The NXP SDS31300 is a programmable power, high-efficiency, fully integrated RF and control sub-system for use in smart defrost applications. The module simplifies OEM implementation and integration and provides a high performance, cost-effective solution.

**BENEFITS**
- Reduced time-to-market
- Simple integration into system
- Repeatable results
- Creates even heating energy
- Reliable
- Cost-effective interconnection
- Programmable from 100 W to 300 W
- Minimum software needed for control

**TARGET APPLICATIONS**
- Consumer kitchen appliances
- Commercial kitchen appliances

**FEATURES**
- High efficiency
- High power
- Closed loop measurement
- Software programmable
- Integrated fault protection
- Integrated RF source
- Simple interconnect
- Flexible host interface
- Compact size
**MODULE FEATURES**

- Programmable power from 100 W to 300 W (power supply dependent)
- Comprehensive sensing including:
  - Forward and reflected power
  - Current and voltage
  - Temperature
- Hardware-based monitoring and safety fault/shutdown
- Flexible API interface to appliance control systems
- Communications interfaces (I²C, SPI or UART)

**SDS31300 SMART DEFROST RF MODULE**

![Image of SDS31300 module](image)

Size: 13.2 x 6.6 x 3.2 cm (L x W x H)

**SMART DEFROST RF MODULE FUNCTIONAL BLOCK DIAGRAM**

![Block diagram of SDS31300 module](image)

**SMART DEFROST RF MODULE IMPLEMENTATION EXAMPLE**

![Implementation example diagram](image)

The SDS31300 module works in tandem with its companion module, the smart tuning unit (STU).

**TYPICAL PERFORMANCE**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>VHF</td>
</tr>
<tr>
<td>Power output</td>
<td>100–300 W CW</td>
</tr>
<tr>
<td>Efficiency</td>
<td>&gt; 70%</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>30-50 Vdc, 10 A Max</td>
</tr>
<tr>
<td>Control section</td>
<td></td>
</tr>
<tr>
<td>operating voltage</td>
<td>5 V</td>
</tr>
</tbody>
</table>

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