



Troubleshooting

To better help our customers - this HP Laserjet 3200 series troubleshooting page is simply a guide / additional information for your convenience, as you search for assistance in repairing your machine. Although this information is provided for your convenience it is recommended, for the most part, that a technician inspects your office equipment.

It is recommended to consult with a professional when ordering your printer part(s).

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Troubleshooting tools

Internal reports

Use the control panel to print configuration reports and demonstration pages. The configuration report shows the settings selected from the control panel. The control panel menu structure might be a useful reference as you alter settings in the menu.

To print a configuration report

- 1 Press **ENTER/MENU**.
- 2 Use the **<** or **>** key to select **REPORTS** and then press **ENTER/MENU**.
- 3 Use the **<** or **>** key to select **CONFIGURATION REPORT** and then press **ENTER/MENU**. The product exits the Menu settings and prints the report.

To print a demonstration page

- 1 Press **ENTER/MENU**.
- 2 Use the **<** or **>** key to select **REPORTS** and then press **ENTER/MENU**.
- 3 Use the **<** or **>** key to select **DEMO PAGE** and then press **ENTER/MENU**. The product exits the Menu settings and prints the report.

Printing all fax reports at once

When you print all reports at once, the following reports are printed:

- **Fax activity log**—recent faxes sent and received, and status
- **Billing log** (if enabled)—prints by billing code
- **Block fax list** (if enabled)—fax numbers you have blocked
- **Configuration report**—current control panel settings, including the following sections:
 - System information
 - Reports
 - Fax settings
 - User defaults
 - Service
 - Page counts
- **Speed-dial report**—one-touch, speed dial, and group dial report

To print all fax reports at once

- 1 Press **ENTER/MENU**.
- 2 Use the **<** and **>** keys to select **REPORTS** and press **ENTER/MENU**.
- 3 Use the **<** and **>** keys to select **ALL FAX REPORTS** and press **ENTER/MENU**.

T.30 protocol trace

Use a T.30 protocol trace report to troubleshoot fax transmission issues.

To print a T.30 protocol trace report

- 1 Press **ENTER/MENU**.
- 2 Use the < or > key to select **SERVICE** and press **ENTER/MENU**.
- 3 Use the < or > key to select **PRINT T.30 TRACE** and press **ENTER/MENU**.
- 4 Use the < or > key to select **NOW** and press **ENTER/MENU**. The product exits the Menu settings and prints the reports.

To set when the T.30 protocol trace reports prints

- 1 Press **ENTER/MENU**.
- 2 Use the < or > key to select **SERVICE** and press **ENTER/MENU**.
- 3 Use the < or > key to select **PRINT T.30 TRACE** and press **ENTER/MENU**.
- 4 Use the < or > key to select the option for when you want the T.30 protocol trace report to print.
- 5 Press **ENTER/MENU** to save the selection.

Use the control panel service menu to choose **T.30 Protocol Trace** and then select **At end of call**. Configure another fax machine, preferably another HP LaserJet 3200 or HP LaserJet 3200M product, to the same (or similar) settings.

Send a fax from the product or receive a fax to the product from the other fax machine. The fax trace report prints after the fax prints.

Explanations of some of the report's column heading follow:

- **Date** and **Time** identify when the fax begins. Match it with the fax log of errors.
- **Type** is the type of fax activity, send or receive.
- **Identification** is the phone number to which a fax is sent.
- **Result** explains the status of the fax:
 - "OK" means that the fax was successful.
 - "Pending" faxes are in memory or are printing.
 - For error codes and their meanings, see tables 18 and 19 on pages 189 through 200.

Table 18. Fax receive error codes

Error code	Error definition	Solution
200	The fax session has completed without errors.	None required.
221	User has pressed STOP/CLEAR causing fax session to be prematurely halted.	Allow the product to receive the fax.
222	<p>The local machine has answered a call but has been unable to detect the presence of a calling fax machine. Typically this is caused by the local fax machine answering a voice call.</p> <p>-Or-</p> <p>The remote user canceled the fax transmission by pressing STOP/CLEAR immediately prior to, or just as the local machine answered the call.</p> <p>-Or-</p> <p>The remote machine automatically ended the call immediately prior to, or just as the local machine answered the call.</p> <p>-Or-</p> <p>The remote (calling) fax machine determined there was a feature incompatibility between the two and disconnected immediately before transmitting any further fax tones or T.30 frames. (This is a very rare and non-standard behavior.)</p>	<p>1 Confirm that the remote caller is a fax machine and not a voice call- (typically we must rely on the remote user informing the caller that the fax session failed).</p> <p>2 If the remote machine ends the call just as the local machine starts reception, reduce the ring count after which the local machine answers. Alternatively suggest that the remote user manually dials to the local machine and then manually starts the fax session, by pressing START once fax tones have been heard from the local machine.</p> <p>3 Confirm the remote user is not inadvertently attempting to poll transmit from the local machine, instead of transmitting to the local machine.</p> <p>4 Reconfigure the local fax machine to use different configuration settings, toggle the ECM state and/ or select a slower reception speed.</p>
223 (ECM error)	The local machine has been unable to receive an entire page even after multiple attempts to re-receive the parts of the page that contain errors. This is usually caused by extremely poor line conditions.	<p>Reattempt the fax reception at a different time when telephone line conditions have improved.</p> <p>-Or-</p> <p>Disable ECM. Errors may still occur, and may result in degraded image quality on the received page. However, the ability to receive the entire document will be improved.</p>

Table 18. Fax receive error codes (continued)

