Avaya Solution & Interoperability Test Lab

Application Notes for ATT AMX Alarm Management Server and Avaya Aura™ Communication Manager via PRI Interface – Issue 1.0

Abstract

These Application Notes describe the compliance testing of ATT AMX Alarm Management Server with Avaya Aura™ Communication Manager. The ATT AMX Alarm Management Server communicates with Communication Manager via PRI trunk interface. The compliance testing tested the major functions of the ATT AMX Alarm Management Server product.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

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1. Introduction

These Application Notes describe the configuration steps required for ATT AMX Alarm Management Server to successfully interoperate with Communication Manager and the Avaya R4 DECT base station. The ATT AMX Alarm Management Server generates preconfigured or ad hoc alarms which were signaled to Communication Manager as calls via the PRI interface. For the conformance tests described by these Application Notes, ATT AMX Alarm Management Server and Communication Manager were configured to operate as follows:

- Each alarm consisted of an audio message and a text message. The text message was sent as the calling party name (which can have a maximum length of fifteen characters) and was thus visible for alarms to local extensions and DECT endpoints (but not PSTN endpoints).
- All alarms were sent as "Priority" calls, and were thus not forwarded to coverage if unanswered by local extensions.
- Alarms were also configured such that the alarm recipient must acknowledge via telephone keypad input, thus preventing alarms which were answered by voicemail systems from being considered as delivered.
- For alarms to extensions coupled to GSM endpoints via the Avaya EC500 facility, EC500 was configured to require acknowledgement for calls answered by the GSM endpoint, thus allowing GSM voicemail systems to be ignored.

1.1. Interoperability Compliance Testing

The compliance testing included the following test scenarios:

- Alarm creation via text-to-speech and via telephone input
- Alarm delivery to idle station
- Alarm to busy station
- Alarm to station, no answer
- Alarm to station with coverage enabled, no answer
- Alarm to station with call forwarding enabled
- Alarm to unavailable station
- Alarm to tandem station
- Alarm to hunt group
- Alarm to multiple endpoints
- Automatic startup after power interruption
- Recovery from interruption to interface to PBX

Where appropriate, each of these tests was performed with local extension, DECT mobile endpoints, PSTN endpoints, and cellular endpoints.

1.2. Support

Support from Avaya is available at http://support.avaya.com/.
Support for ATT products is available at

- Web-based support: only for accredited partners
- Email: Support@attag.ch
- help desk: +41 44 908 6004

2. Reference Configuration

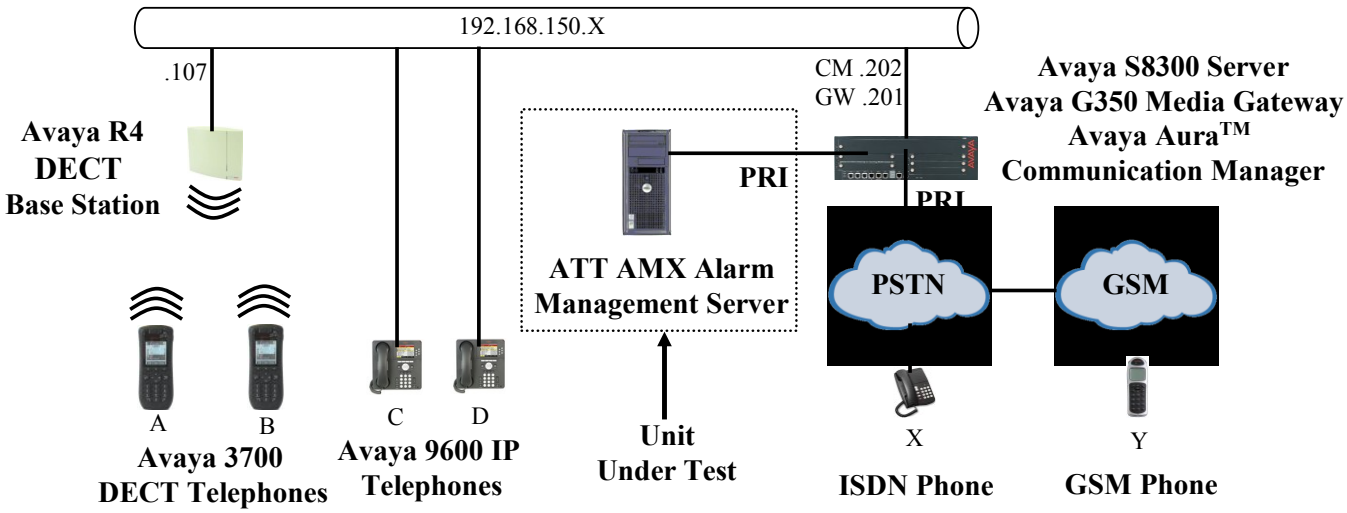

Figure 1: Reference Configuration

The ATT AMX Alarm Management Server in the above diagram interfaces to Communication Manager via the PRI trunk via a Pika PrimeNet MM PRI interface. The ISDN endpoint is included in the configuration so that alarms can be sent to PSTN endpoints. The GSM endpoint is included in the configuration so that alarms can be sent to a local extension which is coupled to a GSM endpoint via EC500.

The following table contains additional information about how each of the telephones contained in the above diagram are configured in Communication Manager:

Diagram	Ext	Endpoint
A	10303	Avaya DECT 3720 Telephone
B	10304	Avaya DECT 3725 Telephone
C	10091	Avaya 9640 IP Telephone
D	10092	Avaya 9640 IP Telephone
X	06911111111	ISDN endpoint
Y	+492222222222	GSM endpoint
	20000	AMX Alarm Generation

Table 1: Extensions Used for Testing

3. Equipment and Software Validated

The following equipment and software were used for the sample configuration provided:

Software Component	Version
Avaya Aura™ Communication Manager	R015x.02.1.016.4 Update 18365
Avaya G350 Media Gateway	30.14.0
Avaya MM710AP DS1 (PRI) interface	HW05/FW021
Avaya 9640 Telephone	3.1.1
Avaya 3720 DECT Telephone	3.0.7
Avaya 3725 DECT Telephone	3.0.10
Avaya R4 DECT	Hardware: IPBS1-Y3/PB, IPBS: 3.2.8, Bootcode: 3.0.26
Pika PrimeNet MM PRI MS Win Driver	6.6.3.1
ATT AMX Alarm Management Server	Release 9.0

Table 2: Equipment and Versions Validated

4. Configure Avaya Aura™ Communication Manager

The configuration and verification operations illustrated in this section were performed using the Communication Manager System Administration Terminal (SAT).

Note that the configuration of the interface to the PSTN is out of the scope of these application notes.

4.1. Verify System-Parameters Special-Applications

Use the **display system-parameters special-applications** command to verify that Communication Manager is configured to meet the minimum requirements to support the special applications used for these tests, as shown by the parameter values in **Table 3**. If these are not met in the configuration, please contact an Avaya representative for further assistance.

Parameter	Usage
PHS X-Station Mobility over IP	The value must be set to "y".

Table 3: Configuration Values for System-Parameters Special-Applications

```
display system-parameters special-applications                  Page   4 of   9
                            SPECIAL APPLICATIONS

     (SA8481) - Replace Calling Party Number with ASAI ANI? n
               (SA8500) - Expanded UUI Display Information? n
                 (SA8506) - Altura Interoperability (FIPN)? n
                (SA8507) - H245 Support With Other Vendors? n
                (SA8508) - Multiple Emergency Access Codes? n
 (SA8510) - NTT Mapping of ISDN Called-Party Subaddress IE? n
                      (SA8517) - Authorization Code By COR? n

          (SA8520) - Hoteling Application for IP Terminals? n
  (SA8558) - Increase Automatic MWI & VuStats (S8700 only)? n
                 (SA8567) - PHS X-Station Mobility over IP? y
       (SA8569) - No Service Observing Tone Heard by Agent? n
                 (SA8573) - Call xfer via ASAI on CAS Main? n
          (SA8582) - PSA Location and Display Enhancements? n
               (SA8587) - Networked PSA via QSIG Diversion? n
                         (SA8589) - Background BSR Polling? n
     (SA8608) - Increase Crisis Alert Buttons (S8700 only)? n
                       (SA8621) - SCH Feature Enhancements? n
```

Figure 2: System-Parameters Special-Applications Form, Page 4

4.2. Verify System-Parameters Customer-Options

Use the **display system-parameters customer-options** command to verify that Communication Manager is configured to meet the minimum requirements to support the configuration used for these tests, as shown by the parameter values in **Table 4**. If these are not met in the configuration, please contact an Avaya representative for further assistance.

Parameter	Usage
Maximum Stations (Page 1)	The value must be sufficient to allow the number of stations, including the ATT AMX Alarm Management Server, shown in **Table 1**.
Maximum XMOBILE Stations (Page 1)	The value must be sufficient to allow the number of DECT stations, including the ATT AMX Alarm Management Server, shown in **Table 1**.
Maximum Off-PBX Telephones – EC500 (Page 1)	This parameter must be large enough to support the number of stations which are paired with EC500 endpoints.
Maximum Concurrently Registered IP Stations (Page 2)	The value must be sufficient to allow the number of IP stations shown in **Table 1**
Enhanced EC500 (Page 4)	This parameter must be set to "y".
IP Trunks (Page 4)	This parameter must be set to "y".
ISDN-PRI (Page 4)	This parameter must be set to "y".

Table 4: Configuration Values for System-Parameters Customer-Options

```
display system-parameters customer-options                      Page   1 of  11
                            OPTIONAL FEATURES

    G3 Version: V15                            Software Package: Standard
      Location: 2                           RFA System ID (SID): 1
      Platform: 13                          RFA Module ID (MID): 1

                                                          USED
                               Platform Maximum Ports: 900   60
                                    Maximum Stations: 450   8
                                Maximum XMOBILE Stations: 100   0
                    Maximum Off-PBX Telephones - EC500: 100   0
                    Maximum Off-PBX Telephones -   OPS: 100   0
                    Maximum Off-PBX Telephones - PBFMC: 0     0
                    Maximum Off-PBX Telephones - PVFMC: 0     0
                    Maximum Off-PBX Telephones - SCCAN: 0     0
```

Figure 3: System-Parameters Customer-Options Form, Page 1

```
display system-parameters customer-options                      Page   2 of  11
                              OPTIONAL FEATURES

IP PORT CAPACITIES                                            USED
                     Maximum Administered H.323 Trunks: 100   10
          Maximum Concurrently Registered IP Stations: 450   2
            Maximum Administered Remote Office Trunks: 0     0
Maximum Concurrently Registered Remote Office Stations: 0     0
              Maximum Concurrently Registered IP eCons: 0     0
  Max Concur Registered Unauthenticated H.323 Stations: 0     0
                   Maximum Video Capable H.323 Stations: 0     0
                    Maximum Video Capable IP Softphones: 0     0
                        Maximum Administered SIP Trunks: 100   19
  Maximum Administered Ad-hoc Video Conferencing Ports: 0     0
   Maximum Number of DS1 Boards with Echo Cancellation: 0     0
                             Maximum TN2501 VAL Boards: 0     0
                     Maximum Media Gateway VAL Sources: 10    1
           Maximum TN2602 Boards with 80 VoIP Channels: 0     0
          Maximum TN2602 Boards with 320 VoIP Channels: 0     0
   Maximum Number of Expanded Meet-me Conference Ports: 0     0
```

Figure 4: System-Parameters Customer-Options Form, Page 2

```
display change system-parameters customer-options                    Page   4 of  11
                              OPTIONAL FEATURES

   Emergency Access to Attendant? y                          IP Stations? y
            Enable 'dadmin' Login? y
            Enhanced Conferencing? y                    ISDN Feature Plus? n
                  Enhanced EC500? y       ISDN/SIP Network Call Redirection? n
    Enterprise Survivable Server? n                       ISDN-BRI Trunks? y
       Enterprise Wide Licensing? n                             ISDN-PRI? y
              ESS Administration? n             Local Survivable Processor? n
          Extended Cvg/Fwd Admin? y                   Malicious Call Trace? n
     External Device Alarm Admin? n               Media Encryption Over IP? n
  Five Port Networks Max Per MCC? n    Mode Code for Centralized Voice Mail? n
               Flexible Billing? n
   Forced Entry of Account Codes? n               Multifrequency Signaling? y
      Global Call Classification? n       Multimedia Call Handling (Basic)? n
             Hospitality (Basic)? y    Multimedia Call Handling (Enhanced)? n
 Hospitality (G3V3 Enhancements)? y             Multimedia IP SIP Trunking? n
                       IP Trunks? y

           IP Attendant Consoles? n
```

Figure 5: System-Parameters Customer-Options Form, Page 4

4.3. Change System-Parameters Features

Use the **change system-parameters features** command to set required features as shown in the following table.

