

TPMS SELECTOR GUIDE

Tire Pressure Monitoring Sensors



TARGET APPLICATIONS

- Tire pressure monitoring systems
- Ultra-low-power wireless sensing

IMPLEMENTATIONS

- Measures dual-axis acceleration to support location of wheel on the vehicle
- Measures temperature
- Measures battery voltage
- Bi-directional wireless communication
- Measures tire pressure for passenger, light-duty or heavy-duty vehicles

NXP TPMS SENSORS

NXP's tire pressure monitoring sensors (TPMS) has a fully integrated 4 x 4 mm package footprint. These are significantly smaller than the previous generation of QFN packages on the market.

These devices provide:

- Low transmitting power consumption (less than 7 mA I_{dd})
- Large customer memory size (~8-15 kB)
- Dual-axis accelerometer architecture

NXP'S TPMS SOLUTION INTEGRATES:

- 8-bit MCU
- Pressure sensor
- XZ-axis or Z-axis accelerometer
- 125 kHz LF receiver
- 315–434 MHz RF transmitter

NXP's portfolio can support cars, light and heavy trucks as well as buses. These TPMS markets are mainly regulation driven with new mandates, resulting in significant growth. NXP continues to produce TPMS products that meet the latest mandates to accommodate customer requirements.

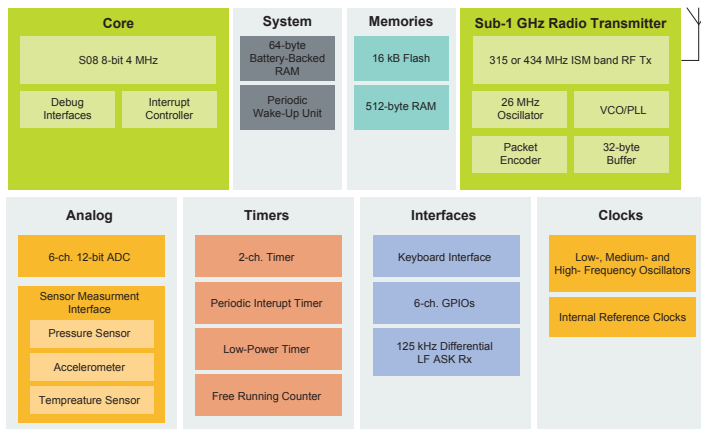
PRODUCT DIFFERENTIATION

Features	Benefits
Small, fully integrated package size	Enables small module design for lighter weight and space-constrained applications
Dual-axis XZ inertial sensor	Enables easier localization capability
Homogeneous firmware as previous generations	Easy transition from between solutions
8–15 kB customer memory/capability of interfacing with external memory	Flexibility of software development and time to market
Low RF power consumption	Long battery life
High production capacity	Secured supply and short lead time

NTM88 SPECIFICATIONS

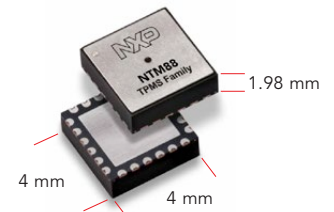
Part number	Pressure Range (kPa)	Pressure Accuracy (-40°C ≤ Ta ≤ 105°C)	Temperature Range (°C)	Temperature Accuracy (-20°C ≤ Ta ≤ 70°C)	Z-axis Accelerometer Range (g)	Z-axis Accelerometer Accuracy (-40°C ≤ Ta ≤ 125°C)	X-axis Accelerometer Range (g)	X-axis Accelerometer Accuracy (-40°C ≤ Ta ≤ +125°C)	Typical Uses
Passenger Car and Light Duty Pressure Range with Single X-axis Accelerometer									
NTM88H025T1	90 to 930	±5	-40 to +125	±3	-360 to +400	±3 @ 0g	NA		Rim Mount
NTM88H055T1					NA		-80 to +90	±3 @ 0g	Cap Mount
NTM88H065T1					NA		-360 to +400		Rim Mount
Passenger Car and Light Duty Pressure Range with Dual XZ-axis Accelerometer									
NTM88H125T1	90 to 930	±5	-40 to +125	±3	-175 to +550	±3 @ 0g	-400 to +400	±3 @ 0g	Tire Mount
NTM88H135T1					-360 to +400		-80 to +90		Rim Mount
NTM88H145T1					-80 to +90		-360 to +400		Rim Mount
NTM88H155T1					-360 to +400		-360 to +400		Cap Mount
Medium Duty Pressure Range with Dual XZ-axis Accelerometer — Under Development, contact sales representative for samples									
NTM88J125T1	90 to 1110	±5	-40 to +125	±3	-175 to +550	±3 @ 0g	-400 to +400	±3 @ 0g	Tire Mount
NTM88J135T1					-360 to +400		-80 to +90		Rim Mount
NTM88J145T1					-80 to +90		-360 to +400		Rim Mount
NTM88J155T1					-360 to +400		-360 to +400		Cap Mount
Heavy Duty / Off Highway Pressure Range with Dual XZ-axis Accelerometer — Under Development, contact sales representative for samples									
NTM88K135T1	90 to 1518	+/-17	-40 to +125	±3	-360 to +400	±3 @ 0g	-80 to +90	±3 @ 0g	Rim Mount

NTM88 TPMS FAMILY BLOCK DIAGRAM



NTM88 ATTRIBUTES

Voltage Measurement Range	1.8 V to 3.6 V
Voltage Resolution (8-bit)	10 mV/LSB
Voltage Accuracy (>2.1 V supply)	± 100 mV
Temperature Measurement Range Run Mode	-40 °C to +125 °C
Temperature Resolution (8-bit unsigned)	1 °C/LSB
Temperature Offset Accuracy (-20 °C ≤ TA ≤ 70 °C)	± 3 °C



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Document Number: TPMSFAMSGFS REV 3