User manual
SG Compact
VER 1.3
FCC Compliance statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Spectrum Compact does not contain serviceable parts. Warranty will not be applicable in the event Spectrum Compact has been opened.

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The specifications or information contained in this document are subject to change without notice due to continuing introduction of design improvements. If there is any conflict between this document and compliance statements, the latter will supersede this document.

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To get up to date information about accessories and their availability, please contact sales representative.

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1 OVERVIEW

1.1 Front view

- SMA/ 2.92 mm connector (antenna port)
- Power switch
- Strap lug
- Touchscreen
- Charge indicator
- USB connector
1.2 Technical specification

<table>
<thead>
<tr>
<th>P/N</th>
<th>J0SSAG11</th>
<th>J0SSAG12</th>
<th>J0SSAG13</th>
<th>J0SSAG14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency bands</td>
<td>6/7/8/10/11 GHz</td>
<td>10/11/13/15/17 GHz</td>
<td>17/18/23/24 GHz</td>
<td>24/26/30/32/38 GHz</td>
</tr>
<tr>
<td>Frequency range</td>
<td>5.925–12.000 GHz</td>
<td>10.000–18.000 GHz</td>
<td>17.000–24.300 GHz</td>
<td>24.000–40.000 GHz</td>
</tr>
<tr>
<td>Output power range</td>
<td>-3...+13 dBm</td>
<td>-3...+11 dBm</td>
<td>-3...+10 dBm</td>
<td>-3...+5 dBm</td>
</tr>
<tr>
<td>Adjustable frequency step</td>
<td>1 MHz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjustable power step</td>
<td>1 dBm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signal form</td>
<td>Continuous wave</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guaranteed accuracy</td>
<td>+/- 1 dBm</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Interface</td>
<td>mini USB 2.0 (1.1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-15ºC to +40ºC / 5ºF to 104ºF</td>
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<td></td>
</tr>
<tr>
<td>Battery</td>
<td>LiPo 2200 mAh (3.7V)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery life</td>
<td>up to 4h</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output</td>
<td>50 ohm SMA (f)</td>
<td>50 ohm 2.92mm (f)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>128 x 81 x 24 mm / 5.04 x 3.2 x 0.94 in</td>
<td>130 x 81 x 28 mm / 5.11 x 3.2 x 1.1 in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>0.3 kg / 10.6 oz</td>
<td>0.4 kg / 14.11 oz</td>
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<td></td>
</tr>
</tbody>
</table>

1.3 Unpacking

Before opening, please inspect the package for any visible damage.
The following accessories are available:

1 – AC/DC USB charger with USB cable;
2 – Leather bag for Spectrum Compact (P/N J0APAC11);
3 – Attenuators 20/40dB or 60dB kit;
4 – Watertight, crush and dust proof case for Spectrum Compact (P/N J0SPAC03);
5 – Rugged RF cable, 2.92mm-2.92mm, 0.3 m (P/N J0ACRF02);
6 – Waveguide adapter UBR to SMA:
- P/N J0S07WA004: UBR84 to SMA, 5.9 – 10 GHz, WR112;
- P/N J0S10WA003: UBR100 to SMA, 8.2 – 12 GHz, WR90;
- P/N J0S15WA003: UBR140 to SMA, 12 – 17 GHz, WR62;
- P/N J0S22WA003: UBR220 to SMA, 17 – 24.3 GHz, WR42;
- P/N J0S26WA001: UBR260 to SMA, 22 – 33 GHz, WR34;
- P/N J0S38WA001: UBR320 to SMA, 26 – 40 GHz, WR28;
7 – Riflescope, tripod and case for sniffer antennas (P/N J0AASA01, J0AASA02, J0AASA03);
8 – Horn antennas:
- P/N J0AA0610HG02: SMA connector, 6.0 – 10.0 GHz, Gain: 14.5 – 18.0dBi;
- P/N J0AA1115HG01: UBR120 flange; 10.7 – 15.35 GHz, Gain: 19.5 – 20.5dBi;
- P/N J0AA1724HG01: UBR220 flange; 17.0 – 24.5 GHz, Gain: 21.0 – 21.5dBi;
9 – Lanyard (P/N J0APAC21).