Parameter	Usage
Distinctive Audible Alerting (Page 6)	Set the ring count parameters as follows. “Internal”: 1, “External”: 2, “Priority”: 3.
Repetitive Call Waiting Tone (Page 10)	Set this to “y”.
Repetitive Call Waiting Interval (Page 10)	Set this to the interval that busy handsets should repeat the call waiting tone. Set this to 4 seconds.

Table 5: Configuration Values for System-Parameters Features

```
change system-parameters features                              Page   6 of  18
                     FEATURE-RELATED SYSTEM PARAMETERS
         Public Network Trunks on Conference Call: 5              Auto Start? n
    Conference Parties with Public Network Trunks: 6                Auto Hold? n
 Conference Parties without Public Network Trunks: 6             Attendant Tone? y
         Night Service Disconnect Timer (seconds): 180            Bridging Tone? n
                 Short Interdigit Timer (seconds): 3           Conference Tone? n
              Unanswered DID Call Timer (seconds):              Intrusion Tone? n
              Line Intercept Tone Timer (seconds): 30     Mode Code Interface? y
                 Long Hold Recall Timer (seconds): 0
                      Reset Shift Timer (seconds): 0
     Station Call Transfer Recall Timer (seconds): 0          Recall from VDN? n
           Trunk Alerting Tone Interval (seconds): 15
                              DID Busy Treatment: tone
               Allow AAR/ARS Access from DID/DIOD? n
                 Allow ANI Restriction on AAR/ARS? n
Use Trunk COR for Outgoing Trunk Disconnect/Alert? ?
                  7405ND Numeric Terminal Display? n                   7434ND? n
DISTINCTIVE AUDIBLE ALERTING
             Internal: 1   External: 2   Priority: 3
                       Attendant Originated Calls: external
```

Figure 6: System-Parameters Features Form, Page 6

```
change system-parameters features                               Page  10 of  18
                        FEATURE-RELATED SYSTEM PARAMETERS

                 Pull Transfer: n            Update Transferred Ring Pattern? n
         Outpulse Without Tone? y              Wait Answer Supervision Timer? n
         Misoperation Alerting? n               Repetitive Call Waiting Tone? y
    Allow Conference via Flash? y     Repetitive Call Waiting Interval (sec): 4
 Vector Disconnect Timer (min):       Network Feedback During Tone Detection? y
                                    System Updates Time On Station Displays? n

                     Station Tone Forward Disconnect: busy
                              Level Of Tone Detection: precise
          Charge Display Update Frequency (seconds): 30
                           Date Format on Terminals: mm/dd/yy
                        Onhook Dialing on Terminals? y
               Edit Dialing on 96xx H.323 Terminals? n
                  Allow Crisis Alert Across Tenants? n


ITALIAN DCS PROTOCOL
  Italian Protocol Enabled? n
```

Figure 7: System-Parameters Features Form, Page 10

4.4. Configure IP Node Names

Use the **change node-names ip** command to configure the address to be used for the DECT IP trunks.

```
change node-names ip                                            Page   1 of   2
                                  IP NODE NAMES
    Name                 IP Address
dect                  192.168.150.107
default               0.0.0.0
procr                 192.168.150.202
```

Figure 8: Node-Names IP Form

4.5. Dial Plan

Use the **change dialplan analysis** command to configure the dial plan as shown in the following table.

Parameter	Usage
Dialed string: "0"	Use a "0" as Facilities Access Code (FAC) to access external telephone numbers.
Dialed string: "1"	Five digit numbers starting with "1" are for local extensions.
Dialed string: "2"	Five digit numbers starting with "2" are ATT AMX Alarm Management Server extensions.
Dialed string: "*0"	Strings beginning with "*0" is used for Trunk Access Codes (TAC).
Dialed string: "*7"	The dialed strings beginning with "*7" are used for Feature Access Codes.
Dialed string: "#7"	The dialed strings beginning with "#7" are used for Feature Access Codes.

Table 6: Dial Plan Analysis Parameters

```
change dialplan analysis                                    Page   1 of  12
                          DIAL PLAN ANALYSIS TABLE
                               Location:  all          Percent Full:    0

      Dialed   Total  Call    Dialed   Total  Call     Dialed   Total  Call
      String   Length Type    String   Length Type     String   Length Type
     0            1    fac
     1            5    ext
     2            5    ext
     *0           4    dac
     *7           3    fac
     #7           3    fac
```

Figure 9: Dialplan Analysis Table Form

4.6. Add Feature Access Codes

Use the **change feature-access-codes** command to allocate feature access codes, as shown in the following table.

Parameter	Usage
Auto Route Selection Access Code, Page 1	Use a "0" to use Automatic Route Selection (ARS) to route PSTN calls over a SIP trunk.
Priority Calling Access Code, Page 3	Enter an available feature code which is assigned to all incoming calls from the ATT AMX Alarm Management Server to indicate that calls are "Priority Calls".

Table 7: Feature Access Code Parameters

```
change feature-access-codes                                    Page   1 of   8
                              FEATURE ACCESS CODE (FAC)
         Abbreviated Dialing List1 Access Code:
         Abbreviated Dialing List2 Access Code:
         Abbreviated Dialing List3 Access Code:
Abbreviated Dial - Prgm Group List Access Code:
                      Announcement Access Code: #01
                       Answer Back Access Code:
                         Attendant Access Code:
      Auto Alternate Routing (AAR) Access Code:
    Auto Route Selection (ARS) - Access Code 1: 0     Access Code 2:
                 Automatic Callback Activation:        Deactivation:
Call Forwarding Activation Busy/DA:        All:        Deactivation:
   Call Forwarding Enhanced Status:        Act:        Deactivation:
                         Call Park Access Code:
                       Call Pickup Access Code:
CAS Remote Hold/Answer Hold-Unhold Access Code:
                  CDR Account Code Access Code:
                        Change COR Access Code:
                   Change Coverage Access Code:
            Conditional Call Extend Activation:        Deactivation:
                  Contact Closure   Open Code:          Close Code::
```

Figure 10: Feature-Access-Codes Form, Page 1

```
change feature-access-codes                                    Page   3 of   8
                              FEATURE ACCESS CODE (FAC)
            Leave Word Calling Send A Message:
          Leave Word Calling Cancel A Message:
  Limit Number of Concurrent Calls Activation:        Deactivation:
             Malicious Call Trace Activation:        Deactivation:
       Meet-me Conference Access Code Change: *73
        Message Sequence Trace (MST) Disable:

PASTE (Display PBX data on Phone) Access Code:
 Personal Station Access (PSA) Associate Code:        Dissociate Code:
       Per Call CPN Blocking Code Access Code:
    Per Call CPN Unblocking Code Access Code:

                Priority Calling Access Code: *74
                         Program Access Code:

      Refresh Terminal Parameters Access Code:
             Remote Send All Calls Activation:        Deactivation:
              Self Station Display Activation:
                    Send All Calls Activation:        Deactivation:
        Station Firmware Download Access Code:
```

Figure 11: Feature-Access-Codes Form, Page 3

4.7. Add Stations

4.7.1. Add Mobile Stations

Use the **add station** command to add an extension for each of the mobile extensions listed in **Table 1** using the parameters shown in the following table.

Parameter	Usage
Type	Enter "XMOBILE" for an analog telephone.
Name	Enter an appropriate name to identify the station.
XMOBILE Type	Enter "DECT".
Mobility Trunk Group	Enter the number of the trunk group which allocated in **Figure 21** for connection to the Avaya R4 base station.
Cell Phone Number	Enter the number allocated to this station.
Mapping Mode	Enter "both".
Length of Display	Enter "12x3".

Table 8: Mobile Station Parameters

```
add station 10303                                          Page   1 of   4
                                    STATION

Extension: 10303                       Lock Messages? n               BCC: 0
     Type: XMOBILE                     Security Code:                  TN: 1
                                     Coverage Path 1:                 COR: 1
     Name: extn 10303                Coverage Path 2:                 COS: 1
                                     Hunt-to Station:
STATION OPTIONS
                                         Time of Day Lock Table:

            XMOBILE Type: DECT                  Message Lamp Ext: 10303
          Display Module? y                   Message Waiting Type: ICON
        Display Language: english                Length of Display: 12x3
    Mobility Trunk Group: 8                          Calls Allowed: all
       Configuration Set:

 CELL PHONE NUMBER MAPPING
             Dial Prefix:
       Cell Phone Number: 10303
            Mapping Mode: both
```

Figure 12: Mobile Station Form

4.7.2. Add IP Stations

Use the **add station** command to add an extension for each of the IP extensions listed in **Table 1** using the parameters shown in the following table.

Parameter	Usage
Type (Page 1)	Enter endpoint type as shown in **Table 1**.
Name (Page 1)	Enter an appropriate name to identify the station.
Security Code (Page 1)	Enter an appropriate security code for the station.

EC500 (Page 4)	Add an EC500 button to activate/deactivate EC500.

Table 9: IP Station Parameters

```
add station 10091                                        Page   1 of   5
                                    STATION

Extension: 10091                       Lock Messages? n               BCC: 0
     Type: 9640                        Security Code: 123456           TN: 1
     Port: S00006                    Coverage Path 1:                 COR: 1
     Name: extn 10091                Coverage Path 2:                 COS: 1
                                     Hunt-to Station:
STATION OPTIONS
                                          Time of Day Lock Table:
             Loss Group: 19           Personalized Ringing Pattern: 1
                                                Message Lamp Ext: 10091
           Speakerphone: 2-way               Mute Button Enabled? y
       Display Language: english
 Survivable GK Node Name:
         Survivable COR: internal              Media Complex Ext:
   Survivable Trunk Dest? y                         IP SoftPhone? n




                                           Customizable Labels? y
```

Figure 13: IP Station Form

```
add station 10091                                        Page   4 of   5
                                    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                          4: priority
 2: call-appr                          5: ec500      Timer? n
 3: call-appr                          6:


    voice-mail Number:
```

Figure 14: IP Station Form

4.8. Configure EC500

Enter the **change telecommuting-access** command to specify an available extension that is to be dialed from mobile phones to perform EC500 commands.

```
change telecommuting-access                                  Page   1 of   1
                            TELECOMMUTING ACCESS

                      Telecommuting Access Extension: 10299
```

Figure 15: Telecommuting-Access Form

Enter the **change off-pbx-telephone configuration-set** command to define a configuration set to be used by GSM endpoints, using the parameters shown in the following table.

Parameter	Usage
Configuration Set	Select an available configuration set number.
Configuration Set Description	Enter a descriptive name to identify the configuration set.
Confirmed Answer	Set this value to "y", so that EC500 alarm calls to GSM endpoints must be acknowledged via keypad input.
Timeout	Select an appropriate time to accommodate human response time.

Table 10: EC500 Feature Access Code Parameters

```
change off-pbx-telephone configuration-set 1                 Page   1 of   1



                                  CONFIGURATION SET: 1

                        Configuration Set Description: GSM
                                 Calling Number Style: network
                                  CDR for Origination: phone-number
                    CDR for Calls to EC500 Destination? y
                           Fast Connect on Origination? n
                          Post Connect Dialing Options: dtmf
                        Cellular Voice Mail Detection: none
                                       Barge-in Tone? n
                          Calling Number Verification? n
             Call Appearance Selection for Origination: primary-first
                                  Confirmed Answer? y Timeout (seconds): 10

 Use Shared Voice Connections for Second Call Answered? n
Use Shared Voice Connections for Second Call Initiated? n
```

Figure 16: GSM Off-Pbx-Telephone Configuration-Set Form

Enter the **change off-pbx-telephone configuration-set** command to define a configuration set to be used by DECT endpoints, using the parameters shown in the following table.