Error code	Error definition	Solution
224	The local machine has received one or more pages with excessive errors. This is usually caused by extremely poor line conditions. Error correction is not used during this session so errors are not corrected. It should be noted that some non-HP machines may optionally choose to resend the entire errored pages, but we will be unable to determine if the received page corrects problems with a previously received page.	Reattempt the fax reception at a different time when telephone line conditions have improved.
225	The remote machine has attempted to initiate a remote diagnostic session with this machine, even though remote diagnostic access is locally disabled.	Enable the remote diagnostics capability on the local machine.
226	The remote machine has attempted to initiate a remote diagnostic session with this machine, but the remote diagnostic versions supported by the two machines are incompatible.	None. Remote diagnostics cannot occur between machines with incompatible remote versions.
227	The remote machine has attempted to initiate a fax session at a speed and modulation that is not supported by the local machine.	Reconfigure the local machine to receive at a slower speed.
228	The remote machine has attempted to initiate a poll transmission from the local machine even though the local machine is not configured for poll transmission.	<ol style="list-style-type: none"> 1 Confirm that polling by the remote user is desired. It is possible that the remote user has inadvertently attempted to poll. If this is the case reattempt a normal transmission from the remote machine. 2 If polling by the remote user was desired, confirm that the local machine was correctly configured for poll transmission.
229	The remote machine has attempted to initiate a secure poll transmission from the local machine but has not provided a valid password.	If the remote user is the desired recipient for the polled document confirm that the remote user has the correct password, and that the local machine is configured with the same password.
230	The remote machine has attempted to initiate an operation that requires error correction but has not selected error correction for the session.	Enable ECM on both the local machine and the remote machine.
231	The remote machine has attempted to initiate a transmission to the local machine even though the capability to receive is disabled at the local machine.	Ensure that the local machine is capable of receiving a document. Check that paper is correctly loaded, paper is not jammed within the machine, and any other system abnormalities have been cleared.

Table 18. Fax receive error codes (continued)

Error code	Error definition	Solution
232 233 234 235 (ECM error) 236 (ECM error) 237	A communication failure has occurred between the two machines. -Or- The user at the remote machine may have pressed STOP/CLEAR . -Or- The power at the remote machine has been interrupted, or deliberately turned off, causing the fax session to be interrupted.	1 Re-attempt the fax reception at a different time when telephone line conditions have improved. 2 If the error persists, and error correction is in use for the fax session, disable ECM.
238 239 (ECM error) 240 (ECM error) 241 (ECM error)	The sending fax machine sent an unexpected communication.	None. This is a defect in the remote sending machine.
242	The remote fax machine is attempting to receive instead of send. Both machines have attempted to start a reception at the same time. It is possible to accidentally initiate a fax reception after dialing on many machines, if there is no paper in the machine or if the paper is not correctly loaded and cannot be sensed by the appropriate document sensor.	Ensure that a document is ready and correctly loaded in the transmitting fax machine and that the remote machine is attempting to initiate a transmission and not a reception.
243 244	The user of the remote machine has pressed that machine's top key causing the session to be prematurely terminated. -Or- The remote fax machine determined that there was a feature incompatibility between the two machines and has terminated the session. An example would be when the local machine wanted to initiate polling, but the remote machine did not support this mode of operation.	1 Confirm that the remote user is not inadvertently attempting to poll transmit from the local machine, instead of transmitting to the local machine. This mode of operation must be specially configured on the local machine. If poll transmission from the local machine is the desired mode of operation confirm that the local machine has been configured for this operation. 2 Reconfigure the local fax machine to use different configuration settings, toggle the ECM state and/or select a slower reception speed.
245 246 (ECM error)	The user of the remote machine has pressed that machine's Stop key causing the session to be prematurely terminated. The local machine has been "holding off" the remote machine during reception of a large and/or complex document because of lack of available memory. This hold off time has exceeded the timeout (typically 60 seconds) used by the remote machine and it has terminated the session.	1 If the document was large, ask the remote user to retransmit the document as two or more smaller documents. 2 Disable ECM and reattempt the fax reception.

Table 18. Fax receive error codes (continued)

Error code	Error definition	Solution
247 - 251	The remote machine appears to be stuck "on."	None.
252	Telephone line conditions were too poor to receive a fax.	<ol style="list-style-type: none"> 1 Reattempt the fax reception at a later time when line conditions may have improved. 2 Configure the machine to start reception at a lower speed. 3 If the local machine received successfully several pages of a larger document, ask the remote user to transmit the document in several smaller parts.
253	The remote machine has attempted to initiate a page transmission using a page width that is not supported by the local machine.	Ask the remote user to reconfigure their fax machine to transmit using a "normal" (letter/A4 page width).
281	The local machine has not received any data at the start of a page during non-ECM reception although the modem has not detected a remote disconnect. The remote machine is probably transmitting fill bytes instead of data and is either broken or jammed.	Reattempt the fax reception after first requesting that the remote user check his or her machine.
282	The local machine has not received any data at the start of a page during ECM reception although the modem has not detected a remote disconnect. The remote machine is probably transmitting sync frames instead of data and is either broken or jammed.	Reattempt the fax reception after first requesting that the remote user check his or her machine.
283	The local machine has detected that modem carrier has stopped. Either the line has been disconnected or the remote machine has aborted the transmission.	Reattempt the fax reception after first requesting that the remote user check his or her machine.
284	The local machine has not received any data during non-ECM page reception and a timeout failure has occurred. The remote machine is probably transmitting fill bytes instead of data and is either broken or jammed.	Reattempt the fax reception after first requesting that the remote user check his or her machine.
285	The local machine has stopped receiving any data during an ECM page reception although the modem has not detected a remote disconnect. The remote machine is probably transmitting sync frames instead of data and is either broken or jammed.	Reattempt the fax reception after first requesting that the remote user check his or her machine

Table 18. Fax receive error codes (continued)

Error code	Error definition	Solution
286	The remote machine has transmitted invalid data. The local machine has received frames with errors during an ECM reception and requested retransmission of the errored frames. The data that is resent does not correspond to the data that was requested. This is an implementation error from the remote machine.	Disable ECM and reattempt the reception.
290	The remote machine has attempted to renegotiate the session mode from ECM to non-ECM between pages. This operation is not supported, and the session has been abandoned.	Reattempt the fax reception and split the document into two portions corresponding to the ECM and non-ECM portions. Some machines will attempt to use non-ECM for photo mode, so this may be associated with a between page encoding change to support photo mode.
291	This isn't a communication error, and it is not expected that this error will occur under non-development scenarios. Reception has failed because the local unit is unable to open a file to receive data into. May be associated with low memory, although low memory should not, by itself, produce the error.	If the error persists reinitialize the unit.
292	The remote machine has attempted to renegotiate the encoding mode from non-JPEG to JPEG. This operation is not supported, and the session has been abandoned.	Reattempt the fax reception and split the document into two portions corresponding to the JPEG and non-JPEG portions. Some machines will attempt to use JPEG for photo mode, so this may be associated with a between page encoding change to support photo mode.

