



## ANI-F-IC1

### Multi-Format ANI Encoder

Manual Revision: 2007-06-20

Covers Software Revisions:

ANI-F: 1.0 & Higher

#### SPECIFICATIONS

Operating Voltage	5 VDC
Operating Current	2.6 mA
Operating Temperature	-30 - +60 C
Frequency Range	280-3600 Hz
PTT Output Current	200 mA
Audio Output Level	1V RMS
Audio Output Impedance	10K $\Omega$ /22 K $\Omega$
Tone Distortion	<1%

#### GENERAL INFORMATION

The ANI-F offers ANI & Emergency ANI encoding tone signaling formats such as Motorola's MDC-1200 & MDC-600, M/A-Com's G-Star, DTMF, 5-tone, 2-tone, ANI with Status, or Burst Tone. A special POCSAG paging version is also available. The ANI-F can be used with Midian's CAD or DDU Series products for monitoring ANI and ENI transmissions.

#### PRODUCT PROGRAMMING

Midian's ANI-M Icom Series Products are programmed using the KL-3 programmer and IPI-1. Please reference the KL-3 & IPI-1 manuals for setup instructions of the programming software and hardware. From the product selection screen on the KL-3 UP software, select the appropriate product name from the list and click OK.

Set the parameters of the ANI-F-IC1 software to fit the application. If any clarifications on a feature are required, move the mouse cursor over the feature name until the question mark appears and right click, a definition of the feature will be shown. If 2-tone or custom tones will be used in the ANI-F-IC1,

you will need to select "Enable Advanced ANI Tone Definitions" in the "ANI Tone Definitions" tab.

After entering the parameters, save the file by going to File - Save As. Enter the file name in the File Name block and click Save. Saving the file will allow for quick and easy reprogramming of units.

Plug the ANI-F-IC1 onto the Icom Programming Interface and plug the interface into the KL-3.

To program the ANI-F-IC1 push the button on the Icom Programming Interface click "Program Unit" in the menu bar to send the file to the ANI-F-IC1. The LED on the interface will flash indicating programming is complete. Follow the same procedure to read the unit, but select "Read Unit" in the menu bar.

#### HARDWARE INSTALLATION

Be certain to follow standard anti-static procedures when handling any of Midian's products.

**F-3/F-4:** Plug the unit into the options connector located behind the rubber stopper under the battery. Before plugging the unit in, remove W1 to open the radio's PTT path, if common PTT is not being used.

**F-3G/F-4G:** Plug the unit into the options connector located behind the rubber stopper under the battery. Before plugging the unit in, open the radio's PTT path by opening jumper D, if common PTT is not being used.

**F-14/F-24:** The unit plugs into the options connector under the battery. Before plugging the unit in, open jumper PTT to open the radio's PTT path, if common PTT is not being used.

**F-30/F-40:** The unit plugs into the options connector located on the main board. Before installing the unit, open the radio's PTT path by opening jumper CPB, if common PTT is not being used. It will be necessary to open the radio for installation. This radio uses a negative PTT; therefore, you will need to open J1 on the ANI-F-IC1.

**F-30G/F-40G:** The unit plugs into the first options connector (labeled as Option One) located on the main board. Before installing the unit, open the radio's PTT path by opening jumper G, if common PTT is not being used. It will be necessary to open the radio for installation. This radio uses a negative PTT; therefore, you will need to open J1 on the ANI-F-IC1.

**F-33G/F-43G:** The unit plugs into the options connector under the battery. Before plugging the unit in, open jumper D to open the radio's PTT path, if common PTT is not being used.

**F-120/220:** The unit plugs into the options connector located on the main board. Before installing the unit, open the radio's PTT path by opening the PTT jumper on the front PC board located next to the PTTI and PTTO pads. This jumper is listed as CP2 on the schematic of the radio. Only open the PTT path if common PTT is not being used. This radio uses a negative PTT; therefore, you will need to open J1 on the ANI-F-IC1.

**F-320/420/520/620:** The unit plugs into the options connector located on the main board. Before installing the unit, open the radio's PTT path by opening PTT jumper C, if common PTT is not being used. This radio uses a negative PTT; therefore, you will need to open J1 on the ANI-F-IC1.

**F-1020/2020:** The unit plugs into the options connector located on the main board. Before installing the unit, open the radio's PTT path by opening jumper PTT, if common PTT is not being used. This radio uses a negative PTT; therefore, you will need to open J1 on the ANI-F-IC1.