Parameter	Usage
Configuration Set	Select an available configuration set number.
Configuration Set Description	Enter a descriptive name to identify the configuration set.
Confirmed Answer	Set this value to “n”, so that EC500 alarm calls to DECT endpoints need not be acknowledged via keypad input. It is assumed that DECT endpoints are not configured for voicemail coverage.

Table 11: EC500 Feature Access Code Parameters

```
change off-pbx-telephone configuration-set 2                    Page   1 of   1



                                   CONFIGURATION SET: 2

                          Configuration Set Description: DECT
                                    Calling Number Style: network
                                     CDR for Origination: phone-number
                    CDR for Calls to EC500 Destination? y
                           Fast Connect on Origination? n
                          Post Connect Dialing Options: dtmf
                         Cellular Voice Mail Detection: none
                                        Barge-in Tone? n
                           Calling Number Verification? y
              Call Appearance Selection for Origination: primary-first
                                    Confirmed Answer? n

 Use Shared Voice Connections for Second Call Answered? n
Use Shared Voice Connections for Second Call Initiated? n
```

Figure 17: DECT Off-Pbx-Telephone Configuration-Set Form

Enter the **change off-pbx-telephone station-mapping** command for the extension to be paired to GSM endpoints, and enter the parameters shown in the table below.

Parameter	Usage
Application	Enter "EC500".
Phone Number	Enter the number of the GSM phone which is to be coupled with this extension. Do not include an additional leading "0" to select ARS.
Trunk Selection	Enter "ARS".
Config Set	Enter the number of the "GSM" configuration set which was configured in **Figure 16**.

Table 12: GSM Off-Pbx-Telephone Station-Mapping Parameters

```
change off-pbx-telephone station-mapping 10091                 Page   1 of   3
                 STATIONS WITH OFF-PBX TELEPHONE INTEGRATION

 Station       Application Dial   CC  Phone Number    Trunk       Config  Dual
 Extension                 Prefix                    Selection   Set     Mode
 10091           EC500         -     02222222222      ARS         1
```

Figure 18: GSM Off-Pbx-Telephone Station-Mapping Form

Enter the **change off-pbx-telephone station-mapping** command for the extension to be paired to DECT endpoints, and enter the parameters shown in the table below.

Parameter	Usage
Application	Enter "EC500".
Phone Number	Enter the number of the GSM phone which is to be coupled with this extension.
Trunk Selection	Enter the number of the DECT base station trunk.
Config Set	Enter the number of the configuration "DECT" set which was configured in **Figure 17**.

Table 13: DECT Off-Pbx-Telephone Station-Mapping Parameters

```
change off-pbx-telephone station-mapping 10092                 Page   1 of   3
                 STATIONS WITH OFF-PBX TELEPHONE INTEGRATION

 Station       Application Dial   CC  Phone Number    Trunk       Config  Dual
 Extension                 Prefix                    Selection   Set     Mode
 10092           EC500         -     10304            8           2
```

Figure 19: DECT Off-Pbx-Telephone Station-Mapping Form

4.9. Configure Trunk Interfaces

4.9.1. Interface to Avaya R4

The signaling group and trunk group described in this section are closely interrelated. If the signaling group is allocated first, all trunk group parameters must initially be set to blank and entered in a subsequent step, after the trunk group has been added.

Use the **add signaling-group** command to allocate a signaling group for interface to the Avaya R5 using the following parameters:

Parameter	Usage
Group Type	Enter "h.323".
Max number of NCA TSC	Enter a value of 1 or greater.
Max number of CA TSC	Enter a value of 1 or greater.
Trunk Group for NCA TSC	Enter the number of the DECT trunk group allocated in **Figure 21**.
X-Mobility/Wireless Type	Enter "DECT".
Trunk Group for Channel Selection	Enter the number of the DECT trunk group allocated in **Figure 21.**
Near-end Node Name	Enter "procr" to designate the G350 processor as the near end node name.
Far-end Node Name	Enter "dect" to assign the Avaya R4 base station as the far end node name.
Near-end Listen Port	Specify an otherwise unused port to be used to listen for incoming voice traffic.
Far-end Listen Port	Specify the port assigned to the Avaya R4 as "Local Port" in **Figure 45**.
Direct IP-IP Audio Connections	Enter "y" to allow direct IP-IP endpoint connections (shuffling).

Table 14: Avaya R4 Signaling-Group Parameters

```
add signaling-group 8                                          Page   1 of   6
                                SIGNALING GROUP

 Group Number: 8                 Group Type: h.323
                            Remote Office? n          Max number of NCA TSC: 5
                                      SBS? n            Max number of CA TSC: 5
     IP Video? n                                    Trunk Group for NCA TSC: 8
       Trunk Group for Channel Selection: 8       X-Mobility/Wireless Type: DECT
      TSC Supplementary Service Protocol: a
                           T303 Timer(sec): 10
   H.245 DTMF Signal Tone Duration(msec):
   Near-end Node Name: procr                   Far-end Node Name: dect
 Near-end Listen Port: 5210                  Far-end Listen Port: 5210
                                          Far-end Network Region: 1
         LRQ Required? n                   Calls Share IP Signaling Connection? n
         RRQ Required? n
                                              Bypass If IP Threshold Exceeded? n
                                                       H.235 Annex H Required? n
         DTMF over IP: out-of-band              Direct IP-IP Audio Connections? y
  Link Loss Delay Timer(sec): 90                          IP Audio Hairpinning? n
         Enable Layer 3 Test? y                    Interworking Message: PROGress
H.323 Station Outgoing Direct Media? n   DCP/Analog Bearer Capability: 3.1kHz
```

Figure 20: Avaya R4 Signaling-Group Form

Use the **add trunk-group <n>** command, were <n> is an unused trunk number, to allocate a trunk group to be used as an interface to the Avaya R4 Base Station. Use the parameters show in the following table.

Parameter	Usage
Group Type (Page 1)	Enter "isdn".
Group Name (Page 1)	Assign a name for identification purposes.
TAC (Page 1)	Enter the Trunk Access Code to be used to identify this trunk.
Direction (Page 1)	Enter "two-way
Carrier Medium (Page 1)	Enter "H.323".
Service Type (Page 1)	Enter "tie".
Member Assignment Method (Page 1)	Enter "auto".
Signaling Group (Page 1)	Enter number of the signaling group allocated in **Figure 20**.
Number of Members (Page 1)	Enter a number large enough to support the maximum number of anticipated simultaneous calls to be made via the DECT trunk.
Codeset to Send Display (Page 2)	Enter "0".
Digit Handling (in/out) (Page 2)	Enter "overlap/enbloc".
Disconnect Supervision In / Out (Page 2)	Enter "y" / "y".
CONNECT Reliable When Call Leaves ISDN (Page 2)	Enter "n".
NCA-TSC Trunk Member (Page 3)	Enter "1".
Send Calling Number (Page 3)	Enter "y".
Format (Page 3)	Enter "unk-pvt".
Send Connected Number (Page 3)	Enter "y".

Table 15: Avaya R4 Trunk-Group Parameters

```
add trunk-group 8                                          Page   1 of  21
                              TRUNK GROUP

Group Number: 8                    Group Type: isdn          CDR Reports: y
  Group Name: DECT                          COR: 1        TN: 1        TAC: *008
   Direction: two-way        Outgoing Display? n          Carrier Medium: H.323
 Dial Access? y              Busy Threshold: 255  Night Service:
Queue Length: 0
Service Type: tie                   Auth Code? n
                                            Member Assignment Method: auto
                                                      Signaling Group: 8
                                                    Number of Members: 10
```

Figure 21: Avaya R4 Trunk-Group Form, Page 1

```
add change trunk-group 8                                        Page   2 of  21
      Group Type: isdn

TRUNK PARAMETERS
        Codeset to Send Display: 0     Codeset to Send National IEs: 6
                                       Charge Advice: none
  Supplementary Service Protocol: a    Digit Handling (in/out): overlap/enbloc
       Digit Treatment:                                Digits:

                                                 Digital Loss Group: 18
Incoming Calling Number - Delete:     Insert:                Format:

 Disconnect Supervision - In? y  Out? y
 Answer Supervision Timeout: 0
                                    CONNECT Reliable When Call Leaves ISDN? n
```

Figure 22: Avaya R4 Trunk-Group Form, Page 2

```
add trunk-group 8                                          Page   3 of  21
TRUNK FEATURES
          ACA Assignment? n            Measured: none
                                 Internal Alert? n        Maintenance Tests? y
                               Data Restriction? n     NCA-TSC Trunk Member: 1
                                      Send Name: n      Send Calling Number: y
            Used for DCS? n                            Send EMU Visitor CPN? n
   Suppress # Outpulsing? n    Format: unk-pvt
                                     UUI IE Treatment: service-provider

                                         Replace Restricted Numbers? n
                                        Replace Unavailable Numbers? n
                                              Send Connected Number: y
                                          Hold/Unhold Notifications? n
             Send UUI IE? y                Modify Tandem Calling Number? n
               Send UCID? n
 Send Codeset 6/7 LAI IE? y
```

Figure 23: Avaya R4 Trunk-Group Form, Page 3

4.9.2. Configure PRI Interface to ATT AMX Alarm Management Server

Use the **add ds1 <media module hardware address>** command to configure the DS1 interface card to serve as a Primary Rate ISDN interface. Assign those values for this command as shown in the following table.

Parameter	Usage
Bit Rate	Assign the bit rate to "2.048", as required to connect to the ATT AMX Alarm Management Server E1 interface card.
Line Coding	Assign the line coding to "hdb3", as required to connect to the ATT AMX Alarm Management Server E1 interface card.
Name	Assign a name to be used to identify the card.
Signaling Mode	Assign the signaling mode to "isdn-pri".
Connect	Specify the connection is to a "pbx"
Interface	Specify that Communication Manager is to serve as the "peer-slave".
Peer Protocol	Specify the Q-SIG protocol is to be used.
Side	Specify "b".
Interface Companding	Specify "alaw".
CRC?	Specify "y".
Idle Code	Specify that an idle sequence of "11111111" is to be sent on the interface when no data is being transmitted.
Channel Numbering	Specify that "timeslot" channel numbering is to be used.

Table 16: DS1 Parameters for PRI Interface to ATT AMX Alarm Management Server

```
add ds1 01v5                                                  Page   1 of   1
                              DS1 CIRCUIT PACK

            Location: 001V5                          Name: Alarm
            Bit Rate: 2.048                  Line Coding: hdb3

      Signaling Mode: isdn-pri
             Connect: pbx                        Interface: peer-slave
   TN-C7 Long Timers? n                      Peer Protocol: Q-SIG
Interworking Message: PROGress                       Side: b
Interface Companding: alaw                           CRC? y
           Idle Code: 11111111           Channel Numbering: timeslot
                             DCP/Analog Bearer Capability: 3.1kHz

                                        T303 Timer(sec): 4
                                       Disable Restarts? n

      Slip Detection? n                Near-end CSU Type: other
```

Figure 24: DS1 Screen for PRI Interface to ATT AMX Alarm Management Server

Use the **add signaling-group** command to allocate a signaling group to this trunk.

Parameter	Usage
Group Type	Specify “isdn-pri” for ISDN primary rate.
Associated Signaling	Set this parameter to “y”.
Primary D-Channel	Assign port 16 of the DS1 interface as the D channel.
TSC Supplementary Service Protocol	Specify “c”.

Table 17: Signaling-Group Parameters for ATT AMX Alarm Management Server PRI Interface

```
add signaling-group 12                                    Page   1 of   1
                              SIGNALING GROUP

Group Number: 12             Group Type: isdn-pri
                   Associated Signaling? y          Max number of NCA TSC: 0
                      Primary D-Channel: 001V516     Max number of CA TSC: 0
                                                   Trunk Group for NCA TSC:
       Trunk Group for Channel Selection: 12      X-Mobility/Wireless Type: NONE
     TSC Supplementary Service Protocol: c          Network Call Transfer? n
                      ETSI CCBS Support: both-directions
```

Figure 25: Signaling Group for Interface to ATT AMX Alarm Management Server

Use the **add trunk-group** command to configure the Trunk Group to the ATT AMX Alarm Management Server. Assign values for this command as shown in the following table.

