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Avaya Solution & Interoperability Test Lab

Application Notes for Igeacare Igeacom300 and Igeacom500 Nurse Call Devices with Avaya Communication Manager - Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Igeacare Igeacom300 and Igeacom500 Nurse Call Devices to successfully interoperate with 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.

BS; Reviewed:
SPOC 3/15/2005
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1. Introduction

These Application Notes describe the compliance-tested configuration utilizing Avaya S8700 Media Server with Avaya G600 Media Gateway running Avaya Communication Manager and Igeacare Igeacom300 and Igeacom500 Nurse Call Devices. The Igeacare Igeacom300 and Igeacom500 are nurse call devices that seamlessly integrates all the functions of a traditional nurse call system, providing instant two-way speech between resident and nurse/aid. The devices are essentially an analog speaker telephone, primarily for nursing home residents to call the nursing staff. The devices support capabilities such as programmable multiple call destination points for initial and redirection of a nurse call.

The Igeacom300 lets residents call using a red button on the device, or a hardwired pull cord, or a push button cord. The Igeacom500 device is an Igeacom300 device equipped with a wireless module, and supports all the Igeacom300 features. The wireless module in Igeacom500 enables the residents to call using a wireless pull cord or a wireless pendant.

The compliance testing was performed for both the Igeacom300 and the Igeacom500. These devices were connected as analog telephones to the Avaya G600 Media Gateway for the purpose of the testing.

1.1. Sample Network Configuration

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

The configuration consists of an Avaya S8700 Media Server and Avaya G600 Media Gateway running Avaya Communication Manager. A mix of Igeacare Igeacom300 and Igeacom500 Nursing Devices are connected to an Avaya analog circuit pack TN793B (not shown) in the Avaya G600 Media Gateway. A mix of Avaya Digital and analog telephones are connected to the Avaya G600 Media Gateway. The P333T-PWR Power Over Ethernet Stackable switch in this configuration is used to support connectivity of S8700 Media Server with the G600 Media Gateway and the Avaya IP telephones. The calls are made from all the Igeacom call points, such as hard-wired pull cord or wireless pendant (not shown) on the Igeacom300 and Igeacom500 to the Avaya telephones.

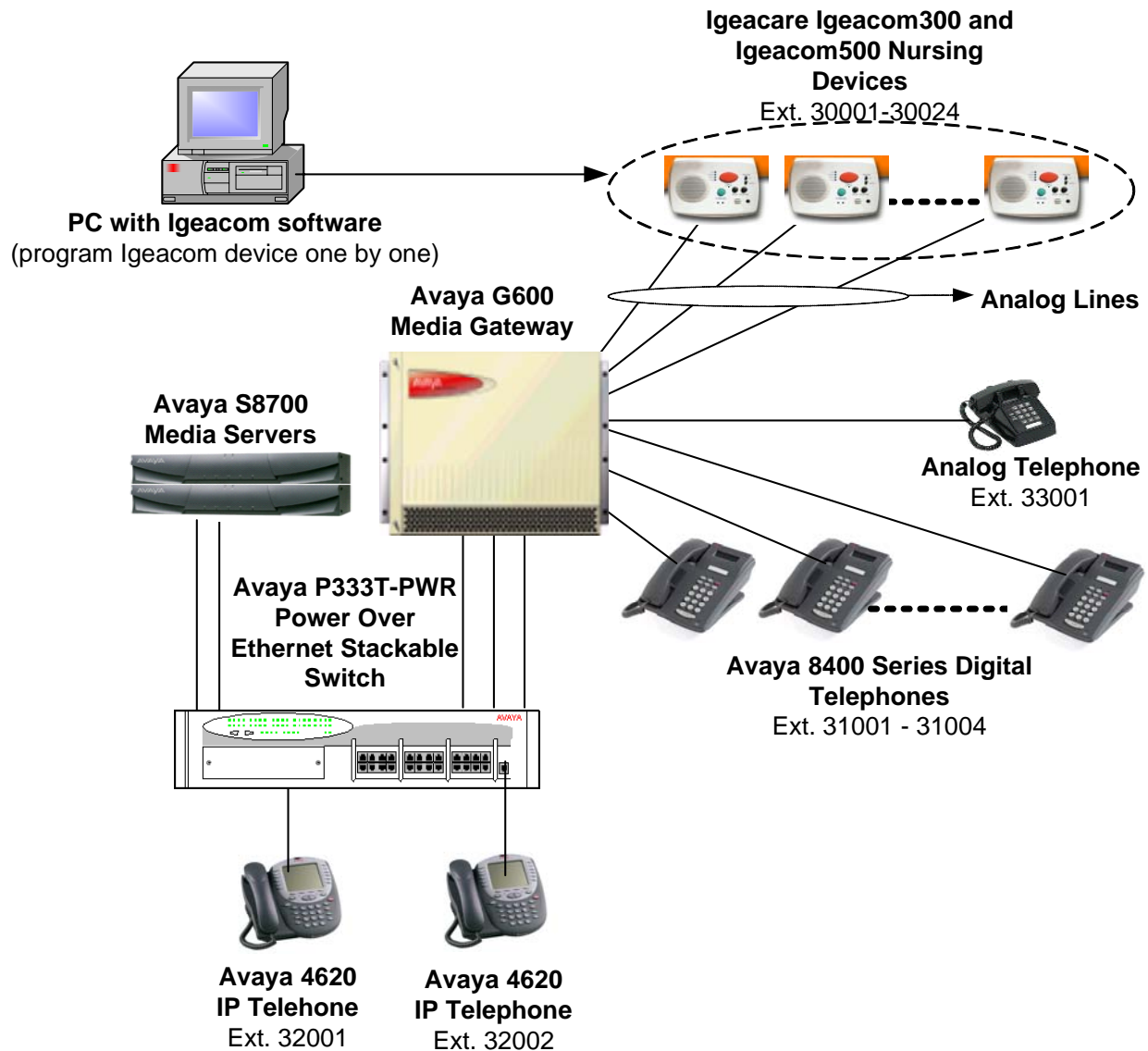Note that this configuration is also applicable with other Avaya Media Servers and Media Gateways.

