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Marketing contact: Anne Strand
Phone: +47 22 51 10 62
Fax: +47 22 51 10 99
E-mail: Anne.Strand@nordicsemi.no
Website: www.nordicsemi.com

IMAGES (**1**): *** HAS BEEN SUPPLIED ***

APPLICATION: TELEHEALTH

First ANT+ telemedical remote monitoring system reduces healthcare costs with Nordic nRF24AP2 2.4GHz transceivers

The i-Residence telemedical and telehealth system from Spantec eliminates the need for costly human-based healthcare monitoring with automatic fall detection, remotely monitored disease management, and medically prescribed exercise monitoring using ANT+ compatible wireless health- or fitness-sensors

Oslo, Norway – December 21, 2010 – Ultra low power (ULP) RF specialist Nordic Semiconductor ASA (OSE: NOD) today announces that Austrian company Spantec has developed the world's first fully comprehensive ANT+™ telemedical remote monitoring system using Nordic nRF24AP2 8-channel 2.4GHz ANT transceivers.

The i-Residence uses an ANT+ ULP wireless network to detect medical emergencies in nursing homes, hospitals, and private households (particularly for the elderly). The network employs ANT+ compatible devices and a series of wireless relay bridges (typically one per room or ward) that connect to an ANT+ hub located in a GSM-based (cell phone network) modem.

Emergencies are detected and classified in rising levels of escalation with various application-dependent measurement options. These include automatic fall detection wireless hip worn device developed by Spantec (currently undergoing full clinical trials in one of Austria's largest hospitals) measuring movement and motion (being able to store data for scientific research as well); automatic alert to rescue center control desks, relatives or neighbors by phone, Short Message Service (SMS or ‘text message’), or visual interface; and full compatibility with any third party ANT+ medical, health or fitness device (such as monitors for blood pressure, blood glucose, mobile electrocardiogram (ECG), weight or heart rate).

In operation, a Nordic nRF24AP2 2.4GHz 8-channel Single-Chip-Connectivity solution running ANT RF protocol software is built into a Spantec-provided GSM modem ANT+ hub that can communicate with up to 64 Nordic nRF24AP2 8-channel-based Spantec relays per sub net. The ULP performance characteristics of the Nordic ANT chips mean that in the event of a mains power failure, the relays can run from back-up battery power alone for up to 24 hours. In addition, Nordic ANT chips are highly immune to interference from other 2.4GHz wireless sources (such as *Bluetooth* wireless technology and *Wi-Fi*) that may be operating in the vicinity.

"Governments and healthcare providers desperately need a product like this in order to meet spiraling healthcare costs that are fast reaching unsustainable levels – particularly in the current economic climate," comments Christian Vlasich, Head of Sales and Marketing at Spantec. "This is mainly due to social factors such as aging populations and an explosion in lifestyle-related diseases such as type 2 diabetes that need to be carefully monitored and managed if life threatening complications are to be avoided.”

Independent research analyst ABI Research, for example, supports Vlasich’s conclusions by predicting that the market for wireless body area network (BAN) sensors will reach 400 million shipments by 2014 and shift from the sports and fitness sector (which accounts for around 9 in 10 wireless sensors shipping today) to include a growing professional healthcare and home healthcare market (see tinyurl.com/kuxggj). In a separate study by analysts Juniper Research, it was predicted that public and private healthcare providers in developed countries could save up to US$5.8 billion in healthcare costs by 2014 through the use of remote patient monitoring technology linked to cellular networks (see tinyurl.com/36pqvle).

"Telemedical and telehealth remote monitoring allows many currently laborious human-based medical and care activities to be automated using wireless sensor-based monitoring and networks that not only massively

reduce costs but also typically increases the reliability and therefore accuracy of collecting and recording medical data," continues Vlasich. "And for such applications, the ANT is a proven and extremely practical RF protocol - backed by ANT+ managed networks ensuring interoperability - and Nordic the longest established and most proven chip supplier."

“Rapidly escalating healthcare costs are encouraging the adoption of remote health monitoring,” comments Geir Langeland, Nordic Semiconductor's Director of Sales & Marketing. “Spantec are to be commended for developing and commercializing the future model for healthcare by using proven ULP wireless technology from Nordic and ANT. With this technology, public and private healthcare providers can potentially save billions of dollars in the treatment of patients in a way that was previously technically and economically impractical.”

The backbone of the i-Residence System consists of a wireless sensor network technology – made out of bridge and relay modules. The protocols are based upon the ANT™ Technology with mash and self-maintaining characteristics. ANT+™ capable devices are discovered automatically. Sensor data is gathered without user interaction and with the help of a protocol stack of maintenance, routing, localization and peer to peer transport protocols. Medical data such as fall alarm, blood pressure, blood glucose, weight is relayed to the i-Residence server infrastructure where the information is processed and further actions are performed, so Armin Blaha, Chief Executive Officer.