Parameter	Usage
Group Type (p.1)	Specify the Group Type as "isdn".
Group Name (p.1)	Select an appropriate name to identify the device.
TAC (p.1)	Specify a trunk access code that can be used to provide dial access to the trunk.
Carrier Medium (p.1)	Specify a Carrier Medium of "PRI/BRI", as PRI will be used for this trunk.
Dial Access (p.1)	Allow dial access to the trunk by dialing the trunk access code.
Service Type (p.1)	Designate the trunk as a "tie" line to a peer system.
Supplementary Service Protocol (p.2)	Specify a Supplementary Service Protocol of "a".
Digit Handling (p.2)	Specify "enbloc/enbloc" to use block sending of dialed digits.
Trunk Hunt (p.2)	Specify "cyclical".
Send Name (p.3)	Specify "n".
Send Calling Number (p.3)	Specify "y" so that the number of the caller is sent for outgoing calls.
Format (p.3)	Specify "public" to use unknown/private dialing plan.
Send Connected Number (p.3)	Specify "y" so that the number of the connected party is sent to the caller.
Group Member Assignments (p.5,6)	Assign the interface ports on the E1 interface to the trunk group members. Note that port 16 is used for the D channel, which must be assigned to the signaling group associated with this trunk.

Table 18: Trunk-Group Parameters for ATT AMX Alarm Management Server PRI Interface

```
add trunk-group 12                                          Page   1 of  21
                              TRUNK GROUP

Group Number: 12                    Group Type: isdn          CDR Reports: y
  Group Name: Alarmserver PRI             COR: 1        TN: 1        TAC: *012
   Direction: two-way        Outgoing Display? n         Carrier Medium: PRI/BRI
 Dial Access? y              Busy Threshold: 255  Night Service:
Queue Length: 0
Service Type: tie                    Auth Code? n            TestCall ITC: rest
                         Far End Test Line No:
TestCall BCC: 4
```

Figure 26: Trunk Group for Interface to ATT AMX Alarm Management Server, Page 1

```
add trunk-group 12                                          Page   2 of  21
      Group Type: isdn

TRUNK PARAMETERS
         Codeset to Send Display: 6     Codeset to Send National IEs: 6
        Max Message Size to Send: 260   Charge Advice: none
  Supplementary Service Protocol: a     Digit Handling (in/out): enbloc/enbloc

            Trunk Hunt: cyclical
                                                Digital Loss Group: 13
Incoming Calling Number - Delete:     Insert:                 Format:
              Bit Rate: 1200         Synchronization: async    Duplex: full
 Disconnect Supervision - In? y  Out? n
 Answer Supervision Timeout: 0
          Administer Timers? n        CONNECT Reliable When Call Leaves ISDN? n
```

Figure 27: Trunk Group for Interface to ATT AMX Alarm Management Server, Page 2

```
add trunk-group 12                                          Page   3 of  21
TRUNK FEATURES
          ACA Assignment? n            Measured: none      Wideband Support? n
                                Internal Alert? n        Maintenance Tests? y
                              Data Restriction? n     NCA-TSC Trunk Member:
                                    Send Name: n      Send Calling Number: y
            Used for DCS? n                           Send EMU Visitor CPN? n
   Suppress # Outpulsing? n    Format: public
 Outgoing Channel ID Encoding: preferred     UUI IE Treatment: service-provider

                                             Replace Restricted Numbers? n
                                            Replace Unavailable Numbers? n
                                                  Send Connected Number: y
                                              Hold/Unhold Notifications? n
              Send UUI IE? y                Modify Tandem Calling Number? n
                Send UCID? n
 Send Codeset 6/7 LAI IE? y                       Ds1 Echo Cancellation? n

    Apply Local Ringback? n              US NI Delayed Calling Name Update? n
 Show ANSWERED BY on Display? y
                           Network (Japan) Needs Connect Before Disconnect? n
```

Figure 28: Trunk Group for Interface to ATT AMX Alarm Management Server, Page 3

```
add trunk-group 12                                          Page   5 of  21
                              TRUNK GROUP
                                   Administered Members (min/max):   0/0
GROUP MEMBER ASSIGNMENTS               Total Administered Members:   0

       Port    Code Sfx Name        Night           Sig Grp
  1: 001V501  MM710                                  12
  2: 001V502  MM710                                  12
  3: 001V503  MM710                                  12
  4: 001V504  MM710                                  12
  5: 001V505  MM710                                  12
  6: 001V506  MM710                                  12
  7: 001V507  MM710                                  12
  8: 001V508  MM710                                  12
  9: 001V509  MM710                                  12
 10: 001V510  MM710                                  12
 11: 001V511  MM710                                  12
 12: 001V512  MM710                                  12
 13: 001V513  MM710                                  12
 14: 001V514  MM710                                  12
 15: 001V515  MM710                                  12
```

Figure 29: Trunk Group for Interface to ATT AMX Alarm Management Server, Page 5

```
add trunk-group 12                                          Page   6 of  21
                              TRUNK GROUP
                                   Administered Members (min/max):   0/0
GROUP MEMBER ASSIGNMENTS               Total Administered Members:   0

       Port    Code Sfx Name        Night           Sig Grp
 16: 001V517  MM710                                  12
 17: 001V518  MM710                                  12
 18: 001V519  MM710                                  12
 19: 001V520  MM710                                  12
 20: 001V521  MM710                                  12
 21: 001V522  MM710                                  12
 22: 001V523  MM710                                  12
 23: 001V524  MM710                                  12
 24: 001V525  MM710                                  12
 25: 001V526  MM710                                  12
 26: 001V527  MM710                                  12
 27: 001V528  MM710                                  12
 28: 001V529  MM710                                  12
 29: 001V530  MM710                                  12
 30: 001V531  MM710                                  12
```

Figure 30: Trunk Group for Interface to ATT AMX Alarm Management Server, Page 6

4.10. Configure Call Routing

4.10.1. Outgoing Calls to PSTN

Use the **change ars analysis** command to designate that all numbers beginning with "0", be routed to the PSTN via route pattern "9".

```
change ars analysis 0                                        Page   1 of   2
                           ARS DIGIT ANALYSIS TABLE
                                 Location:  all           Percent Full:    0

         Dialed           Total     Route    Call   Node  ANI
         String          Min  Max  Pattern   Type   Num   Reqd
   0                     7    15    9        pubu         n
```

Figure 31: ARS Analysis Form

Use the **change route-pattern** command to designate that calls routing pattern 9 should routed to trunk 9, the PSTN trunk.

```
change route-pattern 9                                       Page   1 of   3
                  Pattern Number: 9   Pattern Name: PSTN
                           SCCAN? n     Secure SIP? n
   Grp FRL NPA Pfx Hop Toll No.  Inserted                          DCS/ IXC
   No          Mrk Lmt List Del  Digits                          QSIG
                           Dgts                                  Intw
 1: 9    0                                                        n   user
 2:                                                               n   user
 3:                                                               n   user
 4:                                                               n   user
 5:                                                               n   user
 6:                                                               n   user

    BCC VALUE  TSC CA-TSC    ITC BCIE Service/Feature PARM  No. Numbering LAR
   0 1 2 M 4 W     Request                                    Dgts Format
                                                           Subaddress
 1: y y y y y n  n           rest                                      none
 2: y y y y y n  n           rest                                      none
 3: y y y y y n  n           rest                                      none
 4: y y y y y n  n           rest                                      none
 5: y y y y y n  n           rest                                      none
 6: y y y y y n  n           rest                                      none
```

Figure 32: PSTN Route Pattern Form

4.10.2. Outgoing Calls to ATT AMX Alarm Management Server

Use the **change uniform-dialplan** command to specify that calls to extensions allocated to ATT AMX Alarm Management Server, are to be processed by Automatic Alternate Routing (aar).

```
change uniform-dialplan 0                                      Page   1 of   2
                     UNIFORM DIAL PLAN TABLE
                                                             Percent Full: 0

  Matching                  Insert             Node
  Pattern       Len Del     Digits     Net Conv Num
2               5   0                  aar  n
```

Figure 33: ATT AMX Alarm Management Server Uniform Dialplan Configuration

Use the **change aar analysis** command to select a route pattern for calls to ATT AMX Alarm Management Server extensions.

```
change aar analysis 0                                          Page   1 of   2
                           AAR DIGIT ANALYSIS TABLE
                                 Location:  all           Percent Full:    0

          Dialed           Total     Route    Call   Node  ANI
          String          Min  Max  Pattern   Type   Num   Reqd
    2                     5    5    2         aar          n
```

Figure 34: ATT AMX Alarm Management Server Aar Analysis Configuration

Use the **change route-pattern** command to designate that calls to the ATT AMX Alarm Management Server should be routed to the ATT AMX Alarm Management Server trunk.

```
change route-pattern 2                                         Page   1 of   3
                  Pattern Number: 2   Pattern Name: AMX                          SCCAN? n
Secure SIP? n
    Grp FRL NPA Pfx Hop Toll No.  Inserted                              DCS/ IXC
    No          Mrk Lmt List Del  Digits                                QSIG
                                  Dgts                                  Intw
 1: 12   0                                                               n   user
 2:                                                                      n   user
 3:                                                                      n   user
 4:                                                                      n   user
 5:                                                                      n   user
 6:                                                                      n   user

     BCC VALUE  TSC CA-TSC    ITC BCIE Service/Feature PARM  No. Numbering LAR
    0 1 2 M 4 W     Request                                    Dgts Format
                                                             Subaddress
 1: y y y y y n  n           rest                                        none
 2: y y y y y n  n           rest                                        none
 3: y y y y y n  n           rest                                        none
 4: y y y y y n  n           rest                                        none
 5: y y y y y n  n           rest                                        none
 6: y y y y y n  n           rest                                        none
```

Figure 35: PSTN Route Pattern Form

4.11. Configure Number Treatment

Use the **change public-unknown-numbering** command to specify that the extension is to be used the Calling Party Number for the ATT AMX Alarm Management Server trunk, and to be preceded by the PSTN prefix for the PSTN trunk.

```
change public-unknown-numbering 0                              Page   1 of   2
                     NUMBERING - PUBLIC/UNKNOWN FORMAT
                                          Total
Ext Ext           Trk       CPN            CPN
Len Code          Grp(s)    Prefix         Len
                                                   Total Administered: 4
 5  1             3                        5          Maximum Entries: 240
 5  1             9         6911111111     15
 5  1             12                       5
 5  1             83                       5
```

Figure 36: Public-Unknown-Numbering Configuration

Use the **inc-call-handling-trmt trunk-group** command to insert the Priority Call feature code (defined in **Figure 11**) so that all calls arriving from the ATT AMX Alarm Management Server trunk will be treated as Priority Calls.

```
change inc-call-handling-trmt trunk-group 12                   Page   1 of   3
                     INCOMING CALL HANDLING TREATMENT
 Service/      Number   Number      Del Insert
 Feature        Len      Digits
 tie             5  1                  *74
```

Figure 37: Public-Unknown-Numbering Configuration

5. Configure Avaya R4 Base Station

In its un-configured state, the Avaya R4 base station is set to be a DHCP client. Thus, the MAC address of each base station to be included in the configuration should be entered into the DHCP server together with the IP address, network mask, and default gateway address which are to be assigned to that base station. The Avaya R4 base stations have an integrated HTTP server which allows the input of configuration parameters via a web browser.

Each Avaya R4 base station consists of two independent components:

- A PBX interface component which has a trunk interface to the PBX and an IP interface to one or more radio components.
- A radio component which interfaces to wireless endpoints via DECT and via IP interface to a DECT Base Station containing an active PBX interface component.

The unit which serves as Master has an active PBX interface component and can also have an active radio component. Any additional base stations required to extend radio coverage each has an active radio component which communicates with the Master via IP, with an inactive PBX interface component, hereafter referred to as Slave base stations.

The tested configuration included only one Master base station in the configuration, and had no Slave base stations.

Enter the URL of the DECT base station into a web browser and select the "System administration" control.

