Dialogic
Making Innovation Thrive™

Dialogic® Brooktrout® SR140 Fax Software with Alcatel OmniPCX Office

Installation and Configuration Integration Note

IMPORTANT NOTE

July 2009 64-0600-01

www.dialogic.com

Copyright and Legal Notice

All contents of this document are furnished for informational use only and are subject to change without notice and do not represent a commitment on the part of Dialogic Corporation or its subsidiaries ("Dialogic"). Reasonable effort is made to ensure the accuracy of the information contained in the document. However, Dialogic does not warrant the accuracy of this information and cannot accept responsibility for errors, inaccuracies or omissions that may be contained in this document.

INFORMATION IN THIS DOCUMENT IS PROVIDED IN CONNECTION WITH DIALOGIC® PRODUCTS. NO LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE, TO ANY INTELLECTUAL PROPERTY RIGHTS IS GRANTED BY THIS DOCUMENT. EXCEPT AS PROVIDED IN A SIGNED AGREEMENT BETWEEN YOU AND DIALOGIC, DIALOGIC ASSUMES NO LIABILITY WHATSOEVER, AND DIALOGIC DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY, RELATING TO SALE AND/OR USE OF DIALOGIC PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHT OF A THIRD PARTY.

Dialogic products are not intended for use in medical, life saving, life sustaining, critical control or safety systems, or in nuclear facility applications.

Due to differing national regulations and approval requirements, certain Dialogic products may be suitable for use only in specific countries, and thus may not function properly in other countries. You are responsible for ensuring that your use of such products occurs only in the countries where such use is suitable. For information on specific products, contact Dialogic Corporation at the address indicated below or on the web at www.dialogic.com.

It is possible that the use or implementation of any one of the concepts, applications, or ideas described in this document, in marketing collateral produced by or on web pages maintained by Dialogic may infringe one or more patents or other intellectual property rights owned by third parties. Dialogic does not provide any intellectual property licenses with the sale of Dialogic products other than a license to use such product in accordance with intellectual property owned or validly licensed by Dialogic and no such licenses are provided except pursuant to a signed agreement with Dialogic. More detailed information about such intellectual property is available from Dialogic's legal department at 9800 Cavendish Blvd., 5th Floor, Montreal, Quebec, Canada H4M 2V9. **Dialogic encourages all users of its products to procure all necessary intellectual property licenses required to implement any concepts or applications and does not condone or encourage any intellectual property infringement and disclaims any responsibility related thereto. These intellectual property licenses may differ from country to country and it is the responsibility of those who develop the concepts or applications to be aware of and comply with different national license requirements.**

Dialogic, Dialogic Pro, Brooktrout, Diva, Cantata, SnowShore, Eicon, Eicon Networks, NMS Communications, NMS (stylized), Eiconcard, SIPcontrol, Diva ISDN, TruFax, Exnet, EXS, SwitchKit, N20, Making Innovation Thrive, Connecting to Growth, Video is the New Voice, Fusion, Vision, PacketMedia, NaturalAccess, NaturalCallControl, NaturalConference, NaturalFax and Shiva, among others as well as related logos, are either registered trademarks or trademarks of Dialogic Corporation or its subsidiaries. Dialogic's trademarks may be used publicly only with permission from Dialogic. Such permission may only be granted by Dialogic's legal department at 9800 Cavendish Blvd., 5th Floor, Montreal, Quebec, Canada H4M 2V9. Any authorized use of Dialogic's trademarks will be subject to full respect of the trademark guidelines published by Dialogic from time to time and any use of Dialogic's trademarks requires proper acknowledgement.

The names of actual companies and products mentioned herein are the trademarks of their respective owners.

This document discusses one or more open source products, systems and/or releases. Dialogic is not responsible for your decision to use open source in connection with Dialogic products (including without limitation those referred to herein), nor is Dialogic responsible for any present or future effects such usage might have, including without limitation effects on your products, your business, or your intellectual property rights.

Any use case(s) shown and/or described herein represent one or more examples of the various ways, scenarios or environments in which Dialogic products can be used. Such use case(s) are non-limiting and do not represent recommendations of Dialogic as to whether or how to use Dialogic products.

1. Scope

This document is intended as a general guide for configuring a basic installation of the ***Alcatel OmniPCX Office (OXO)*** for use with Dialogic® Brooktrout® SR140 Fax over IP (FoIP) software platform. The interoperability includes ***SIP*** call control and T.38/T.30 media.

This document is not intended to be comprehensive, and thus should not and does not replace the manufacturer's detailed configuration documentation. Users of this document should already have a general knowledge of how to install and configure the ***Alcatel OXO***.

