

# Product Brief

## SmartPulse™ IP-Gateway reference design

### General description

The SmartPulse™ IP-Gateway reference design enables SmartPulse and other DECT ULE home automation wireless sensor / actuator products to be connected to the web for remote management via smartphones, laptops and tablet PCs.

The reference design is based on Dialog's SmartPulse SC14CVMDECT base station system in package IC and also features Dialog's SC14452 application host processor for VoIP functionality. It additionally integrates 32Mb of flash memory, 16MB SDRAM, an Ethernet Phy and Ethernet transformer.

As a member of the Dialog SmartPulse family of products it is ideally suited for connecting home automation, security, healthcare and energy monitoring consumer devices to the internet. The design automatically configures with a home or business's DECT ULE wireless sensor and actuator products, such as those built on Dialog's SC14WSMDATA and SC14WSMDECT system in package ICs.

Like all SmartPulse devices, the IP-Gateway integrates a simple to use AT Command set for configuring wireless links between multiple sensors and the base station; eliminating the need for an in-depth understanding of the DECT protocol.

#### Software

The reference design is supported by Dialog's Rhea µClinux based software development environment, which includes web servers, TCP/IP stack and an SSH server.

By using these libraries, along with the two included example SC14WSMDATA applications, it's possible to connect a virtually unlimited number of SmartPulse enabled sensors or actuators to the internet and enable the fast development of cloud based home automation systems.

#### Features

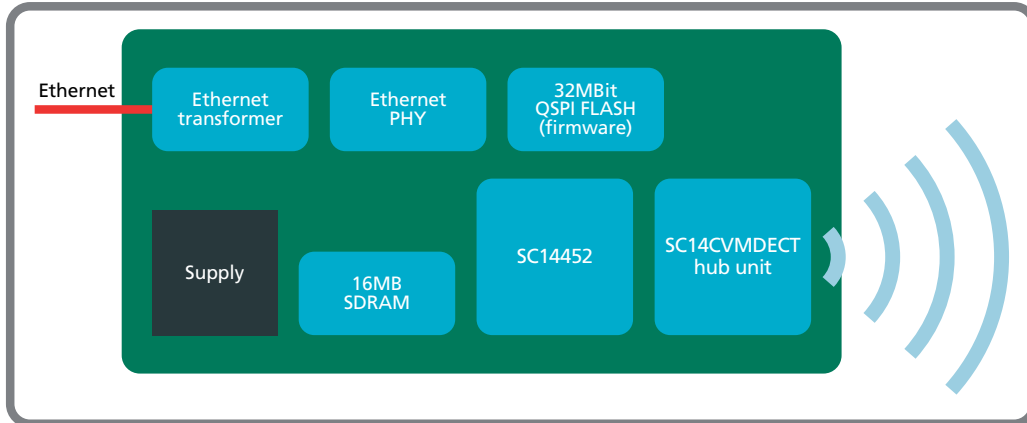
- Easy to install development environment (Virtual- Box image), RHEA tool chain installed
- 2 example SC14WSMDATA sensor and actuator nodes
- Leverages open source µClinux software
- Quick send and receive sensor payload through browser interface
- JSON based HTTP interface
- EU/US/J-DECT certified
- 232 bits / 29 Byte packet data
- RF range: 1870 - 1930 MHz
- Receiver sensitivity < -93 dBm
- Transmit power 23 dBm (200 mW)

#### Applications

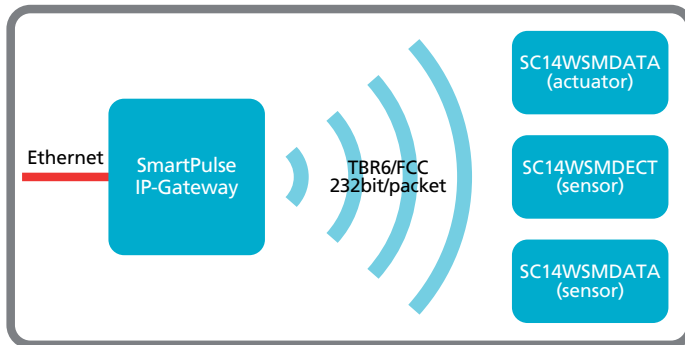
- Ultra low power wireless sensor data applications
  - Home automation
  - Home security
  - Home healthcare
  - Home energy metering
- Low standby current wireless actuator data applications



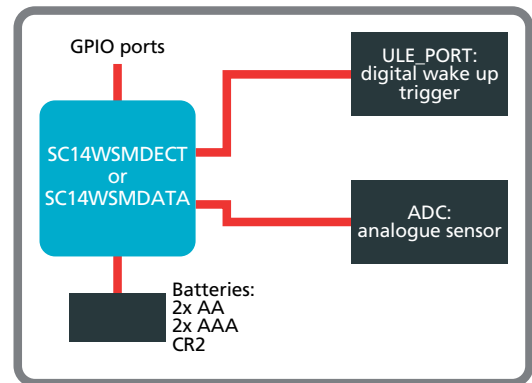
## System diagram



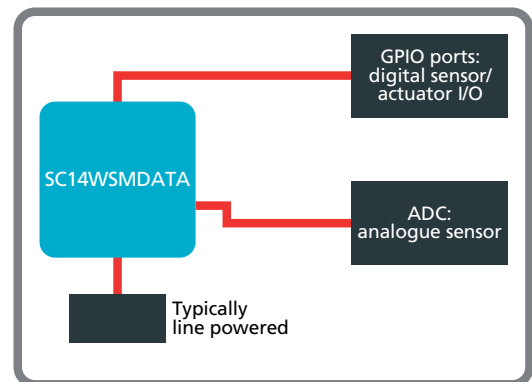
IP-Gateway reference design layout



System configuration



Sensor configurations



Actuator configurations

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