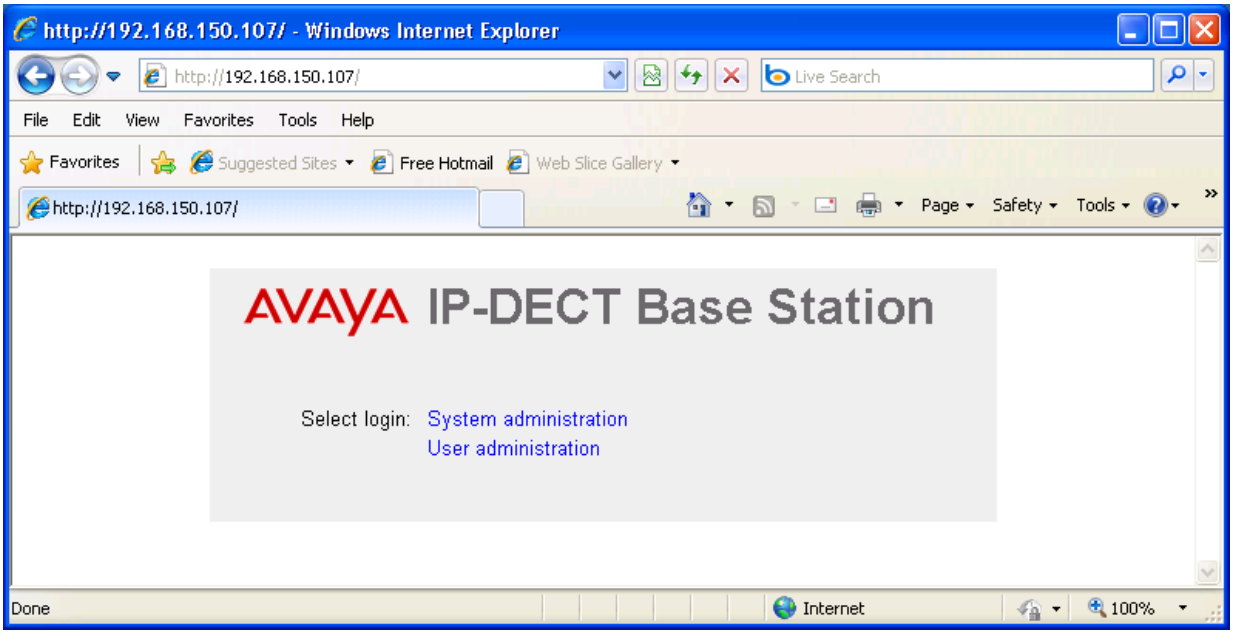

Figure 38: Master Base Selection

Enter the appropriate credentials and click “OK”. For the first-time login, the default password is “changeme”. After initial login, this should be changed to appropriate value, for security reasons.

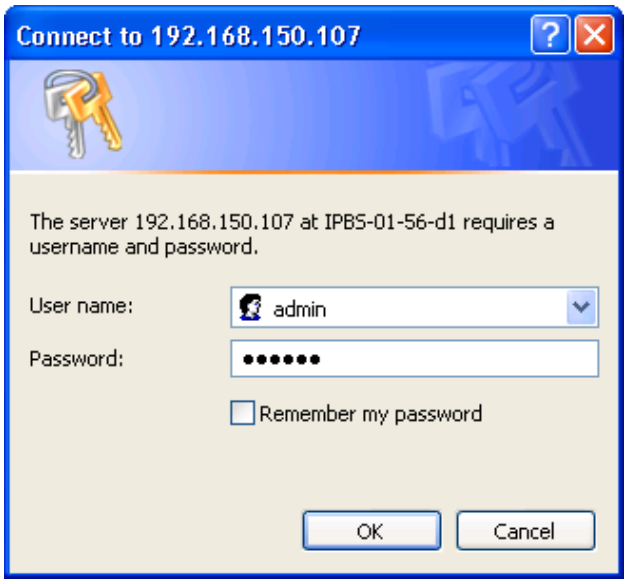

Figure 39: DECT Base Station Login

The initial display shows the **General->Info** tab, which contains version/hardware identification information.

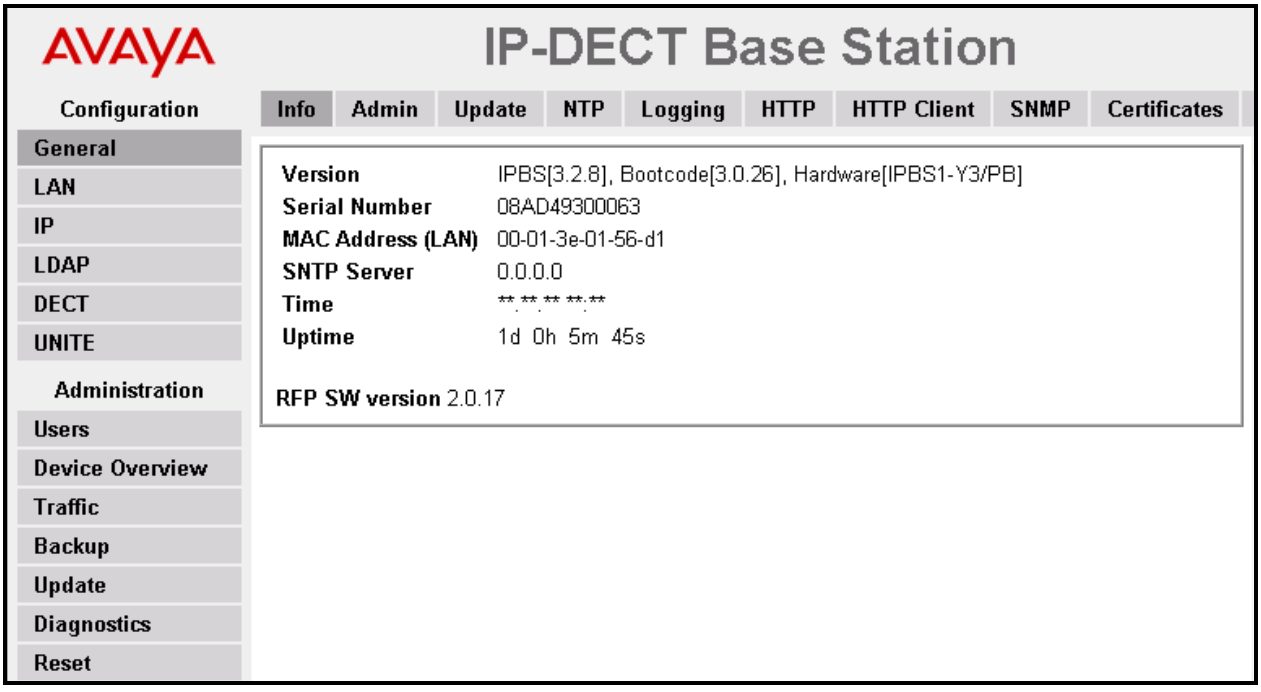

Figure 40: DECT Base Station General -> Info Tab

Select the **LAN->IP** tab. Verify that the IP parameters assigned to the base station correspond to those which are configured in the DHCP reservation.

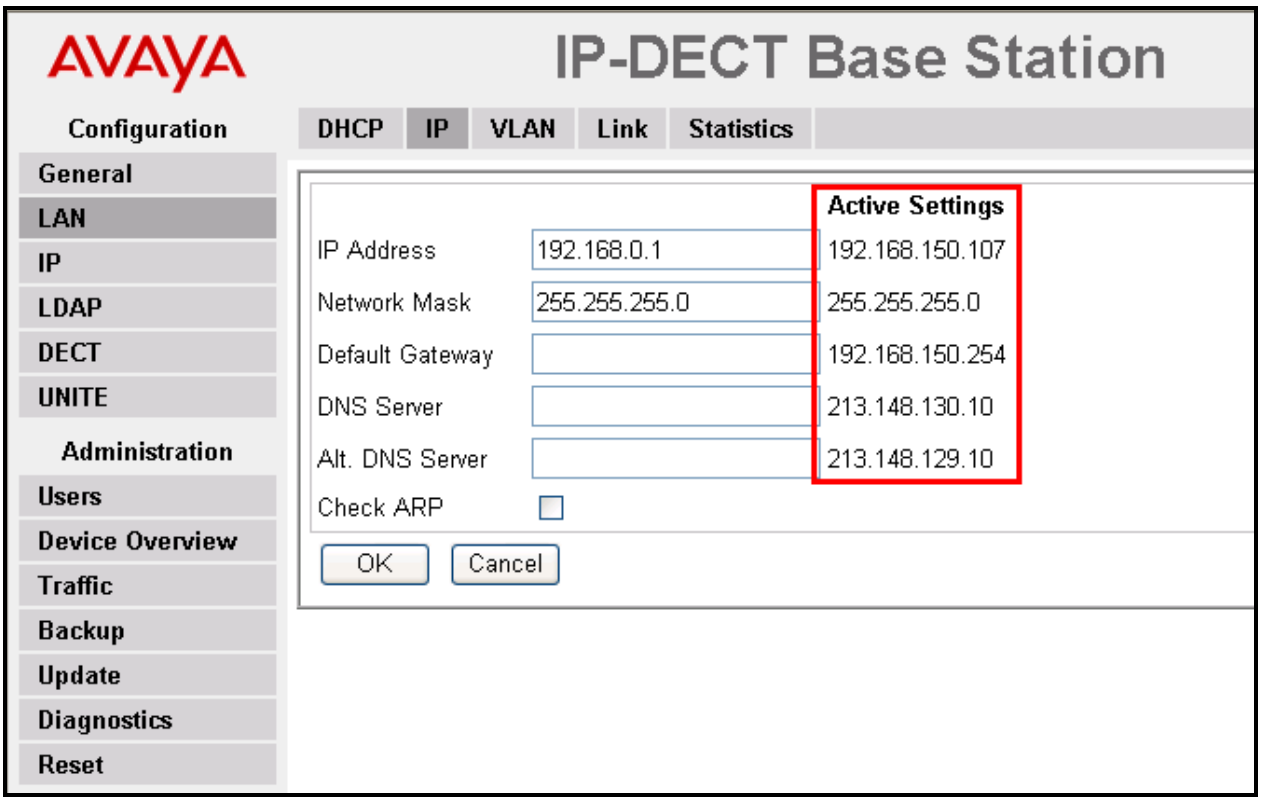

Figure 41: DECT Base Station LAN -> IP Tab

Select the **General->Admin** tab. Enter the parameters shown in the following table and click "OK".

Parameter	Usage
Device Name	Enter an appropriate name to identify the DECT Base Station.
User Name	Enter "admin", the default administrator user name.
Password	Enter an appropriate password.

Table 19: DECT Base Station General -> Admin Tab Parameters

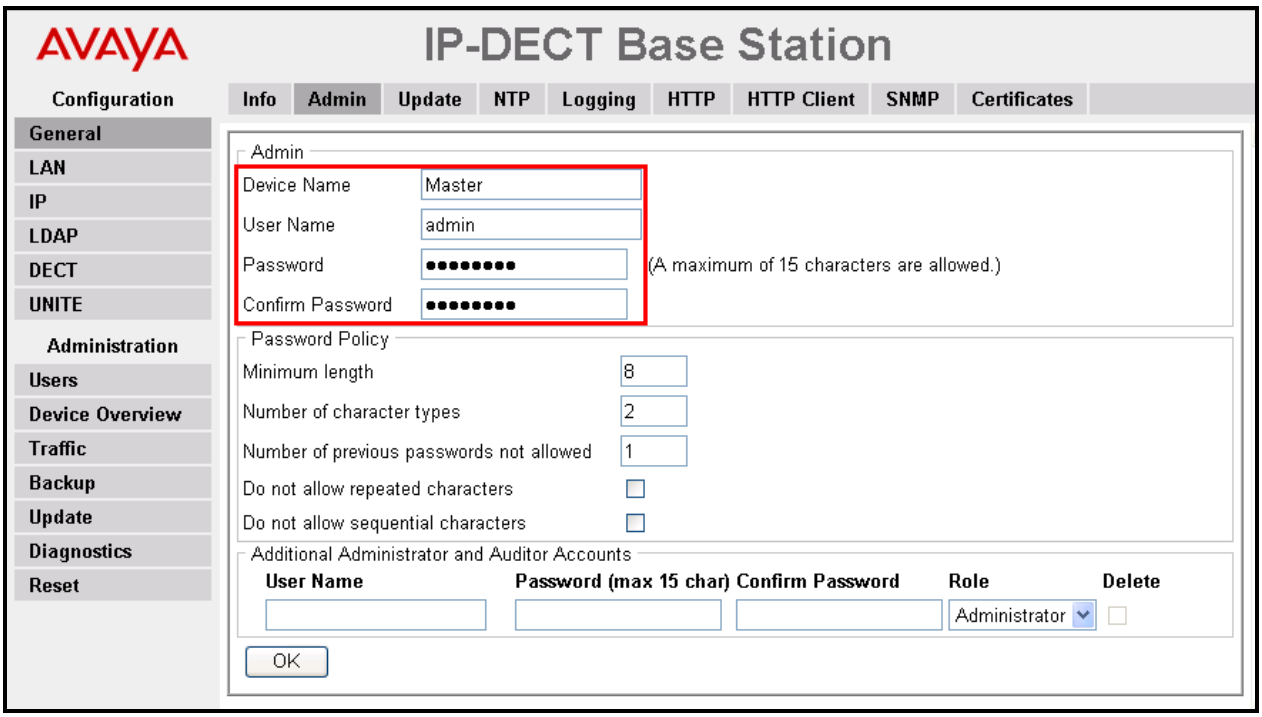

Figure 42: DECT Base Station General -> Admin Tab

Select the **DECT->Master** tab. Enter the parameters shown in the following table and select "OK".

