



## Extract from the Engineering Component Specification (ES) PATs XCVR

### 1 General

The Passive Anti-Theft System (PATs) is a vehicle anti-theft system that uses Radio Frequency Identification (RFID) technology to provide drive-away theft protection. The Transceiver Module, in conjunction with the other system components, enables or disables vital engine electronics through the engine management system during vehicle engine start. The Transceiver Module interfaces to the PATs Controller (which interfaces to the vehicle electrical and starting systems, the SCP communications or ISO 9141 communication bus and the IP cluster theft indicator) The PATs Controller receives power from the vehicle electrical system, sends a control signal to the Transceiver Module, receives identification data from the Transceiver Module, communicates Vehicle Security Status over the SCP communications or ISO 9141 communication bus and controls the starter interrupt relay and the IP cluster theft indicator.

#### 1.1 Scope

This specification describes the quality and test requirements for the CPATs based PATs (Passive Anti Theft System) Transceiver module, hereinafter referred to as the Transceiver module, defined on the respective print.

This engineering specification describes the minimum requirements for CPATs Transceiver modules. This specification is a supplement to the released transceiver drawing, as well as subcomponent drawings. All requirements herein must be met in addition to the requirements specified on the part drawings. Minimum measures necessary for demonstrating compliance to these requirements are given in each section.

The engineering tests, sample sizes and test frequencies stipulated in this test specification reflect the minimum requirements established to provide a regular evaluation of conformance to design intent. The test program is intended as a supplement to normal material and dimensional inspection, and to statistical process control, and should in no way adversely influence other quality / inspection operations.

The specifications represent the present manufacturing and testing capability of the supplier. The supplier shall continue efforts to reduce variability of the manufacturing process, and adjust mean levels of various test, as required. Control Plan approval by the Component Engineering & Manufacturing Operations (CEMO) and by other activities is a prerequisite for initial sample review and approval. The manufacturing source will prepare, submit and retain the original approved Control Plan and any later revisions and provide a copy to the PD design responsible.

## 1.2 Application

The Transceiver module contains a broadband LC tank circuit, coil driver transmitter, receiver amplifier, FSK demodulator, SCI (Serial Communications Interface) byte packer and a +5.0 VDC power supply.

The Transceiver module performs four basic operations:

- provide magnetic energy to inductively charge the transponder
- transmit data to transponder
- amplify, demodulate and pack the transponder code data into bytes
- transmit the transponder code data bytes to the PATS Controller via an SCI interface

The Transceiver module has a four wire harness and connector that matches to the vehicle harness. The vehicle harness then routes the four wire interface to the PATS controller connector.

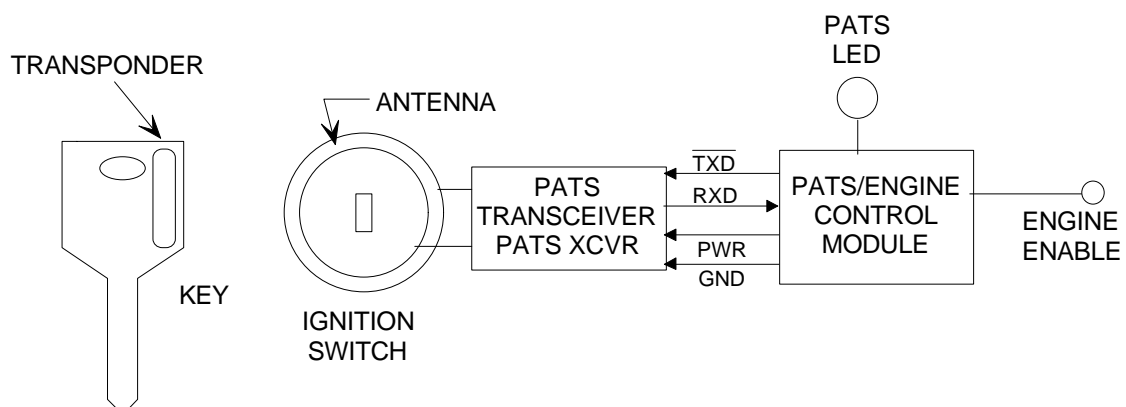


Figure 1: Block diagram of immobiliser



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### 1.3 Pin Out Description

PIN #	PIN NAME	DESCRIPTION	INPUT/OUTPUT
1	Transceiver Power	Buffered power source for the Transceiver	INPUT
2	Transceiver Ground	Ground for transceiver	INPUT
3	Transmit Signal	Transmit Control	INPUT
4	Receive Data	Receive SCI data from Transceiver	OUTPUT

### **98XX-15607-A**

The PATS 98 transceiver is going to be replaced with an identical successor that differs only in the printed circuit board size and layout. The board is smaller and rectangular instead of L-shaped. The redesign was done to get a common board design for all PATS transceivers throughout the different carlines. The Bill of Material is identical. Below are the pictures of the three variants, that are identical in all electrical- and RF respects except of the mechanical outline.



### **VP2W9F-15607-A**

The Jaguar transceiver is identical to the PATS 98 „VP“ derivate except of a small change to the resonance circuit. In order to compensate the lesser metal content in the coil compared to PATS 98 due to the plastic lock casting, the capacitor, that forms together with the coil the L-C-circuit, is decreased by 20% and a damping resistor of 47kOhm is added across the L-C to reduce the Q.

