

Model 8140 Frequency Distribution System



- **Eliminates Periodic Frequency Calibration of Test Equipment**
- **For Calibration Lab or Production Test**
- **10-MHz or Custom Outputs**
- **Trunk-Line Frequency Distribution Lowers Wiring Costs**
- **Unlimited System Size When Daisy Chaining**

Spectracom's Frequency Distribution System comprises the Model 8140 Distribution Amplifier and combinations of Model 8140T LineTaps™, Model 8140MT MultiTaps™, and Model 8140VT VersaTaps™.

The Model 8140 Distribution Amplifier sends accurate frequencies to multiple locations over long distances. The amplifier derives 10 MHz from the input signal, and sends it on the trunk line coaxial cables to up to 25 remote stations. Running a separate cable to each station is not necessary. Input and output signals are monitored. Faults light a visual indicator or activate an optional Audible Alarm. Unlimited numbers of remote stations may receive output from one frequency standard by adding distribution amplifiers.

Remote station Line Taps receive both 10-MHz and DC power from the trunk line cable. The signal is buffered, then converted to the frequency needed at that station. MultiTaps are configurable dividers with three square wave outputs. VersaTaps are single-frequency synthesizers that provide custom frequency outputs.

Model 8140 Specifications

Frequency Output: Four connectors provide 10-MHz sine wave signals to terminated cable via separate buffer amplifiers. Level is 0.5 V rms, 50 ohms, superimposed on +12 VDC. One front panel TTL-compatible output is selectable between 0.1, 1, 5, and 10 MHz. Phase noise is typically less than -130 dB/Hz 1 kHz from the carrier when the distribution amplifier is fed with noise-free 10 MHz.

Number of Remote Stations: Each Distribution Amplifier will drive up to 25 standard Line Tap loads. If additional loads must be driven, another Model 8140 Distribution Amplifier may be "daisy-chained" onto the output of a Line Tap to drive 25 more loads.

Tap	Standard Line Tap Load
8140T	1
8140MT	3
8140MT-40	1
8140VT-10-00	3
8140VT-10-00-40	1

Distance to Remote Stations: Up to 25 LineTaps on RG-58 50-ohm cable at a maximum distance of 1500 feet from base station. Model 8140TA Distribution Line Extender extends this distance to up to 3000 feet with fewer Line Taps allowed. Using low-loss cable such as RG-8 extends distance to 3000 feet for all 25 Line Taps.

Audible Alarm (Option 20): Activated by input or output loss.

Frequency Input: 10 MHz; Signal level 0.25 to 3.0 Vrms, 50-ohm impedance. Input options: 5 or 1 MHz.

Power: 115/230 VAC ±15%, 50/60 Hz; 40 W.

Physical & Environmental

Size:

8.5"W x 5.25"H x 13.5"D
216W x 133H x 343D mm

Weight:

12 lbs

Connectors:

Input/Output:

BNC; 4 DC-isolated output terminators included

AC power: 3-prong connector, 7' cord included

Controls:

Power switch, frequency select

Indicators:

Power, output fault

Temperature:

0 to +50°C operating range

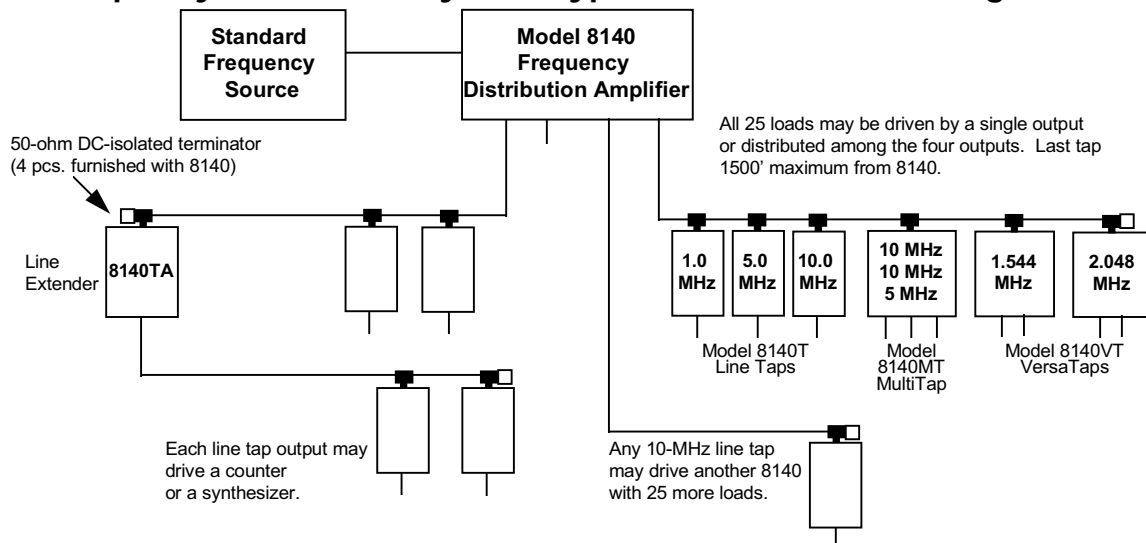
Humidity:

