OPERATION & INSTALLATION MANUAL

**Basic description and operation
of the**

E-747 ENCODER

| **1** SELECT COMMAND | **2** SELECT SIREN NUM. | **3** SEND |

CANCEL	WAIL	ATTACK
ALERT	PUBLIC ADDRESS	AIR HORN
HI-LO	WHOOP	NOON TEST
MSG 1	MSG 2	MSG 3
MSG 4	MSG 5	MSG 6
MSG 7	MSG 8	SILENT TEST

1	2	3
4	5	6
7	8	9
ALL	0	ENCODER RESET

| SEND |
| ON/OFF |

WHELEN® E-747

WHELEN ENGINEERING COMPANY INC.

E-747 ENCODER

OPERATION AND INSTRUCTION MANUAL

The purpose of this manual is to provide operation and installation information about the use of a Whelen Engineering Company Model E-747 Encoder.

Prior to reading this manual or using this product you should be familiar with Whelen Engineering Company's family of High Power Voice and Siren Systems.

Document # 04-0113585-00

Table Of Contents

Introduction

The E-747 Encoder is an easy to use activation unit for Whelen's family of High Power Voice and Siren System products. The E-747 output is Whelen's standard, reliable 10 digit DTMF protocol.

The E-747 is a compact, desktop unit designed for simple 4 wire connection to a base station transmitter. The E-747 has a sealed membrane keypad for initiating a simple 3 step warning sequence. The warning activation sequence consists of :

     1. Select a command.

     2. Select a siren or all sirens.

     3. Press the SEND button.

The user may select from 18 different command, or control, functions as listed below:

Wail	Digital Voice Message 1	Cancel
Attack	Digital Voice Message 2	Silent Test
Alert	Digital Voice Message 3	
Public Address	Digital Voice Message 4	
Air Horn	Digital Voice Message 5	
Hi-Lo	Digital Voice Message 6	
Whoop	Digital Voice Message 7	
Noon Test	Digital Voice Message 8	
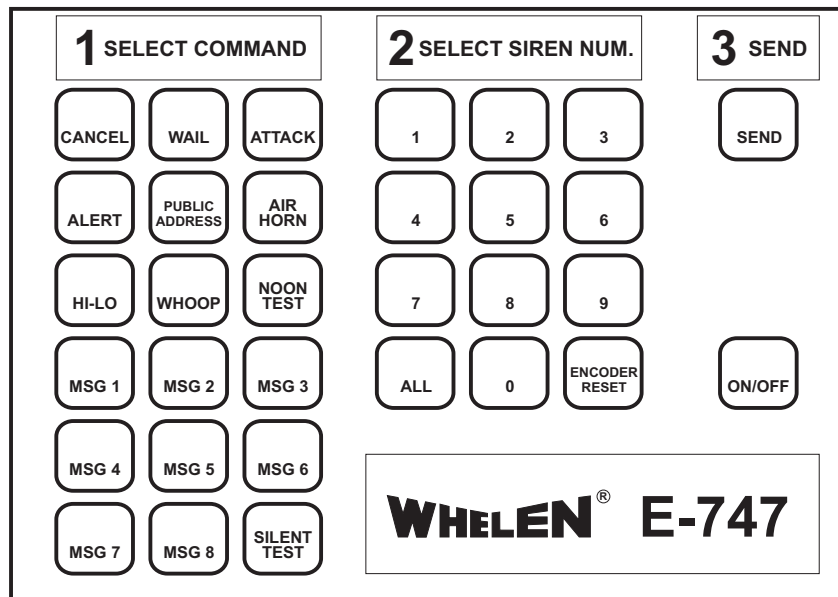
The user may select 1 of 10 individual sirens or "All" sirens in the system.

Operation

General

Remember, the E-747 must be ON, as indicated by the "ON/OFF" LED, before anything can happen!

Operation of the E-747 is a simple 3 step procedure as shown on the heading of the unit.

