TDB003 PROXIMITY SMART KEY SYSTEM TESTER

OPERATING MANUAL



The Diagnostic BOX .com

CONTENTS

CONTENTS	
INTRODUCTION	PAGE 3
SMART/PROXIMITY SYSTEM OPERATION	PAGE 4
GENERAL OPERATION	PAGE 6
TRANSPONDER KEY TESTING	PAGE 9
REMOTE CONTROL (RF) TESTING	PAGE 11
REMOTE CONTROL (IR) TESTING	PAGE 12
TRANSPONDER COIL ANTENNA TESTING	PAGE 13
PROXIMITY/SMART KEY SYSTEM FULL TESTING	PAGE 14
PROXIMITY/SMART KEY SYSTEM SCAN MODE	PAGE 16
OSCILLOSCOPE MODE	PAGE 17
SETTINGS INFORMATION	PAGE 18
VEHICLE PROXIMITY TRANSMITTER LOCATIONS	PAGE 19
SPECIFICATION	PAGE 55
CONTACT INFORMATION	PAGE 56
DECLARATION OF CONFORMITY	PAGE 57

INTRODUCTION

The TDB003 Proximity/Smart Key Systems Tester offers a simple and cost effective way to diagnose and test problems relating to the vehicle immobiliser system, which is made up of a number of components.

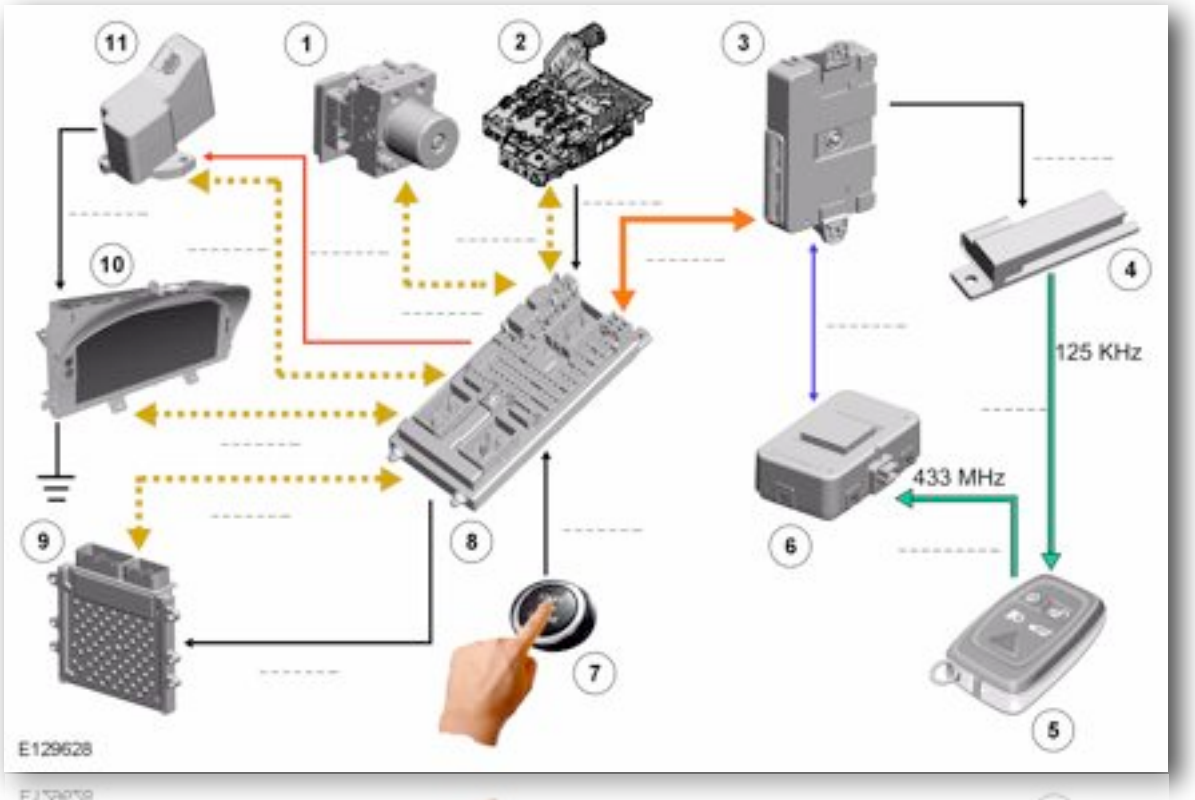
The TDB003 enables the transponder key, remote control operation, external vehicle antenna transmitters, internal vehicle antenna transmitters and transponder antenna to be fully tested to ensure that all parts of the system are working.

The TDB003 can display signal levels, frequency measurements, signal waveforms and a number of other useful features.

Features include :-

- Standard transponder key test
- Infra Red (IR) remote control test
- Radio Frequency (RF) remote control test
- Proximity/Smart key test
- Proximity/Smart vehicle antenna transmitter test
- Proximity/Smart key signal amplitude level indication
- Radio Frequency (RF) remote control amplitude level indication
- Transponder frequency indication
- Oscilloscope waveform function (FAST and SLOW)
- Proximity/Smart key system scan modes
- Audible signal indication
- Transponder vehicle antenna test

SMART/PROXIMITY SYSTEM OPERATION



SYSTEM COMPONENTS

The Proximity Smart Key systems, all work in a similar way. The system compromise's of a number of components, some are linked to other systems to enhance the security of the whole vehicle.

1. ABS Anti Braking System Module ECU.
2. TCM Traction Control Module ECU.
3. KVM Keyless Vehicle Module ECU.
4. Low Frequency Transmitter (125kHz/134kHz) Doors, Boot/Trunk and Internal.
5. Smart/Proximity Key.
6. RF Radio Frequency Receiver Module ECU (315MHz/433MHz).
7. Engine Start/Stop button.
8. Security System Module ECU.
9. ECM Engine Control Module ECU.
10. Instrument Cluster Module.
11. Steering Control Module ECU.

SMART/PROXIMITY SYSTEM OPERATION

OPERATION

The Smart/Proximity key receives low frequency signals on 125kHz or 134kHz frequency.

The key has a transponder, which when you operate the vehicle door by either pulling the handle or pressing the button (This varies on vehicles and models) the transponder is energised through a 125kHz or 134kHz signal. The key then responds to the vehicle on a higher RF frequency 433MHz or 315MHz sending a security message.

If the vehicle and the key communicate with the correct security messages, then the vehicle will open the door and allow the starting of the vehicle using the start/stop button.

There are a number of sensors transmitting the 125KHz/134KHz signal around the vehicle, normally in the doors, boot/trunk, external bumper, centre console, rear seats, glove box area etc, depending on the make and model.

GENERAL OPERATION

INSERTING/REPLACING BATTERIES



SLIDE COVER TO EXPOSE BATTERY COMPARTMENT.



INSERT 4 AAA BATTERIES.

NORMAL ALKALINE OR RECHARGEABLE CAN BE USED.



SLIDE COVER BACK.

GENERAL OPERATION

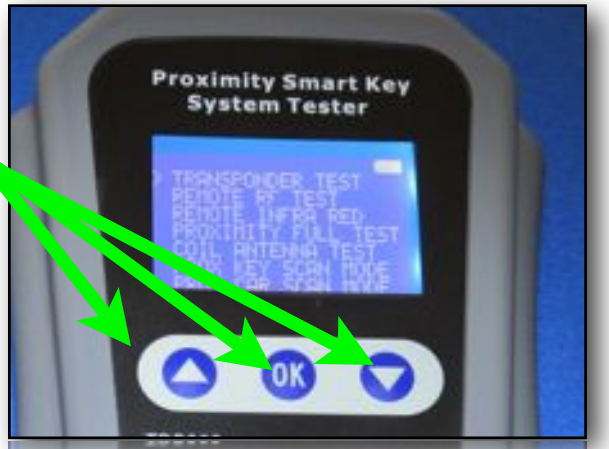
SWITCHING ON/OFF AND MENU NAVIGATION

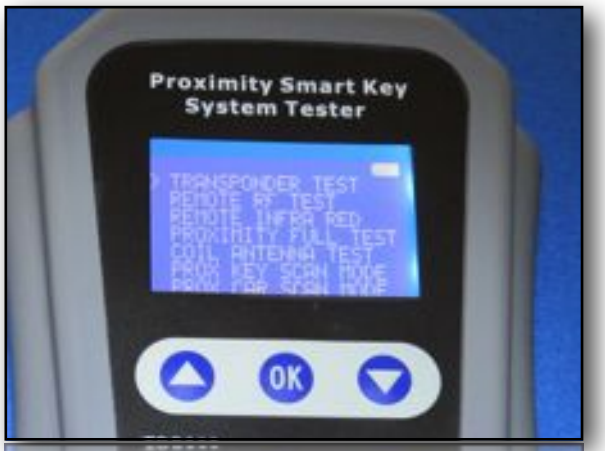


PRESS THE ON BUTTON
TO TURN ON.

PRESS THE ON BUTTON FOR 2
SECONDS TO TURN OFF.

UP, DOWN AND OK BUTTONS TO
NAVIGATE THE MENU
SELECTIONS.





MAIN MENU
USE THE UP AND DOWN
BUTTONS TO SELECT FUNCTION
AND PRESS THE OK TO SELECT.

TO RETURN TO MAIN MENU
PRESS THE OK BUTTON AGAIN.

GENERAL OPERATION

ANTENNA RECEIVING LOCATIONS



TRANSPONDER KEY TESTING



SELECT THE TRANSPONDER TEST FROM THE MAIN MENU.

PLACE THE KEY IN THE KEY SLOT OR ON TOP OF THE KEY SLOT.

SOME REMOTE KEYS WILL NEED TO BE PLACED HORIZONTALLY, VERTICALLY OR INSIDE THE KEY SLOT TO LOCATE THE TRANSPONDER.





THE TDB003 WILL INDICATE THE TRANSPONDER HAS BEEN DETECTED AND THE FREQUENCY THE TRANSPONDER OPERATES ON.

TRANSPONDER KEY TESTING

TRANSPONDER DETECTION CAPABILITY TABLE		
PHILIPS PCF7935	MEGAMOS 8E	TEXAS 4D 80-BIT
PHILIPS HI-TAG2, HI-TAG2 EXTENDED, HI-TAG2 PRO	TEMIC 11/12/14	TEXAS 128-BIT
PHILIPS HI-TAG3	TEMIC 8C	TEXAS 4D (4E) CHRYSLER
MEGAMOS 13	TEXAS 4C	CN1 (4C)
MEGAMOS 48, MEGAMOS 48 CAN	TEXAS 4D 40-BIT	CN2 (4D)
JET C1 (4C)	JMA TPX1 (4C)	KEYLINE TK24 (4C)
JET C2 (4D)	JMA TPX2 (4D)	KEYLINE TK40 (46)
JET C3 (46)	JMA TPX4 (46)	KEYLINE TK60 (46)
SILCA EH3 (4C/4D)		KEYLINE TK100 (4C/ 4D/46)

REMOTE CONTROL RADIO FREQUENCY (RF) TESTING



THE TDB003 WILL DISPLAY THE FREQUENCY OF THE REMOTE CONTROL AND ALSO THE SIGNAL LEVEL ON THE BAR GRAPH.

SELECT THE REMOTE RF TEST FROM THE MAIN MENU.

PLACE THE REMOTE KEY CLOSE TO THE BASE OF THE TDB003 AND PRESS EACH OF THE BUTTONS TO TEST.



SEE PAGE 8 FOR TDB003 RF ANTENNA LOCATION.

REMOTE CONTROL INFRA RED (IR) TESTING



SELECT THE REMOTE INFRA RED FROM THE MAIN MENU.

POINT THE REMOTE AT THE IR RECEIVER AND PRESS EACH BUTTON ON THE REMOTE CONTROL.

THE TDB003 WILL DISPLAY INFRA RED IF A SIGNAL IS RECEIVED.

SEE PAGE 6 FOR IR RECEIVER LOCATION.



TRANSPONDER COIL ANTENNA TESTING



SELECT THE COIL ANTENNA TEST FROM THE MAIN MENU.

HOLD THE CENTRE OF THE TDB003 CLOSE TO THE IGNITION, AND INSERT THE TRANSPONDER KEY AND SWITCH IGNITION ON.

THE TDB003 WILL INDICATE COMMUNICATION BETWEEN THE CAR AND THE KEY BY A SERIES OF BLEEPS.

IMPORTANT

NOTE 1 : ON SOME VEHICLE SUCH AS FORD AND MAZDA THE IGNITION ANTENNA WILL ONLY TRANSMIT ONCE WHEN THE KEY IS TURNED. YOU MUST REMOVE THE KEY AND WAIT FOR 30 SECONDS BEFORE IT WILL TRANSMIT AGAIN BY TURNING THE KEY.

NOTE 2 : THE PICK FOR THE ANTENNA IS THE TRANSPONDER COIL IN THE CENTRE OF THE TESTER. IF YOU ARE UNABLE TO RECEIVE A SIGNAL THEN TURN THE TESTER SO IT IS FACING THE ANTENNA, THE BACK OF THE TESTER FACING YOU.

PROXIMITY/SMART KEY SYSTEM FULL TEST



PLACE THE TDB003 VEHICLE TRANSMITTER ANTENNA CLOSE TO THE PROXIMITY TRANSMITTER ON THE VEHICLE.

SELECT THE PROXIMITY FULL TEST FROM THE MAIN MENU.

HOLD THE PROXIMITY REMOTE AT THE BASE OF THE UNIT.

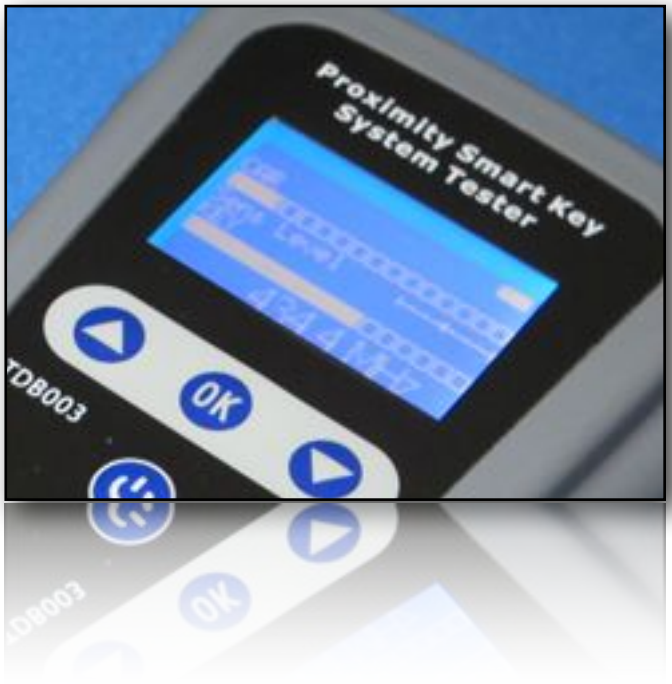


OPERATE THE PROXIMITY SYSTEM BY TOUCHING THE SENSOR, BUTTON OR OPENING THE DOOR.

THE TDB003 WILL GIVE A VISUAL AND AUDIBLE SIGNAL TO INDICATE THE SIGNAL LEVEL OF THE VEHICLE TRANSMITTER AND THE PROXIMITY REMOTE KEY.



PROXIMITY/SMART KEY SYSTEM FULL TEST



THE TDB003 WILL ALSO DISPLAY THE FREQUENCY OF THE PROXIMITY REMOTE SIGNAL.

IF THE PROXIMITY SIGNAL IS DIFFICULT TO READ, ADJUST THE SENSITIVITY USING THE UP AND DOWN BUTTONS.

PROXIMITY/SMART KEY SYSTEM SCAN MODES



SELECT PROX KEY SCAN MODE FROM THE MAIN MENU.

THE TDB003 WILL DISPLAY A ROLLING SIGNAL WAVEFORM TO SHOW THE KEY SIGNAL ONLY.

USE THE UP AND DOWN BUTTONS TO ADJUST THE SENSITIVITY.



SELECT PROX FULL SCAN MODE FROM THE MAIN MENU.

THE TDB003 WILL DISPLAY A ROLLING SIGNAL WAVEFORM TO SHOW THE KEY AND CAR SIGNALS.

USE THE UP AND DOWN BUTTONS TO ADJUST THE SENSITIVITY.



SELECT PROX CAR SCAN MODE FROM THE MAIN MENU.

THE TDB003 WILL DISPLAY A ROLLING SIGNAL WAVEFORM TO SHOW THE CAR SIGNAL ONLY.

USE THE UP AND DOWN BUTTONS TO ADJUST THE SENSITIVITY.

OSCILLOSCOPE MODE



IN OSCILLOSCOPE MODE THE SIGNAL LEVEL OF THE SMART/ PROXIMITY KEY CAN BE VIEWED AND COMPARED.

THERE ARE TWO OSCILLOSCOPE MODES, SLOW AND FAST FOR THE DIFFERENT FREQUENCY SMART KEYS USED.

THE MEASUREMENT SENSITIVITY CAN BE ADJUSTED USING THE UP AND DOWN BUTTONS.



SETTINGS INFORMATION



THE SETTINGS OPTIONS CAN BE SELECTED BY SELECTING SETTINGS FROM THE MAIN MENU.

SOUNDER CONTROL ALLOWS YOU TO SELECT EITHER :-

- PROXIMITY/SMART KEY ON
- VEHICLE PROXIMITY SENSOR ON
- OFF

NOTE : YOU CAN ONLY HAVE ONE SELECTED, AND NOT BOTH.



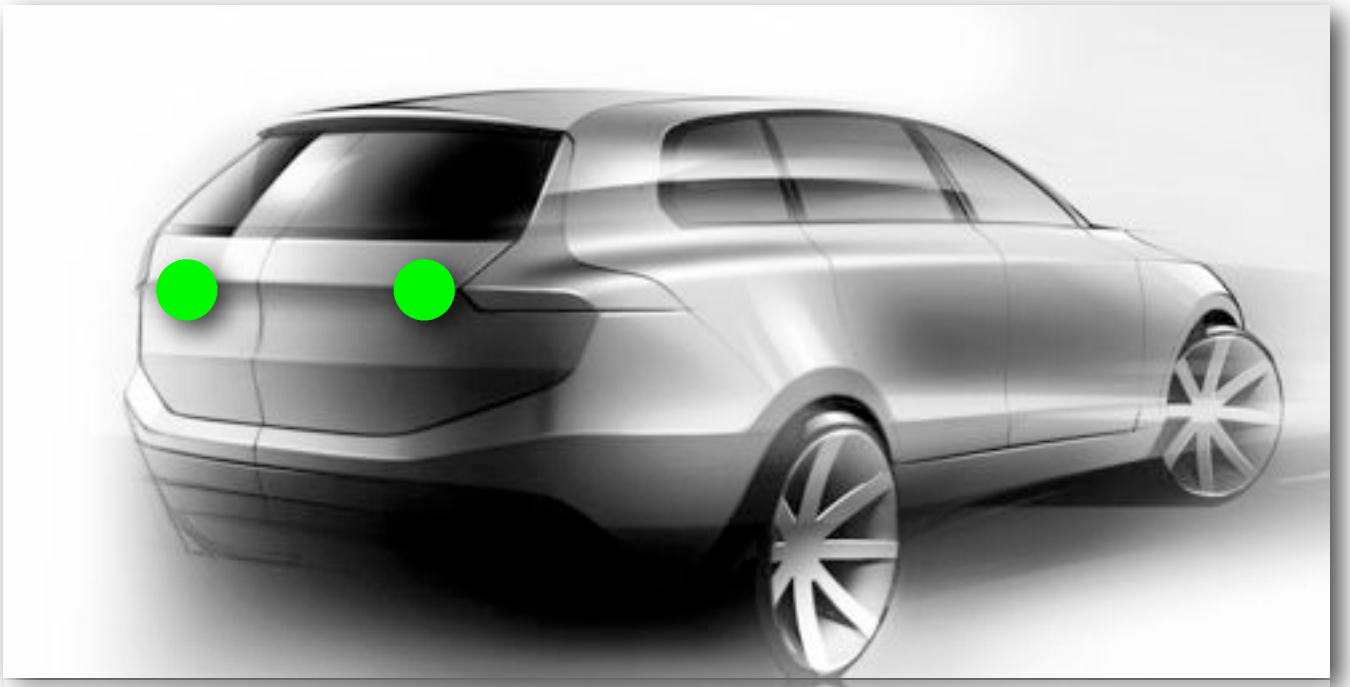


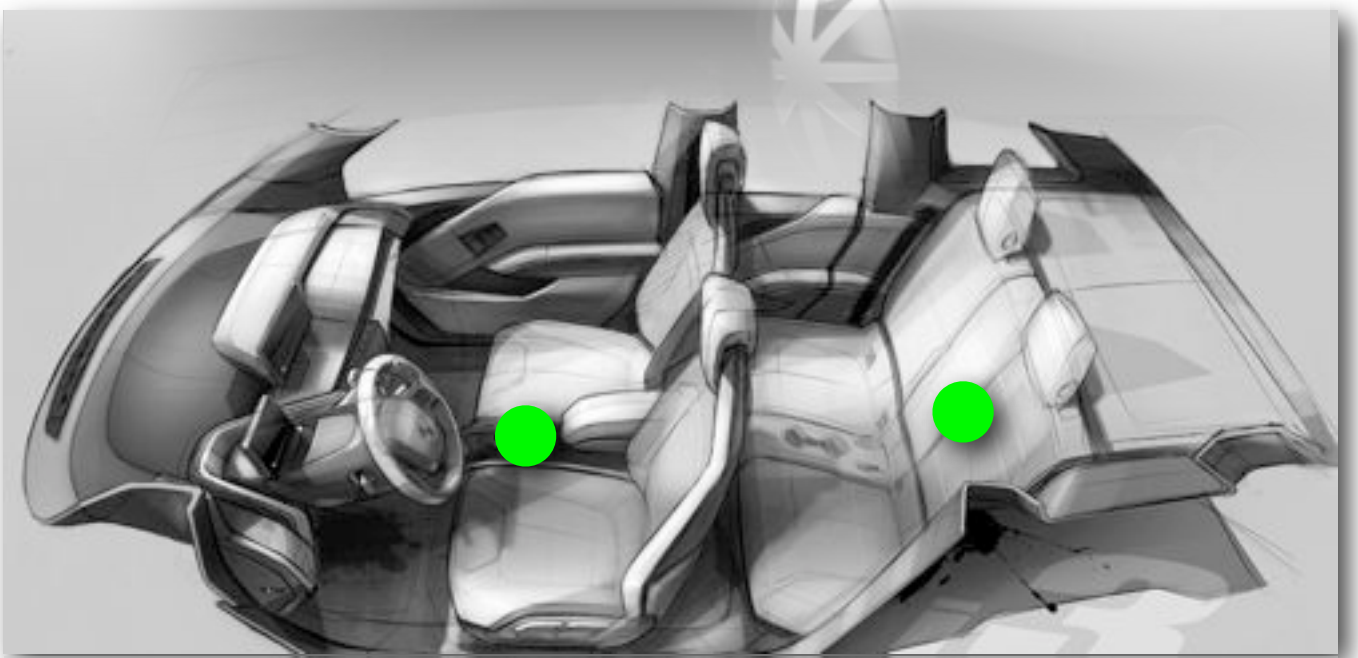
PROX SENSITIVITY ENABLES YOU TO INCREASE THE PICK UP OF THE PROXIMITY SENSOR.

