Application Note:
Message Waiting Indicator for Analog Lines

A Message Waiting Indicator ("MWI") is a method used on analog telephone sets to indicate a voice message has been recorded and is waiting for the recipient at that extension. Xorcom supports the 'hvac' or 'neon' 90 VAC on-hook AC voltage to light up a Neon bulb.

In addition to the MWI, the PBX appliances send a scattered dial tone when a message is waiting.

***Figure 1**: Typical analog phone with MWI neon light capability*

Asterisk® PBX MWI Configuration

Telephones with an Integrated MWI

Instructions for configuring MWI to work with Asterisk appliances can be found in the article entitled "How to enable the Message Waiting Indicator" on the Xorcom Wiki.

Telephones without an Integrated MWI (an idea for "do-it-yourselfers")

If your telephone sets are not equipped with integrated MWI functionality it is still possible to implement it using an external LED. Modern MWI mechanisms are based on a low-power Light Emitting Diode (LED) with a blocking component (like a Zener diode) that blocks line voltage which is lower than the required voltage (usually 80 to 100 Volts). See the schematic for this scenario in Figure 2, below:

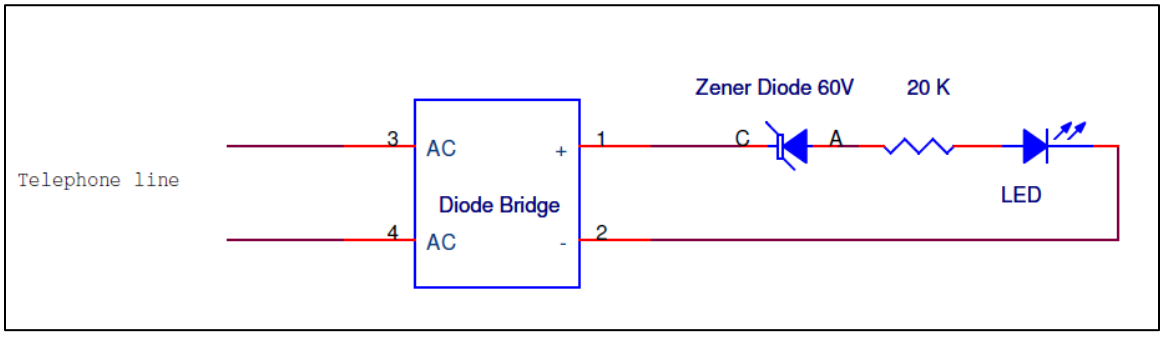

***Figure 2**: This circuit shows how to activate MWI functionality for telephone sets that are not equipped with an integrated MWI.*

To add the MWI functionality to your existing analog telephone set, simply create the above reference circuit and connect it in parallel to the telephone line.

Make sure the VM function is enabled in the Asterisk configuration (refer to the relevant Asterisk distribution documentation for instructions).

Popular Implementations

MWI is popular in hotels (click here to see our hotel implementation white paper), offices, and most public telephone networks.

Ease of implementation and accuracy of the MWI technology is illustrated below, in Figure 3. This figure shows the voltage over an analog line connected to an Astribank channel bank when a message is waiting. The regularly oscillating signal voltage illustrates the expected, clean wave shape of the electrical signal.

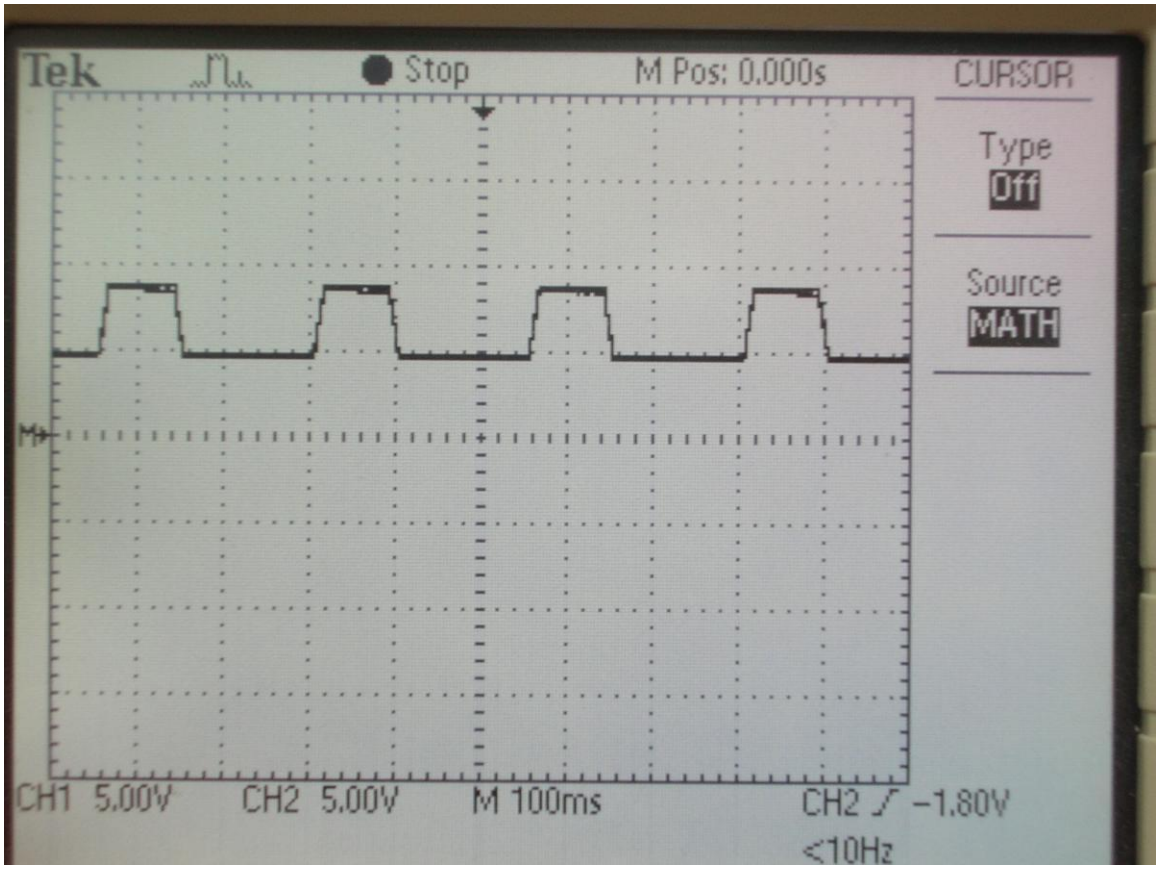

***Figure 3**: Scope probes are x10. Line voltage is 50 volts, jumping to 90 volts every 250 milliseconds.*

For more information about this topic and/or Xorcom products in general, please contact us using the details below.

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