Igeacare Igeacom300 and Igeacom500 Nursing Devices
Ext. 30001-30024

PC with Igeacom software
(program Igeacom device one by one)

Avaya G600 Media Gateway

Analog Lines

Avaya S8700 Media Servers

Analog Telephone
Ext. 33001

Avaya P333T-PWR Power Over Ethernet Stackable Switch

Avaya 8400 Series Digital Telephones
Ext. 31001 - 31004

Avaya 4620 IP Telehone
Ext. 32001

Avaya 4620 IP Telephone
Ext. 32002

Figure 1: Network Configuration

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2. Equipment and Software Validated

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

Equipment	Version
Avaya S8700 Media Server and G600 Media Gateway running Avaya Communication Manager	2.1 (R012x.01.0.411.7)
Avaya Analog TN793 circuit pack to support analog telephones and Igeacom devices	V6
Analog Telephones	N/A
Avaya 8400 Series Digital telephones	N/A
Avaya 4620 IP telephones	2.0
Igeacare Igeacom500 and Igeacom300	Tav-383
Igeacom Programming Software	5.34

3. Configure Igeacare Igeacom300 and Igeacom500

The Igeacom Nurse Call device supports calling the nurse staff via the following calling points:

- Red Call Button
- Hard wired Pull Cord
- Hard wired Push Button Cord
- Wireless Pendant
- Wireless Pull Cord

In addition, the device supports the following activities buttons. Pressing an activity button routes the call to an associated telephone number where a pre-recorded voice message is played back.

