



# Dialogic® Brooktrout® SR140 Fax Software with T38Fax.com SIP Trunking Service

Installation and Configuration Integration Note

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## 1. Scope

This document is intended as a general guide for configuring a **T38Fax.com SIP trunk** for use with the **Dialogic® Brooktrout® SR140 Fax over IP (FoIP) software platform**. The interoperability includes **SIP** call control with **T.38/T.30** media.

This document is not intended to be comprehensive and thus does not replace the sip trunk provider's detailed configuration documentation. Users of this document should already be in the possession of a **T38Fax.com** account.

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. Please consult with T38Fax.com's documentation for details on setting up your specific end user configuration.

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.. All references to the SDK herein refer to the Dialogic® Brooktrout® Fax Products SDK. The T38Fax.com SIP Trunking Service will sometimes be denoted herein as T38Fax.com or SIP Trunk, or some other form thereof.

## 2. Configuration Details

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

### 2.1 T38Fax.com SIP Trunking Service

Vendor	<i>T38Fax.com</i>
Model	<i>Power-T.38 SIP Trunking Service</i>
Software Version	<i>N/A</i>
IP Device	<i>Dialogic® Brooktrout® SR140 Fax Software</i>
Protocol to SR140 Fax Software	<i>SIP</i>
Additional Notes	<i>none</i>

### 2.2 Dialogic® Brooktrout® SR140 Fax Software

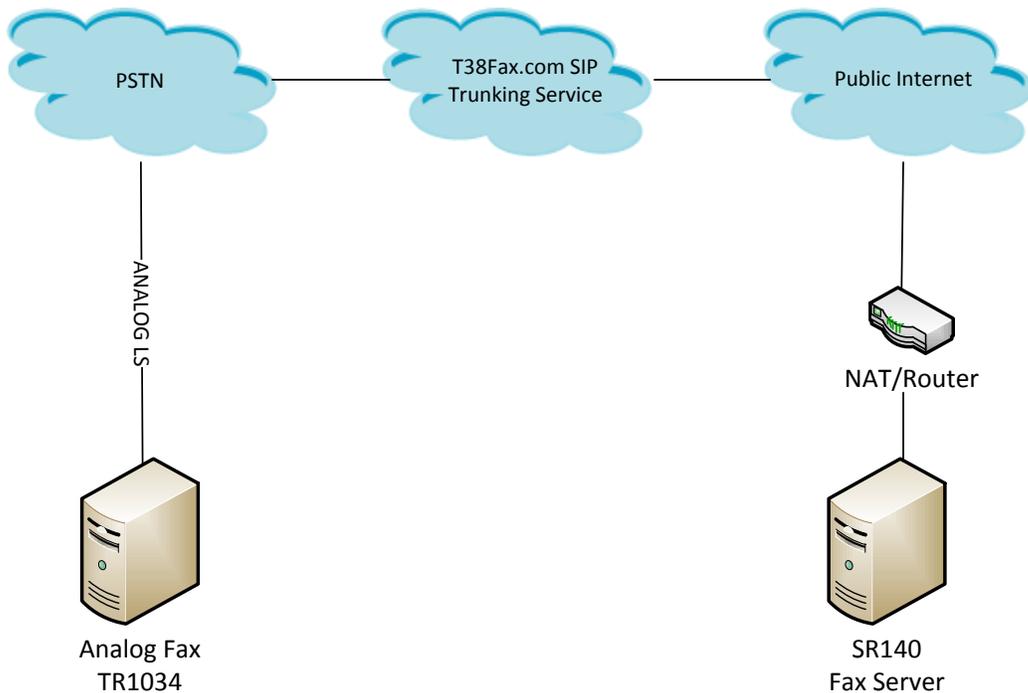
Vendor	<i>Dialogic</i>
Model	<i>Dialogic® Brooktrout® SR140 Fax Software</i>
Software Version	<i>Tested with SDK 6.6.0</i>
Protocol to Gateway or Call Manager	<i>SIP</i>
callctrl.cfg file	<i>Use all the defaults</i>

### 2.3 Dialogic® Brooktrout® TR1034 Fax Board

Vendor	Dialogic
PSTN Device	Dialogic® Brooktrout® TR1034 Fax Board
Software Version	SDK 6.5.0
Protocol to PSTN Device	Analog Loop Start
callctrl.cfg file	All defaults

## 2.4 Network System Configuration

The diagram below details the sample configuration used in connection with this document. On the IP side, the SR140 was configured to send and receive T.38 faxes. On the PSTN side, the TR1034 board was configured to send and receive T.30 faxes over an analog loop start connection. Carrying traffic between the two was the T38Fax.com SIP Trunk. Testing consisted of the full suite of interop calls between the two endpoints: first the SR140 sending and the TR1034 receiving and then the TR1034 sending with the SR140 receiving.



