



Complete reference design providing RF and real-time control for use in smart defrost applications

SDS31300 Smart Defrost RF Module Reference Design

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



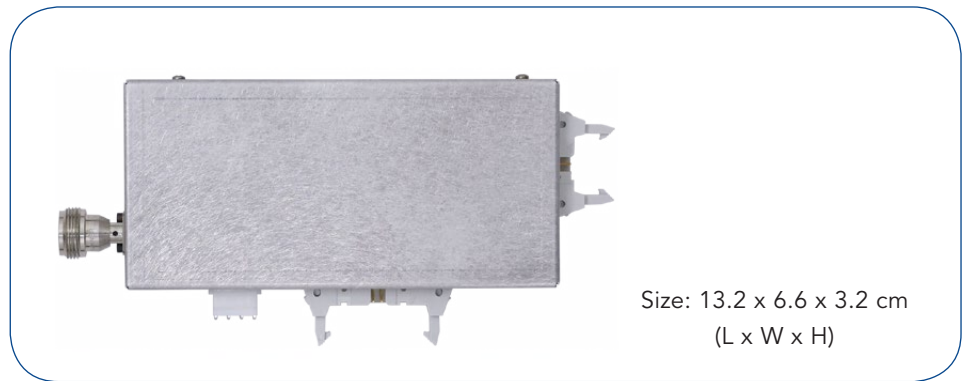
MODULE FEATURES

- ▶ 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)

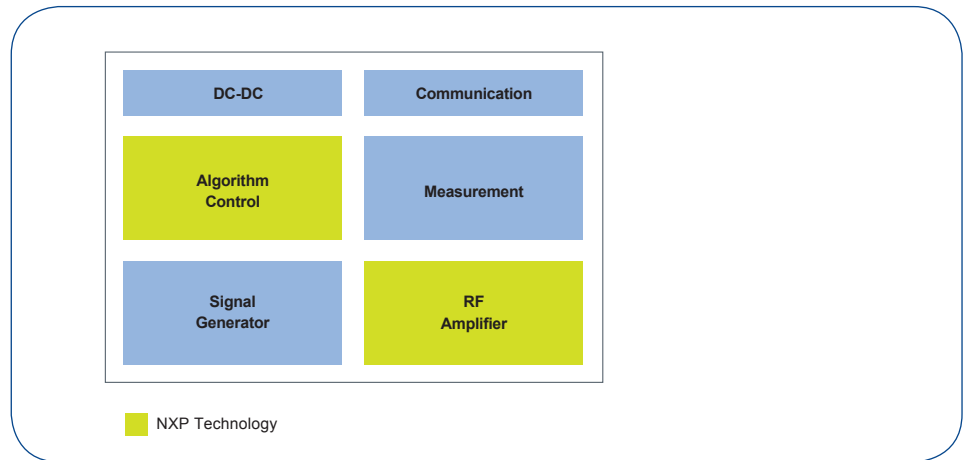
TYPICAL PERFORMANCE

Frequency	VHF
Power output	100–300 W CW
Efficiency	> 70%
Operating voltage	30-50 Vdc, 10 A Max
Control section operating voltage	5 V

SDS31300 SMART DEFROST RF MODULE



SMART DEFROST RF MODULE FUNCTIONAL BLOCK DIAGRAM



SMART DEFROST RF MODULE IMPLEMENTATION EXAMPLE

