



## Avaya Solution & Interoperability Test Lab

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# Application Notes for Dictaphone Freedom Voice Recording Systems with Avaya Digital Phones and Avaya Communication Manager - Issue 1.0

### Abstract

These Application Notes describe the configuration steps required for Dictaphone Freedom Voice Recording Systems – the Combo system and the Freedom FT - to successfully interoperate with the Avaya Digital Phones (6400 and 8400 series) connected to Avaya S8700 Media Server and Avaya G600 Media Gateway running Avaya Communication Manager. Features and functionality were validated and performance testing was conducted in order to verify operation under load. Information in these Application Notes has been obtained through interoperability compliance testing and additional technical discussions. Testing was conducted via the Developer*Connection* Program at the Avaya Solution and Interoperability Test Lab.

# 1. Introduction

These Application Notes describe the compliance-tested configuration utilizing Avaya Digital telephones connected to Avaya S8700 Media Server with Avaya G600 Media Gateway and Dictaphone Freedom Voice Recording systems (the Combo system and the Freedom FT system). The Freedom Combo Recorder supports voice for up to 24 voice recording channels that are connected to the telephone lines being recorded and one integrated voice recorder card. For high channel recording densities or fault tolerant configurations, the Freedom FT recorder offers an array of up to 14 recorder cards in a chassis.

The compliance testing was performed for both the systems - the Combo system and the Freedom FT system. The digital lines connected to the telephones were tapped via a T-adaptor for the purpose of the voice recording.

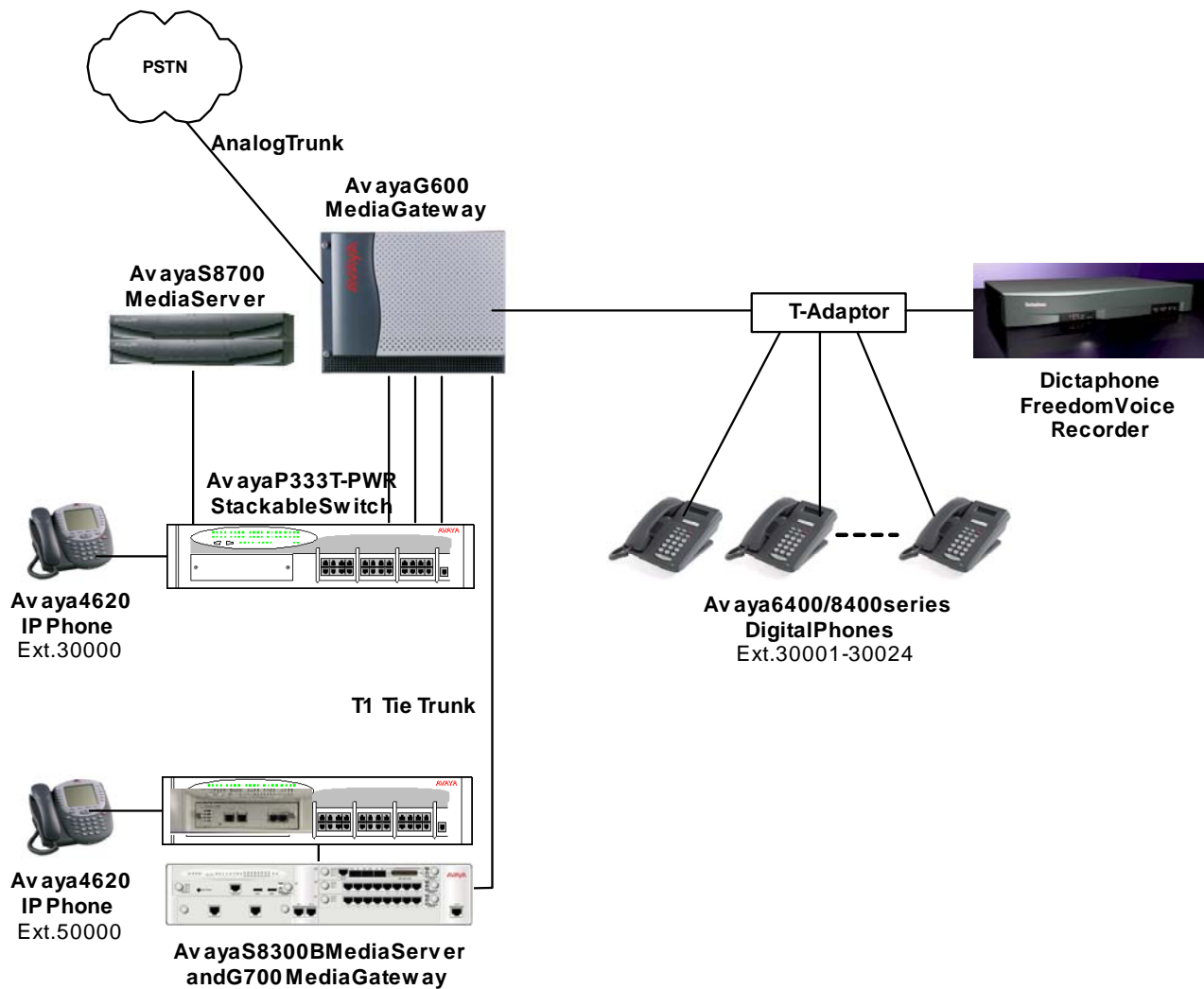
## 1.1. Sample Configuration

The tested configuration is shown in **Figure 1**.