### Diagram Notes:

SR140 Fax Server = Fax Server including Dialogic® Brooktrout® SR140 Fax Software and third party fax application

The SR140-based fax server will reside behind a NATed router firewall and will have a private IP address. The T38Fax.com SIP trunking service will perform the far-end NAT translation for the proper routing.

**IMPORTANT:** If your firewall features a SIP Application-Level Gateway (ALG) that could interfere with SR140's communication with T38Fax.com, it should be disabled.

### 3 Prerequisites

None

### 4 Summary of Limitations

None

### 5 T38Fax.com SIP Trunk Setup Notes

For the sample test configuration, the T38Fax.com SIP Trunk was configured as described below.

#### 5.1 Network Addresses

Device #	Device Make, Model, and Description
1	sip.t38fax.com proxy / SIP registrar server

#### 5.2 T38Fax.com SIP Trunk Configuration

There is no need to configure the IP trunk itself. *T38Fax.com* will provide the hostname of the proxy server. The provided hostname should be used as the “Primary Proxy Server” when setting up the SR140 software.

### 6 Brooktrout® SR140 Fax Software Setup Notes

The ***Installation and Configuration Guides*** for the SR140 are available from the following site:

<http://www.dialogic.com/manuals/brooktrout/default.htm>

Please note that if you plan to place your fax server behind a firewall or other such NAT device, your outgoing SIP registration to T38Fax.com should automatically open and maintain the necessary connections for all bi-directional network traffic. If for any reason T38Fax.com’s automatic NAT traversal does not work, you may need to manually open those ports.

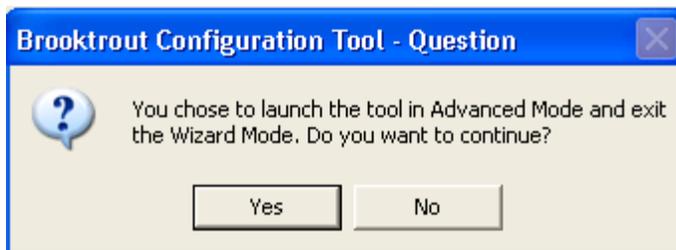
Dialogic SR140 Ports:

- Port 5060 – SIP signaling port
- Port 8080 – TCP port for HTTP (license activation - required for automatic registration via Internet; otherwise, manual registration via Dialogic Website is required)
- Ports 56000 to 57000 – UDP ports for FoIP traffic (configurable)

