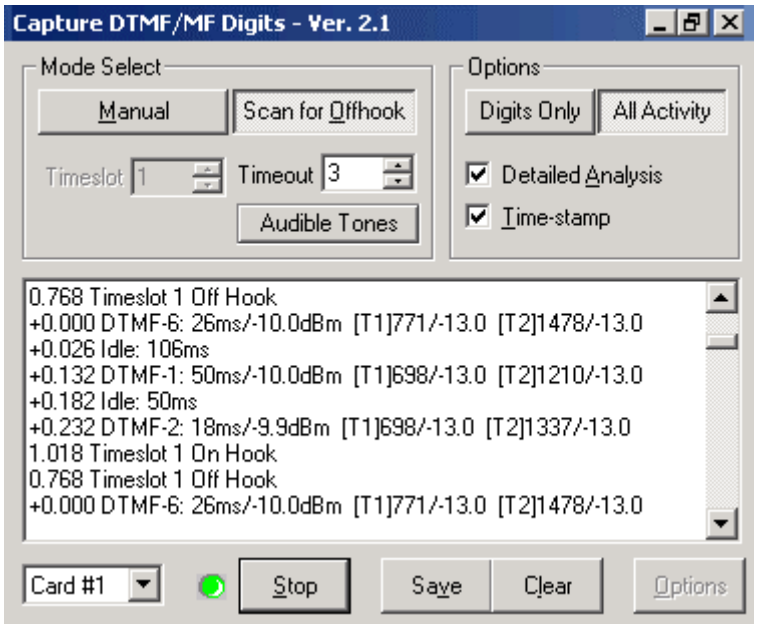
DTMF / MF Transmit and Capture Digits / Tones



Captured Dialed Digits

The **Capture Dialed Digits** application provides the capability to capture and display DTMF and MF digits (along with MFR2-forward and MFR2-backward) digits and User-Defined tones as they are received on one or several time slots. Multiple capture application boxes may be opened, each with different operating modes and options. The two different basic modes of operation are: Manual and Scan for Off hook Modes.

In Manual mode, the capture operation simply stays on the selected time slot, displaying the digits received, where as in 'Scan for Off hook Mode', the scanning of successive time slots takes place and a detection of a onhook to offhook transition at a time slot would mark the beginning of the capture activity. There are different options with which the capture application can be performed.

- The 'Digits only' will capture only the digits on a time slot
- The 'All Activity' will capture digits and unrecognized bursts

The 'Detailed Analysis' will record precise time measurement of each digit or burst, component frequencies and power. The DTMF/MF/ MFC-R2 Detector and Generator Software (XX022) is available as a part of basic applications in T1 E1 Analyzer.

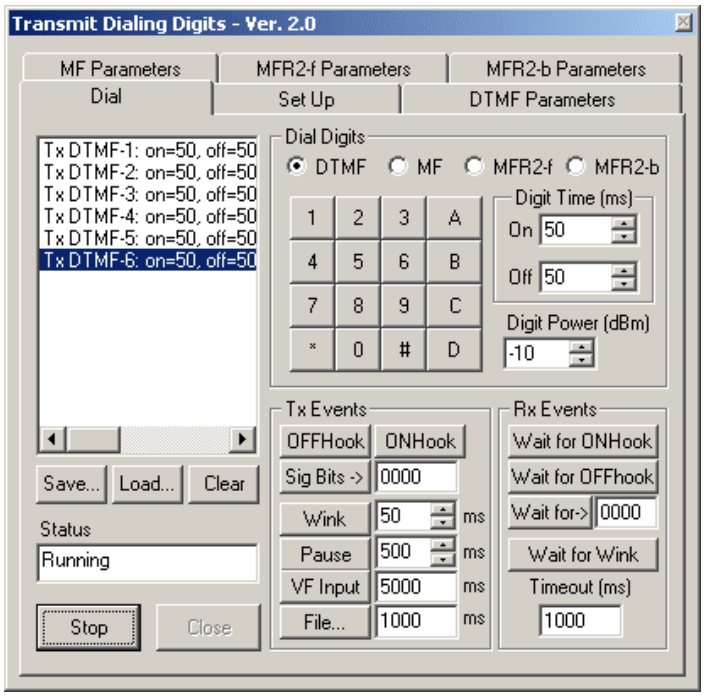
For more details, refer to DTMF/MF Transmit & Capture Digits/Tones webpage.

