

**Media Control Systems**  
**DTG-3001A**  
**Operation Guide**  
**P/N. 950-0012-00 Version 1.6**

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## Chapter 1 Introduction

### Important Notice

Like any other piece of complex equipment, the DTG-3001A digital Tone Generator Module will perform as designed only if it is installed, used, and serviced in accordance with the manufacturer's instructions.

All individuals who have, or will have the responsibility for installing, using, and servicing the product must carefully read this manual.

The warranties made by Media Control Systems, with respect to this product are void if the equipment is not installed, operated, and maintained in accordance with the instructions in this manual. Please protect you and your employees by following these instructions.

At Media Control Systems, we are continually striving to provide our customers with equipment that performs maximally and is commensurate with the latest techniques in circuit design. Consequently, changes are made in our equipment from time to time reflect this desire for customer satisfaction.

### Overview

This circuit board will allow the user to simulate a four digit DTMF tone burst that a satellite network would send to indicate a commercial begin and commercial end sequence. The tone burst consists of four digits: the first three digits from 0 to 9, and the last digit will consist of either a "\*" or "#".

Typically, the "\*" is used with the first tone group to signal a commercial begin period and the "#" is used to signal a commercial end. The output of the generator can be modulated by the user if needed, and transmitted to a remote site.

This tone generator module is capable of passing a balanced (600 ohm) 1 VPP program audio signal and will mute program audio when the tones are generated and then restore program audio once the tone burst is complete. Tone and program audio output will be unity gain, 600 ohm balanced audio. For a High Impedance output remove jumper J5.

### DTMF Tones

All DTMF tones generated will be at the same speed as the satellite networks, and are able to control the Media Control Systems CTD-3104A, ATS-1A, CIS-2A, NSS-4B, and any other device capable of processing and acting on industry standard DTMF cue tones.

The DTG-3001A DTMF tone generator module provides two sequences of four DTMF tones, comprising of either a START or END function. Front panel pushbutton switches, internal jumpers, and control inputs on the edge connector can be used to select various output combinations. Three sets of DIP (dual inline package) switches on the circuit board determine the

first three digits in the sequence. The last digit is determined by the pushbutton or control signal. If an audio signal has been connected to the audio input, the audio will be muted, and the tone sequence will be inserted in its place. Please refer to the configuration tables that follow for specific information.

## Chapter 2 Configuration

### Operational Modes

#### Normal Single Sequence.

The START and END buttons, or edge connector control inputs, initiate a single sequence of tones. Either sequence (START or END) may be repeated on completion of the previous output. The pushbutton or logic signal must be released before successive tones can be transmitted.

#### Normal Repeat Sequence

Tone sequences will be repeated as long as the pushbutton is depressed. Logic inputs will generate a “Normal Single Sequence”.

#### Single START/END

The START and END sequences must alternate. One sequence cannot be repeated until the other sequence has been generated.