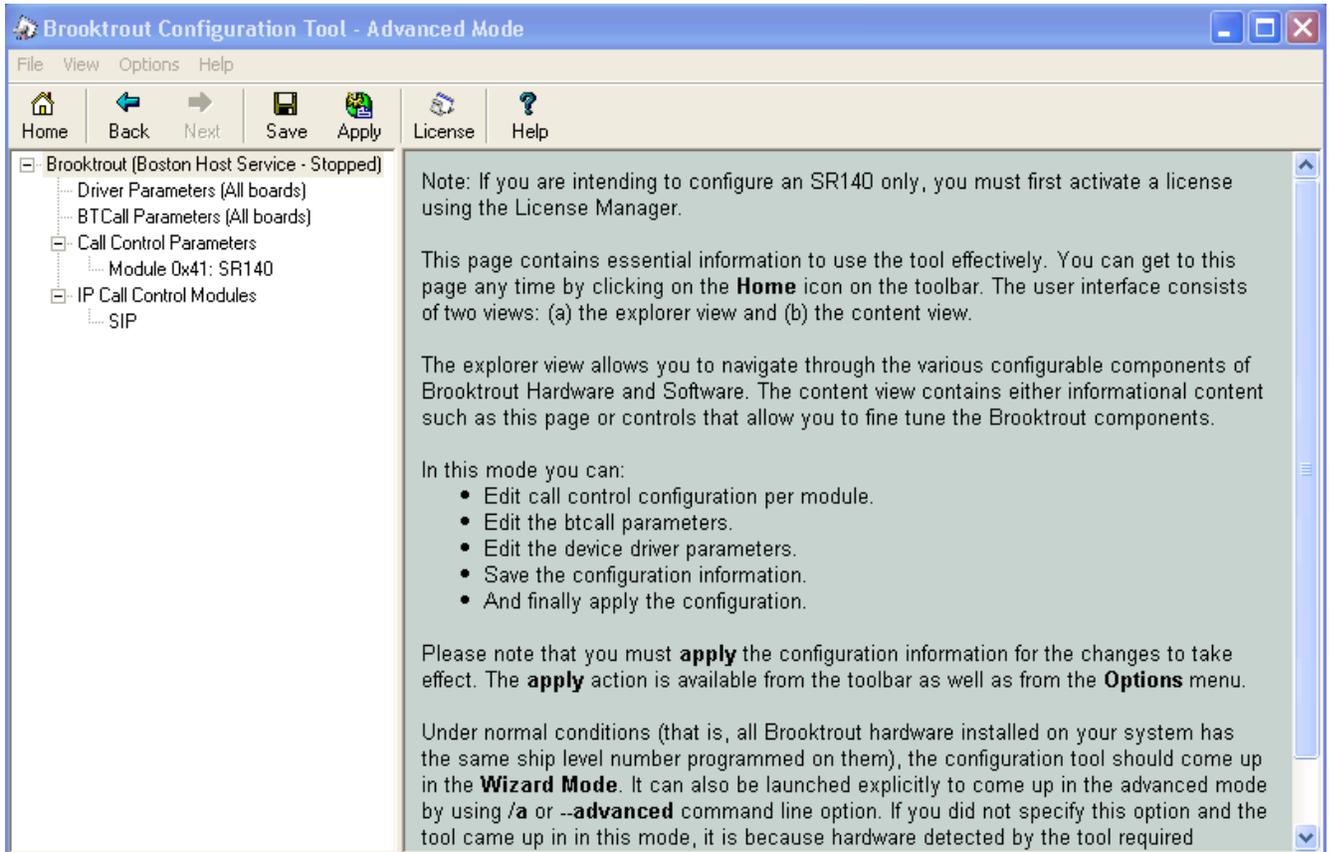
The following SR140 Setup Wizard screen shots illustrate how the test configuration was setup to interop with the T38Fax.com SIP