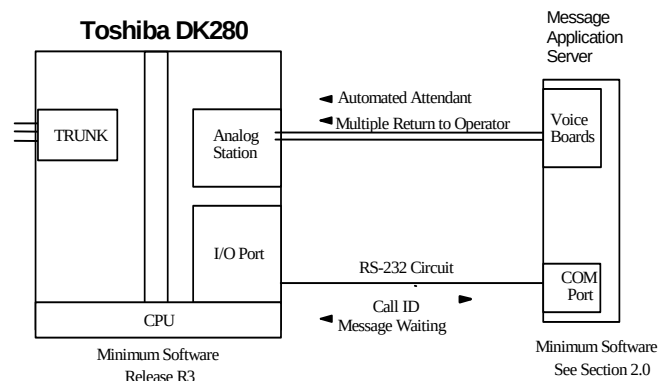


Configuration Note 88017 – Version I (1/10)

Toshiba DK280/424 with SMDI



With RS232 /direct Serial integration, call information is transmitted over a digital RS232 link between the PBX and the MAS.

MAS Requirements

¹Release Note:

Should features of the integration not function optimally when integrated to a PBX or MM that may be operating on an unsupported software release as defined Section 2.0 and 3.1, customers will need to upgrade their PBX and/or MM to a supported software release.

PBX hardware requirements

1.0 METHOD OF INTEGRATION

With RS232 /Direct Serial integration, call information is transmitted over a digital RS232 link, between the DK280 PIOU card and the Avaya Message Application Server (MAS). Voice communications are provided over separate analog lines on the DK280 that connect to the MAS. When an incoming call is received, it is accompanied by a digital message from the DK280 containing call information. The MAS then answers the call and plays the appropriate greeting. Message-Waiting Indication is set and canceled by sending a digital message over the RS-232 link to the DK280/424.

2.0 AVAYA MESSAGE APPLICATION SERVER REQUIREMENTS

- **Dialogic D/41 or D/120 cards** (4 and 12 ports/cards)
- **Releases ¹: 1.1, 2.0, 3.x, 4.0, 5.x**

3.0 PBX HARDWARE REQUIREMENTS

- **RSTU** - Analog Station Card, Provides 8 single line appearances. Need one station port per MAS port
- **PIOU** - Options card, provides SMDI link, 1 per system.
- **RRCS 4, 8 or 12 circuit** - DTMF receiver card, 1 per system.
- **PPTC1A** - SMDI Cable, 1 per system

NOTE: If the MAS is not co-located with the DK280, it will be necessary to use line drivers for the RS-232 link. The customer must provide the necessary hardware:

- **Cables:**
 - RJ11 four-wire telephone cord, one per MAS port

3.1 PBX SOFTWARE REQUIREMENTS

- Minimum Software ^{1 (see pg 1)}; Release R3
- Simplified Message Desk Interface (SMDI) 1991 Version

4.0 SUPPORTED INTEGRATION FEATURES

[✓] Items are supported

System Forward to Personal Greeting

All Calls	[✓]
Ring/no answer	[✓]
Busy	[✓]
Busy/No Answer	[]

Station Forward to Personal Greeting

All Calls	[✓]
Ring/no answer	[✓]
Busy	[✓]
Busy/No Answer	[]

Auto Attendant	[✓]
Call Me	[✓]
Direct Call (Mode Code #00)	[✓]
External Call ID (ANI)	[]
Find Me	[]
Internal Call ID	[✓]
Message Waiting	[✓]
Multiple Call Forward	[✓]
Multiple Greetings	[]
N+1	[]
Outcalling	[✓]

4.1 DISCONNECT TYPE

Disconnect is achieved by a “D” Tone sent from the switch. For proper external disconnect supervision, ISDN or Loop start CO lines (with a Loop disconnect clear time set to 100ms) are recommended.