GL Communications Inc.

818 West Diamond Avenue - Third Floor, Gaithersburg, MD 20878, U.S.A

(Web) www.gl.com - (V) +1-301-670-4784 (F) +1-301-670-9187 - (E-Mail) info@gl.com

Transmit Dialed Digits



Transmit Dialing Digits

The Transmit Dialing Digits application provides the capability to transmit DTMF, MF, MFR2-forward, MFR2-backward, transmitting signal data from files, and directly from the T1 E1 VF input, applying signaling bits control, and performing other functions related to call establishment, progress, and termination. The application provides the following features -

- A Keypad that changes the digits display in accordance with various standards DTMF, MF, MFR2-f and MFR2-b
- Options to set the Digit on-time/off-time, and digit power
- Options to save call scripts and retrieve for further testing

Transmit event options include - on-hook, off-hook, wink, pause for a specified duration, route data from a file as a part of conversion, and insert T1 E1 VF input onto the selected time slot options.

For more details, refer to DTMF/MF Transmit & Capture Digits/Tones webpage.

Working Principle

The Transmit Dialling Digits application allow the T1 E1 Analyzer to be used as a very basic Call Emulator. Using a simple, easy to create script, this application can manually place (originate) actual phone calls to a switch. This works on T1 systems using R1 (wink) protocol, and on E1 systems using MFC-R2 protocol.

For T1-systems using R1, this application can also receive (answer) simple calls. Inserting the 'Tx VF In' command into the script allows the use of an optional Telephone Handset to actually talk and listen on the established call. (Optional GL Handset Adapter is required for GL PCI Card Analyzer products - NOT required for GL USB Analyzer products).

