.10 Electrical/Environmental Requirements and Characteristics ... GROUNDING REQUIREMENTS ... 4.10 Third Wire Ground Test ... 4.20 Alternate or Additional Ground ... TABLE SUMMARY OF ELECTRICAL/ENVIRONMENTAL CHARACTERISTICS ... FIGURE DK8 BASE KEY SERVICE UNIT AND HPFB MINIMUM CLEARANCE REQUIREMENTS...

Page 15: General

1 GENERAL 1.00 This chapter defines the installation site re- quirements necessary to ensure a proper operat- ing environment for the STRATA DK8 and DK16. Also included are grounding requirements. 2 INPUT POWER REQUIREMENTS 2.00 The system requires an input power source of 117VAC nominal (85VAC ~ 135VAC), 50/60 Hz, 15 amps.

Page 16: Electrical/Environmental Requirements And Characteristics

3.03 If reserve power is to be installed for the STRATA DK16, the batteries will require a well-ventilated location close (within nine feet) to the DKSUB16 (the optional Toshiba-supplied battery 2" 2" cable is 9 feet in length). The STRATA DK8 reserve battery (HPFB) should be mounted di- rectly above the DKSU8 as shown in Figure 2-1.

Page 17: Ksu Grounding Diagram

SUMMARY OF ELECTRICAL/ENVIRONMENTAL CHARACTERISTICS GENERAL Primary power Input AC AC frequency Power Environmental specifications Operating temperature Operating humidity Storage temperature Power supply DC voltage output specification Battery charger characteristics (DK16 only) QSTU, KSTU, PSTU or PESU (circuits 1 & 2) Ring voltage Ringing capability GROUND 1...

Page 18

INSTALLATION-SITE REQUIREMENTS SECTION 100-816-202 MARCH 1993 5) If a reading of zero volts on one terminal, and a reading of 100 ~ 120 VAC on the other terminal is obtained, remove both probes from the outlet. 6) Set the meter to the “OHMS/Rx1” scale. Place one probe on the ground terminal, and the other probe on the terminal that produced a reading of zero volts.

Page 19: System Configuration

INSTALLATION-CONFIGURATION TOSHIBA SYSTEM PRACTICES SECTION 100-816-203 DIGITAL KEY TELEPHONE SYSTEMS MARCH 1993 INSTALLATION CHAPTER THREE SYSTEM CONFIGURATION...

Page 21

3.10 Telephone Circuit (Port) Types... 3-5 3.20 Digital Telephone Circuit Connections ... 3-5 3.30 Electronic Telephone Circuit Connections (STRATA DK16 Only) ... 3-8 3.40 Standard Telephone Circuit Options ... 3-8 TELEPHONE UPGRADES ... 3-9 4.10 Digital Telephone Upgrades ... 3-9 4.20...

Page 22

INSTALLATION-CONFIGURATION SECTION 100-816-203 MARCH 1993 3-ii...

Page 23: Introduction

3-C). An optional printed circuit board called the QCDU can be added to the KSU to provide one CO line circuit and two digital telephone circuits. A maximum of two QCDUs may be added to provide a total of four additional digital telephone circuits and two additional CO line circuits.

Page 24: Dk8 Co Line/Station Configuration Guide

BU + KSTU + EU + KCDU + KCDU BU + KSTU + EU + PCOU + PEKU BU + KSTU + EU + PCOU + PDKU BU + KSTU + EU + PCOU + PSTU = Central Office = Digital Telephone = Standard Telephone EQUIPMENT EQUIPMENT...

Page 25: Dk8 Key Service Unit Components

• Conference Circuit Interface Unit (QCNU) • SMDR/TTY Interface Unit (QSMU) • (Requires PPTC) • Customer supplied equipment not offered by Toshiba Telecommunication Systems Division. TABLE 3-C Supports Connector Type Digital Telephones (with 25-pair Amphenol or without PDIU–DI2 or ADM)

Page 26: Dk16 Base Key Service Unit Components

600 Ohm page Interface Standard Telephone Interface Unit (4-Circuit) (KSTU) DTMF/ABR Receiver (K4RCU) Feature Cartridge Control Relay Customer supplied equipment not offered by

Toshiba Telecommunication Systems Division. TABLE 3-D Supports Connector Type • Digital Telephones (with 25-pair Amphenol or without PDIU–DI2 or ADM) •...

Page 27: Dk16 Expansion Key Service Unit Pcbs

25-pair amphenol (PIOU) Spring clip terminal (PIOUS) 3.10 Telephone Circuit (Port) Types 3.11 There are three types of telephone circuits to which stations can be connected: digital telephone circuits, electronic telephone circuits, and stan- dard telephone circuits. All three types of circuits are available with the STRATA DK16.

Page 28: Strata Dk8 Station Apparatus Overview

NOTE: X = the option is provided STRATA DK8 STATION APPARATUS OVERVIEW Type and Number of Station Circuits Required Digital Telephone Digital, one for each DKT with or without ADM or PDIUDI Stand-alone Data Digital, one for each...

Page 29: Strata Dk16 Station Apparatus Overview

Console (HDSS) Conference Amplifier Electronic, two for the amplifier Single-wire-pair Standard, one for Devices: each device (voice • Standard Telephone mail devices may • Voice Mail Device require more than one • Facsimile Machine circuit) • Modem • Dictation Equipment...

Page 30 • Stand-alone Data Interface Units (PDIU-DS): Each PDIU-DS requires one circuit. Any digital telephone circuit, except for Circuit 8 on a PDKU1 (STRATA DK16), can support a PDIU-DS (see Note 1). NOTES: 1. There are two versions of the PDKU: PDKU1 and PDKU2.

Page 31 4.00 Digital and Electronic telephones can be upgraded for a number of features; there are no upgrades for standard telephones. Each of these upgrades shares a circuit with the telephone that it is connected to and is not considered a station. 4.10 Digital Telephone Upgrades 4.11 Digital telephones can be upgraded with the...

Page 32 KSTU PCB in the Base Unit. However, a PDKU installed in the Expansion Unit would be required for six of the 14 digital telephone circuits. The Expansion Unit would also be needed for the PCOU. The optional K4RCU, along with the music source and the page/amplifier, as noted earlier, could be connected to the Base Unit.

Page 33 DK8 WORKSHEET 1, STATION AND CO LINE TOTALS 1. DIGITAL PORTS (CIRCUITS) Device Quantity DDCBs (2 max.) _____ PDIU-DSs (8 max.) _____ Digital Telephones (with or _____ without PDIU-DIs or ADMs) (8 max.) 2. STANDARD PORTS (CIRCUITS) Device Quantity Maximum of 2 items total, including Standard Telephones: Standard Telephones...

Page 34 INSTALLATION-CONFIGURATION SECTION 100-816-203 MARCH 1993 DK8 WORKSHEET 2, KEY SERVICE UNIT AND PCBs 1. From Worksheet 1 enter the number of required ports (circuits) and lines. Digital Ports: _____ (8 max) Standard Ports: _____ (2 max) CO Lines: _____ (4 max) NOTE: The maximum number of digital ports is 8, and standard ports is 2.

Page 35 Power Failure Transfer Interface: Yes or No _____ A standard telephone can be connected to this interface to provide connection to a CO line if there is a power failure. PFT interface is standard on DK8; one customer-supplied standard telephone is required.

Page 36 Miscellaneous Peripherals HESB (Amplifier/Speaker): Total _____ 1. One HESB and HHEU is required for each digital telephone with the Loud Ringing Bell feature. 2. One HESB is optional to provide single-zone external page connected to the KSU's 600 ohm external page output.

Page 37: Dk16 Station And Co Line Totals

DK16 WORKSHEET 1, STATION AND CO LINE TOTALS 1. DIGITAL PORTS (CIRCUITS) Device Quantity DDSS Consoles (2 max.) _____ DDCBs (2 max.) _____ PDIU-DSs (16 max.) _____ Digital Telephones (with or _____ without PDIU-DIs or ADMs) (16 max. 2. ELECTRONIC PORTS (CIRCUITS) Device Quantity HDSS Console (1 max.)

Page 38 INSTALLATION-CONFIGURATION SECTION 100-816-203 MARCH 1993 DK16 WORKSHEET 2, KEY SERVICE UNIT AND PCBs 1. From Worksheet 1 enter the number of required ports (circuits) and lines. Digital Ports: _____ Electronic Ports: _____ Standard Ports: _____ CO Lines: _____ NOTE: The maximum number of combined digital, electronic, and standard ports is

20.

Page 39: Dk16 Peripherals And Upgrades

Power Failure Transfer Interface: Yes or No _____ A standard telephone can be connected to this interface to provide connection to a CO line if there is a power failure. PFT interface is standard on DK16; one customer-supplied standard telephone is required.

Page 40 DK16 WORKSHEET 3, PERIPHERALS AND UPGRADES (continued) HHEU: Total _____ One HHEU must be installed in each digital and electronic telephone that supports a headset or connects to an HESB for the Loud Ringing Bell feature. See HESC-65A. HVSU2 or Combined HVSU/HVSI: Total _____ Electronic telephones must be equipped with either the HVSU2 assembly or the combined HVSU and HVSIs assemblies to receive Off-hook Call Announce.

Page 41: Dk16 System Power Check

DK16 WORKSHEET 4, SYSTEM POWER CHECK Equipment Type: 2000- and 1000-series digital telephone 2000-series electronic telephone 3000-series electronic telephone 6000-series electronic telephone 6005-series electronic telephone 6500-series electronic telephone DDSS/HDSS console* PDIU-DI2 and PDIU-DI PDIU-DS Standard telephone Add-on Module * All series.

Page 43 INSTALLATION-DK8 KSU & PCB TOSHIBA SYSTEM PRACTICES DIGITAL KEY TELEPHONE SYSTEMS SECTION 100-816-204 MARCH 1993 INSTALLATION CHAPTER FOUR DK8 KSU AND PCB INSTALLATION...

Page 45 6.10 KSU Option PCBs ... 4-9 6.20 PCB Option Considerations ... 4-9 6.30 PCB Installation/Power Supply Considerations ... 4-9 CO LINE/DIGITAL TELEPHONE INTERFACE UNIT (QCDU) ... 4-9 7.00 General ... 4-9 7.10 QCDU Configuration ... 4-11 7.20 QCDU Installation Procedure ... 4-11 7.30...

Page 46 11.40 QSMU Wiring ... 4-17 11.50 QSMU Programming Overview ... 4-17 11.60 Device Communication Parameters ... 4-17 BUILT-IN CO LINE, DIGITAL TELEPHONE AND OTHER CIRCUITS ... 4-17 12.00 General ... 4-17 12.10 Built-in CO Line Circuits ... 4-17 12.20 Built-In Digital Telephone Circuits ... 4-17 12.30...

Page 47: Part Idk8 Ksu Installation

PART I. KSU INSTALLATION 1 GENERAL 1.00 This chapter provides the instructions nec- essary to mount the STRATA DK8 Key Service Unit. Instructions are also provided on how to remove and replace the power supply. 2 KEY SERVICE UNIT MOUNTING 2.00 Mounting Surface Considerations 2.01 The Key Service Unit (KSU) is designed to be mounted on a wall or other vertical surface.

Page 48: Dk8 Dimensions And Screw Locations

INSTALLATION-DK8 KSU & PCB SECTION 100-816-204 MARCH 1993 WALL MOUNT SCREW FRONT COVER SCREW 16.375" FRONT COVER SCREW FIGURE 4-2 DK8 DIMENSIONS AND SCREW LOCATIONS 10" 6.875" WALL MOUNT WALL MOUNT SCREW SCREW 6.75" WALL MOUNT SCREW FRONT COVER SCREW FRONT COVER SCREW...

Page 49: Dk8 Side View Dimension And Plug/Jack Locations

TO HPFB SCREW AC POWER CORD AND PLUG 4' 7" STATION TIP/RING AMPHENOL 25-PAIR JACK (FEMALE) TIE WRAP SUPPLIED WITH DK8 TO HOLD AMPHENOL CONNECTOR LEFT SIDE VIEW FIGURE 4-3 DK8 SIDE VIEW DIMENSION AND PLUG/JACK LOCATIONS 3" TIE-WRAP TIE-WRAP HOLDER HOLDER BATT...

Page 50: Mounting The Key Service Unit

INSTALLATION-DK8 KSU & PCB SECTION 100-816-204 MARCH 1993 2.20 Mounting the Key Service Unit 1) Make sure the power supply switch is turned OFF. 2) Place the Key Service Unit on the desired location on the mounting surface and mark the location of the four screw holes (there is one on each corner).

Page 51: Power Supply Test Removal And Replacement

9) Reinstall the cover on the key service unit. 4 DK8 POWER FAILURE EMERGENCY TRANSFER OPTION 4.00 A dedicated standard telephone can be con- nected to the Power Failure Transfer

Interface (PF1) on the Key Service Unit to provide power failure backup.

Page 52: Dk8 Cabling Diagram

INSTALLATION-DK8 KSU & PCB SECTION 100-816-204 MARCH 1993 TIE-WRAP HOLDER TO HPFB SCREW AC POWER CORD AND PLUG 4' 7" STATION TIP/RING AMPHENOL 25-PAIR JACK (FEMALE) TIE WRAP SUPPLIED WITH DK8 TO HOLD AMPHENOL CONNECTOR LEFT SIDE VIEW FIGURE 4-4 DK8 CABLING DIAGRAM 3"...

