FUNCTIONAL DESCRIPTION OF THE CONTINETAL PASE SYSTEM

FCA WL/WS PASE System MY 2021 KeyFOB

WXFOB1 =434MHZ, WXFOB2 = 315MHZ

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General description.

WL/WS PASE system has the features described below:

Remote Control

Conversion of the RF from button press(es), Passive entry into requests:

- Unlock request: If the RFHUB receives two FOB unlock button presses, from the same FOB, within five seconds of each other, it sends: a driver door unlock request upon reception of the first press, and a all doors unlock request on the second.
- Lock request: Sends the lock request upon reception of a lock button press from the FOB.
- Power liftgate toggle request: If the RFHUB receives two FOB unlock button presses, from the same FOB, within five seconds of each other, it sends a power liftgate toggle request.
- Panic Toggle Request: Sends the panic toggle request upon reception of a lock button press from the FOB.
- Remote start request: If the RFHUB receives two FOB unlock button presses, from the same FOB, within five seconds of each other, it sends a lock request and then a remote start ON request.

Keyless Ignition

The Keyless Go system replaces the conventional key and ignition switch with a momentary button press and a wireless electronic key (FOBIK). When the operator presses the Go-Button the FOBIK is interrogated wirelessly. If the FOBIK is recognized as belonging to the vehicle and in the vehicle interior the system allows the ignition state of the vehicle to be manipulated by the operator between Off, Run, and Start ignition states.

The Following figure shows the system architecture:

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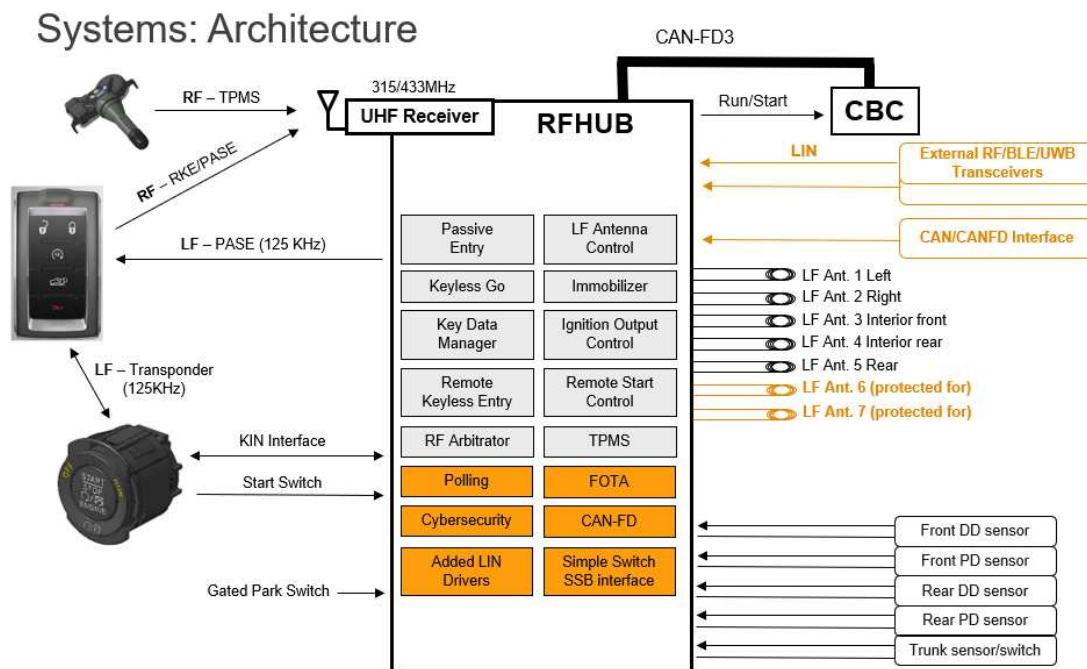
RKE (Remote Keyless Entry)

Remote Keyless Entry (RKE) telegrams are issued by a ID Device. When pressing one of the buttons, the ID Device transforms the state information about the pressed button (lock, unlock, panic…) into Remote Control Blocks (RCB). The RCB is modulated by an RF signal (315MHz or 433MHz) and sent to the PASE ECU.