Table 19. Fax send error codes

Error code	Error condition	Solution
300	Fax session has completed without errors.	None required.
311	The user of the local machine has pressed the Stop key causing the session to be prematurely halted before all pages have been transmitted.	None required.
312	A remote fax device has failed to answer the call. Specifically fax tones or the fax handshake from a remote machine has not been detected. Typically this is caused by the user calling the wrong number, the correct number has been called but the machine has been configured not to answer, or the remote machine has temporarily disabled answering because of a condition such as lack of paper or a paper jam.	Confirm the remote fax machine is ready to receive a document and reattempt the transmission.
313	A busy signal has been detected each time the local machine has attempted to call the remote machine.	Reattempt the fax transmission at a later time when the line is no longer busy.
314	The local machine has attempted to initiate a remote diagnostic session but has detected that remote diagnostics are disabled at the remote machine.	Enable remote diagnostics on the remote machine.
315	The local machine has attempted to initiate a remote diagnostic session but has detected that the remote diagnostic version supported by the remote machine is incompatible.	No solution. Remote diagnostics cannot occur between machines with incompatible remote versions.
316	The local machine is setup to initiate document transmission, but it has detected that the remote machine is not able to receive a document. This error should be very rare since normally a remote machine will not answer if it cannot receive a document. One of the few exceptions to this would occur if the remote machine was configured to poll transmit a document but was unable to receive.	Configure the remote machine for reception. Typically the remote user configure the remote machine, including loading paper, clearing jams, and clearing other system abnormalities.
317	The remote machine cannot support a fax reception at any speed or modulation that is supported by the local machine.	No solution.
318	The remote machine cannot support a fax reception at the page width selected by the local machine.	No solution.

Table 19. Fax send error codes (continued)

Error code	Error condition	Solution
319	The local machine has attempted to initiate a binary file transfer (BFT) but has detected that the remote machine does not support this mode of operation.	<ol style="list-style-type: none"> 1 Enable the BFT capability on the remote machine if it is supported. 2 Retransmit the document as a normal fax, rather than attempting a BFT transfer.
320	The local machine is set up to initiate poll reception with a remote machine, but it has detected that the remote machine is not configured to do this. Poll transmission from a remote machine is typically configured on a session by session basis.	<p>Confirm that the local user really wants to attempt a poll reception. If not, reconfigure the local machine for a normal fax transmission.</p> <p>-Or-</p> <p>Configure the remote machine for poll transmission. The remote user must load a document to transmit and then configure the machine for polling.</p>
321	There was a communication error with the receiving fax machine caused by poor telephone line conditions.	Reattempt the fax transmission at a different time when telephone line conditions have improved.
322 - 324	Telephone line conditions were too poor to send a fax.	<ol style="list-style-type: none"> 1 Reattempt the fax transmission at a different time when telephone line conditions have improved. 2 If the session fails after transmitting several pages of a large document, retransmit the document as several smaller documents.
325 - 328 (ECM error)	Telephone line conditions were very poor.	<p>Reattempt the fax transmission at a different time when telephone line conditions have improved.</p> <p>-Or-</p> <p>Disable ECM. Errors may still occur, and may result in a degraded image quality on the received page. However, the ability to transmit the entire document will be improved.</p>
329 - 331	The remote machine has reported that one or more pages have been received (non-ECM mode) with excessive errors. This error does not result in the session being terminated immediately. Subsequent page transmission can still occur and later pages may be received without error.	<p>Reattempt the fax transmission at a different time when telephone line conditions have improved.</p> <p>-Or-</p> <p>Select a lower speed for the initial transmission speed.</p>
332 - 343	There is a defect in the remote fax machine (the other machine) and there is no solution except to send or receive to or from another fax machine.	

Table 19. Fax send error codes (continued)

Error code	Error condition	Solution
344 - 348 349-353 (ECM error) 354-355	The remote machine has failed to respond to a fax command from the local machine because the connection is interrupted. -Or- The remote user has pressed the Stop key while the reception was in progress -Or- Under rare conditions incompatibility between the two machines may cause the remote machine to simply abandon the call.	1 Reattempt the fax transmission at a different time when telephone line conditions have improved. 2 If the fax session was using error correction, disable ECM.
356 - 361 362-366 (ECM error)	The remote user has pressed the Stop key causing the session to be aborted. -Or- The remote machine has encountered a system problem such as no paper or a paper jam which has inhibited it from receiving any more pages, and which has caused it to terminate the session prematurely. -Or- A feature incompatibility has been encountered by the remote machine causing it to terminate the session.	1 Configure the remote machine for document reception by clearing any paper jams, loading sufficient paper, and clearing any other system errors. 2 Configure the local fax machine to use different configurations; toggle the ECM state; select a slower reception speed.
367 - 372 373-377 (ECM error) 378-379	The remote machine appears to be stuck "on."	None.
380	The remote machine has failed to issue a valid response to a CTC frame. This occurs during ECM transmission after multiple retransmissions of erroneous data.	None; there is a defect in the remote machine.
381	The remote machine has failed to respond to a fax command from the local machine because the connection is interrupted. -Or- The remote user has pressed the Stop key while the reception was in progress.	1 Reattempt the fax transmission at a different time when telephone line conditions have improved. 2 Disable ECM.
382	The remote fax machine has been "holding off" the local fax machine from continuing the on-going transmission because of a temporary low memory condition at the remote machine. If this "hold off" period exceeds a machine's specific timeout value, the session will be terminated.	Resend the document as two or more separate fax transmissions. Wait several minutes between the end of one transmission and the start of the next transmission. -Or- Disable ECM.