1.4 Initial power-up

Slide power switch towards the red dot (●) to power on your SG Compact. If the battery meter is indicating LOW BATTERY, connect USB charger via USB connector and charge the SG Compact. Full charging cycle (with 1A power source) is approximately 5 hours.

Operation time with a fully charged battery is up to 4 hours for P/N J0SSAG11/J0SSAG12/J0SSAG13 and up to 3 hours for P/N J0SSAG14. Using a SG Compact while charging it via USB will prolong its operation time by approximately 1 hour, but it can't ensure continuous operation.

1.5 Connecting to antenna

1) Select external filters (if necessary) and connect them according to chapter 3 ADDING FILTERS.
2) Connect an appropriate 50 Ω coaxial cable to SG Compact.
3) Attach the waveguide adapter to an antenna or radio flange.
4) Attach the coaxial cable to the waveguide adapter.
FREQ – The frequency field allows setting a CENTRE frequency of SG Tx frequency.
POWER – Allows you to set SG Tx power in dBm.

! Output power range depends on SG model.
SG Compact 6–12 GHz (P/N J0SSAG11) Tx power range is -3...+13dBm.
SG Compact 10–18 GHz (P/N J0SSAG12) Tx power range is -3...+11dBm.
SG Compact 17–24.3 GHz (P/N J0SSAG13) Tx power range is -3...+10dBm.
SG Compact 24–40 GHz (P/N J0SSAG14) Tx power range is -3...+5dBm.
3 ADDING FILTERS

3.1 Overview

In order to use SG Compact in the field it is necessary to use external filters. Filters ensure filtration of additional harmonics which occur in the device's mixer. The tables below summarize filters' usage with appropriate SG Compact units.

<table>
<thead>
<tr>
<th>Frequency band, GHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
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<tr>
<td>7</td>
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<td>8</td>
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<td>32</td>
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<td>38</td>
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<td>42</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SG unit*</th>
<th>Filter</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>10</th>
<th>11</th>
<th>13</th>
<th>15</th>
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<th>23</th>
<th>24</th>
<th>26</th>
<th>28</th>
<th>32</th>
<th>38</th>
<th>42</th>
</tr>
</thead>
<tbody>
<tr>
<td>J0SSAG11</td>
<td>J0ALPF09</td>
<td></td>
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<tr>
<td>J0SSAG12</td>
<td>J0ALPF14</td>
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<tr>
<td>J0SSAG13</td>
<td>J0S22WAF01</td>
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<tr>
<td>J0SSAG14</td>
<td>J0S38WAF01</td>
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</tbody>
</table>

*See Chapter 1.2. Technical specification further details.

Legend:
- Corresponding filter should be used at this frequency band.
- Filter usage is not required as harmonics for particular SG Compact comply with levels defined by radio standard.
- The SG Compact unit does not support these frequencies.

Filters:

<table>
<thead>
<tr>
<th>P/N</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>J0ALPF09</td>
<td>Low pass filter with cut-off frequency 9 GHz</td>
</tr>
<tr>
<td>J0ALPF14</td>
<td>Low pass filter with cut-off frequency 14 GHz</td>
</tr>
<tr>
<td>J0S22WAF01</td>
<td>Low pass filter/waveguide-to-coax converter with cut-off frequency 21 GHz</td>
</tr>
<tr>
<td>J0S38WAF01</td>
<td>Low pass filter/waveguide-to-coax converter with cut-off frequency 33 GHz</td>
</tr>
</tbody>
</table>

Low pass filter with cut-off frequency 9 GHz  
P/N J0ALPF09

Low pass filter with cut-off frequency 14 GHz  
P/N J0ALPF14
3.2 Connecting filters to SG Compact

- Low pass filter/waveguide-to-coax converter with cut-off frequency 21 GHz
  P/N J0S22WAF01

- Low pass filter/waveguide-to-coax converter with cut-off frequency 33 GHz
  P/N J0S38WAF01

- SG Compact interconnected with low pass filter
  P/N J0ALPF14

- SG Compact interconnected with low pass filter
  P/N J0ALPF09

- SG Compact interconnected with low pass filter/ waveguide-to-coax converter
  P/N J0S22WAF01
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