

### 1. Scope

This document is intended to detail a typical installation and configuration of a Dialogic® 1000 Media Gateway (DMG1000) or Dialogic® 2000 Media Gateway (DMG2000) when used to interface between a PBX and the Dialogic® Brooktrout SR140 Fax over IP (FoIP) platform. For the purpose of this integration note, the system was configured for general use and not for automatic (i.e. DID) fax routing.

### 2. Configuration Details

Listed below are the specific details of the PBX and Dialogic® gateway used in the testing to construct the following documentation.

#### 2.1 Gateway

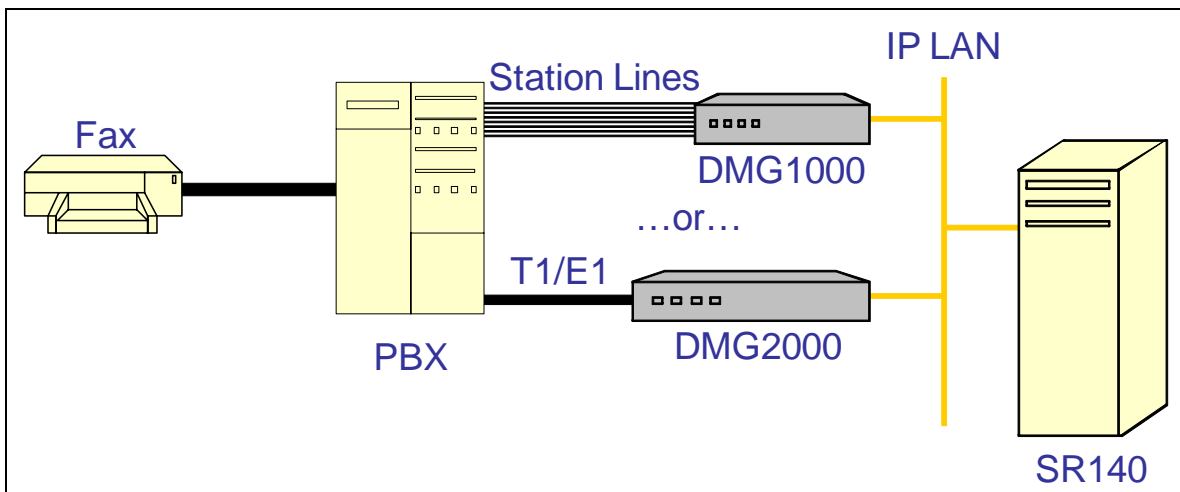
Gateway Model	Dialogic® 1000 Media Gateway (DMG1000) Dialogic® 2000 Media Gateway (DMG2000)
Software Version(s)	5.1 SU1.1 (5.1.118_N) or higher

#### 2.2 SR140

Software Version(s)	5.2 or higher
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#### 2.3 System Diagram

The diagram below details the setup used in the testing and creation of the technical document.



### 3. Prerequisites

N/A

### 4. Summary of Limitations

- TCP cannot be used as a SIP transport because the SR140 software does not support SIP over TCP.
- The G.711 coder must be used.

### 5. Gateway Setup Notes

During the initial setup of the gateway using the serial port, you must:

- Assign the gateway a Unique IP address, subnet mask and network gateway address (if the latter is required).
- Configure the gateway to use the SIP VoIP protocol.
- Configure the gateway as needed to connect to your TDM interface.

During the solution-specific setup of the gateway using the web interface, you must:

- Configure the gateway with at least a single IP endpoint.
- Set the Voice coder to be G.711.
- Set the SIP Transport as UDP.
- Set the Fax Transport mode to be T.38.
- Set the Fax/Modem tone relay to either In-band or RFC2833.

### 6. PBX Setup Notes

Depending on the TDM interface being used (i.e. analog, T1/E1 or digital station set); consult the appropriate gateway configuration guide.

Basic configuration requires that the TDM interface be configured to match the setting selected on the gateway and the PBX set up with a centralized method of call distribution between all of the configured channels. This is typically done via a hunt group or port-to-port forwarding configuration. This centralized call distribution method offers a single point of entry to where all faxes can be directed.

In this configuration, it is not making use of any DID routing capabilities so specialized numbering configuration is not required on the PBX-side of the connection.

### 7. SR140 Setup Notes

- Follow the instructions in the SR140 User's Guide for the initial installation and setup.
- Select the Telephony tab in SR140:
  - Under BTCall Parameters, click Show Advanced and select Permitted Compression Types. Set this to either 'MR' or 'MH' as needed.
  - Under SIP – T.38 parameters, Set T.30 Fast Notify to 'Yes'. Also set Maximum Bit rate (bps) to '14400'.
  - Under SIP – T.38 parameters make sure that Media Renegotiate Delay Outbound msec is set to '-1'.
- Click Save and then Apply.
- Close the Configuration Tool.
- On the main SR140 page, under the tab of Board/Module, select '0x41' and click 'Initialize'.

## 8. Testing Validation Matrix

The table below shows various test scenarios that are run as typical validation scenarios when the gateway is used in a FoIP situation. The notes column specifies any notable results of the test.

Test Number	Call Scenario Description	Notes
<b>Inbound call scenarios</b>		
1	Send a 1-page fax from TDM to IP.	
2	Send a 5-page fax from TDM to IP.	
3	Send a 1-page fax from IP to TDM.	
4	Send a 5-page fax from IP to TDM.	

## 9. Troubleshooting

### 9.1 Important Debugging Tools

- Ethereal/Wireshark – Used to view and analyze the network captures provided by the Dialogic® gateway diagnostic firmware.
- Adobe Audition -- Used to review and analyze the audio extracted from the network captures to troubleshoot any audio-related issues.

## 10. Appendix

### 10.1 Abbreviations

LBRC	Low Bit Rate Coder
MWI	Message Waiting Indication
LWC	Leave Word Calling
PBX	Private Branch Exchange

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