A mix of Avaya 6400 and 8400 series digital phones are connected to the digital circuit packs in the Avaya G600 Media Gateway. The telephones lines are tapped and connected to the Freedom Voice Recorder system Telecom Block (not shown). Besides the internal calls that can be made using the digital stations and the IP telephone, a ground start Central Office trunk is connected to the G600 Media Gateway to make analog trunk calls. The T1 tie trunk to the Avaya S8300 Media Server and G700 Media Gateway enables making T1 calls to the stations behind the Avaya S8700 Media Server and Avaya G600 Media Gateway. The P333T-PWR stackable switch in this configuration is used to support connectivity of S8700 Media Server, G600 Media Gateway, and the IP telephone.

The Freedom Voice Recorder in **Figure 1** represents the Combo as well as FT Voice Recording system. These units were tested separately. Each system consists of 4 modules – the Freedom Telecom Block(s), the Digital Speech Converter (DSC-4) cards, the Freedom Recorder(s) and the Freedom workstation. The Combo unit is fully configured to connect 24 channels to an integrated Voice Recorder. The FT unit is configured for 24 channels as well, connecting the telephone channels to two Voice Recorder modules.

Note that these configurations are also applicable with other Avaya Media Servers and Media Gateways.



**Figure 1: Network Configuration Diagram**

## 2. Equipment and Software Validated

The following equipment and software/firmware were used for the sample configurations provided:

Equipment	Software/Firmware
Avaya 6400 and 8400 series, and CallMaster V and Call Master VI digital telephones	TN2224B Digital 2W DCP
Avaya S8700 Media Server/G600 Media Gateway	2.1 (R012x.01.0.411.7)
Avaya S8300 Media Server/G700 Media Gateway (for T1 tie trunks)	2.1 (R012x.01.0.411.7)
Dictaphone Freedom Combo Recorder	Model 5FA
Dictaphone Freedom FT <ul style="list-style-type: none"><li>Freedom FT Recorder Module</li><li>Freedom FT Dual Telecom Block</li><li>Freedom FT Chassis</li></ul>	PN 428591 Model 5SA Model 3AF
Freedom Telecom Block	2.0.13
Freedom Recorder	2.0.13
Freedom Recorder Workstation	2.0.2
Freedom DSC-4 Digital Interface Cards	DEFINITY_DIRECT_07c.emx

## 3. Configure Freedom Voice Recording System

In order to enable voice recording for the digital telephones, the digital communication line to each telephone is tapped, and the speech and the digital control messages are sent to the corresponding channels on the Dictaphone **Freedom DSC-4** Digital Interface card. The DSC-4 card (Digital Speech Converter) forms the interface between the digital telephone and the **Freedom Voice Recorder**. Each DSC-4 card supports 4 channels. The DSC-4 cards are installed in the **Freedom Telecom Block**. Each Telecom Block supports up to 6 DSC-cards connecting up to 24 digital telephone channels. The criteria for starting and stopping the voice recording for each telephone are configured for the corresponding channel on the DSC-4 card. The following criteria for starting and stopping of voice recording were tested for compliance with Avaya Digital telephones:

- Audio Mode - to start/stop recording when the voice path is opened/closed
- Lamp Mode - to start/stop recording when the call appearance green lamp goes on/off
- Record on Demand Mode - to start recording when the man-msg-wt button is pressed illuminating the associated LED and stop recording when that button is pressed again turning the LED off. Recording is enabled when the LED is lit and a call is in progress.

The retrieval and playback of the voice recordings is performed via the *Freedom Workstation*.

Configuring the parameters for both the Dictaphone Freedom Voice Recorder systems (the Freedom Combo and the Freedom FT) follow the same procedure(s). This section covers the procedures to configure the DSC-4 channels and the playback of the voice recordings.

### 3.1. DSC-4 Command Line Interface

Step	Description
<b>1.</b>	<p>The start and stop criteria in a DSC-4 card is programmed using a PC, via a Command Line Interface. This requires a null-modem. Each DSC-4 card has 4 channels. These channels are numbered 0-3 for each card. Connect the first DSC-4 card via the null-modem cable to the PC's COM port. Start a terminal emulation application on the PC, such as HyperTerminal, and use the settings indicated below:</p> <div data-bbox="272 789 1511 1003" style="border: 1px solid black; padding: 5px;"><pre>Bits per second: 57600 Data bits: 8 Parity: None Stop Bits: 1 Flow control: None</pre></div> <p>Press the &lt;Enter&gt; key on the keyboard. The DSC will send a prompt to the screen: -&gt; At the prompt, use the <b>prog</b> command to configure the start and stop criteria for each DSC channel. Repeat the procedure for the other DSC-4 cards to configure additional channels.</p>

## 3.2. Audio Start/Stop Mode

In this mode, the Freedom Voice Recorder starts the voice recording when the audio path opens and stops the voice recording when the audio path closes on a DSC-4 channel associated with a telephone.