Page 53: Dk8 Base Unit Jacks And Connectors

J2, CO LINE 1 MODULAR JACK (RJ11) SW101 (CO1) SW201 (CO2): 3-db PAD SWITCHES FOR CO LINE 1 AND 2 FG1A J1, POWER FAILURE TELEPHONE MODULAR JACK (RJ11) J9, J10 CONNECTORS FOR QCDU(S) FG1A INSTALLATION (1-PER QCDU) MODULAR JACK COVER HOLDERS...

Page 54: Dk8 Key Service Unit Power Failure Transfer (Pft) Circuit Diagram

INSTALLATION-DK8 KSU & PCB SECTION 100-816-204 MARCH 1993 LINE STANDARD TELEPHONE FIGURE 4-6 DK8 KEY SERVICE UNIT POWER FAILURE TRANSFER (PFT) CIRCUIT DIAGRAM DK8 OR DK16 KSU MAIN PCB POWER AVAILABLE CONNECTION MOD JACK CO1 (KSU) MOD JACK PF1 (BASE UNIT)

Page 55: Part Ii Dk8 Printed Circuit Board Installation

Chapter 2 for grounding.) 6 PCB INSTALLATION CONSIDERATIONS 6.01 The STRATA DK8 KSU comes standard with four digital telephone circuits (ports) and two CO line circuits. These circuits, along with the common control unit, are built into the motherboard. 6.10 KSU Option PCBs 6.11 The KSU can support up to five optional...

Page 56: Dk8 Printed Circuit Board Installation

INSTALLATION-DK8 KSU & PCB SECTION 100-816-204 MARCH 1993 QCNU1A J6-25-PAIR AMPHENOL JACK FOR TELEPHONE TIP/RING AND RELAY CONTACT (FEMALE) QSTS1A 190 130 JACK FIGURE 4-7 DK8 PRINTED CIRCUIT BOARD INSTALLATION HPFB6 ON OFF BATT RIGHT PIN 1 COMPONENT SIDE QCDU1A...

Page 57: Qcdu Configuration

7.11 The QCDU may have to be configured to control excessive loudness if the system is close to a CO or installed behind a PBX telephone system. It does not have to be configured for anything else. The decibel (db) PAD switch, SW101 controls the loudness by providing a 3 db signal level drop to, or from, the PBX or CO when set to the PAD position.

Page 58: Qcdu Wiring

TAKE OUTJACK COVER WHEN PFT IS CONNECTED STORE THE JACK COVER THAT HAS BEEN TAKEN OUT IN THE JACKCOVER HOLDER REINSTALL THE JACK COVER WHEN THE PFT TELEPHONE IS UNPLUGGED FIGURE 4-9 MODULAR JACK COVER REMOVAL AND STORAGE 4) Slide front edge and FG wire of QCDU under the "System Frame Ground Bar", align and...

Page 59: Qcdu Programming Overview

8.32 The QSTU must be connected to a OL13A (or equivalent) type lines for off-premises stations. (300 ohms loop resistance max., including the telephone or other devices DC off hook resistance.) 8.40 QSTU Programming Overview 8.41 The following parameters may be specified for...

Page 60: Qrcu Configuration

FIGURE 4-10 QSTU CONTROLS AND INTERFACE CONNECTORS Dual-Tone Multi-Frequency (DTMF) tones gener- ated by a standard telephone (or any other device connected to a standard telephone circuit (QSTU)), and it is required for Direct Inward System Access (DISA) calls. The QRCU circuits are also used to...

Page 61: Qrcu Wiring

DK8RCU1A FIGURE 4-11 QRCU INTERFACE CONNECTORS following steps (Figure 4-7). 1) Remove the PCB from its protective packag- ing. 2) Make sure that the power supply switch is OFF. 3) Align and insert QRCU connectors J1 and J2 into motherboard connectors J15 and J16

respectively (note the component side place- ment in Figure 4-7), and apply firm, even pressure to ensure proper mating of connec-...

Page 62: Qcnu Interface Connectors

INSTALLATION-DK8 KSU & PCB SECTION 100-816-204 MARCH 1993 FIGURE 4-12 QCNU INTERFACE CONNECTORS 10.40 QCNU Programming Overview 10.41 The QCNU does not require any program- ming. 11 OPTION INTERFACE UNIT (QSMU) 11.00 General 11.01 The QSMU provides a circuit interface with peripheral options.

Page 63 QCDU instructions in Paragraph 7. 12.20 Built-in Digital Telephone Circuits 12.21 The four digital telephone circuits that come standard with the system are integrated into the motherboard in the KSU. These circuits are identi- cal to the digital circuits found on the QCDU. The motherboard does not have to be configured for the digital circuits to operate.

Page 65 INSTALLATION-INTRODUCTION TOSHIBA SYSTEM PRACTICES DIGITAL KEY TELEPHONE SYSTEMS SECTION 100-816-205 MARCH 1993 INSTALLATION CHAPTER FIVE DK16 KSU AND PCB INSTALLATION...

Page 66 INSTALLATION-INTRODUCTION SECTION 100-816-205 MARCH 1993...

Page 67 5.20 Expansion Unit PCBs ... 5-13 5.30 PCB Option Considerations ... 5-13 5.40 PCB Installation/Power Supply Considerations ... 5-14 BASE UNIT STANDARD TELEPHONE INTERFACE UNIT (KSTU) ... 5-14 6.00 General ... 5-14 6.10 KSTU Configuration ... 5-14 6.20 KSTU Installation Procedure ... 5-14 6.30...

Page 68 14.20 K4RCU Installation Procedure ... 5-33 14.30 K4RCU Wiring ... 5-34 14.40 K4RCU Programming Overview ... 5-34 BUILT-IN CO LINE AND DIGITAL TELEPHONE CIRCUITS ... 5-34 15.00 General ... 5-34 15.10 Built-in CO Line Circuits ... 5-34 15.20 Digital Telephone Circuits ... 5-34 15.30...

Page 69 5-22 K4RCU PCB ... 5-34 5-23 KCOU PCB ... 5-35 5-24 EMERGENCY STANDARD TELEPHONE INSTALLATION ... 5-36 TABLE KSTU CONTROLS AND INTERFACE CONNECTORS ... 5-15 PEKU CONTROLS AND INTERFACE CONNECTORS ... 5-19 PSTU CONTROLS AND INTERFACE CONNECTORS ... 5-21 PESU CONTROLS AND INTERFACE CONNECTORS ... 5-24 PCOU CONTROLS, INDICATORS, AND INTERFACE CONNECTORS ...

Page 70 IMPORTANT INITIAL INSTALLATION NOTES! These minimum installation steps must be carried out for proper system operation. 1. Set the SW1 switch in the Base Unit ON for BATTERY OPERATION; otherwise, all programmed customer data will be lost on power down. 2.

Page 71: Part Idk16 Ksu Installation

PART I. KSU INSTALLATION 1 GENERAL 1.00 This chapter provides the instructions nec- essary to mount both the STRATA DK16 Base Key Service Unit and the Expansion Key Service Unit. Instructions are also provided on how to test, remove, and replace the power supply and base unit CO line interface subassembly.

Page 72: Figure

INSTALLATION-DK16 KSU & PCB SECTION 100-816-205 MARCH 1993 COVER SCREWS (6) SIDE COVER = Six cover screws to be removed before mounting KSU FIGURE 5-1 DK16 BASE KEY SERVICE UNIT EXTERIOR METHOD 1 STUD PLASTERBOARD EXPANSION UNIT BASE UNIT FIGURE 5-2 DK16 BASE KEY SERVICE UNIT WALL MOUNTING METHODS POWER BASE COVER...

Page 73: Dk16 Base Key Service Unit Interior

DC POWER SWITCH –24V CIRCUIT BREAKER (RIGHT SIDE) MODULAR CONNECTORS J4 (CO4) J3 (CO3) J2 (CO2) J1 (CO1) MOH VOLUME CONTROL (STANDARD TELEPHONE) P5 (AMPHENOL JACK) J6, MOH (TO MOH/BGM SOURCE) J7, 600 PAGE (TO PAGE AMP) MOUNTING HOLE AND SCREW...

Page 74: Mounting The Expansion Key Service Unit

INSTALLATION-DK16 KSU & PCB SECTION 100-816-205 MARCH 1993 4) Secure screws approximately two thirds of the way into the top two holes on the mounting surface. 5) Hang the unit from the top two screws and then secure the screws completely into the mounting

surface.

Page 75: Dk16 Base Key Service Unit Wiring Connections

AC POWER CORD MODULAR CONNECTOR SELF-ADHESIVE RUBBER PAD AMPHENOL CLAMP AMPHENOL CONNECTOR FIGURE 5-4 DK16 BASE KEY SERVICE UNIT WIRING CONNECTIONS – 2 NOTES SUPPLIED IN PLASTIC BAG WITH BASE UNIT. DO NOT ROUTE POWER CORD WITH OTHER CORDS. RCA JACK TIE WRAP MODULAR CORD (X5)

Page 76: Connecting The Dk16 Expansion Unit To The Dk16 Base Unit

INSTALLATION-DK16 KSU & PCB SECTION 100-816-205 MARCH 1993 DK16 BASE UNIT HINGE MOUNT TB1 (FG2) GREEN/YELLOW FG2 WIRE AND PLUG (FROM EXPANSION UNIT – PLUGS INTO TB1 OF BASE UNIT) SAFETY LOCK (SUPPLIED WITH EXPANSION UNIT) RIBBON CABLE (FROM EXPANSION UNIT – PLUGS INTO EXPANSION CONNECTOR (P3) OF BASE UNIT) FIGURE 5-5 CONNECTING THE DK16 EXPANSION UNIT TO THE DK16 BASE UNIT...

Page 77: Mounting The Dk16 Expansion Unit

EXPANSION UNIT RIBBON CABLE TO EXPANSION UNIT EXPANSION UNIT LATCH MOUNTING HOLE AND SCREW FIGURE 5-6 MOUNTING THE DK16 EXPANSION UNIT EXPANSION SAFETY LOCK FG SCREW PULL LOCK PUSH UNLOCK FG WIRE FG2 WIRE AC CORD TIE WRAP HOLDER INSTALLATION-DK16 KSU & PCB SECTION 100-816-205 MARCH 1993 BASE UNIT...

Page 78: Dk16 Expansion Unit Interior

INSTALLATION-DK16 KSU & PCB SECTION 100-816-205 MARCH 1993 EXPANSION UNIT SIDE COVER FIGURE 5-7 DK16 EXPANSION UNIT INTERIOR SLOT LOCK LOCK...

Page 79: Dk16 Expansion Unit Wiring Connections

AMPHENOL CONNECTOR TIE WRAP 9 FT AC POWER CORD FIGURE 5-8 DK16 EXPANSION UNIT WIRING CONNECTIONS PULL LOCK PUSH UNLOCK TIE WRAP OPTIONAL AC GROUND WIRE FROM FG TERMINAL TO EARTH GROUND (COLD WATER PIPE) TO AC OUTLET (DO NOT ROUTE AC POWER CORD SIDE-BY-SIDE WITH OTHER CABLES) INSTALLATION-DK16 KSU &...

Page 80

12-volt batteries) to ensure uninterrupted system operation in the event of a power failure. A pre-assembled interface cable for installation of the Reserve Power option is available from Toshiba (PBTC-3M), refer to Figure 5-9. IMPORTANT NOTE! Local ordinances may dictate battery type and installation details.

Page 81: Power Supply Removal And Replacement

KPSU16 BATT – BLACK POWER SUPPLY ACTUAL SIZE FIGURE 5-9 RESERVE POWER/BATTERY WIRING 3 POWER SUPPLY REMOVAL AND REPLACEMENT 3.00 The power supply (KSPU 16) comes factory- installed in the Base Key Service Unit (Figure 5- 10); if necessary, it can be removed and replaced. 3.10 Power Supply Removal 1) Make sure that the power supply switch is OFF and that the AC power cable is not...

Page 82

INSTALLATION-DK16 KSU & PCB SECTION 100-816-205 MARCH 1993 KPSU16A POWER SUPPLY AC POWER CABLE FG SCREW (LEFT SIDE) DC CABLE (FG) GREEN/YELLOW WIRE WITH RING TERMINAL THAT IS FASTENED TO POWER SUPPLY FG SCREW DC OUT (P9) CONNECTOR (KPSU16 VOLTAGE TEST POINTS) FIGURE 5-10 POWER SUPPLY (KPSU16) 4) Plug the DC cable into the DC OUT connector.

Page 83: Part Ii Dk16 Printed Circuit Board Installation

5 DK16 PCB INSTALLATION CONSIDERATIONS 5.01 The STRATA DK16 Base Unit comes standard with eight digital telephone circuits (ports) and four CO line circuits. The digital circuits are inte- grated into the motherboard, and the CO line cir- cuits are on the KCOU which is attached to the P6 and P7 connectors on the motherboard.

Page 84: Pcb Installation/Power Supply Considerations

INTERFACE UNIT (KSTU) 6.00 General 6.01 The optional KSTU provides four standard telephone circuits and it can only be installed in the Base Unit. The KSTU supports the two-wire de- vices such as standard telephones, Auto Attendant devices, voice mail machines, and facsimile machines.

Page 85: Kstu Wiring

6.32 The KSTU must be connected to a OL13A (or equivalent) type lines for off-premises stations. (300 ohms loop resistance max., including the telephone or other devices DC off hook resistance. 6.40 KSTU Programming Overview 6.41 The following parameters may be specified for...

Page 86: Pdku Hardware Options

INSTALLATION-DK 16 KSU & PCB SECTION 100-816-205 MARCH 1993 phone the same wire pair and circuit on the PDKU. The PDKU (Figure 5-12) has no controls. NOTE: The PDIU-DI attaches to 1000-series Digital Telephones, and the PDIU-DI2 attaches to 2000-series Digital Telephones. 7.10 PDKU Hardware Options 7.11 The PDKU supports the hardware options noted below.