Table 19. Fax send error codes (continued)

Error code	Error condition	Solution
383	The remote machine has failed to respond to a fax command from the local machine because the connection is interrupted. -Or- The remote user has pressed the Stop key while the reception was in progress.	Reattempt the fax transmission at a different time when telephone line conditions have improved -Or- Disable ECM.
384	The local machine has attempted a black JPEG transmission to a machine that does not support this mode.	Reattempt the fax transmission using a different mode.
386	The local machine has failed to complete phase 3 of the initial V.34 handshake after originating a fax session. This is usually caused by poor line conditions although it may be a compatibility issue with certain machines and/or line conditions.	1 Reattempt the fax reception at a different time when telephone line conditions have improved. 2 Disable V.34 on the local machine and attempt the transmission using the V.17 mode.
387	The local machine has failed to successfully negotiate the initial V.8 handshake with the remote machine after originating a fax session. Typically this will occur when the remote machine is not fax capable or has disabled reception. It may also be a compatibility issue with certain machines and/or line conditions.	1 Reattempt the fax transmission at a different time when telephone line conditions have improved. 2 Disable V.34 on the local machine and attempt the transmission using the V.17 mode.
388	The local machine has originated a fax session and detected a remote fax machine but has been unable to detect any T30 frames. If the machine is in V.17 mode it is likely that the connection has been interrupted. In V.34 mode is also possible for this error to occur because of compatibility problems with certain machines and/or line conditions.	1 Reattempt the fax transmission at a different time when telephone line conditions have improved. 2 Disable V.34 on the local machine and attempt the transmission using the V.17 mode.
389	The local machine has originated a fax session and has reattempted V.8 negotiations multiple times without success.	1 Reattempt the fax transmission at a different time when telephone line conditions have improved. 2 Disable V.34 on the local machine and attempt the transmission using the V.17 mode.

Table 19. Fax send error codes (continued)

Error code	Error condition	Solution
390	The local machine has originated a fax session using error correction (either V.34 or V.17). Transmission of an image has been abandoned after a timeout when no data has become ready for transmission. This is most likely caused by a low memory condition, although it could be caused by other internal problems that cause generation of data for transmission to stall.	Reattempt the transmission after making sure documents stored in memory are printed, and the unit has paper ready for printing. If the problem persists reinitialize permanent storage.
391	The local machine has originated a fax session without error correction (not V.34). Transmission of an image has been abandoned after a timeout when no data has become ready for transmission. This is most likely caused by a low memory condition although it could be caused by other internal problems that cause generation of data for transmission to stall.	Reattempt the transmission after making sure documents stored in memory are printed, and the unit has paper ready for printing. If the problem persists reinitialize permanent storage.
392	The local machine has answered a fax session and completed the initial V.34 handshake but has been to detect any T30 frames. This failure is either a compatibility problems with certain machines or is caused by line conditions.	<ol style="list-style-type: none"> 1 Reattempt the fax reception at a different time when telephone line conditions have improved. 2 Disable V.34 on the local machine and attempt the reception using the V.17 mode.
393	The local machine has failed to complete phase 3 of the initial V.34 handshake after answering a fax session. This is usually caused by poor line conditions although it may be a compatibility issue with certain machines and/or line conditions.	<ol style="list-style-type: none"> 1 Reattempt the fax reception at a different time when telephone line conditions have improved. 2 Disable V.34 on the local machine and attempt the reception using the V.17 mode.
394	The local machine has failed to successfully negotiate the initial V.8 handshake with the remote machine after answering a fax session. Typically this will occur when the calling machine is not fax capable. It may also be a compatibility issue with certain machines and/or line conditions.	<ol style="list-style-type: none"> 1 Reattempt the fax reception at a different time when telephone line conditions have improved. 2 Disable V.34 on the local machine and attempt the reception using the V.17 mode.
395	An unexpected T.30 frame has been received between pages during a multipage V.34 reception. This is almost certainly a compatibility problem with the remote machine and may be caused by an error with the implementation of the remote machine.	<ol style="list-style-type: none"> 1 Reattempt the fax reception. If transmission errors are not encountered because line conditions have improved then this error will probably be avoided. 2 Disable V.34 on the local machine and attempt the reception using the V.17 mode.

Table 19. Fax send error codes (continued)

Error code	Error condition	Solution
396-409	An error occurred during a V.34 transmission when the local machine was unable to correctly handshake with the remote machine and was consequently unable to transmit a T.30 frame. This occurs when the line was disconnected or if line conditions degrade during the session.	Reattempt the fax transmission at a different time when telephone line conditions have improved.
410-419	Error occurred during a V.34 reception when the local machine was unable to correctly handshake with the remote machine and was consequently unable to transmit a T30 frame. This occurs when the line is disconnected or if line conditions degrade during the session.	Reattempt the fax reception at a different time when telephone line conditions have improved.
420	V.34 negotiations have failed from the originating machine during phase 4. Phase 4 occurs after V.8 and before the first T.30 frames are exchanged. Compatibility problems have been observed in this area when sending to non-HP units.	Reattempt the fax reception at a different time when telephone line conditions have improved.
421	V.34 negotiations have failed from the originating machine during phase 3. Phase 3 occurs after V.8, before phase 4, and before the first T.30 frames are exchanged. Compatibility problems have been observed in this area when sending to non HP units.	Reattempt the fax reception at a different time when telephone line conditions have improved.
422	V.34 negotiations have failed from the answering machine during phase 4. Phase 4 occurs after V.8 and before the first T.30 frames are exchanged.	Reattempt the fax reception at a different time when telephone line conditions have improved.
423	V.34 negotiations have failed from the answering machine during phase 3. Phase 3 occurs after V.8, before phase 4, and before the first T.30 frames are exchanged.	Reattempt the fax reception at a different time when telephone line conditions have improved.
430	The transmitting machine is unable to send continuous ones at the end of the control channel prior to starting the primary channel. This is a V.34 error. This error may be associated with line conditions although it is more likely to be caused by internal problems with the modem.	Reattempt the fax reception at a different time when telephone line conditions have improved.