Step	Description
1.	<p>The default setting for all the channels on the DSC-4 card is Audio start/stop. If you have to reconfigure a channel from any other mode, then clear the previous setting first, followed by setting to the Audio start/stop mode.</p> <p>In the following example,</p> <ul style="list-style-type: none"><li>• The command <b>prog 0 clear</b> clears all the settings for the first channel (Channel 0) on the DSC-4 card.</li><li>• The command <b>prog 0 audiostream set 1</b> enables the start of voice recording when the audio path opens and stops when the audio path is closed for the telephone associated with channel 0.</li><li>• The command <b>display 0 all</b> displays the settings for channel 0.</li></ul> <pre data-bbox="272 968 1544 1755">-&gt; prog 0 clear  -&gt; prog 0 audiostream set 1  -&gt; display 0 all  programming ch 00:  audiostream    : 1  hookstart     : 0  lampstart     :  lampstop      :  keystart      :  keystop       :  keyaudio      : off  rodlamp       : off  keycli        : 0 1 2  startmode     : 0 6  stopmode      : 1  bchannel      : 0  directaudio   : off  lock          : unlocked</pre>

### 3.3. Lamp Start/Stop Mode

In this mode, the Freedom Voice Recorder starts the voice recording when the lamp associated with a call appearance button on the telephone comes on and stops the recording when the lamp goes out.

**Note:** In order to continue recording when the call is merged into a conference, the lamp associated with an available call appearance button should also be enabled for the lamp start/stop mode, because the conference call shifts to the next available call appearance.

Step	Description
1.	<p>In the following example,</p> <ul style="list-style-type: none"><li>• The command <b>prog 3 audiostream set 0</b> clears the Audio mode setting for the last channel (Channel 3) on the DSC-4 card.</li><li>• The command <b>prog 3 lampstart set 0</b> enables the start of voice recording for the telephone when the first lamp (lamp 0) comes on for the telephone associated with channel 3.</li><li>• The command <b>prog 3 lampstop set 0</b> enables the stopping of voice recording for the telephone when the first lamp (lamp 0) goes off for the telephone associated with channel 3.</li><li>• The command <b>display 3 all</b> displays the settings for channel 3.</li></ul> <pre data-bbox="289 934 787 1192">-&gt; prog 3 audiostream set 0 -&gt; prog 3 lampstart set 0 -&gt; prog 3 lampstop set 0 -&gt; display 3 all  programming ch 03:  audiostream   : 0  hookstart    : 0  lampstart     : 0  lampstop     : 0  keystart     :  keystone     :  keyaudio     : off  rodlamp      : off  keycli       : 0 1 2  startmode    : 0 6  stopmode     : 1  bchannel     : 0  directaudio  : off  lock         : unlocked</pre>

Step	Description
2.	<p data-bbox="277 233 537 264"><b>Hold with two files</b></p> <p data-bbox="277 268 1528 449">When the telephone call is placed on Hold in lamp mode, the default behavior is that only one file is created for the voice recording and the recording continues during the hold. If two files are desired for the voice recording - one file for the voice recording before the hold and another file for the voice recording after the call is unheld, use the following example for setting <b>stopmode</b>. Refer to Section 5.2 Test Result for voice recording observations during Hold.</p> <ul data-bbox="298 491 1520 827" style="list-style-type: none"> <li>• The command <b>prog 2 audiostart set 0</b> clears the Audio mode setting for the third channel (Channel 2) on the DSC-4 card.</li> <li>• The command <b>prog 2 lampstart set 0</b> enables the start of voice recording for the telephone when the first lamp (lamp 0) comes on for the telephone associated with channel 2.</li> <li>• The command <b>prog 2 lampstop set 0</b> enables the stopping of voice recording for the telephone when the first lamp (lamp 0) goes off for the telephone associated with channel 2.</li> <li>• The command <b>prog 2 stopmode set 1 3</b> enables the stopping of voice recording if either the green lamp goes off or the green lamp is blinking on hold.</li> <li>• The command <b>display 2 all</b> displays the settings for channel 2.</li> </ul> <pre data-bbox="289 856 786 1751"> -&gt; prog 2 audiostart set 0  -&gt; prog 2 lampstart set 0  -&gt; prog 2 lampstop set 0  -&gt; prog 2 stopmode set 1 3  -&gt; display 2 all  programming ch 02: audiostart   : 0 hookstart    : 0 lampstart    : 0 lampstop     : 0 keystart     : keystop      : keyaudio     : off rodlamp      : off keycli       : 0 1 2 startmode    : 0 6 stopmode     : 1 3 bchannel     : 0 directaudio  : off lock         : unlocked </pre>