IMPORTANT: PBX options or features not described in this Configuration Note are not supported with this integration. To implement options/features not described in this document, please contact the Avaya Switch Integration product manager.

PBX software requirements

Supported integration features

Disconnect Type

Programming PBX system parameters

5.0 CONFIGURING THE TOSHIBA DK 280 TO INTEGRATE

Before you begin programming, it is recommended that a hard copy of the customer database be obtained to verify existing programming.

5.1 TOSHIBA DK280 SYSTEM PROGRAMMING

Refer to the Programming section in the Toshiba DK280 manual for information on entering, saving, and exiting database programming.

Program 03 Flexible PCB Cabinet and Slot Assignments.

To properly activate DTMF receivers, you need to assign the appropriate code for your RTCU slot. If you have a 4 circuit RRCS, assign code 92, for an 8 circuit RRCS assign code 93, for a 12 circuit RRCS, assign code 94. Program as follows:

enter-S03H-S-__ - __ -H- exit [Turn System Power OFF (5 sec) then ON]
 ↑ ↑
 Slot Number PCB Code

Identify the Serial (PIOU) card that will be used for the SMDI link, assign the PCB slot as code 43

enter-S03H-S-__ - __ -H- exit [Turn System Power OFF (5 sec) then ON]
 ↑ ↑
 Slot Number PCB Code

Program 04 Logical Port Intercom Number Assignment.

Assign extension numbers for your MAS ports as follows:

Note: The DK280 automatically assigns extension numbers and this procedure is optional.

enter-S04H-S-__ # __ -H-exit
 ↑ ↑
 Logical Port Number Station Number

Program 10-1 System Assignments, Part 1

The following should be enabled: (LED ON)

- 01 Tone First (from DKTs and EKTs)
- 04 Exchange line DTMF signal time 160ms
- 07 Ring Transfer of CO Line Allowed
- 08 Alternate Point Answer
- 09 Exclusive Hold Allowed
- 18 Ring Detect Time Normal

enter-S10H-S-1- __ -H-exit

↑

Turn LEDs listed above ON

Program 10-2 System Assignments Part 2

The following should be enabled (LED ON):

- 01 Tone First (from DSS Console)
- 04 MW cancel from VM: RS232 or dial # **6 4 + [DN]**
- 02 Hunt/C.F. override from DSS console's phone
- 11 No DTMF Tone Return
- 15 External Page included with all call page
- 16 Executive Override Warning Tone/ON

enter-***#1*2*3-Spkr10Hold-Spkr2 __ Hold-Spkr ## Hold - Spkr # # Hold

Select 2 ↑

Buttons LEDs↑

Light LEDs as defined by the table above

Program 10-3 System Assignments Part 3

The following must be enabled: (LED ON)

- 10 SMDI station number digit length (HEX-1)
- 11 SMDI station number digit length (HEX-2)
- 14 SMDI standard protocol
- 18 Auto Attd: Normal Ringing Pattern After Camp-On

enter-***#1*2*3-Spkr10Hold-Spkr 3-__-Hold-Spkr # # Hold-Spkr # # Hold

Select 3 ↑

Turn LEDs listed above ON ↑

The following **must** be disabled: (LED OFF)

- 12 SMDI station number digit length (HEX-4)
- 13 SMDI station number digit length (HEX-8)
- 09 SMDI 1985 Version

Program 13 Defining the Message Center

The **lowest** numbered MAS port should be entered for the system message center.

enter-S13H-S1- __ -H-exit

↑

PORT =Lowest numbered MAS Port

Program 15 Exchange line attributes

The following should be enabled for all analogue trunks, this ensures positive CO disconnect: LED ON for selected trunks:

0	ARTS	Auto release in talk state
3	AROH	Auto release on hold
4	AROH time	Auto release on hold time 95ms

enter-S15H-S- __ - __ -H-exit



Selection code



Exchange line buttons

Program *32 Voice mail Message Center port for SMDI

Enter the Voice Mail Message Center port for all stations that are using Voice Mail.

enter-S*32H-S- __ # __ -H-exit



Port Number



VM Port = First MAS Port

This procedure will assign the first MAS port as the Voice Mail Message Center for the Subscriber Stations.