**F-1720/1820:** The unit plugs into the options connector located on the main board. Before installing the unit, open the radio's PTT path by opening jumper PTT, if common PTT is not being used. This radio uses a negative PTT; therefore, you will need to open JU-1 on the ANI-F-IC1.

## HARDWARE ALIGNMENT

For the TX Audio Output in a wide band system, set the ANI modulation pot R12 to 3.3 KHz (66% of 5 KHz) of deviation per EIA specifications. For the TX Audio Output in a narrow band system, set the ANI modulation pot R12 to 1.65 KHz (66% of 2.5 KHz) of deviation per EIA specifications.

## RADIO PROGRAMMING

**F-3/F-4/F-30/F-40/F-320/F-420/F-1020/F-2020:** For Emergency ANI, program the radio's option button (P0-P3) as Opt 1 Momentary/Active Low.

**F-3G/F-4G/F-14/F-24/F-33G/F-43G/F-120/F-220/F-520/F-620/F-1720/F-1820:** For Emergency ANI, program the radio's option button under Common > Key & Display as OPT1 Momentary/L (Active Low).

**F-30G/F-40G:** For Emergency ANI, program the radio's option button under Common>Key & Display as OPT11 Momentary/L (Active Low). If you use the second options connector, program as OPT21 Momentary/L (Active Low).

## OPERATION

**ANI Encode:** When the PTT Input is grounded, the unit will assert the PTT Output and send the programmed ANI tones out the TX Tone Output.

**ENI Encode:** When the Emergency Input is grounded, the unit will assert the PTT Output and send the programmed Emergency ANI tones out the TX Tone Output.

## TECHNICAL NOTES

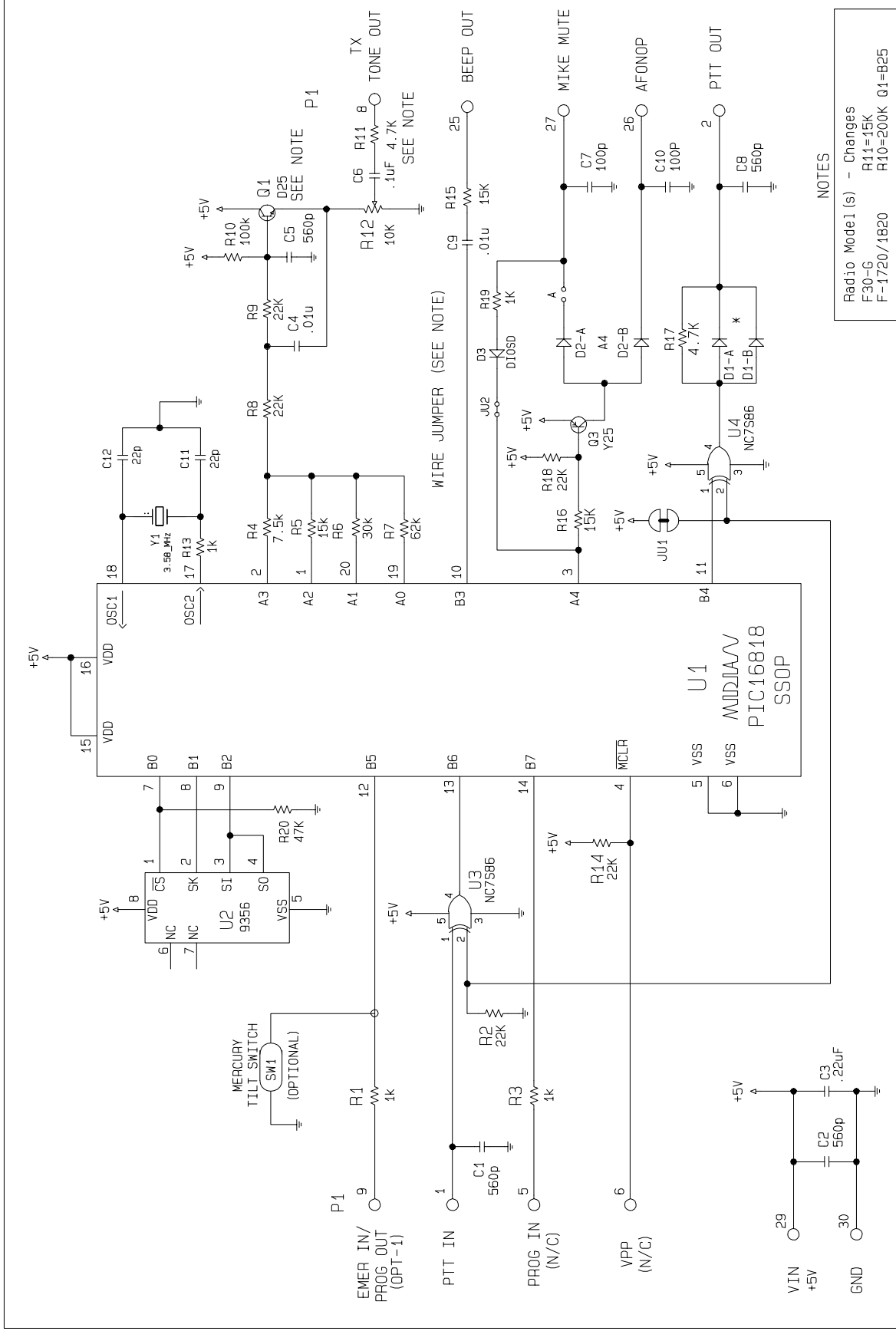
**Programming 2-tone:** 2-tone ANI is programmed with the Advanced Tone Definitions. In Frame 1, Frequency 1 type in the frequency of the first tone and type the length of the first tone in Frame 1 msec. In Frame 2 msec, type in the length of the gap time. In Frame 3, Frequency 1 type in the frequency of the second tone and type the length of the second tone in Frame 3 msec.

