The **Sentrius™ RG1xx-M2 LoRa-enabled concentrator card** combines Laird’s long-standing expertise in optimized RF design with the emerging LoRaWAN ecosystem. The Sentrius RG1xx-M2 card enables OEMs to integrate a high-performance, certified LoRaWAN gateway interface to any Linux based platform. Laird’s optimum hardware solution expands upon Semtech drivers and reference design for improved RF performance. Comprehensive integration and design services for a custom gateway are also available via Laird’s dedicated Engineering Services team, as are qualified LoRa antenna solutions from Laird.

**Optimized RF performance** – Improvements over Semtech reference design for:
- Power variation over temperature
- Performance over frequency

**Superior TX Performance** – Up to +27dBm

**Standardized Interface** – M2 connector with compliance to M2.COM standard E type key.

**Comprehensive Certifications** – FCC, IC, CE (all pending)

**Partner with Laird to create your own custom LoRa-enabled gateway**

From embedded hardware, easy-to-connect antennas to expert integration services, Laird provides a comprehensive array of capabilities to build a customized LoRaWAN implementation, including:

- **LoRa-Equipped Concentrator card**
  Quickly add LoRaWAN capability to any Linux-based Gateway design via standard M2.COM interface.

- **Product Development Services**
  Laird is your partner for enclosure design, Linux driver implementation, FCC/IC/CE Certification testing, and more.

- **Antennas**
  Laird offers a family of high-gain omnidirectional antennas ideally suited for LoRa applications.

**Application Areas**

- Smart Metering and Remote Sensing
- Industrial Automation/Monitoring and Control
- Agricultural and Rural IoT / M2M Applications
### Shared Specifications

<table>
<thead>
<tr>
<th>Category</th>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Radio</strong></td>
<td>Semtech Radios</td>
<td>SX1301 and SX1257 (x2)</td>
</tr>
<tr>
<td><strong>Reference Design</strong></td>
<td></td>
<td>Based on Semtech Rev 1.0 - SX1301 AP1</td>
</tr>
<tr>
<td><strong>Connectors</strong></td>
<td>Connector Type</td>
<td>M2.COM E Key - <a href="http://www.m2com-standard.org/en-us">http://www.m2com-standard.org/en-us</a></td>
</tr>
<tr>
<td></td>
<td>External Antenna</td>
<td>u.FL connector</td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td>Consumption</td>
<td>TX (max): 440mA, RX (all channels): 340mA, Idle: 40mA</td>
</tr>
<tr>
<td><strong>Voltage</strong></td>
<td>Input</td>
<td>5V (+/- 10%)</td>
</tr>
<tr>
<td><strong>RF Characteristics</strong></td>
<td>Frequency Range</td>
<td>RG186-M2: 863 to 870 MHz, RG191-M2: 902 to 928 MHz</td>
</tr>
<tr>
<td></td>
<td>RX sensitivity</td>
<td>Up to -140 dBm</td>
</tr>
<tr>
<td></td>
<td>Max RF Output Power</td>
<td>Up to +27 dBm</td>
</tr>
<tr>
<td><strong>Software</strong></td>
<td>Host Interface</td>
<td>SPI</td>
</tr>
<tr>
<td></td>
<td>Driver Support</td>
<td><a href="https://github.com/Lora-net/lora_gateway">https://github.com/Lora-net/lora_gateway</a> (Laird testing done with Linux)</td>
</tr>
<tr>
<td><strong>Temperature</strong></td>
<td>Operating Range</td>
<td>-30 to +85</td>
</tr>
<tr>
<td><strong>Physical</strong></td>
<td>Dimensions</td>
<td>75 x 53 x 3.8 mm</td>
</tr>
<tr>
<td></td>
<td>Weight</td>
<td>&lt;11g</td>
</tr>
<tr>
<td><strong>Regulatory</strong></td>
<td>Certifications</td>
<td>FCC / IC / CE (all pending)</td>
</tr>
<tr>
<td><strong>Warranty</strong></td>
<td></td>
<td>12 months</td>
</tr>
</tbody>
</table>

### Ordering Information

- RG186-M2: LoRaWAN Concentrator Card – M2.COM Interface (Europe) Q2 2017
- RG191-M2: LoRaWAN Concentrator Card – M2.COM Interface (N. America) Q2 2017

### Related Products

**Sentrius™ RM1xx - LoRa + BLE Certified Modules**

LoRa Class 1 + Bluetooth Low Energy module with smartBASIC for automated / hostless operation. Now with Bluetooth Central Mode. www.lairdtech.com/products/rm1xx-series

**Sentrius™ RG1xx – LoRa-Enabled Gateway**

LoRa Class 1, Bluetooth Low Energy and 802.11ac Wi-Fi, completing the end-to-end solution for your own private, custom LoRaWAN network. Coming Q2 2017

### Did You Know?

LSR, a Laird Business, is a leader in Wireless Product Development, offering true end-to-end solutions through its array of services & technical expertise

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**Design Services**
- RF Hardware & Antenna Design
- Software/Firmware Development
- Mobile App / Cloud Development
- Industrial Design
- Mechanical Engineering

**EMC Testing & Certification**
- On-Site FCC/IC/CE/Giteki/RCM EMC Certification
- Wireless & Antenna Testing
- EMC Emissions Testing
- International Testing Services

To learn more about LSR visit: www.lsr.com