The patented Spectracom Ageless Master Oscillator is a highly accurate frequency and timing source. Outputs are locked to the U.S. Naval Observatory via the NAVSTAR Global Positioning System (GPS). A Time Receiver Autonomous Integrity Monitor (T-RAIM) algorithm detects and disqualifies faulty satellites to maintain the reliability of system outputs. Spectracom’s field-proven Ageless Oscillator technology provides continuous automatic frequency control, compensating for aging and temperature drift.

The 8197B includes an internal Rubidium reference. It is ideally suited for use as a site master oscillator for communications systems. Typical applications include calibration, land mobile simulcast, narrow band land mobile radio, Specialized Mobile Radio (SMR), paging simulcast, satellite/microwave communication links, T1/E1, wireless telephone, SONET and ATM enterprise timing, and broadcast radio and television. To support your installation, Spectracom offers ancillary system components, including distribution amplifiers, frequency synthesizers, clock selectors, and clock converters.
Output Accuracy
Locked: ±1 X 10–12 typical, 24-hour average
Unlocked: ±2 x 10–11/week typical aging

Front Panel
10 MHz:
One 10 MHz output (BNC Female); 750 mVrms sinewave, 50 ohm impedance 30 dB harmonic suppression.

1PPS:
TTL signal (BNC Female), accuracy is ±500 nanosecond typical with SA off and in position hold.

Data Comm Port:
RS-232 (DB 9 Female) interface for maintenance and performance monitoring.

Rear Panel
10 MHz:
Four 10 MHz outputs (BNC Female); 750 mVrms sinewave, 50 ohm impedance 30 dB harmonic suppression.

Phase Noise At 10 MHz Outputs:
<table>
<thead>
<tr>
<th>Phase Noise</th>
<th>Offset</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;97 dBc</td>
<td>1 Hz</td>
</tr>
<tr>
<td>&lt;110 dBc</td>
<td>10 Hz</td>
</tr>
<tr>
<td>&lt;125 dBc</td>
<td>100 Hz</td>
</tr>
<tr>
<td>&lt;135 dBc</td>
<td>1000 Hz</td>
</tr>
</tbody>
</table>

Timing Outputs:
1544 kHz (T1 rate) and 2048 kHz (E1 rate) @ RS-485 levels (RJ-11)

Data Clock Outputs:
9.6 kHz, 18 kHz, and disciplined 1PPS at RS-485 levels (DB 9 Female)

Data Sync Outputs:
64 kHz, 18 kHz, 17-2/3 Hz, 33-1/3 Hz at RS-485 levels (DB 15 Female)

Alarm Outputs:
Relay contacts SPDT, 2A @ 30 VDC (terminal strip)

Data Comm Port:
RS-485 (RJ-11) interface for maintenance and performance monitoring.

GPS Antenna:
L1, C/A Code transmitted at 1575.42 MHz ("N" Type Female)

Received Frequency:
1575.42 MHz Satellites

Tracked:
Up to 12, simultaneous, GPS TRAII M satellite error management

Power:
115/230 VAC ±15%, 50/60 Hz (3-prong connector, 7’ cord included).
Maximum power consumption, 60W. Option 03 adds 25W.

Options
Internal Frequency Distribution Amplifier:
Option 03 converts four 10 MHz rear-panel outputs to the equivalent of Model 8140. Provides 10 MHz and +12 VDC to power LineTaps, MultiTaps, and VersaTaps which can also provide frequencies other than 10 MHz. For more information, see Model 8140 data sheet.

Frequency Outputs:
Four 10 MHz rear panel outputs are converted to 12.8 MHz (Option 6), or 5 MHz (Option 07).

CTCSS Outputs:
Option 14 provides two low-frequency RS-485 outputs, to nearest 1/3 Hz, synchronized to GPS on-time point. Uses Data Sync Output connector.

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