NOTE : ON SOME MODELS SUCH AS CHRYSLER THE SIGNAL FROM THE SENSORS ARE MUCH SMALLER, ENABLE HIGH SETTING TO RECEIVE A BETTER SIGNAL.

PROXIMITY TRANSMITTER LOCATION

AUDI KEYLESS ENTRY SYSTEM
A4
Q7

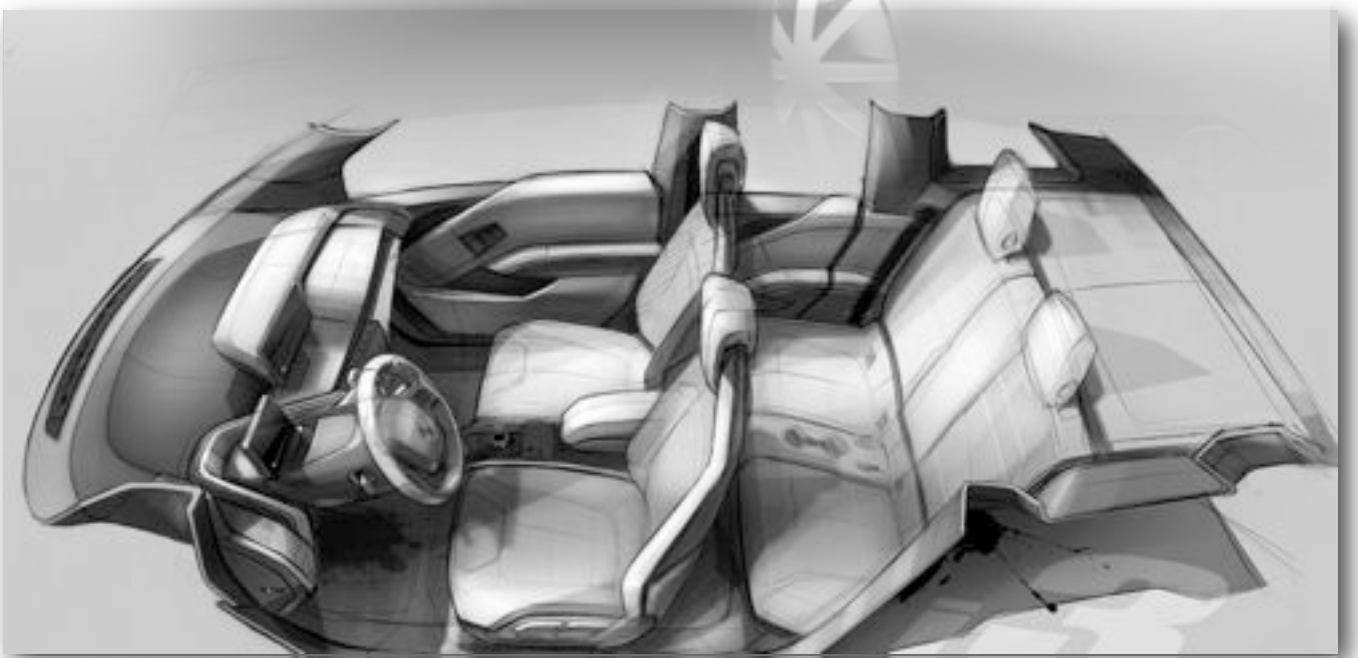




PROXIMITY TRANSMITTER LOCATION

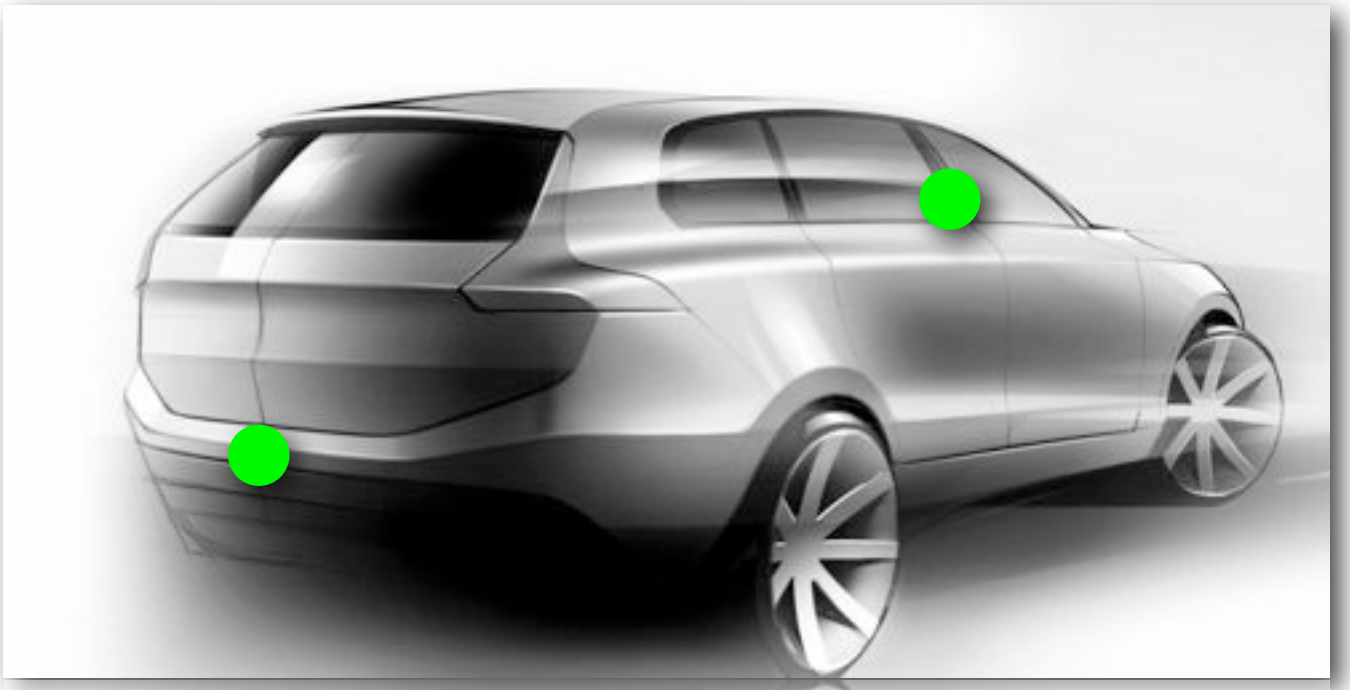
CHEVROLET KEYLESS ENTRY SYSTEM
CRUZE

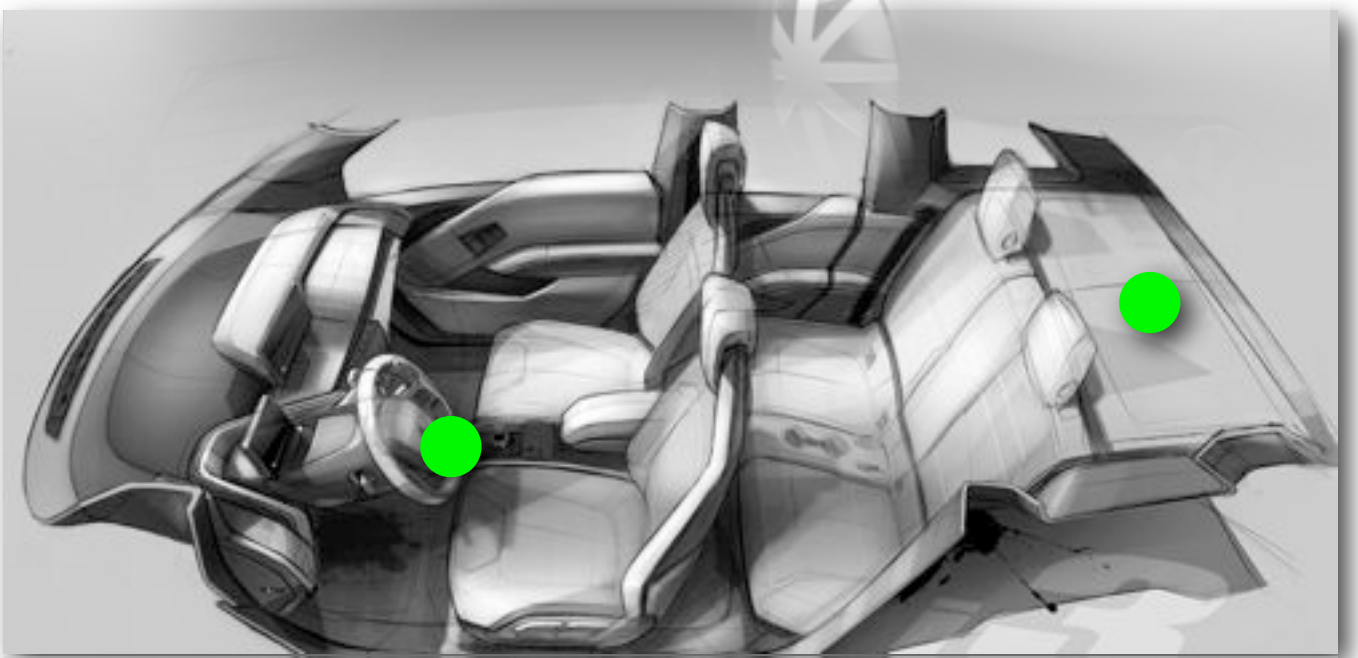




PROXIMITY TRANSMITTER LOCATION

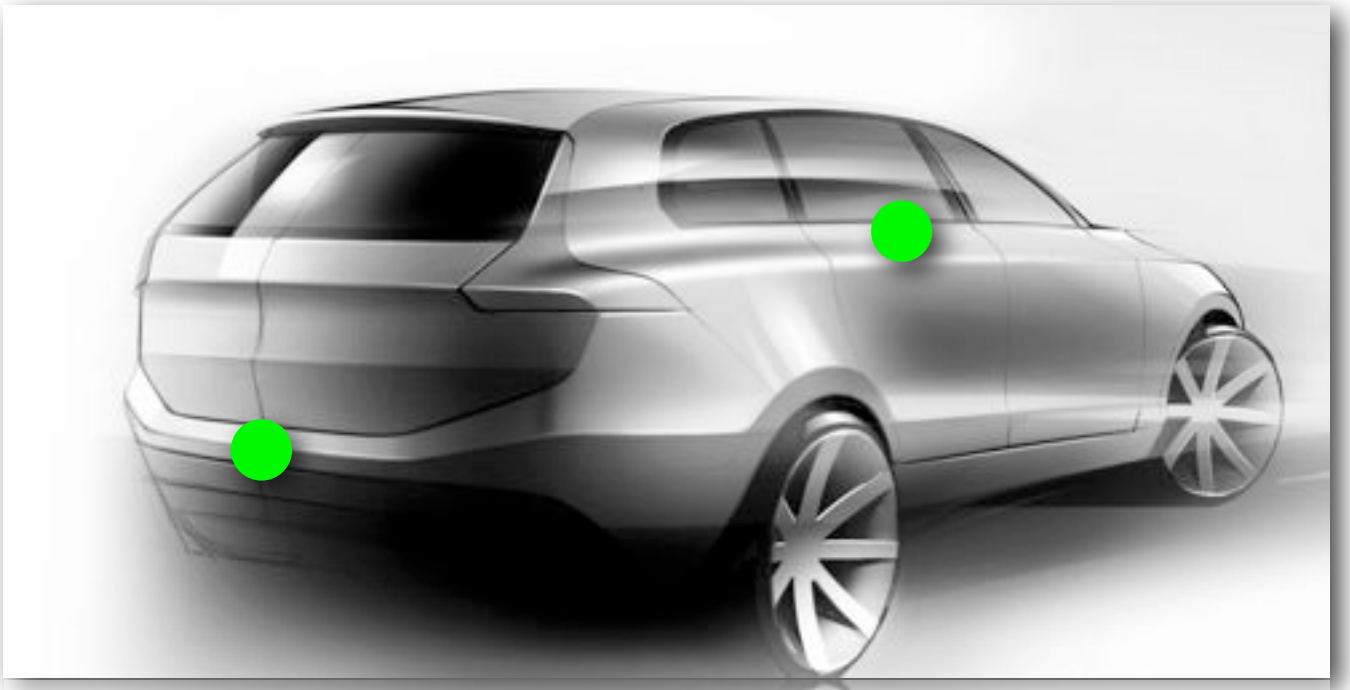
CHRYSLER KEYLESS ENTRY SYSTEM
300

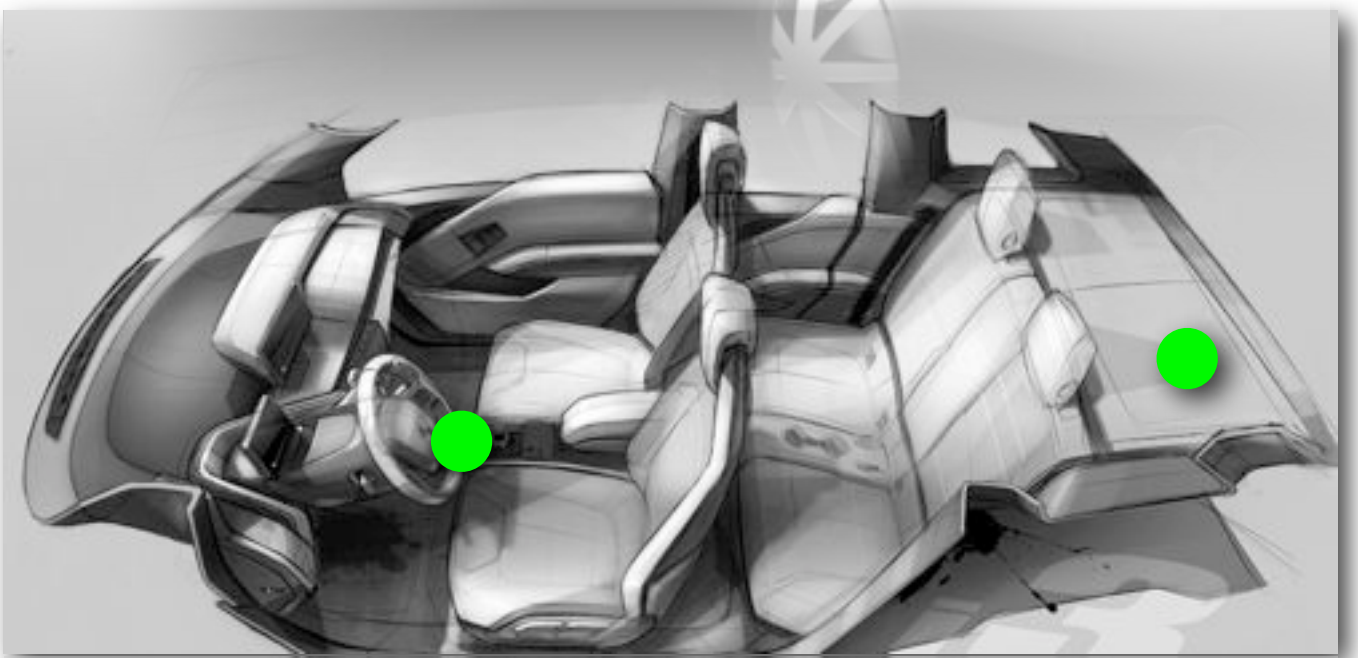




PROXIMITY TRANSMITTER LOCATION

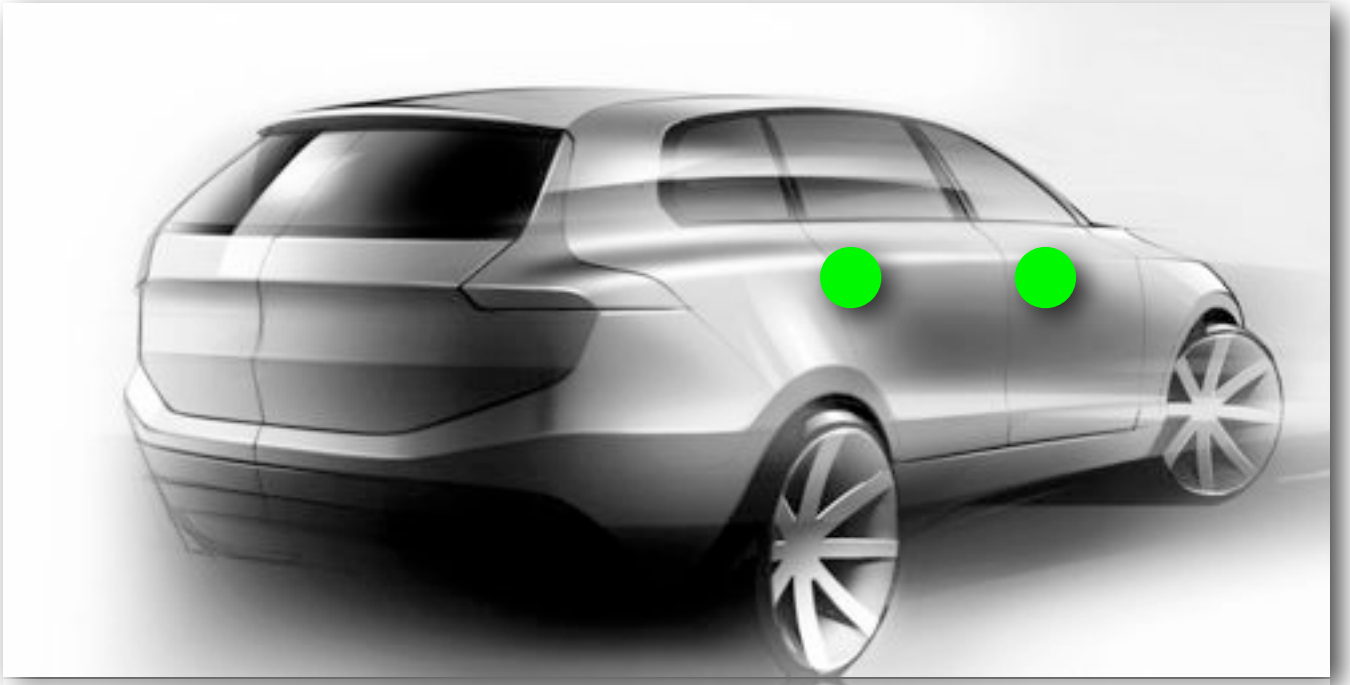
DODGE KEYLESS ENTRY SYSTEM