95% R.H.non-condensing

System Ordering Information

- Specify Spectracom **Model 8140** plus
Option 01 for 19" EIA rack mount
Option 07 for 5-MHz input
Option 08 for 1-MHz input
Option 20 for audible alarm
- Specify output taps:
Model **8140Txx** provides fixed sine wave outputs
8140T10 = 10 MHz
8140T5 = 5 MHz
8140T1 = 1 MHz
8140TR1 = 0.1 MHz
Model **8140MT** provides configurable TTL frequencies.
Model **8140VT** provides fixed custom frequencies.
- Specify any required Line Extenders, **8140TA**.
- When exceeding 25 standard Line Tap loads, (see table) order additional Model 8140 Amplifiers.

Frequency Distribution System, Typical Interconnection Diagram



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8140T Line Tap™

- Buffered Sine Wave Output
- Isolates Trunk Line From Any Load Disturbances



Performance Specifications

Output Frequency Choices: 10, 5, 1, or 0.1 MHz. Specify for each Line Tap.

Output Level: 600 mV rms sine wave into 50 ohms. TTL-compatible when used without termination.

Input Signal: 10 MHz from Model 8140

Harmonic Distortion: -40 dBc

Reverse Isolation: 80 dB typical

Power: DC power is supplied via the coaxial trunk line from a Spectracom Distribution Amplifier.

Physical & Environmental

Size: 5.25" W x 2.63" H x 1.71" D
133 W x 67 H x 43 D mm

Hole Pattern: 4.75" x 1.75"; 121 x 44 mm

Weight: 1 lb

Connectors: BNC - Input tee included

Temperature: 0 to +50°C operating range

Humidity: 95% R. H. non-condensing

Ordering Information

For 10-MHz sine wave output tap, specify **8140T10**.

For 5-MHz sine wave output tap, specify **8140T5**.

For 1-MHz sine wave output tap, specify **8140T1**.

For 100-kHz sine wave output tap, specify **8140TR1**.

8140MT MultiTap™

- Three Buffered Square Wave Outputs
Reduce Cost Per Output
- User-Settable Frequency Dividers
Increase System Flexibility

Performance Specifications

Frequency Outputs:

Three square wave outputs per MultiTap. 1.5 V p-p into 50 ohms. There are four groups of output frequency choices. Once a group is chosen, each of the three outputs may be set to any frequency in the group. For a 10-MHz input, the outputs are:

Groups

10 MHz	10 MHz	2 MHz	2 MHz
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: Typically 10 MHz. TTL input range is 1 kHz to 20 MHz; sine input range is 100 kHz to 20 MHz. 300 mV p-p to 5V p-p sine; high impedance. Output frequencies are proportional to input frequency. Coaxial input line must be properly terminated.

Power: DC power is supplied through the coaxial trunk line from a Spectracom Distribution Amplifier. An optional AC/DC adapter allows the MultiTap to be driven from sources other than a Spectracom Distribution Amplifier. External power must always be used if any output frequencies desired are less than 100 kHz even if used with a distribution amplifier.

Physical & Environmental

Connectors: BNC - Input tee included
Power: 2.1 mm I.D. DC jack

All other physical and environmental parameters are the same as 8140T.

Ordering Information

Specify **Model 8140MT** plus **Option 40** for 115 VAC adapter.



Stand-Alone Operation

