SPECTRACOM

PUBLIC SAFETY) SECURITY) GOVERNMENT

MODEL 8140MT

MultiTap

INSTRUCTION MANUAL

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Revisions, if any, are located at the end of the manual.

Manual Revision A
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LIMITED WARRANTY

Spectracom warrants each new product manufactured and sold by it to be free from defects in material, workmanship, and construction, except for batteries, fuses, or other material normally consumed in operation that may be contained therein, for five years after shipment to the original purchaser (which period is referred to as the "warranty period"). This warranty shall not apply if the product is used contrary to the instructions in its manual or is otherwise subjected to misuse, abnormal operations, accident, lightning or transient surge, repairs or modifications not performed by Spectracom.

The GPS receiver is warranted for one year from date of shipment and subject to the exceptions listed above. The power adaptor, if supplied, is warranted for one year from date of shipment and subject to the exceptions listed above.

The Rubidium oscillator, if supplied, is warranted for two years from date of shipment and subject to the exceptions listed above.

All other items and pieces of equipment not specified above, including the antenna unit, antenna surge suppressor and antenna pre-amplifier are warranted for 5 years, subject to the exceptions listed above.

WARRANTY CLAIMS

Spectracom's obligation under this warranty is limited to in-factory service and repair, at Spectracom's option, of the product or the component thereof, which is found to be defective. If in Spectracom's judgment the defective condition in a Spectracom product is for a cause listed above for which Spectracom is not responsible, Spectracom will make the repairs or replacement of components and charge its then current price, which buyer agrees to pay.

Spectracom shall not have any warranty obligations if the procedure for warranty claims is not followed. Users must notify Spectracom of the claim with full information as to the claimed defect. Spectracom products shall not be returned unless a return authorization number is issued by Spectracom. Spectracom products must be returned with the description of the claimed defect and identification of the individual to be contacted if additional information is needed. Spectracom products must be returned properly packed with transportation charges prepaid.

EXCEPT FOR THE LIMITED WARRANTY STATED ABOVE, SPECTRACOM DISCLAIMS ALL WARRANTIES OF ANY KIND WITH REGARD TO SPECTRACOM PRODUCTS OR OTHER MATERIALS PROVIDED BY SPECTRACOM, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Spectracom shall have no liability or responsibility to the original customer or any other party with respect to any liability, loss, or damage caused directly or indirectly by an Spectracom product, material, or software sold or provided by Spectracom, replacement parts or units, or services provided, including but not limited to any interruption of service, excess charges resulting from malfunctions of hardware or software, loss of business or anticipatory profits resulting from the use or operation of the Spectracom product or software, whatsoever or howsoever caused. In no event shall Spectracom be liable for any direct, indirect, special or consequential damages whether the claims are grounded in contract, tort (including negligence), or strict liability.

EXTENDED WARRANTY COVERAGE

Extended warranties can be purchased for additional periods beyond the standard five-year warranty. Contact Spectracom no later than the last year of the standard five-year warranty for extended coverage.

1.1   INTRODUCTION

The Spectracom Model 8140MT MultiTap™ is a programmable divider/buffer. Three TTL/50 ohm outputs are provided that can be configured to the same frequency or set independently.

The MultiTap™ can operate as part of a Spectracom Distribution or as a stand-alone device.

1.2   UNPACKING

In the event of damage to the shipping carton or if there is hidden damage to the equipment, but the carton is not damaged, be sure to contact the carrier immediately so that his representative can witness any equipment damage that may exist inside the carton. If you fail to report shipping damage immediately you may forfeit any claim against the carrier. You should also notify SPECTRACOM CORPORATION of shipping damages so that we can assist you in obtaining a replacement or to repair the equipment.

Be sure to remove all items of equipment and accessories from the shipping carton before discarding it.

1.3   RESHIPMENT

If it is necessary to return the unit to the factory, the original shipping carton may be used. If it is not available, a carton of at least 250# test corrugated paper with at least two inches of polyethylene foam surrounding the unit must be used. The unit should be sealed in a plastic bag for moisture protection and a note must be included stating the reason for the return. A return authorization number must be obtained from Spectracom. This number should be shown on the shipping papers and in any related correspondence.