The sample configuration shown and/or referred in the subsequent sections was used for lab validation testing by Dialogic. Therefore, it is quite possible that the sample configuration will not match an exact configuration or versions that would be present in a deployed environment. However, the sample configuration does provide a possible starting point to work with the equipment vendor for configuring your device. Please consult the appropriate manufacturer's documentation for details on setting up your specific end user configuration.

2. Configuration Details

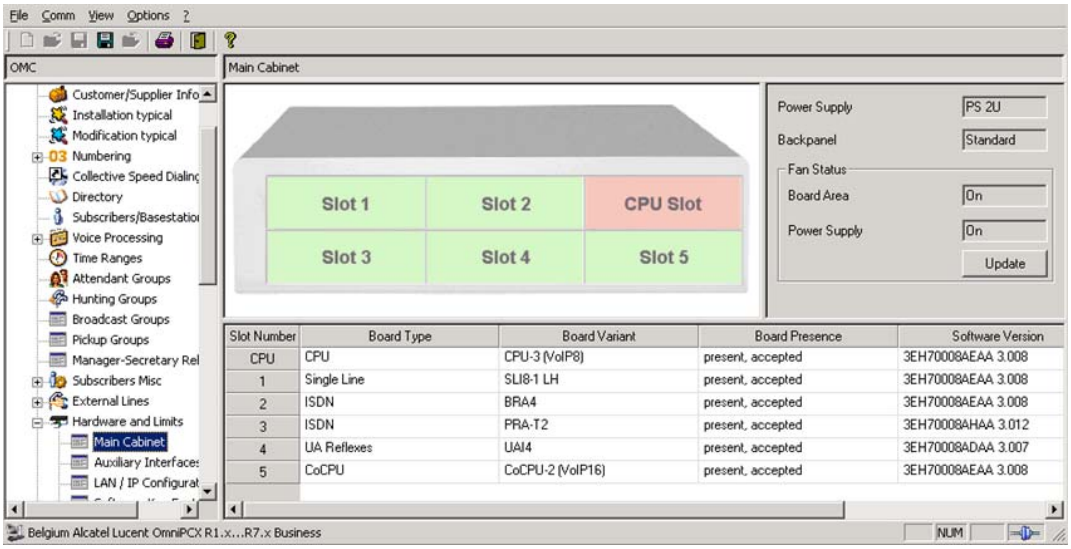
The following systems were used for the sample configuration described in the document.

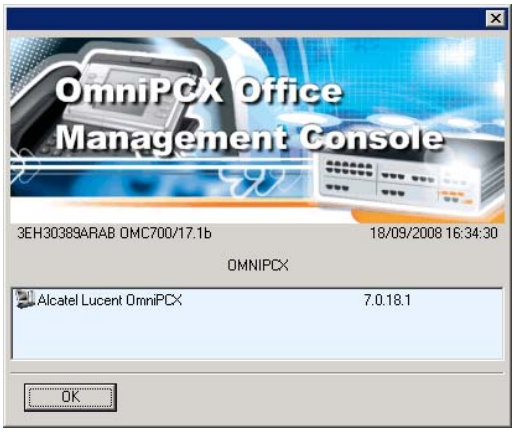
2.1 Gateway

Vendor	***Alcatel***
Model	***OmniPCX Office (OXO)***
Software Version	R7.0.18.1
PSTN Device	***Dialogic® Brooktrout® TR1034 BRI Fax Board***
Protocol to PSTN Device	***E1 ISDN PRI***
IP Device	***Dialogic® Brooktrout® SR140 Fax Software***
Additional Notes	The OmniPCX Office (OXO) should not be confused with the OmniPCX Enterprise (OXE)

For ease of reference, the Dialogic Brooktrout SR140 Fax Software and Dialogic Brooktrout TR1034 Fax Boards will sometimes be denoted herein, respectively, as SR140 and TR1034, and the Alcatel OmniPCX Office will be denoted herein as OXO or Alcatel OXO, or some other form thereof, Also, all mentions of SDK herein refer to the Dialogic Brooktrout SDK.