Page 87: Pdku Installation Procedure

206, and Peripherals Installation, Chapter 7, for installation procedures for the PDIU-DI/PDIU-DI2. PDIU-DIs/PDIU-DI2s can be equipped with any digital telephone connected to PDKU Circuits 1 ~ 7 with PDKU1 or Circuits 1 ~ 8 with PDKU2. 7.16 DDCB Configuration. Refer to Peripherals Installation, Section 100-816-207, for installation procedures for the DDCB.

Page 88: Peku Controls And Interface Connectors

W5, cut for BGM option 4) Use a 3-pair cable for making connections between the PEKU and the Off-hook Call Announce (OCA) electronic telephone. Refer to Wiring Diagrams, Section 100-816-208, for wiring/interconnecting details. 5) Refer to Station Apparatus Installation, Sec- tion 100-816-206, for procedures to upgrade electronic telephones for OCA.

Page 89: Peku Installation Procedure

Announce P50 Off-hook Call 10-pin connector Announce P60 DSS/EKT DSS Console/ Two-position slide switch Electronic Telephone SW1 Switch BGM source connection White jumper wire W5 Jumper Wire 8.14 Background Music (BGM) Configuration. Configure the PEKU to support a BGM source in...

Page 90: Peku Wiring

(PSTU) provides an interface between standard telephones or two-wire devices and the system, and it must be installed in the Expansion Unit. The PSTU PCB adds eight standard telephone lines to the system. The PSTU can also support a Back- ground Music (BGM) source.

Page 91: Pstu Installation Procedure

50-PIN AMPHENOL CONNECTOR (FEMALE) SSTU SUBUNIT BACKPLANE CONNECTOR FIGURE 5-15 PSTU AND SUBUNIT (SSTU) PSTU CONTROLS AND INTERFACE CONNECTORS CONTROL/INDICATOR/ CONNECTOR TYPE OF COMPONENT (Figure 5-15) Ring Voltage W1 Jumper Three-terminal jumper Plug (PSTU1 ( ) and PSTU2 only) NOTE: PSTU1 (V.4) became available in November 1989.

Page 92: Pstu Wiring

(1 and 2) identical to PSTU circuits for connection between standard telephones, or two-wire devices, and the system. It also provides four electronic telephone interface circuits (5 ~ 8) identical to PEKU circuits for connecting electronic telephones, BGM or an external amplifier. The...

Page 93: Pesu Pcb Option Location And Identification

NOTE: Connect two ringers maximum per port (H or L). FIGURE 5-16 PESU PCB OPTION LOCATION AND IDENTIFICATION CUT W7 ONLY IF BGM IS CONNECTED TO CIRCUIT 8. ESTS PESU ESTS: STANDARD TELEPHONE INTERFACE, ALWAYS EQUIPPED FROM FACTORY 5-23 INSTALLATION-DK 16 KSU & PCB SECTION 100-816-205 MARCH 1993...

Page 94

3) Apply firm, even pressure to the EOCU to ensure proper mating of connectors. 4) Use 3-pair cable for connecting the PESU and the OCA electronic telephone (refer to Wiring Diagrams, Section 100-816-208, for wiring/ interconnecting details). 5) Refer to Station Apparatus Installation, Sec- tion 100-816-206, for procedures to add OCA to electronic telephones.

Page 95: Pesu Installation Procedure

• Configures the PESU Circuits 1 and 2 for con- nection to voice mail devices. Program 10-2 • Sets the standard telephone ring cadence for normal or distinctive ringing and BGM source connection. Program 10-3 • Used for external amplifier connection.

Page 96: Pcou Wiring

Switches are factory-set to the 0 (0 dB signal level drop) position. 2) If the Expansion Unit is located within one mile of the PBX or CO telephone office, set dB PAD switches SW101 through SW401 to the 3 (-3 dB signal level drop) position.

Page 97 PCOU CONTROLS, INDICATORS, AND INTERFACE CONNECTORS

CONTROL/INDICATOR/ CONNECTOR TYPE OF COMPONENT (Figure 5-17) CO Line Circuit 1 Red LED Indicator CD112 CO Line Circuit 2 Red LED Indicator CD212 CO Line Circuit 3 Red LED Indicator CD312 CO Line Circuit 4 Red LED Indicator CD412 Modular connector...

Page 98: Option Interface Unit (Piou And Pious)

INSTALLATION-DK 16 KSU & PCB SECTION 100-816-205 MARCH 1993 12 OPTION INTERFACE UNIT (PIOU AND PIOUS) 12.00 General 12.01 The Option Interface Unit (PIOU or PIOUS) provides a circuit interface with peripheral options. A maximum of one PIOU or PIOUS PCB can be installed in the system.

Page 99 PIOU CONTROLS AND INTERFACE CONNECTORS CONTROL/INDICATOR/ CONNECTOR

TYPE OF COMPONENT (Figure 5-18) SMDR/TTY Interface Dual modular connector Connector J3 IMDU Connector P1 10-pin connector IMDU Connector P2 9-pin connector IMDU Connector P3 3-pin connector M/B Make/Break Three-terminal jumper plug Jumper Plug P10 M/B Make/Break Three-terminal jumper plug Jumper Plug P11...

Page 100: Piou And Pious Installation Procedure

INSTALLATION-DK 16 KSU & PCB SECTION 100-816-205 MARCH 1993 SMDR MAKE BREAK MAKE BREAK TERMINAL STRIP PIOUS FIGURE 5-19 PIOUS PCB SWITCH/JUMPER, OPTION LOCATION NOTE: Refer to Remote Maintenance Procedures, Section 100-816-600, for information regard- ing the IMDU. 12.20 PIOU and PIOUS Installation Procedure 12.21 Install the PIOU or PIOUS in accordance with the following steps: 1) Remove the PCB from its protective packag-...

Page 101: Co Line/Digital Telephone Interface Unit (Kcdu)

Expansion Unit of DK16 (it will not function in DK24/ 56/96), has two loop start CO line circuits and four digital telephone circuits. The KCDU digital tele- phone circuits can support all but one of the de- vices supported by either the PDKU or Base Unit...

Page 102: Kcdu Installation Procedure

25-PAIR AMPHENOL CONNECTOR (FEMALE) FIGURE 5-21 KCDU INDICATORS, OPTIONS, AND CONNECTORS a CO or installed behind a PBX telephone system. It does not have to be configured for anything else. The decibel (db) PAD switches, SW501 (CO1) and SW601 (CO2), control the loudness by providing a 3 db signal level drop to, or from, the PBX or CO when set to the PAD position.

Page 103: Kcdu Wiring

DETECTOR UNIT (K4RCU) 14.00 General 14.01 The K4RCU must be installed to recognize Dual-Tone Multi-Frequency (DTMF) tones gener- ated by a standard telephone (or any other device INSTALLATION-DK 16 KSU & PCB TABLE 5-H DESCRIPTION Lights to indicate CO line circuit 1 is in operation.

Page 104: K4Rcu Wiring

(KCOU) to slot 02, and 4 standard tele- phone circuits (KSTU) to slot 3. 15.20 Digital Telephone Circuits 15.21 The eight digital telephone circuits that come standard with the system are integrated into the motherboard in the Base Unit. These circuits are indentical to the digital circuits found on the PDKU and KCDU.

Page 105: Kcou Removal And Replacement

16 KCOU REMOVAL AND REPLACEMENT 16.00 General 16.01 The KCOU comes factory-installed in the Base Key Service Unit (Figure 5-3); if necessary, it can be removed and replaced. 16.10

KCOU Removal 1) Make sure the Power Supply (KPSU16) DC power switch is turned off. 2) Loosen and remove screws 1 and 2 (Figure 5-23).

Page 106: Dk16 Power Failure Emergency Transfer Option

MARCH 1993 17 DK16 POWER FAILURE EMERGENCY TRANSFER OPTION 17.00 A dedicated standard telephone can be con- nected to the Power Failure Transfer Interface (PF1) on the DK16 Base Unit to provide power failure backup. During normal operation, this tele- phone cannot be used—it does not count as a...

Page 107 INSTALLATION-STATION APPARATUS TOSHIBA SYSTEM PRACTICES DIGITAL KEY TELEPHONE SYSTEMS SECTION 100-816-206 MARCH 1993 INSTALLATION CHAPTER SIX STATION APPARATUS INSTALLATION...

Page 108 INSTALLATION-STATION APPARATUS SECTION 100-816-206 MARCH 1993...

Page 109 Busy Override and Camp-on Ring Tone Over Handset/Headset Option ... 6-10 3.80 External Power Straps ... 6-10 3.90 DKT2000 Add-On-Module Installation ... 6-11 ELECTRONIC TELEPHONE UPGRADE OPTIONS (DK16 Only) ... 6-11 4.10 Off-hook Call Announce Upgrade (HVSU2 or HVSU/HVSI) ... 6-11 4.20 Loud Ringing Bell/Headset Upgrade (HHEU)... 6-12 4.30...

Page 110 REMOVING THE TELEPHONE BASE ... 6-3 HANDSET HANGER ... 6-3 WALL MOUNTING BASE ROTATION ... 6-3 PDIU-DI2 INSTALLATION INTO 2000-SERIES DIGITAL TELEPHONE ... 6-5 PDIU-DI INSTALLATION INTO 1000-SERIES DIGITAL TELEPHONE... 6-5 DVSU INSTALLATION FOR DIGITAL TELEPHONES ... 6-6 DKT2010-H STRAP AND CONNECTOR LOCATIONS ... 6-7 DKT2010-SD, DKT2020-S, AND DKT2020-SD STRAP AND CONNECTOR LOCATIONS ...

Page 111: Overview

• Digital Telephones: Installation instructions for digital telephones in this chapter and elsewhere in this manual apply only to the Toshiba 2000- and 1000-series Digital Telephones. The 2000- series Digital Telephones consist of four mod- els: the DKT2010-H, the DKT2010-SD, the DKT2020-S, and the DKT2020-SD.

Page 112: Connecting Electronic Telephones To The System (Dk16 Only)

(RJ-11) at the station location. The standard single-pair, modular digital telephone cord that is sent with the telephone is 7 feet (the maximum allowed is 25 feet). NOTES: 1.

Page 113: Removing The Telephone Base

(Figure 6-2). The hanger fits in the notch on the handset cradle. 3) Rotate the telephone base 180 degrees and secure it to the telephone with its four captive screws (Figure 6-3). FIGURE 6-3 WALL MOUNTING BASE ROTATION...

Page 114: Digital Telephone Upgrades

INSTALLATION-STATION APPARATUS SECTION 100-816-206 MARCH 1993 4) Connect the telephone to the wall modular connector with a cord approximately four inches long (available at most telephone sup- ply companies). Route the cord into the hol- low portion of the base.

Page 115: Pdiu-Di2 Installation Into 2000-Series Digital Telephone

DIGITAL TELEPHONE TOP ASSEMBLY FIGURE 6-4 PDIU-DI2 INSTALLATION INTO 2000-SERIES DIGITAL TELEPHONE DVSU HHEU PDIU/ DVSU DIGITAL TELEPHONE TOP ASSEMBLY TO P2 OF BOTTOM PCB IMPORTANT: DO NOT CONNECT DIU CABLES TO HHEU CONNECTOR DIRECTORY TRAY NOTE: A 1000-SERIES DIGITAL TELEPHONE CANNOT SUPPORT AN HHEU AND A PDIU-DI AT THE SAME TIME.

Page 116: Off-Hook Call Announce Upgrade (Dvsu)

V.4 HHEU1, except that the HHEU2 has longer wires to accom- modate wall mounting. 4. A Toshiba HESC-65A cable is required to connect the HHEU in a digital telephone to the HESB. 5. 1000-series digital telephones cannot be...

Page 117: Dkt2010-H Strap And Connector Locations

W303 W302 CARBON W301 CARBON 1020SD ROOM NOISE SWITCH EX.SP STRAP W204-1020H W305-1020SD FIGURE 6-9 1000-SERIES DIGITAL TELEPHONE STRAP AND CONNECTION LOCATIONS BEEP CARBON W201 W202 BEEP W204 W204 EX.SP FIGURE 6-8 DKT2010-SD, DKT2020-S, AND DKT2020-SD STRAP AND CONNECTOR LOCATIONS...

Page 118: Hheu Installation For Digital Telephone

Loud Ringing Bell/headset upgrade (HHEU) in accordance with the following steps. 1) Loosen the four captive screws securing the telephone base (Figure 6-1), and remove the base. 2) Using a screwdriver or other suitable tool, remove the plastic tab located on the back of the base (Figure 6-1);...

Page 119: Carbon Headset/Handset Straps

HHEU. 8B) For 1000-series digital telephones, refer to Figure 6-9, and locate the EX.SP strap on the upper PCB in the telephone, and cut it if an HHEU will be connected to an HESB for the Loud Ringing Bell option.

Page 120: Microphone/Speaker Sensitivity Adjustment (Speakerphones Only)

3.70 Busy Override and Camp-on Ring Tone Over Handset/Headset Option 3.71 The Busy Override and Camp-on Ring tones can be sent over the telephone handset or head- set, in addition to the speaker, with 2000-series digital telephones. The tones only sound over the speaker with 1000-series Digital Telephones.

Page 121: Dkt2000 Add-On-Module Installation

1) Loosen the four captive screws securing the telephone base (Figure 6-1), and remove the base. 2) Depending on the telephone, refer to Figure 6-7, 6-8, or 6-9 and locate the EX.POW straps, W101 and W102. Cut these straps. 3) Reinstall the telephone base, and secure it with its four captive screws.

