MIDI PROGRAMMABLE STEREO EQUALIZER

OWNER'S MANUAL MQ-1 (version 1)

Release No.1 for http://www.adadepot.com

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1.0 INTRODUCTION

Thank you for purchasing the ADA MQ-1 MIDI Programmable Two-third Octave Equalizer. The MQ-1 is designed to satisfy the stringent needs of audio and video studios while combining the versatility of programmability, non-volatile storage, and MIDI control.
The software in the MQ-1 provides the fullest implementation of MIDI available. Since the MQ-1 is software-based, it will never grow obsolete. As the MIDI standard evolves, your MQ-1 can be updated by simply changing the program ROM. Using an interleaved constant-Q filter design, sideband frequency interaction is minimized and filter bandwidth is stable at all boost/cut settings (unlike conventional graphic EQ designs). To properly set-up and familiarize yourself with the MQ-1, read and follow these operating instructions completely. If you can't wait and want to jump right into the MQ-1, go to section 1.1 QUICK SET-UP
We know you will be impressed with its sonic purity and technical capabilities and we wish you years of enjoyment with your MQ-1.

IMPORTANT: Please take this time to fill-out and return the enclosed warranty card so we may provide you information on future software updates.

1.1 QUICK SET-UP GUIDE

INITIAL PREPARATION:

1. Turn power switch ON.
2. Press BYPASS A and BYPASS B (LED's off).

SELECT MEMORY NUMBER:

1. Use ▲ ▼ buttons to scroll thru the memory numbers 1 thru 99.
2. Or select a bank by pressing the BANK button, select bank number 0 thru 9 using ▲ ▼ buttons, followed by pressing any button labeled 0 thru 9.

EDIT EQ VALUES:

1. Press EDIT button to access channel A.
2. Select GAIN button or a frequency band from 40 (Hz) to 16 (kHz).
3. Use ▲ ▼ buttons to change the amount of boost or cut.
4. Repeat steps 2 and 3 until all changes are complete.
5. Press EDIT button. Channel B LED now lit. Repeat steps 2 and 3 to edit Channel B.
6. To abandon this edit session, press EDIT button. LED's turned off and *changes not saved.* To store changes, see **STORE EQ VALUES.**

STORE EQ VALUES:

1. To store the new values that you have set press STORE button.
2. Select the location you want the edited memory stored. Select any memory number as described in SELECT MEMORY NUMBER.

SELECT MIDI CHANNEL:

1. Press MIDI CHNL button.
2. Use ▲ ▼ buttons to select MIDI channel from 1 thru 16, ALL (OMNI) or OFF (MIDI reception off).
3. Press MIDI CHNL to save and exit.

DIRECTING MIDI PROGRAM CHANGE INFORMATION TO DIFFERENT INTERNAL MEMORY NUMBERS:

1. Press PRGM button.
2. Select a MIDI program number by using the ▲ ▼ buttons to scroll thru MIDI program numbers 1 thru 128 or select directly using BANK and 0 thru 9.
3. Press MEM button.
4. Select an internal memory number by using the ▲ ▼ buttons to scroll thru the 1-99 memory numbers or select directly using BANK and 0 thru 9.
5. Press MEM to save the change and to exit.

BULK LOAD PRESET MEMORY (1 thru 18):

1. Press GAIN, hold down, press 10K. Display shows "LP".

SET CHANNEL FLAT:

1. Press EDIT button. Channel A LED lit.
2. Press both ▲ ▼ buttons simultaneously. Display reads "FLAt".
3. Press EDIT. Channel B LED lit.
4. Press both ▲ ▼ buttons simultaneously.
5. Press EDIT to exit.