5.2 CONFIGURING THE SINGLE LINE PORTS

Program 31 Station Class of Service

Enable the following features for the MAS ports: (LED ON)

- 01 Handsfree Disabled
- 04 VM to VM call Blocking *See Note below*
- 05 VM Group 1
- 09 VM (No Conference)
- 15 Toshiba VP Integration (A/D tones)
- 16 Receive VM ID Code
- 17 End to End Signal RCV (VM)
- 18 Block Executive/Privacy Override
- 20 Toshiba VP or strategy (B + Station No.)

enter-S31H-S- __ # __ -H-exit



Port Number



Key LEDs

Note: VM to VM Blocking is a “nice to have” security feature, but not really required for integration with MAS. If VM to VM Call Blocking is enabled, Accucall must be run manually. We recommend leaving this parameter disabled until after Accucall has been run. For SMDI LED’s 15, 16, 19 & 20 must be OFF.

Program 33 Station Hunting

Program MAS Hunt Group, *ensure all Voice server ports are entered*. (this allows calls to be directed to the 1st port only, if busy the DK280 will forward the call onto the 1st idle port)

enter-S33Hold -Spkr -__-#-__-Hold - Spkr ## Hold - Spkr ## Hold
 ↗ ↖
 Port Number Hunt to Port Number

Program 37 Exchange line ring transfer (camp-on) recall time

Program MAS ports camp-on time out to 999 seconds. This ensures that MAS controls call transferees.

enter-S37H-S-__-#-__-H-exit
 ↗ ↖
 Port Number Camp-on time (**set to 999**)

Program 81 CO Lines/Station Ringing Assignments (Optional)

Program CO lines to ring to Auto Attendant

You have three time slot assignments:

Day	81	Immediate
	82	12 second delay
	83	24 second delay
Day 2	84	Immediate
	85	12 second delay
	86	24 second delay
Night	87	Immediate
	88	12 second delay
	89	24 second delay

Program as follows:

enter-S8__-H-S__-#-__-H-exit
 ↑ ↑ ↖
 Select 1-9 VM Port LEDs=Trunks

If a CO line must call forward or hunt from a station, the line must be assigned to ring **that station only**.

5.3 CONFIGURING SUBSCRIBER STATIONS

Program 39 Flexible Key Assignment

Assigns pre-programmed features and key mapping to selected ports or stations.

You must enable the * key on digital phones by programming a flexible key for Speedial (*).

enter-S39H-S-____#____-____-H-exit
 ↗ ↑ ↖

Port Number Press LED Feature Code 497 = Speedial

Enter Station port number or range to be programmed. Press the LED\Key to be defined. Enter the Feature Code to be assigned to the LED\Key.

Assign the following Features to keys at the Station as needed.

I.E.: Assign 457 to a key for Call Forward Busy/NA
 Assign 458 to a key for Call Forward No Answer
 Assign 459 to a key for Call Forward Busy
 Assign 486 to a key for Call Forward All Calls Fixed

Note: the extension user entering a numeric code on their handset can also select all these features directly.

The following station programming is optional and should be set as customer needs dictate:

Program 36 Fixed Call Forward (this must be programmed if you are using key 486, Call Forward All Calls Fixed) *See note Section 8.3*

Assigns fixed call forward destination to a station user

enter-S36H-S-____#____H-exit
 ↗ ↖

Port Number Forward VM port number

Program 31 Station Class of Service

enter-S31H-S-____#____-H-exit
 ↗ ↖

Port Number Key LEDs

LED 01 Handsfree Disabled (**LED OFF**) will allow for hands free speaker phone use

Program 32 Automatic Preference

Setting automatic preference to 1-01 will give users intercom dial tone when they press the SPKR key without going off hook on the handset.

enter-S32H-S-____#____-____-H-exit
 ↗ ↑ ↖

Port Number	Data	Automatic Preference Code:
	0 = Disable	00 = No Selection
	1 = Enable	01 = Intercom
		02 = Lowest CO line

Configuring the MAS

6.0 CONFIGURING THE MESSAGE APPLICATION SERVER

Configuring the MAS platform for proper PBX integration requires configuring several menus accessed within the **Voice Mail System Configuration** application.