CHARGER
DURANGO

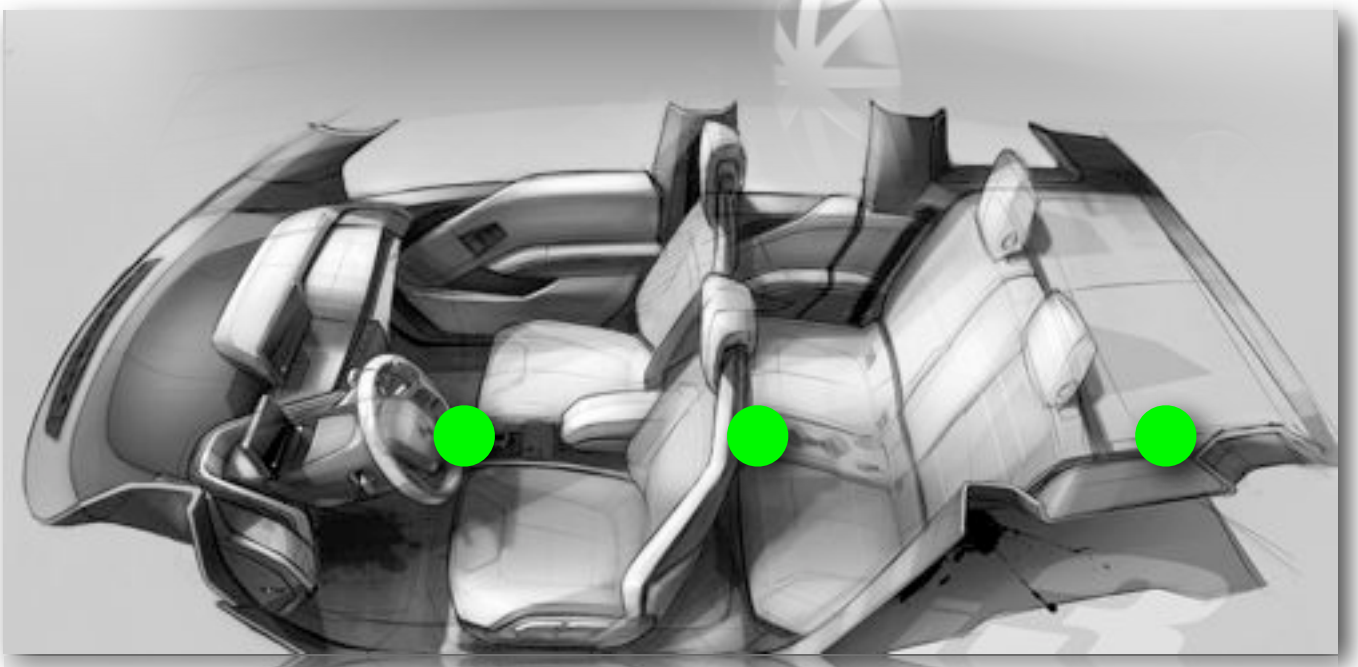




PROXIMITY TRANSMITTER LOCATION

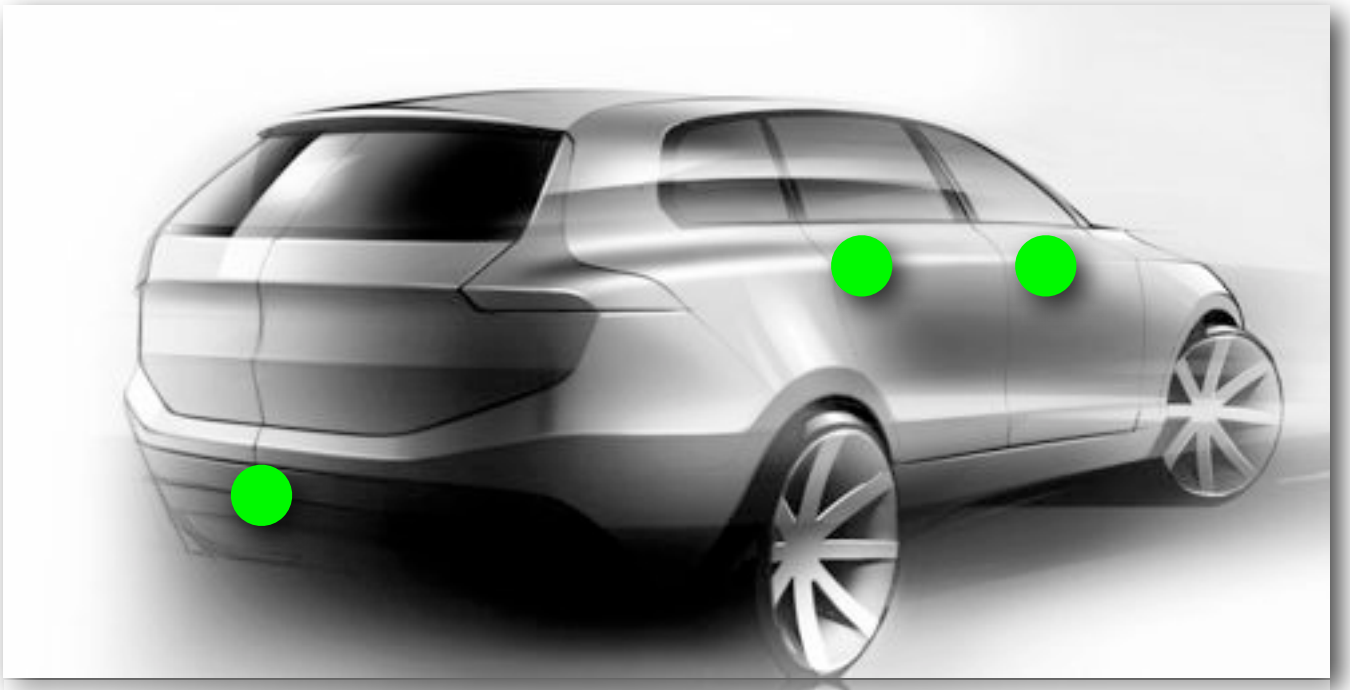
FORD PROXIMITY SYSTEM
FIESTA
FOCUS
MONDEO

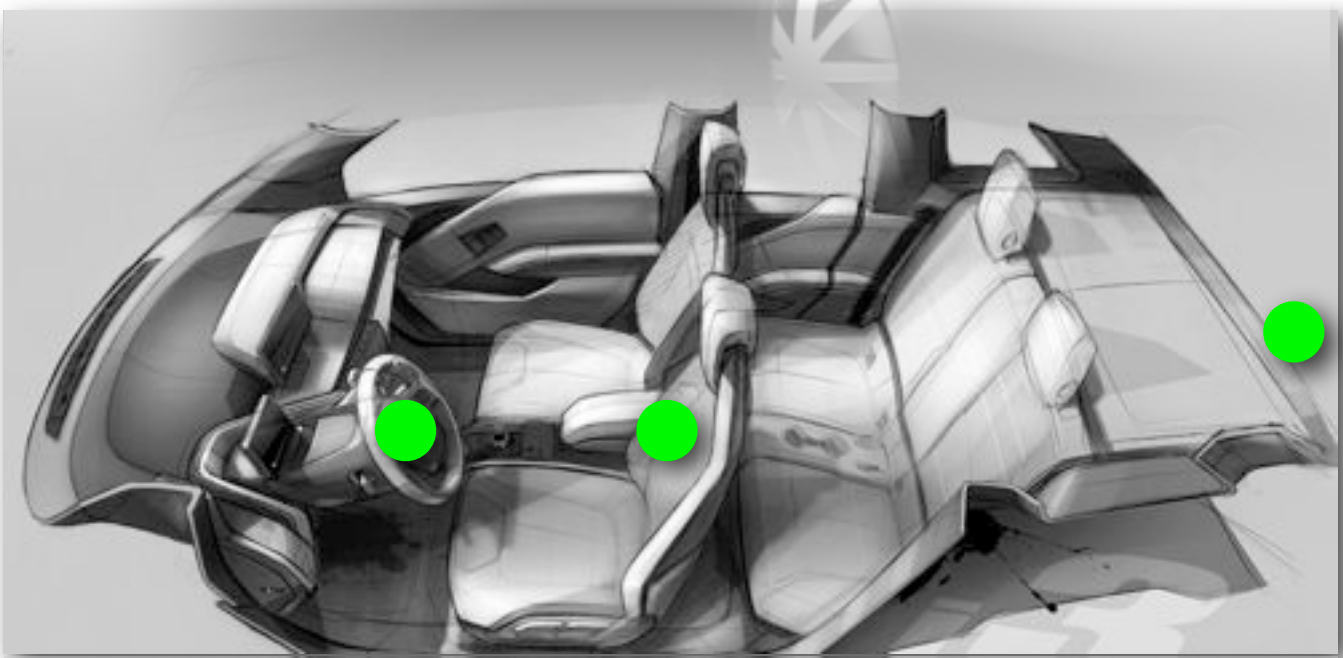




PROXIMITY TRANSMITTER LOCATION

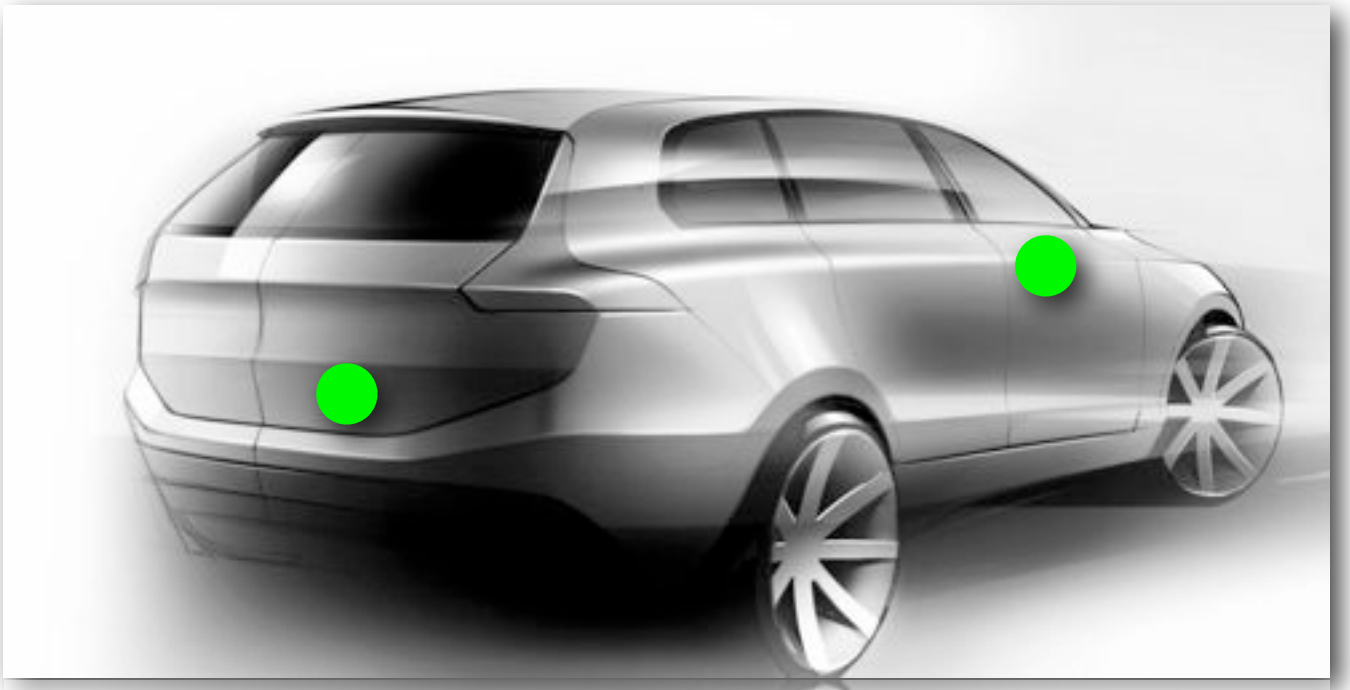
HYUNDAI KEYLESS ENTRY SYSTEM
SONATA
IX35

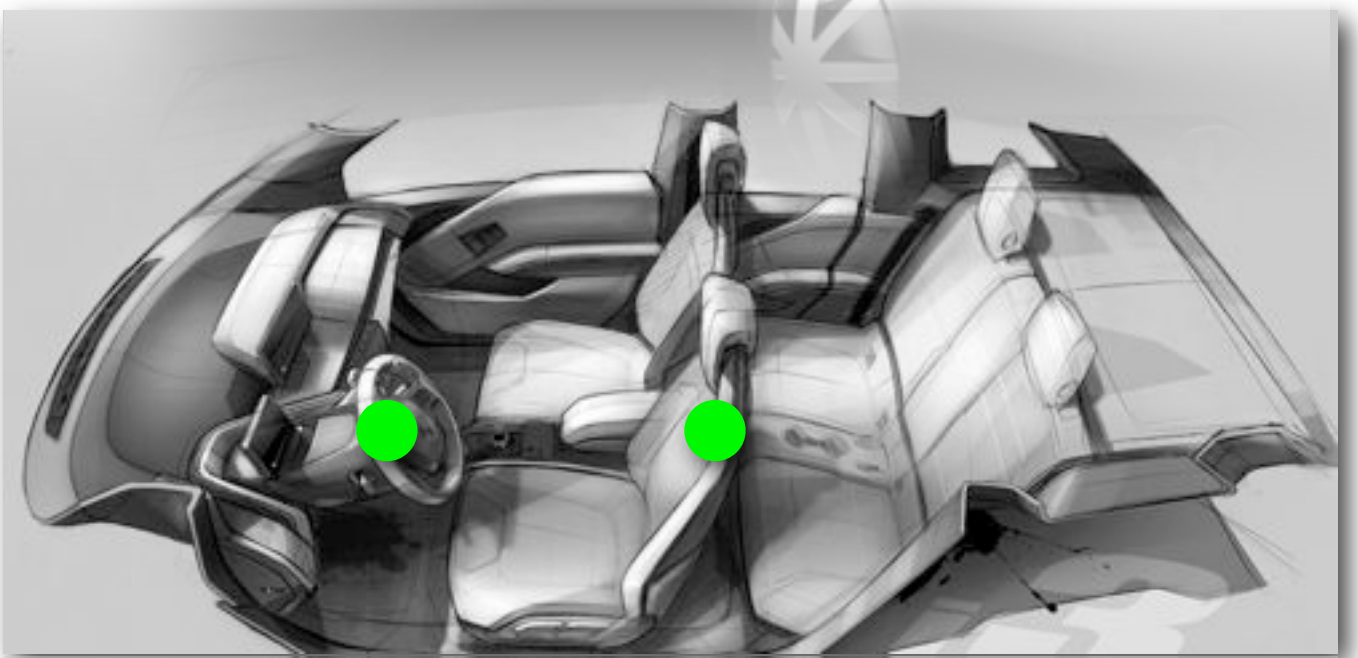




PROXIMITY TRANSMITTER LOCATION

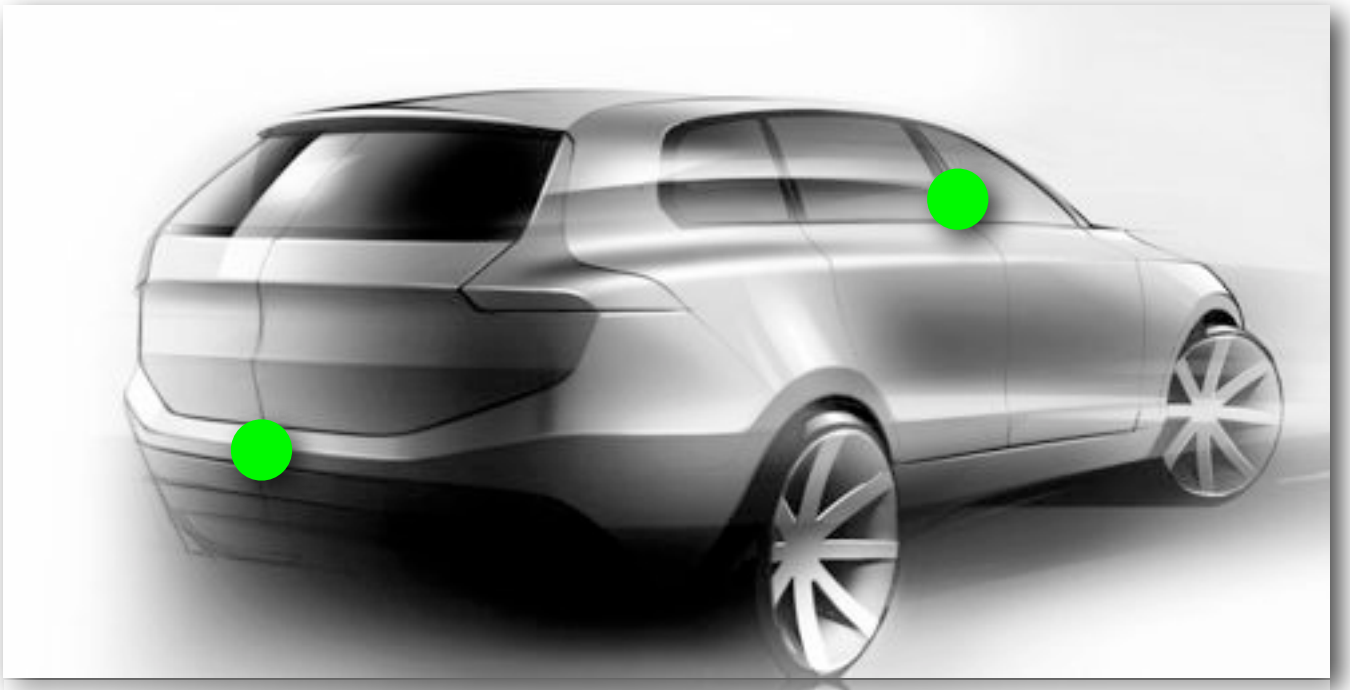
INFINITI KEYLESS ENTRY SYSTEM
FX35

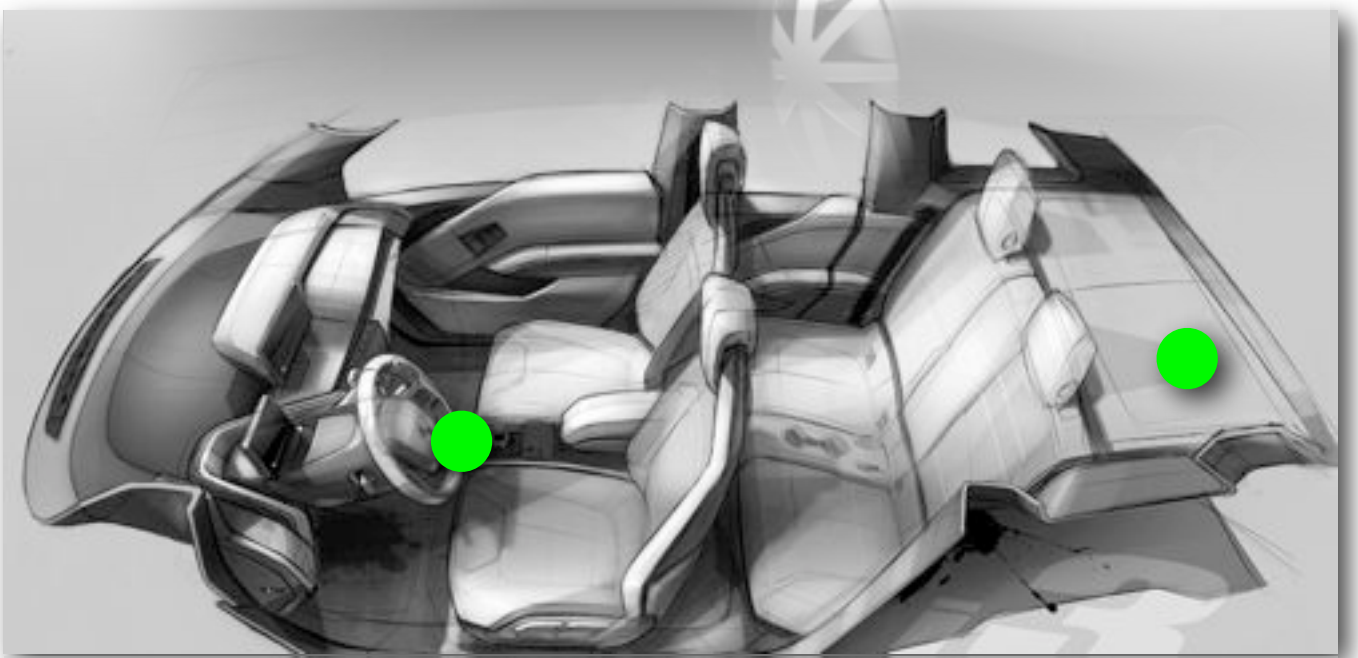




PROXIMITY TRANSMITTER LOCATION

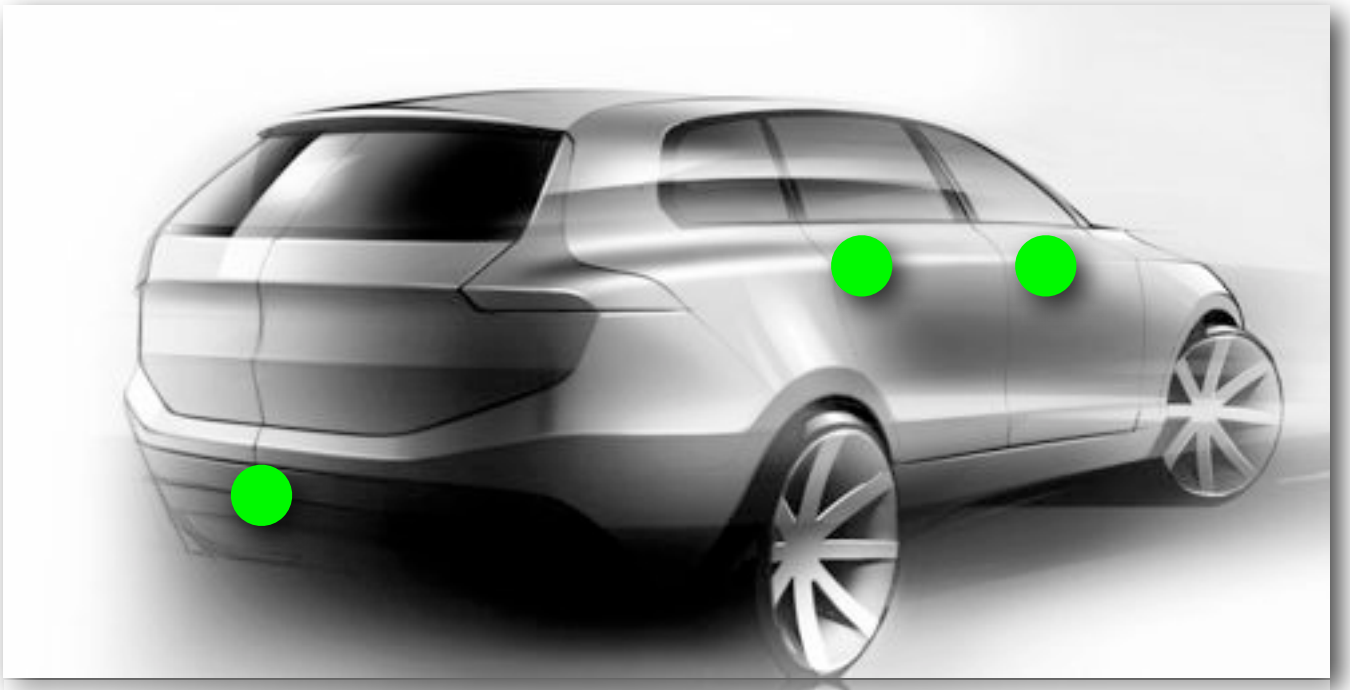
JEEP KEYLESS ENTRY SYSTEM
GRAND CHEROKEE