1.2 FEATURES

- ✓ 99 stereo programs.
- ✓ 14 frequency bands per channel with 12dB boost/cut.
- ✓ Received MIDI program numbers are re-assignable (mapable) to any MQ-1 memory number. V MIDI In, Out and Thru. V Selectable MIDI channel including ALL channels (OMNI) and no channels (OFF).
- ✓ Front panel security lock-out feature with user selectable code.
- ✓ Constant-Q design with ultra-stable bandpass filters and minimum phase distortion.
- ✓ Lexan membrane switch front panel replaces all conventional pots or sliders. No contamination from liquids or dust and no slider wear.
- ✓ Transformerless active balanced inputs insure quiet performance.
- ✓ Optional MC-1 MIDI CONTROLLER footswitch provides instant access to any program for on-stage control.
- ✓ Self-diagnostics checks unit during power up.
- ✓ Instantaneous logic-controlled FET switching.
- ✓ EPROM updates will be available for future system expansion.
- ✓ Equivalent Input Noise: >102dB.
- ✓ Simple programming routine.
- ✓ One year parts and labor warranty. Extended 3 year warranty available.

1.3 PRECAUTIONS

WARNING:	To prevent fire or shock hazard, do not expose this appliance to rain or moisture. Locate the MQ-1 out of the direct rays of the sun. Avoid locations subject to vibration and excessive dust, heat or cold.
CAUTION:	To prevent electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.
RETAIN INSTRUCTIONS:	Keep this manual in a safe location for future reference.
CLEANING:	Do not clean your MQ-1with chemical solvents such as benzene or alcohol. Wipe only with a clean dry cloth.

2.0 CONTROL FUNCTIONS

HEADROOM	Channel A and B. 4-step LED meter monitors signal level at various points in the circuit. Set gain and frequency controls so red LED lights only on the largest transients.
BYPASS	Channel A and B. Engages or bypasses the gain and equalization on the selected channel. LED on indicates channel bypass (EQ out of signal path).
LED READOUT	Displays MQ-1's internal memory number when not in Edit mode (see section 4.0 for description of program and memory numbers). Displays MIDI Channel, external MIDI program number or internal memory number in MIDI mode. Displays

	boost/cut of selected frequency or gain on channel A or B when in Edit mode.
▲ ▼	Scrolls thru programs. When in Edit or MIDI mode, increases or decreases value of selected parameter.

DUAL FUNCTION SWITCHES:

IN NON-EDITMODE

EQ CURVE	Displays the relative boost/cut of each frequency band through the intensity of its corresponding LED. LED off is -12dB and full on is +12dB. The switch toggles between Channel A, Channel B, and display off.
BANK	Enter a BANK number (0 thru 9) by using the ▲ ▼ buttons. After bank selection, you must select the "ones" digit using the buttons labeled (0 thru 9) to exit bank select mode. 0 THRU 9 Selects the "ones" digit of the memory number.
MIDICHNL	Selects the MIDI channel mode. Use the ▲ ▼ switches to select the MIDI channel number from 1 -16, ALL (OMNI) or OFF.
PRGM	Selects the external MIDI program number that is assigned to the internal memory number on the MQ-1. The normal relationship is 1-to-1 (i.e., external MIDI program #1 selects internal memory #1, 2 to 2, etc.). When the LED is lit, use the ▲ ▼ switches, the bank switch and/or a number from 0 to 9 to select the external MIDI program number.
MEM	Selects the internal memory number on the MQ-1 that is assigned to the external MIDI program number. When the LED is lit, the display reads the internal memory number. Select the MEM number using the ▲ ▼ switches, the bank switch and/or a number from 0 to 9. To record the change, press the switch again or press the PRGM button to continue.

IN EDIT MODE

GAIN	Boosts or attenuates the input signal of each channel independently by ±12dB in 2db steps. Use the ▲ ▼ buttons to increment or decrement.
FREQUENCY	14 bands on 2/3 octave ISO centers. Choose any frequency then use the ▲ ▼ buttons to select the amount of boost/cut from -12dB to +12dB in 1dB steps.
EDIT	Places MQ-1 into the Edit mode. The switch toggles between Edit Channel A, Edit Channel B or not editing. When you enter the Edit mode, the display reads "Edit" until a frequency band is selected. Display then shows the value of the selected frequency. Use the ▲ ▼ buttons to decrease/ increase the value of the selected frequency band.
LED	indicates which channel of the Edit mode is being edited. Both LEDs off indicates the MQ-1 is not in the Edit mode.
STORE	Places the MQ-1 into the Store mode. Stores any current or edited program to any internal memory location. Press the STORE button followed by a memory location. LED indicates Store mode is engaged. LED turns off after storage is complete.