1.4   POWER SOURCES

The MultiTap™ is normally powered by the Spectracom Distribution system. If the unit is used independently or if any output frequency is below 0.1 MHz, external power must be used. The MultiTap™ may be powered by an AC-DC wall adapter providing 9 VDC at 300 mA. Either polarity is acceptable. The distribution power connection is disabled when external power is used.

2.0 OPERATION

The MultiTap™ is configured at the factory to provide outputs of 10, 5, and 1 MHz with a 10-MHz input.

Before operating the MultiTap™, determine the input frequency and desired output frequencies. To reconfigure the unit, remove the cover and install the jumpers according to the chart on the inside of the cover and below in Figure 1, MultiTap™ Programming Chart. Replace the cover and connect the input signal and power source.

| OUTPUT FREQUENCY SELECTION WITH 10 MHz INPUT SELECT GROUP A,B,C, OR D WITH J5 & J6 SELECT OUTPUT 1 WITH J7, OUTPUT 2 WITH J8, OUTPUT 3 WITH J9 | | | | | | | |
GROUP	J5	J6	POSITION 1	POSITION 2	POSITION 3	POSITION 4	POSITION 5
A	[⊡⊙ ⊙]	[⊡⊙ ⊙]	10 MHz	5.0 MHz	1.0 MHz	0.2 MHz	40 KHz
			÷1	÷2	÷10	÷50	÷250
B	[⊙ ⊡⊙]	[⊡⊙ ⊙]	10 MHz	5.0 MHz	0.5 MHz	0.1 MHz	20 KHz
			÷1	÷2	÷20	÷100	÷500
C	[⊡⊙ ⊙]	[⊙ ⊡⊙]	2.0 MHz	1.0 MHz	0.2 MHz	40 KHz	8 KHz
			÷5	÷10	÷50	÷250	÷1250
D	[⊙ ⊡⊙]	[⊙ ⊡⊙]	2.0 MHz	1.0 MHz	0.1 MHz	20 KHz	4 KHz
			÷5	÷10	÷100	÷500	÷2500
USE EXTERNAL POWER BELOW 0.1 MHz OUTPUT							

FIGURE 1   MULTITAP™ PROGRAMMING CHART

Figure 2, MultiTap™ Configuration Example, illustrates a typical configuration. The input source is 10 MHz and the desired outputs are: Output 1 - 1 MHz; Output 2 - 4 kHz; Output 3 - 4 kHz. Installing the jumpers as shown would configure the unit for Group D position 2 on output #1 and position 5 on outputs #2 and 3.