Parameter	Usage
Mode	Select "Active" from the drop-down menu.
PBX	Select "ACM" from the drop-down menu.
Protocol	Select "H.323/XMobile" from the drop-down menu.

Table 20: DECT Base Station DECT -> Master Tab Parameters

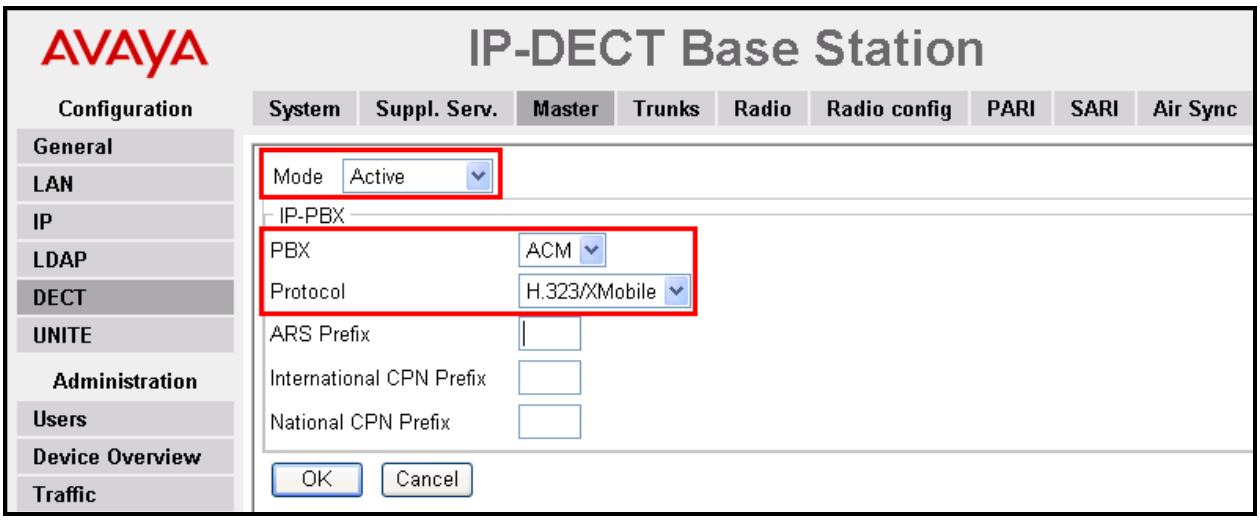

Figure 43: DECT Base Station DECT -> Master Tab

Select the **DECT ->System** tab. Enter the parameters shown in the following table and select "OK".

Parameter	Usage
System Name	Enter an appropriate name to identify this base station.
Password / Confirm	Enter an appropriate password for this base station.
Subscriptions	Select "With System AC" from the drop-down menu.
Authentication Code	Enter an appropriate code to be used by endpoints for registration authentication.
Frequency	Select "Europe" from the drop-down menu.
Coder	Select "G711A" from the drop-down menu.
Frame (ms)	Select "20" from the drop-down menu.

Table 21: DECT Base Station DECT -> System Tab Parameters

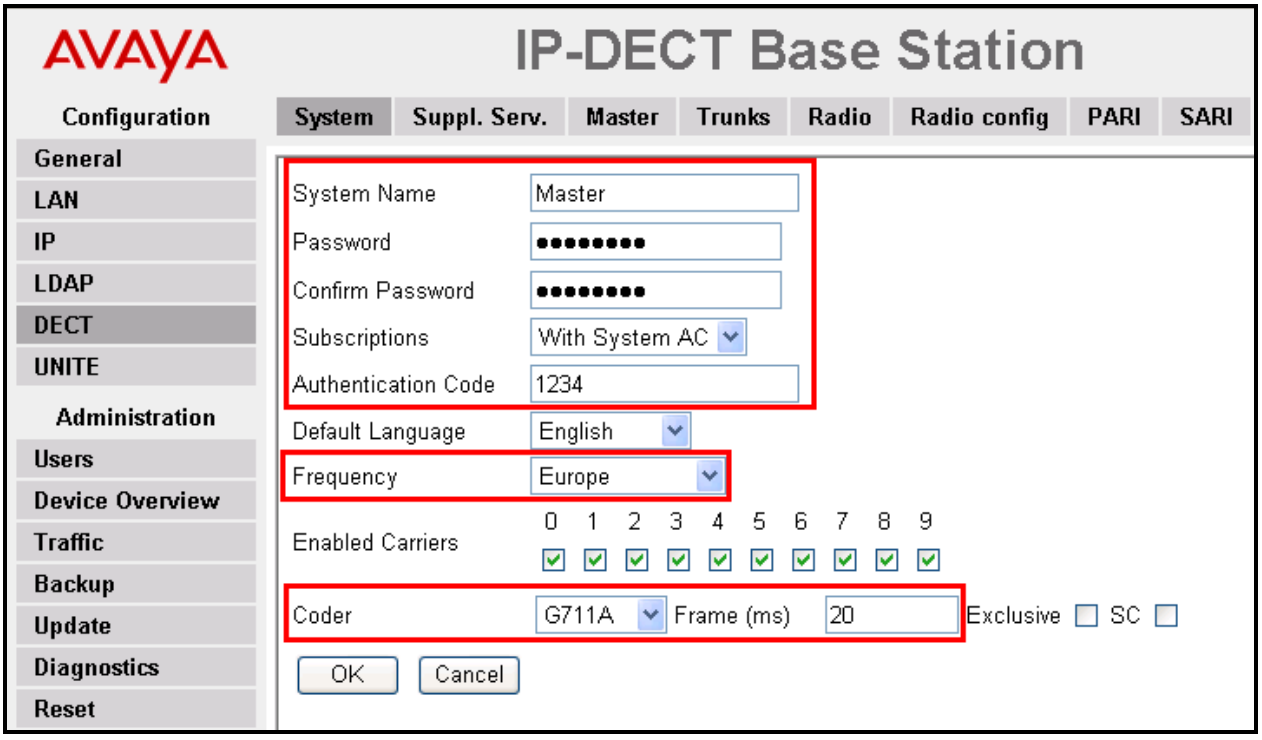

Figure 44: DECT Base Station DECT -> System Tab

Select the **DECT->Trunks** tab. Enter the parameters shown in the following table and select "OK".

Parameter	Usage
Name	Enter an appropriate name to identify this trunk.
Local Port	Enter the number of the local port which is read by this base station. This must be the same values assigned to "Far-end Listen Port" in **Figure 20**.
CS IP Address	Enter the IP assigned to the proc interface in **Figure 8**.
CS Port	Enter the number of the local port which is read by this base station. This must be the same values assigned to "Near-end Listen Port" in **Figure 20**.

Table 22: DECT Base Station DECT -> Trunks Tab Parameters

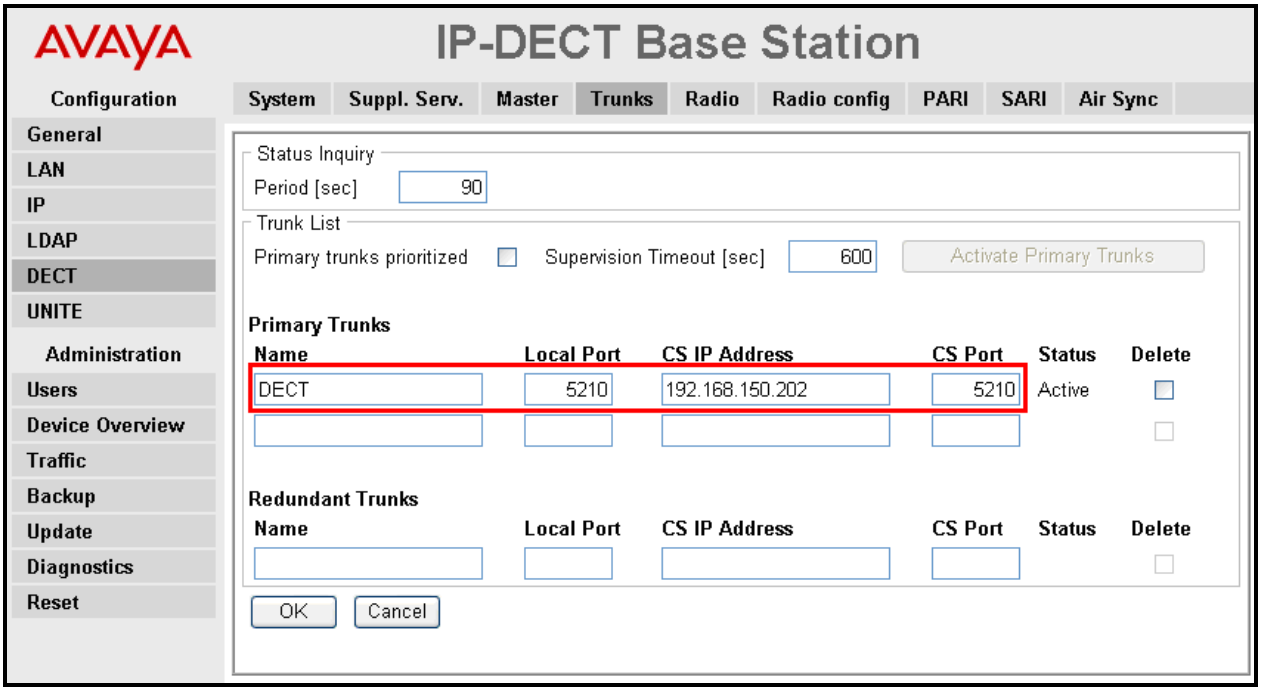

Figure 45: DECT Base Station DECT -> Trunks Tab

Select the **DECT->Radio** tab. Enter the parameters shown in the following table and select "OK".

Parameter	Usage
Name	Enter the System Name assigned to this base station in **Figure 44**.
Password	Enter the password assigned to this base station in **Figure 44**.
Master IP Address	Enter the IP address assigned to this base station, as displayed by the "Active Settings" in **Figure 41**.