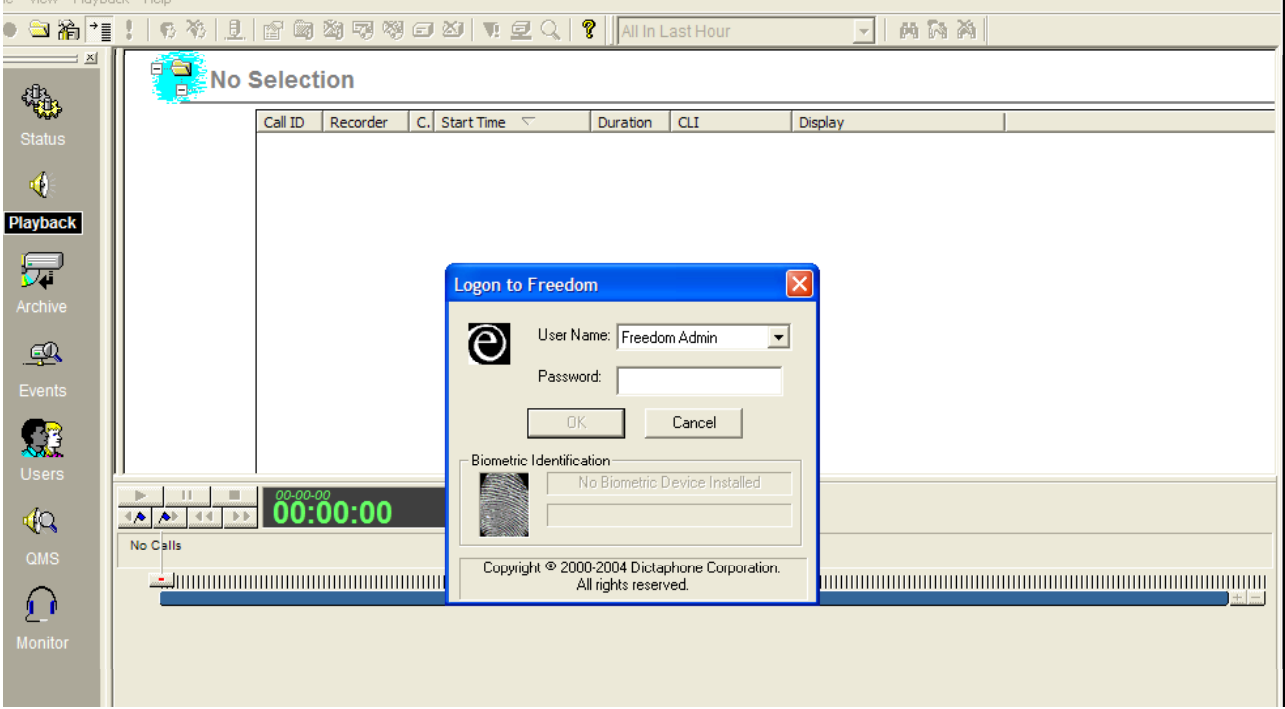


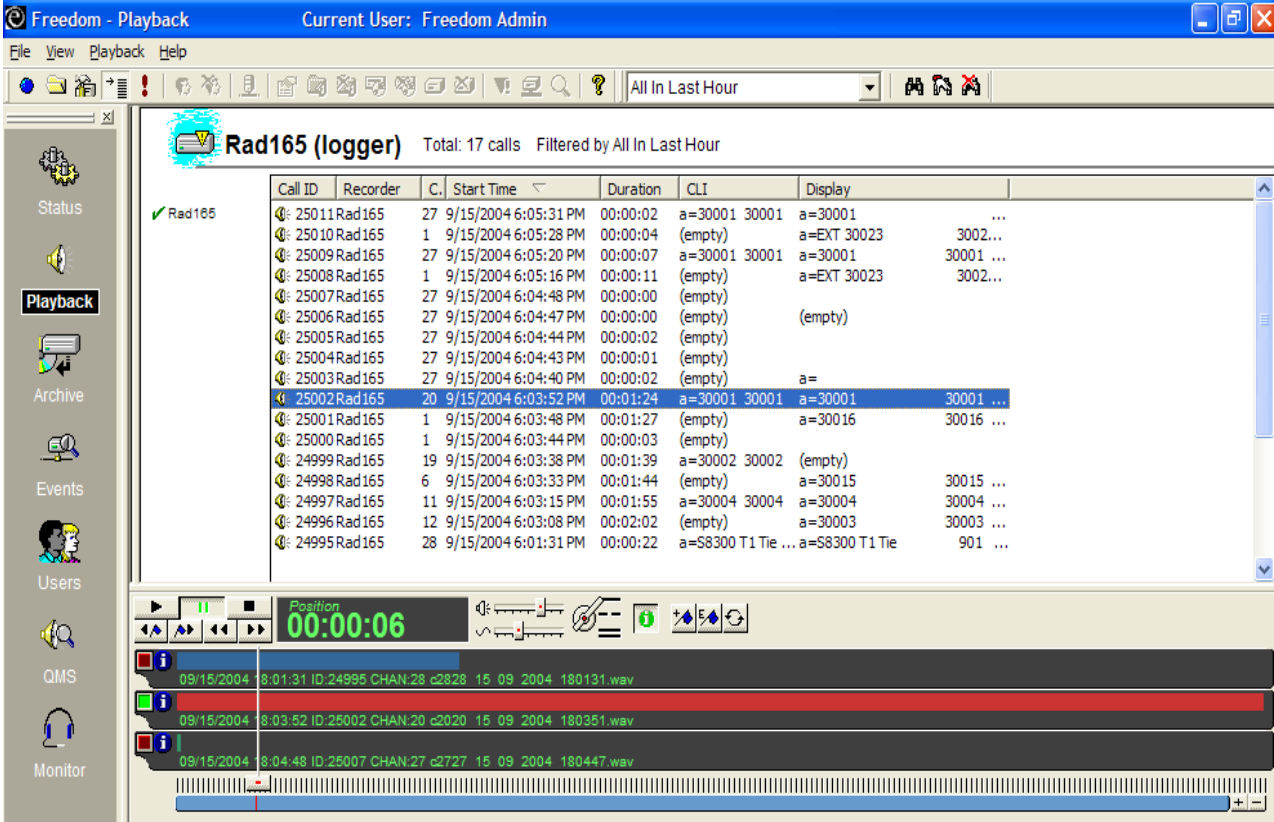
### 3.4. Record on Demand Mode

In this mode, the telephone user can enable/disable the voice recording on demand by pressing a pre-configured **Manual Message Waiting Indicator (man-msg-wt)** button on the telephone. Pressing the man-msg-wt button for the first time *enables* the voice recording feature in Audio start/stop mode . Pressing it again disables the voice recording feature. In order to make the record on demand work in this manner, the **rodlamp** must be configured for the associated DSC-4 channel. This feature works in conjunction with Audio start/stop mode only.

Step	Description
1.	<p>In the following example,</p> <ul style="list-style-type: none"><li>• The command <b>prog 3 audiostart set 1</b> enables the start of voice recording for the telephone on channel 3 when the audio path opens and stops when the audio path is closed.</li><li>• The command <b>prog 3 rodlamp set 3</b> enables the record on demand for channel 3.</li><li>• The command <b>display 3 all</b> displays the settings for channel 3.</li></ul> <pre data-bbox="289 793 787 1556">-&gt; prog 3 audiostart set 1  -&gt; prog 3 rodlamp set 3  -&gt; display 3 all  programming ch 03:  audiostart   : 1  hookstart    : 0  lampstart    :  lampstop     :  keystart     :  keystop      :  keyaudio     : off  rodlamp      : 3  keycli       : 0 1 2  startmode    : 0 6  stopmode     : 1  bchannel     : 0  directaudio  : off  lock         : unlocked</pre>

### 3.5. Playback Voice Recordings

Step	Description
1.	<p>Open the Freedom Workstation application on the PC and log in with the appropriate password.</p> 