- Access the **Voice Mail System Configuration** application from the MAS program group.
- Access to the **Voice Mail Domain**, and then select **PBXs – Dialogic Other**
- Access the **General** tab and set the following values:
 - **Go Off Hook when Port Disabled = Enable by checking the box**
 - Pause before Digits = 500**
 - Pause Interval for Comma in Dial String (ms) = 1000**
 - DTMF Inter-Digit Delay during Dialing (ms) = 80**
 - DTMF Length during Dialing = 80**
 - DTMF Length during Detection (ms) = 32**
- Access the **Call Transfer** tab and set the following values:
 - **Transfer Mode = Blind**
 - Transfer Prefix Code = &,XN**
 - Transfer Complete Code = Leave Blank**
 - Transfer Release Code when Busy = &**,
 - Transfer Release Code when No Answer = &**,
 - Transfer Release Code when Reject = &**,
 - Flash Time Interval (ms) = 500**
 - Enable Call Progress = Enable by checking the box**
 - Start Delay for Call Progress (ms) = 1000**
- Access the **Hangup Detection** tab and set the following values:
 - **Maximum Continuous Tone before Hanging Up (ms) = 6000**
 - Hangup String = D**
 - Hangup String Timeout (ms) = 0**
 - Minimum Duration For Drop in Loop Current (ms)= 300**
 - Maximum Silence before Hanging Up (ms) = 6000**
- Return to the **Voice Mail System Configuration** window, and select **Voice Servers** and access **Telephony Interface (Analog)**.
- Select the **Analog** tab to configure the selected port(s) on your Voice Server as follows:

- **Playback Volume = 2 (Default)**
- **Number of Ports = Enter the number of ports in your system**

Note: The MAS service must be restarted to allow port enabling

- Enable the port(s) by checking the **Box** field next to the Port field
 - **Extension** = Enter the extension number assigned to each port
 - **Incoming Ring Count = 1**
 - **Primary ID** = Enter the Logical Terminal Number (LTN) for each port (normally, LTN start with **0XXX** for **first port**, **0XXX** for **second port**, **0XXX** for **third port**, etc. *0= 1st Phantom digit in a 3 digit number plan, XXX= the valid extension number in a 3 digit plan, when using 4 digit or greater number plan enter actual extension number*)..
 - **Secondary ID** = Enter the Message Desk (MD) number assigned to the SMDI link (normally, the MD is **001**) for all ports.
- Return to the **Voice Servers** section and access **PBX Integration**.
 - Access the **General** tab. Select **Serial** as the integration type.
Max Time to Wait for Serial and Remote Integration Data (sec) = 6

Note: The value for this field varies according to the PBX's traffic. It might be necessary to use the default value of '18' or higher. The value that we use derives from our Product Quality Assurance lab environment test result.

- Access the **Serial General** tab and set the following values:
- **Packet Format = SMDI** (*Important: refer to section 8.5*)
Extension Field Length in Packet = Number of digits in the extension
Maximum Number of Remote Service Sessions = 0
Log Serial Packets = Enable by checking the box
- Access the **Serial Settings** button in the same tab and set the following values:
- **Line Speed (Bits per Second) = 1200**
Data Bits = 7
Stop Bits = 1
Parity = Even
Flow Control = None
Connector = COM1
- Return to the Voice Mail System Configuration window.
Access **PBX Type**. Select **Dialogic Other**

After making these changes, return to “Configuring the voicemail system” within the Message Application Server Installation guide. Ensure you are prompted to restart the Message Application Server services to apply these changes.