Table 23: DECT Base Station DECT -> Radio Tab Parameters

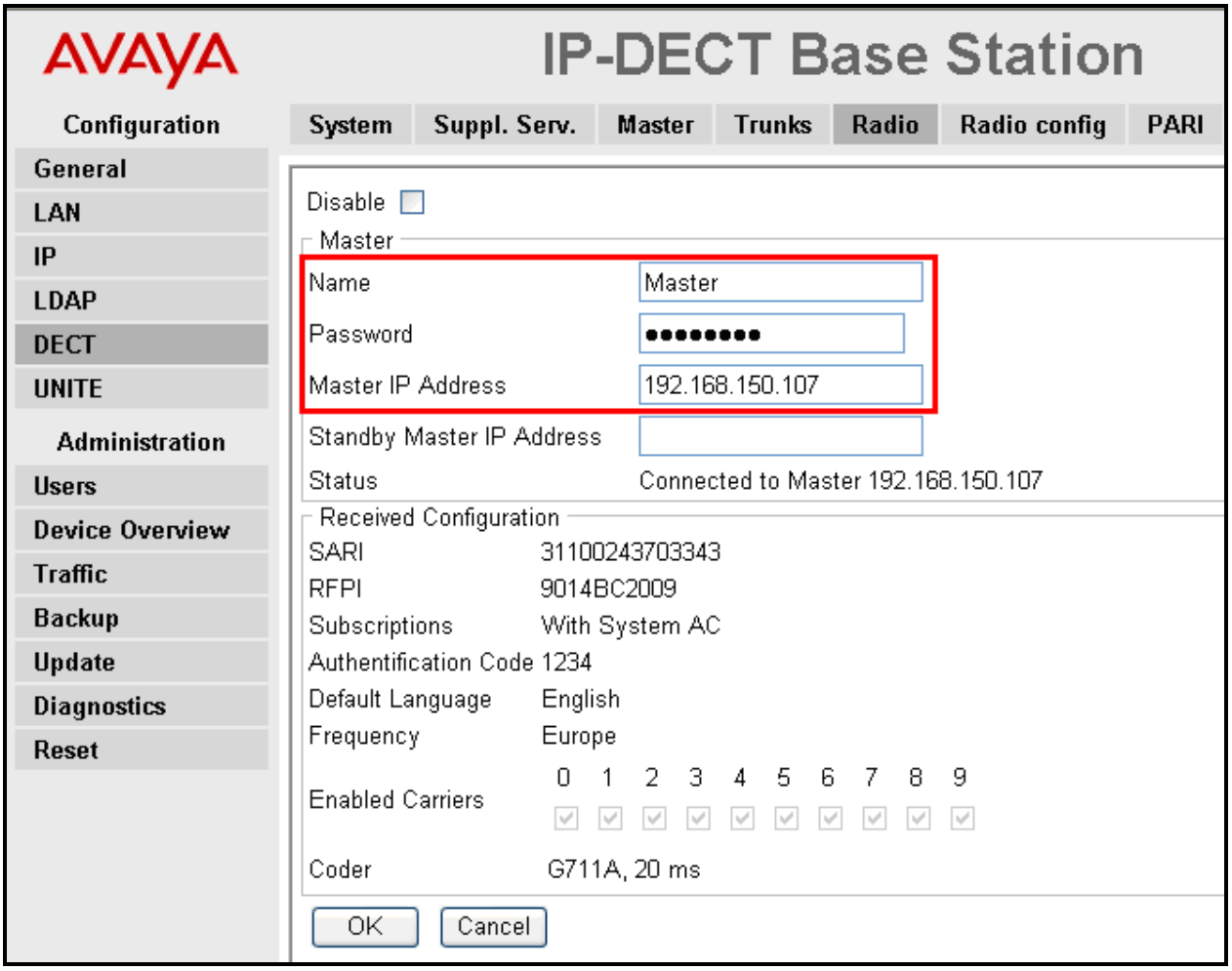

Figure 46: DECT Base Station DECT -> Radio Tab

Select the **DECT->Air Sync** tab. Enter the parameters shown in the following table, select "OK".

Parameter	Usage
Sync Mode	Select "Master" from the drop-down menu.

Table 24: DECT Base Station DECT -> Air Sync Tab Parameters

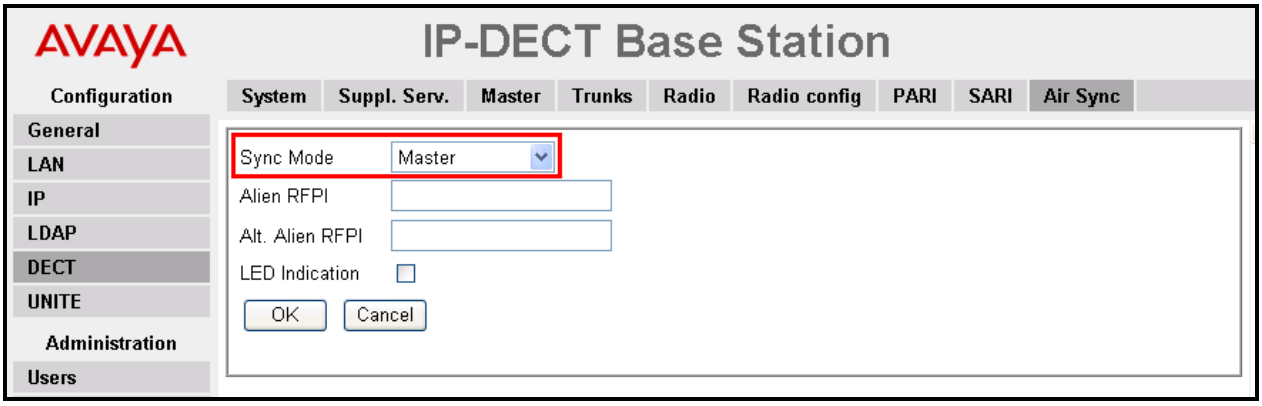

Figure 47: DECT Base Station DECT -> Air Sync Tab

Select the **Reset->Idle-Reset** tab. Click "OK".

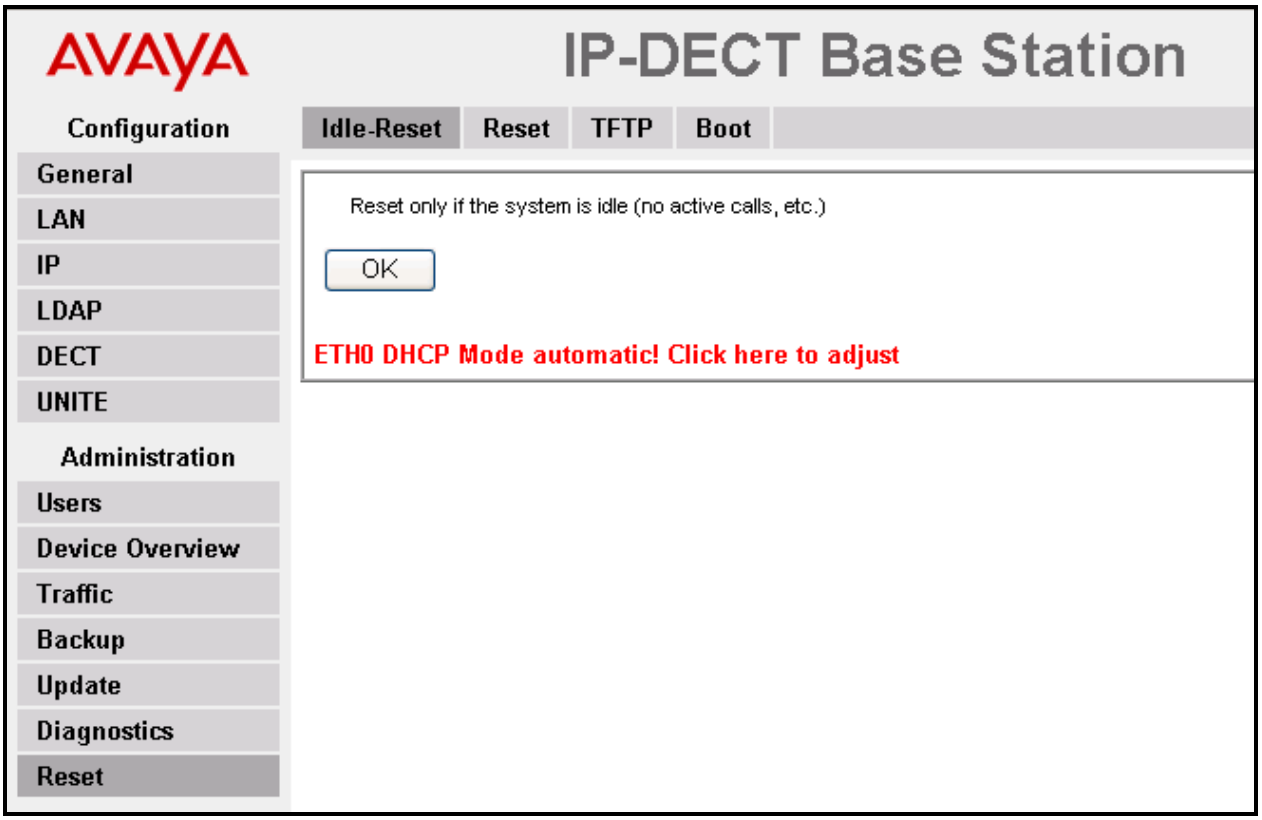

Figure 48: DECT Base Station Reset -> Idle-Reset Tab

6. Configure ATT AMX Alarm Management Server

From the AMX server, run the PikaSetup Utility from the Windows "Start" icon. Navigate to "PIKA" -> "PrimeNet MM", and set the parameter as shown in the following table.

Parameter	Usage
Interface Type	Select "E-1" from the drop-down menu.
Network Protocol	Select "ISDN" from the drop-down menu.

Table 25: PIKA Interface Parameters

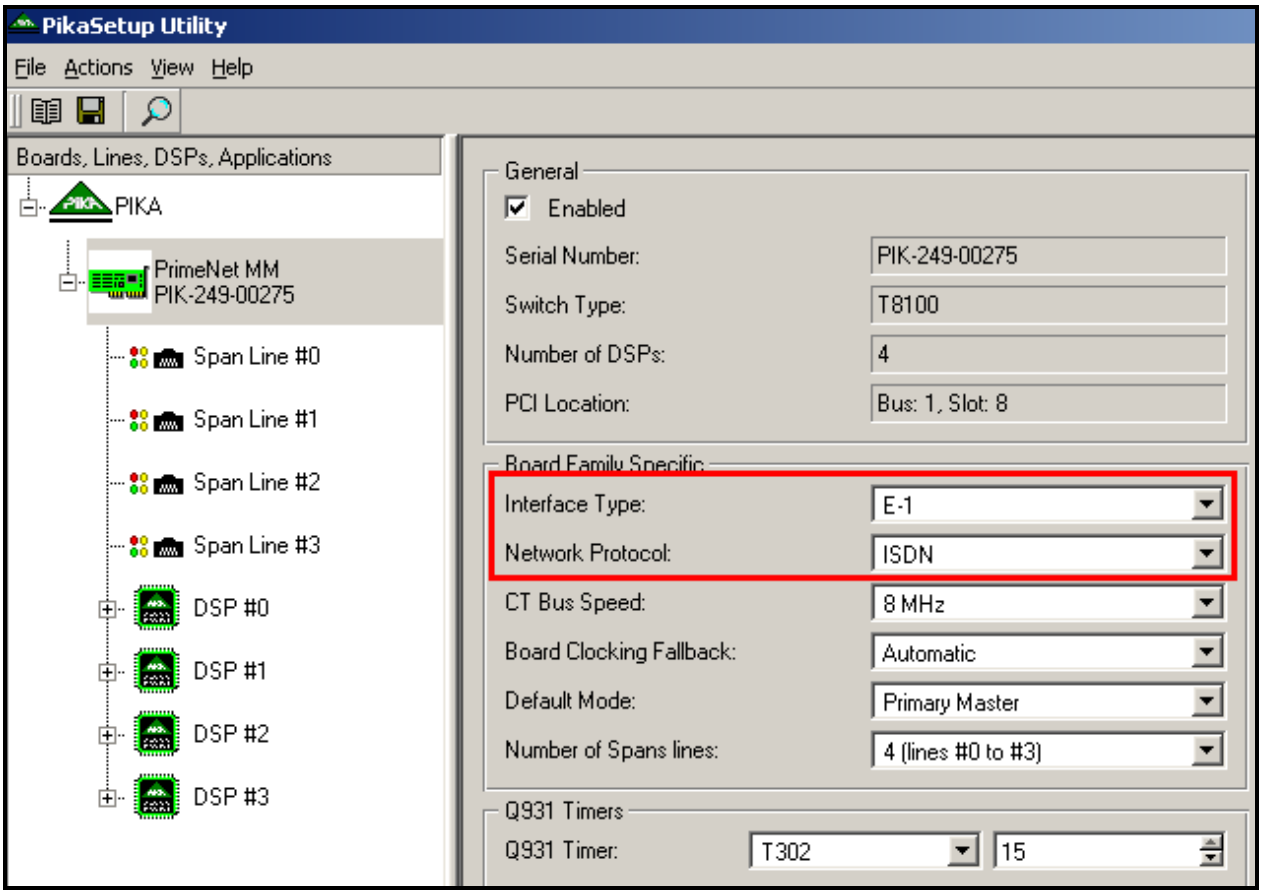

Figure 49: PIKA Interface Screen

Navigate to “PIKA” -> “PrimeNet MM” -> “Span Line #0”, and set the parameter as shown in the following table.