Trunking Service. Launch the Config Tool (Start->Programs->Brooktrout->Brooktrout Configuration Tool



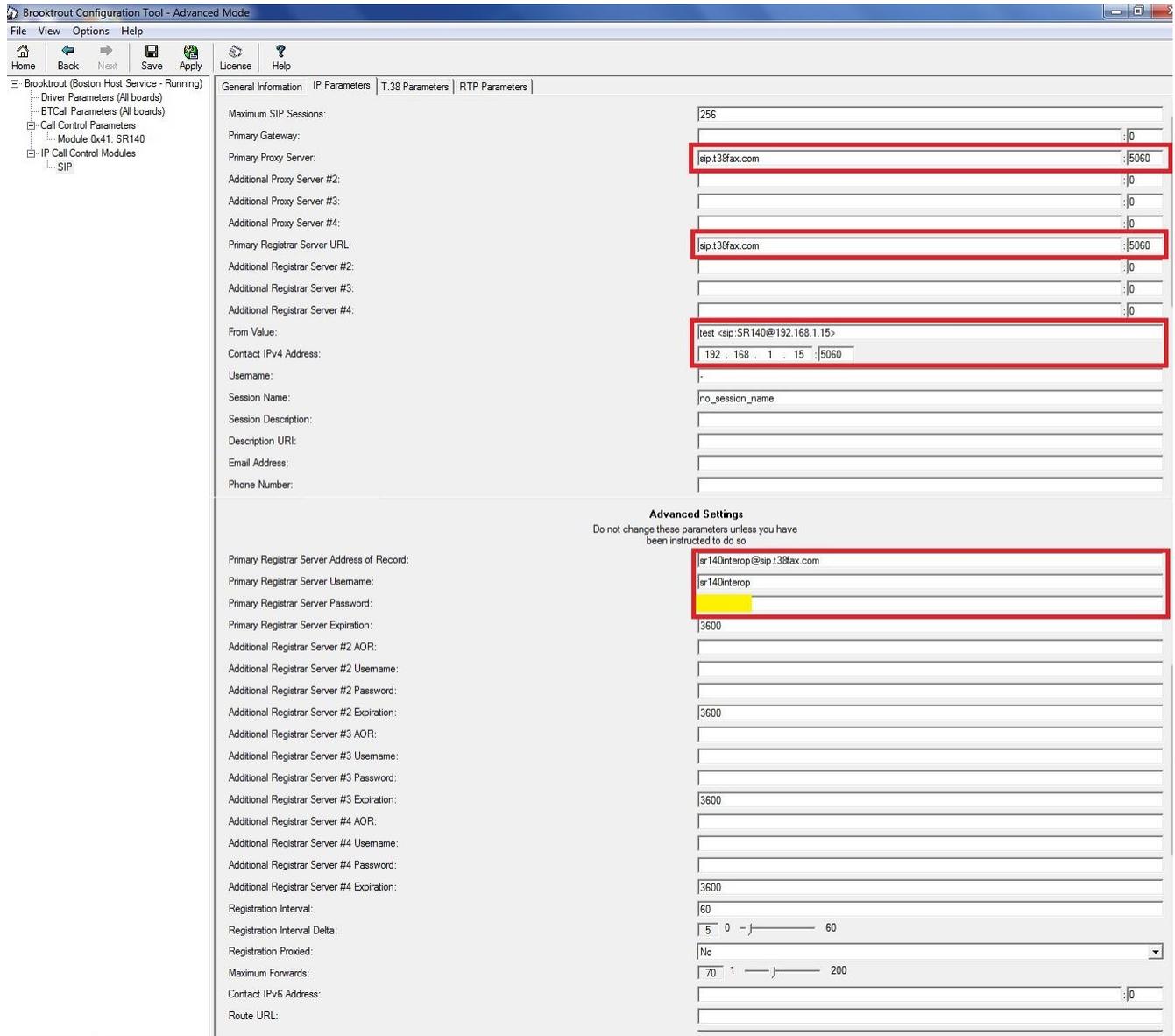
Select **Advanced Mode**.