2.1 REAR PANEL

FUSE	Externally accessible 0.5 AMP fuse. Replace with equivalent type and rating only.
POWER SWITCH	ON/OFF rocker switch (located near power supply to prevent the leakage of AC line hum into the audio circuitry).
PHANTOM POWER	A 9VAC/DC coaxial power input jack used to supply phantom power to the optional MC-1 MIDI CONTROLLER. Use with a 7-pin MIDI cable In the MIDI IN jack.
MIDI THRU	Passes all MIDI data received at the MIDI IN connector to subsequent MIDI instruments.
MIDI OUT	Transmits MIDI information originated by the MQ-1 to subsequent MIDI instruments.
MIDI IN	Receives MIDI. Permits MQ-1 programs to be automatically selected via a MIDI signal. The MQ-1 recognizes program change, SYSEX and MIDI Time Code.
OUTPUT (A and B)	Two, single-ended 1/4" phone jacks.
INPUT (A and B)	Two, transformerless balanced line level inputs. See diagram below.

2.2 BATTERY

The MQ-1 uses a 3-volt Lithium battery which maintains power for program storage while the MQ-1 is unplugged from an AC supply. Expected battery life is 8-10 years. Should replacement be necessary, contact a qualified service technician.

3.0 INITIAL SET-UP

1. Set MQ-1 rear panel POWER SWITCH to OFF.
2. Connect your signal source to the rear panel INPUT jacks.
3. Connect MQ-1 OUTPUTS to your amplifier inputs or mixing console inputs.
4. If using MIDI:
   a) Connect the MIDI Out of your keyboard, MIDI footswitch or other signal processor to the MIDI IN jack on the MQ-1.
   b) When using a MIDI device before the MQ-1 and a MIDI device following the MQ-1, use the MIDI Thru jack to send the external program number.
   c) When using the MQ-1 as the first in a series of MIDI devices, use the MIDI Out jack to send the MQ-1's internal memory number.
5. If you own the optional MIDI footswitch, connect the MIDI In Jack on the MQ-1 to the MC-1 with the MIDI CABLE. You have the option of using a standard 5-pin MIDI cable and plugging the AC ADAPTER into the MC-1 or you can use the . ADA 7-pin MIDI CABLE and phantom power the MC-1 thru the 7-pin cable (preventing the need

to have AC power near the footcontroller); when using the 7-PIN CABLE the AC ADAPTER plugs into the 9VAC/DC jack on the MQ-1 rear panel.

6. Set MQ-1 rear panel POWER SWITCH to ON.
7. Set your amplifier's power switch to the "on" position.
8. The MQ-1 will now step thru its SELF- DIAGNOSTIC program, checking a variety of functions for proper operation. If no problem exists, the DIAGNOSTIC operation is completed within eight seconds. Your MQ-1 is now ready for operation. (If a problem does occur, reference section 5.0 SELF-CHECK DIAGNOSTIC for explanation of error codes.)
9. Set signal levels by observing the HEADROOM LED meters. The HEADROOM meters monitor the signal path in various places in the MQ-1. Proper adjustment of signal levels prevent the HEADROOM meter from reaching the 0dB level on all but the strongest signals. To compensate for output clipping, adjust the GAIN control in the Edit mode (press EDIT, press GAIN, then use ▲ ▼buttons to set gain of MQ-1). If you are clipping ("0dB" headroom continuously) in a certain frequency band, you may want to decrease the boost in that band rather than decrease the overall gain in the system (press EDIT, press the frequency band that appears to be clipping, then use the ▲ ▼ buttons to cut the level).