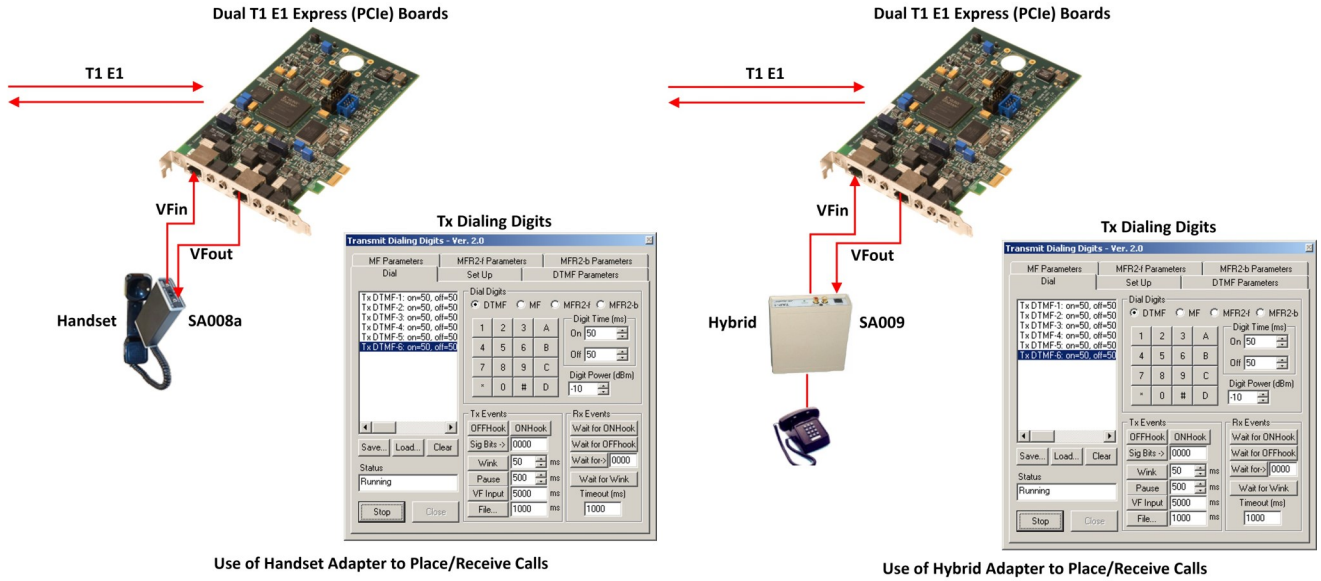


Figure: Handset and Hybrid Adapter to Place / Receive Calls

Standard Frequencies for MF/DTMF Digits

The table depicts the standard low and high frequencies used for indicating DTMF and MF digits. The Transmit dialling digit application provides the flexibility to the user to change these frequencies. The user can also provide twist between low and high level powers of each digit. Latency parameter value can also be varied on necessity.

Standard Frequencies for MF Digits:

Frequencies	900	1100	1300	1500	1700
700	1	2	4	7	ST3P
900		3	5	8	STP
1100			6	9	KP
1300				0	ST2P
1500					ST

Standard Frequencies for DTMF Digits:

Frequencies	1209	1336	1477	1633
697	1	2	3	A
770	4	5	6	B
852	7	8	9	C
941	*	0	#	D

Figure: Standard Frequencies for MF and DTMF Digits

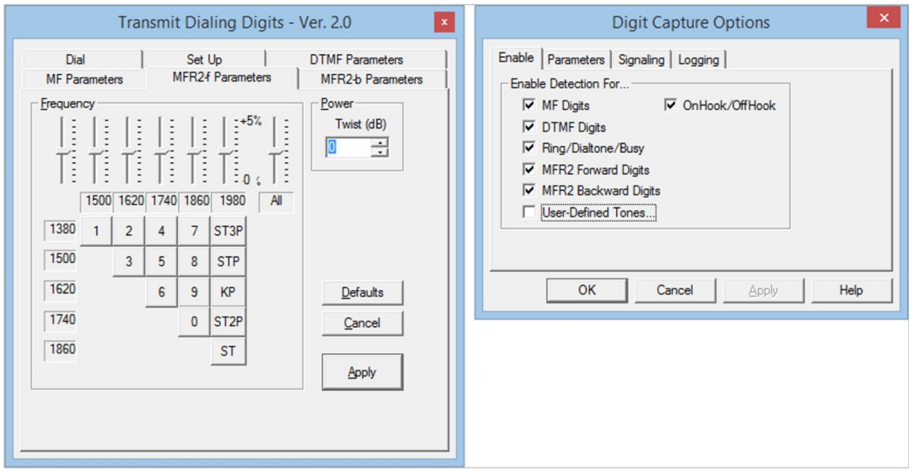


Figure: MFR2-f Parameters and Capture Digit Options

MFC-R2 and CAS R1 Call Simulation

MFC-R2 uses a compelled signaling protocol. The Transmit Dialling Digits application has no receive capability, therefore the received digits have to be assumed to occur in the same order.

Ready-to-go sample scripts are provided for T1 (R1) and E1 (MFC-R2 CCITT) operation. The scripts can be easily modified to meet the requirements of a particular system.