The RCBs are received by an RF receiver on the PASE ECU which demodulates the RF signal. The packets then get transferred to the host processor which decodes the Manchester coded data, verifies the checksum, and checks if the telegram is addressed to the respective vehicle. The authentication function on the host decrypts the telegram data and transfers the button information to a function which transforms the information into lock, unlock, panic… commands which are in turn transferred to the body control module over CAN.

KeyFOB

The WL/WS Keyfob is a hand device that sends RF commands to the vehicle provided by the user at the time he wants, such as lock or unlock the vehicle, the remote start, etc. The device responses can be given in two operating frequencies:

- WXFOB1 433.92 MHz
- WXFOB2 315 MHz

At the same time, the KeyFOB it can receive signals of low frequency (125 kHz) to discern its location around the vehicle. Responding to unlock doors or open the trunk sensing the proximity of the user with KeyFOB.

Functions

The WL/WS Keyfob is part of the WL/WS PASE system and has the following functions:

- Transmit RKE commands requested by the User
- Receive and decode LF messages from the vehicle for PASE and Polling
- Provide to the vehicle RF response to PASE commands and Polling requests
- Provide Transponder functionality
- Measure its battery level and report it to the vehicle
- Provide visual feedback to the User when RKE commands are sent

WL/WS Keyfob is a TOKEN-based design. The NXP NCF29A1 TOKEN is a single-chip solution including a Microcontroller, an UHF Transmitter and a Transponder, all in the same package, this feature available in the NXP NCF29A1 TOKEN is enable.

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Block Diagram

WL/WS Keyfob follows the design shown in the picture below. The HW architecture is based on NXP recommendations to guarantee the best performance of the chipset and consists of the following stages:

- UHF Components
- 3D LF Front-end
- Buttons
- LED Driver
- Motion Sensor (feature not included in WL/WS)
- TOKEN IC (Microcontroller + UHF Transmitter)
- Power Supply

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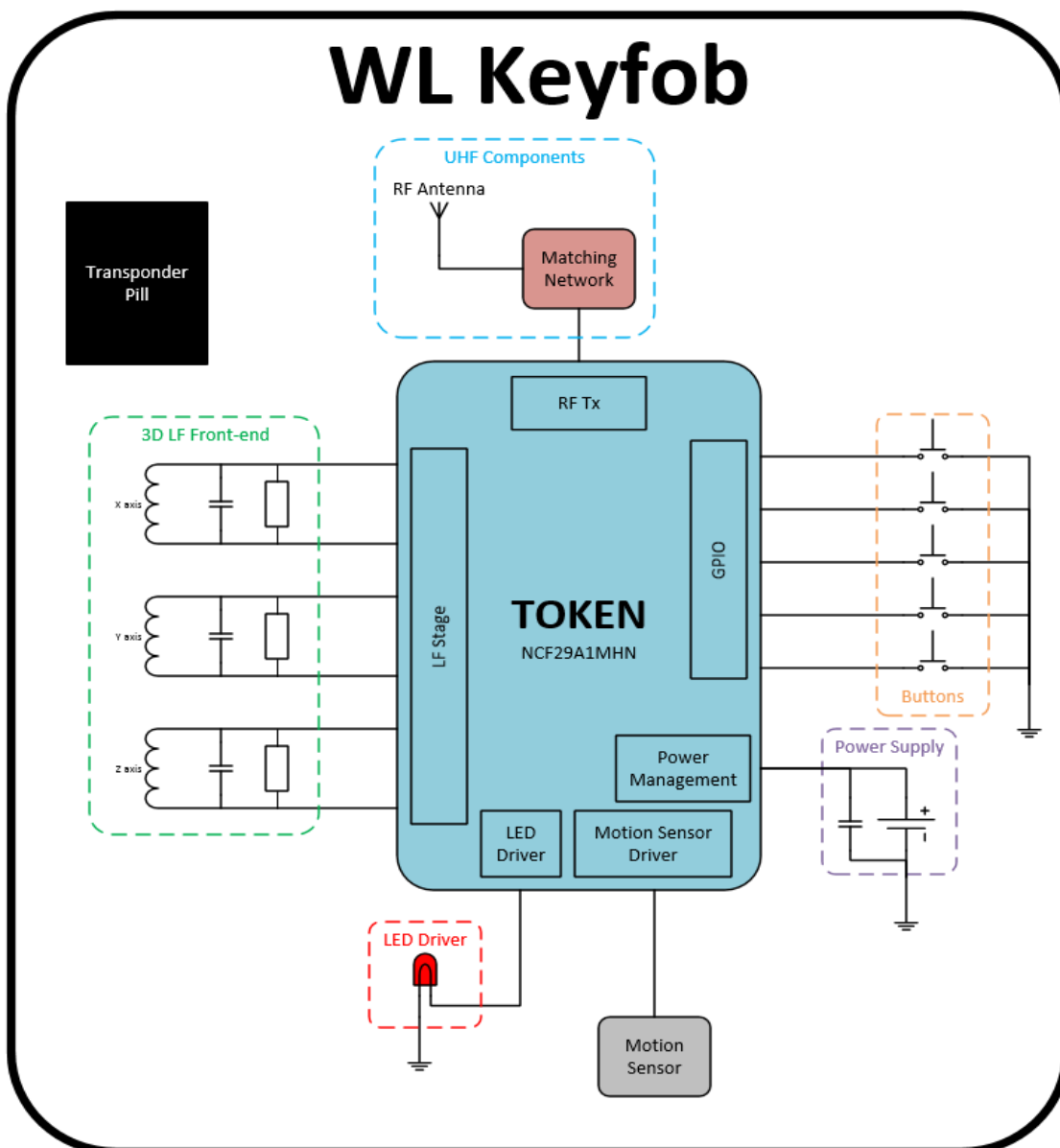
Variants