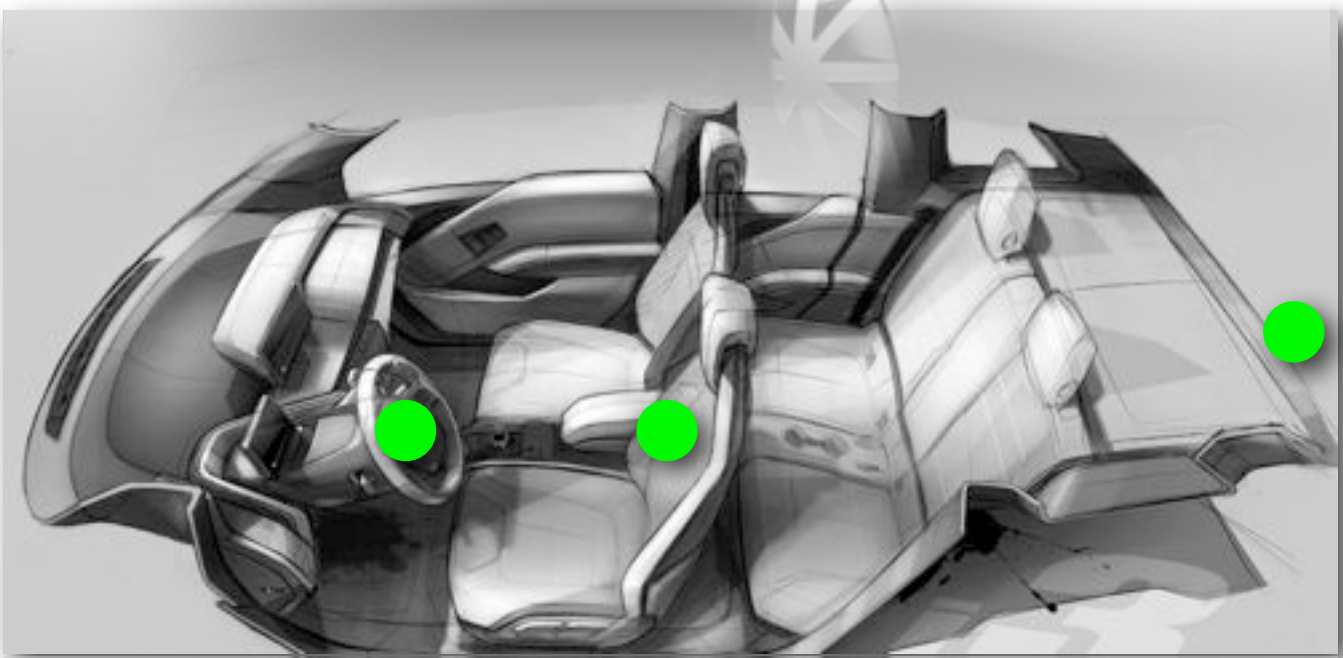




PROXIMITY TRANSMITTER LOCATION

KIA KEYLESS ENTRY SYSTEM
CEE'D

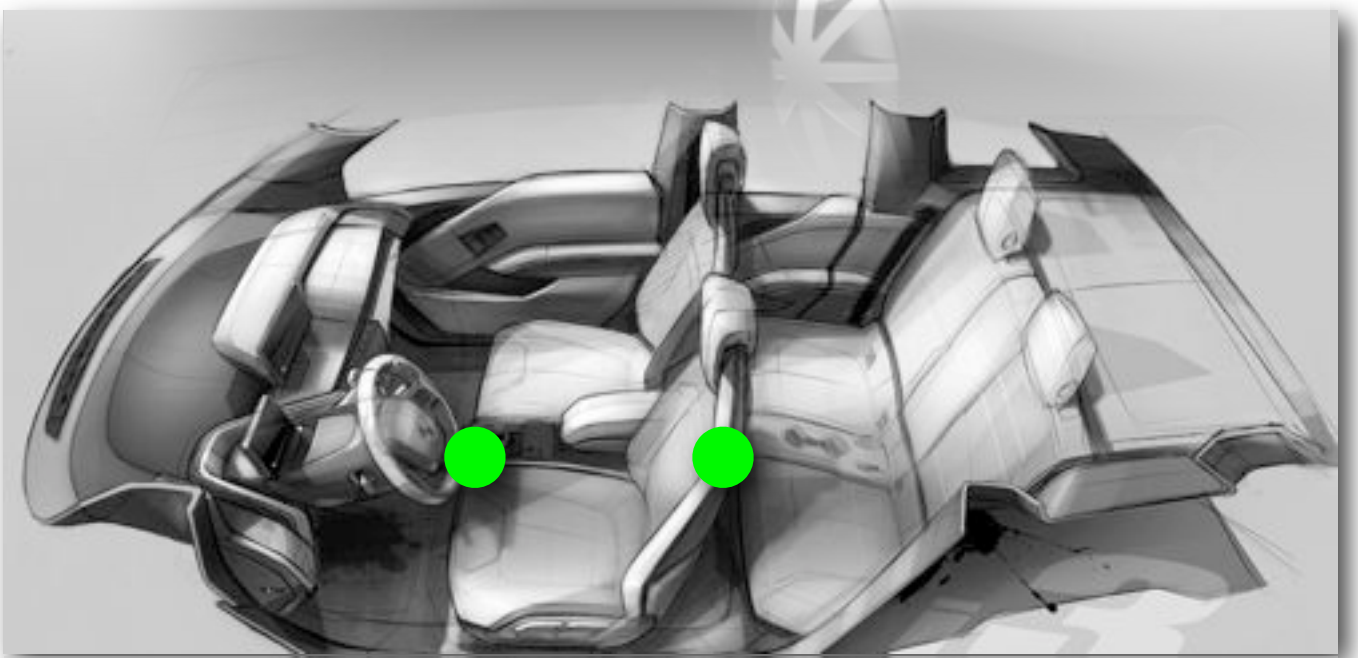




PROXIMITY TRANSMITTER LOCATION

LEXUS SMART ACCESS
CT200H

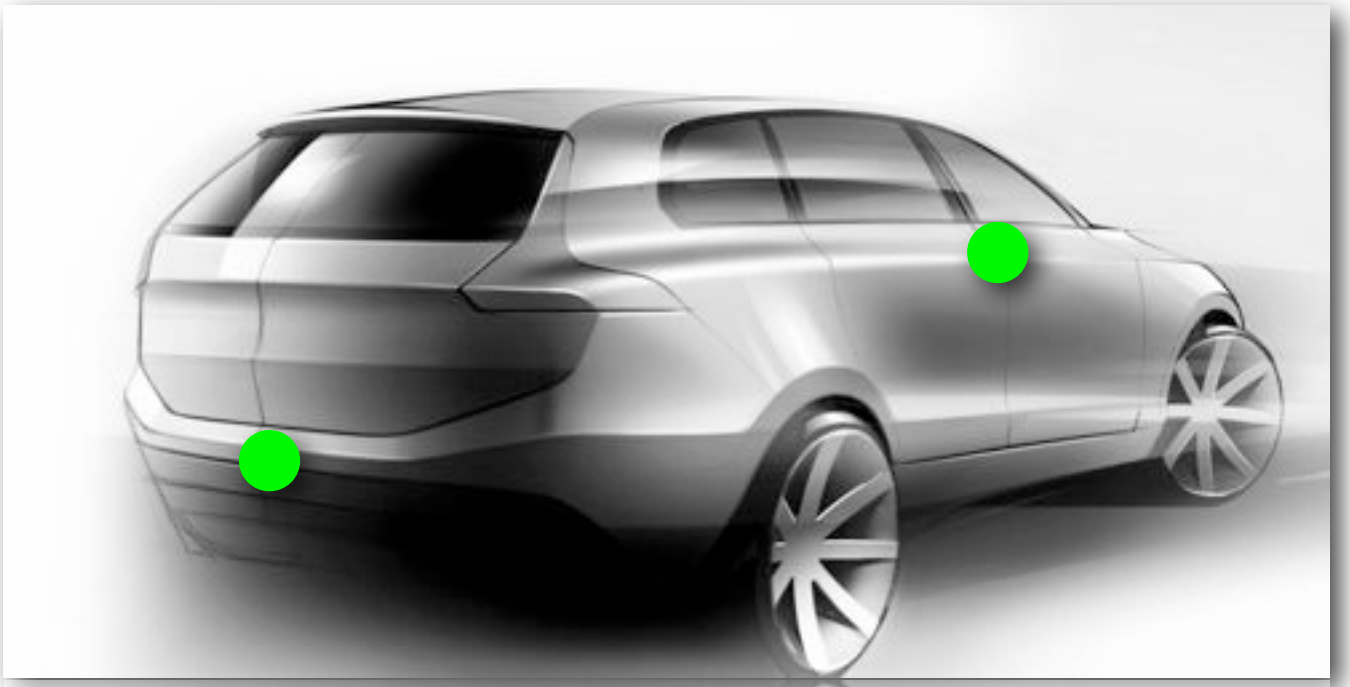


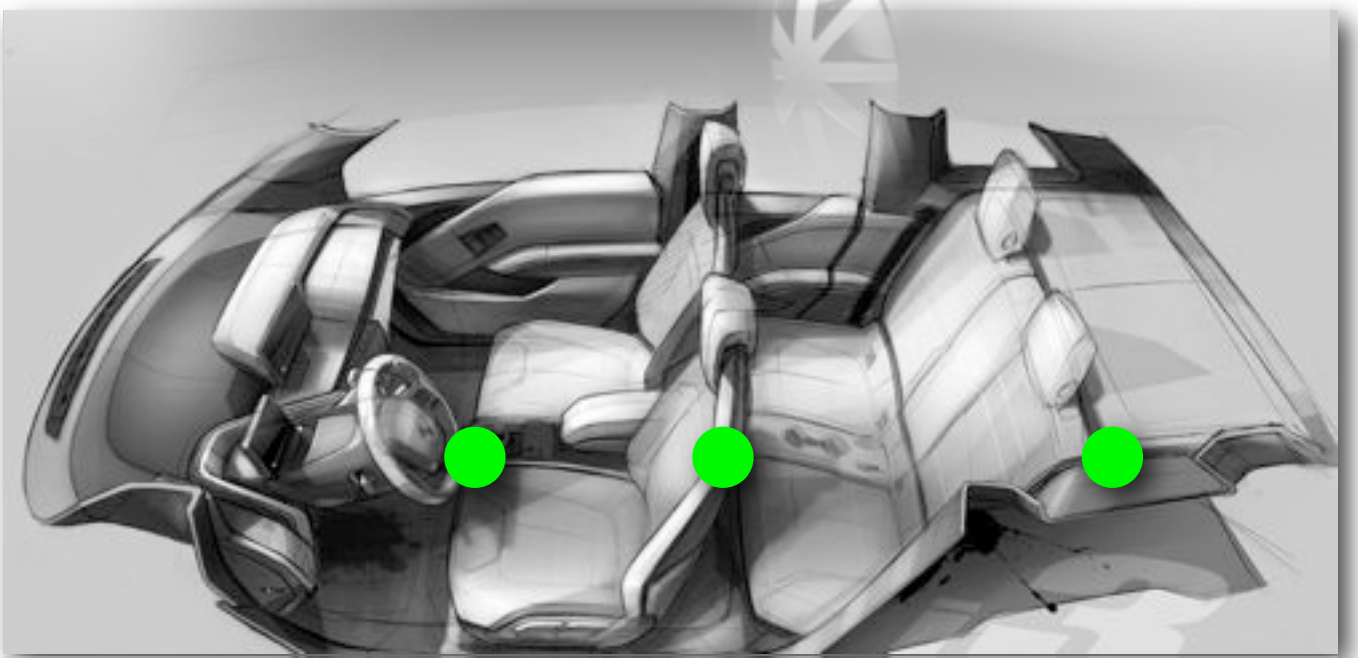


PROXIMITY TRANSMITTER LOCATION

LEXUS SMART ACCESS

GX460
HS250H
IS SERIES
RC350
RC F
RX450H

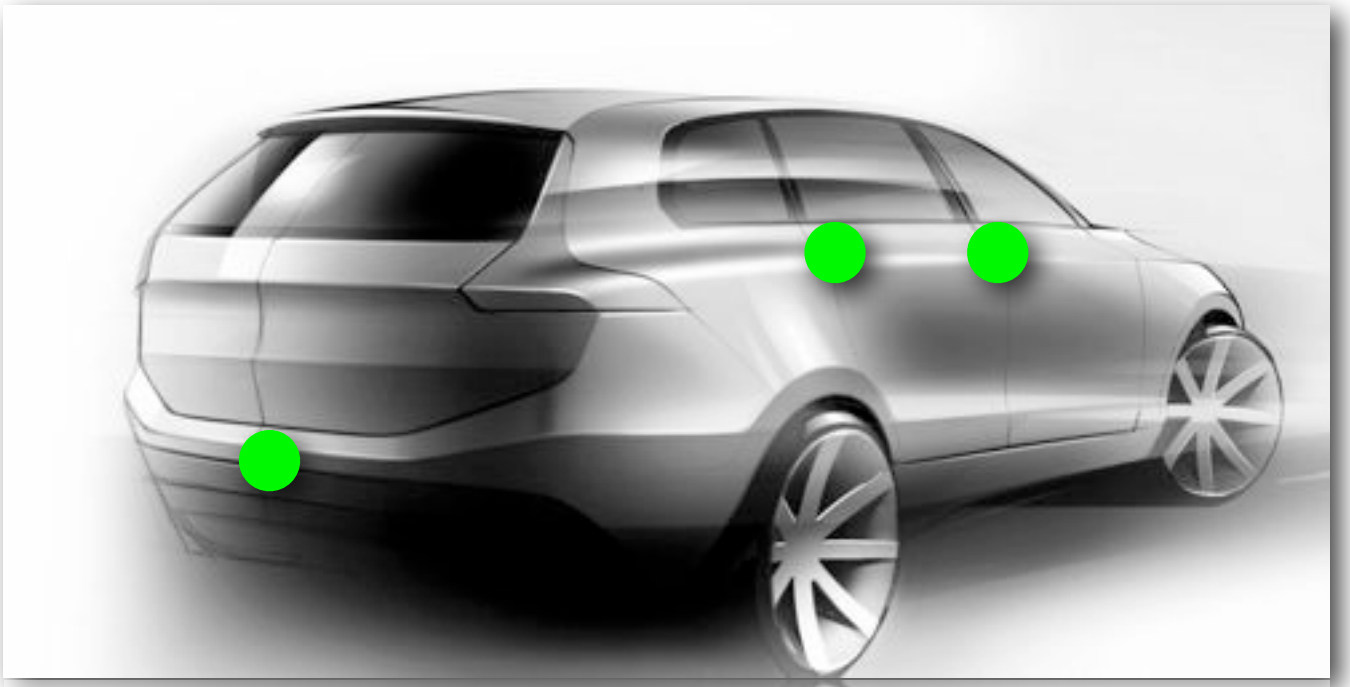


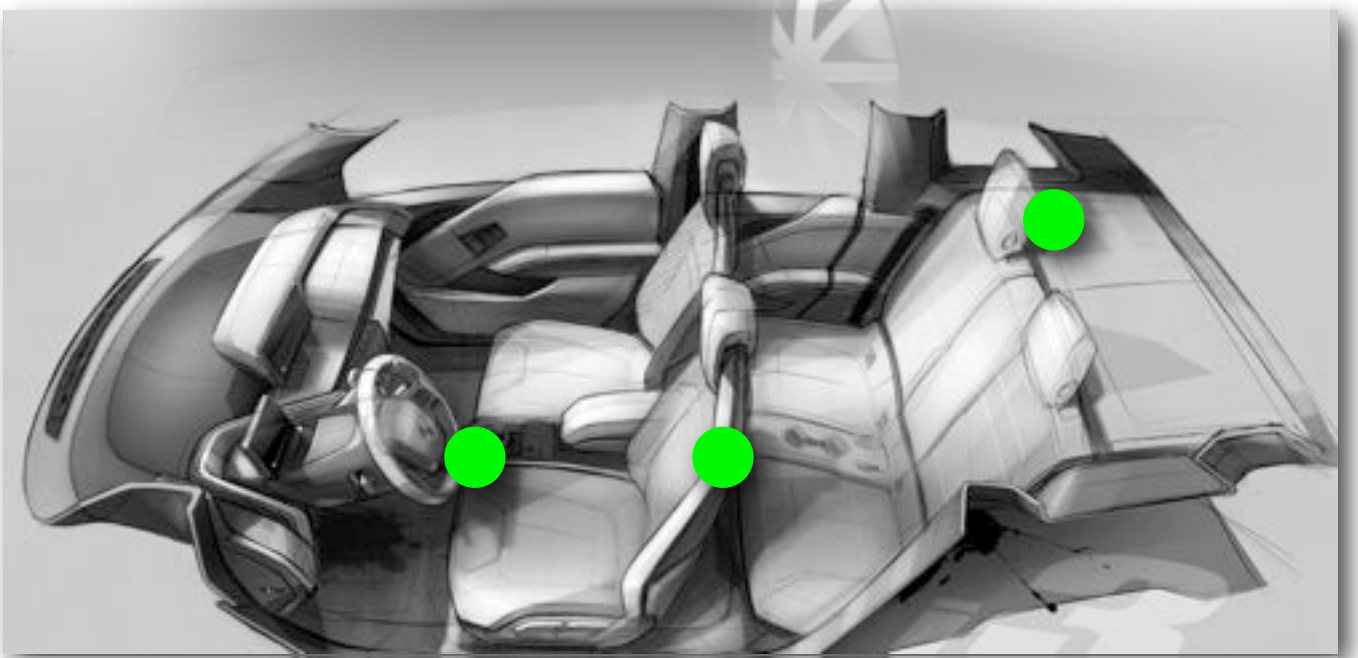


PROXIMITY TRANSMITTER LOCATION

LEXUS SMART ACCESS

ES300H LS600H
ES350
GS450H

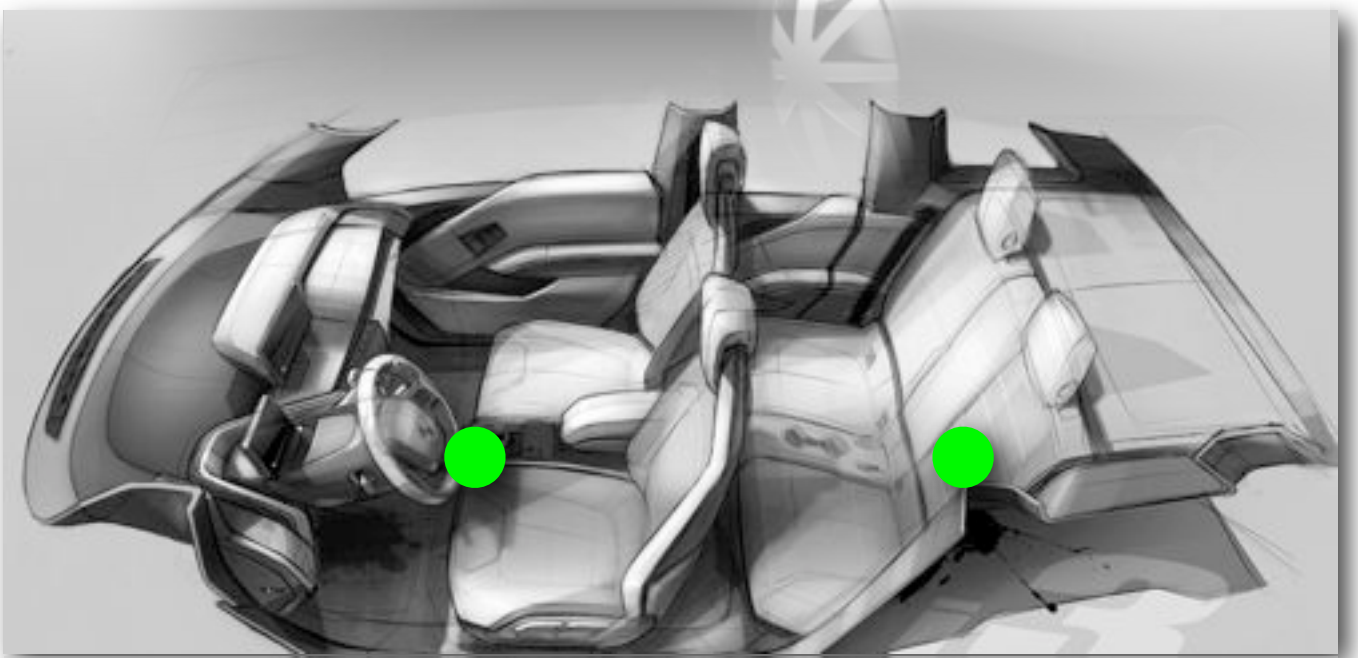




PROXIMITY TRANSMITTER LOCATION

LINCOLN
MKC

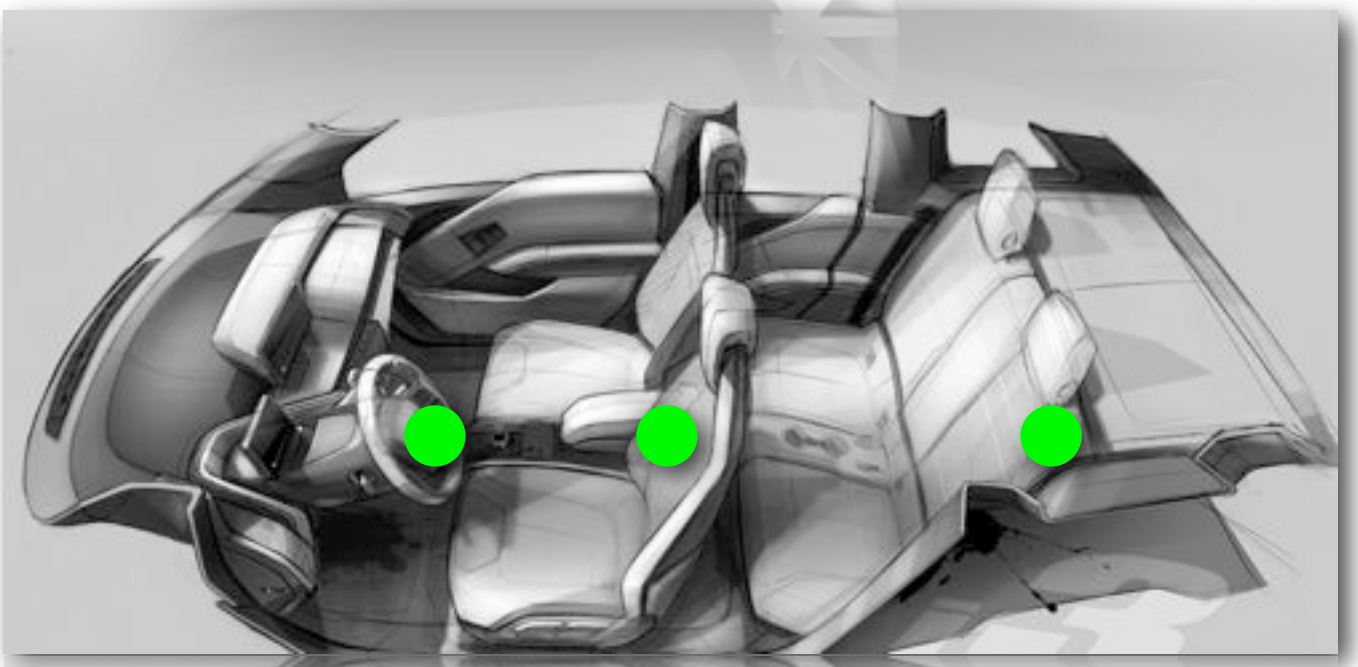




PROXIMITY TRANSMITTER LOCATION

MAZDA ADVANCED KEYLESS ENTRY
CX-9

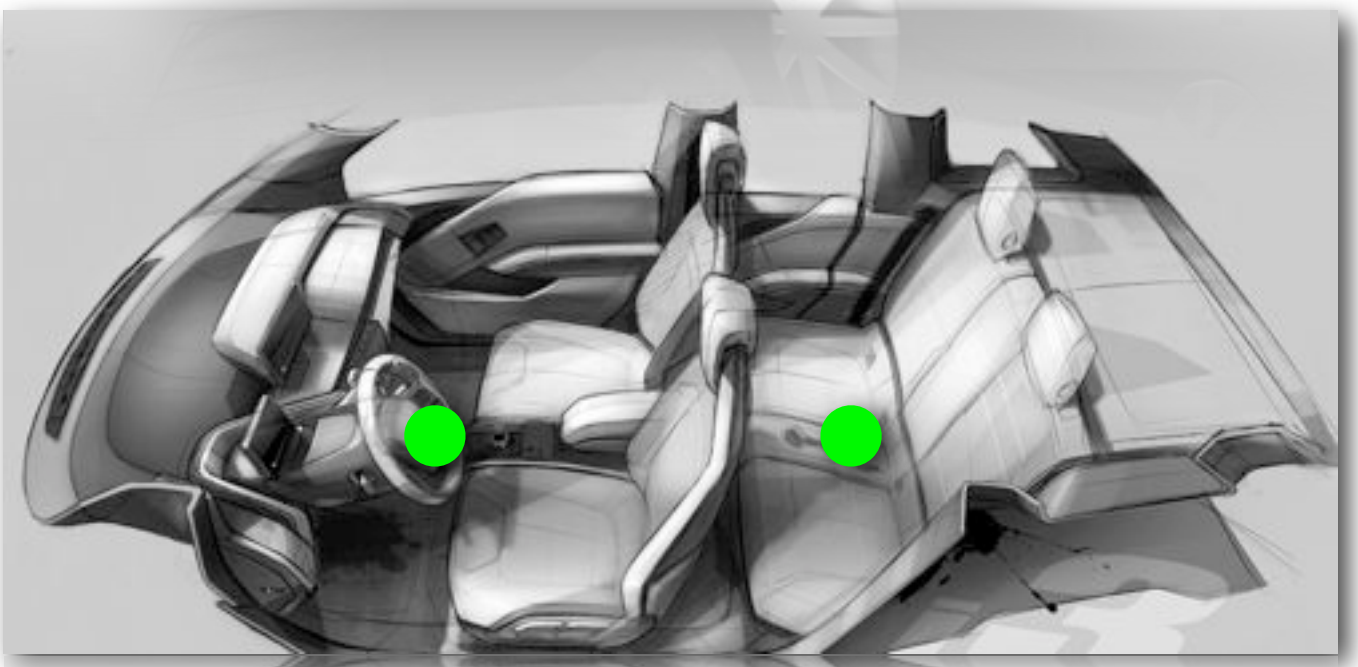




PROXIMITY TRANSMITTER LOCATION

MAZDA ADVANCED KEYLESS ENTRY
6 & 3 (Advanced Keyless)
6 & 3 (Without Advanced Keyless) - 1 Transmitter in centre of vehicle only.

