



# Off-Hook Detection Using AT Commands

## APPLICATION NOTE #177

### INTRODUCTION.

This application note describes a method by which Cermetek modems can be used to detect the status of the PSTN (Public Switched Telephone Network) line. For the case of multiple devices sharing one PSTN line, it is often useful to determine if the PSTN line is being used by another device prior to initiating a data or voice transmission session.

The method described in Application Note # 177 relies on two operating features of Cermetek modems:

1. The modem can be configured to check for dial tone prior to dialing. If the PSTN line is active (i.e., already off-hook), then no dial tone will be detected. This feature can be used to determine if any of the other line sharing devices are currently off-hook.
2. The modem can be configured to check for the presence of a DCE carrier. If dial tone IS detected and a DCE carrier IS NOT detected, then the PSTN line is available for data (i.e., modem) and/or voice transmission.

### SET UP THE MODEM TO PERFORM THE DETECTION TESTS.

The **NO DIALTONE** message must be enabled by using the **ATX2** command. The use of any of the other **ATXn** commands will result in non-detection per this scheme.

Enable the **NO DIALTONE** message as follows:

Enter: **ATX2 <CR>**  
Response: **OK**

### TESTING THE PSTN LINE.

Temporarily reset the modem as follows:

Enter: **ATS6=2 <CR>** This selects a 2 second dial tone wait period.  
Response: **OK**

Enter: **ATS7=2 <CR>** This selects a 2 second carrier wait period.  
Response: **OK**

Perform the PSTN tests as follows:

Enter: **ATDT <CR>** This instructs the modem to attempt to dial. However, no phone number has been specified, so no DTMF tones will be generated.

Response: **NO DIALTONE** If, after a few seconds, this message is displayed, then the PSTN Line is currently active or in use. This indicates that the line IS NOT available.

or

Response: **NO CARRIER** If, after a few seconds, this message is displayed, then the PSTN Line is currently inactive or not in use. This indicates that the line IS available.

After testing the PSTN line, return the **S6** and **S7** registers to their previous values or to their default values.

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