- Menu button
- Activities button

The parameters that can be programmed on each device for the calling points and the activity buttons are:
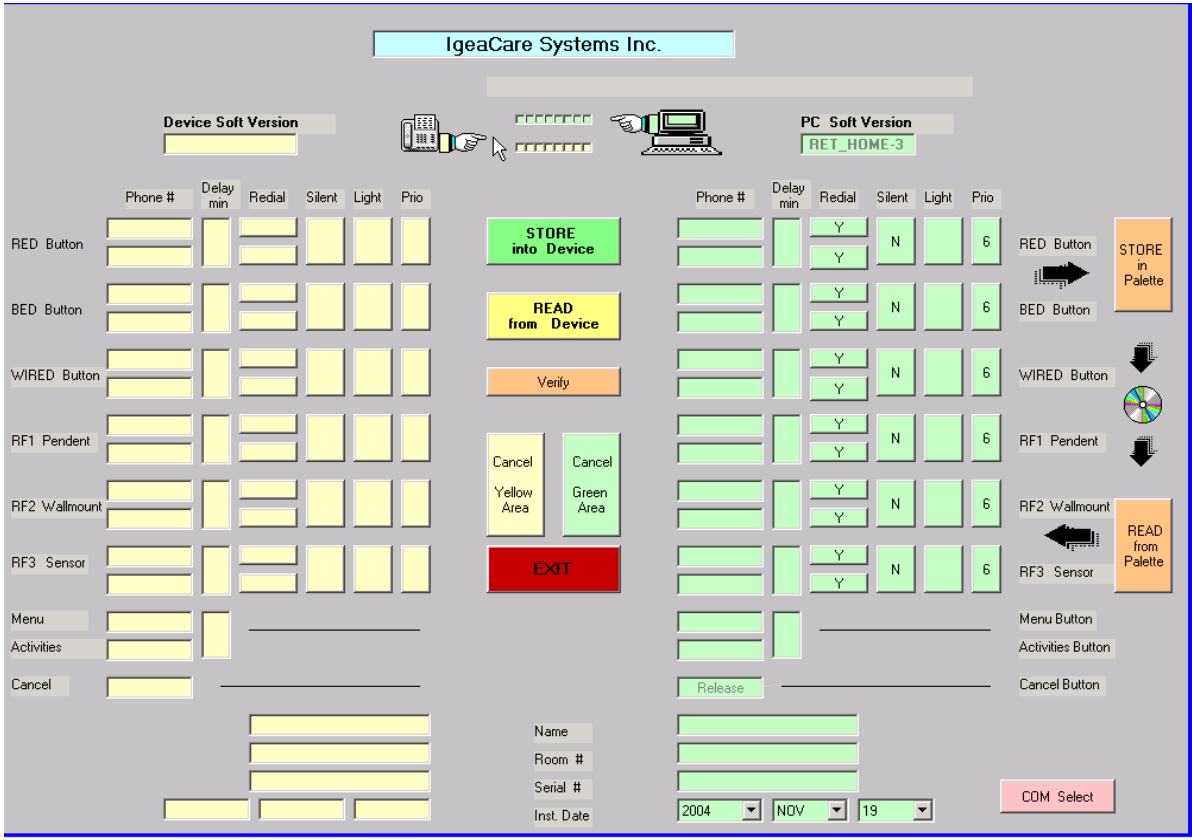
- Telephone Numbers
- Redial Yes/No
- Redial Delays in minutes
- Silent Dialing Yes/No
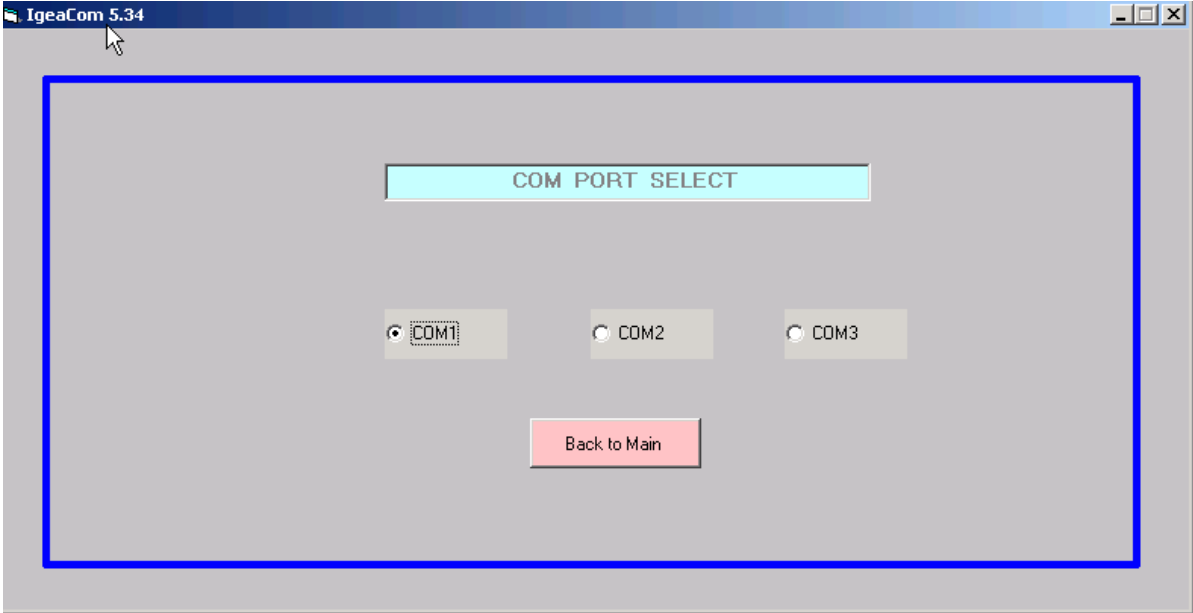- Color Dome Light White/Green/Red/Blue

- Priority (from Highest = 1 to Lowest = 6)

The Igaecom300 and Igeacom500 devices are configured using the Igeacom software via an infra-red link. This section describes the procedure to configure an Igeacom device.
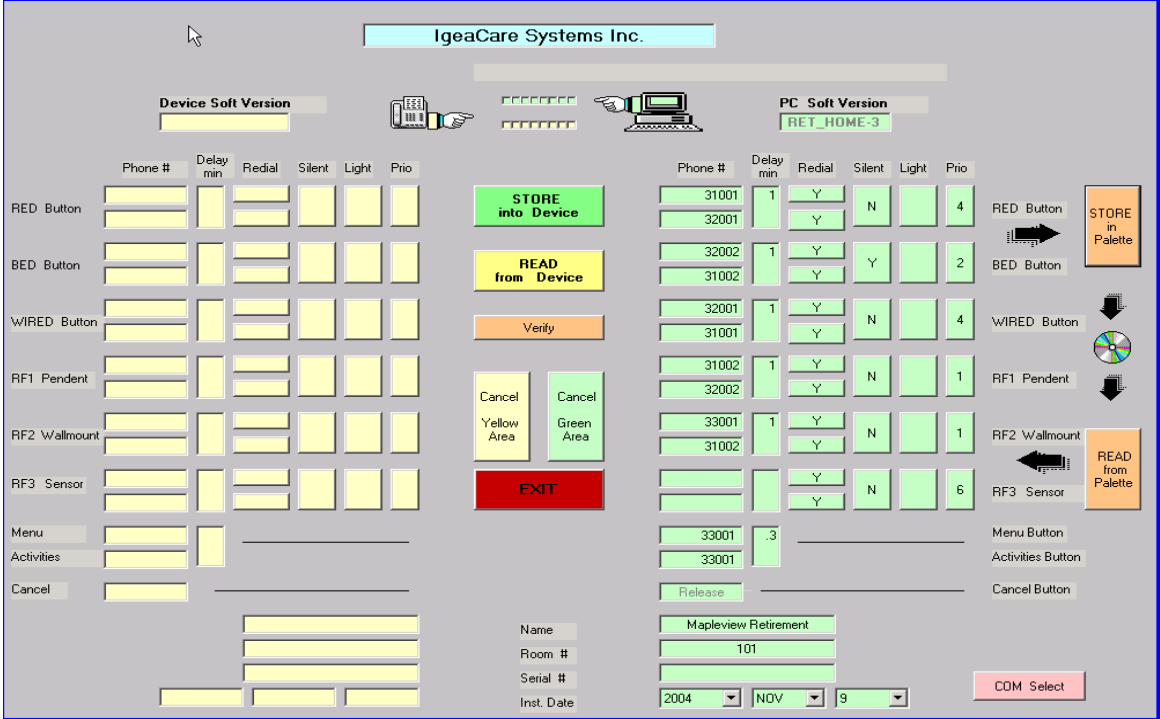
3.1. Configure Igeacom Programming Setup