**Step 1 is "Select Command"   Step 2 is "SELECT SIREN NUM."   Step 3 is "SEND"**

Step 1 is shown to the right. Select the command by pressing the appropriate button. The corresponding LED will light up. If the command was already selected, pressing the button will de-select it and turn the LED off. Command definitions are as follows:

|	
CANCEL	**Terminates all siren activity.**
WAIL	**Activates the Wail Tone.**
ATTACK	**Activates the Attack Tone.**
ALERT	**Activates the Alert Tone.**
PUBLIC ADDRESS	**Enables the Public Address mode.**
AIR HORN	**Activates the Air Horn Tone.**
HI-LO	**Activates the Hi-Lo Tone.**
WHOOP	**Activates the Whoop Tone.**
NOON TEST	**Activates the Noon Test function.**
MSG 1	**Activates Digital Voice Message 1.**
MSG 2	**Activates Digital Voice Message 2.**
MSG 3	**Activates Digital Voice Message 3.**
MSG 4	**Activates Digital Voice Message 4.**
MSG 5	**Activates Digital Voice Message 5.**
MSG 6	**Activates Digital Voice Message 6.**
MSG 7	**Activates Digital Voice Message 7.**
MSG 8	**Activates Digital Voice Message 8.**
SILENT TEST	**Initiates Silent Test Function.**

Step 2 is shown to the right. Select the remote siren by its address number. The siren number represents the 4th digit of the four digit siren address. The user may also select all of the sirens by pressing the ALL button. This places a DTMF # symbol in the 4th digit of the address. The first three address digits and the area code are set internally. This is explained in a later section. Siren number definitions are as follows:

0 to 9	**4th digit of the siren address.**
ALL	**4th digit = #, all sirens in system.**
ENCODER RESET	**Resets the encoder, clears entries.**
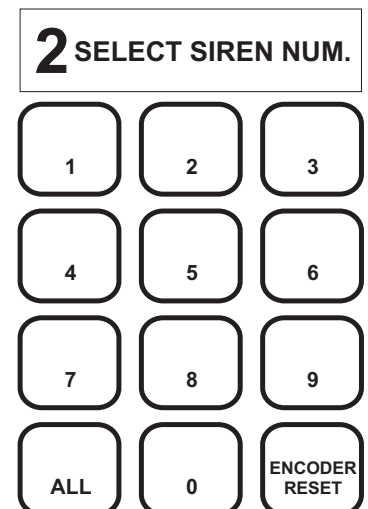
Remember, only one specific siren, or all sirens, may be addressed at a time.

Step 3 consists of deciding whether or not to send the selected command. Pressing the SEND button <u>will</u> send the command. There is <u>NO</u> second chance!! After sending the command, the LED of the issued command will flash. The siren number remains on steady. The SEND LED turns off.
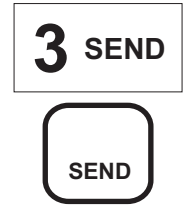
Remember, if there is no LED response, the button has not been properly pressed.

For a Public Address function, be sure to send the PUBLIC ADDRESS command <u>before</u> keying up the microphone and talking.
Note: The microphone is not included. Refer to Model WPSNCMIC, part # 01-0245719-00.

EXAMPLE: Activate the Alert Tone at remote siren number 3.

<u>Make sure the E-747 is on.</u>

Press the ALERT button, press the 3 button, press the SEND button.

<u>Set-Up</u>

Remove power before opening the E-747.