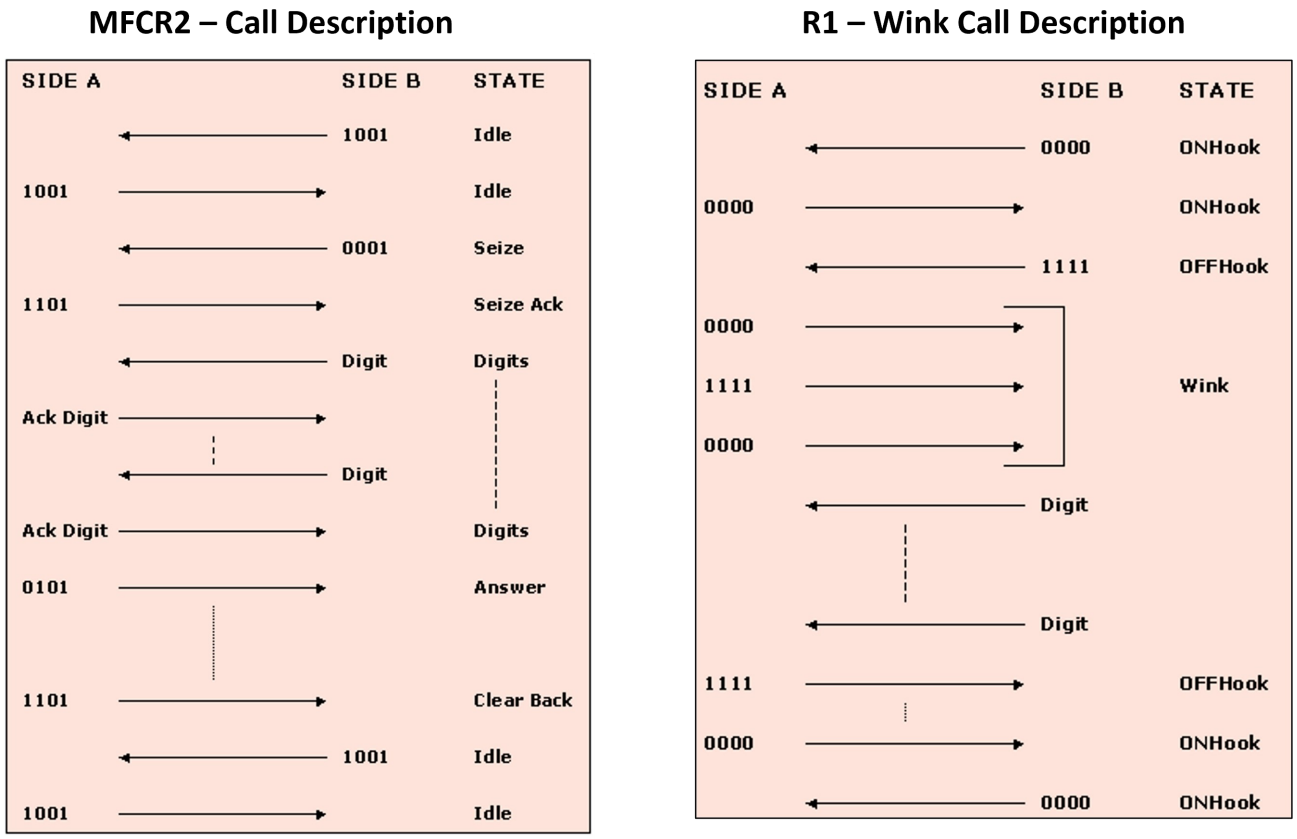


Figure: MFC R2 and CAS R1 Call Description

Buyer's Guide

Item No	Product Description
XX022	DTMF/MF/MFC-R2 Detector & Generator Software (Included as a part of basic applications in T1 E1 analyzer)

Item No	Related Software
XX020	Record and Playback of Files
SA026	Adobe Audition Software
SA048	Goldwave Software
XX031	Call Capture and Analysis
XX050	Signaling Bits Recorder Software
XX024	Real-time Strip Chart
SA021	File Edit Software

Item No	Related Hardware
PTE001	tProbe™ Dual T1 E1 Laptop Analyzer with Basic Analyzer Software
FTE001	QuadXpress T1 E1 Main Board (Quad Port– requires additional licenses)
ETE001	OctalXpress T1 E1 Main Board plus Daughter Board (Octal Port– requires additional licenses)
XTE001	Dual T1 E1 Express (PCIe) Boards (requires additional licenses)

For more details, refer to DTMF/MF Transmit & Capture Digits/Tones webpage.

GL Communications Inc.
818 West Diamond Avenue - Third Floor, Gaithersburg, MD 20878, U.S.A
(Web) www.gl.com - (V) +1-301-670-4784 (F) +1-301-670-9187 - (E-Mail) info@gl.com