Tire Pressure Generation TIS-09DH

Wheel Unit

Type

ASK/FSK 433.92 MHz

FCC ID: KR5TIS-09DH
IC: 7812D-TIS09DH

1. SYSTEM OVERVIEW

The tire pressure monitoring system (referred as TG for Tire Guard) consists of the following units:

- Tire guard wheel unit type TIS-09DH which includes an integrated pressure, temperature and acceleration sensor and a RF transmitter.
- LF receiver unit which includes a LF receiver (not described in this document)

The TG monitors a vehicle's tire pressure whilst driving or stationary. An electronic unit (wheel unit) inside each tire, mounted to the valve stem, periodically measures the actual tire pressure. By means of RF communication, this pressure information is transmitted to the RF receiver.

2. TECHNICAL DESCRIPTION

Carrier frequency:	433.92 MHz
Number of channels:	1
Type of modulation:	Amplitude Shift Keying (ASK), Frequency Shift Keying (FSK)
Baud rate:	4096bps, 9600bps
Rated Output Power:	< 10mW
Antenna:	Internal
Voltage supply range:	2.1 up to 3.2V
Temperature range	-40, +120°C

3. TYPICAL USAGE PATTERN

3.1 AVERAGE FACTOR CALCULATION (Standard 47 CFR Part 15C (periodic intentional transmitter))

Maximum transmitting duration in whatever 100ms windows: 19.73ms

⇨ **Averaging factor = 20xlog(19.73/100)=--14.1dB**

Detail of the calculation:

Baudrate = 4096bps Tolerance Baudrate = 1%
➔ Bit duration (max) = 1.01/4096 = 0,24658203125

Frame Length = 10 bytes = 80 bits
➔ Frame duration (max) = 19.73ms

Averaging Factor = 20*log (Frame duration / 100ms)

Averaging Factor = -14.1dB