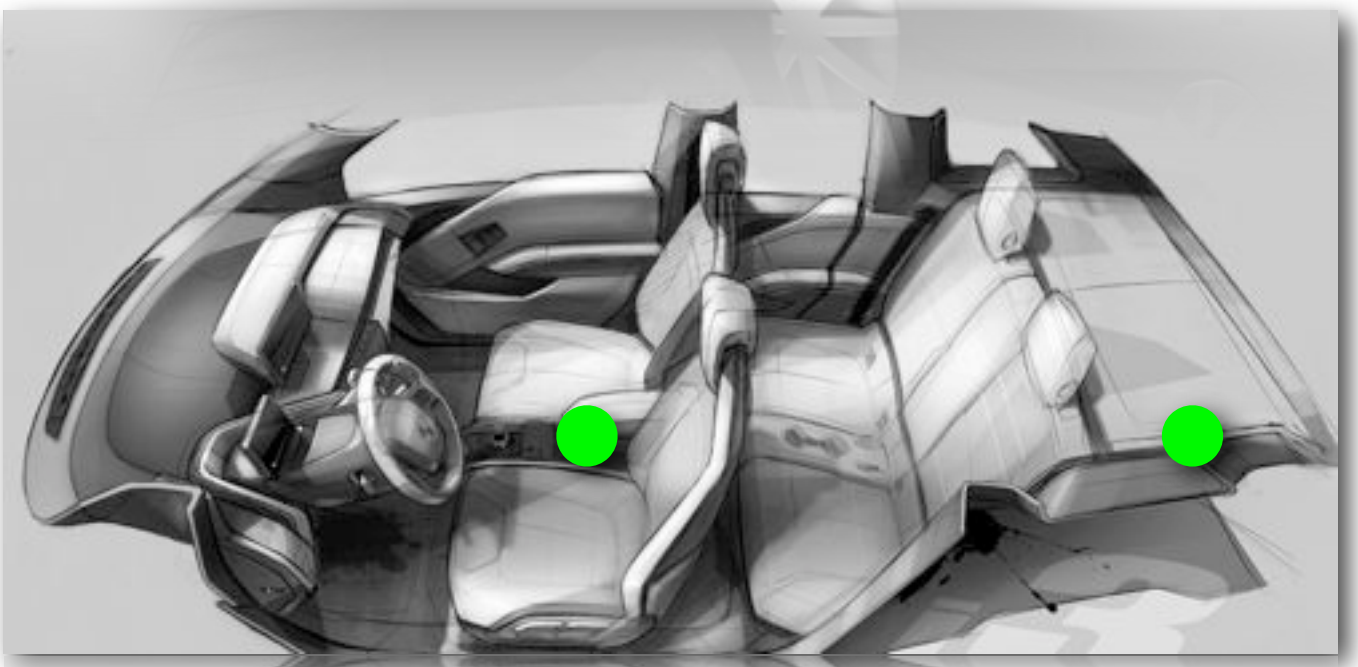




PROXIMITY TRANSMITTER LOCATION

MITSUBISHI KEYLESS OPERATION SYSTEM (KOS)
ASX
MIRAGE G4
LANCER EVOLUTION X

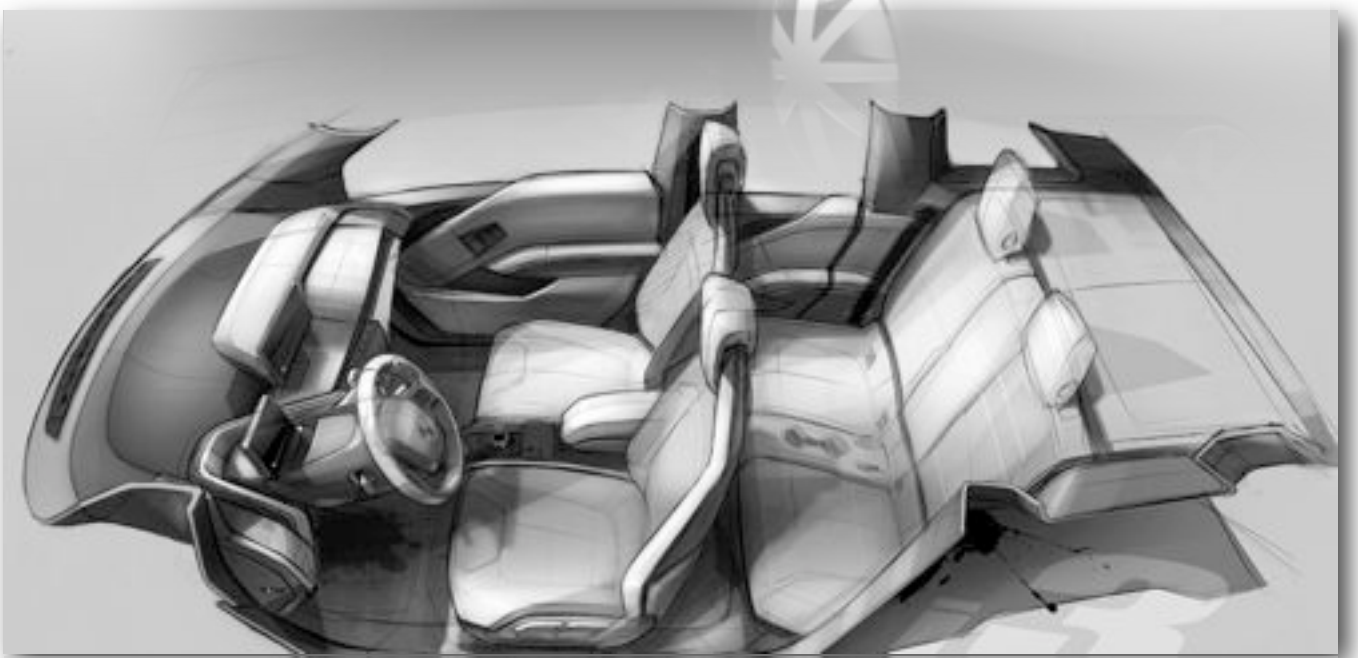




PROXIMITY TRANSMITTER LOCATION

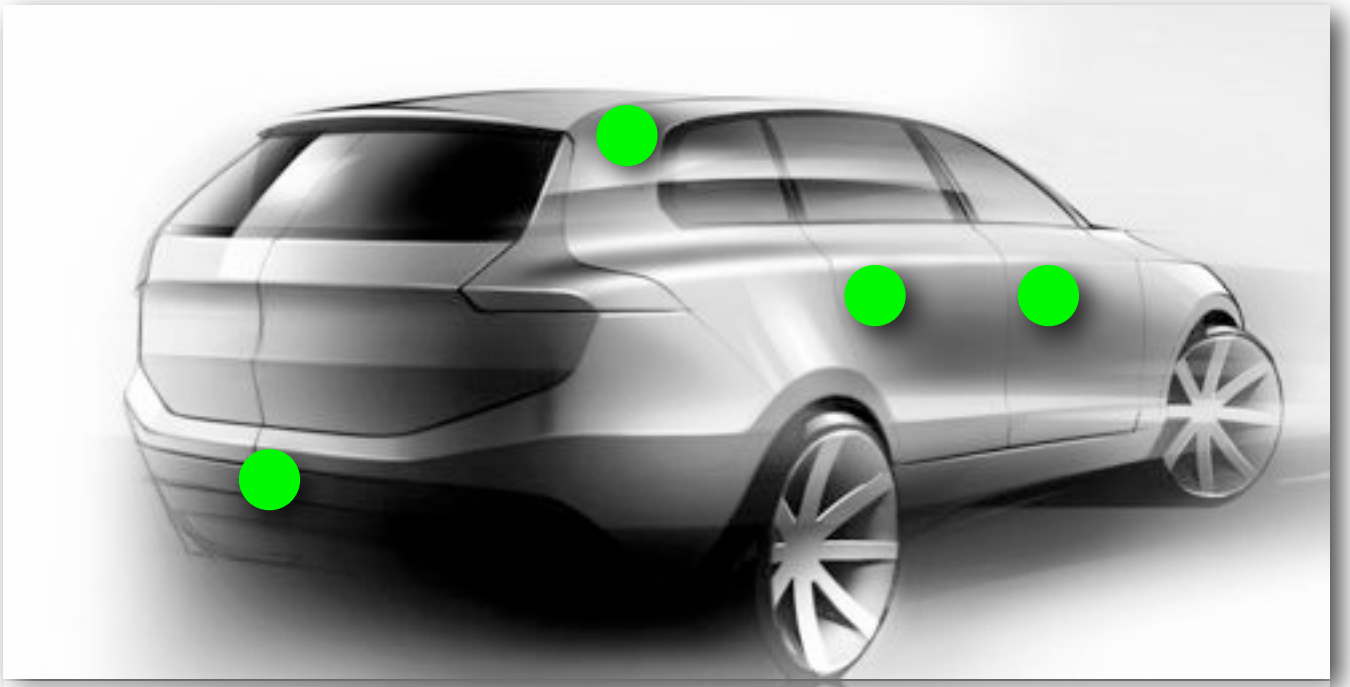
NISSAN KEYLESS ENTRY SYSTEM
MICRA (K11)
PATHFINDER
JUKE
QASHQAI

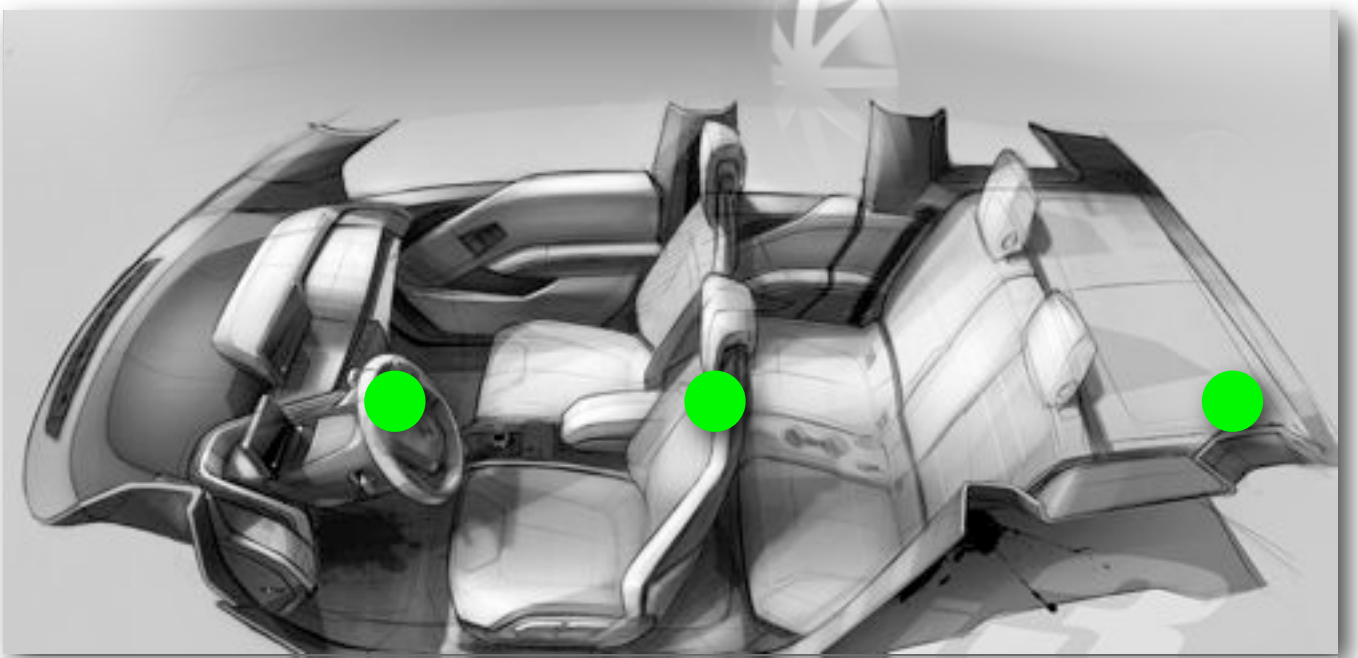




PROXIMITY TRANSMITTER LOCATION

RANGE ROVER PASSIVE ENTRY SYSTEM
EVOQUE
DISCOVERY 4
RANGE ROVER SPORT
FREELANDER

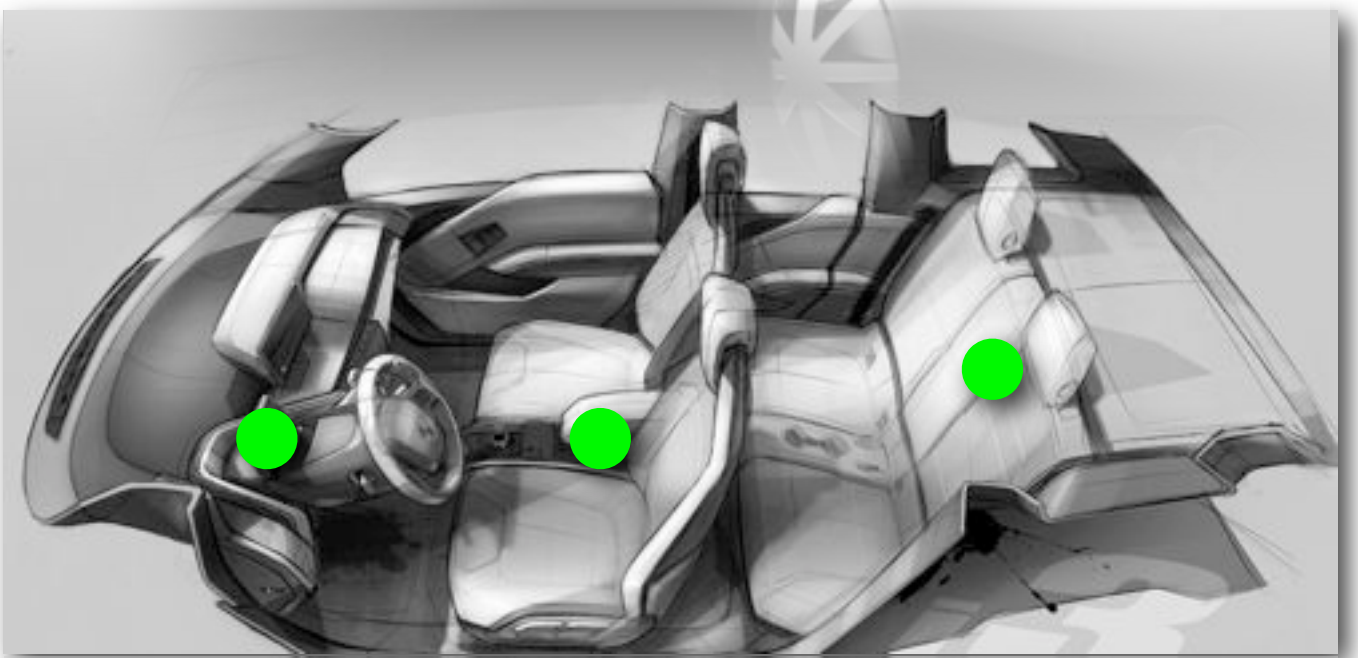




PROXIMITY TRANSMITTER LOCATION

RENAULT KEYLESS ENTRY SYSTEM
SCENIC

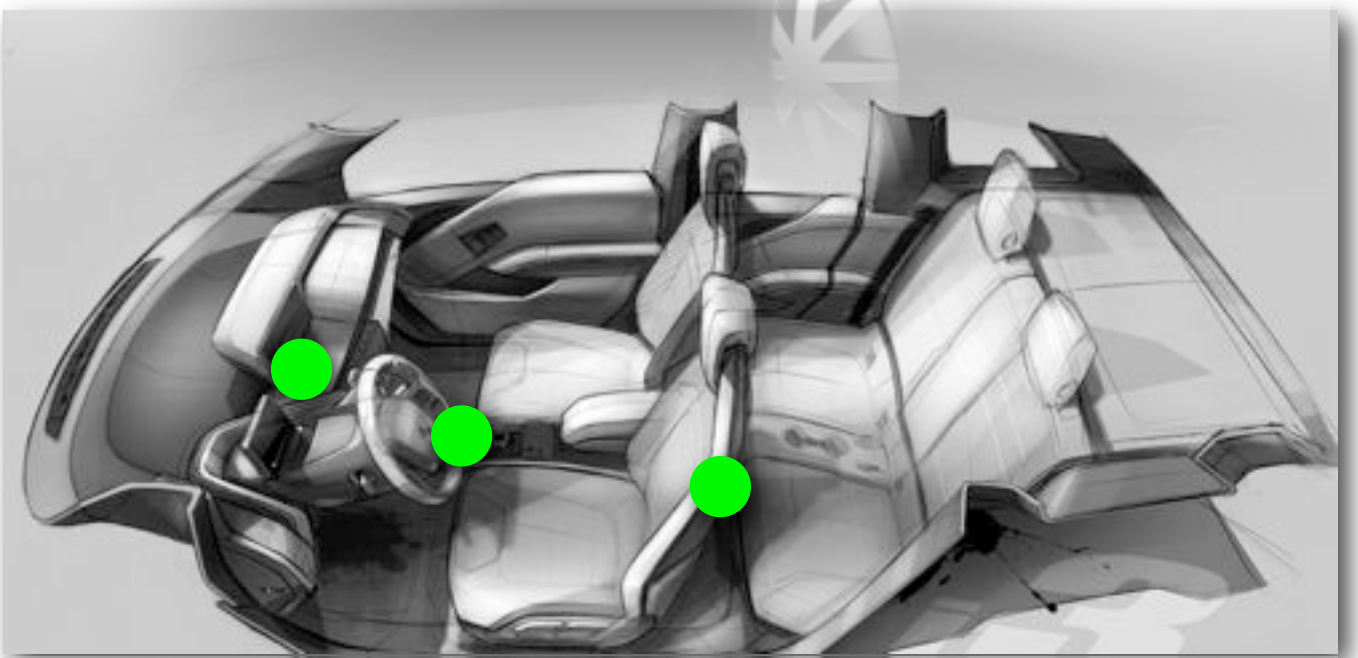




PROXIMITY TRANSMITTER LOCATION