About Spantec (www.spantec.at)
Spantec GmbH is an Austrian start-up and was founded in April 2008. The company name stands for Sensor Platform and Network Technologies. Spantec offers technology for innovative, electronic feedback systems within diverse areas such as telemedicine, industrial safety and energy. The core technology is NEON – a high performance sensor platform delivered to 3rd party companies. In combination with the intelligent Network Technology “SWARM - Secure Wireless Access Remote Methods”, the system provides a wide spectrum of applications in the industry and the sports sector. The company’s HQ is in Linz while Spantec’s development team is located in Vienna.

Spantec has been a member of the ANT+ Alliance since 2009 and is the first company able to provide a sensor network based on Nordic nRF24AP2 2.4GHz 8-channel Single-Chip-Connectivity solution running ANT RF protocol software and ANT+ managed networks.

About nRF24AP2™ 1-channel
Based on Nordic’s class-leading nRF24L01+ transceiver core, the nRF24AP2 integrates an ultra-low power 2.4GHz transceiver with ANT Wireless’ production-proven ultra low power protocol stack, ANT, to create a true Single-Chip-Connectivity solution.

The nRF24AP2 core provides a range of benefits including substantial enhancements in wideband blocking and intermodulation as well as 5dB of extra sensitivity compared to its predecessor (the nRF24AP1). This extra sensitivity increases immunity to disturbance from other 2.4GHz sources in the vicinity. The ANT protocol stack implementation includes new features such as support for up to 8-channels, proximity search, frequency agility, and continuous scanning mode.

The device operates at a peak current of just 17mA. Average operating currents are in the microampere range (for example, in simple broadcast mode, average operating current is 9µA) leading to extended operation from small coin cell type batteries.

The single-channel nRFAP2-1CH is a cost optimized and flexible product specifically designed for use in a wide range of sensors. Combined with different host microcontrollers it provides a low cost, ultra low power solution for everything from simple sensors like bike cadence meters to more complex sensors like heart rate monitors and blood glucose monitors.

About nRF24AP2™ 8-channel
Based on Nordic’s class-leading nRF24L01+ transceiver core, the nRF24AP2 integrates an ultra-low power 2.4GHz transceiver with ANT Wireless’ production-proven ultra low power protocol stack, ANT, to create a true Single-Chip-Connectivity solution.

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The device operates at a peak current of just 17mA. Average operating currents are in the microampere range (for example, in simple broadcast mode, average operating current is 9µA) leading to extended operation from small coin cell type batteries.

The 8-channel nRF24AP2-8CH is an advanced and flexible product specifically designed for ANT hubs. Supporting up to 8-channels and without compromising power consumption, it enables devices like sports watches, bicycle computer and gym machines computers, for example, to connect to up to eight sensors simultaneously.

The device is fully interoperable with existing Nordic Semiconductor nRF24AP1 ANT chipsets and supports the ANT+ managed network alliance platform, assuring interoperability between wireless products from different vendors.

About Nordic Semiconductor ASA (www.nordicsemi.com)
Nordic Semiconductor is a fabless semiconductor company specializing in ultra low power (ULP) short-range wireless communication.

Nordic Semiconductor's nRF24xxx range of 2.4GHz transceiver and transmitter devices are aimed at applications including PC peripherals (wireless keyboards/mice/multimedia controllers), game controllers, intelligent sports equipment and wireless audio (for example, MP3 and portable CD player wireless headphones and wireless PC speakers). The latest nRF24LE1 is targeted at ultra-low cost and power applications such as wireless desktops and intelligent (for example, wristwatch-based) sports equipment.

Nordic is a member of the ANT+ Alliance and has successfully collaborated with ANT Wireless of Cochrane, Canada, since 2005. ANT devices such as the nRF24AP2 – using Nordic 2.4GHz transceivers and the proven ANT protocol – have been used in millions of wireless sensor nodes across the world. ANT is perfectly suited for any kind of low data rate sensor network topologies in personal area networks (PANs) and practical wireless sensor networks (WSNs). ANT+ (built on the ANT protocol) facilitates interoperability between ANT+ Alliance member devices and the collection, automatic transfer and tracking of sensor data. Applicable in sports, wellness, and medical health sensors, ANT+ defines device profiles that specify data formats, channel parameters and network key. The ANT+ Alliance is an open, special interest group of companies.

Nordic's products are all manufactured in state of the art semiconductor process technologies through strong, long-term relationships with world-best manufacturing facilities. Sales are primarily made through a carefully selected worldwide distribution network. The company has offices in Trondheim and Oslo, Norway, the U.S. (West Coast), Hong Kong, Korea, Japan, Taiwan, and the Philippines. Nordic is listed on the Oslo Stock Exchange (OSX: NOD). All operations are managed according to the ISO 9001:2000-approved quality assurance system.

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