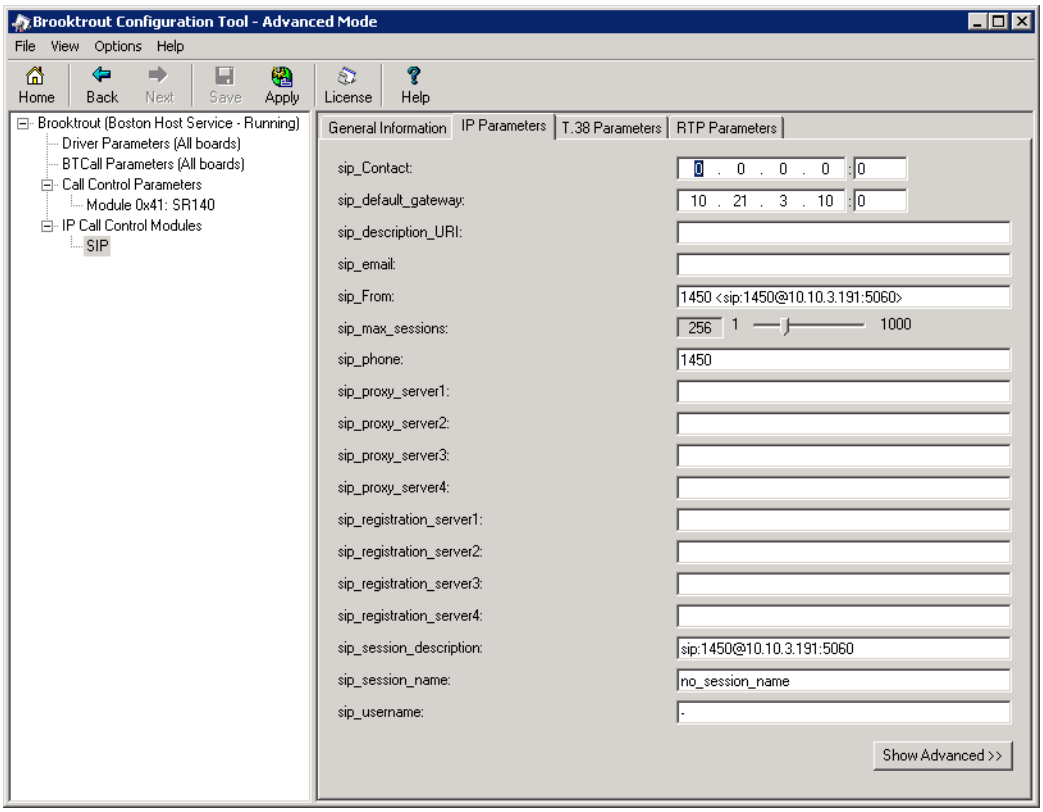
Shown below is a screenshot of the Alcatel OXO hardware configuration that was tested.





2.2 Dialogic® Brooktrout® SR140 Fax Software

Vendor	Dialogic
Model	Dialogic® Brooktrout® SR140 Fax Software
Software Version	***SDK 5.2.7*** ***SDK 6.0.2 – version used to run interop tests*** ***SDK 6.1.0***
Protocol to Gateway or Call Manager	***SIP***
callctrl.cfg file	***See screenshot below:***



2.3 Dialogic® Brooktrout® TR1034 Fax Board

Vendor	Dialogic
PSTN Device	Dialogic® Brooktrout® TR1034 Fax Board
Software Version	***SDK 5.2.6 was used for testing***
Protocol to PSTN Device	***BRI***
callctrl.cfg file	***All defaults***

2.4 Network System Configuration

The diagram below details the sample configuration used in connection with this document.

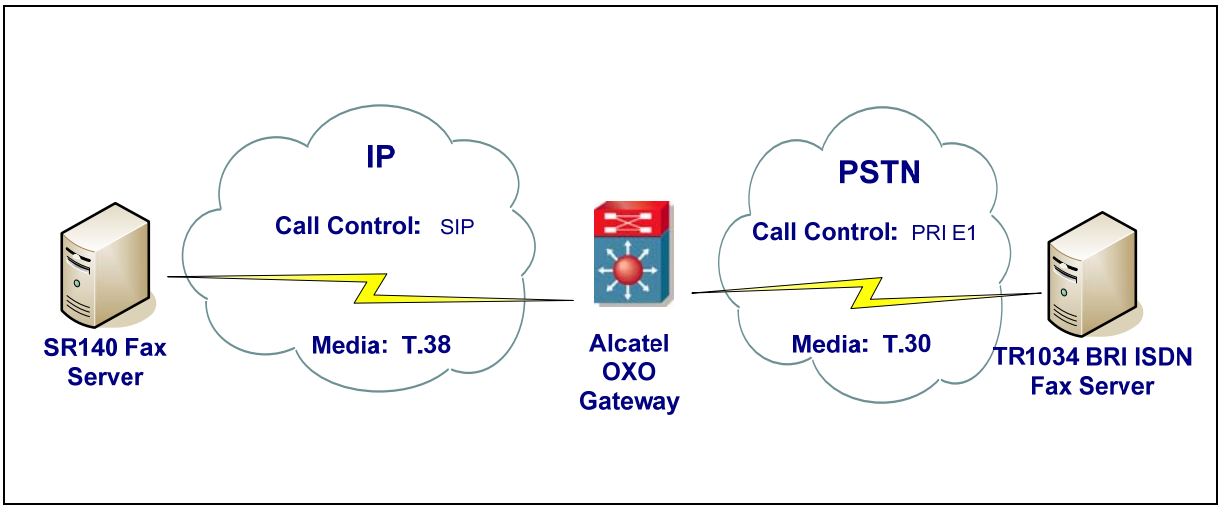


Diagram Notes:

- SR140 Fax Server = Fax Server including Dialogic® Brooktrout® SR140 Fax Software and 3rd party fax application
- TR1034 BRI ISDN Fax Server = Fax Server including Dialogic® Brooktrout® TR1034 BRI ISDN Fax Board and 3rd party fax application

3. Prerequisites

When the Alcatel OXO is configured for multiple codecs, and not just G.711 ulaw or G.711 alaw, SDK 5.2.7, SDK 6.0.2, 6.1.0 (or a later version) is required on the SR140. It is not possible to configure the Alcatel OXO codecs locally for the SIP trunk to the SR140.