#### Single START and END Sequence

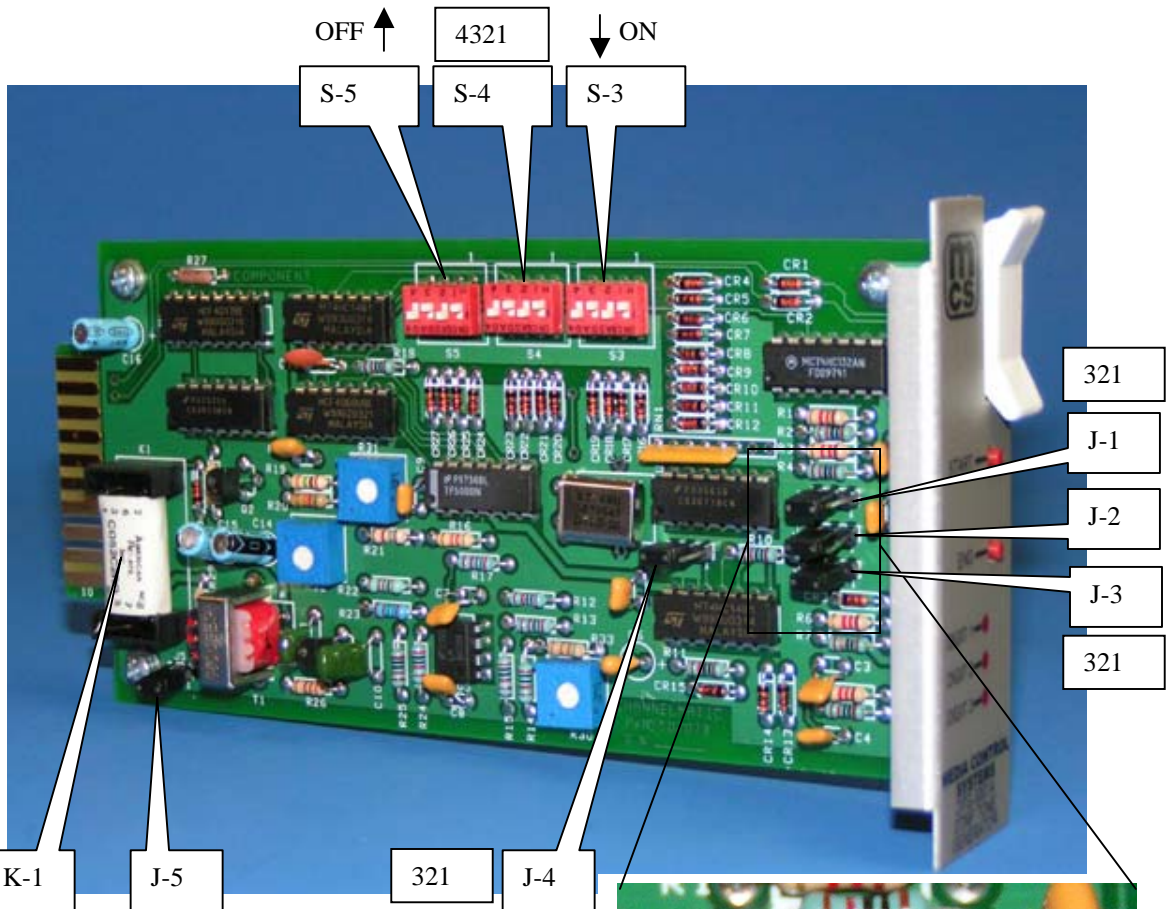
To initiate a combination of both sequences, only the START input is used. The START input must remain active until the START sequence has finished. Once the START input goes inactive, the END sequence is automatically initiated.

Note: “ACTIVE” indicates either a logic low signal or that the pushbutton is depressed.

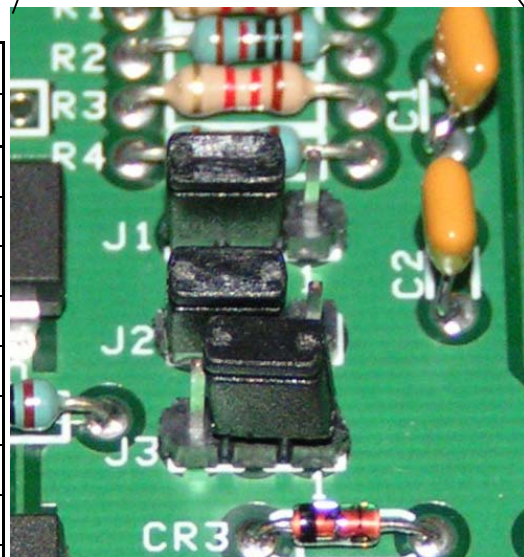
### Jumper Installation

Table 1-1. DTG-3001A Operational Mode Settings.

<b>Operational Mode</b>	<b>J1</b>	<b>J2</b>	<b>J3</b>	<b>J4</b>
Normal Single Sequence	2-3	2-3	2-3	2-3
Normal Repeat Sequence	2-3	2-3	1-2	2-3
Single START/END Sequence	1-2	1-2	2-3	2-3
Single START & END Sequence	2-3	2-3	2-3	1-2



DTMF Digit	S3, S4, S5 Settings			
	SW1	SW2	SW3	SW4
1	ON	OFF	OFF	OFF
2	OFF	ON	OFF	OFF
3	ON	ON	OFF	OFF
4	OFF	OFF	ON	OFF
5	ON	OFF	ON	OFF
6	OFF	ON	ON	OFF
7	ON	ON	ON	OFF
8	OFF	OFF	OFF	ON
9	ON	OFF	OFF	ON
0	OFF	ON	OFF	ON
*	ON	ON	OFF	ON
#	OFF	OFF	ON	ON
A	ON	OFF	ON	ON
B	OFF	ON	ON	ON
C	ON	ON	ON	ON
D	OFF	OFF	OFF	OFF