Step	Description																																																																																																																														
2.	<p>Click on <b>Playback</b> and highlight the entry for a desired channel to playback. Double click to playback the voice recording.</p> <p><b>Note:</b> Each recorder supports up to 24 channels. The recorder channel numbers are in the range 1-12 and 17-28. The channels 1-12 map to the channels on the first three DSC-4 cards in a telecom block and the channels 17-28 map to the last three DSC-4 cards in a telecom block.</p> <p>In the following example, the voice recording for channel 20 in the Combo unit (with the duration of 1 minute and 24 seconds) is played back. The recording for channel 20 corresponds to the telephone connected to the 16<sup>th</sup> port of an Avaya digital circuit pack (TN2224B) via channel 3 on the 4<sup>th</sup> DSC-4 card. See Sections 4.1.1 and 4.1.2 for the Avaya TN2224B circuit pack and telephone station administration.</p>  <table border="1" data-bbox="545 877 1544 1276"> <thead> <tr> <th>Call ID</th> <th>Recorder</th> <th>C.</th> <th>Start Time</th> <th>Duration</th> <th>CLI</th> <th>Display</th> </tr> </thead> <tbody> <tr> <td>25011 Rad165</td> <td>27</td> <td>9/15/2004 6:05:31 PM</td> <td>00:00:02</td> <td>a=30001 30001</td> <td>a=30001</td> <td>...</td> </tr> <tr> <td>25010 Rad165</td> <td>1</td> <td>9/15/2004 6:05:28 PM</td> <td>00:00:04</td> <td>(empty)</td> <td>a=EXT 30023</td> <td>3002...</td> </tr> <tr> <td>25009 Rad165</td> <td>27</td> <td>9/15/2004 6:05:20 PM</td> <td>00:00:07</td> <td>a=30001 30001</td> <td>a=30001</td> <td>30001 ...</td> </tr> <tr> <td>25008 Rad165</td> <td>1</td> <td>9/15/2004 6:05:16 PM</td> <td>00:00:11</td> <td>(empty)</td> <td>a=EXT 30023</td> <td>3002...</td> </tr> <tr> <td>25007 Rad165</td> <td>27</td> <td>9/15/2004 6:04:48 PM</td> <td>00:00:00</td> <td>(empty)</td> <td>(empty)</td> <td></td> </tr> <tr> <td>25006 Rad165</td> <td>27</td> <td>9/15/2004 6:04:47 PM</td> <td>00:00:00</td> <td>(empty)</td> <td>(empty)</td> <td></td> </tr> <tr> <td>25005 Rad165</td> <td>27</td> <td>9/15/2004 6:04:44 PM</td> <td>00:00:02</td> <td>(empty)</td> <td>(empty)</td> <td></td> </tr> <tr> <td>25004 Rad165</td> <td>27</td> <td>9/15/2004 6:04:43 PM</td> <td>00:00:01</td> <td>(empty)</td> <td>(empty)</td> <td></td> </tr> <tr> <td>25003 Rad165</td> <td>27</td> <td>9/15/2004 6:04:40 PM</td> <td>00:00:02</td> <td>(empty)</td> <td>a=</td> <td></td> </tr> <tr style="background-color: #e6f2ff;"> <td>25002 Rad165</td> <td>20</td> <td>9/15/2004 6:03:52 PM</td> <td>00:01:24</td> <td>a=30001 30001</td> <td>a=30001</td> <td>30001 ...</td> </tr> <tr> <td>25001 Rad165</td> <td>1</td> <td>9/15/2004 6:03:48 PM</td> <td>00:01:27</td> <td>(empty)</td> <td>a=30016</td> <td>30016 ...</td> </tr> <tr> <td>25000 Rad165</td> <td>1</td> <td>9/15/2004 6:03:44 PM</td> <td>00:00:03</td> <td>(empty)</td> <td>(empty)</td> <td></td> </tr> <tr> <td>24999 Rad165</td> <td>19</td> <td>9/15/2004 6:03:38 PM</td> <td>00:01:39</td> <td>a=30002 30002</td> <td>(empty)</td> <td></td> </tr> <tr> <td>24998 Rad165</td> <td>6</td> <td>9/15/2004 6:03:33 PM</td> <td>00:01:44</td> <td>(empty)</td> <td>a=30015</td> <td>30015 ...</td> </tr> <tr> <td>24997 Rad165</td> <td>11</td> <td>9/15/2004 6:03:15 PM</td> <td>00:01:55</td> <td>a=30004 30004</td> <td>a=30004</td> <td>30004 ...</td> </tr> <tr> <td>24996 Rad165</td> <td>12</td> <td>9/15/2004 6:03:08 PM</td> <td>00:02:02</td> <td>(empty)</td> <td>a=30003</td> <td>30003 ...</td> </tr> <tr> <td>24995 Rad165</td> <td>28</td> <td>9/15/2004 6:01:31 PM</td> <td>00:00:22</td> <td>a=S8300 T1 Tie ...</td> <td>a=S8300 T1 Tie</td> <td>901 ...</td> </tr> </tbody> </table>	Call ID	Recorder	C.	Start Time	Duration	CLI	Display	25011 Rad165	27	9/15/2004 6:05:31 PM	00:00:02	a=30001 30001	a=30001	...	25010 Rad165	1	9/15/2004 6:05:28 PM	00:00:04	(empty)	a=EXT 30023	3002...	25009 Rad165	27	9/15/2004 6:05:20 PM	00:00:07	a=30001 30001	a=30001	30001 ...	25008 Rad165	1	9/15/2004 6:05:16 PM	00:00:11	(empty)	a=EXT 30023	3002...	25007 Rad165	27	9/15/2004 6:04:48 PM	00:00:00	(empty)	(empty)		25006 Rad165	27	9/15/2004 6:04:47 PM	00:00:00	(empty)	(empty)		25005 Rad165	27	9/15/2004 6:04:44 PM	00:00:02	(empty)	(empty)		25004 Rad165	27	9/15/2004 6:04:43 PM	00:00:01	(empty)	(empty)		25003 Rad165	27	9/15/2004 6:04:40 PM	00:00:02	(empty)	a=		25002 Rad165	20	9/15/2004 6:03:52 PM	00:01:24	a=30001 30001	a=30001	30001 ...	25001 Rad165	1	9/15/2004 6:03:48 PM	00:01:27	(empty)	a=30016	30016 ...	25000 Rad165	1	9/15/2004 6:03:44 PM	00:00:03	(empty)	(empty)		24999 Rad165	19	9/15/2004 6:03:38 PM	00:01:39	a=30002 30002	(empty)		24998 Rad165	6	9/15/2004 6:03:33 PM	00:01:44	(empty)	a=30015	30015 ...	24997 Rad165	11	9/15/2004 6:03:15 PM	00:01:55	a=30004 30004	a=30004	30004 ...	24996 Rad165	12	9/15/2004 6:03:08 PM	00:02:02	(empty)	a=30003	30003 ...	24995 Rad165	28	9/15/2004 6:01:31 PM	00:00:22	a=S8300 T1 Tie ...	a=S8300 T1 Tie	901 ...
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## 4. Configure Avaya Communication Manager

This section covers the procedure to configure the digital telephones via the System Access Terminal (SAT) for the Avaya Communication Manager controlling the S8700 Media Server and G600 Media Gateway.