Table 19. Fax send error codes (continued)

Error code	Error condition	Solution
431	The transmitting machine has not received a response after aborting a transmission. Depending upon when the session is aborted some remote machines may not respond. It should be noted that the local unit always attempts to abort the session in such a way that the remote machine is allowed to respond to the final PPS_EOP.	No action required. The session was aborted.
440-444	Error occurred during a V.34 transmission after one or more partial pages (image data) were transmitted using the primary channel. The transmitting machine was unable to restart the control channel in order to resume the T.30 handshake. This typically occurs when the receiving machine prematurely disconnects during partial page reception, although it is possible it may also be caused by compatibility issues.	Reattempt the fax reception at a different time when telephone line conditions have improved.

Translating the fax trace report

Print a fax log report (see the user guide for instructions). The fax log report contains information about the product's interpretation of the problem.

Read the time sequences, looking for abnormal activity on the fax trace report. See table 20, "Fax phase sequence," on page 201, and table 21, "Appropriate responses," on page 202, to separate normal from abnormal activity. Fax abbreviations appear in table 22 on page 203.

Identify the phase in which the error occurred.

Note

??? is an unidentified command.

Examples of a successfully sent fax and a successfully received fax appear after the tables.

Table 20. Fax phase sequence

Sequence	Calling station	Called station
Phase A—Call setup sequence		
1	Ring signal	
2	CNG tone beep, 1100Hz 1 second	
3		Transmit CED, 3 seconds, 2100 Hz
4		Transmit NSF
5		Transmit CSI
6		Transmit DIS
7	DIS detected	
Phase B—Pre-message procedure (negotiate compatible format/protocol)		
8	Transmit TSI	
9	Transmit DCS, select mode	
10		DCS detected
11	Transmit TCF/training	
12	Transmit FSK	
13		Training (synchronize signals), check for errors
14		Transmit CFR
15	Detect CFR	
Phase C—Message transmission (page/scan transmission)		
16	Transmit message (FSK, followed by date)	
17		Receive message (SCAN), check for errors
18	Transmit FSK	
19	At end of message, send one of the following: <ul style="list-style-type: none"> ● EOM ● EOP ● MPS ● PRI-Q ● PPS-NULL ● PPS-MPS ● PPS-EOM ● PPS-EOP ● PPS-PRI-Q 	
Phase D—Post-message transmission (next page/end of transmission)		
20		Detect EOM, EOP, MPS, PRI-Q, PPS-NULL, PPS-MPS, PPS-EOM, PPS-EOP, or PPS-PRI-Q
21		Transmit MCF response to confirmation signals of post-message responses
Phase E—Call release (hangup sequence)		
21	Transmit DCN	
22		Station hangs up

Table 21. Appropriate responses

Commands	Comments	Appropriate responses
(NSF) (CSI) DIS	Identifying capabilities: from a manual receiver or an auto-answer unit	(NSC) (CIG) DTC (TSI) DCS (NSF) (CSI) DIS (CRP) (TSI) (NSS) (PWD) (SEP) (CIG) DTC (PWD) (SUB) (TSI) DCS
(NSC) (CIG) DTC	Mode setting command: from calling unit	(TSI) DCS (NSF) (CSI) DIS
(PWD) (SEP) (CIG) DTC	Poll operation	(CRP) (TSI) (NSS)
(TSI) DCS (TSI) (NSS)	Mode setting command: from manual transmitter or automatic receiver	CFR FTT (NSC) (CIG) DTC
(PWD) (SUB) (TSI) DCS	This command is always followed by phasing/training.	(NSC) (CIG) DTC
CTC	Mode setting command: from the transmitter to the receiver	(CTR) (CRP)
(EOR-NULL)	Indicates the next block transmission from the transmitter to the receiver	(ERR) (RNR) (CRP)
Any one of the following: ● (EOR-EOP) ● (EOR-EOM) ● (EOR-PRI-MPS) ● (EOR-PRI-EOP) ● (EOR-PRI-EOM)	The receiver	(ERR) (RNR) PIN (CRP)
Any one of the following: ● MPS ● EOP ● EOM ● (PRI-MPS) ● (PRI-EOP) ● (PRI-EOM)	Post-message commands	MCF RTP RTN PIP PIN (CRP)
(PPS-NULL)	Post-message command for a partial page from the transmitter to the receiver	(PPR) MCF (RNR) (CRP)
Any one of the following: ● (PPS-MPS) ● (PPS-EOP) ● (PPS-EOM) ● (PPS-PRI-MPS) ● (PPS-PRI-EOP) ● (PPS-PRI-EOM)	Post-message commands for a complete page from the transmitter to the receiver	(PPR) MCF (RNR) PIP PIN (CRP)
(RR)	Ask for the status of the receiver: from the transmitter to the receiver	(RNR) (ERR) MCF PIP PIN (CRP)
DCN	Phase E command	None