Page 122: Loud Ringing Bell/Headset Upgrade (Hheu)

HHEU2 is identical to the V.4 HHEU1, except that the HHEU2 has longer wires to accommodate wall mounting. 3. A Toshiba HESC-65 or HESC-65A cable is required to connect the HHEU in an electronic telephone to the HESB. Refer to Section 100-816-207 for HESB instal- lation procedures.

Page 123: Carbon Headset/Handset Straps

7) Connect the HHEU subassembly wire plug to the P1 connector on the electronic telephone PCB (Figure 6-13). 8) Cut the HHEU strap on the telephone PCB (Figure 6-13). NOTE: The HHEU strap must be replaced if the SW601 HHEU PCB is removed from the telephone.

Page 124: Beep Strap

5.11 The DDSS console, which can operate with a digital or electronic telephone (preferably an LCD model), can connect only to Circuit 8 of the Base Unit digital telephone circuit set or Circuit 8 of the PDKU. Standard twisted single-pair or two-pair jacketed telephone cable (maximum 1000 feet, 303 meters) is used for the connection.

Page 125: Hdss Console Connections

DDSS consoles: • DDSS consoles can connect only to Circuit 8 of the Base Unit digital telephone circuit set or Circuit 8 of the PDKU. • A maximum of two DDSS consoles can be installed per system equipped with an Expan- sion Unit.

Page 126: Ddcb And Mdfb Cabling

INSTALLATION-STATION APPARATUS SECTION 100-816-206 MARCH 1993 NOTE: DK8 and DK16 do not support the HDCB. 6.02 DK8 and DK16 systems can be equipped with up to six MDFBs. 6.03 For DK8, DDCBs can only connect to Circuit 3 (Port 02) and Circuit 4 (Port 03). 6.04 For DK16, DDCBs can only connect to Ports 04 and 12.

Page 127: Door Phone/Lock Programming Considerations

5) Connect ADM cable connectors to P1 of ADM and P1 of DKT2000 telephone as shown in Figure 6-18. 6) Install base of ADM and telephone – tuck ADM cable into ADM and telephone base as necessary for proper length.

Page 128 MARCH 1993 ADM CABLE (SUPPLIED WITH ADM) BLACK WIRE TO PIN 1 (SMALLER CONNECTOR) NOT USED ON DK16 2000-SERIES DIGITAL TELEPHONE FIGURE 6-18 ADD-ON MODULE INSTALLATION Note: This DSS button assignment is fixed and cannot be changed. FIGURE 6-19 DK16 ADD-ON MODULE DSS BUTTON...

Page 129 TOSHIBA SYSTEM PRACTICES INSTALLATION-PERIPHERALS DIGITAL KEY TELEPHONE SYSTEMS SECTION 100-816-207 MARCH 1993 INSTALLATION CHAPTER SEVEN PERIPHERAL INSTALLATION...

Page 131 SMDR Printer/Call Accounting Device Installation ... VOICE MAIL OPTIONS ... 7.00 System Hardware Requirements... 7.10 Toshiba VP Voice Messaging System... 7.20 Customer-supplied Voice Mail Messaging Systems ... DK16 ALARM SENSOR INSTALLATION ... DK16 NIGHT RINGING OVER EXTERNAL ZONE PAGE ...

Page 132 RS-232 CONNECTOR/CABLE CONNECTIONS ... 7-26 DK8 AND DK16 PDIU-DI TO IBM XT-TYPE COMPUTER, RS-232 CONNECTOR/CABLE CONNECTIONS ... 7-27 DK8 AND DK16 PDIU-DS TO TOSHIBA PRINTER, RS-232 CONNECTOR/CABLE CONNECTIONS ... 7-28 DK8 AND DK16 PDIU-DS TO HAYES-TYPE SMART MODEM, RS-232 CONNECTOR/CABLE CONNECTIONS ...

Page 133 Music-on-Hold feature of this telecommunications system. Toshiba America Information Systems, Inc., hereby disclaims any liability arising out of the failure to obtain such a license. 2.12 Music-on-Hold Installation. Install the Mu-...

Page 134 DK16 EXPANSION UNIT PIOU/PIOUS (NOTE) (34) W2, IF USING PIOUS (SEE FIGURE 7-7) MOH TO: CO LINES STATIONS ON-HOLD BGM TO: DIGITAL ELECTRONIC TELEPHONE SPEAKERS OPTIONAL EXTERNAL PAGE/ BGM OUTPUTS HESB OR AMPLIFIER SPEAKER MOH OR NIGHT TRANSFER CONTROL RELAY SELECT PROG.

Page 135 With this configuration, the MOH source is sent only to CO lines/stations on hold, while the BGM source is sent directly to electronic/ digital telephone speakers and to the external page system via the 600 ohm RCA jack on the DK8 KSU or DK16 Base Unit.

Page 136 1327 Ralston Avenue Sylmar, Ca. 91342-7607 Phone: (818) 362-9516 FIGURE 7-2 DK16 BGM SOURCE/STANDARD TELEPHONE CIRCUIT PRECAUTION DIAGRAM 1) For DK16, enter the programming mode and identify the BGM slot number in Program 19 of the printed circuit board (KSTU, PSTU, PEKU, and PESU) which the BGM source will be connected to.

Page 137 KSTU, PSTU PESU OR PEKU INSTALLATION-PERIPHERALS SECTION 100-816-207 MARCH 1993 CO LINES AND STATIONS ON-HOLD ELECTRONIC/DIGITAL TELEPHONE SPEAKER (BGM: 481 ON/480 OFF) TO EXTERNAL PAGE SYSTEM (BGM WHEN PAGE IS IDLE) CO LINES AND STATIONS ON-HOLD (BGM WHEN PAGE IS IDLE)

Page 138 INSTALLATION-PERIPHERALS SECTION 100-816-207 MARCH 1993 MOH SOURCE SEE: PROGRAM 10-2 (CIRCUIT ASSIGNMENT) PROGRAM 19 (SLOT ASSIGNMENT) ELECTRONIC/ DIGITAL TELEPHONE BGM SOURCE KSTU/PSTU – CIRCUIT 4 PEKU – CIRCUIT 3 PESU – CIRCUIT 8 EXTERNAL SPEAKER BGM SOURCE AMPLIFIER (1) BACKPLANE WIRING...

Page 139 3.10 DK8 KSU and DK16 Base Unit Relay 3.11 The DK8 KSU or DK16 Base Unit Relay can be programmed for one of three options: • BGM mute • Night transfer • MOH source control These options are set in Program 77-1 (LED 01 and 02).

Page 140: Dk16 Piou Relay Control Functional Wiring Diagram

FIGURE 7-6 DK16 PIOU RELAY CONTROL FUNCTIONAL WIRING DIAGRAM (Logical Port 04) of the Base Unit Digital telephone circuit set and to circuit 1 of the KCDU or PDKU (Logical Port 12) in the Expansion Unit. Each DDCB door lock control installed reduces the sys- tem door phone capacity of six by one.

Page 141: Dk16 Pious Relay Control Functional Wiring Diagram

BREAK MAKE BREAK MAKE NORMAL OPEN ALARM SENSOR NORMAL CLOSE PIOUS • All wiring connections must be 24 AWG twisted pairs. RELAY OPTIONS: • K1 (DE): DOOR LOCK OR AMP MUTE CONTROL; PROGRAM 77-1, LED 07 • K2 (NH): NIGHT RELAY OR MUSIC-ON-HOLD CONTROL; PROGRAM 77-1, LED 05 •...

Page 142: Dk16 Door Lock Control Option (Piou/Pious)

INSTALLATION-PERIPHERALS SECTION 100-816-207 MARCH 1993 DOOR LOCK 0 BUTTON NOTE: Unlock Door 0 assigned to digital and electronic telephones in Program 39 with Code 71. K1/P10 (24VDC, 1.0 AMP MAX.) FIGURE 7-8 DK16 DOOR LOCK CONTROL OPTION (PIOU/PIOUS) programmed to activate continuously when the Night Transfer 1 button (only) is set to NIGHT mode (for indirect answering machine control);...

Page 143: Dk8 And Dk16 Door Lock Control Option (Ddcb)

NOTE 1 RELAY CONTROL CONTACT DK16 KDCU, (See Fig. 8-4 CKT1 wiring diagrams) - OR- DK16 PDKU, (DK16 Port 04, 12) CKT1 (DK8 Port 02, 03) - OR - DK16 DIGITAL DOOR LOCK CKT5 OF CONTROL BASE UNIT CONTACT - OR - NOTE 2 DK8 KSU, CKT 3 AND 4...

Page 144

Talkback Amplified Speaker option allows a talkback speaker to be provided in areas where a telephone is not needed. In this configuration, the HESB is connected to the 600 ohm Page RCA jack on the DK8 KSU or DK16 Base Unit and is used as the amplifier and speaker.

Page 145

(–) wire of the HESC-65 cable using a modular block. 5) Connect Terminal 3 of the HESB TB1 terminal block to pin 3 of the electronic telephone's modular block (VOICE TIP). 6) Connect Terminal 4 of the HESB TB1 terminal block to Pin 4 of the electronic telephone's...

Page 146: Dk8 And Dk16 Hesb/Digital Telephone With Loud Ringing Bell Wiring

EXSP and HHEU jumpers on the digital telephone main PCB. FIGURE 7-10 DK8 AND DK16 HESB/DIGITAL TELEPHONE WITH LOUD RINGING BELL WIRING HESB (REAR VIEW) VOLUME CONTROL VOICE 1 2 3 4 5 6 7 8 9 10...

Page 147: Dk16 Hesb/Electronic Telephone With Loud Ringing Bell Wiring

CORD NOTE: See Section 100-816-206 for instructions on how to cut the HHEU strap inside the telephone. FIGURE 7-11 DK16 HESB/ELECTRONIC TELEPHONE WITH LOUD RINGING BELL WIRING HESB (REAR VIEW) VOLUME CONTROL (+) (RED) (-) (GREEN) VOICE TIP VOICE RING...

Page 148

INSTALLATION-PERIPHERALS SECTION 100-816-207 MARCH 1993 4.23 Amplified Speaker Installation. Install the HESB Amplified Speaker option in accordance with the following steps (refer to Figure 7-12): 1) Connect a jumper between terminals 1 and 2 of the HESB TB1 terminal block. 2) Connect a jumper between terminals 6 and 7 of the HESB TB1 terminal block.

Page 149: Dk8 And Dk16 Hesb/Amplified Speaker Wiring

DK8 OR DK16 KSU 600 OHM PAGE RCA JACK NOTE: PIOU/PIOUS page outputs do not operate. JUMPER WIRES: INTERNAL WIRING: VOICE FIGURE 7-12 DK8 AND DK16 HESB/AMPLIFIED SPEAKER WIRING 5 4 3 2 JACKETED TWISTED PAIR 24AWG VOLUME CONTROL MODULAR 1 2 3 4 5 6 7 8 9 10 CONNECTOR MAY BE USED...

Page 150: Dk8 And Dk16 Hesb/Talkback Amplified Speaker Wiring

INSTALLATION-PERIPHERALS SECTION 100-816-207 MARCH 1993 DK8 OR DK16 KSU 600 OHM PAGE RCA JACK NOTE: PIOU/PIOUS page outputs do not operate. JACKETED TWISTED PAIR 24AWG JUMPER WIRES: INTERNAL WIRING: VOICE DOOR PHONE NOTE: The 600 ohm duplex page output is compatible with most commercially available talkback amplifiers.

Page 151: Hesb Wall Mounting

(see Program 10-2). When the all page code is dialed, all four relays are activated to permit simultaneous paging to all speaker zones and all digital and electronic telephone speakers. Install this option in accordance with the following steps (refer to Figure 7-16):...

Page 152: Dk8 And Dk16 Page And Separate Bgm Using Same Amplifier

INSTALLATION-PERIPHERALS SECTION 100-816-207 MARCH 1993 DK8 KSU OR DK16 BASE KEY SERVICE UNIT PAGE 600 OHM RCA JACK DK8 KSU OR DK16 BASE UNIT 25-PAIR AMPHENOL CONNECTOR FIGURE 7-15 DK8 AND DK16 PAGE AND SEPARATE BGM USING SAME AMPLIFIER 1) Connect the input from the paging amplifier via an RJ11 jack to the J7 600 ohm RCA Jack on the Base Unit.

Page 153: Dk16 Piou Zone, Page/Bgm/Night Ring (Separate Amplifiers)

PIOU BGM OR NIGHT RINGING BASE KEY AND/OR SERVICE UNIT PAGE FROM BASE UNIT J7 600 OHM RCA JACK PIOU PIN NUMBERS ( ) 25-PAIR CABLE Program 77-1 Button/LED FIGURE 7-16 DK16 PIOU ZONE, PAGE/BGM/NIGHT RING (SEPARATE AMPLIFIERS) 66 BLOCK PIN NUMBERS JACKETED TWISTED PAIR...

Page 154: Dk16 Paging With Multiple Amplifiers

INSTALLATION-PERIPHERALS SECTION 100-816-207 MARCH 1993 PIOU PGOUT 1 (15) PGIN 1 (40) PGOUT 2 (17) PGIN 2 (42) PGOUT 3 (19) PGIN 3 (44) PGOUT 4 (21) PGIN 4 (46) BGM OR NIGHT BASE UNIT RING OR PAGE FROM BASE UNIT J7 600 OHM COMMON (23)

Page 155 10) Press the Night Transfer 1 or Night Transfer 2 button on an electronic or digital telephone to set the system into the NIGHT mode. Test by calling into the system on a CO line assigned (Program 78) to night ring over external page.