JUMPERS CONFIGURED FOR

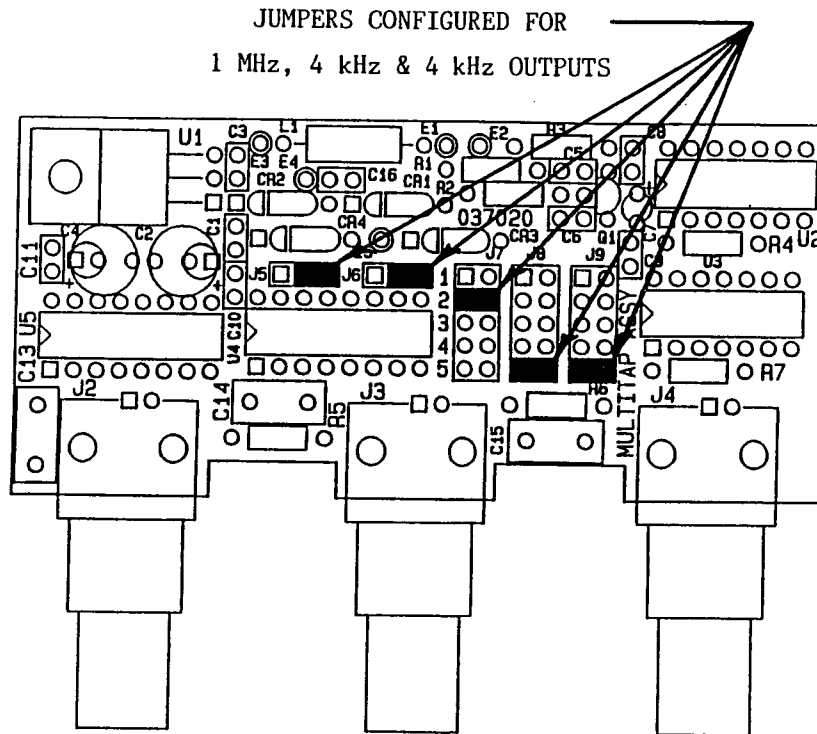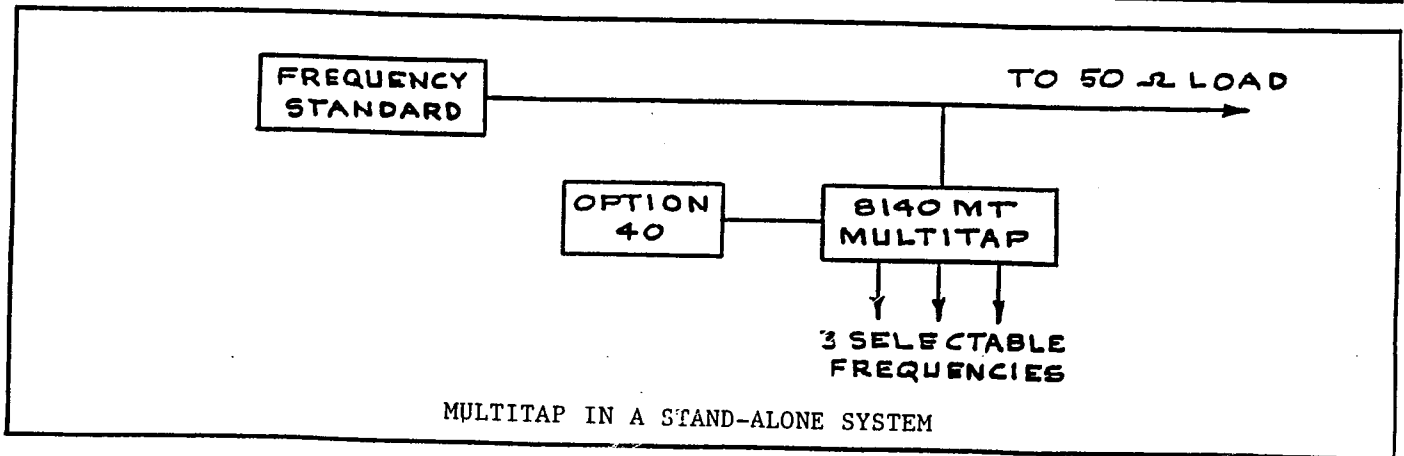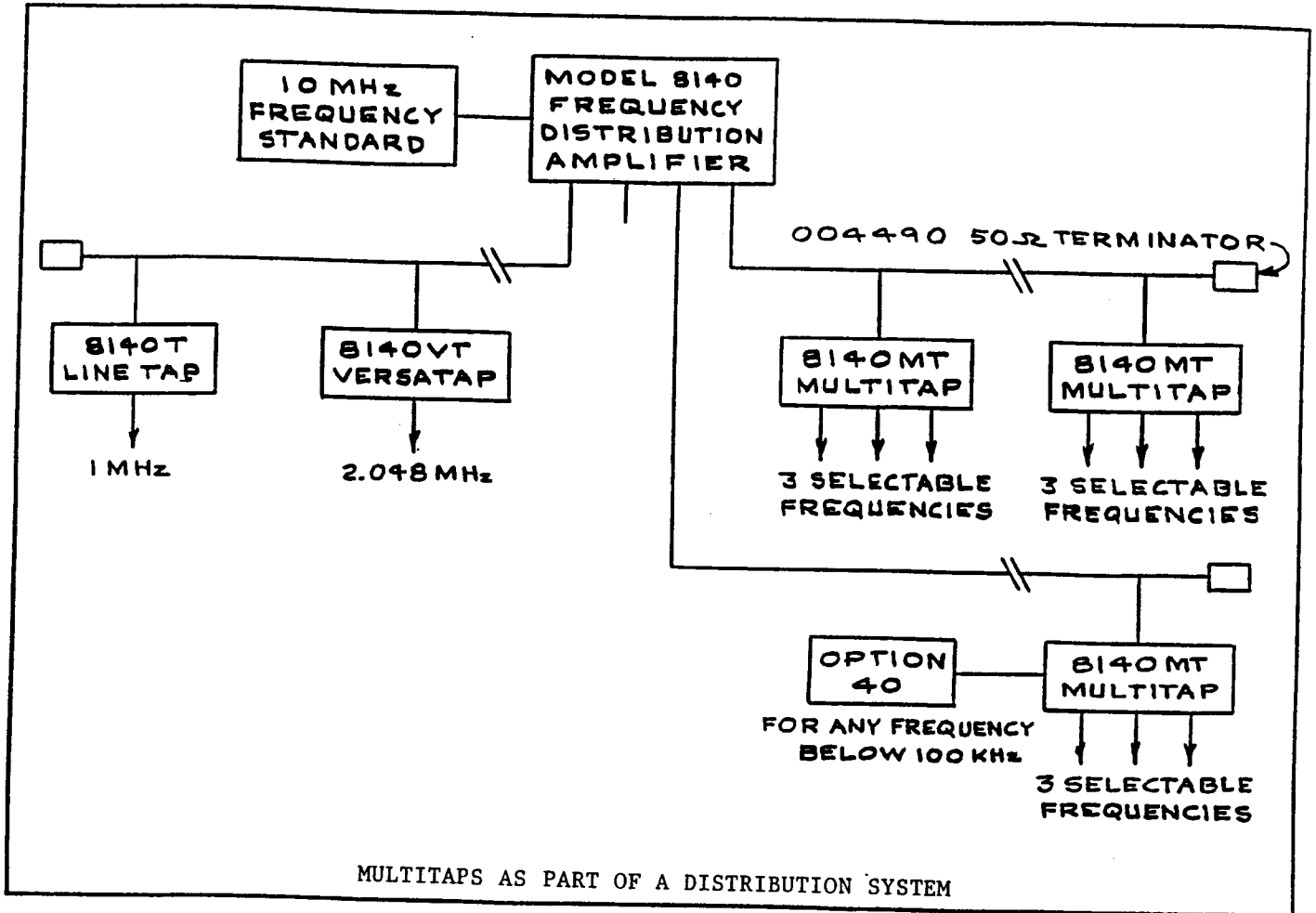1 MHz, 4 kHz & 4 kHz OUTPUTS