Table 22. Fax abbreviations

Abbreviation	Function	Signal format ("X"= any #)
CED	Called station identification	2100 Hz
CFR	Confirmation to receive	X010 0001 1850 or 1650 Hz for 3 seconds
CIG	Calling subscriber identification	1000 0010
CNG	Calling tone	1100 Hz for 500 ms
CRP	Command repeat	X101 1000
CSI	Called subscriber identification	0000 0010
CTC	Continue to correct	X100 1000
CTR	Response to continue to correct	X010 0011
DBM	-dBm signal strength detected from sending station (number is deviation from average value)	Range in -10 to -43 (-43 is a weak signal; see explanation below Figure 85, Example of a successfully received fax)
DCN	Disconnect	X101 1111
DCS	Digital command signal	X100 0001
DIS	Digital identification signal	0000 0001
DTC	Digital transmit command	1000 0001
DOM	End of message	X111 0001 1100 Hz
EOP	End of procedure	X111 0100
EOR	End of retransmission	X111 0011
EQM	Eye quality monitor—a measure of the modem signal quality, lower numbers indicate better signals	0-99
ERR	Response for end of retransmission	X011 1000
ECD	Facsimile coded date	0110 0000
FCF	Facsimile	
FCS	Frame check sequence	
FDM	File diagnostics message	X011 1111
FIF	Facsimile information field	
FSK	Frequency shift key. Low-speed command identifier separating commands/scans; precedes command mode.	
FTT	Failure to train. The 1.5 seconds of the Training Check Frame (TCF) indicates line conditions are not good enough for this modulation.	X010 0010
GC	Group command	1300 Hz for 1.5 to 100 seconds 2100 Hz for 1.5 to 100 seconds
GI	Group identification	1650 or 1850 Hz
HDLC	High-level data link control	
LCS	Line conditioning signals	1100 Hz

Table 22. Fax abbreviations (continued)

Abbreviation	Function	Signal format ("X"= any #)
MCF	Message confirmation	X011 0001 1650 or 1850 Hz
MSG	Message received high speed data	
MPS	Multi-page signal	X111 0010
NSF	Non-standard facilities command	1000 0100
NSF	Non-standard facilities	0000 0100
NSS	Non-standard setup	X100 0100
PID	Procedure interrupt disconnect	X011 0110
PIN	Procedural interrupt negative	X011 0100
PIP	Procedural interrupt positive	X011 0101
PIS	Procedural interrupt signal	462 Hz for 3 seconds
PPS	Partial page signal	X111 1101
PPS-EOM	Partial page signal—end of message	X111 1101
PPS-EOP	Partial page signal—end of procedure	X111 1101
PPS-MPS	Partial page signal—multi-page signal	X111 1101
PPS-NULL	Partial page signal—null	X111 1101
PPR	Partial page request	X011 1101
PRI-EOM	Procedure interrupt—end of message	X111 1001
PRI-EOP	Procedure interrupt—end of procedure	X111 1100
PRI-MPS	Procedure interrupt—multi-page signal	X111 1010
RCP	Return to control for partial page	0110 0001
RNR	Receive not ready	X011 0111
RR	Receive ready	X111 0110
RTC	Return to control mode	Six EOLs
RTN	Retrain negative	X011 0010
RTP	Retrain positive	X011 0011
TCF	Training check	Zeroes for 1 5 5
TSI	Transmitting subscriber identification	X100 0010
PWD	Password (for polling)	1000 0011
PWD	Password (for transmission)	X100 0101
SCAN	Data packets or scan line count	
SEP	Selective polling	1000 0101
SUB	Sub-address	X100 0011
V.xx	Protocol version used (Group 3 only)	V.27 = 4800/2400 V.29 = 9600/7200 V.33 = 14400/12000 V.17 = 14400/12000/9600/7200
XID	Exchange identification procedure	
???	Unidentified command sequence	

HP LaserJet 3200



HP
2083963383
JAN-30-2001 2:23PM

T.30 Protocol Trace

Job	Date	Time	Type	Identification	Duration	Pages	Result
22	1/30/2001	2:23:21PM	Send	555-nnnn	0:27	1	OK
Elapsed	Local	Remote	Signal	Detail			
0000.00	OFFHOOK						
0004.19	CNG						
0007.71	CNG						
0010.43	V8						
0014.04	PHASE3						
0015.42	PHASE4						
0015.68	NSF	v34	-11 dBm	ff 03 20 ad 00 36 04 00 00 00 00			
0015.84	CSI	v34	-11 dBm	ff 03 40 34 36 32 36 20 36 39 33 20 38 30 32 20 20 20 20 20 20			
				id : 208 396 6264			
0015.93	DIS	v34	-11 dBm	ff 13 80 20 c2 f8 c4 80 92 80 80 80 00			
				Capabilities			
				modulation : n.a.			
				encoding : mh ,mr ,mnr			
				resolution : std ,fine ,300 dpi ,metric pref.			
				ecm : yes			
				page width : 215mm			
				page length : unlimited			
				msIt : 0 ms			
				color : no			
				misc : v.8			
0015.96	TSI	v34		ff 03 43 33 38 33 33 36 39 33 38 30 32 20 20 20 20 20 20 20 20			
				id : 2083963383			
0015.96	DCS	v34		ff 13 83 00 42 f8 c4 80 80 80 80 80 00			
				Use			
				data rate : n.a.			
				encoding : mnr			
				resolution : r8x7.7 1/mm (fine)			
				ecm : yes .256			
				page width : 215mm			
				page length : unlimited			
				msIt : 0 ms			
				color : no			
				misc :			
0016.60	CFR	v34	-11 dBm	ff 13 84			
0016.60	PC	v34 31.2		sybm 3429			
0024.67	MSG	v34 31.2					
0025.08	PPS_EOP	v34		ff 13 bf 2f 00 00 5c			
0025.44	MCF	v34	-11 dBm	ff 13 8c			
0025.47	DCN	v34		ff 13 fb			
0026.72	DNHOOK						

Figure 76. Example of a successfully sent fax

Note

Phase A, call establishment, does not show up on a trace report. Phase C is the phase in which faxed pages are transferred.