Page 156: Dk16 Night Ringing Over All External Page Zones

INSTALLATION-PERIPHERALS SECTION 100-816-207 MARCH 1993 PIOU PAGE AND NIGHT RING BASE UNIT SIGNAL FROM BASE UNIT J7 600 OHM PAGE RCA JACK BREAK MAKE NIGHT RELAY PIOU PIN NUMBERS ( ) 25-PAIR CABLE NOTES: 1. Page signal path 2. Night ring signal path 3.

Page 157 Caller dials 703 to access CO line 03 (outgoing). • Caller dials the DISA security code and receives CO dial tone. • Caller dials the telephone number and con- verses when the call is answered. • Caller hangs up. •...

Page 158: Dk8 And Dk16 Smdr Printout Examples

<05 ANSWERS DISA CALL 12 SECONDS AFTER DK DIAL TONE> First Digit (varies) 123456789123456789654123 65 7145833700 7145833700 Outgoing Telephone Number (1~26 digits) Station to which the CO Line was transferred (1~4 digits) CO Line Incoming Ring Duration Before Answer (MM:SS) 7-26 456789...

Page 159 Disconnect Timer: 01 DISA 12:24 00:04;57 (incoming) 03 DISA 12:24 00:04;57 (outgoing) 6.03 System Program Data Printout. If a printer is connected to the SMDR port on the QSMU, PIOU, or PIOUS, customer program information stored in the system RAM may be printed out for reference by using Program 97 (see Paragraph 6.14).

Page 160: Dk8 And Dk16 Piou/Pious Smdr Cable Connections

7 VOICE MAIL OPTIONS 7.00 System Hardware Requirements 7.01 The STRATA DK8 and DK16 may be config- ured to support Toshiba VP voice mail messaging system or a customer-supplier voice mail system. 7.02 The DK8 must be equipped with a QSTU, and the DK16 must be equipped with a KSTU, PSTU, or PESU to support a voice mail system.

Page 161: Piou/Pious Smdr Port (Program 97) Data Dump Example

These programming features are: • Answer (A) Tone. The STRATA DK8 and DK16 stations will send an answer tone to Toshiba VP when the station answers a Toshiba VP call. • Disconnect (D) Tone. The STRATA DK8 and...

Page 162: Dk8 And Dk16 Voice Mail/Auto Attendant Block Diagram

(camp-on) recall from a station that did not an- swer a Toshiba VP blind transfer. (The B tone notifies Toshiba VP that the call is a recall and not a new call, allowing Toshiba VP to respond with the appropriate greeting.) For this feature to...

Page 163 Program 31: Turn LEDs 05, 09, and 15 ~ 20 ON for the QSTU, KSTU, PESU, or PSTU ports that are connected to the Toshiba VP VM/AA ports. Do not set these options for standard

telephone, digital telephone, or elec- tronic telephone station ports.

Page 164 When the sensor is activated, all electronic and digital tele- phones will sound an alarm signal. The electronic/ digital telephone alarm signal can be reset by any electronic or digital telephone with an alarm reset button (see Program 39).

Page 165: Dk16 Alarm Sensor Block Diagram

INSTALLATION-PERIPHERALS SECTION 100-816-207 MARCH 1993 INSTALLATION-PERIPHERALS SECTION 100-816-207 8.02 Jumper W3 on the PIOUS is used to set the alarm sensor to detect an open or closed condition from the facility alarm system. Solder the W3 jumper wire as follows (refer to Figure 7-23): •...

Page 166 DIU (PDIU-DI/PDIU-DI2), becomes part of the digital telephone, replacing the telephone's base; the other unit, is a small self- contained unit called the stand-alone DIU (PDIU-DS). Each DIU is powered by the digital port it is connected (see Table 8-D for wiring requirements).

Page 167 RS-232 interface leads (signals) on which signal- ing data is transmitted and received. DIUs connect to serial data devices with standard RS-232 cables, available from telephone supply stores (see Fig- ures 7-25 ~ 7-30). The PDIU-DI/PDIU-DS requires nine signals for some applications, but can function with eight using modular cords and connectors with RJ45/DB25 adapters for other applications.

Page 168 3. Change the PDIU-DI escape sequence per the guidelines in paragraph 10.63. 1) Install the digital telephone that is to be equipped with PDIU-DI per the instructions in Section 100-816-206 and the drawing in Sec- tion 100-816-208.

Page 169 10 EIA signals listed in Paragraph 10.20. Figures 7-25 and 7-30 provide diagrams for connecting RS-232 cables between PDIU-DIs and Toshiba lap top, and IBM, XT and AT PCs. 4) Set the PDIU-DI DIP switch (SW1-1 ~ 4) for the desired application.

Page 170 Figure 7-32 shows the DIP switch locations and Paragraph 10.30 describes switch functions. NOTE: If using Toshiba computers and printers with X-On/X-OFF flow control, set SW1-(4) "ON" on the DIU connected to the computer and DIU connected to the printer.

Page 171 CO line. If modems are connected directly to telephone network CO lines, automatic transfer of CO line voice calls to system modems (data call) will not function as described in the Data Interface User Guide .

Page 172 10.63 Modem Setup Recommendations 1) Always change the escape sequence of the telephone PDIU-DI from default (+++) to some other ASCII character (ATS2=XX command to PDIU-DI). This allows placing the PDIU-DI or modem into the command mode selec- tively.

Page 173: Dk8 Or Dk16 Data Installation Example Block Diagram

LAPTOP, PC 1 RS-232 DKT/PDIU-DI (10) LAPTOP, PC 2 DKT/PDIU-DI RS-232 (11) SERIAL PRINTER RS-232 PDIU-DS TOSHIBA POWER READY CONNECT (13) MODEM (18) RS-232 PDIU-DS TOSHIBA POWER READY CONNECT (14) MODEM POOL MODEM 1 (19) RS-232 PDIU-DS TOSHIBA POWER...

Page 174: Dk8 And Dk16 Pdiu-Di To Ibm At-Type Computer

PIN DESIGNATIONS COM PORT PIN # NAME Rear view of asynchronous (serial) communication interface connector (DB9) of Toshiba laptop or IBM AT personal computer 2 3 4 5 6 7 8 9 6 7 8 9 2 3 4 5 MALE...

Page 175: Dk8 And Dk16 Pdiu-Di To Ibm Xt-Type Computer

IBM XT PERSONAL COMPUTER OR ASCII TERMINAL (FUNCTIONS LIKE A DTE) DB25 PIN DESIGNATIONS PDIU-DI PIN # NAME Rear view of personal computer or ASCII terminal DB25, RS-232 connector 1 2 3 4 5 6 7 8 1 2 3 4 5 6 7 8 NOTE: The PC/ASCII terminal receives data on Pin 3 (RD) and transmits...

Page 176: Dk8 And Dk16 Pdiu-Ds To Toshiba Printer

Pin 3 (RD) and receives data on Pin 2 (TD). FIGURE 7-27 DK8 AND DK16 PDIU-DS TO TOSHIBA PRINTER, RS-232 CONNECTOR/CABLE CONNECTIONS (CONFIGURED IN THE "CONNECT TO DTE"

MODE: P1 ~ P9 = A-B SO PDIU FUNCTIONS LIKE A DCE)

Page 177: Dk8 And Dk16 Pdiu-Ds To Hayes-Type Smart Modem

HAYES-TYPE SMART MODEM (FUNCTIONS LIKE A DCE) MODEM PIN # NAME Rear view of modem DB25 connector NOTES: 1. Modem receives data on pin 2 (TD) and transmits data on pin 3 (RD). 2. The PDIU-DS must be in the connect to modem mode (P1 ~ P9 strapped B-C) so that it transmits data on pin 2 (TD) and receives data on pin 3 (RD).

Page 178: Dk8 And Dk16 Pdiu-Di/Pdiu-Ds Modular Cable/Rj-45 Adapter Connections

4. In Connection Example 3, PDIU-DS must be in the connect to DTE mode (P1 ~ P9, strapped A-B). 5. All modular cords and adapters are customer-supplied. FIGURE 7-29 DK8 AND DK16 PDIU-DI/PDIU-DS MODULAR CABLE/RJ-45 ADAPTER CONNECTIONS TOSHIBA LAPTOP OR IBM AT TYPE PERSONAL COMPUTER (PC) TYPE 1 MODULAR ADAPTER TYPE B MODULAR CORD (CROSSED)

Page 179: Dk8 And Dk16 Pdiu-Di/Pdiu-Ds Modular Cords And Rj-45/Rs-232 Adapter Pin Connections

TYPE 1 RJ45 TO DB9 (FEMALE) ADAPTER TYPE 2 RJ45 TO DB25 (MALE) ADAPTER TYPE 3 RJ45 TO DB25 (FEMALE) ADAPTER FRONT TYPE A RJ45 FLAT MODULAR CORD (STRAIGHT) FRONT TYPE B RJ45 FLAT MODULAR CORD (CROSSED) Modular Cords (50 ft max, 24AWG; customer-supplied) FIGURE 7-30 DK8 AND DK16 PDIU-DI/PDIU-DS MODULAR CORDS AND RJ-45/RS-232 ADAPTER PIN CONNECTIONS 8 7 6 5 4 3 2 1...

Page 180: Connector Information

INSTALLATION-PERIPHERALS SECTION 100-816-207 MARCH 1993 PDIU-DS (FRONT VIEW) POWER READY CONNECT CONNECT LED READY LED POWER LED PERCEPTION (SEE PARAGRAPH 10.72) P1 ~ P9 LOCATED ON PCB INSIDE OF PDIU-DS UNIT (SEE NOTES) SIGNAL NAME/ SIGNAL ABBREVIATON FUNCTION FRAME GROUND SIGNAL GROUND TRANSMIT DATA RECEIVE DATA...

Page 181: Dk8 And Dk16 Pdiu-Di/Pdiu-Ds Sw1 Dip Switch Information

3. When a PDIU-DS is connec- ted to a modem that tracks the DCD signal (AT&C1) SW1(4) must be ON. 4. If using Toshiba Personal Computers and Toshiba Printers using X-ON/X-OFF flow control, set SW1(4) ON on PDIU-DIs and -DSs.

Page 182: Dk8 And Dk16 Pdiu-Ds Disassembly/Assembly Diagram

INSTALLATION-PERIPHERALS SECTION 100-816-207 MARCH 1993 PDIU-DS NOTES: Do not cut the PERCEPTION jumper wire for STRATA DK8 or DK16 installations. Jumper wire is for PERCEPTION applications only. See Table 8-D regarding external power requirements. FIGURE 7-33 DK8 AND DK16 PDIU-DS DISASSEMBLY/ASSEMBLY DIAGRAM SIDE GROOVES POWER PERCEPTION...

Page 183: Dk8 And Dk16 Pc To Pc Test Call Using At Commands

10.80 PDIU-DI/PDIU-DS Installation Tests 10.81 Paragraphs 10.82 ~ 10.86 provide tests for five DIU call applications. The telephone and port numbers used in these figures are provided for explanation purposes only; when actually testing, use port and telephone numbers appropriate for the system.

Page 184: Dk8 And Dk16 Pc To Printer Test Call Using Manual Dialing

COM port (the PC COM port connected to DKT/PDIU-DI port 01). This is LAPTOP PC RS-232 DKT/PDIU-DI (11) RS-232 TOSHIBA POWER READY CONNECT FIGURE 7-35 DK8 AND DK16 PC TO PRINTER TEST CALL USING MANUAL DIALING normally accomplished using the DOS and MODE commands.

Page 185: Dk8 And Dk16 Internal Pc To External Pc Test Call Using At Commands

PC and communication software package are set to the same values (data transmission rate, parity, data bits, stop bits, flow control, etc.). INTERNAL MODEM (18) RS-232 PDIU-DS TOSHIBA POWER READY CONNECT (14) LAPTOP PC 1 DKT/PDIU-DI RS-232 (10)

Page 186

DKT/PDIU-DI (10) FIGURE 7-37 DK8 AND DK16 EXTERNAL PC TO INTERNAL PC TEST

CALL USING AT COMMANDS 5) To terminate the call: Press the telephone Data Release button and; a) Type + + + from PC2 keyboard. • b) Type A T H from the PC keyboard used in step 5a.

Page 187 At this time, PC 1 and PC 2 are con- nected, as shown by the thick lines, to exchange data (file transfers, typed mes- sages, etc.). 5) To terminate the call: Press the telephone Data Release button, and a) Type + + + from PC2 keyboard. •...

Page 188: Dk8 And Dk16 Pc Auto Dial Voice Call Test

FIGURE 7-38 DK8 AND DK16 PC AUTO DIAL VOICE CALL TEST 3) Make sure that a dialing directory consisting of names and telephone numbers you wish to auto dial is installed within the application software (include the appropriate STRATA CO line access code prefixing each telephone number).

Page 189: Dk16 Amplified Two-Co Line Conference And/Or Amplified Disa Functional Wiring Diagram

CKT6 B = 18 CKT7 supplied. Use a 2-way, telephone CO line amplifier that is FCC Part 68 registered and provides automatic gain control; the above example is with a Reliance Electric Co., R-TEC VFR5050 (VVSG) Repeater, with 500-X or 500-X-CT mounting assembly and a PS16 power adapter.

Page 190 2 talks, the talk level is amplified in the reverse direction. NOTE: Only the outside party 1 talk path is amplified to/from a system telephone when it is con- nected into a two-CO line conference. 11.03 Amplifier Requirements. •...

Page 191 INSTALLATION-WIRING DIAGRAMS TOSHIBA SYSTEM PRACTICES DIGITAL KEY TELEPHONE SYSTEMS SECTION 100-816-208 MARCH 1993 INSTALLATION CHAPTER EIGHT WIRING DIAGRAMS...

