- G.726-40

- G.729a

- G.723

Using a FAX Machine

You can connect a fax machine to an FXS port on the SPA2102, SPA3102, SPA8000, and SPA8800. T.38 Fax is supported on these devices, for fax transmission over an IP network. The SPA2102 and SPA3102 support a single connection, while the SPA8000 and SPA8800 support one connection for each pair of FXS ports (1/2, 3/4, 5/6, and 7/8) for a maximum of four connections.

Follow this procedure to optimize fax completion rates.

STEP 1 Upgrade the ATA firmware to the latest version

STEP 2 Ensure that you have enough bandwidth for uplink and downlink.

- For G.711 fallback, it is recommend to have approximately 100Kbps.

- For T.38, allocate at least 50 kbps.

STEP 3 To optimize G.711 fallback fax completion rates, set the following on the Line tab of your ATA device:

- Network Jitter Buffer: very high

- Jitter buffer adjustment: disable

- Call Waiting: no

- 3 Way Calling: no

- Echo Canceller: no

- Silence suppression: no

- Preferred Codec: G.711

- Use pref. codec only: yes

STEP 4 If you are using a Cisco media gateway for PSTN termination, disable T.38 (fax relay) and enable fax using modem passthrough.

For example:

```
modem passthrough nse payload-type 110 codec g711ulaw
fax rate disable
fax protocol pass-through g711ulaw
```

STEP 5   Enable T.38 fax on the SPA 2102 by configuring the following parameter on the Line tab for the FXS port to which the FAX machine is connected:

```
FAX_Passthru_Method: ReINVITE
```

NOTE   If a T.38 call cannot be set-up, then the call should automatically revert to G.711 fallback.

STEP 6   If you are using a Cisco media gateway use the following settings:

Make sure the Cisco gateway is correctly configured for T.38 with the SPA dial peer. For example:

```
fax protocol T38
fax rate voice
fax-relay ecm disable
fax nsf 000000
no vad
```

Fax Troubleshooting

If have problems sending or receiving faxes, complete the following steps:

STEP 1   Verify that your fax machine is set to a speed between 7200 and 14400.

STEP 2   Send a test fax in a controlled environment between two ATAs.

STEP 3   Determine the success rate.

STEP 4   Monitor the network and record the following statistics:

- Jitter

- Loss

- Delay

STEP 5   If faxes fail consistently, capture a copy of the web interface settings by selecting Save As > Web page, complete from the administration web server page. You can send this configuration file to Technical Support.

STEP 6   Enable and capture the debug log. For instructions, refer to Appendix C, **"Troubleshooting."**.

NOTE   You may also capture data using a sniffer trace.

STEP 7   Identify the type of fax machine connected to the ATA device.

STEP 8   Contact technical support:

- If you are an end user of VoIP products, contact the reseller or Internet telephony service provider (ITSP) that supplied the equipment.

- If you are an authorized Cisco partner, contact Cisco technical support.