7.0 INSTALLING THE INTEGRATION LINK

☐ Connect the PPTC1A cable between the PIOU card on the DK280 and COM1 on the MAS. If the MAS is going to be co-located with the DK280 then line drivers are not required.

Note: It is the customer’s responsibility to provide gender changers if required.

8.0 CONSIDERATIONS/ALTERNATIVES

8.1 The Toshiba DK280 does not support internal station-to-station blind transfers.

8.2 Outside lines and phantom extensions

If an outside line is programmed to ring immediately on a Voice Mail port, and the station it transfers to is programmed to forward on Busy or All Calls back to the same Voice Mail port, the call will camp on the station until the recall timer elapses and the port that transferred the call is free. We recommend that you program a “Phantom” extension that is set to forward All Calls to the first Voice Mail port. This will be the forwarding target for all subscribers’ stations.

Programming a “Phantom” extension:

For this example we will use 239 for the “Phantom” extension and 200 for the first Voice Mail port.

Program extension 239 to Call Forward All Calls to 200.

Subscribers will forward their phones to extension 239.

The Toshiba will allow you to program an extension with a Station Card installed and will keep the extensions programming when the Station Card is removed, thus creating a “Phantom” extension.

8.3 Call Forward considerations for DND use

If you use option 498 (DND/do not disturb) as a flexible key assignment, you must use either Call Forward Busy or Call Forward Busy/No Answer in conjunction with it. If you do not the caller will hear DND tone and will not forward to Voice Mail.

Important notes regarding this integration

8.4 Loss of data link reverts the MAS to interface mode. Calls can still be forwarded to the MAS ports but will not have call ID.

8.5 Procedure for adding more than one Message Application Server (MAS) when using RS-232 integrations:

The following steps are for MAS 1 only:

- 1) The first MAS is the only one that will have the RS-232 link from the PBX connected to COM1
- 2) MAS 1 will also have the appropriate **Serial** integration (i.e. Serial General, NEC/Ericsson) according to the Configuration Note or the PBX used.
- 3) Finally, within the **Serial** integration programming of MAS 1, configure the **Maximum Number of Remote Service Sessions**. For example, if there are 2 additional MAS servers, then the value should be 2.

- The following steps are for the additional MAS servers only:

- 1) The remaining MAS servers will not have any integration link or any other cabling from the PBX or external devices.
- 2) These MAS servers will have the **PBX Integration** programmed as “**Remote**.”
- 3) Next, access the **Remote** tab from the **PBX Integration** General page and configure the 2 fields (**Primary Remote Server Name** and **Secondary Remote Server Name**) with MAS #1’s info. You can not get integration data from any other MAS, so it must be MAS 1 only.

After concluding these steps, save them, and continue with the remaining of the programming detailed on either the Configuration Note and/or the MM Installation Guide.

CHANGE HISTORY		
Revision	Issue Date	Reason for Change
DRAFT 0.1	01/06/03	Initial release for review/validation
DRAFT 0.2	03/10/03	Brand name change
DRAFT 0.3	01/13/04	Updated to meet MM Release 1.1
Version A	03/17/04	GA
Version B	09/16/04	Updated to meet Release 2.0
Version C	04/11/06	Updated to meet Release 3.0

Version D	02/09/07	Added consideration 8.5
Version E	05/05/08	Updated to support MM 4.0
Version F	05/16/08	Updated diagram page 1
Version G	2/02/09	Updated to support MM 5.0
Version H	07/09	Updated to support MM 5.1
Version I	01/19/10	Added note indicator to titles of Section 2.0 and 3.1; added corresponding note in sidebar; removed word "supported" in same sections for MAS releases and PBX Software releases.

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