HP LaserJet 3200



HEWLETT-PACKARD
208-396-6264
JAN-30-2001 2:21PM

T.30 Protocol Trace

Job	Date	Time	Type	Identification	Duration	Pages	Result
9	1/30/2001	2:21:24PM	Receive	555-nnn	0:20	1	OK
Elapsed	Local	Remote	Signal	Detail			
0000.00	OFFHOOK						
0004.89	V8						
0008.48	PHASE3						
0009.79	PHASE4						
0009.79	NSF	v34		ff 03 20 ad 00 36 04 00 00 00 00			
0009.79	CSI	v34		ff 03 40 34 36 32 36 20 36 39 33 20 38 30 32 20 20 20 20 20 20			
				id : 208 396 6264			
0009.79	DIS	v34		ff 13 80 20 c2 f8 c4 80 92 80 80 80 00			
				Capabilities			
				modulation : n.a.			
				encoding : mh ,mr ,mnr			
				resolution : std ,fine ,300 dpi ,metric pref.			
				ecm : yes			
				page width : 215mm			
				page length : unlimited			
				mslt : 0 ms			
				color : no			
				misc : v.8			
0010.72	TSI	v34	-11 dBm	ff 03 43 33 38 33 33 36 39 33 38 30 32 20 20 20 20 20 20 20 20			
				id : 2083963383			
0010.81	DCS	v34	-11 dBm	ff 13 83 00 42 f8 c4 80 80 80 80 80 00			
				Use			
				data rate : n.a.			
				encoding : mnr			
				resolution : r8x7.7 1/mm (fine)			
				ecm : yes ,256			
				page width : 215mm			
				page length : unlimited			
				mslt : 0 ms			
				color : no			
				misc :			
0010.81	CFR	v34		ff 13 84			
0010.81	PC	v34 31.2	-11 dBm	symb 3429			
0019.07	MSG	v34 31.2	-13 dBm	93 frames, 0 err. rcp. eqm=31			
0019.61	PPS_EOP	v34	-10 dBm	ff 13 bf 2f 00 00 5c			
0019.68	MCF	v34		ff 13 8c			
0020.03	DCN	v34	-10 dBm	ff 13 fb			
0020.03	ONHOOK						

Figure 77. Example of a successfully received fax

Explanation of DBM

-dBm values should fall into the range of -10 to -43 (with -43 being a weak signal). In the example in figure 77 above, -11 dBm, -13 dBm, and -10 dBm are strong signals.

Repetitive image defect ruler

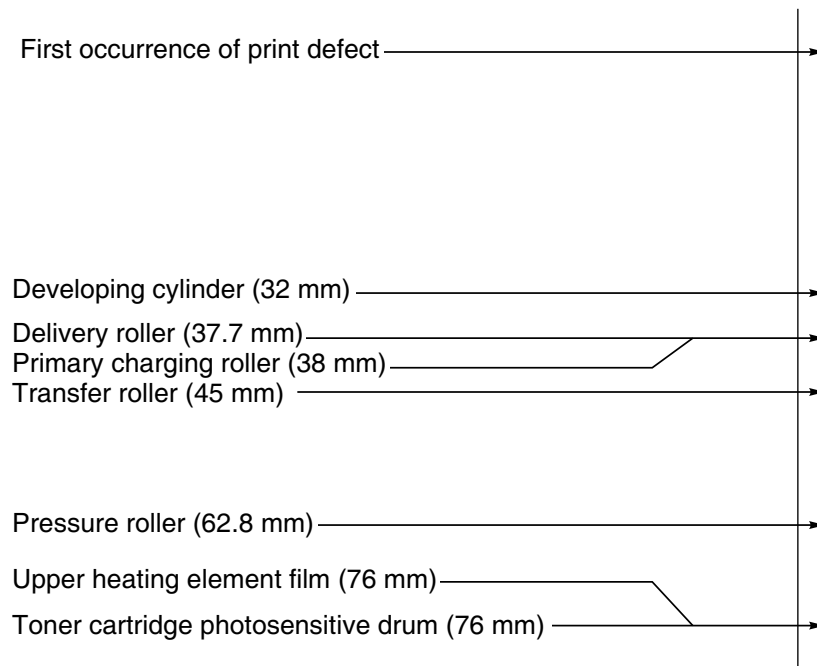
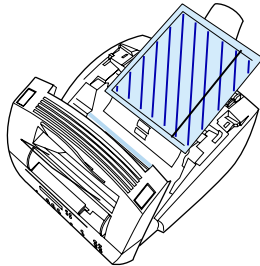


Figure 78. Repetitive image defect ruler

Document scanner recalibration

2



If copies, items scanned to the computer, or faxes you send have vertical black or white lines running through them, recalibration might be necessary.

Recalibrating the document scanner produces a calibration graph. Successful interpretation of the calibration graph is key to solving the problem of vertical black or white lines on scanned images.

To recalibrate the document scanner and interpret the calibration graph

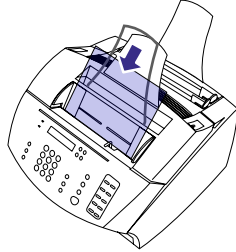
- 1 Clean the product as described in chapter 3, "Maintenance."
- 2 Before recalibrating the document scanner, open the document scanner and place a page that contains the black or white lines between the guides, just above the contact image sensor glass. The black or white line points to a portion of the glass that requires extra attention.
- 3 Clean the contact image sensor glass at the point indicated by the black or white line.

Note

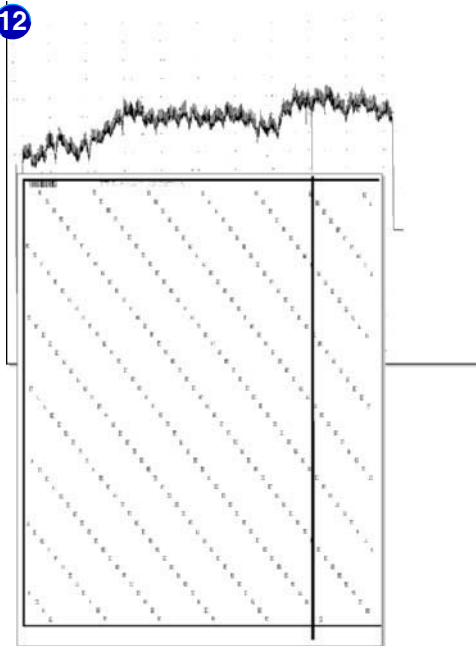
If toner is the contaminant, you might have to scrape it off of the glass. Be careful not to scratch the glass.