The system area code and the first three digits of the address are typically factory set. However, if the need arises to change these switches it may be done by the user. The settings are made with rotary switches, located inside of the E-747 housing. To access the switches, remove the two Phillips head screws on the bottom of the unit. <u>Gently</u> remove the top of the housing, without removing any cables. The switches are located on the base mounted circuit board, as shown. Notice that each switch is labled. Starting at the bottom, are AC-1, AC-2 and AC-3 which identify the first, second and third digits of the three digit Area Code. As shown, the Area Code is 080. The top three switches are AD-1, AD-2 and AD-3 which identify the first, second and third digits of the four digit Address. As shown, the Address is 400X, where X is selected from the keypad during Step 2.
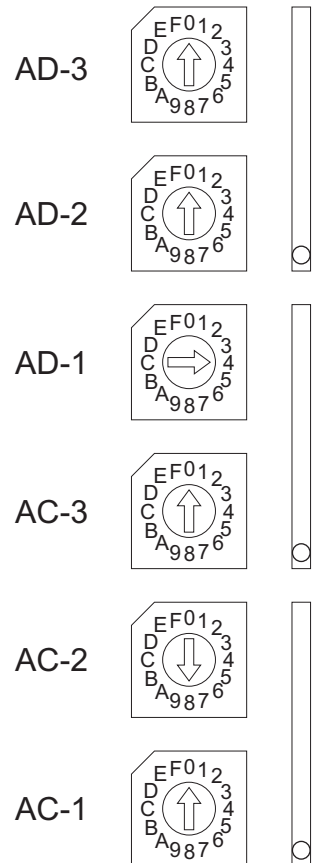
Note that the switches go from 0 to F. The Area Code digits will only use 0 to 9. However, the Address may be 0 to 9 or the letter C. The letter C represents a # symbol or wildcard.

Caution should be used in changing the Area Code. This value is typically set at the factory to insure a unique value. Any changes to this value should be discussed with the factory, to avoid future confusion.

Installation

This step-by-step procedure for installing the E-747 is intended for use by a qualified radio technician.

1.   Inspect the E-747 for any physical damage.

2.   Locate the 4 conductor cable on the back of the E-747. This cable connects to the base transmitter, as follows:

           Green - Audio Return
           White - Audio
           Red - Push To Talk
           Black - Push To Talk

3.   Set the transmitter warm-up time. Locate the rotary switch in the back of the E-747. Select the warm-up time by setting the switch to the appropriate position, as shown in the table.

Warm-up Time	Switch Position
100 ms	0
500 ms	1
1 second	2
2 seconds	3

4.   Plug the wall mount transformer into a 115 volt AC source. Press the ON/OFF button to turn the E-747 on. The ON/OFF LED should be lit.

5.   Locate the recessed LEVEL and MIC VOL adjustments on the E-747. A small flat bladed screwdriver is needed for the adjustment.

6.   Set the DTMF Tone level. With the E-747 on, press the CANCEL button (the LED should be on), select siren number 1, and press SEND. While the tone is transmitting, adjust the LEVEL potentiometer for 2.5 KHz deviation. Repeat this step as needed to adjust the level.

7.   Set the microphone level. Plug the microphone into the MIC jack. Key up the microphone and adjust the MIC VOL potentiometer for 4 KHz deviation, while speaking into the microphone.

        Note: The microphone is not included. Refer to Model WPSNCMIC, part # 01-0245719-00.

Optional Automotive (or 12 VDC) Installation

Follow the procedure, as described above, with the following exception at Step 4.