4. Summary of Limitations

There is no ECM configuration setting on the Alcatel OXO. All calls were non-ECM. The bit rate of the calls was up to 14,400 baud.

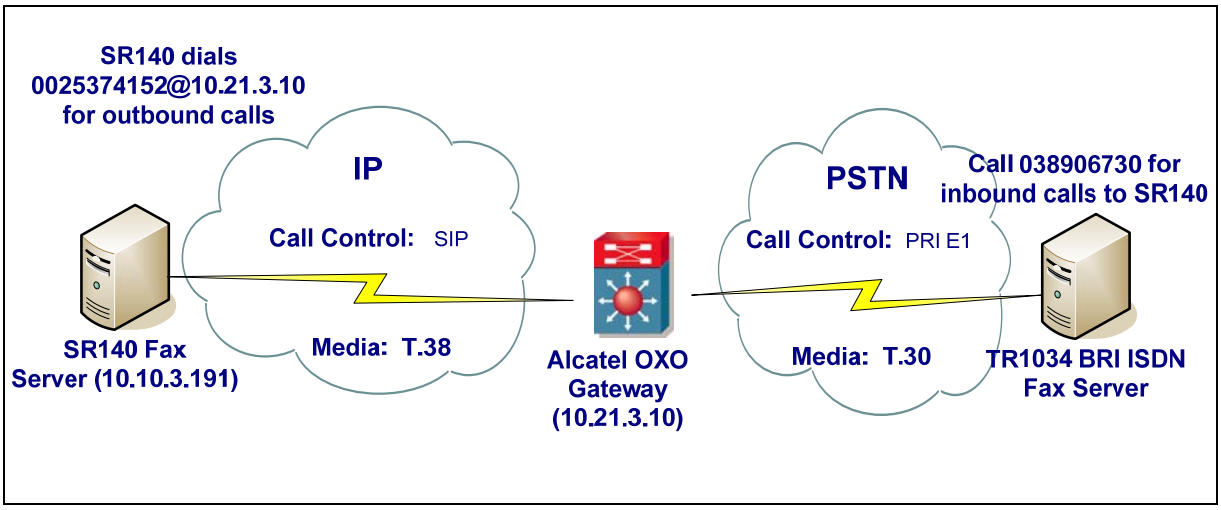
5. Deployment Details

5.1 Network Addresses

Device #	Device Make, Model, and Description	Device IP Address
1	SR140	10.10.3.191
2	OXO Gateway	10.21.3.10

5.2 Dialing Plan Overview

The diagram below provides an overview of the dialing plan used for this document.