3.1 ACCESSING PROGRAMS

The MQ-1 is shipped from the factory with 18 preset programs. *NOTE: Programs 19 thru 99 are set flat.* As you store your own programs into memory locations, you erase the formerly stored program values in the respective registers. However, you can always recall the original factory preset programs, so feel free to experiment. Programs can be changed in real time or in Bypass mode.

CHANGE MEMORY NUMBER WITHIN THE SAME BANK

1. BYPASS A and BYPASS B LED's off.
2. EDIT and STORE LED's off.
3. Press the desired program number button (0-9). *Only a single keystroke is required when changing the "ones" digit in a program.*
4. ALTERNATE TO 3 - - You can also use the ▲ ▼ buttons to scroll thru the numbers.

CHANGE TO NEW BANK AND MEMORY NUMBER

1. Press BANK button.
2. Select bank number 0 thru 9 using ▲ ▼ buttons.
3. Select "ones" digit by pressing any button labeled 0 thru 9.
4. ALTERNATE TO 2 & 3 - - hold down the ▲ or the ▼ button with the BANK function off. The number scrolls and wraps around from 1 to 99 in either direction.

3.2 EDITING AND STORING PROGRAMS

The EDIT function is used to look at specific parameter settings and to create or modify an EQ program. The STORE function is used to take the program you are listening to in the Working Register and store it in a specific internal memory number location. ***To save your own programs, you must use the* STORE *function. If you do not* STORE *an edited program, It will be erased when you select a different program.***

4.0 MIDI FUNCTIONS

The MQ-1 has MIDI In, Out and Thru and recognizes program change, System Exclusive, and MIDI Time Code. To send and receive MIDI data, you must select a MIDI channel. You have the option of selecting an individual MIDI channel (1-16), or you can send or receive on all 16 MIDI channels (OMNI) or you can turn MIDI off. The MQ-1 has 99 storage registers for EQ programs. These are referred to as "internal memory". The MQ-1 allows you to "map" MIDI program numbers received via MIDI IN to any "internal memory" numbers you choose. For example, if you have a MIDI digital reverb connected to the MQ-1 sending program change 11, the MQ-1 could "map" the reception of program 11 to memory 22 or any memory location from 1 thru 99 in the MQ-1. This gives you the potential of "mapping" more than one reverb program to the same equalizer memory number. Other MIDI devices without this feature limit you to a one-to-one relationship, e.g., when you change to program 11 on your reverb, the receiving device also changes to 11. When the PRGM or MEM buttons are in use and their corresponding LED is flashing, the MIDI interfaced is temporarily disabled. If the MQ-1 is left with the PRGM button active, the MQ-1 will display MIDI program numbers when they are received instead of internal memory numbers. The external MIDI PRGM number range is from 1-128 while the internal MEM number range is from 1-99 and "out". (When scrolling, the word "out" will appear as the memory number rolls over from 1 to 99 or 99 to 1. If a program is assigned to "out", the MQ-1 will go into bypass when that MIDI program is received.)

SELECT MIDI CHANNEL

1. Press MIDI CHNL. To select a number from 1 through 16, ALL (OMNI), or MIDI OFF, use the ▲ ▼ buttons to make your selection. When the display reads "ALL", the MQ-1 will talk and listen to all 16 MIDI channels simultaneously. When the display reads "OFF", the MQ-1 will not talk or listen to any MIDI channel. *Be sure to set the MIDI device connected to the MQ-1 to the same MIDI channel as the MQ-1.* (If you do not know the MIDI channel being sent by the device proceeding the MQ-1, set to ALL.)
2. After selection made, press MIDI CHNL to save and exit.