FIGURE 2   MULTITAP™ CONFIGURATION EXAMPLE

If the signal source is a Spectracom Distribution Amplifier, terminate the end of the input line with P/N 004490 DC-isolated 50-ohm load furnished with Distribution Amplifier. For other sources, use P/N 004493 (or equivalent) non-isolated 50-ohm load for input termination.

The outputs of the MultiTap™ are TTL buffers configured to drive a 50 ohm cable. Because of the extremely fast rise times of the signals, the cable must be terminated by a 50 ohm load. Unless the cable is very short, ringing will be evident at the load end of any cable left unterminated.

MULTITAPS AS PART OF A DISTRIBUTION SYSTEM

MULTITAP IN A STAND-ALONE SYSTEM

2.2 ELECTRICAL SPECIFICATIONS

Frequency Outputs:

Three square wave outputs per MultiTap™. 1.5 V peak-to-peak into 50 ohms.
Once group is chosen, any divisor in a group may be individually selected.

Table of output divisors:

Grp. A	B	C	D
1	1	5	5
2	2	10	10
10	20	50	100
50	100	250	500
250	500	1250	2500

For a 10-MHz input, the available outputs in MHz are:

Grp. A	B	C	D
10	10	2	2
5	5	1	1
1	0.5	0.2	0.1
0.2	0.1	0.04	0.02
0.04	0.02	0.008	0.004

Frequency Input:

1 kHz to 20 MHz TTL; 100 kHz to 20 MHz sine, 300 mV peak-to-peak to 5 V peak-to-peak sine; high impedance. Feed line must be properly terminated.

Power Requirements:

Option 40 (AC/9 VDC adapter) or Spectracom Distribution System. When driven
by a Distribution Amplifier, the DC load equals 3 line taps. Option 40, which
is required for stand-alone operation, reduces the distribution load to 1 line
tap equivalent, and is required whenever output frequencies are below 100 kHz.
Maximum current is less than 150 mA.