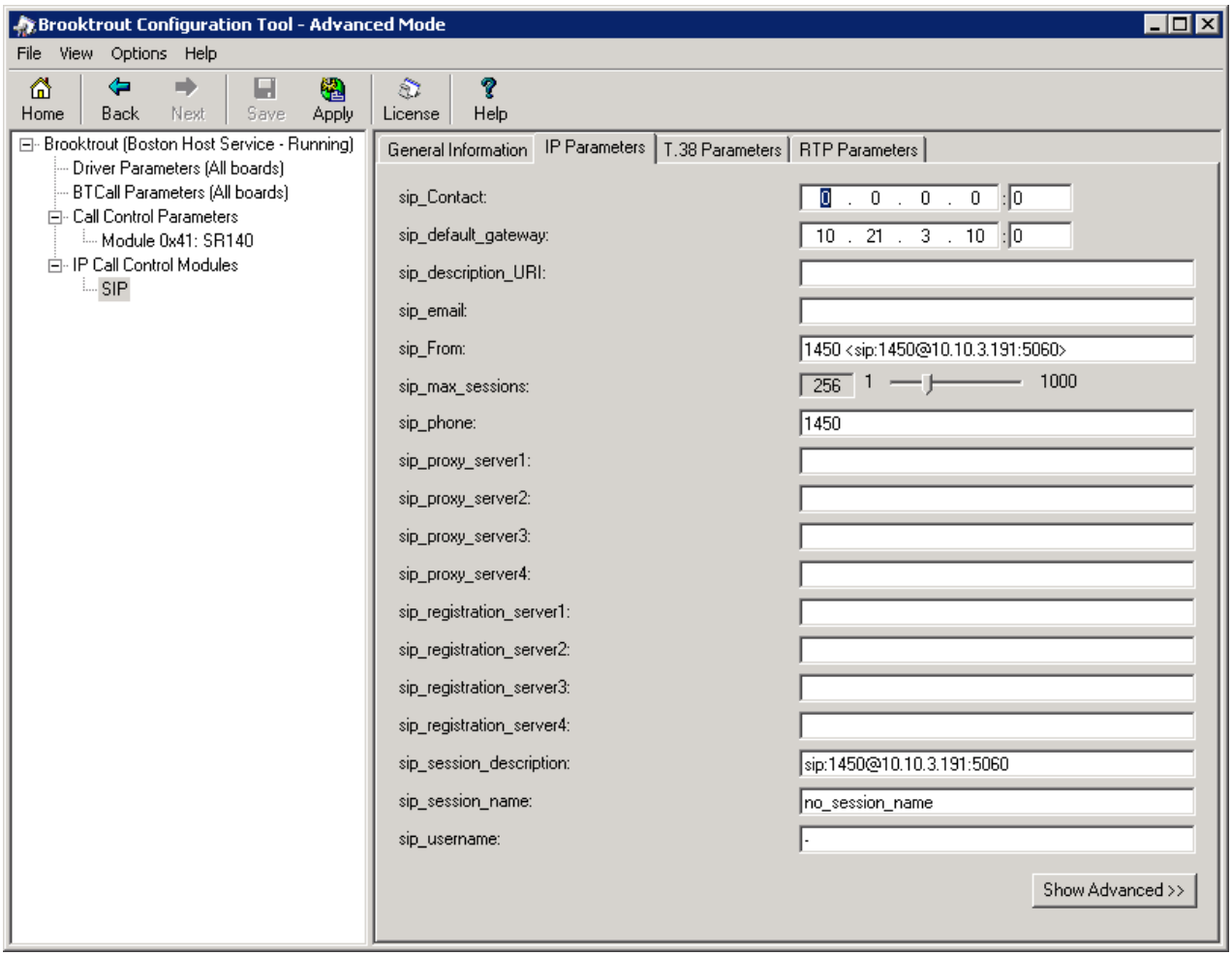
Notes:

- SR140 Fax Server = Fax Server including Dialogic® Brooktrout® SR140 Fax Software and 3rd party fax application
- TR1034 BRI ISDN Fax Server = Fax Server including Dialogic® Brooktrout® TR1034 BRI ISDN Fax Board and 3rd party fax application

6. Dialogic® Brooktrout® SR140 Fax Software Setup Notes

The SR140 configuration values that were used in the sample configuration are shown in the screenshot below. The parameters were left to default. No changes were required.

Note: by setting the IP address of the gateway in your SR140 fax application, there is no need to put the IP address of the gateway in the sip_default_gateway parameter.



The callctrl.cfg file used to configure the SR140 sample application used for the interop testing is shown below.

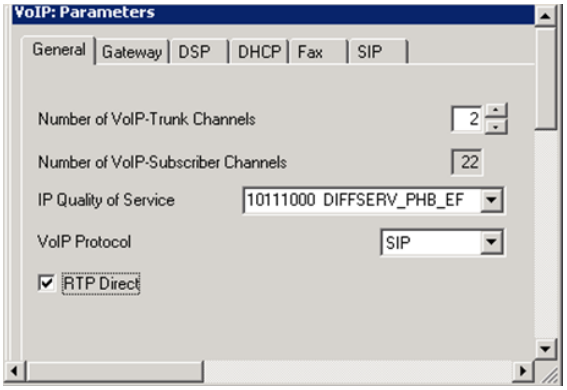
```
  l3l4_trace=verbose
  l4l3_trace=verbose
  api_trace=verbose
  internal_trace=verbose
  host_module_trace=verbose
  ip_stack_trace=warning
# Most of the time a path should be used for this file name.
  trace_file="C:\ecc.log"
```