Parameter	Usage
Framing	Select “E1 CRC4” from the drop-down menu.
Encoding	Select “E1 HDB3” from the drop-down menu.
Line Build out	Select “120 Ohm” from the drop-down menu.
Network Type	Select “ETSI EuroISDN” from the drop-down menu.
Termination Type	Select “Network Side” from the drop-down menu.
Network Switch Type	Select “NET5” from the drop-down menu.
Addressing Type	Select “None” from the drop-down menu.
CODEC Compand Mode	Select “A-Law” from the drop-down menu.
Numbering Plan	Select “None” from the drop-down menu.
Bearer Capabilities	Select “Speech” from the drop-down menu.
Transfer Rate	Select “64 Kbps” from the drop-down menu.
Call Model Mode	Select “Automatic” from the drop-down menu.

Table 26: PIKA Interface Parameters

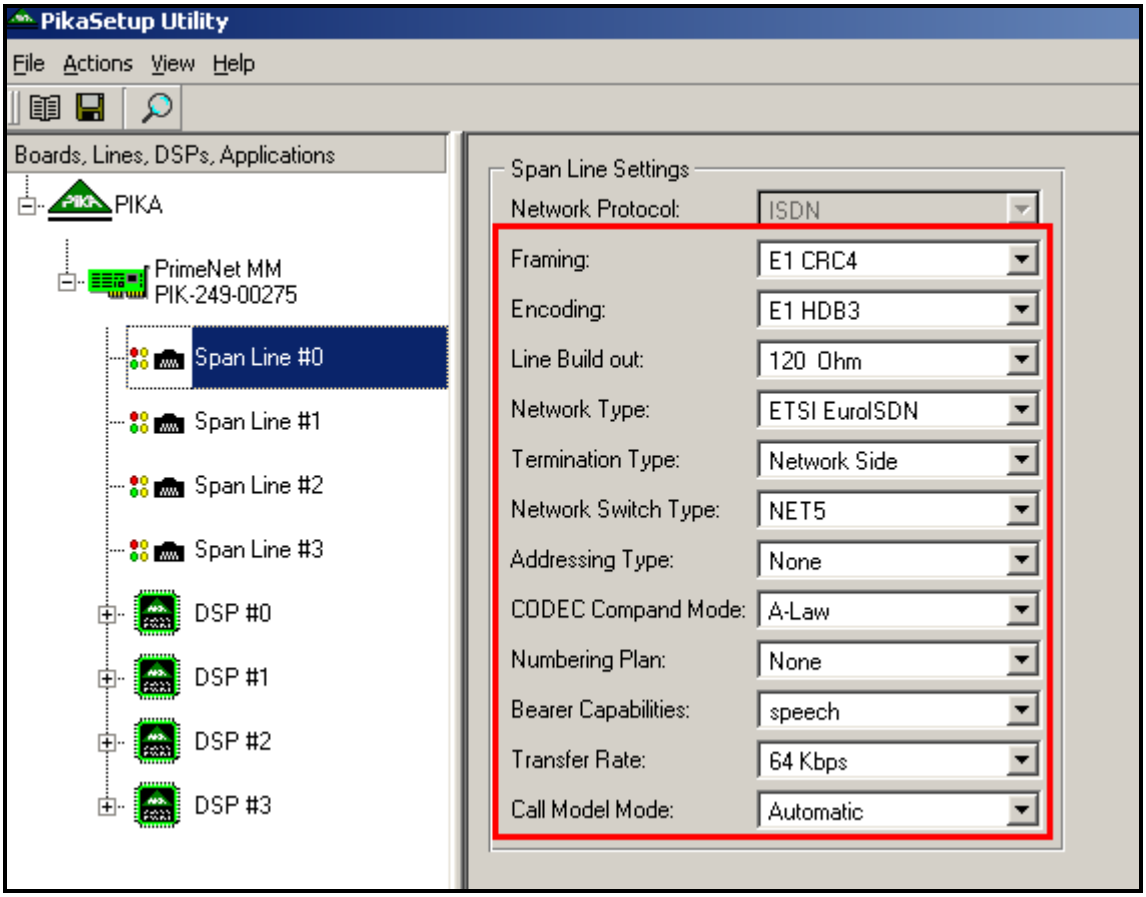

Figure 50: PIKA Interface Screen

7. General Test Approach and Test Results

The compliance testing of ATT AMX Alarm Management Server interoperating with Communication Manager was performed manually. The tests were functional in nature, and no performance testing was done. The following observations were encountered during testing:

- If a local fixed extension which has no available call appearance receives an incoming alarm call, the caller receives a "busy" indication: it makes no difference if it is a "priority" call.

- If an alarm call is made to a diverted (call forwarding) station, the call is diverted: it makes no difference if it is a "priority" call.

Neither of the above observations was considered to be a product failure. With the exception of the above-described observations, all tests which were performed produced the expected result. **Section 1.1** contains a list of tests which were performed.

8. Verification Steps

The correct installation and configuration of ATT AMX Alarm Management Server can be verified by performing the steps shown below.

8.1. Verify Avaya Aura™ Communication Manager Configuration

Enter the "status signaling-group" command from the Communication Manager SAT terminal and verify that the signaling group is in the "in-service" state.

```
status status signaling-group 9
                        STATUS SIGNALING GROUP

       Group ID: 9                               Active NCA-TSC Count: 0
     Group Type: isdn-pri                         Active CA-TSC Count: 0
  Signaling Type: facility associated signaling
    Group State: in-service


                           Primary D-Channel


            Port: 001V516        Level 3 State: in-service


                         Secondary D-Channel


            Port:                Level 3 State: no-link
```

Figure 51: Signaling Group Status

Enter the “status trunk” command from the Communication Manager SAT terminal and verify that the all of the trunk members are in the “in-service/idle” state.

```
status trunk 12                                                    Page   1

                           TRUNK GROUP STATUS

Member   Port     Service State      Mtce Connected Ports
                                    Busy

0012/001 001V501  in-service/idle    no
0012/002 001V502  in-service/idle    no
0012/003 001V503  in-service/idle    no
0012/004 001V504  in-service/idle    no
0012/005 001V505  in-service/idle    no
0012/006 001V506  in-service/idle    no
0012/007 001V507  in-service/idle    no
0012/008 001V508  in-service/idle    no
0012/009 001V509  in-service/idle    no
0012/010 001V510  in-service/idle    no
0012/011 001V511  in-service/idle    no
0012/012 001V512  in-service/idle    no
0012/013 001V513  in-service/idle    no
0012/014 001V514  in-service/idle    no
0012/015 001V515  in-service/idle    no
0012/016 001V517  in-service/idle    no
0012/017 001V518  in-service/idle    no
0012/018 001V519  in-service/idle    no
0012/019 001V520  in-service/idle    no
0012/020 001V521  in-service/idle    no
0012/021 001V522  in-service/idle    no
0012/022 001V523  in-service/idle    no
0012/023 001V524  in-service/idle    no
0012/024 001V525  in-service/idle    no
0012/025 001V526  in-service/idle    no
0012/026 001V527  in-service/idle    no
0012/027 001V528  in-service/idle    no
0012/028 001V529  in-service/idle    no
0012/029 001V530  in-service/idle    no
0012/030 001V531  in-service/idle    no
```

Figure 52: Trunk Status

8.2. Verify Avaya R4 DECT Base Station Configuration

From the Avaya R4 DECT base station, the **Device Overview** -> **Radios** tab should show registrations for the base station.

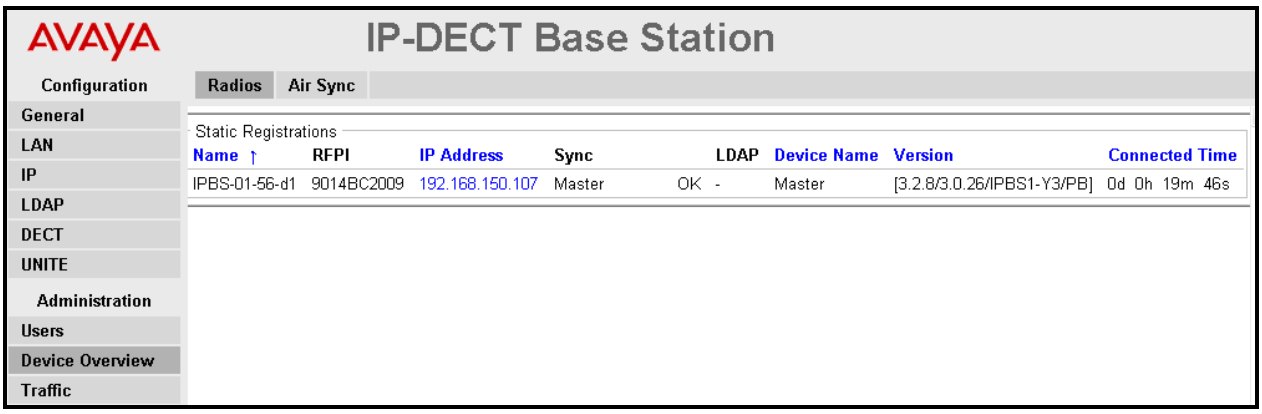

Figure 53: DECT Base Station Radio Status

8.3. Verify ATT AMX Alarm Management Server Configuration

Start the Pika Test program on the AMX server. The last line of the program output should indicate that a "PK_EVENT_CALL_BOARD_LINE_UP" event is received for board "0".

```
Warning: Unable to find requested application mask for line resources 102 to 119


Board Board                                API                Return
Index Type                                 Function           Status
===== ===================================  =================  ======
0     PikaPrimeNetMMPCI                    PK CTI Start       OK

Use '?' to display the full help menu or '? <section name>' to display a menu
sub section. For a complete list of menu sub sections type '? section'.
New users should type '? intro' for an introduction to Pika Test.

Ready!
BOARD 0 SPAN 0 PK_EVENT_CALL_BOARD_LINE_DOWN
BOARD 0 SPAN 1 PK EVENT CALL BOARD LINE DOWN
BOARD 0 SPAN 2 PK_EVENT_CALL_BOARD_LINE_DOWN
BOARD 0 SPAN 3 PK_EVENT_CALL_BOARD_LINE_DOWN
BOARD 0 SPAN 0 PK_EVENT_CALL_BOARD_LOSF_CLEAR_ALARM
BOARD 0 SPAN 0 PK_EVENT_CALL_BOARD_RMT_ALARM
BOARD 0 SPAN 0 PK_EVENT_CALL_BOARD_RMT_CLEAR_ALARM
BOARD 0 SPAN 1 PK EVENT CALL BOARD RED ALARM
BOARD 0 SPAN 2 PK_EVENT_CALL_BOARD_RED_ALARM
BOARD 0 SPAN 3 PK_EVENT_CALL_BOARD_RED_ALARM
BOARD 0 SPAN 0 PK_EVENT_CALL_BOARD_LINE_UP
```

Figure 54: AMX Trunk Status

9. Conclusion

These Application Notes contain instructions for configuring Communication Manager to connect to the ATT AMX Alarm Management Server via the Avaya R4 base station. A list of instructions is provided to enable the user to verify that the various components have been correctly configured.

10. Additional References

This section references documentation relevant to these Application Notes. The Avaya product documentation is available at http://support.avaya.com.

[1] *Administering Avaya Aura™ Communication Manager*, May 2009, Document Number 03-300509.
[2] *Avaya Aura™ Communication Manager Feature Description and Implementation,* May 2009, Document Number 555-245-205.
[3] *Avaya DECT R4 Installation and Administration Manual,* August 2009, Document Number 21-603363.
[4] *AMX Alarm Management Server,* AMX Flyer
[5] *Personal & Alarm Management,* Version 1.2.1-EN, October 2009

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya DevConnect Program at devconnect@avaya.com.