



Imecom White Paper

Direct In-bound Fax Routing Utilizing DTMF Tones
With Brooktrout TR Series Loop-Start Fax Boards

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About This Whitepaper

This whitepaper applies to version 8.0 and later releases of the Imecom Use it Messaging™ DM Fax Server™ software. For additional whitepapers, please visit:

<http://www.imecominc.com/downloads/whitepapers/>

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Overview

This document is intended to highlight some system characteristics that are necessary in order to implement a direct inbound fax routing solution using:

- Imecom DM Fax Server software
- A Dialogic Brooktrout TR Series loop-start (analog) fax board
- DTMF tones generated by telecommunications equipment

This implementation often uses features of a PABX and application software that were not intended for this purpose, and the installation can require a degree of improvisation. Where possible, inbound routing using a Brooktrout T1/PRI board or analog DID board is advised for faster, more reliable service.

IMPORTANT NOTE: All Brooktrout TR series loop-start boards -TR1034 and TruFax series - are capable of doing DTMF routing. However, the enabling and control of DTMF routing is entirely handled through the Imecom DM Fax Server software.

DTMF Routing with Telecom Equipment

The following procedure describes automated inbound fax routing using DTMF digits regenerated by telecom equipment. This set of instructions assumes an Imecom DM Fax Server with Brooktrout TR1034 series loop-start fax board is used.

1. The sending fax machine dials the number for the Brooktrout TR1034 fax board.
2. PABX rings the Brooktrout TR1034 fax board and plays ringing tone to the sending fax machine.
3. The Brooktrout TR1034 fax board answers the call (goes off-hook).
4. PABX senses this and sends down the last few digits of the dialed number as DTMF tones (usually the last 3 or 4 digits of the phone number).
5. Imecom DM Fax Server software collects these digits and determines who or where to route the incoming fax.
6. PABX connects the sending fax machine to the Brooktrout TR1034 fax board.
7. The fax is then received and routed to the correct location.

"Manual" Sending of DTMF Tones

This process requires extra steps on the part of the person sending the fax, as no telecom equipment is regenerating DTMF digits to the Brooktrout fax board. This set of instructions assumes an Imecom DM Fax Server with Brooktrout TR1034 series loop-start fax board is used.

1. The sending fax machine dials the number for the TR1034.
2. The Brooktrout TR1034 fax board answers the call (goes off-hook). Typically the DM Fax Server software instructs the board to play a tone (or in the case of TR1034 boards, there's an option of playing a voice prompt) alerting the sender that the board's ready to accept DTMF digits.
3. The sender types in the extension of the person for whom the fax is intended. The Brooktrout board would accept the digits, answer the call, and receive the fax.

System Requirements

The PABX should:

- Provide a standard loop-start line for the Brooktrout TR1034 fax board. (Loop-start is often referred to as "POTS", for Plain Old Telephone Service.)
- Be capable of assigning a sub-group of numbers to a single port. When any number within the subgroup is dialed, the call is automatically routed to the same port.
- Be able to send down the dialed number, or part of the dialed number, to the port as DTMF digits after the call has been answered. This is commonly called *after-dialing*, and is a feature provided for the PABX to communicate with other peripherals, such as voice mail.
- Send the first DTMF digit *no earlier* than 200ms after the call has been answered by the Brooktrout TR1034 fax board. Ideally this parameter would be programmable, or significantly longer than the 200ms required by the Brooktrout TR1034 fax board to allow for delays within the application.

Many systems are capable of sending down a pre-defined number of digits, and stripping off any leading digits. For example, a typical system can be programmed to send down the last 4 digits.

For More Information

Since 1989, Imecom Group has been providing enterprise fax server solutions, network fax software, and image printer driver software to companies of all sizes across the world. For more information on Imecom Group and our product offerings, please visit <http://www.imecominc.com> or call us at +1 603.569.0600.

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