The following steps explain how to set up the Configuration/Programming mode for an Igeacom device.
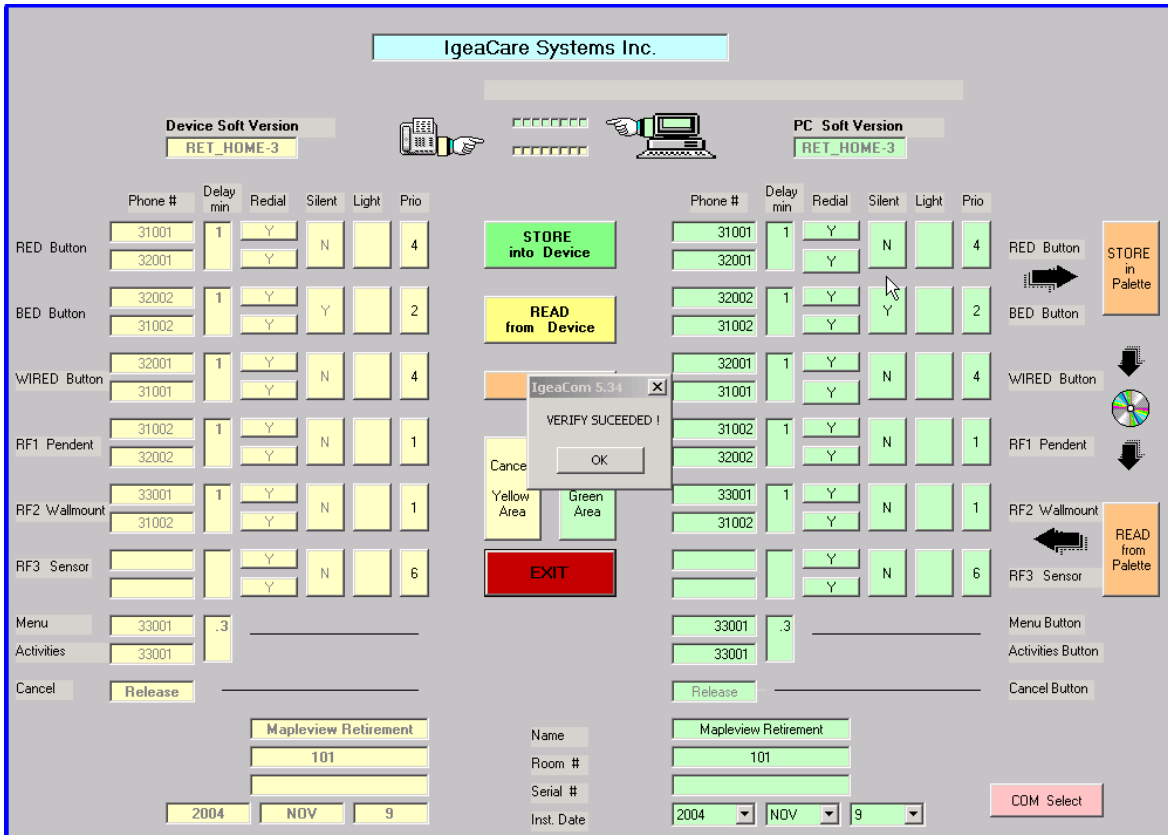
Step	Description
1.	**Start Igeacom Software** Start the Igeacom 5.34 software on a PC. The following display appears on the PC screen. This is the only user interface for configuring an Igeacom device.