The variants of the device are differentiated by the distribution of buttons as well as the frequency of RF transmission.

WL Variant

433.92 MHz				
315 MHz				

WS Variant

433.92 MHz		

Components on board

Crystal Oscillator	27.6 MHz
Microcontroller + RF tx	433.92 MHz or 315MHz
3D coil (LF rx)	125 kHz

Technical Data

Operation Voltage	3V (battery coin CR2450)
RF frequency	433.92MHz or 315 MHz
Modulation	ASK and FSK
Max Bit rate	19.2 kbps
Max RF output power	10 dBm
Max current consumption	22 mA
Standby current consumption	0.0072 mA
Operating temp range	-20°C to + 70°C

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Warnings

For safe use, read the instructions carefully!

Battery:
CAUTION!
Risk of explosion, if the battery is replaced by an incorrect type.
Only use battery type CR2450 (3 V)
Batteries must be inserted into the Keyfob with correct polarity (+ and -).
Avoid extreme temperatures or extreme environmental conditions. Risk of explosion
Never dispose batteries to fire. Never try to open batteries. Risk of explosion
The battery is not ordinary waste, discard old batteries to your local recycling.
Never leave children unattended with the keyfob →choking hazard.
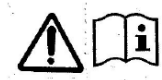
Serial product will contain the following additional information on label:

**Continental request to the customer (OEM) to place following statements
into the vehicle owners manual:**

Do not ingest battery, Chemical Burn Hazard.
*This product contains a coin / button cell battery. If the coin / button cell battery is swallowed,
it can cause severe internal burns in just 2 hours and can lead to death.*

Keep new and used batteries away from children.
If the battery compartment does not close securely, stop using the product and keep it away from children.
*If you think batteries might have been swallowed or placed inside any part of the body, seek immediate
medical attention.*

FCC/ISED Owner Manual statement of compliance.

NOTE: If **the device itself** is smaller than 8 cm x 10 cm, the statements of compliance may be included in the device
or vehicle owner/operator manual. However, if **the device itself** is larger than 8 cm x 10 cm, then it is required to
have *at least* the first paragraph above placed on the **device label or housing**.

*This device complies with Part 15 of the FCC Rules and with Industry Canada's licence-
exempt RSSs. Operation is subject to the following two conditions: (1) This device may not
cause harmful interference, and (2) This device must accept any interference received,
including interference that may cause undesired operation.*

*Cet appareil est conforme aux CNR d'Industrie Canada a applicables aux appareils radio
exempts de licence. L'exploitation est autorisée à condition que l'appareil ne produise pas de
brouillage préjudiciable et qu'il accepte tout brouillage, même celui susceptible d'en
compromettre le fonctionnement.*

*Note: Changes or modifications not expressly approved by the party responsible for
compliance could void the user's authority to operate the equipment.*

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TAIWAN:

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