SELECT PROGRAM & MEMORY NUMBER

1. Connect the MIDI Out of a MIDI device to the MIDI IN jack on the MQ-1. Test if reception is occurring by changing programs on the sending device. As you change programs on the external device, the MQ-1's LED display will change.
2. Press PRGM. LED flashes.
3. Select a new PRGM number by (a) scrolling through! the program numbers with the ▲ ▼ buttons or (b) go directly to a program using the BANK, ▲ ▼ and 0-9 buttons.
4. Press MEM. LED flashes.
5. Select a new MEM number by (a) scrolling through! the program numbers with the ▲ ▼ buttons or (b) go directly to a program using the BANK, ▲ ▼ and 0-9 buttons.
6. Press MEM to store and exit.

4.1 ONE-TO-ONE MAPPING

The MQ-1 is shipped with a 1-to-1 program/memory map, i.e., external MIDI program 1 is mapped to internal memory 1, external 2 to memory 2, etc. If you want to restore the 1-to-1 relationship:

1. Press PRGM, hold down, simultaneously press MEM. Display reads "LoAd".
2. Press STORE to load map, any other key to abort.

4.2 EQ CURVE

Each of the frequency and gain select switches has an associated LED. When the MQ-1 is not in the Edit mode these LED's provide a visual indication of the amplitude of each frequency band when the EQ CURVE button is toggled on. The intensity of a particular LED

will indicate the relative amplitude of that frequency or gain, i.e., off is -12db and full on is +12dB. The channel to be displayed is selected by the EQ CURVE button which has a tri-state operation. Press once, the A channel is displayed, press again and the B channel is displayed, press a third time and the function is toggled off.

WARNING/ABORT CODES

SOURCE	**DESCRIPTION**	**CODE**
Blank Display	Indicates a PROM checksum error or a serious hardware failure. The program halts and can only be restarted by powering the unit off, then powering it on again. The unit will probably require service as this is generally a hardware failure.	
MIDI Map	Error in MIDI to internal memory mapping. Program numbers with errors are displayed and reset to a 1-to-1 mapping (i.e., MIDI PRGM #1 = internal MEM #1, 2 =2, etc.).	E1
Internal Memory	Checksum error in the working parameters. The A & B channels are set flat and the display will "blink".	E2
Internal Control	Checksum error in control parameters. The unit will be set for: MIDI PRGM = NONE, MIDI MEM = OUT, MIDI CH = OFF, Current Program = OUT, CODE = NONE (non-code mode) BYPASS, EQ CURVE = NONE (not displaying EQ CURVE).	E3
MI DI Time Code	Error in data stored for MTC. Reload Q-list.	E4

[1] Checksum error is indicated by a "C" followed by a space and the affected memory number. Dead battery condition indicated by all programs displaying an error message, i.e., C1, C2, C3,etc.

6.0 MEMORY PRESET SETTINGS

(The following 18 memory presets are loaded into the factory preset Program Storage Registers.)