Instead of plugging into AC, cut the cable from the wall mount transformer, or supply a cable with the appropriate plug. The white stripped wire is the positive DC lead. Connect the positive DC lead to a nominal 12 VDC source through a 1 Amp fuse. Connect the ground wire to the 12 VDC Ground. The VDC range may be 11 to 15 VDC.
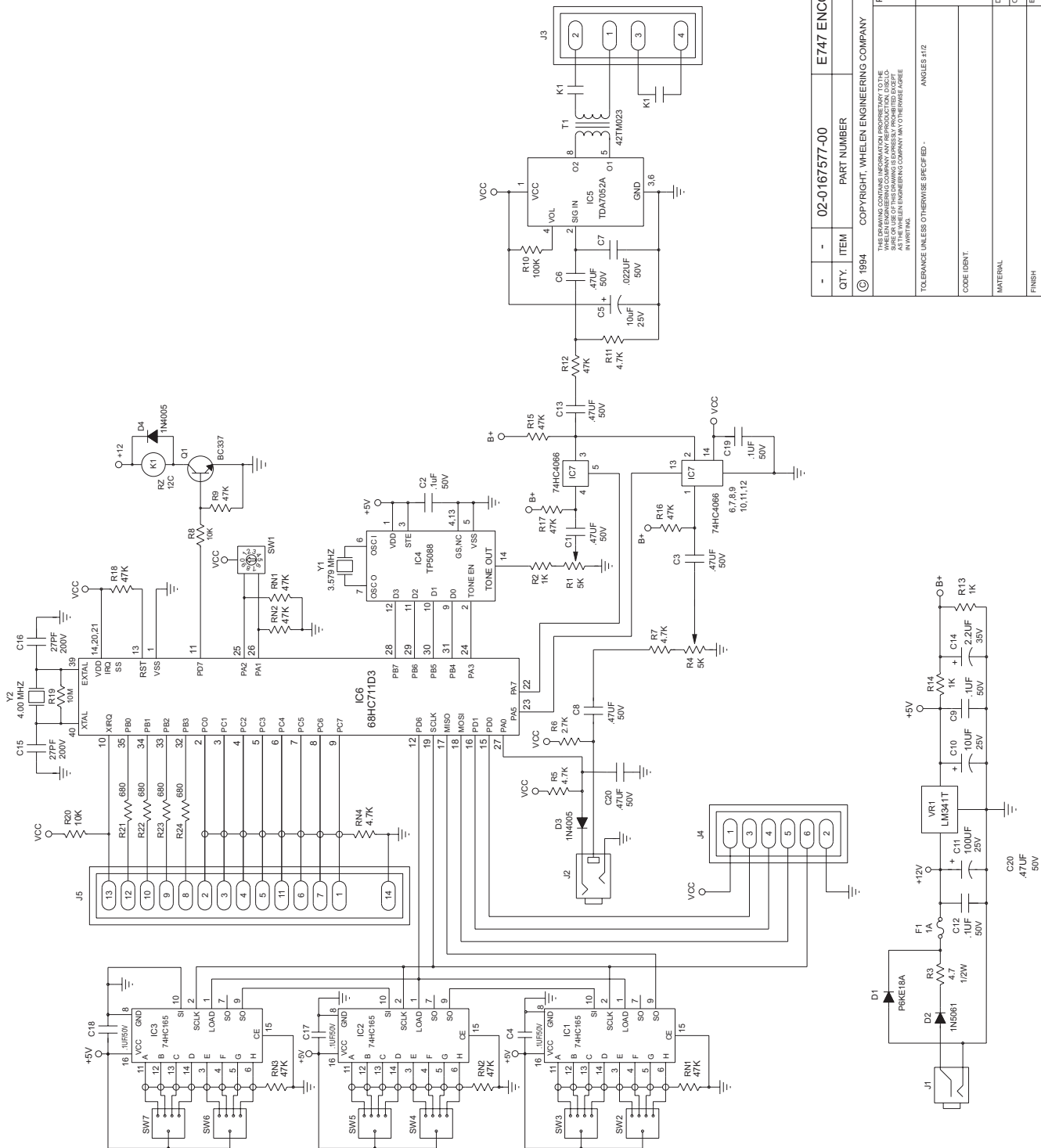
SPECIFICATIONS