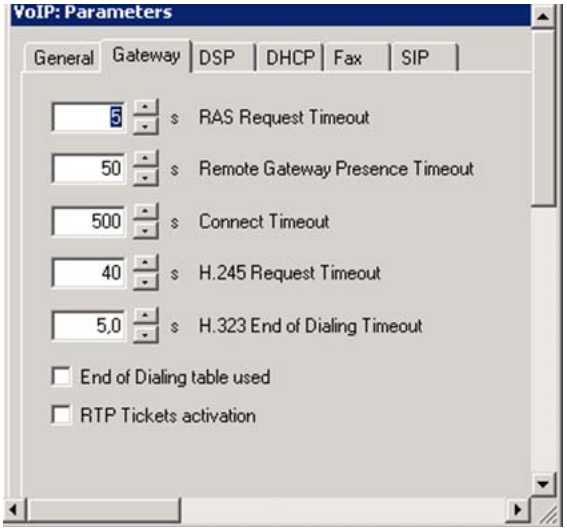
```
  max_trace_files=1
  max_trace_file_size=10
[host_module.1]
  module_library=brktsip.dll
  enabled=true
[host_module.1/t38parameters]
  t38_fax_rate_management=transferredTCF
  fax_transport_protocol=t38_only
  t38_fax_udp_ec=t38UDPRedundancy
  rtp_ced_enable=true
  t38_max_bit_rate=14400
  t38_fax_version=0
  media_renegotiate_delay_inbound=1000
  media_renegotiate_delay_outbound=-1
  t38_fax_fill_bit_removal=false
  t38_fax_transcoding_jbig=false
  t38_fax_transcoding_mmr=false
  t38_t30_fastnotify=false
  t38_UDPTL_redundancy_depth_control=5
  t38_UDPTL_redundancy_depth_image=2
[host_module.1/rtp]
  rtp_codec=pcmu pcma
[host_module.1/parameters]
  sip_max_sessions=256
  sip_default_gateway=10.21.3.10:0
  sip_proxy_server1=
  sip_proxy_server2=
  sip_proxy_server3=
  sip_proxy_server4=
  sip_registration_server1=
  sip_registration_server1_aor=
  sip_registration_server1_username=
  sip_registration_server1_password=
  sip_registration_server1_expires=3600
  sip_registration_server2=
  sip_registration_server2_aor=
  sip_registration_server2_username=
  sip_registration_server2_password=
  sip_registration_server2_expires=3600
  sip_registration_server3=
  sip_registration_server3_aor=
  sip_registration_server3_username=
  sip_registration_server3_password=
  sip_registration_server3_expires=3600
  sip_registration_server4=
  sip_registration_server4_aor=
  sip_registration_server4_username=
  sip_registration_server4_password=
  sip_registration_server4_expires=3600
  sip_registration_interval=60
  sip_Max-Forwards=70
  sip_From=1450 <sip:1450@10.10.3.191:5060>
  sip_Contact=0.0.0.0:0
  sip_username=-
```

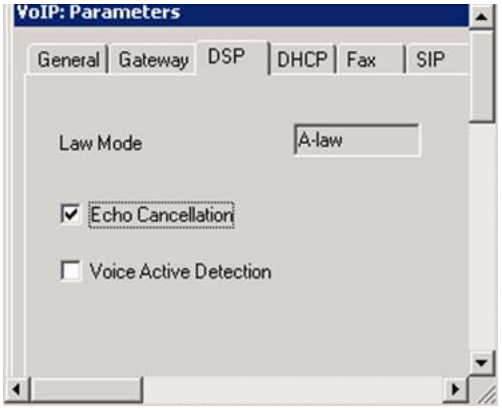
```
  sip_session_name=no_session_name
  sip_session_description=
  sip_description_URI=sip:1450@10.10.3.191:5060
  sip_email=
  sip_phone=1450
  sip_Route=
  sip_session_timer_session_expires=0
  sip_session_timer_minse=-1
  sip_session_timer_refresh_method=0
  sip_ip_interface=
  sip_ip_interface_port=5060
  sip_redirect_as_calling_party=0
  sip_redirect_as_called_party=0
[module.41]
  model=SR140
  virtual=1
  exists=1
  vb_firm=C:\fdtool-6.0.2\bin\bostvb.dll
  channels=1
[module.41/ethernet.1]
  ip_interface={B7C1DB9A-9B4B-49E4-902F-D28324FCAAA3}:0
  media_port_min=56000
  media_port_max=57000
[module.41/host_cc.1]
  host_module=1
  number_of_channels=1
```