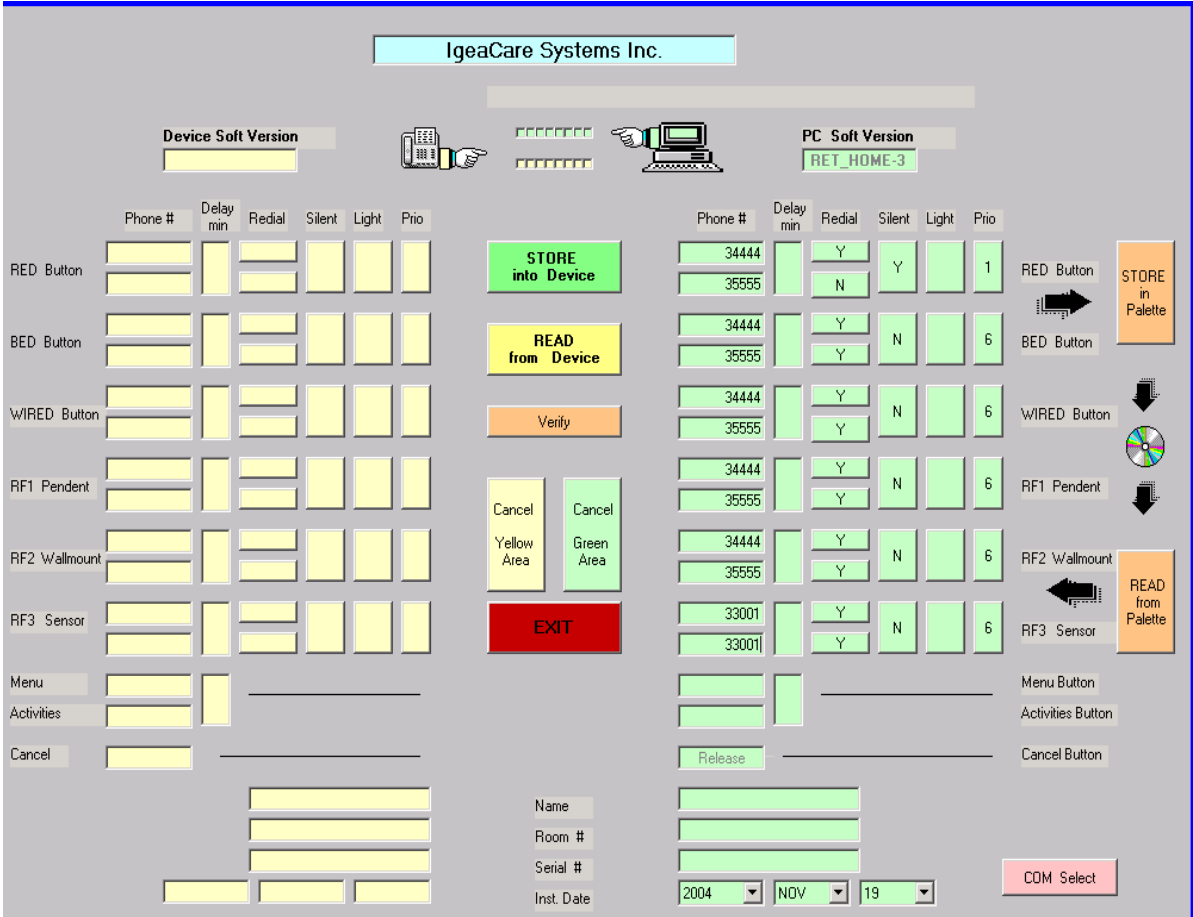| Step	Description
2.	**COM port connection** Connect one end of the Igeacom infra-red link Programming Tool to a COM port of the PC Click. Click on the **COM Select** icon in the lower right corner to select the COM port. In the following example, **COM1** is selected. ![IgeaCom 5.34 COM PORT SELECT window with COM1, COM2, COM3 options and Back to Main button]
3.	**Infra-red link setup** Align the other end (RF end) of the Igeacom Programming Tool with the front of the Igeacom device. • To place Igeacom device into infra-red download (programming) mode, simultaneously press both **Volume** buttons for approximately 5 seconds. • To end the infra-red download mode: once the parameters are downloaded and verified, press both **Volume** buttons to end system download.

3.2. Configuring Multiple Call Points

Step	Description
1.	**Calling Point Parameters** Set the following parameters for the **RED Button** calling point on the PC Software Version section (Right Half of the screen) of the Igeacom screen. • **Phone #**: Enter the phone number that the device should dial if the RED Button is pressed. The first Phone # is the primary contact and the second phone number is the rollover telephone number. In the following example, when the Red Button is pressed, the primary contact is **x31001.** If the primary contact does not answer, the call is made to the rollover number **x32001.** • **Delay min**: Enter the amount of time that Igeacom device should wait before dialing the rollover phone number. For example, **1** minute. • **Redial**: If the Igeacom device should redial the primary and rollover number when the call is not answered, then click **Y** for **Yes,** otherwise **N** for **No**. • **Silent**: click **Y** for **Yes** or **N** for **No** to enable or disable hearing the Igeacom device dial the primary or rollover number. In the following example, **Silent** is set to **N**. • **Light**: Click on this field to determine the color in the dome light: red, white, green, or blue will be lit when a call is made, or leave it blank if the dome light is not connected. • **Prio**: Click on this field to set the priority on a scale of 1 to 6. The number 1 is the highest priority and the number 6 is the lowest priority. See Step 3 for more details.

Step	Description
2.	**Other Calling Points** Repeat step 1 for other calling points. For example, • Configure **Bed Button** row for the hard wired push button cord. • Configure **WIRED Button** row for hard wired pull cord. • Configure **RF1 Pendant** row for wireless pendant. • Configure **RF2 Wallmount** row for wireless pull cord.
3.	**Priority** When multiple calling points are configured, then each calling point can be ranked for a priority. For example, in the snapshot screen in Step1, the Red Button is set for priority 4, Hardwired Pull Cord is priority 4, and wireless pendant is priority 1. Now, • Make a test call using Red Button • Don't answer and then make the call from the Hard-wired pull cord. • Don't answer and then make the call from the wireless pendant. Since the priority for Red Button and Hard wired pull cord is the same, the call does not get cancelled when the Hard-wired pull cord is triggered. However, since the wireless pendant has higher priority, the call from the hard wired pull cord is cancelled and a new call is made to the phone number associated with the wireless pendant.
4.	**Activity Buttons** Configure the **Phone #** and **Delay** fields for the **Menu** and **Activities** button. In the example snapshot, the Phone # is set to an analog x33001.