RENAULT KEYLESS ENTRY SYSTEM
MEGANE

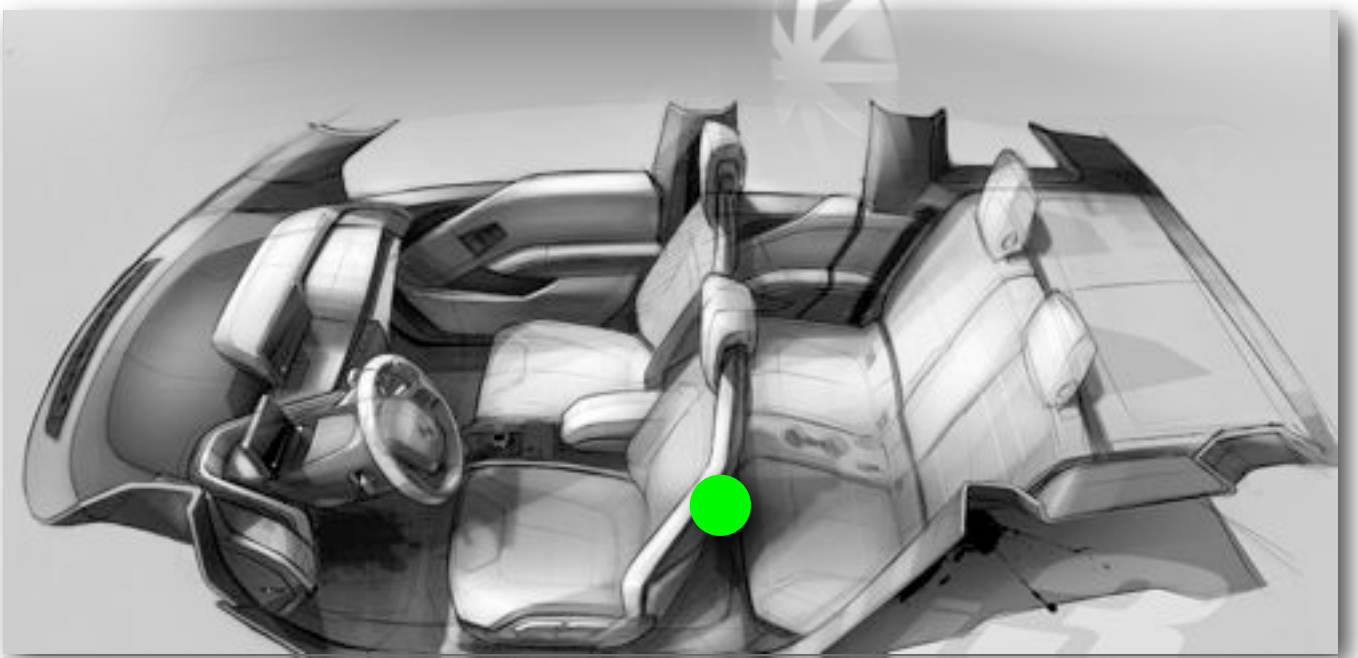




PROXIMITY TRANSMITTER LOCATION

RENAULT KEYLESS ENTRY SYSTEM
CAPTUR

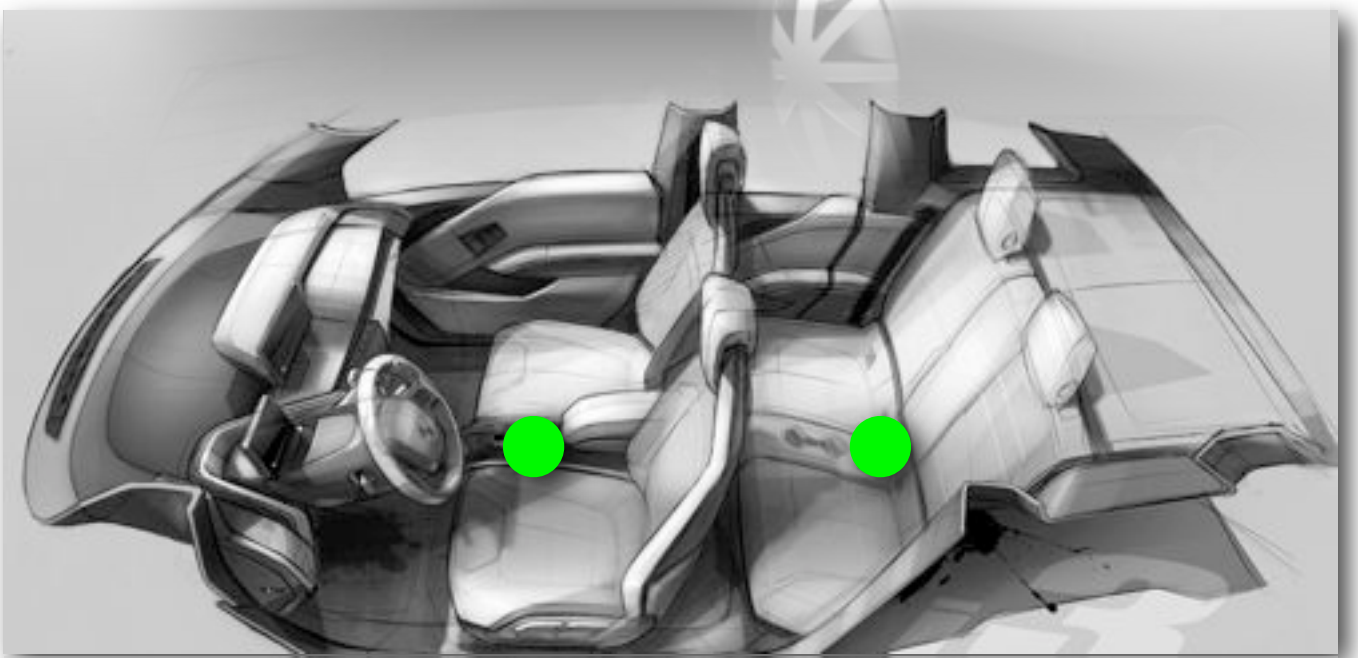




PROXIMITY TRANSMITTER LOCATION

SSANGYONG SMART KEY SYSTEM
KORANDO

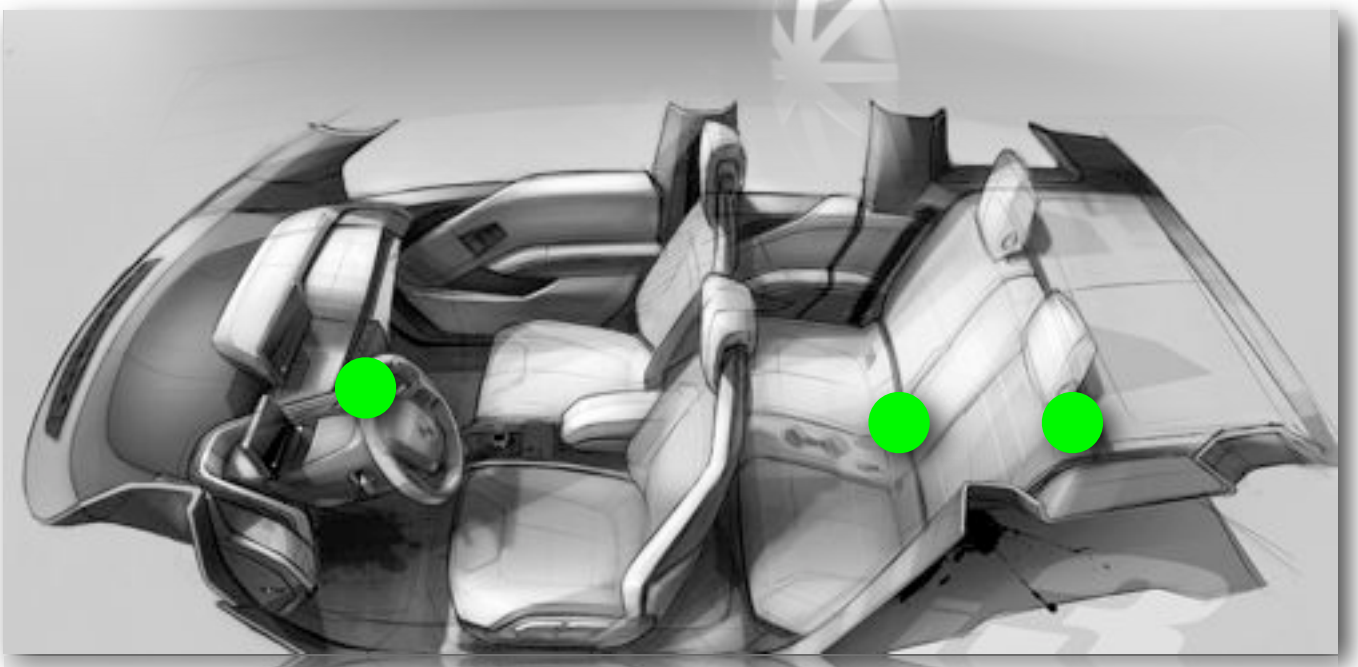




PROXIMITY TRANSMITTER LOCATION

SUBARU SMART KEY SYSTEM
WRX
FORESTER

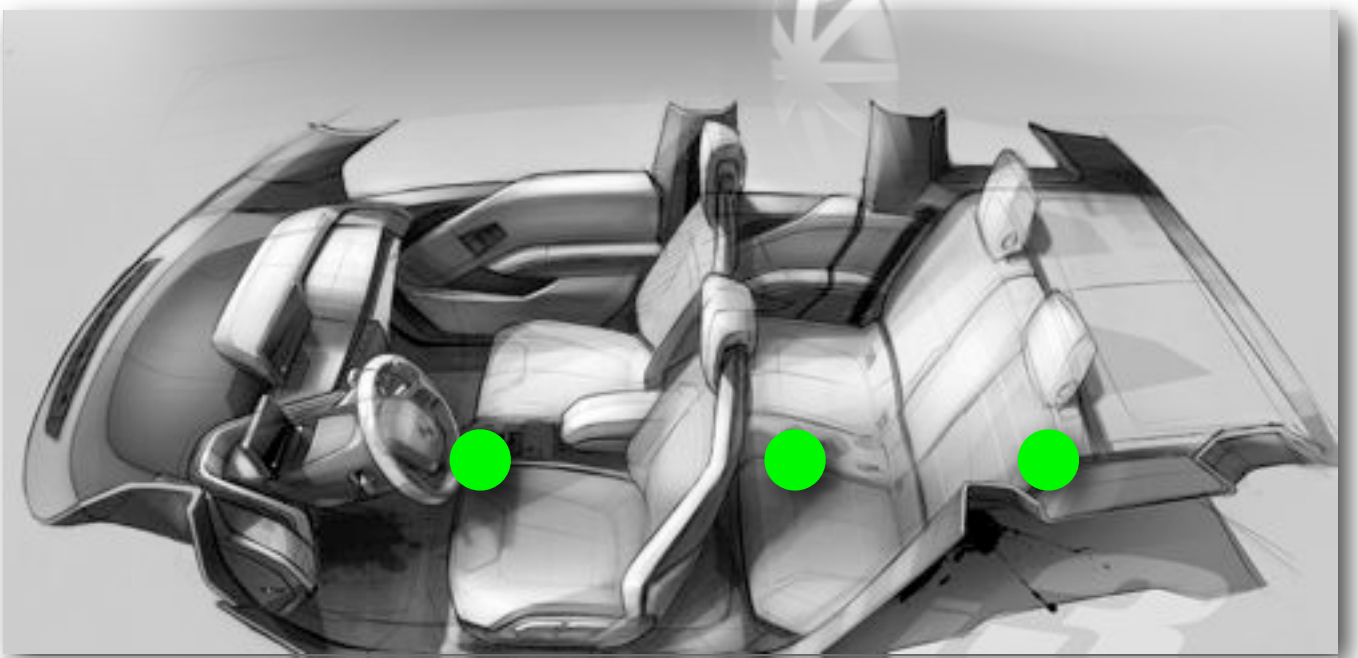




PROXIMITY TRANSMITTER LOCATION

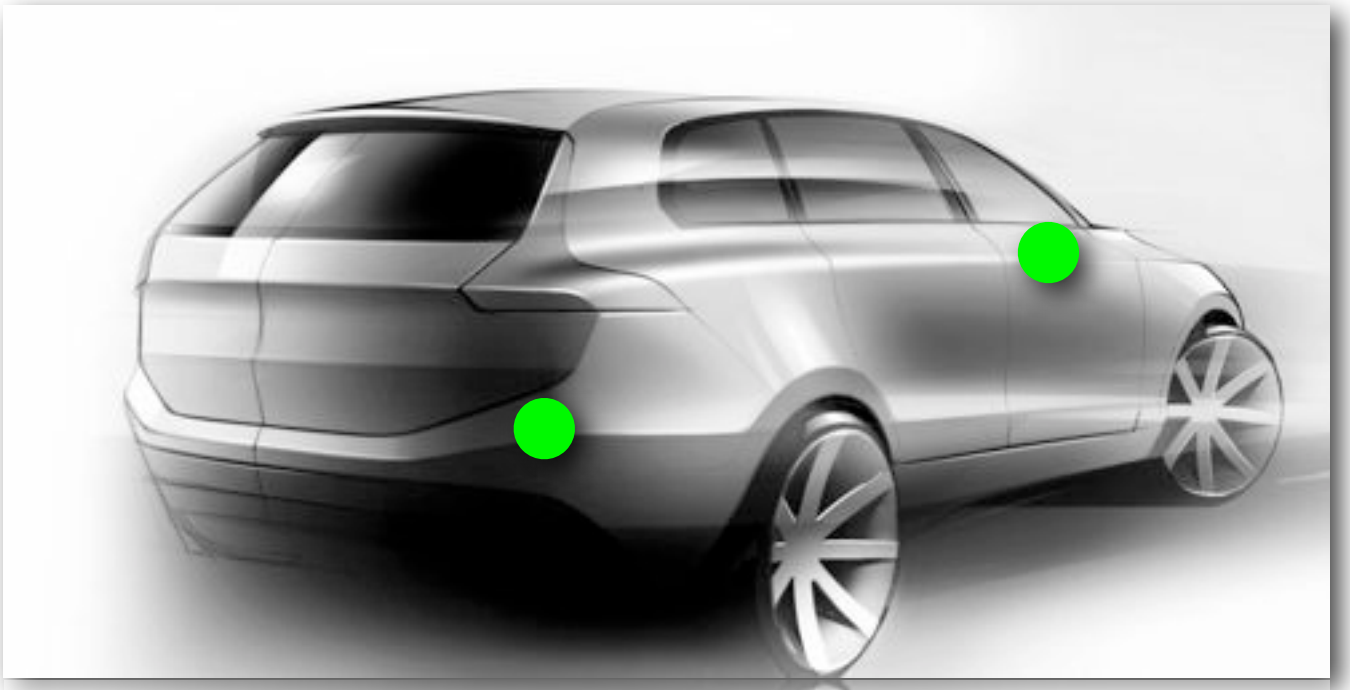
SUBARU SMART KEY SYSTEM
LEGACY
BRZ

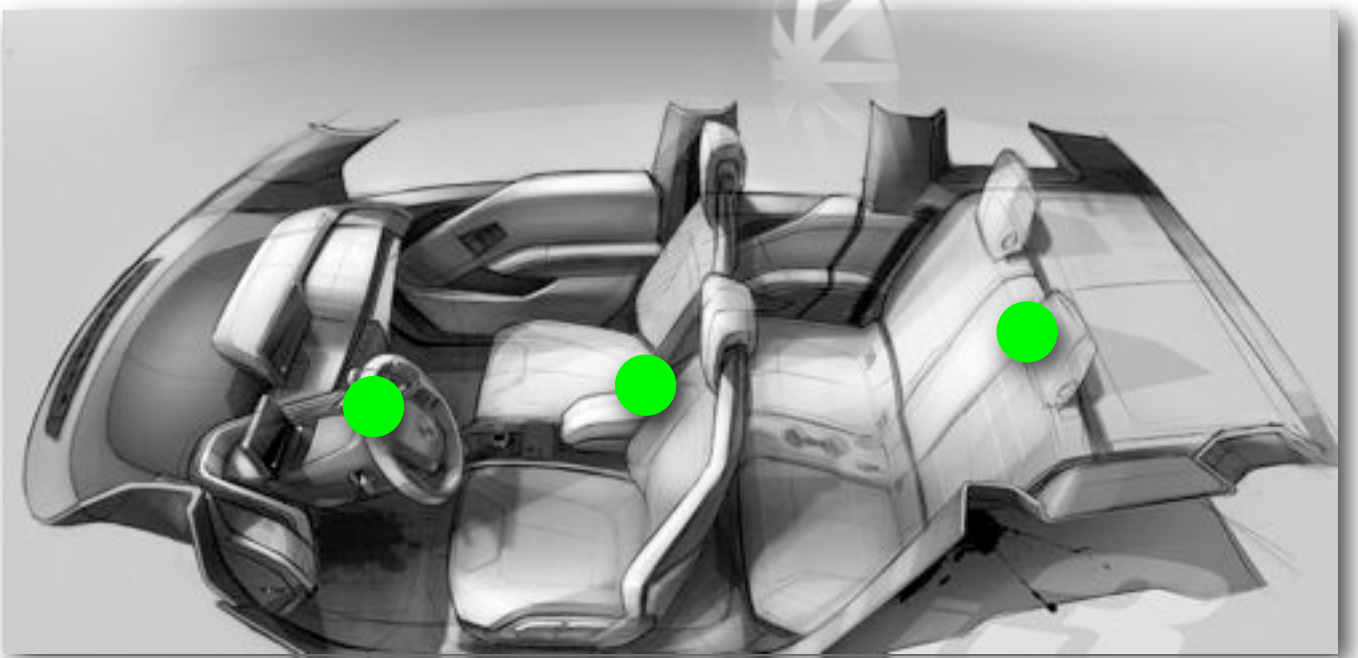




PROXIMITY TRANSMITTER LOCATION

SUBARU SMART KEY SYSTEM
OUTBACK

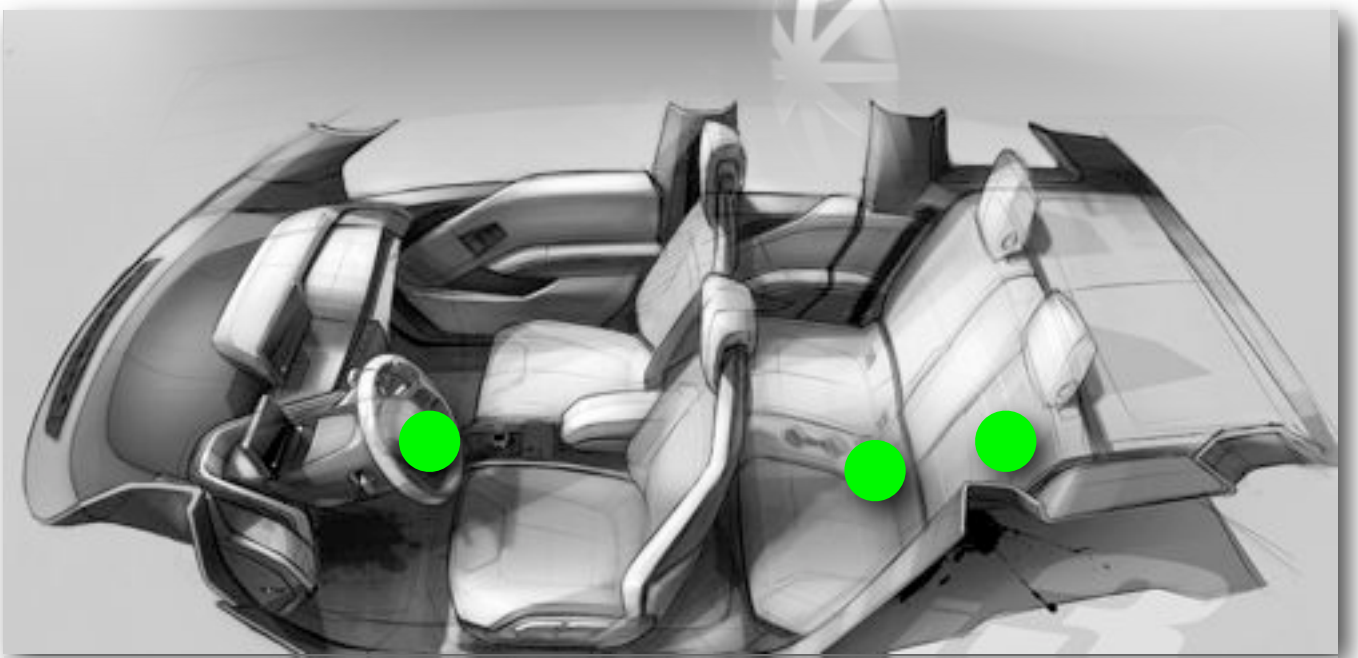