### 4.1. Configure Digital Station

#### 4.1.1. Digital Circuit Pack

Install a digital circuit pack in the Avaya G600 Media Gateway. Using the System Access Terminal (SAT), verify that the digital circuit pack is administered. In the following example, a TN2224B 2-wire digital circuit pack is administered for the digital telephones. The TN2224B supports up to 24 digital telephones.

```
display circuit-packs                                     Page 1 of 1
                CIRCUIT PACKS
      Cabinet: 1                      Carrier: A
Cabinet Layout: rack-mount-stack      Carrier Type: rmc-port

Slot Code  Sf Mode   Name
-----
01: TN744  D         CALL CLASSIFIER
02: TN2312                IP SERVER INTFC
03: TN799  D         CONTROL-LAN
04: TN2302                IP MEDIA PROCESSOR
05: TN2224 B         DIGITAL LINE
06: TN2224 B         DIGITAL LINE
07: TN747  B         CO TRUNK
08: TN464  F         DS1 INTERFACE
09: TN793                ANALOG LINE
10: TN464  F         DS1 INTERFACE

'#' indicates circuit pack conflict.
```

#### 4.1.2. Station Attributes

Using the SAT, add digital stations by using the **add station x** command, where x is the extension to be assigned.

- **Type:** administer the type of the station, such as **6408D+** .
- **Port:** administer the port on the circuit pack that the digital station is connected to, such as **1A0501**, where the station is connected to port 1 of the circuit pack in slot 1A05.

```

add station 30001                                     Page 1 of 4
                                                    STATION
Extension: 30001                                     Lock Messages? n      BCC: 0
  Type: 6408D+                                       Security Code:         TN: 1
  Port: 01A0501                                    Coverage Path 1:      COR: 1
  Name: 30001                                       Coverage Path 2:      COS: 1
                                                    Hunt-to Station:

STATION OPTIONS
  Loss Group: 2                                       Personalized Ringing Pattern: 1
  Data Module? n                                     Message Lamp Ext: 30001
  Speakerphone: 2-way                               Mute Button Enabled? y
  Display Language: english

                                                    Media Complex Ext:
                                                    IP SoftPhone? n

```

### 4.1.3. Station Buttons

#### Manual Message Waiting Indicator (MMWI)

The LED associated with the Manual Message Waiting Indicator (MMWI) button on the telephone is used to enable or disable the record-on-demand mode of voice recording. The recording is enabled when the man-msg-wt button is pressed, illuminating the associated LED, and stops recording when that button is pressed again, turning the LED off. When the LED associated with man-msg-wt button is lit, the voice recording follows the behavior of the Audio start/stop Mode (i.e., the recording starts or stops when the voice path is opened or closed).

Administer a **man-msg-wt** button in the Button Assignment section of the station form. In the following example, the man-msg-wt is administered as button 4.

```

change station 30004                                 Page 3 of 4
                                                    STATION
SITE DATA
  Room:                                             Headset? n
  Jack:                                             Speaker? n
  Cable:                                           Mounting: d
  Floor:                                           Cord Length: 0
  Building:                                        Set Color:

ABBREVIATED DIALING
  List1:                                           List2:           List3:

BUTTON ASSIGNMENTS
  1: call-appr                                     6:
  2: call-appr                                     7:
  3: call-appr                                     8:
  4: man-msg-wt Ext: 30004                         9:
  5:                                               10:

```

## Call Appearance

The lamp mode of voice recording tracks the status of the call appearance (**call-appr**) buttons on the telephone to activate and de-activate call recording. The lamp mode can also track the bridged call appearance (**brdg-appr**) buttons, if so desired. However, the bridged call appearance buttons are typically used for making private calls and are not enabled for voice recording in the Freedom Voice Recorder.

**Note:** In order to continue recording when the call is merged into a conference, the lamp associated with an available call appearance button should also be enabled for the Lamp start/stop mode, because the conference call shifts to the next available call appearance. Refer to Section 3.3 regarding Lamp start/stop mode.

Administer the **call-appr** and **brdg-appr** buttons in the Button Assignment section of the station form, as in the following example. The call-appr associated with button 4 should also be enabled for Lamp start/stop mode in the Dictaphone Freedom DSC-4 card so that voice recording can continue when conference is initiated by this telephone.

change station 30002			Page 3 of 4
	STATION		
SITE DATA			
Room:		Headset?	n
Jack:		Speaker?	n
Cable:		Mounting:	d
Floor:		Cord Length:	0
Building:		Set Color:	
ABBREVIATED DIALING			
List1:	List2:	List3:	
BUTTON ASSIGNMENTS			
1:	<b>call-appr</b>	5:	
2:	<b>brdg-appr</b> Btn:1 Ext:30003	6:	
3:	<b>brdg-appr</b> Btn:1 Ext:30004	7:	
4:	<b>call-appr</b>	8:	