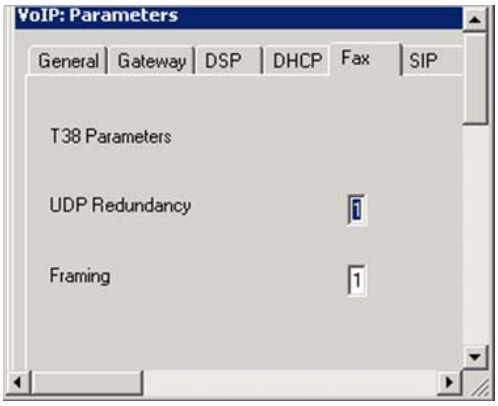
7. Alcatel OXO Gateway Setup Notes

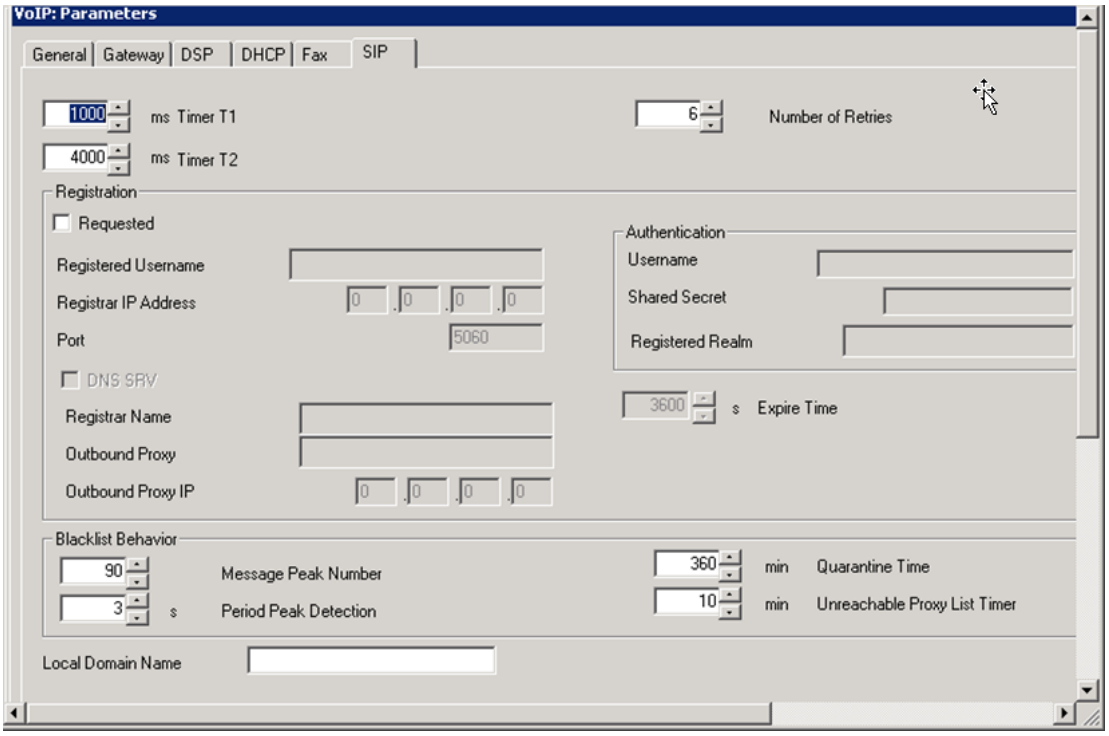
The following screenshots show the values that were used for the "VoIP: Parameters" configuration tabs in the OXO Management Console, including the Fax (T.38) tab. There are only a few parameters for T.38. There is no parameter for Error Correction Mode (ECM).









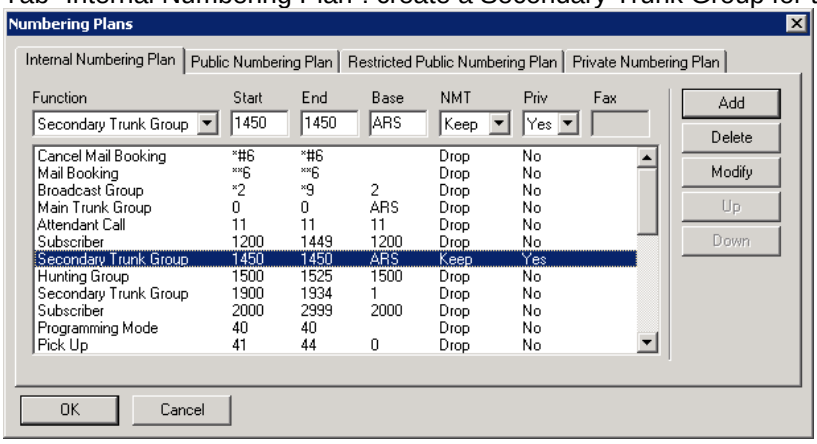


8. IP Trunk and Routing Configuration

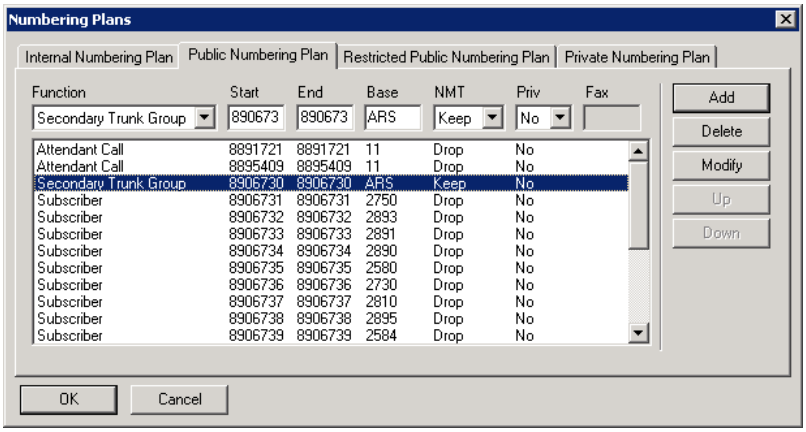
This section covers how to set up the fax “line” to the SR140. Go in the OXO Management Console to setup up numbering plans.