GENERAL -

Input Power: 12 volt DC nominal, 60 mA typ., 150 mA max.
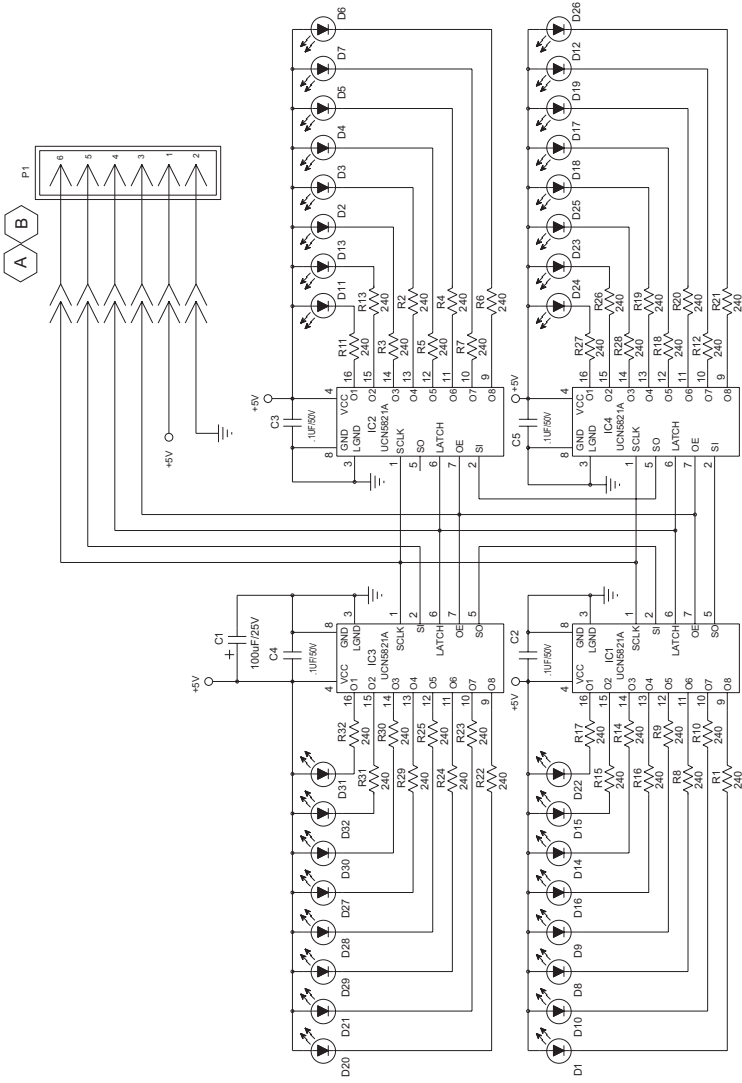   UL listed wall mounted transformer.

Physical: Desktop design, almond color.
                               2.1" H x 6.9" W x 6.7" D.
                               1.1 pounds.

Environmental: Operating temperature, -20°C to +60°C.
                               Humidity, 0-90%, non-condensing.

Output: 4 wire cable for audio and PTT.

Audio: 2 wire, 600Ω transformer balanced, adjustable.

Control: Normally open relay for Push To Talk.
                               Contact rating, 1/2 A @ 120 VAC, 1 A @ 12 VDC.

Signaling: DTMF format, Whelen 10 digit protocol.

REAR PANEL CONTROLS -

Transmit Warm-up: 100 ms, 500 ms, 1 second, 2 second
                               Selector switch.

DTMF Tone Level: Variable.

Microphone Volume: Variable.

Microphone Jack: Ground, Signal, PTT.

E747 ENCODER
CPU PC BD
SCHEMATIC

E747 ENCODER CPU PC BD SCHEMATIC

PART NUMBER 02-0167577-00

DESCRIPTION

PIONEERS IN SAFETY SIGNALS

WHELEN® ENGINEERING COMPANY
ROUTE 145
CHESTER, CT 06412-0684
TELEPHONE (203) 526-9504

TOLERANCE UNLESS OTHERWISE SPECIFIED - ANGLES ±1/2

CODE IDENT.

MATERIAL

FINISH

DR. PCW
CH. LTG
ENG. PCW
APP. TMF

SCALE NONE
DATE 8-11-94
DRAWING NO. 67577

SHEET 1 OF 3
REV. C

E747 ENCODER LED PC BD SCHEMATIC

PIONEERS IN SAFETY SIGNALS

WHELEN ® ENGINEERING COMPANY
ROUTE 145
CHESTER, CT 06412-0684
TELEPHONE (203) 526-9504

E747 ENCODER
LED PC BD SCHEMATIC

DRAWING NO. 67579

REV. B

SCALE 2=1
DATE 8-9-94
SHEET 1 OF 3

DR. LTG
CH.
ENG. LTG
APP:

PART NUMBER 02-0167579-00

ITEM

QTY. 1994

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CODE IDENT.

MATERIAL

FINISH