Step	Description
5.	**Store into Device** Click on **Store into Device** to download the configuration parameters from the PC into the Igeacom device. Click **Read from Device** to read the installed parameters in the device. Click **Verify** to compare the stored parameters on the right of the screen and those read from the device on the left. The following example shows that **VERIFY SUCEEDED** display appears, confirming that was no discrepancy.

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3.3. Call Routing Example: Igeacom calls to a group in Avaya Communication Manager

Avaya Communication Manager treats the Igecom devices as analog extensions. The associated extensions of these devices can be administered as a member of a group in Avaya Communication Manager, e.g. Coverage Answer Group, Hunt Group, Call Pickup Group etc. This section describes an example of how an Igeacom device can be configured to route the calls to the Coverage Path and the Coverage Answer Group in Avaya Communication Manger. In this example, all call points on the Igeacom call extension 34444 first. If there is no answer, extension 35555 will be dialed. This section covers only the Igeacom configuration. See Section 4.2 for the associated coverage routing configuration for the extensions 34444 and 35555 in Avaya Communication Manager.

Step	Description
1.	Configure multiple calling points, following the steps described in Section 3.2 and by setting the first **Phone#** to **34444** and the second **Phone#** to **35555** for the following calling points: **RED Button**, **Bed Button** (hard wired push button cord), **WIRED Button** (hard wired pull cord), **RF1 Pendant** (wireless pendant), and **RF2 Wallmount** (wireless pull cord).

4. Configure Avaya Communication Manager

This section covers the procedure to configure the analog stations associated with Igeacom devices via the Avaya Communication Manager System Access Terminal (SAT).

4.1. Configure Analog Station

4.1.1. Analog Circuit Pack

Install an analog circuit pack in the Avaya G600 Media Gateway. Using the SAT, verify that the analog pack is administered by issuing the "display circuit-packs" command. In the following example, a **TN793 Analog Line** circuit pack is administered for the analog 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: TN793            ANALOG LINE
  07: TN747  B        CO TRUNK
  08: TN464  F        DS1 INTERFACE
  09: TN2224 B        DIGITAL LINE
  10: TN464  F        DS1 INTERFACE


  '#' indicates circuit pack conflict.
```

4.1.2. Station Attributes

Using the SAT, add analog 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 **2500**.
- **Port:** administer the port on the circuit pack that the analog station is connected to, such as **1A0601**, where the station is connected to port 1 of the circuit pack in slot 1A06.
- **COR**: enter Class Of Restriction (COR) to **2**. See Section 4.1.3 for the significance of COR.

```
display station 30001                                          Page   1 of   3
                                  STATION

Extension: 30001                          Lock Messages? n          BCC: 0
    Type: 2500                            Security Code:              TN: 1
    Port: 01A0601                       Coverage Path 1:            COR: 2
    Name: igea 1                        Coverage Path 2:            COS: 1
                                        Hunt-to Station:           Tests? y


STATION OPTIONS
              Loss Group: 1             Message Waiting Indicator: none
     Off Premises Station? n
```

4.1.3. Class of Restriction

The Igeacom device units are intended for use as an emergency device to make an outgoing call to nursing staff. Although this device can answer incoming calls, it may not be desirable. For instance, if a patient presses a Red Button to make an emergency call and an incoming call is terminating at the device, the incoming call gets answered instead of the patient's attempt to reach nursing staff. To restrict the incoming calls to the Igeacom device, use the **Class of Restriction** (COR) feature in Avaya Communication Manager. For example,

1. Set the COR for the device to **2** as in Section 4.1.2.
2. Set the COR for all other telephones and trunks to any other COR. For example, COR 1.
3. On Page 3 of the form for COR 1, set the **CALLING PERMISSION** for COR 2 to "**n"**. This will prevent all incoming calls to Igeacom device from any station or trunk with COR 1.
4. If the stations and trunks have COR other that 1 and 2, repeat Step 3 for all those CORs.

```
display cor 1                                                  Page   3 of   4
                          CLASS OF RESTRICTION



CALLING PERMISSION (Enter "y" to grant permission to call specified COR)

  0? y     12? y    24? y    36? y    48? y    60? y    72? y    84? y
  1? y     13? y    25? y    37? y    49? y    61? y    73? y    85? y
  2? n     14? y    26? y    38? y    50? y    62? y    74? y    86? y
  3? y     15? y    27? y    39? y    51? y    63? y    75? y    87? y
```

Alternatively, set the COR for the Igeacom device to **2**, and configure COR 2 to have "Called Party Restriction" set to "termination".

4.2. Call Routing Example: Igeacom calls to a group in Avaya Communication Manager

This section describes the coverage routing configuration for the extensions 34444 and 35555 in Avaya Communication Manager. Recall from Section 3.3 that in this example, all call points on the Igeacom dial extension 34444 first. If there is no answer, extension 35555 will be dialed.

Note that this is just one approach of routing the calls, and the routing of the Igeacom originated calls are not limited to this approach. This approach is described here for the illustration of the Igeacom originated calls terminating to a group in Avaya Communication Manager.

4.2.1. Setting up first calling pattern as x34444

In the first calling pattern, telephone number x34444 when dialed will ring on x31001 and x31002 for 5 rings. If no one answers it will ring on the Nursing Desks x32001 and x32002.

1. Using the SAT **add station** command, administer station **x34444** and link coverage path (e.g. coverage path 1), as follows:
   - **Type: leave default (6408D+)**
   - **Port: X**.
   - **Name: NURSE CALL**
   - **Coverage Path 1: 1**