8.1 Numbering Plans

Go to Numbering -> Numbering Plans.
Tab “Internal Numbering Plan”: create a Secondary Trunk Group for the fax server:



In the “Public and Restricted Numbering Plan” tabs, create an entry for the public number(s) assigned to the fax line.

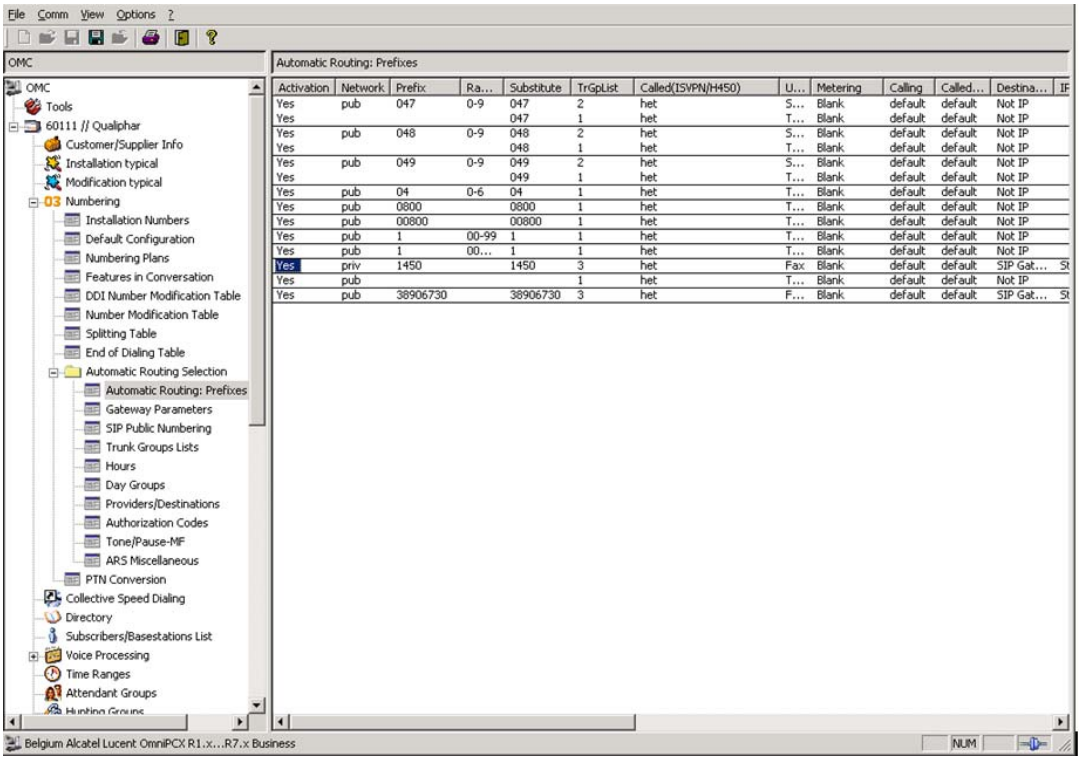


8.2 ARS – Automatic Routing Selection

Go in the OXO Management Console to Numbering -> Automatic Routing Selection -> Automatic Routing: Prefixes. Add entries as follows: one on the private network for the private number of the fax server, and others on the public network to cover all dial-in numbers.

Configuration parameters are as follows:

- Called(ISVPN/H450): het (heterogeneous: connection to non-Alcatel equipment)
- Destination: SIP Gateway
- IP Type: Static
- IP Address: IP address of the fax server
- Gateway Alive Protocol: ICMP
- Gateway Alive Timeout/s: 0
- Gateway Bandwidth: 64 kBit/s(2 calls)
- Codec/Framing: G711_20



9. Frequently Asked Questions

- "*I'm configured as near as possible to this the sample configuration described in this document, but calls are still not successful; what is my next step?*"
  - ➔ Provide this document to your gateway support.
  - ➔ Ensure T.38 is enabled on the gateway.
  - ➔ Confirm that basic network access is possible by pinging the gateway.

- "*How do I obtain Wireshark traces?*"
  - ➔ The traces can be viewed using the Wireshark network analyzer program, which can be freely downloaded from *http://www.wireshark.org*.
  - ➔ To view the call flow in Wireshark, open the desired network trace file and select "Statistics->VoIP Calls" from the drop down menu. Then highlight the call and click on the "Graph" button.