Page 193 DK16 PEKU BACKGROUND MUSIC CONNECTION ... 8-16 DK16 PEKU STATION/MDF CROSS CONNECT RECORD ... 8-17 DK16 MDF WIRING/STANDARD TELEPHONE, VOICE MAIL TO PSTU ... 8-18 DK16 PSTU STATION/MDF CROSS CONNECT RECORD ... 8-19 DK16 PESU CIRCUIT CARD WIRING DIAGRAM ...

Page 194 INSTALLATION-WIRING DIAGRAMS SECTION 100-816-208 MARCH 1993 TABLE FCC REGISTRATION NUMBERS STRATA DK8 AND DK16 ... STATION LOOP REQUIREMENTS ... NETWORK REQUIREMENTS ... DIGITAL TELEPHONE/DIU/DDSS CONSOLE/ADM/LOOP LIMITS ... TABLE LIST TITLE 8-ii PAGE...

Page 195: General

INSTALLATION-WIRING DIAGRAMS • Figure 8-13 — DK16 MDF Wiring/Electronic Telephone to PEKU • Figure 8-14 — DK16 MDF Wiring/HDSS Con- sole and Associated Electronic Telephone Wir- ing to PEKU • Figure 8-15 — DK16 PEKU Background Mu- sic Connection •...

Page 196: Station Loop Requirements

2. PESU circuits 3 and 4 are not used. 3. DDCB can connect only to Circuit 5 of the DK16 Base Unit or Circuit 1 of the PDKU or KCDU. 4. Two-pair, larger wire, or local telephone power supply is required to achieve maximum range, see Table 8-D.

Page 197: Network Requirements

NETWORK REQUIREMENTS Facility TOSHIBA Interface Code Printed Circuit Board or Interface 02LS2 QCDU/KCDU/PCOU/PCOU2 (Loop Start Line) 02LS2 DK8 KSU DK16 Base KSU (Loop Slant Line) 0L13A QSTU/KSTU/PESU*/PSTU/ PSTU2 (Off-premises Station) Circuits 1 and 2 INSTALLATION-WIRING DIAGRAMS TABLE 8-C Network Ringer...

Page 198: Digital Telephone/Diu/Ddss Console/Adm/Loop Limits

INSTALLATION-WIRING DIAGRAMS SECTION 100-816-208 MARCH 1993 DIGITAL TELEPHONE/DIU/DDSS CONSOLE/ADM/LOOP LIMITS QPSU/KPSU Battery Backup MODE QPSU/KPSU DKT Ringing (Volume Max) Battery Backup QPSU/KPSU DKT with DVSU (OCA) Battery Backup DKT with HHEU QPSU/KPSU Battery Backup Carbon Handset QPSU/KPSU DKT with PDIU-DI/...

Page 199: Secondary Protector Diagram

UL 497A. As of October 1, 1990, the following manufacturers offer secondary protectors that are UL listed. □ □ □ □ □□□□ □□□□ □ □ □ □ □□□□ □□□□ □□□□ □□□□ STANDARD TELEPHONE OR OTHER DEVICE □ □ □□□□ □ CONSOLE (DK16 only) □ □ □□□ DIGITAL OR ELECTRONIC TELEPHONE MDFB...

Page 200

3. Oneac Corp; Libertyville, Illinois 60048 • • • • • Secondary protector: Model OnLine 614+ and OnLine DG/S. For indoor use on the protected side of primary telephone protector only. 4. Siemon Co.; Watertown, Connecticut 06795 • • • • •...

Page 201: Dk8 Mdf Wiring To Ksu Amphenol Station And Relay Connections

NOT USED wires required only for long station runs per Table 8-D. PT/PR may be used with normal station runs also. STD TEL 3. Standard Telephone circuits 1 ~ 2 require a QSTU to be CIRCUIT 2 OR BGM installed.

Page 202: Dk8 Mdf Wiring To Co Lines (Ksu And Qcdu)

1. PFT, CO1, and CO2 modular jacks are equipped on the main circuit card of the DK8. 2. CO3 requires one optional QCDU and CO4 requires a second QCDU to be installed. NETWORK JACK: RJ11 FIC: 02LS2 MODULAR CORDS (BOTTOM) POWER FAILURE STANDARD TELEPHONE...

Page 203: Dk8/Dk16 Mdf Wiring Ddcb And Door Lock Control

TO KCDU OR PDKU IN DK16 EXPANSION UNIT OR AMPHENOL CONNCECTOR OF DK8 OR DK16 KSU. W/FEMALE CONNECTOR BRIDGINGCLIPS W-BL BL-W W-GN GN-W W-BR BR-W R-BL BL-R R-GN GN-R R-BR BR-R BK-BL BL-BK BK-O O-BK BK-GN GN-BK BK-BR BR-BK BK-S S-BK Y-BL BL-Y...

Page 204: Dk8 Qstu/Dk16 Kstu Station/Mdf Cross Connect Record

RJ11C RJ11C RJ11C RJ14C RJ14C FIGURE 8-6 DK8 AND DK16 CO LINE RECORD KSTU/QSTU PORT INTERCOM NUMBER NUMBER BASE UNIT (KCDU/PCOU) DK8 KSU DK16 BASE UNIT, FIXED SLOT 02 KCDU/PCOU SLOT 04, 05 (DK16 ONLY) 8-10 STANDARD TELEPHONE/ DEVICE LOCATION...

Page 205: Dk8 Qsmu Tty/Smdr Wiring

DB-25 RS-232 (MALE) PDIU-DS, ASCII TERMINAL, EXTERNAL MODEM, SMDR PRINTER, OR ACCOUNTING DEVICE PPTC PIN-OUT LEAD NAME JUMPER DB25 PINS MODULAR PINS WIRE COLOR NOTE: QSMU TTY/SMDR PROGRAM OPTION: PROGRAM 10-3 LED04 ON LED04 OFF SMDR FIGURE 8-7 DK8 QSMU TTY/SMDR WIRING NOTE 1: If connected to an external Hayes compatible modem, interchange pin 2 and pin 3, and pin 20...

Page 206: Dk16 Mdf Wiring/Base Unit P5 Amphenol Station And Relay Connections

T/R wires are always required; PT/PR are additional power wires required only for long station runs per Table 8-D. PT/PR may be used with normal station runs also. Standard Telephone circuits 1 ~ 4 require a KSTU in the base unit. FIGURE 8-8...

Page 207: Dk16 Mdf Wiring/Co Lines To Base Unit

FIGURE 8-9 DK16 MDF WIRING/CO LINES TO BASE UNIT RJ11 MODULAR JACKS NETWORK JACK: RJ11 FIC: 02LS2 8-13 INSTALLATION-WIRING DIAGRAMS SECTION 100-816-208 MARCH 1993 MODULAR DK16 BASE UNIT CORDS MAIN CIRCUIT BOARD MODULAR JACKS (TOP) (BOTTOM) POWER FAILURE STANDARD TELEPHONE...

Page 208

(GND) PR (ADD. POWER) (SEE NOTE 2) NOT USED MODULAR CORD 8-14 RJ11 6 5 4 3 2 1 DIGITAL TELEPHONE (DKT 1) RJ11 6 5 4 3 2 1 Night 1 All Call DDSS/BLF CONSOLE (CIRCUIT 8 0NLY) — OR — DIGITAL TELEPHONE (DKT 8) —...

Page 209: Dk16 Mdf Wiring For Digital Telephones (Dkts) With

FEMALE CONNECTOR TO PERSONAL COMPUTER OR ASCII TERMINAL, ETC. RS-232 CABLE (SEE SECTION 100-016-207) DIGITAL TELEPHONE (DKT 1) (WITH OR WITHOUT PDIU-DI/PDIU-DI2) RJ11 DB-25 FEMALE CONNECTOR TO MODEM, PRINTER, OR HOST COMPUTER ETC. TOSHIBA RS-232 CABLE (SEE SECTION 100-016-207) PDIU-DS...

Page 210: Dk8 Or Dk16 Pdku, Kcdu, Dk8 Ksu Or Dk16 Base Ksu Digital Station/Mdf Cross Connect Record

PWR R NOTES: 1. Indicate if PDIU-DS, digital telephone (with or without PDIU-DI/PDIU-DI2 or ADM) or DDSS console (number 1 or 2) is connected. 2. PDIU-DS and PDIU-DI/PDIU-DI2 can be connected to circuits 1 ~ 7 only on PDKU1; all Base Unit, KCDU, and PDKU2 digital circuits support DIUs.

Page 211: Dk16 Mdf Wiring/Electronic Telephone To Peku

CIRCUIT 7 CIRCUIT 8 OCA T1 (OT) OCA R1 (OR) CIRCUIT 2 NOTES: To receive OCA, the 6500-series electronic telephone CIRCUIT 3 must have HVSU2 subassembly or combined HVSU/HVSI subassemblies installed. CIRCUIT 4 Program 31, button/LED 03 must be “on” for electronic telephone to receive OCA.

Page 212: Dk16 Mdf Wiring/Hdss Console And Associated Electronic Telephone Wiring To Peku

V-GN GN-V V-BR BR-V 66M150 SPLIT BLOCK NOTE: See Program 29 to assign DSS buttons. FIGURE 8-14 DK16 MDF WIRING/HDSS CONSOLE AND ASSOCIATED ELECTRONIC TELEPHONE WIRING TO PEKU VOICE T1 VOICE R1 DATA T1 DATA R1 CIRCUIT 2 CIRCUIT 3...

Page 213: Dk16 Peku Background Music Connection

CIRCUIT 6 TO BGM connection to port 02. See Program 19 for ELECTRONIC slot assignment. TELEPHONE Cut W5 jumper on PEKU. Provide BGM to electronic telephone speakers CIRCUIT 7 TO and external page. ELECTRONIC Volume is adjusted at BGM source TELEPHONE only (not at PEKU).

Page 214: Dk16 Peku Station/Mdf Cross Connect Record

Y-Bl Bl-Y NOTES: 1. Indicate if BGM or electronic telephone is connected (see Program 10-2 and 19); BGM connects to VT and VR, circuit 3 only (DT and DR not used). 2. Indicate if electronic telephone or HDSS console. 3. OCA wiring not shown, see MDF-to-electronic telephone wiring.

Page 215: Dk16 Mdf Wiring/Standard Telephone, Voice Mail To Pstu

BR-Y V-BL BL-V V-GN GN-V V-BR BR-V 66M150 SPLIT BLOCK FIGURE 8-17 DK16 MDF WIRING/STANDARD TELEPHONE, VOICE MAIL TO PSTU TIP 1 RING 1 NOT USED NOT USED (ckt 3 CAN SUPPORT BGM) NOT USED NOT USED NOT USED NOT USED...

Page 216: Dk16 Pstu Station/Mdf Cross Connect Record

Y-Bl NOT USED Bl-Y NOT USED NOTES: 1. Indicate if standard telephone, voice mail port, etc. 2. Circuit 3 or 8 can support a Background Music (BGM) source. FIGURE 8-18 DK16 PSTU STATION/MDF CROSS CONNECT RECORD DKSU SLOT NO. PORT...

Page 217: Dk16 Pesu Circuit Card Wiring Diagram

NOTES: (Standard telephone circuits 1 & 2) All cable 24 AWG; max loop resistance - 300 ohms from PESU to standard telephone/VM port. Standard telephones may be on- or off-premises. Off-premises connection is made via OL13A FIC, and RJ21X jack.

Page 218: Dk16 Pesu Station/Mdf Cross Connect Record

1. HDSS is not allowed. 2. Indicate if external amplifier is connected. 3. Indicate if BGM or electronic telephone is connected; BGM connects to VT and VR, circuit 8 only (DT and DR not used). 4. OCA wiring not shown, see MDF-to-electronic telephone wiring.

Page 219: Dk16 Mdf Wiring/Co Lines To Pcou

NETWORK BRIDGING CLIPS 66M150 SPLIT BLOCK FIGURE 8-21 DK16 MDF WIRING/CO LINES TO PCOU 6 5 4 3 2 1 2 3 4 5 MODULAR CORD SAME NETWORK JACK: RJ14C FIC: 02LS2 8-25 INSTALLATION-WIRING DIAGRAMS SECTION 100-816-208 MARCH 1993 TELCO-PROVIDED MODULAR BLOCK, 625-TYPE OR EQUIVALENT...

Page 220: Dk16 Mdf Wiring/Co Lines And Digital Telephones To Kcdu

OF PDIU-DI NOT USED 8-26 KCDU CO2 LED CO1 LED CO1+2 MODULAR JACK RJ11 6 5 4 3 2 1 PR (5) T (4) R (3) PT (2) DIGITAL TELEPHONE (WITH OR WITHOUT PDIU-DI/PDIU-DI2) OR PDIU-DS - or

- DDCB...

Page 221: Dk16 Mdf Wiring/Piou Peripherals (25-Pair)

PIOU PCB PG.OUT 1 PG.IN 1 PG.OUT 2 PG.IN 2 PG.OUT 3 PIOU PG.IN 3 ONLY PG.OUT 4 PG.IN 4 SELECT RELAY FUNCTION WITH PROGRAM 77-1 DOOR LOCK OR AMP. CONTROL BREAK MAKE BASE UNIT 600 (DUPLEX) COMMON N.C. ALARM SENSOR N.O.