```
add station 34444                                              Page   1 of   4
                                  STATION

Extension: 34444                       Lock Messages? n            BCC: 0
     Type: 6408D+                      Security Code:               TN: 1
     Port: X                         Coverage Path 1: 1            COR: 1
     Name: NURSE CALL                  Coverage Path 2:            COS: 1
                                       Hunt-to Station:


STATION OPTIONS
             Loss Group: 2         Personalized Ringing Pattern: 1
            Data Module? n                      Message Lamp Ext: 34444
           Speakerphone: 2-way              Mute Button Enabled? y
       Display Language: english


                                       Media Complex Ext:
                                            IP SoftPhone? n
```

2. Using the SAT **add coverage path** command, administer coverage path 1 and administer coverage points as the coverage answer groups.

- In **COVERAGE CRITERIA** section change the following:
    - **All? Y**.
- Administer "**Point1**" as coverage answer group 1 "**c1**" and "**Point 2**" as coverage answer group 2 "**c2**".

```
display coverage path 1
                              COVERAGE PATH

                  Coverage Path Number: 1
                                              Hunt after Coverage? n
                       Next Path Number:      Linkage

COVERAGE CRITERIA

    Station/Group Status    Inside Call     Outside Call
            Active?              n               n
             Busy?              y               y
       Don't Answer?           y               y            Number of Rings: 1
            All?              Y               Y
 DND/SAC/Goto Cover?           y               y

COVERAGE POINTS

    Terminate to Coverage Pts. with Bridged Appearances? n

  Point1: c1        Rng:    Point2: c2        Rng:    Point3:
```

3. Using the SAT **add coverage answer-group** command, administer coverage answer groups 1 and 2.
    - Administer **coverage answer-group 1** with "**Group Name**" to **AIDS CALL** and set the two extensions (**Ext**) as **x31001** and **x31002**.
    - Administer **coverage answer group 2** with "**Group Name**" to **NURSE CALL** and set the two extensions (**Ext**) as **x32001** and **x32002**.

```
display coverage answer-group 1
                      COVERAGE ANSWER GROUP

                    Group Number: 1
                      Group Name: AIDS CALL

GROUP MEMBER ASSIGNMENTS

   Ext      Name (first 26 characters)      Ext      Name (first 26 characters)
 1: 31001   dig #1                         5:
 2: 31002   dig #2                         6:
 3:                                        7:
 4:                                        8:
```

```
display coverage answer-group 2
                           COVERAGE ANSWER GROUP

                           Group Number: 2
                             Group Name: NURSE CALL


GROUP MEMBER ASSIGNMENTS


    Ext       Name (first 26 characters)      Ext       Name (first 26 characters)
 1: 32001     IP Phone #1                   5:
 2: 32002     IP Phone #2                   6:
 3:                                         7:
 4:                                         8:
```

4.3. Setting up second calling pattern as x 35555

In the second calling pattern, telephone number x35555 when dialed will ring on the Nurse
Escalation Desk at x33001.

1. Using the SAT **add station** command, administer station **x35555** and link coverage path (e.g.
    coverage path 2, as follows:
    - **Type: 6408D+**
    - **Port: X**
    - **Name: NURSE ESCALATION CALL**
    - **Coverage Path 1: 2**

```
display station 35555                                        Page   1 of   4
                              STATION

Extension: 35555                        Lock Messages? n          BCC: 0
    Type: 6408D+                        Security Code:             TN: 1
    Port: X                             Coverage Path 1: 2         COR: 1
    Name: NURSE ESCALATION CALL         Coverage Path 2:           COS: 1
                                        Hunt-to Station:

STATION OPTIONS
              Loss Group: 2          Personalized Ringing Pattern: 1
             Data Module? n                        Message Lamp Ext: 35555
            Speakerphone: 2-way                  Mute Button Enabled? y
        Display Language: english


                                              Media Complex Ext:
                                                 IP SoftPhone? n
```

2. Using the SAT **add coverage path** command, administer coverage path 2 and administer x33001
    as the coverage point.

- In **COVERAGE CRITERIA** section change the following:
  - **All? Y**
- Administer "**Point1**" as **x33001**.