## 5. Interoperability Compliance Testing

The interoperability compliance testing focused on the voice recording capability of the Dictaphone Freedom Voice Recorder systems to record calls to and from the Avaya Digital telephones connected to Avaya S8700 Media Server and G600 Media Gateway. The testing was performed for two of the Dictaphone Freedom Voice Recording systems – the Combo system and the Fault Tolerant (FT) system. The digital telephones in the test configuration were enabled for the following types of triggers for voice recording:

- Audio Mode - to start recording when the voice path is detected
- Lamp Mode - to start recording when the call appearance green lamp goes on
- Record on Demand Mode - to start recording when the man-msg-wt button is pressed

## 5.1. General Test Approach

The general approach was to make calls to and from the Avaya digital telephones – internal calls as well as trunk calls. The internal calls were made from the other Avaya digital telephones as well as the IP phones. The trunk calls were made from the ground start CO and T1 tie trunks. The basic features such as Hold, Conference and Transfer were exercised. The main objectives were to verify that:

- The calls to and from the 6400 and 8400 series digital phones and the CallMaster V and VI can be recorded.
- The calls are automatically recorded in the Freedom Voice Recorder, triggered by the audio mode or lamp mode.
- The calls can be recorded on demand using man-msg-wt button on a digital telephone.
- The calls can be played back with good quality. For incoming trunk calls, the volume of the call can be increased on the trunk leg of the call for the purpose of recording by configuring the appropriate settings in the Freedom Voice Recorder.
- The calls can be recorded for conference as well as the transferred calls.
- The calls that are put on Hold and then unheld can record either one file or two files depending upon the configured option.
- Freedom Voice Recorders can perform under load and continue voice recording after the system is back to normal.
- Power failure in the Freedom Voice recorder does not drop the calls in progress.

## 5.2. Test Results

All test cases completed successfully. With the appropriate triggers administered for voice recording, the Freedom Voice Recorder was able to record calls with good quality, including the calls in Conference, Transfer and Hold scenarios. The following behavior was observed in some scenarios:

1. *Hold in Lamp Recording Mode with one file:* When an 8400 series telephone initiates Hold, the speech from that telephone is recorded during the Hold period. This may be desirable. However, if recording during Hold is not desired, either mute the call by pressing the Mute button, or configure the Lamp Mode trigger with an option to record two files to make sure the speech is not recorded during the Hold.
2. *Hold in Audio Recording Mode:* When a 6400 series telephone initiates Hold, two separate files are recorded – one for the speech before Hold and the other for the speech after Unhold. However, when an 8400 series telephone initiates Hold, a single file with speech from the Hold initiating telephone is recorded during the Hold period.

3. *Silence recorded file:* In some cases where no voice recording is expected, Freedom Voice Recorder does not record the voice appropriately. Instead of having no recording in a file at all, a separate file is created and “silence” is recorded in that file. For example, if a call is initiated from a bridged appearance on telephone 2 associated with a primary telephone 1, a file with silence is recorded associated to primary telephone 1.
4. *Record on Demand after power is restored:* When the power is restored on Freedom Voice Recorder after a power failure, the record-on-demand enabled station does not trigger the recording of voice calls automatically, even if the man-msg-wt lamp is lit. Press the man-msg-wt button off and on again to enable the trigger for voice recording.

## 6. Verification Steps

The following steps may be used to verify the configuration and connectivity:

- DSC-4 line status:
  1. Follow the procedure in step 1 of Section 3.1 to connect a PC to a DSC-4 card.
  2. To verify the current line status, issue a **lines** command at the DSC-4 prompt on the PC. Verify that the result is **AAAA** for the channels **0123**.
  3. Repeat steps 1 and 2 for each DSC-4 card.
- Voice Recording: Make a call to a digital station. Verify that the call is recorded and can be played at the Freedom Workstation.

## 7. Support

For technical support on the Dictaphone product line, consult [www.dictaphone.com/support](http://www.dictaphone.com/support) or contact Dictaphone Technical Support at 800-833-7776.

## 8. Conclusion

These Application Notes illustrate the procedure for configuring the Dictaphone’s Freedom Voice Recorder System – the Combo system and the FT system – for the calls generated by Avaya digital telephones (6400 and 8400 series and the Callmasters V and VI) connected to Avaya Media Servers and Avaya Media Gateways. With the appropriate configuration and connectivity, the telephone voice calls were always recorded.



## 9. Additional References

Product documentation for Avaya products can be found at <http://support.avaya.com>.

Following is a list of documentation for the Dictaphone products:

### Dictaphone Freedom Series

- Fault Tolerant (FT) System Hardware and Software Service Manual for Versions 1.2 and 1.3, 2/9/2004
- Hardware and Software Service Manual for Versions 1.2 and 1.3, 2/9/2004
- Accessories Service Manual, 5/10/2004
- Freedom Fault Tolerant (FT) System – Read Me Before You Begin, 2/16/2004
- Read Me Before You Begin, 7/20/2001
- Dictaphone Freedom Operators Guide Version 1.3
- Dictaphone Freedom Administrators Guide Version 1.3
- Dictaphone Freedom Quick Reference Guide, 9/2002

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