PROXIMITY TRANSMITTER LOCATION

SUBARU SMART KEY SYSTEM
IMPREZA

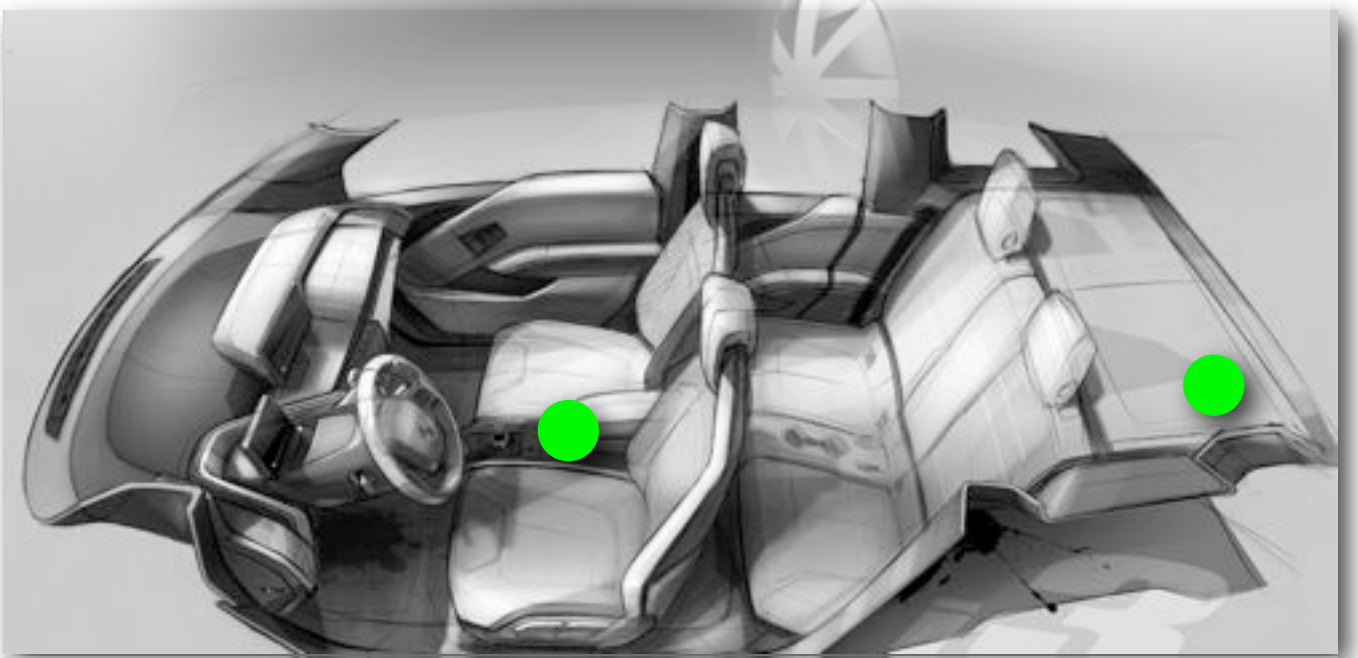




PROXIMITY TRANSMITTER LOCATION

SUZUKI KEYLESS START SYSTEM
KIZASHI
SWIFT

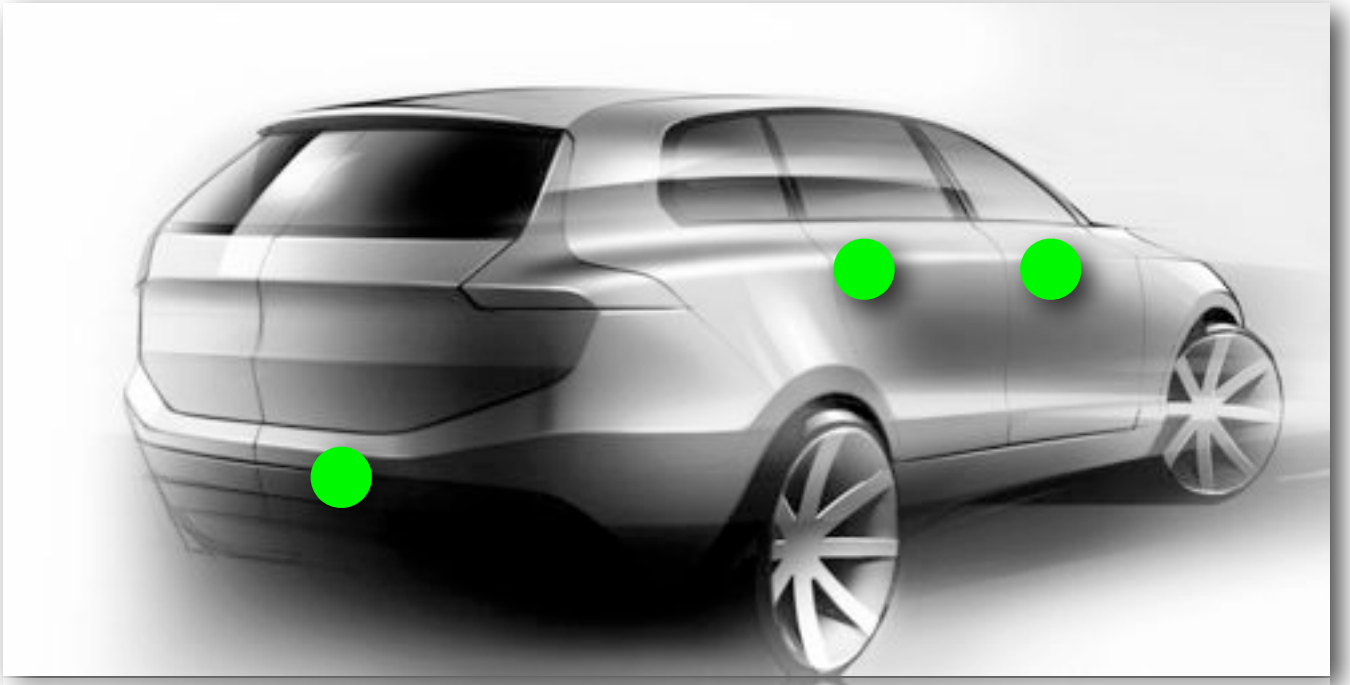


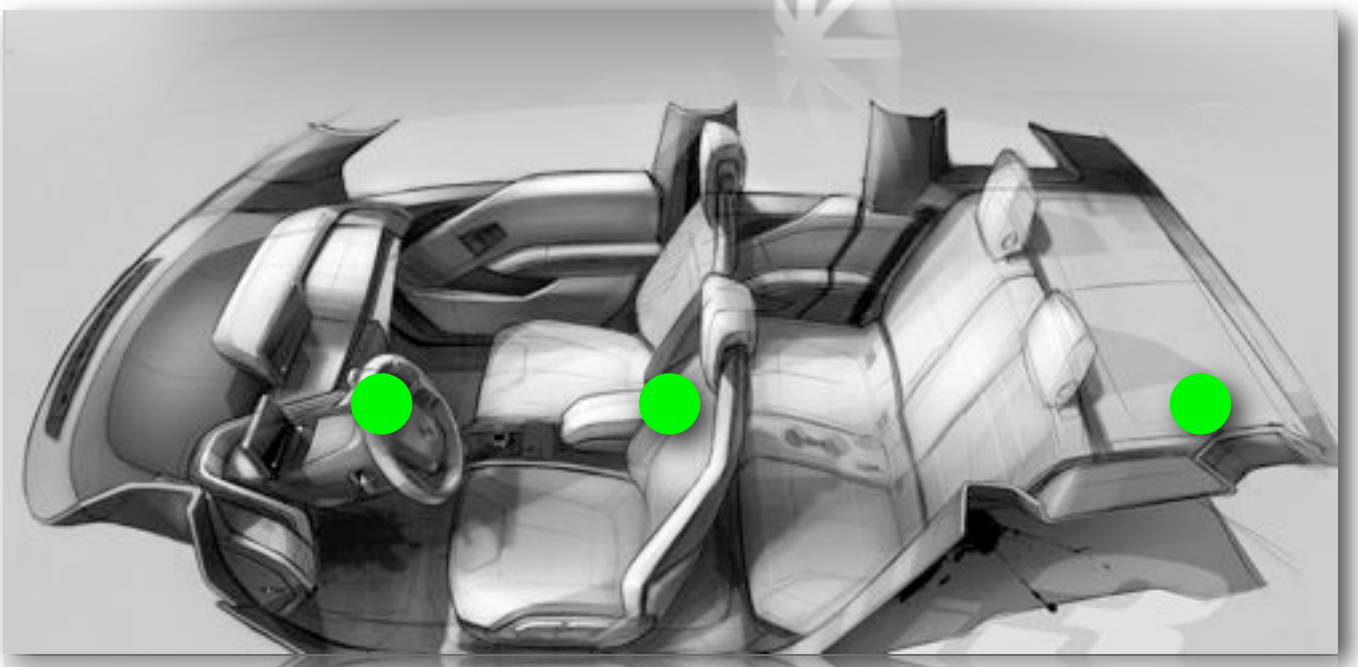


PROXIMITY TRANSMITTER LOCATION

TOYOTA SMART ACCESS

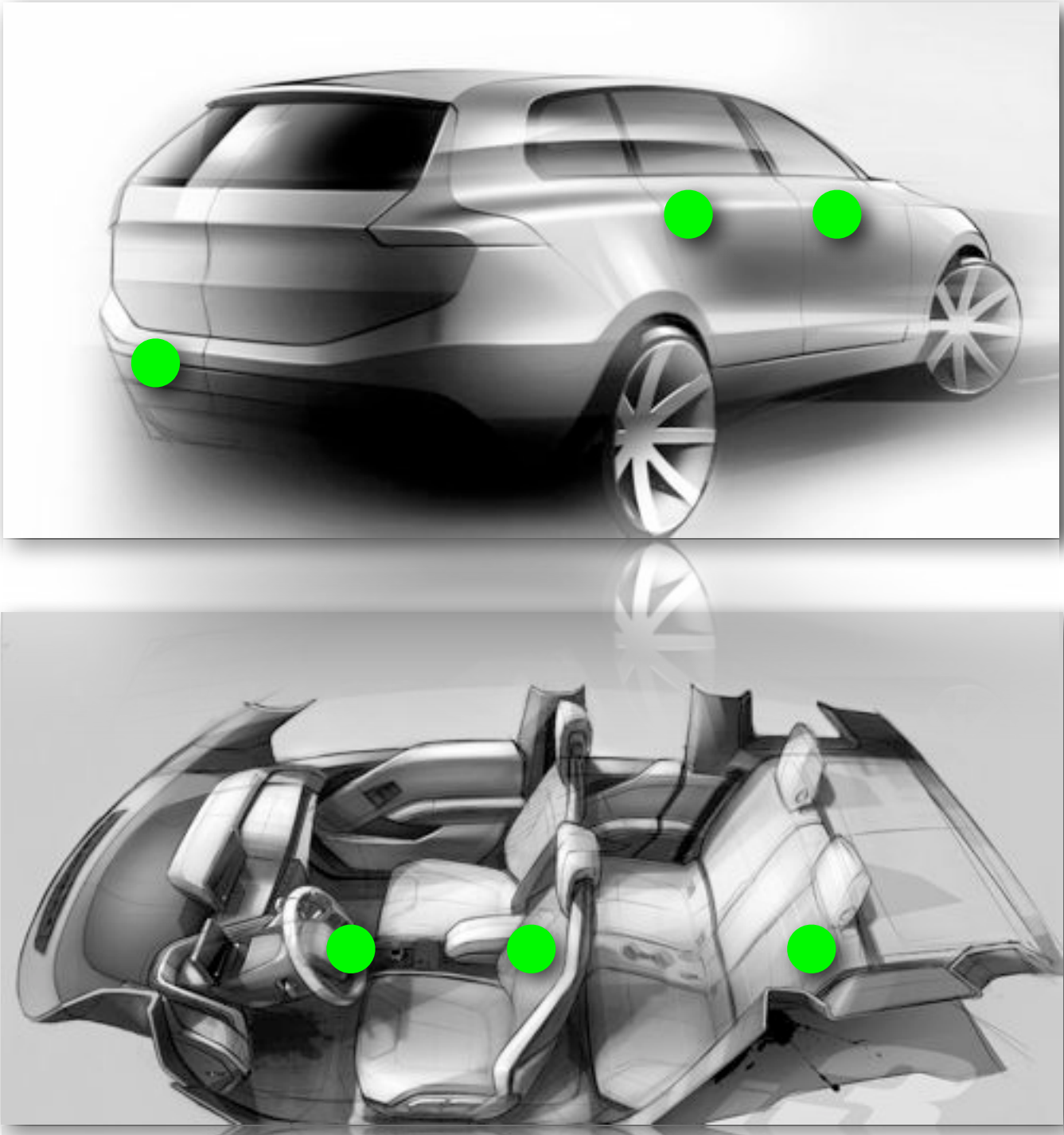
IQ	CAMRY	CAMRY HV	HIGHLANDER
4RUNNER	SEQUOIA	SIENNA	HIGHLANDER HV
AVALON	VENZA		





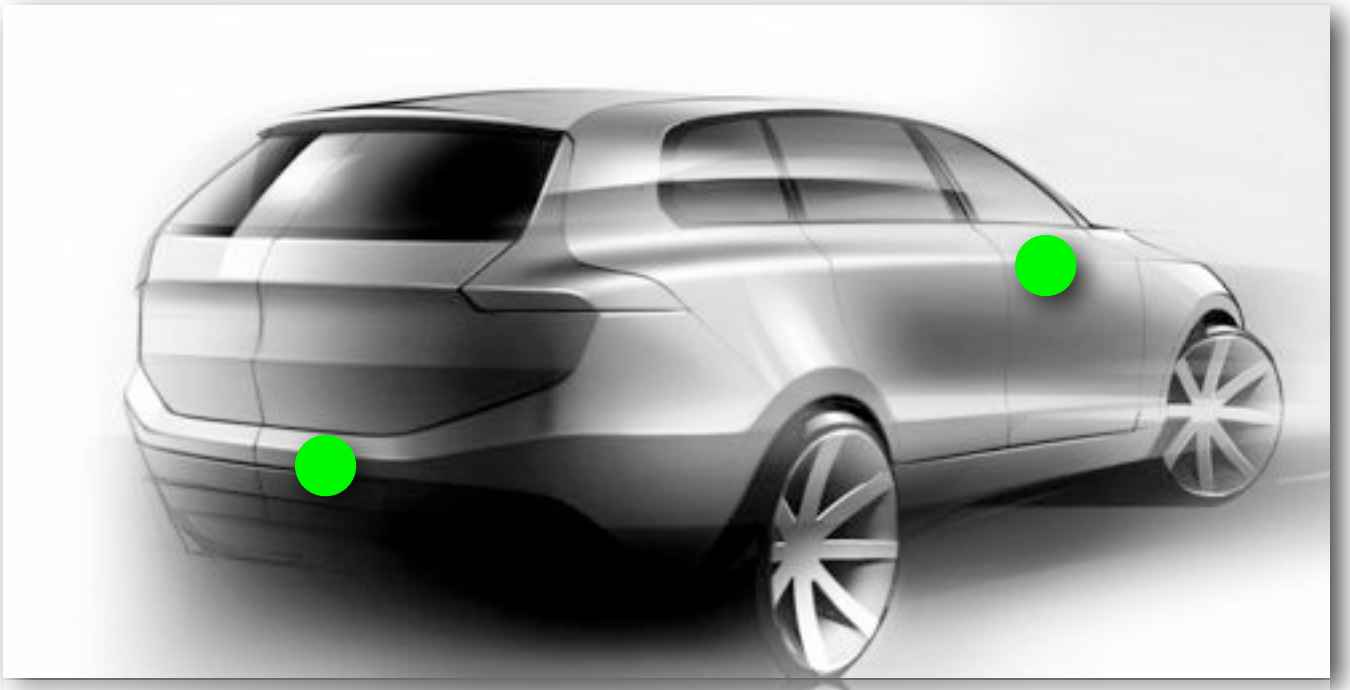
PROXIMITY TRANSMITTER LOCATION

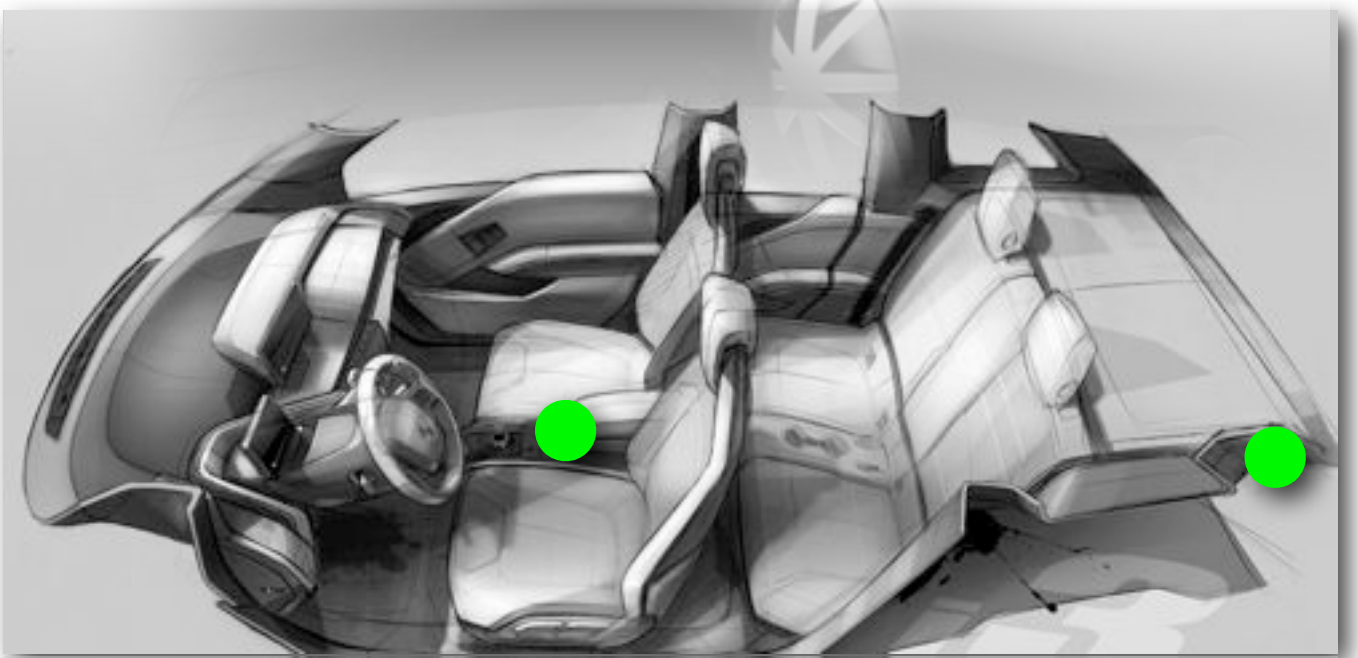
TOYOTA SMART ACCESS
LAND CRUISER



PROXIMITY TRANSMITTER LOCATION

TOYOTA SMART ACCESS
PRIUS