MEM NO.	Program	CH	GAIN	40	63	100	160	250	400	630	1K	1.6K	2.5K	4K	6.3K	10K	16K
1	FLAT	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	WARM	A	0	0	0	0	3	4	5	6	5	4	3	0	0	0	0
		B	0	0	0	0	3	4	5	6	5	4	3	0	0	0	0
3	HI CUT	A	2	0	0	0	0	0	0	0	0	0	0	0	0	-12	-12
		B	2	0	0	0	0	0	0	0	0	0	0	0	0	-12	-12
4	LOCUT	A	2	-12	-12	-12 -	0	0	0	0	0	0	0	0	0	0	0
		B	2	-12	-12	12	0	0	0	0	0	0	0	0	0	0	0
5	LO LEFT	A	2	6	6	6	6	0	0	0	0	0	0	0	-6	-6	-6
	HI RIGHT	B	2	-12	-12	-12	-6	0	0	0	0	0	0	0	6	6	6
6	CALF.	A	2	-12 -	-6	0	0	3	3	5	3	1	0	0	0	-6	-12
	CURVE	B	2	12	-6	0	0	3	3	5	3	1	0	0	0	-6	-12
7	STEREO	A	2	0	0	0	0	0	0	6	-12	6	0	5	-12	6	1
	1	B	2	0	0	0	0	6	-12	6	0	5	-12	5	1	0	0
8	OUT OF	A	2	0	0	0	6	-12	6	0	0	0	0	0	0	0	0
	PHASE 1	B	2	0	0	0	0	0	6	-12	6	0	0	0	0	0	0
9	RESONANT 1	A	0	-1	-1	-1	0	0	-12	12	-12	0	0	0	0	0	0
		B	0	-1	-1	-1	0	0	0	-12	12	-12	0	0	0	0	0
10	FLAT	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	SHELF 4K	A	0	0	0	0	0	0	0	0	0	0	0	6	6	5	5
	BOOST	B	0	0	0	0	0	0	0	0	0	0	3	5	5	5	5
12	SHELF 2K	A	0	0	0	0	0	0	0	0	0	3	5	5	5	5	5
	BOOST	B	0	0	0	0	0	0	0	0	0	3	5	5	5	5	5
13	SHELF	A	2	-12 -	-5	-5	-5	-3	0	0	0	0	0	0	0	0	0
	250HZ CUT	B	2	12	-5	-5	-5	-3	0	0	0	0	0	0	0	0	0
14	HUM CUT	A	2	6	-12	0	-12 -	6	0	0	0	0	0	0	0	0	0
		B	2	6	-12	9	12	6	0	0	0	0	0	0	0	0	0
15	RESONANT 2	A	0	-2	-2	0	0	-12	12	-12	0	0	0	0	0	0	0
		B	0	-2	-2	0	0	0	0	0	-12	12	-12	0	0	0	-3
16	-BOSTON-	A	2	0	3	4	5	6	0	-3	-3	-3	0	3	4	6	6
	CURVE	B	2	0	0	4	5	6	0	-3	-3	-3	0	3	4	6	6
17	STEREO 2	A	2	0	0	0	0	6	-12	5	0	5	-12	6	0	0	0
		B	2	0	0	0	0	0	0	6	-12	5	0	5	-12	6	0
18	OUT OF	A	0	0	0	6	-12	6	0	0	0	0	6	-12	6	0	0
	PHASE 2	B	0	0	0	0	0	6	-12	6	0	0	0	6	-12	6	0

7.0 SPECIFICATIONS

BOOST/CUT, EQ	+/-12dB in 1dB steps
BOOST/CUT, GAIN	+/-12dB in 2dB steps
ISO CENTERS	40, 63,100, 160, 250, 400, 630, 1K, 1.6K, 2.5K, 4K, 6.3K, 10K, 16K
FREQUENCY RESPONSE	20Hz - 20kHz +/-0.1dB, controls set flat.
DISTORTION	<0.01 % @ 1 kHz
EQUIVALENT INPUT NOISE	<102dB
INPUT IMPEDANCE	35k ohms
OUTPUT IMPEDANCE	100 ohms
MAX. INPUT LEVEL	+24dBM (ref. .775VRMS)
MAX. OUTPUT LEVEL	+19dBM (ref. 775VRMS)
INPUTS	Two, transformerless balanced 1/4" phone jacks. Ring, tip, sleeve.
OUTPUTS	Two, single-ended 1/4" phone jacks.
POWER CONSUMPTION	12 watts
POWER	120VAC, 50/60HZ.
DIMENSIONS	L-10.5"x W-19" x H-1.75" (483X44X269mm)
WEIGHT	6.5lbs (2.95kg); 9lbs (4.08kg) shipping
OPTION	220VAC, 50/60HZ .
ACCESSORY	MC-1 MIDI Controller :

* All specifications subject to change without notice.

7.1 MIDI SPECIFICATIONS

SPECIFICATION	1.0, Rev 3.3
MIDI TIME CODE	Recognized in Level 3 Software
CHANNEL	1-16, OMNI, Off
PROGRAM CHANGE:	External Programs: 1 – 128 Internal Memory: 1-99, OUT (bypass condition).