- 4 At the product control panel, press the **10** on the one-touch keypad to print the demonstration page.
- 5 Copy the demonstration page.

10



12



- 6 If the vertical black or white line appears on the copy of the demonstration page, continue with steps 7 through 13 below.
- 7 On the control panel, press **ENTER/MENU**.
- 8 Press **<** once to display **SERVICE** and press **ENTER/MENU**.
- 9 Use the **<** and **>** keys to select **SCAN CALIBRATION** and press **ENTER/MENU**.
- 10 Insert a blank, white piece of letter-sized paper into the document feeder tray.
- 11 Press **ENTER/MENU** to begin the scan calibration. The product pulls the piece of paper through and then prints a calibration graph.
- 12 Examine the calibration graph. A dip in the calibration graph can indicate an image defect.

Note

Dips at the ends of the calibration graph are normal.

- 13 Line up the calibration graph with a newly copied page. If the dip in the calibration graph corresponds to the black or white line, the contaminant is likely internal and the contact image sensor assembly should be replaced.

Locations of connectors

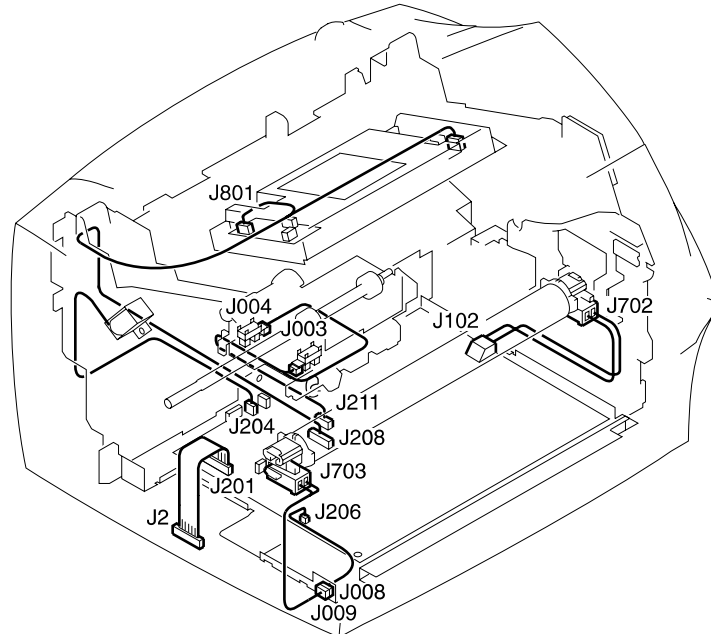


Figure 81. Locations of connectors (1 of 3)

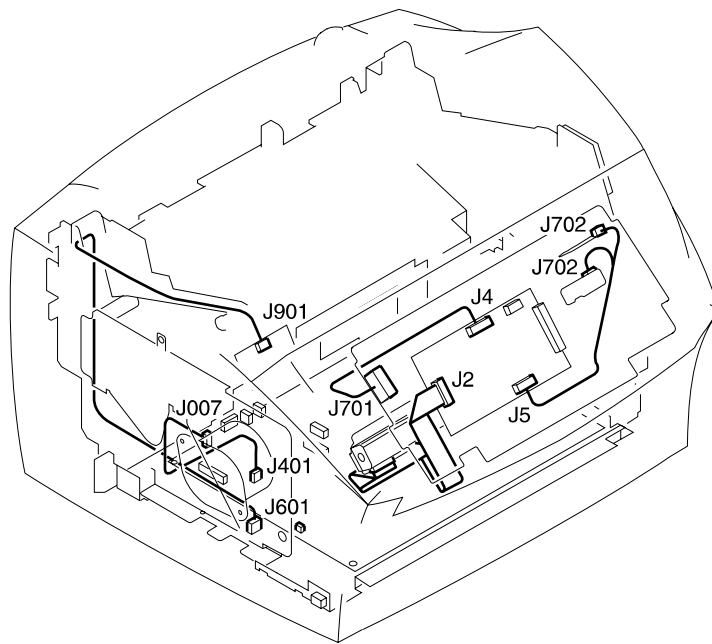


Figure 82. Locations of connectors (2 of 3)

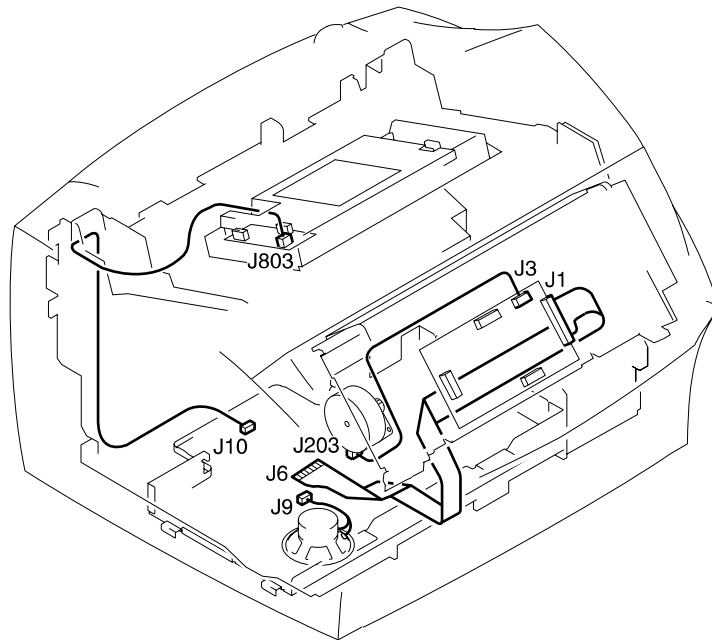


Figure 83. Locations of connectors (3 of 3)