## Edge Connector Pinout

Edge Connector Pin Out			
A	Start GPI Input (+)	1	Ground
B	Stop GPI Input (+)	2	No Connection
C	No Connection	3	No Connection
D	+5vdc Input	4	No Connection
E	Audio Output (+)	5	No Connection
F	Audio Output (-)	6	No Connection
H	+12vdc Input	7	-12vdc Input
J	Audio Input (+)	8	No Connection
K	Audio Input (-)	9	No Connection
L	Ground	10	No Connection

## Specifications

### Power Requirements

Quiescent (Powered with no tones being generated)

+5vdc= 4.02mA

+12vdc=2.95mA

-12vdc= 2.57mA

Dynamic (Tones being generated)

+5vdc= 23.5mA avg to 27.72 mA peak

+12vdc=2.95mA

-12vdc= 2.57mA

### Audio Output

Standard ITT DTMF tones.

Greater than 2.2 Vpp into 600 ohms

Adjustable from 0 Vpp to 2.2 Vpp

# Typical Wiring Configuration

## DTG-3001A Typical Wiring Configuration

**GPI Source to start and stop DTMF cue tone sequence.**  
A low going pulse or ground will trigger the start and stop sequence.

**DTMF cue tones for delivery to Ad Insertion system.**

Audio signals connected to this audio input will be muted when DTMF tones are generated.

In this configuration the DTG-3001A will generate a DTMF ON tone sequence when the Start GPI is triggered and a DTMF OFF tone sequence when the Stop GPI is triggered. Refer to page 4 of the DTG-3001A manual to program dip switches for cue tone sequence. Factory default settings are 888\*#. Operational mode settings are set for "Normal Repeat Sequence", refer to page 3 of the DTG-3001A manual to change the configuration.

TBX-1	Start GPI Input (+)	On
TBX-2	Ground	G
TBX-3	Stop GPI Input (-)	Off
TBX-4	Ground	G
TBX-5	Audio Output (+)	Out+
TBX-6	Ground	G
TBX-7	Audio Output (-)	Out-
TBX-8	Audio Input (+)	In+
TBX-9	Ground	G
TBX-10	Audio Input (-)	In-
TBX-11	Ground	G
TBX-12	Ground	G

Media Control Systems, LLC

## Limited Warranty

MEDIA CONTROL SYSTEMS, LLC, Warrants each new product manufactured by it to be free of defective materials and workmanship, and agrees to remedy any such defect by repair or replacement at no extra charge for a period of one (1) year from the original date of purchase.

This warranty does not extend to any MCS product subject to misuse, neglect, accident, improper wiring or installation, or used in violation of MCS instructions. Nor does it extend to equipment that has been altered outside MCS's factory without prior written approval, nor to equipment that has had the serial number removed, nor to accessories used herewith, which were not manufactured by MCS. Fuses and batteries are specifically excluded from this Warranty. Equipment sold by but not manufactured by MCS is warranted by the original equipment manufacturer.

The owner must deliver equipment covered by this warranty with all transportation charges prepaid, to the MCS factory for examination. If examination discloses, by MCS's judgement, that this is thus defective, the equipment will be repaired or replaced at no charge. Equipment returned prepaid under warranty and repaired in MCS's factory will be returned with all transportation charges, surface freight only, paid by MCS. Units that fail under conditions cited above, as being outside of the warranty extension will be repaired on a time-and-material basis after notification to and approval by owner. All freight incurred in repairing equipment not under warranty will be the responsibility of the owner.

In respect to any and all equipment furnished by MCS, this warranty is in lieu of any other warranty, obligation, or liability expressed or implied including warranty of merchantability or fitness for a particular purpose. No person, including a company representative, is authorized to assume for MCS any other liability in connection with the sale of its products.

Under no circumstances shall MCS be liable in contracts or in tort for any economic loss, including any loss of profits, or for any special or consequential damage.

All inquires relating to either product operation or warranty service should be directed to:

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