7.2 SOFTWARE UPDATES

By sending in your warranty card, you are entitled to one iree EPROM software update. Thereafter, updates are $50.00 each. You can send your unit to ADA for installation or we can send you the EPROM. It is very simple to install. When you power-up the MQ-1, the software revision level is indicated on the LED Readout before the word "ADA" flashes. Level 1 software offers the following features: 100% compatibility with MIDI Spec 1.0. In addition, ADA has pioneered a phantom power system which sends AC power through a 7-pin MIDI cable to controllers such as ADA'S MC-1 MIDI CONTROLLER. Level 2 software offers upload and download of MQ-1 parameters to computers with a MIDI interface using system exclusive messages. In addition, MQ-I parameters may be accessed in real-time using SYSEX messages. Level 3 software will make available MIDI Time Code for syncroniztng with SMPTE Time Code devices. These are the updates that we now know about. As MIDI evolves, so will the MQ-1, its capabilities will continue to expand!

8.0 RETURNING UNITS FOR SERVICE

If your unit requires service, please do the following:

1. Call our Customer Service Department toll-free at (800)241-8888 in CA (415)632-1323 for a Return Authorization (RA) number.
2. Pack unit in its original carton with packing materials and include a note explaining the problem, your name, address, day-time phone number, and date and place of purchase.

3. Write the RA number on the outside of the shipping container.
4. Ship via UPS, Federal Express, or U.S. Postal Service. You pay the freight. (We recommend you insure the unit.)
5. If the unit is under warranty, ADA will perform the servicing and pay the return shipping charges to you. If your Warranty Card was returned, there is a record of your purchase on file at ADA. Otherwise, send a copy of your original purchase invoice for proof of warranty coverage.
6. If the unit is not under warranty, ADA will bill you for the servicing and return shipping charges. We require payment in advance or cash on delivery (COD) for these charges.

9.0 WARRANTY

The MO-1 is warranted against defects in material and workmanship for a period of three hundred and sixty-five (365) days from date of purchase. ADA will replace defective parts and make necessary repairs at no charge if factory inspection reveals faulty workmanship or material. This warranty does not cover damage due to misuse, accident or neglect. ADA retains the exclusive right to make such determination on the basis of factory inspection. Products returned to the factory must first receive authorization from ADA and must be shipped prepaid. The return authorization "number" must be printed on the outside of the container or shipment will not be accepted by ADA. This warranty remains valid only if repairs are performed by ADA, and provided that the serial number on the unit has not been defaced for removed. This warranty is expressly in lieu of all other warranties either expressed or implied.

9.1 OPTIONAL EXTENDED WARRANTY

An optional three year warranty is available on the MQ-1 if the intended warranty protection policy is purchased within the first 90 days of purchase. The policy covenants and restrictions are the same as on our standard one year warranty, only the term is increased an additional three years after the original factory warranty expires. Enclosed is an application for the extended warranty protection policy.

10.0 SYSTEM EXCLUSIVE MESSAGES

RESET DEVICE

<FO> System Exclusive Message ID (SYSEX)
<OD> ADA Identifier
<cc> Channel number
<dd> Device number
<01> Reset Device Command
<xx> Message Checksum
<F7> End of System Exclusive (EOX)

• Causes the specified device to perform a reset operation.
• Specifics of the reset are device dependent.
• No response is sent by the device.

RUN DIAGNOSTIC TEST

<FO> SYSEX
<OD> ADA Identifier
<cc> Channel number
<dd> Device number
<02> Run diagnostic test command
<tt> Test number
<xx> Message checksum
<F7> EOX

• Causes the specified device to run a selected diagnostic test routine.
• Test 00 is equivalent to the power-on diagnostic.
• Other test numbers are device specific.
• No response is sent by the device.