**F-30G/F-40G:** It has been found on more recent versions of the radio that the PTT In and PTT Out connections on the options connector have been reversed. In these versions, the PTT jumper should not be cut and functions such as Time-Out-Timer and Penalty Timer will not be available.

## MIDIAN CONTACT INFORMATION

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**Web:** <http://www.midians.com/>



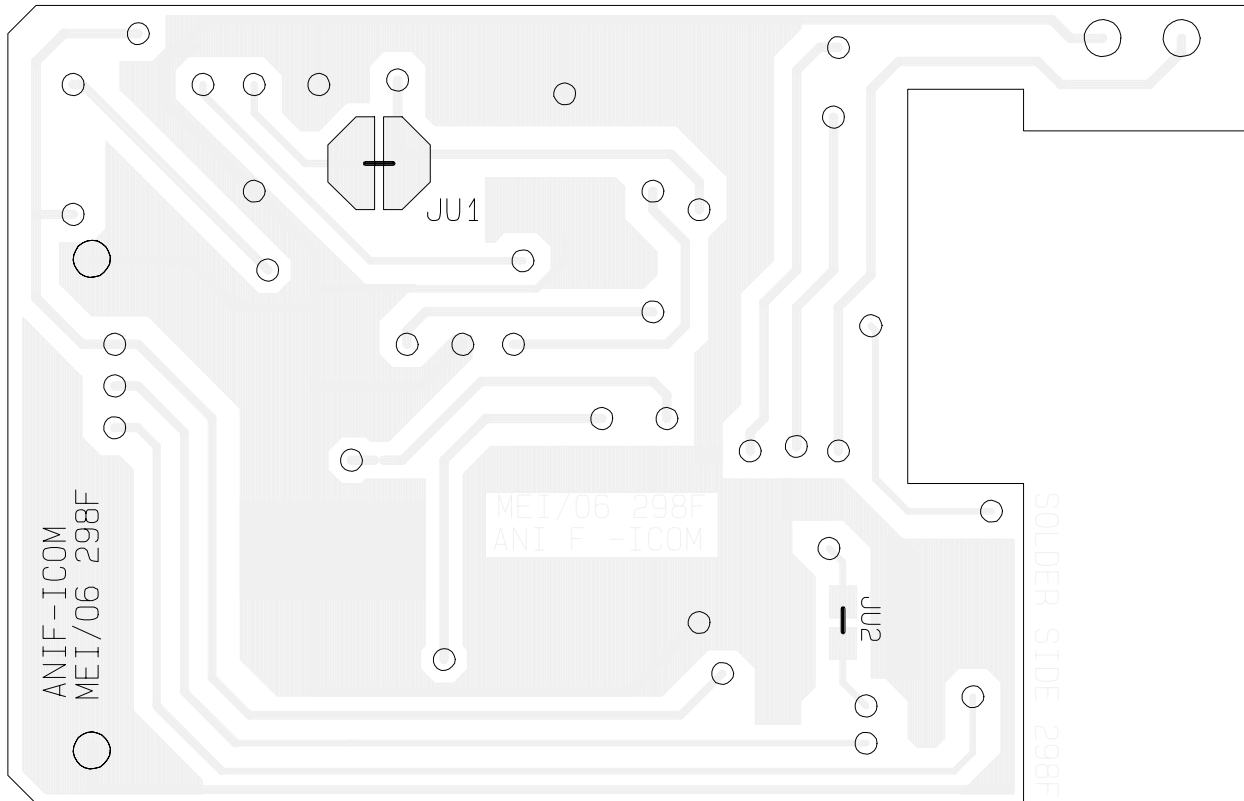
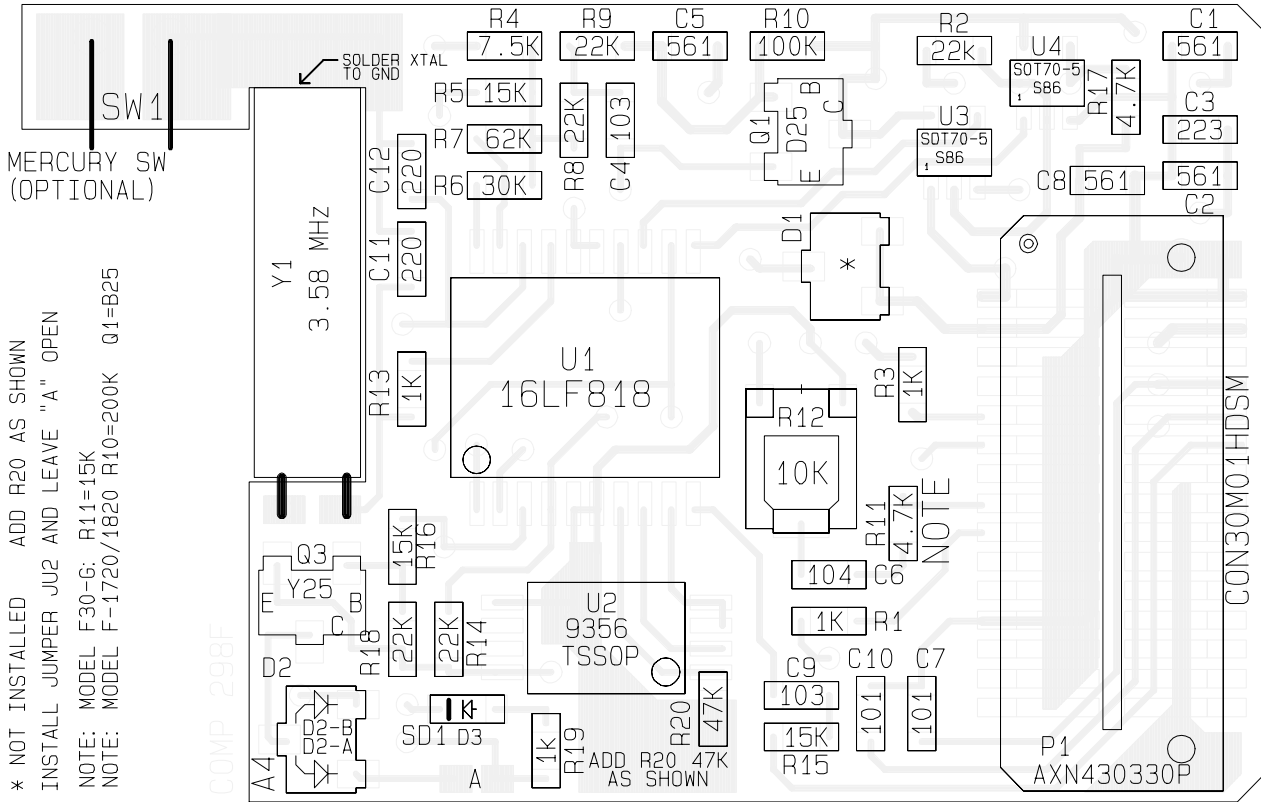
Radio Model (s) - Changes  
 F30-G R11=15K  
 F-1720/1820 R10=200K Q1=B25

NOTES

- \* - NOT INSTALLED
- P1 PINS 5, 6, 13, 14, 15, 21 ARE N/C
- JU1 - LEAVE IN FOR POS PTT (IC-F4)
- CUT FOR NEG PTT (SEE MANUAL)

ANI-F-IC1	REV. F	FILE NO. 298F.SCH
SCHEMATIC	ECO/SH	DMG.NO.
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MIDIAN ELECTRONICS	MIDIAN	APPR.
DATE 01-98	DWN.BY AIB	
DESIGN BW	REV. JUN 20/07 AB	



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DATE 01-98	DWN.BY AB	APPR.	ANI-F-IC1	ECO/SH 239	DWG. NO. 298.HCP
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