Select **Yes** to enter Advanced Mode.

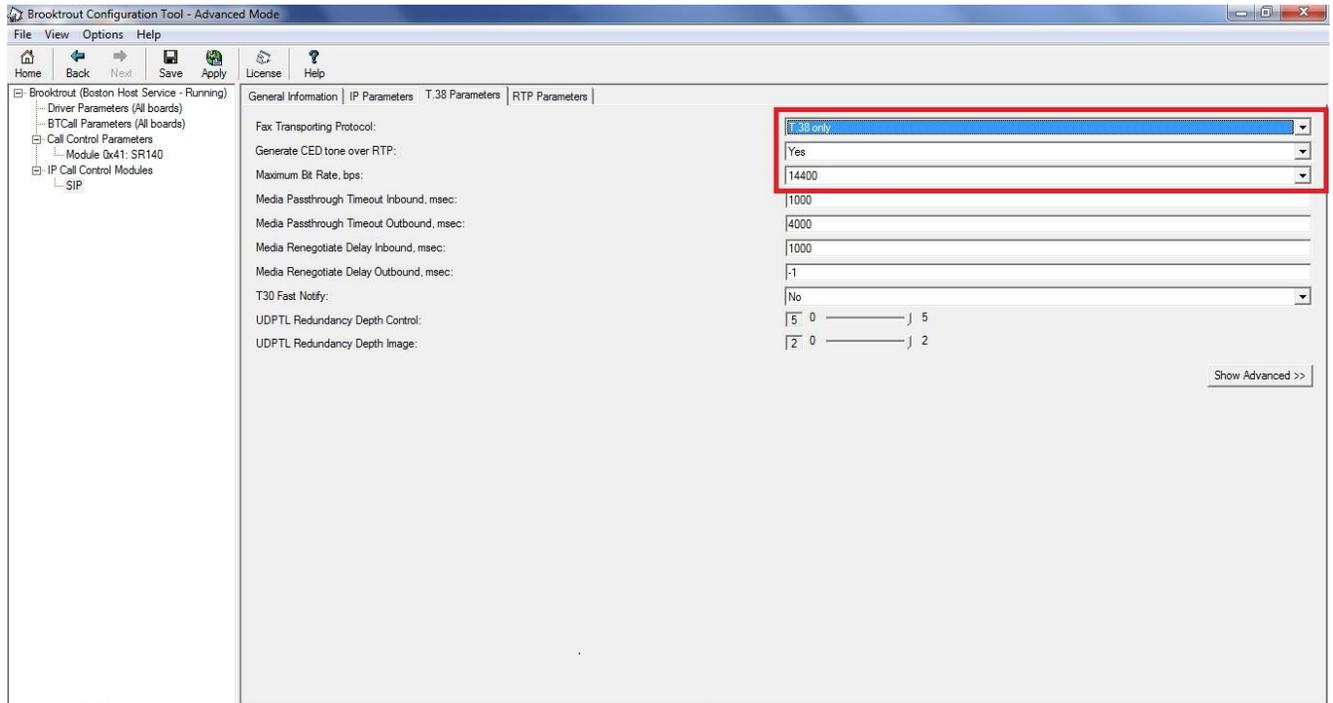


Select **SIP** under **IP Call Control Modules** and open the **IP Parameters Tab**



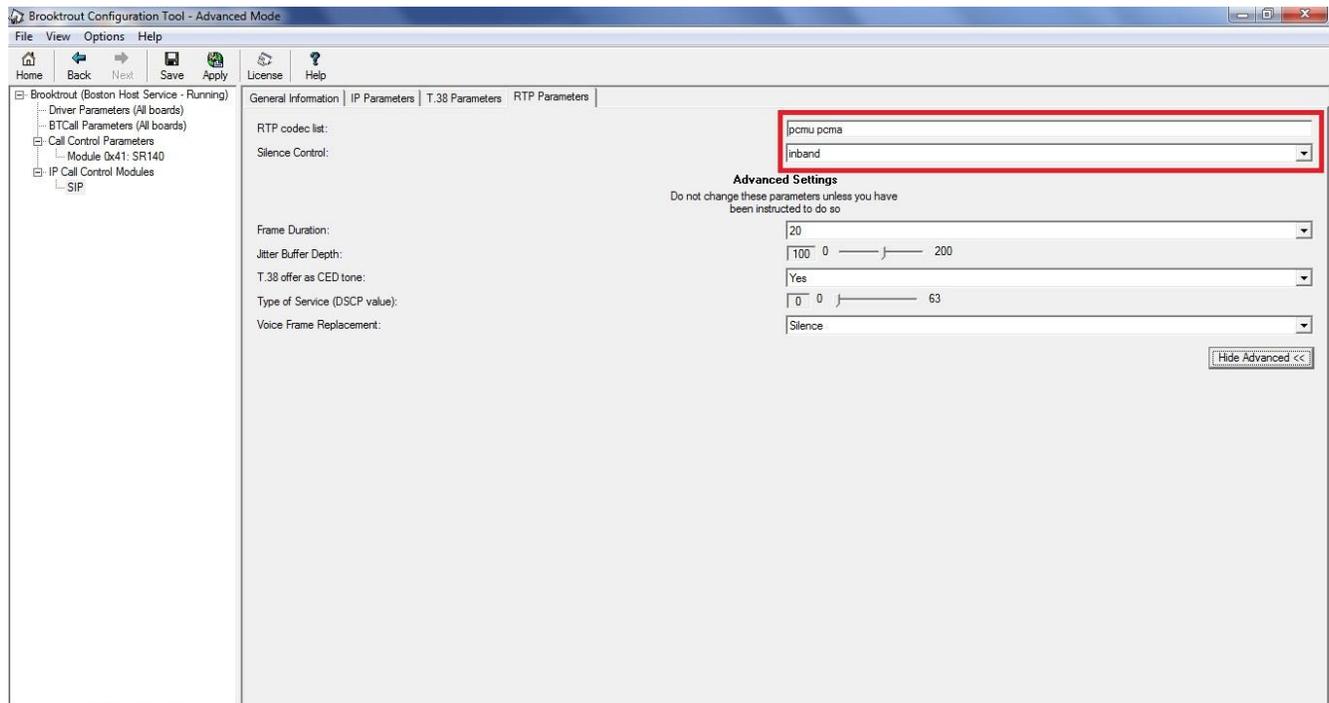
- Change **Primary Proxy Server** to sip.t38fax.com
- Change **Primary Registration Server URL** to sip.t38fax.com
- Change **From Value** to <userID>@sip.t38fax.com (example: 12155551212@sip.t38fax.com)
- Change **Primary Registrar Server Address of Record** to <userID>@sip.t38fax.com
- Change **Primary Registrar Server Username** to the <userID> provided by T38Fax.com.
- Change **Primary Register Server Password** to the <password> provided by T38Fax.com.