```
display coverage path 2
                          COVERAGE PATH

                Coverage Path Number: 2
                                              Hunt after Coverage? n
                       Next Path Number:        Linkage

COVERAGE CRITERIA

   Station/Group Status     Inside Call      Outside Call
             Active?             n                 n
              Busy?              y                 y
        Don't Answer?           y                 y         Number of Rings: 1
             All?               y                 y
 DND/SAC/Goto Cover?            y                 y

COVERAGE POINTS

   Terminate to Coverage Pts. with Bridged Appearances? n

 Point1: 33001     Rng:     Point2:                 Point3:
  Point4:                   Point5:                 Point6:
```

4.3.1. Number of rings between each coverage group/call point

Using the SAT **change system-parameters coverage-forwarding**, on the first page, under **CALL COVERAGE/FORWARDING PARAMETERS** set the **Local Cvg Subsequent Redirection/CFWD No Ans Interval (rings)** to **5**. By setting this to 5, the Igeacom originated call will ring the first coverage point 5 times. If there is no answer, the call will be redirected to a subsequent coverage point. Setting this value to 5 in this example is arbitrary. It can be set to any desired value to globally control coverage path behavior.

```
change system-parameters coverage-forwarding                    Page   1 of   2
                 SYSTEM PARAMETERS CALL COVERAGE / CALL FORWARDING


CALL COVERAGE/FORWARDING PARAMETERS


        Local Cvg Subsequent Redirection/CFWD No Ans Interval (rings): 5
      Off-Net Cvg Subsequent Redirection/CFWD No Ans Interval (rings): 2
                          Coverage - Caller Response Interval (seconds): 4
   Threshold for Blocking Off-Net Redirection of Incoming Trunk Calls: 1

COVERAGE
                                        Keep Held SBA at Coverage Point? y
     External Coverage Treatment for Transferred Incoming Trunk Calls? n
        Immediate Redirection on Receipt of PROGRESS Inband Information? n
                                          Maintain SBA At Principal? n


                                        Station Hunt Before Coverage? n


FORWARDING

                                            Call Forward Override? n
                                          Coverage After Forwarding? y
```

5. Interoperability Compliance Testing

The interoperability compliance testing focused on the capability of the Igeacare's Igeacom300 and Igeacom500 analog devices to make calls from all the call points to a mix of Avaya Digital, analog and IP telephones controlled by an Avaya S8700 Media Server and G600 Media Gateway.

5.1. General Test Approach

The general approach was to make calls from all the call points to a mix of Avaya Digital, analog and IP telephones, verifying that the calls were routed to the phone numbers configured on the device. The main objectives were to verify that:

- The calls from all the call points of Igeacom devices – red button, hard-wired push button cord, hard wired pull cord, wireless pull cord, wireless pendant, menu button, and activities button – to a mix of Avaya Digital, Analog and Avaya IP telephones were routed and answered successfully.
- The lamps on the Igeacom and the silent mode, when applicable, operate properly.

- The Igeacom device was dropped and was available for next call when hanging up telephone finished the call.
- The Igeacom device was dropped and was available for next call when the Igeacom device cancelled the call.
- The call initiation, routing, answer and completion of redial by the Igeacom devices were successful.
- The Igeacom device's Priority feature operated properly by dropping and initiating new calls successfully.
- Calls from the Igeacom devices can be routed and answered by Avaya Communication Manager groups such as Coverage Answer Group.
- Up to twenty four Igeacom devices connected to a single Avaya TN793 Analog circuit pack can simultaneously make and maintain the calls.
- The device can be operated when the line cable was reconnected after a period of disconnection.

5.2. Test Results

All test cases completed successfully. With the appropriate configuration of the device, the call origination and completion were successful. The following behavior was observed in one of the scenarios:

The Igeacom device units are intended for use as an emergency device to make an outgoing call to nursing staff. It was observed that this device can answer incoming calls, and it may not be desirable. To restrict the incoming calls to the Igeacom device, use the **Class of Restriction** (COR) feature in Avaya Communication Manager as described in Section 4.1.3.

6. Verification Steps

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

- Make a call from Igeacom device to an Avaya digital station. Verify the call is established and can be maintained.
- Make calls from all the Igeacom call points (e.g. red button, hard-wired push button cord etc.), as configured in Section 3.2. Verify that the calls terminate to the extensions programmed in the Igeacom device for each call point.
- Verify Priority feature as described in Section 3.3, Step 3.
- Make calls from the Igeacom Activity buttons (Menu and Activities) as configured in Section 3.3, Step 4. Verify that the calls terminate to the extensions programmed in the Igeacom device for each call point.
- Configure the Igeacom device as in Section 3.3 and configure calling patterns in Avaya Communication Manger as described in Section 4.2. Verify that the Igeacom calls follow the administered calling patterns.

7. Support

For technical support on the Igeacare product line, consult www.igeacare.com/support or contact Igeacare Technical Support at telephone number 1-866-361-6225.

8. Conclusion

These Application Notes illustrate the procedure for configuring the Igeacare's Igeacom300 and Igeacom500 Nurse Call Devices with Avaya Communication Manager. With the appropriate configuration and connectivity, the telephone calls from the Igeacom devices were always established and maintained.

9. Additional References

The following documents are relevant to these Application Notes:

1) *Administrator's Guide for Avaya Communication Manager,* Issue 8, June 2004, Document Number 555-233-506.
2) Igeacare Igeacom User Guide, Version 2.0
3) Igeacare Igeacom Software User Guide, Version 1.0

Additional product documentation for Avaya products may be found at http://support.avaya.com and for Igeacare products at http://www.igeacare.com.

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