REPORT DIAGNOSTIC STATES.
<FO> SYSEX
<OD> ADA Identifier
<cc> Channel number
<dd> Device number
<03> Report diagnostic status
<xx> Message checksum
<F7> EOX

DIAGNOSTIC STATUS RESPONSE
<FO> SYSEX
<OD> ADA Identifier
<cc> Channel number
<dd> Device number
<00> Response ID
<03> Reponse type
<ss> Response (may be one or more bytes)
<xx> Message checksum
<F7> EOX
• Retrieves the most recent diagnostic result.
• The first byte of the response - 0 if no error occurred, and ≠ 0 if an error occurred.
• Some tests may return multiple bytes on a device and test specific basis.

DEVICE REASSIGN
<FO> SYSEX
<OD> ADA Identifier
<cc> Channel number
<dd> Device number
<04> Device reassign command
<ee> New channel number
<ff> New device number
<xx> Message checksum
<F7> EOX

DEVICE REASSIGN RESPONSE
<FO> SYSEX
<OD> ADA Identifier
<cc> Old channel number
<dd> Old device number
<00> Response ID
<04> Response type
<ee> New channel number
<ff> New device number
<xx> Message checksum
<F7> EOX
• Causes a device to switch channels or device numbers.

GO OFFLINE
<FO> SYSEX
<OD> ADA Identifier
<cc> Channel number
<dd> Device number
<05> Offline command
<xx> Message checksum
<F7> EOX
•Causes the specified device to go offline until manually **returned** online.
• No response is returned by the device.

SET PARAMETERS
<FO> SYSEX
<OD> ADA Identifier
<cc> Channel number
<dd> Device number
<06> Set parameter command
<PP> Program number
<NN> Number of parameters
<bb> Base parameter number
<V_1> Parameter *1* value
.
.
<V_n> Parameter *n* value
<xx> Message checksum
<F7> EOX

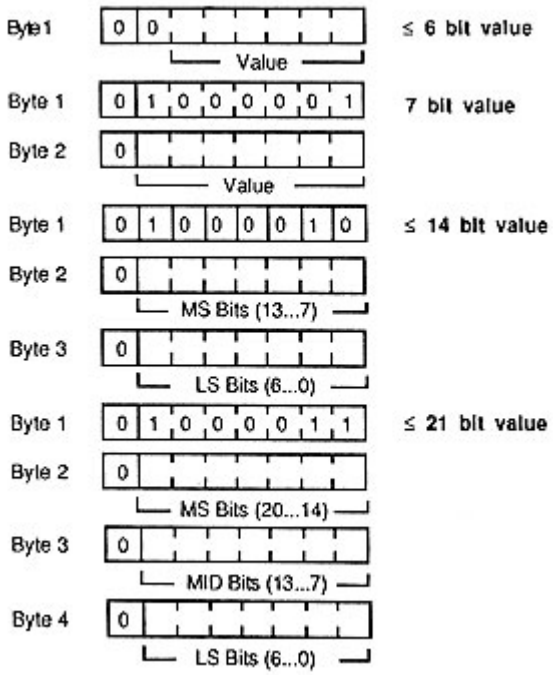
SET PARAMETERS RESPONSE
<FO> SYSEX
<OD> ADA Identifier
<cc> Channel number
<dd> Device number
<00> Response ID
<06> Response type
<rr> Message checksum
<F7> EOX
• Sets one or more parameters in a program.
• Program number 7F specifies the current working parameter registers.
• A zero response indicates no errors were detected, a non-zero response indicates that a bad parameter number or value was detected.

GET PARAMETERS
<FO> SYSEX
<OD> ADA Identifier
<cc> Channel number
<dd> Device number
<07> Get parameters command
<pp> Program number
<NN> Number of parameters
<P_1> Parameter 1 value
<P_n> Parameter n value
<xx> Message checksum
<F7> EOX

• Causes the specified device to send the values of one or more selected parameters.
• Program number F7 specifies the current working parameter registers.

NOTES ON ADA SYSTEM EXCLUSIVE MESSAGES

1. All messages include a 7 bit 2's complement checksum taken over all of the data bytes (doesn't include the SYSEX, EOX, or checksum itself).
2. Values are in "Number" format (MS bits sent first):



• 70...F7 as byte 1 are reserved for special single byte codes.