Page 222: Dk16 Pious/Tty And Smdr Wiring

MARCH 1993 DB-25 RS-232 (MALE) PDIU-DS, TO ASCII TERMINAL, EXTERNAL MODEM • 7–BIT • EVEN PARITY • 1–STOP TOSHIBA RS-232/MODULAR ADAPTOR PART NO. PPTC DB-25 RS-232 (MALE) TO PRINTER PDIU-DS, OR CALL ACCOUNTING DEVICE • 8–BIT • NO–PARITY • 1–STOP BIT NOTE 3: PIOUS option settings: SW1 –...

Page 223: Dk16 Pious Page/Relay/Alarm Connections

KSU BACKPLANE PAGE RCA PAGE JACK J7 BREAK MAKE BREAK MAKE NORMAL OPEN ALARM SENSOR NORMAL CLOSE PIOUS • All wiring connections must be 24 AWG twisted pairs. Dotted lines show optional connections; only one optional connection is allowed. • RELAY OPTIONS: •...

Page 224: Dk16 Piou Smdr/Tty Options And Wiring

MARCH 1993 DB-25 RS-232 (MALE) PDIU-DS, TO ASCII TERMINAL, EXTERNAL MODEM • 7–BIT • EVEN PARITY • 1–STOP BIT TOSHIBA RS-232/MODULAR ADAPTOR PART NO. PPTC DB-25 RS-232 (MALE) TO PRINTER PDIU-DS, OR CALL ACCOUNTING DEVICE • 8–BIT • NO PARITY •...

Page 225: Dk16 Mdf Wiring/Amplified Two-Co Line Conference

TO PEKU W/FEMALE BRIDGING CONNECTOR CLIPS W-BL BL-W W-GN GN-W W-BR BR-W R-BL BL-R R-GN GN-R R-BR BR-R BK-BL BL-BK BK-O O-BK BK-GN GN-BK BK-BR BR-BK BK-S S-BK Y-BL BL-Y Y-GN GN-Y Y-BR BR-Y V-BL BL-V V-GN GN-V V-BR BR-V 66M150 SPLIT BLOCK FIGURE 8-27 DK16 MDF WIRING/AMPLIFIED TWO-CO LINE CONFERENCE...

Page 226: Dk16 External Power For Digital Telephone Connection

200 MV P-P (MAX) AC RIPPLE ON DC OUTPUT AC/DC power supplies that meet the above requirements are available from most telephone equipment supply houses. FIGURE 8-28 DK16 EXTERNAL POWER FOR DIGITAL TELEPHONE CONNECTION STATION CABLING T1 (VOICE/DATA) (GND) R1 (VOICE/DATA) (NOT USED)

Page 227 TOSHIBA SYSTEM PRACTICES FAULT FINDING DIGITAL KEY TELEPHONE SYSTEMS SECTION 100-816-500 MARCH 1993 FAULT FINDING PROCEDURES...

Page 229 PARAGRAPH GENERAL ... FAULT CLASSIFICATION ... FAULT CLEARING PROCEDURES ... DEFECTIVE APPARATUS RETURNS ... FAULT IDENTIFICATION AND ELIMINATION PROCEDURES ... DK8 HARDWARE FAULT ISOLATION ... DK16 HARDWARE FAULT ISOLATION ... STATION CABLE CONTINUITY CHECK... 8.01 Voltmeter Test ... 8.10 Ohmmeter Test ... 8.20 Cable Installation ...

Page 231 1 GENERAL 1.01 This section describes the maintenance pro- cedures used to diagnose faults in the STRATA DK8 and DK16 digital key telephone system. Faults are classified and then cleared by replacing the malfunctioning unit and performing operational tests in the sequences prescribed by the fault clearing flowcharts in Paragraph 9.

Page 232 Attach the tag to the front of the unit with string (not wire) so the tag can remain attached during the testing and repair process. Return tags are available from Toshiba America Information Systems, Inc., TSD Division. 5 FAULT IDENTIFICATION AND ELIMINATION PROCEDURES 5.01 The DK8 or DK16, KSU common control...

Page 233 IC5, PIN 42, +5V TEST POINT (+4.5 ~ +5.5) QPSU8 POWER SUPPLY POWER SUPPLY MOUNTING SCREW F.G. SCREW FOR THIRD WIRE GROUND CONNECTION HPFB GROUND WIRE CN1, AC POWER CORD CONNECTOR POWER SUPPLY MOUNTING SCREW FIGURE 2 QPSU8 DC VOLTAGE TEST UNLOCK (FG) SCREW DK16 BASE UNIT...

Page 234 8 STATION CABLE CONTINUITY CHECK 8.01 Voltmeter Test 8.02 The continuity of the cable run between the DK16 KSU and the digital or electronic telephone is checked with a voltmeter as follows: NOTE: Perform the following at the locations indi- cated: 1.

Page 235 8.21 If cable voltmeter and ohmmeter tests are within limits, digital telephones may not operate because of the following: 1) Digital telephone cable runs must be free of cable splits (single or double). Test for and eliminate all cable splits.

Page 236 NOTES: 1. This is the maximum allowable reading for all Digital and Electronic telephone cable runs except if connecting an HDSS console to Circuits 7 and 8 of a PEKU—then the maximum cable restriction is 20 ohms, not 40 ohms.

Page 237 CHART NO. 1 FAULT CLASSIFICATION START Please read Chapters 1~5 of this section before proceeding. Is the system completely Go to non-operational? Chart 2 Is it a station Go to no dial tone Chart 3 fault? Is it a CO Go to line no dial Chart 4...

Page 238 FAULT FINDING SECTION 100-816-500 MARCH 1993 Go to Chart 1 Reprogram customer data base, one program at a time, and check to see if fault re-occurs. Does the fault re-occur after entering customer data base? CHART NO. 2 CATASTROPHIC FAULTS START Is the system completely...

Page 239 Check station wiring per paragraph 8 START of this section. Repair if necessary. Replaceable Station PCBs DK8: QCDU and faulty station on a QSTU replaceable station DK16 Base: KSTU PCB? DK16 Expansion: KCDU, PDKU, PEKU, PESU Are the faulty station(s) only in the DK16 expansion unit? Replace the DK8 or...

Page 240 SECTION 100-816-500 MARCH 1993 START Check CO line wiring per section 100-816-008. Test central office line using a standard telephone or butt set at the TELCO block. Repair as necessary. faulty CO lines on a replaceable PCB (not including KSU...

Page 241 DSS CONSOLE FAULTS (DK16 ONLY) START DDSS console type? HDSS On PEKU connected to HDSS, set SW1 to the DSS position. Refer to section 100-816-008 and verify wiring: • For DDSS, circuit 8 of the base Go to unit or PDKU (KCDU does not support DDSS).

Page 242 (Prog. 03 is not required for DK8, QRCU). Is the fault cleared? Check that the VM/AA ports are connected to the standard telephone station ports correctly. (Refer to QSTU, KSTU, PSTU, or PESU wiring diagrams in Section 100-816-208.) Correct if necessary. Is the fault...

Page 243: Fault Finding

STATION MESSAGE DETAIL RECORDING (SMDR) FAULTS START Read the SMDR installation This chart assumes instructions in the SMDR device paragraph 7 of has no faults. Section 100-816-207 before proceeding with this chart. SMDR data or garbled data is detected at the QSMU, PIOU/PIOUS SMDR port.

Page 244 FAULT FINDING SECTION 100-816-500 MARCH 1993 If a Digital or Electronic telephone is in the programming mode, it is not possible to enter the Remote Maintenance mode. External modem connected to QSMU, PIOU, PIOUS TTY port On DK8, check that Prog. 10-3, LED 04 is on for QSMU TTY operation.

Page 245: Remote Administration

REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES TOSHIBA SYSTEM PRACTICES SECTION 100-816-600 DIGITAL KEY TELEPHONE SYSTEMS MARCH 1993 REMOTE ADMINISTRATION MAINTENANCE PROCEDURES...

Page 246 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993...

Page 247 PARAGRAPH USING REMOTE ADMINISTRATION AND MAINTENANCE ... GENERAL DESCRIPTION ... HARDWARE REQUIREMENTS ... TERMINAL/MODEM INSTALLATION ... 4.10 Maintenance Terminal/External Modem Option System Hardware Requirements ... 4.20 DK8 and DK16 Local Maintenance Terminal Installation ... 4.30 Remote Maintenance Option Installation ... 4.40 Programming ...

Page 248 PROGRAM 36: FIXED CALL FORWARD ... 33 RM-AD PROGRAM 37: RING TRANSFER (CAMP-ON) RECALL TIME ... 34 RM-AE PROGRAM 38: DIGITAL AND ELECTRONIC TELEPHONE BUTTONSTRIP TYPE ... 35 RM-AF PROGRAM 39: FLEXIBLE BUTTON ASSIGNMENT ... 36 RM-AG

PROGRAM 42-1~8: PBX ACCESS CODE ... 37 RM-AH PROGRAM 60: SMDR OUTPUT/ACCOUNT CODE DIGIT LENGTH ...

Page 249 RM-AK PROGRAM 78: CO LINE SPECIAL RINGING ASSIGNMENTS DISA/IMDU/NIGHT RINGING OVER EXTERNAL PAGE ... 41 RM-AL PROGRAM 80: DIGITAL AND ELECTRONIC TELEPHONE RINGING TONES ... 42 RM-AM PROGRAM 93: CO LINE IDENTIFICATION ... 43 RM-AN PROGRAM 44 (A OR B): TOLL RESTRICTION TRAVELING CLASS OVERRIDE CODE ENTRY ...

Page 250 REMOTE ADMINISTRATION & MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 FIGURE SECTION FLOWCHART ... REMOTE MAINTENANCE EXTERNAL MODEM CONNECTION FOR DK8/16 (METHOD ONE OF ONE) ... REMOTE MAINTENANCE EXTERNAL MODEM CONNECTION FOR DK8/16 (METHOD TWO OF TWO) ... REMOTE MAINTENANCE USING IMDU MODEM (DK16 ONLY) ... LOCAL MAINTENANCE USING ASCII TERMINAL OR PERSONAL COMPUTER ...

Page 251 1 USING REMOTE ADMINISTRATION AND MAINTENANCE 1.01 Figure 1 is provided as a quick reference aid in using this section. General Description: The functions available on STRATA DK systems via a Local or Remote Terminal are explained in Paragraph 2. The hardware and installation requirements are explained in Paragraphs 3 and 4.

Page 252 2.01 With the STRATA DK8, Remote Adminis- tration and Maintenance is accomplished with a remote terminal/modem communicating over the public telephone network, but only via an exter- nal modem connected to a dedicated CO line or standard telephone port. See Figures 2 and 3.

Page 253 (7-BITS, EVEN PARITY, 1-STOP BIT) PPTC: ADAPTOR, MODIFIED FOR EXTERNAL MODEM CONNECTION AS SHOWN IN TABLE RM-A OF THIS SECTION MODEM LINE JACK EXTERNAL MODEM 3-PAIR MODULAR CORD STANDARD TELEPHONE CIRCUIT TELEPHONE NETWORK SECTION 100-816-600 MARCH 1993 QSMU (DK8) — OR — RS232...

Page 254 REMOTE MAINTENANCE USING IMDU MODEM (DK16 ONLY) TABLE RM-A PPTC1A-5M ADAPTOR MODULAR PIN NO. DB25 PIN NO. DSR, DTR, DCD, 4 Jumper to 5 CO LINE TELEPHONE NETWORK MODEM RS-232 LEAD NAME RTS to CTS PIOU OR PIOUS IMDU TIME SWITCH...

Page 255 PIOU or PIOUS. The IMDU has a built-in maintenance channel for remote connection; however, an external modem requires a CO line or standard telephone port (Figures 2 and 3). 2. The DK16 PIOU or PIOUS can only be installed in the Expansion Unit.

Page 256 NOTE: The Toshiba PPTC RS-232 modular-to-DB25 adaptor is factory configured for ASCII termi- nal connection. Pins 2 and 3 and Pins 8 and 20 of the adaptor must be reversed for external modem connection (see Table RM-A).

Page 257 CO line, call the CO line number to estab- lish modem communication. • If the modem is connected to a standard telephone port, call a STRATA DK CO line that can be transferred to (or pro- grammed to ring) the standard telephone modem port to establish modem commu- nication.

Page 258 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 continuing with Remote Administration and Maintenance installation. 5) If a terminal is to be utilized on-site, refer to Paragraph 5. For off-site programming refer to Paragraph 6. 5 LOCAL TERMINAL OPERATION 5.00 Requirements 5.01 For DK16, the optional Expansion Unit must have a PIOU or PIOUS PCB installed to perform...

Page 259 2) To continue, Press CR and enter the security code per Paragraph 6.30. 6.22 Manual connection via call transfer: 1) Using a telephone (at the remote location) that can switch to the terminal/modem, dial the number of a system CO line.

Page 260 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 • When communication is established, the terminal will display: CONNECTED or COMMUNICATIONS (see Note). NOTE: If the connection is not completed or commu- nication is unsuccessful, the remote terminal will display: NO CARRIER. If this is the case, check that the equipment is installed per Para- graph 5.10 or 6.10 of this section and try again.

Page 261 8.10 System Record Sheets 8.11 Before system data can be programmed, the System Record Sheets which contain the customer data base must be available (see Programming, Section 200-816-302). 8.20 Program Types 8.21 There are three types of programs: Type 1: All Type 1 programs use the same proce- dure;...

Page 262 Any digital or electronic telephone button can be activated from the remote terminal at any time while in the Test Mode (even while the end user is using the telephone). Therefore, caution must be used to prevent service interruption or interference. The Test Mode provides status tests to check whether or not a station or CO line is in use.

Page 263 11.21 Allows the terminal to set a Calling Station Message for a station. The message will be set on -13- SECTION 100-816-600 MARCH 1993 CO LINE A IMDU OR EXT. MODEM DATA TOSHIBA STATION CO LINE B Digital Telephone XX CO-to-CO CONNECTION CO LINE C...