Select **SIP** under **IP Call Control Modules** and open the **T.38 Parameters** tab



- Confirm that **Fax Transporting Protocol** is set to **T.38 only**
- Confirm that **Generate CED tone over RTP** is set to **YES**
- Confirm that **Maximum bit rate bps** is set to **14400**

Select **SIP** under **IP Call Control Modules** and open the **RTP Parameters** tab



- Confirm that **RTP codec list** is set to **pcmu pcma**
- Confirm that **Silence Control** is set to **inband**

Click **Save** and then close the Configuration Tool.

## 7 Dialogic® Brooktrout® SR140 Fax Software Setup Notes

The Installation and Configuration Guide used to set up the SR140 is available from the site below:

<http://www.dialogic.com/manuals/brooktrout/default.htm>

The SR140 callctrl.cfg file used in the sample test configuration is shown below for reference.

```
api_trace=verbose
internal_trace=verbose
I3I4_trace=verbose
I4I3_trace=verbose
host_module_trace=verbose
ip_stack_trace=warning
v tty_trace=true
max_trace_files=1
max_trace_file_size=100
trace_file=test_0004_ecc.log
[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_passthrough_timeout_inbound=1000
media_passthrough_timeout_outbound=4000
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_stream_renegotiation=single
t38_t30_fastnotify=false
t38_type_of_service=0
t38_UDPTL_redundancy_depth_control=5
t38_UDPTL_redundancy_depth_image=2
[host_module.1/rtp]
rtp_frame_duration=20
rtp_jitter_buffer_depth=100
rtp_codec=pcmu pcma
rtp_silence_control=inband
t38_offer_as_ced=true
rtp_type_of_service=0
rtp_voice_frame_replacement=0
[host_module.1/parameters]
sip_max_sessions=256
sip_default_gateway=
sip_proxy_server1=sip.t38fax.com:5060
sip_proxy_server2=
sip_proxy_server3=
sip_proxy_server4=
sip_registration_server1=sip.t38fax.com:5060
sip_registration_server1_aor=12155551212@sip.t38fax.com
sip_registration_server1_username=12155551212
sip_registration_server1_password=XXXXXXX
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_registration_interval_delta=5
sip_registration_proxied=false
sip_Max-Forwards=70
sip_From=1215551212@sip.t38fax.com
sip_Contact=
sip_ContactV6=
sip_username=-
sip_session_name=no_session_name
sip_session_description=
sip_description_URI=
sip_email=
sip_phone=
sip_Route=
sip_session_timer_session_expires=0
sip_session_timer_minse=1800
sip_session_timer_refresh_method=0
sip_ip_preference=ipv4_only
sip_ip_interface=
sip_ip_interfaceV6=
sip_ip_interface_port=5060
sip_ip_interface_portV6=5060
sip_redirect_as_calling_party=0
sip_T1_timeout=500
sip_max_invite_retransmissions=7
sip_redirect_as_called_party=0
sip_tcp_enable=false
sip_user_agent=Brktsip/6.6.0B2 (Dialogic)
sip_RFC3325_Identity=0
sip_transport_protocol=udp
sip_reject_call_not_answered=486
sip_reject_unsupported_media=488
sip_reject_t38_renegotiation=488
[module.41]
model=SR140
virtual=1
exists=1
vb_firm=C:\fdtool-6.6.0\bin\bostvb.dll
channels=2
[module.41/ethernet.1]
ip_preference=ipv4_only
ip_interface={CA94E576-741B-4B17-BAB2-2EA99F8842ED}:0
ip_interfaceV6=
ip_address=0.0.0.0
ip_addressV6=
media_port_min=56000
media_port_max=56999
[module.41/host_cc.1]
```

host\_module=1  
number\_of\_channels=2

## 8 Dialogic® Brooktrout® TR1034 Setup Notes

For the sample test configuration, the TR1034 was configured using the default values with V.34 disabled, consult the *Dialogic® Brooktrout® Fax Products Installation and Configuration Guide* for details.

<http://www.dialogic.com/manuals/brooktrout/default.htm>

## 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?"*
  - ➔ Confirm that basic network access is possible by pinging the gateway.
  - ➔ Contact T38Fax.com's support team.
  
- *"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.
  
- *"I try to call the SR140 port, but I get a network busy - why?"*
  - ➔ It's possible you do not have the proper ports open on your firewall. Check settings against the above recommendations and be sure your efforts match up.