Page 264 (10 ~ 49). 12.02 Chain Speed Dial numbers can also be programmed using the Speed Dial Mode. See the Digital or Electronic Telephone User Guide for more information regarding chain Speed Dialing. 12.03 To program Speed Dial numbers, enter the REPT mode per Paragraph 7 of this section.

Page 265 Program 77-1 , LED 14. If using the IMDU for remote programming, go into Program 77-1 and turn button/LED 14 on as shown in steps 9, 10, and 11. If this is not completed, remote programming must be reactivated locally from the programming digital or electronic telephone. REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES...

Page 266 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 STATION SPEED DIAL, SPEED DIAL MEMO, VM ID CODES INITIALIZATION STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 92 Press CR. Enter 1. Enter button/LED number: 0 1.

Page 267 SYSTEM SPEED DIAL, SPEED DIAL MEMO INITIALIZATION STEP ACTION Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 92 Press CR. Enter 2. Enter button/LED number 0 1. Change LED 01 to “ON” by entering Y. Press SPACE three times.

Page 268 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 LCD CHARACTER MESSAGE MEMORY INITIALIZATION STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 92 Press CR. Enter 3. Enter button/LED number 0 2. Change LED 02 to “ON”...

Page 269 STEP ACTION Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 92 Press CR. Enter 4. Enter button/LED number 0 2. Change LED 02 to "ON" by entering Y. Press SPACE two times. Change key 04 to "ON"...

Page 270 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 DIGITAL TELEPHONE VOLUME LEVEL INITIALIZATION STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 92 Press CR. Enter 5. Enter 0 1; change button/LED 01 to "ON" by entering Y.

Page 271 CALL FORWARD BACKUP RAM INITIALIZATION STEP ACTION Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 92 Press CR. Enter 9. Enter button/LED number 0 3. Change LED 03 to "ON" by entering Y. Press SPACE.

Page 272 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 STEP Enter the Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 03 Press CR. Enter the Slot Number Refer to the System Record Sheet and enter the desired slot number.

Page 273 SOFTWARE CHECK/REMOTE MAINTENANCE—SECURITY CODE STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 00 Press CR. To Check Software Version Enter Action Code 0 . System will display the system's software version. Press CR.

Page 274 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION

100-816-600 MARCH 1993 STEP Enter the Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 01 Press CR. Enter the Physical Port Number Enter the desired physical port number. Example: Port number 01, enter 0 1.

Page 275 PORT/STATION NUMBER ASSIGNMENT STEP Enter the Program Mode At the >MODE prompt enter P R O G CR. Enter Program Number 04 Press CR. Enter the Logical Port Number Refer to the System Record Sheet and enter the desired logical port number. Example: Port number 01, enter 0 1.

Page 276 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 TYPE 1 PROGRAM PROCEDURE EXAMPLE (PROGRAMS: 10-1, 10-2, 10-3, 15, 16, 42-0, 77-1, 77-2) STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number Refer to the record sheet and enter the desired program number.

Page 277 TYPE 2 PROGRAM PROCEDURE EXAMPLE (PROGRAMS: 20, 30, 31, 35, 40, 41, 43, 79, 81 ~ 89) STEP ACTION Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number Refer to the record sheet and enter the desired program number. Example: Program 30, enter 3 0, press CR.

Page 278 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 SYSTEM ASSIGNMENTS – BASIC TIMING STEP Enter the Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 12 Press CR. Check the record sheet and enter the program code that is required.

Page 279 Refer to the System Record Sheet, and enter the required port number for the PDIU-DS. Example: port 04; Enter: 0 4. Press #. The system will display the presently selected standard telephone port number. Refer to the System Record Sheet, and enter the required standard telephone port number.

Page 280 Press CR. Refer to the System Record Sheet and enter the required DSS console number (1 ~ 2). The system will display the telephone to which the DSS console is assigned. Example: DSS console number 1 is assigned to telephone number 1.

Page 281 DSS CONSOLE BUTTON ASSIGNMENTS STEP ACTION Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number Press 2 9 CR. Enter Console Number and Buttonstrip Group Number Press Button Group Number (1 ~ 3) Console Number (1 ~ 2) Enter the 2-digit Button Number to be Programmed (01 ~ 20): (current feature code displays...

Page 282 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 STEP Enter the Program Mode At the >MODE prompt, enter P R O G CR. Enter the Program Number 32 Press CR. Refer to the record sheet and enter the required port number. Example: Port 01, enter 0 1.

Page 283 STEP ACTION Enter the Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 34 Press CR. Refer to the record sheet and enter the required port number. Example: Port 05, enter 0 5. Press #. The present data will be displayed. Refer to the record sheet and enter the required timing.

Page 284 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 RING TRANSFER (CAMP-ON) RECALL TIME STEP Enter the Program Mode At the >MODE prompt, enter P R O G CR. Enter the Program Number 37 Press CR. Refer to the System Record Sheet and enter the required port number.

Page 285 DIGITAL AND ELECTRONIC TELEPHONE BUTTONSTRIP TYPE STEP ACTION Enter the Program Mode At the >MODE prompt, enter P R O G CR. Enter the Program Number 38 Press CR. Refer to the System Record Sheet and enter the required port number. Example: Port 00, enter 0 0.

Page 286 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 STEP Enter the Program Mode At the >MODE prompt, enter P R O G CR. Enter the Program Number 39 Press CR. Refer to the System Record Sheet and enter the required port number. Example: Port 00, enter 0 0.

Page 287 STEP ACTION Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter

Program Number 42 Press CR. Refer to the System Record Sheet and enter the required PBX group number (1 ~ 8). System will display present PBX access code. Refer to the System Record Sheet and enter the required access code.

Page 288 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 SMDR OUTPUT/ACCOUNT CODE DIGIT LENGTH STEP Enter Program Mode At the >MODE prompt, enter PROGCR Enter Program Number 60 Press SMDR Threshold Time Enter: Item code 2. The system will display either "0" or "1". "0" indicates that the threshold time is set at 0.1 seconds.

Page 289 STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 69 Press CR. Refer to the System Record Sheet, and enter the required code number (000 ~ 299). Example: code number 001; Enter: 0 0 1. The system will display the present account code number assigned to 001.

Page 290 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 VERIFY ACCOUNT CODE/TOLL RESTRICTION ASSIGNMENT STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 70 Press CR. Refer to the System Record Sheet, and enter the required code number (000 ~ 299).

Page 291 CO LINE SPECIAL RINGING ASSIGNMENTS-DISA/IMDU/ NIGHT RINGING OVER EXTERNAL PAGE STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 78 Press CR. Refer to the System Record Sheet and enter the feature number for the feature to be programmed.

Page 292 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 DIGITAL AND ELECTRONIC TELEPHONE RINGING TONES STEP Enter Program Mode. At the >MODE prompt, enter P R O G CR. Enter Program Number 80 Press CR. Refer to the System Record Sheet and enter the required port number.

Page 293 STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 93 Press CR. Enter Action Code 1 Refer to the System Record Sheet and enter the appropriate CO line number. Example: CO line 2, enter 0 2. The system will display previously entered identification characters (up to 16 characters).

Page 294 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 TOLL RESTRICTION TRAVELING CLASS OVERRIDE CODE ENTRY STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 44 (Do not enter A or B) Press CR.

Page 295 STEP Enter the Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 45 Press CR. Enter the number 2. Refer to the record sheet and enter the required CO line number. Example: CO line 01, enter 0 1. The system will display N or Y to define if the LED is on or off.

Page 296 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 STEP Enter the Program Mode At the >MODE prompt, enter P R O G CR. Enter the Program Number 45 Press CR. Refer to the System Record Sheet and enter 8 or 9 for the desired code number.

Page 297 TOLL RESTRICTION ALLOWED/DENIED OFFICE CODES ASSIGNED BY CLASS STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 46 Press CR. Enter class number (1 ~ 4). Enter 6, 7, or 8 SPACE. •...

Page 298 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 TOLL RESTRICTION CLASS PARAMETERS STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 46 Press CR. Refer to the System Record Sheet and enter the Toll Restriction class number (1 ~ 4).

Page 299 TOLL RESTRICTION EXCEPTION OFFICE CODES ASSIGNED BY AREA CODE STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 47 Press CR. Enter exception table (1 ~ 8) and press 1. Refer to the System Record Sheet and enter the required area code and press CR.

Page 300 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 STATION TOLL RESTRICTION CLASSIFICATION STEP Enter the Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 48 Press CR. Refer to the System Record Sheet and enter the required port number.

Page 301 STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 50 Press CR. Enter the number 2. The system will display the last area code programmed. Refer to the System Record Sheet and change if required.

Page 302 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 50 Press CR. Enter the number 4 The system will display the present LDI route number. Refer to the System Record Sheet and change if required.

Page 303 STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 50 Press CR. Enter the number 6 The system will display the present dial zero timeout. Refer to the System Record Sheet and change if required. Example: 10, enter 1 0.

Page 304 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 LCR OFFICE CODE EXCEPTIONS FOR SPECIFIED AREA CODE STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 52 Press CR. Define Route Plan Number Refer to the System Record Sheet and enter the exception table number (1 ~ 8).

Page 305 STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 53 Press CR. Define Route Plan Number Refer to the System Record Sheet and enter the route plan number (1 ~ 8). Example: Route Plan 1, enter 1. Define Schedule Number Refer to the System Record Sheet and enter the required schedule number (1 ~ 3).

Page 306 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 54 Press CR. Enter Route Plan Number Refer to the System Record Sheet and enter the required route plan number (1 ~ 8).

Page 307 STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 55 Press CR. Enter Modified Digits Table Number Refer to the System Record Sheet and enter the modified digits table number (1 ~ 6). Example: Enter modified digits table number 1, enter 1.

Page 308 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 55 Press CR. Enter Modified Digits Table Number Refer to the System Record Sheet and enter the required modified digits table number (1 ~ 6).

Page 309 STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 55 Press CR. Enter Modified Digits Table Number Refer to the System Record Sheet and enter the required modified digits table number (1 ~ 6). Example: Enter table number 1, enter 1.

Page 310 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 STEP Enter Program Mode At the >MODE prompt, enter P R O G CR. Enter Program Number 56 Press CR. Enter Port Number Refer to the System Record Sheet and enter the required port number, Example: Port 01, enter 0 1.

Page 311 STEP Enter the Data Dump Mode At the >MODE prompt, enter D U M P CR. To Output Speed Dialing Data Enter R E P ---or--- R E P = A L L or S Y S = Port number for individual station speed dial. To Stop Printout at Any Time Enter DELETE CR at the same time.

Page 312 At any time, enter m 0 q (lower case). NOTES: 1. To cancel a message set via Mode 95, use Mode 97 procedure. 2. [M] represents the message entered. 3. DKT = digital telephone; EKT = electronic telephone. TABLE RM-BO MODE 95 ACTION...

Page 313 1. To cancel a message set via Mode 95, use Mode 97 with any message number in step 4 and skip step 5. 2. [M] represents the message entered. 3. DKT = digital telephone; EKT

= electronic telephone. REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES TABLE RM-BP...

Page 314 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 REMOTE CALLED STATION MESSAGING (ADD/REVIEW/CHANGE) STEP Enter the Message Mode At the >MODE prompt, enter M E S G CR. To Add Or Review a Called Station Message Set the terminal keyboard to the lower case (cap lock off) and enter m 9 4.

Page 315 To Exit the Message Mode At any time, enter m 0 p (lower case). NOTES: 1. [M] represents the message entered. 2. DKT = digital telephone; EKT = electronic telephone. REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES TABLE RM-BR MODE 96 ACTION...

Page 316 Enter T K X X K 0 1 A A A AAA = 1, 2, or 3-digit CO line access code and = telephone number. To Access A CO Line (via CO Line Button) and Dial Out Enter T K X X K Y Y YY = CO line number.

Page 317 Call Remote Station B (from SEKT XX and CO line YY) Enter T K X X K Y Y = station B's telephone number) Answer station B. NOTE: If the system is equipped with Music-on-hold, go to step 4. If the line must be tested via a CO-to-CO connection, go to step 6.

Page 318 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 SYSTEM DATE/DAY/TIME SETTING PROCEDURE STEP Enter the Test Mode At the >MODE prompt, enter T E S T CR. To Set Date Enter T K 0 0 K 0 1 6 5 1 Y Y M M D D # CR. To Set Time Of Day Enter T K 0 0 K 0 1 6 5 2 H H M M S S # CR.

Page 319 ... . System speed dial location (90 ~ 99) (Refer to Digital or Electronic Telephone User Guide for information regarding chain dialing.) Special Entries: F=Flash; P=1.5 or 3-sec Pause (Prog. 12);...

Page 320 INITITAILIZATION PROGRAMS System Programs (90) Station Speed Dial, VM I.D. Codes (92) System Speed Dial (92) LCD Messages (92) Timed Reminders (92) Digital Telephone Volume Level (92) Call Forward Backup (92) PCB Slot Assignments (03) PROGRAM PROGRAM TYPE TYPE 1...

Page 321 REMOTE ADMINISTRATION AND MAINTENANCE PROCEDURES SECTION 100-816-600 MARCH 1993 MESSAGE RECORD SHEET—Use several sheets if necessary MESG.#_____ MESG.#_____ MESG.#_____ MESG.#_____ MESG.#_____ MESG.#_____ MESG.#_____ MESG.#_____ MESG.#_____ MESG.#_____ -71-...

This manual is also suitable for:

Strata dk8