PRIUS V

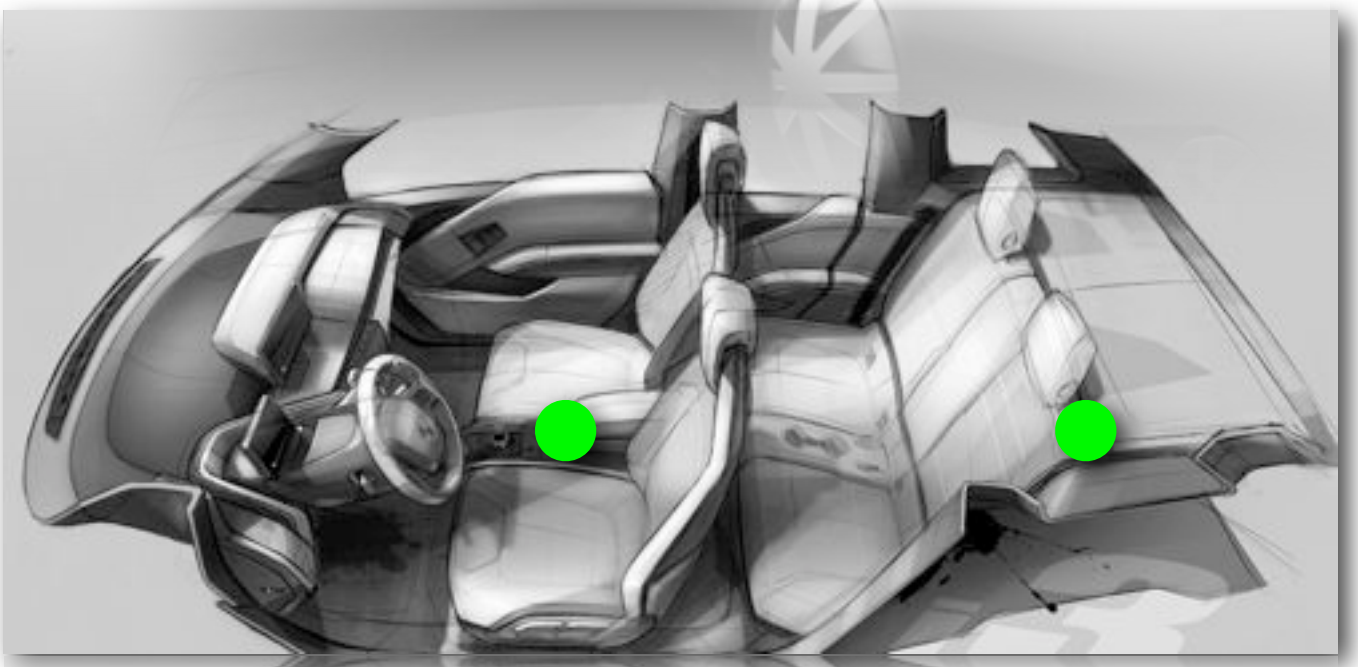




PROXIMITY TRANSMITTER LOCATION

TOYOTA SMART ACCESS
RAV 4 EV

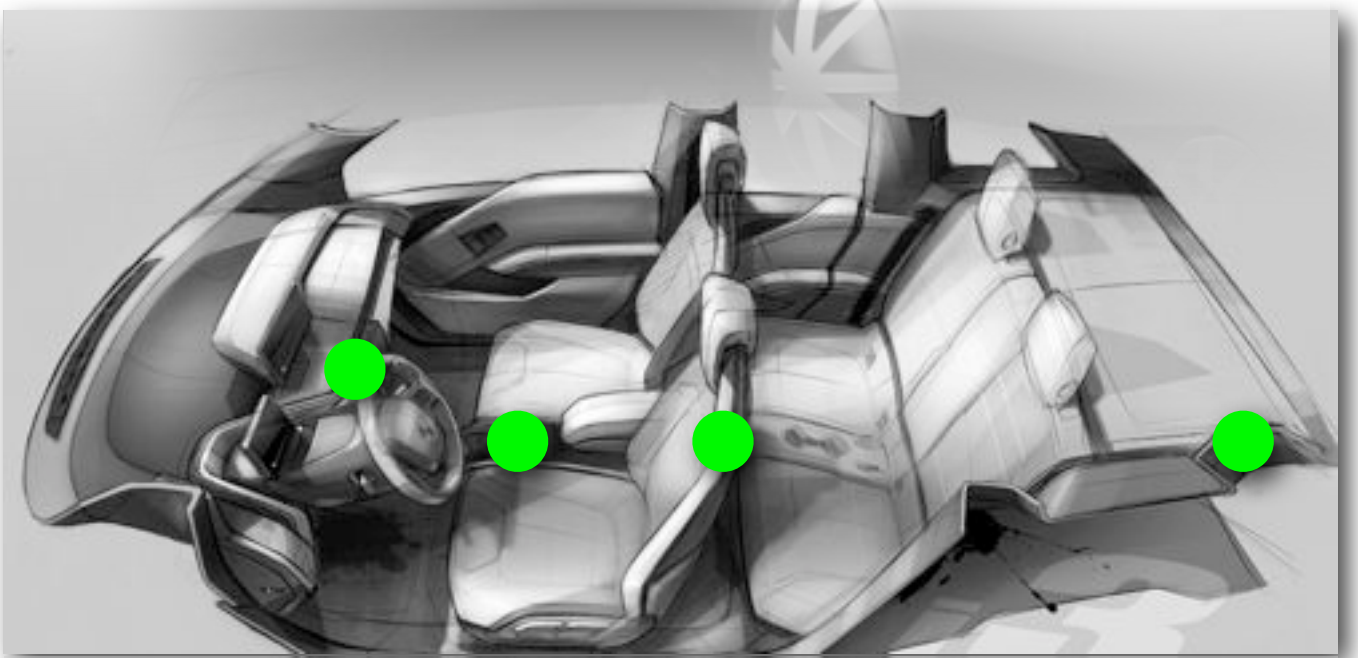




PROXIMITY TRANSMITTER LOCATION

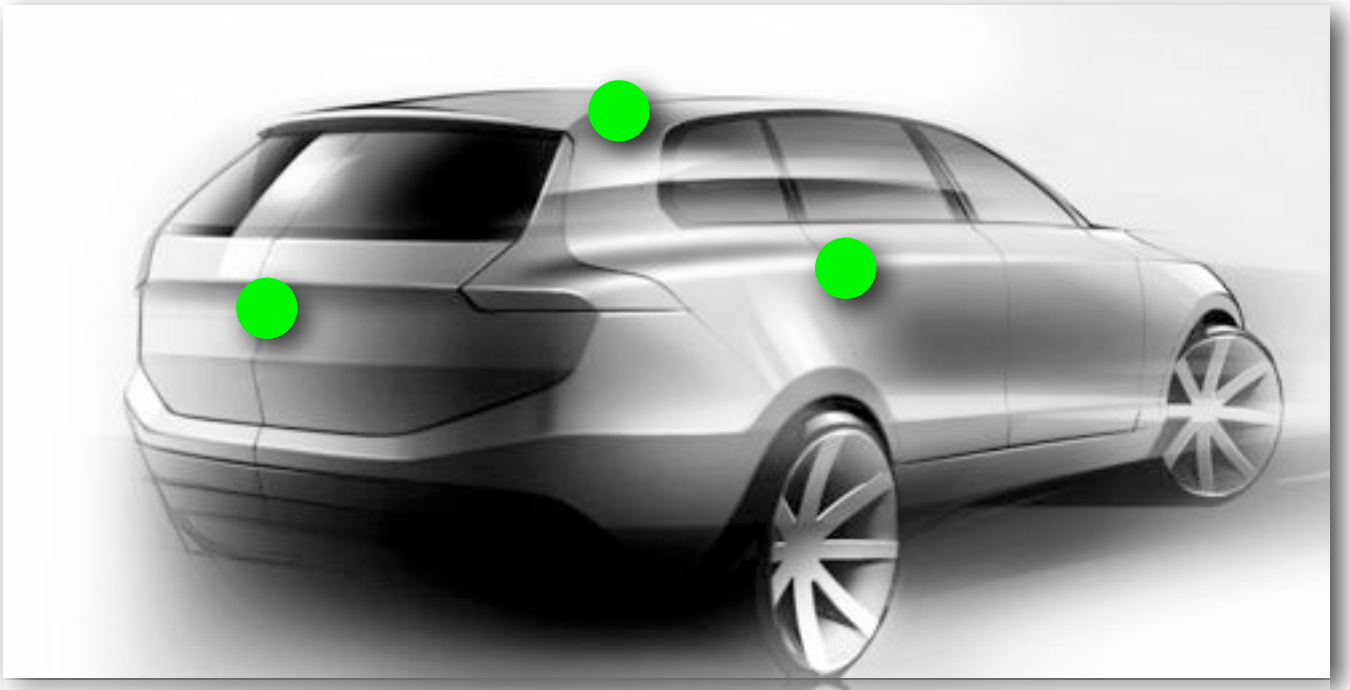
VAUXHALL/OPEL SMART
PROXIMITY ACCESS
ASTRA J

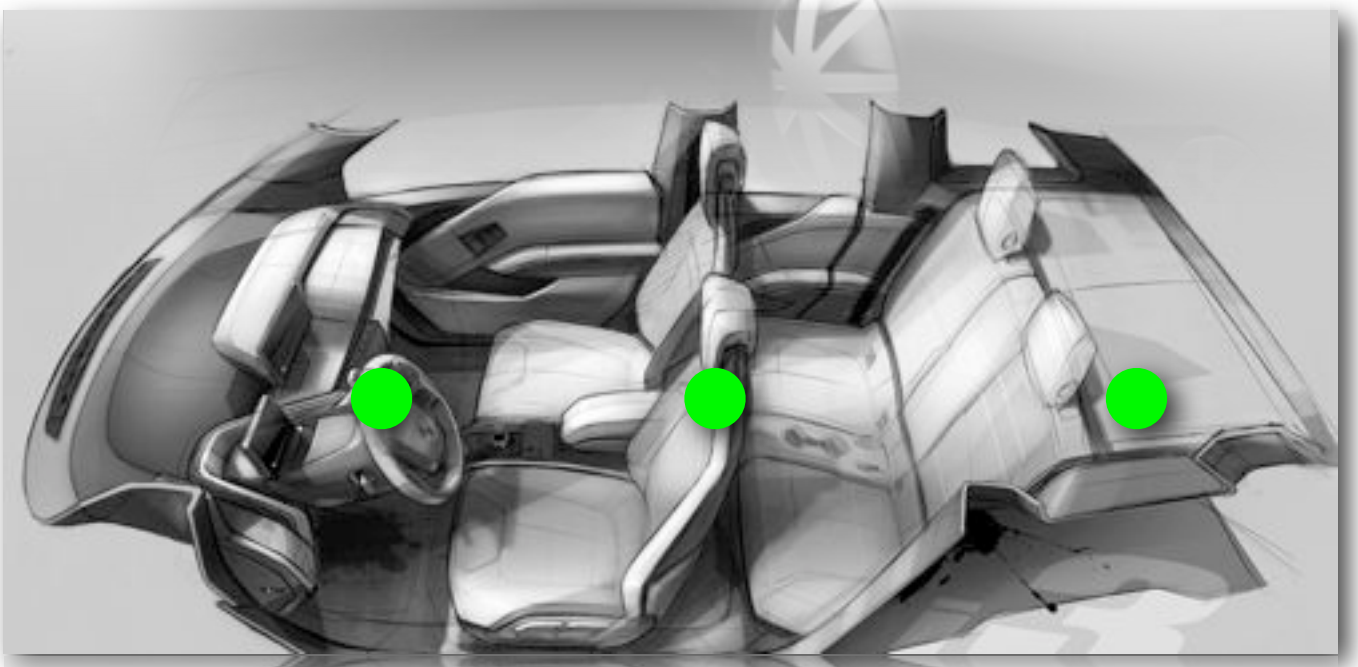




PROXIMITY TRANSMITTER LOCATION

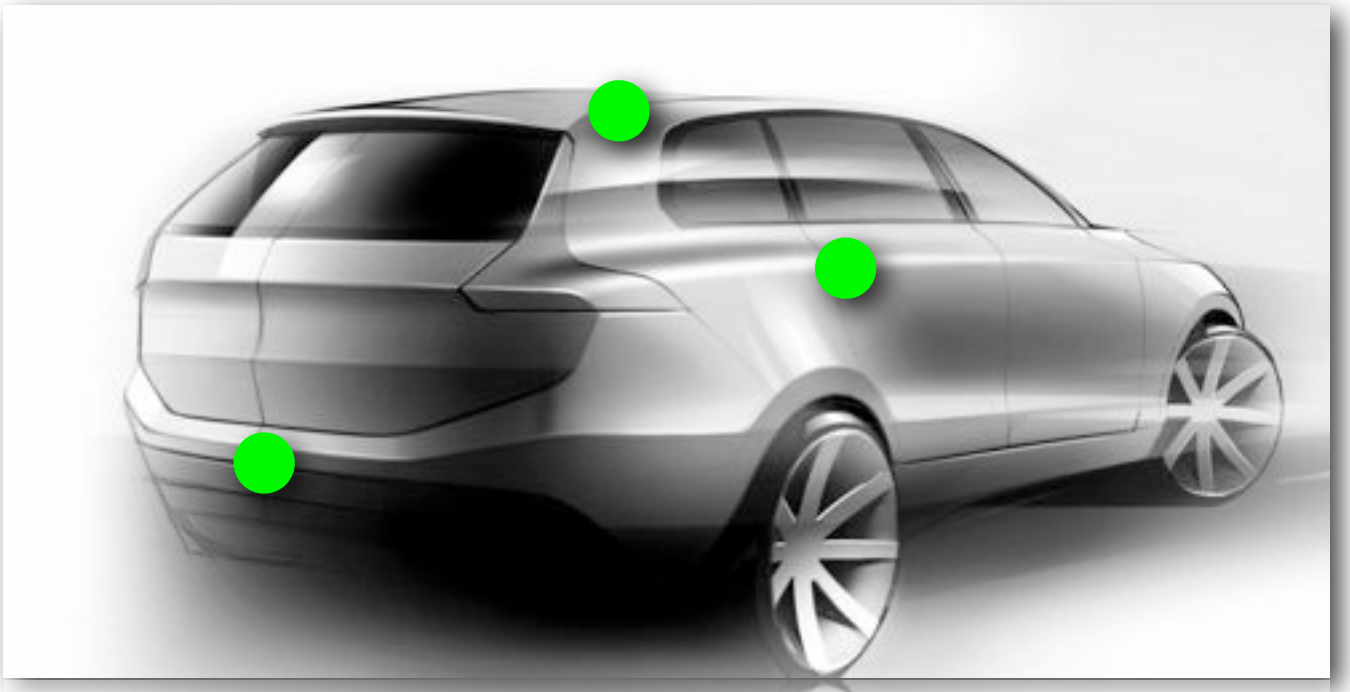
VOLVO KEYLESS DRIVE
XC60
XC70

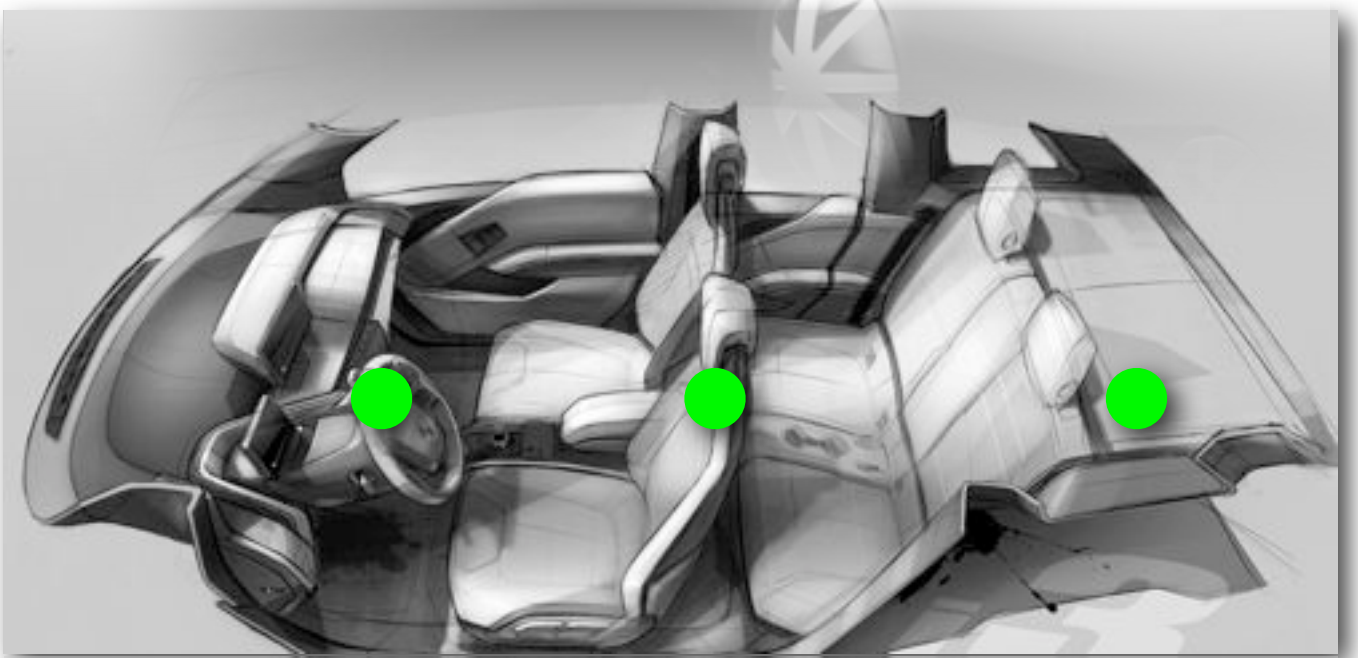




PROXIMITY TRANSMITTER LOCATION

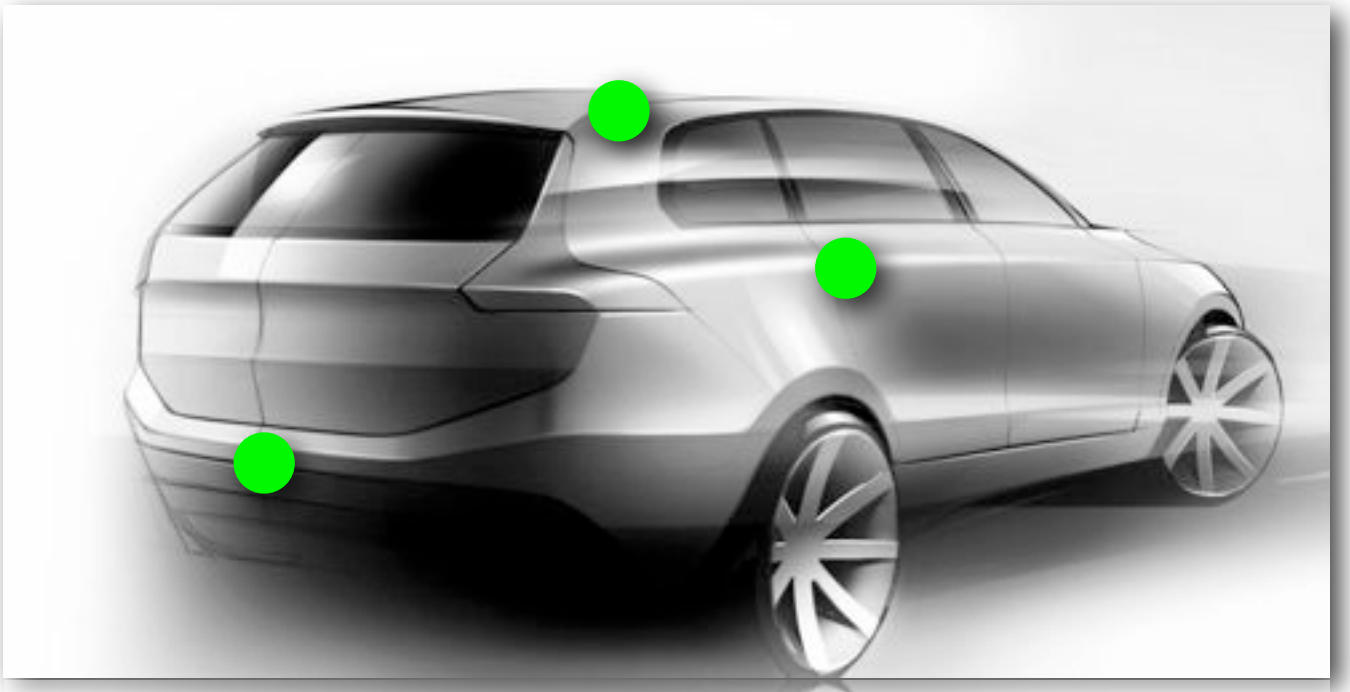
VOLVO KEYLESS DRIVE
S60

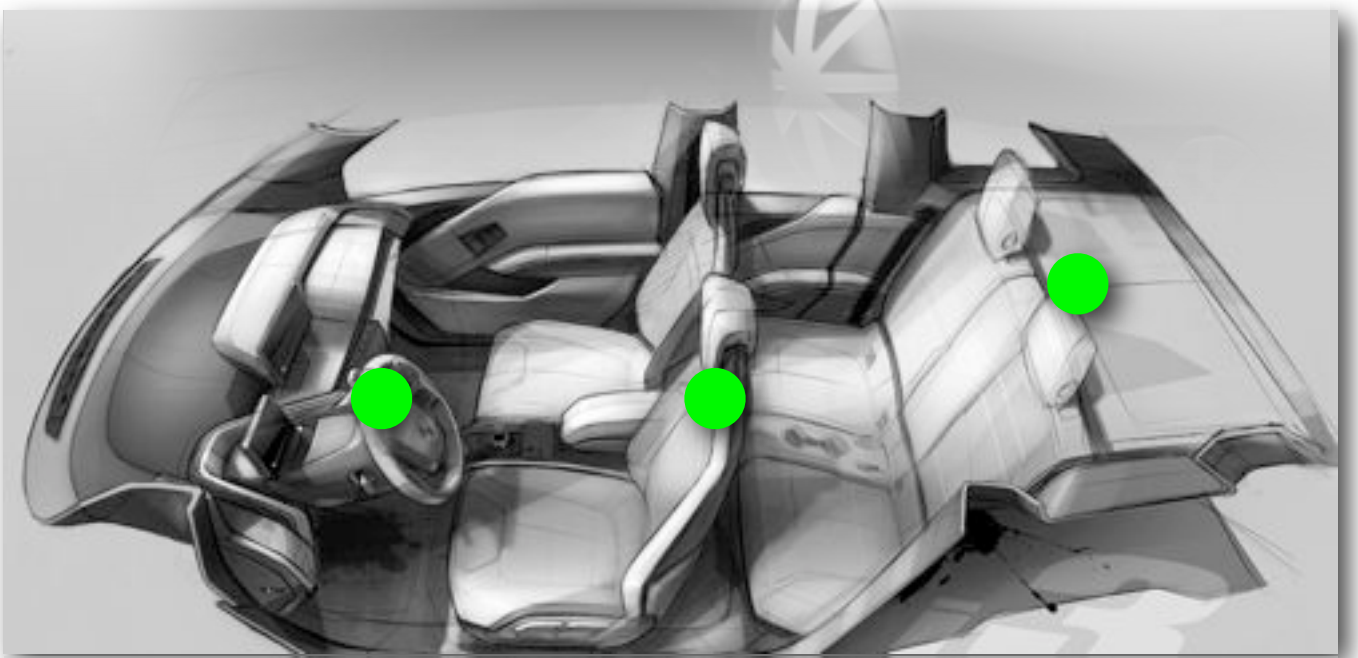




PROXIMITY TRANSMITTER LOCATION

VOLVO KEYLESS DRIVE
S80

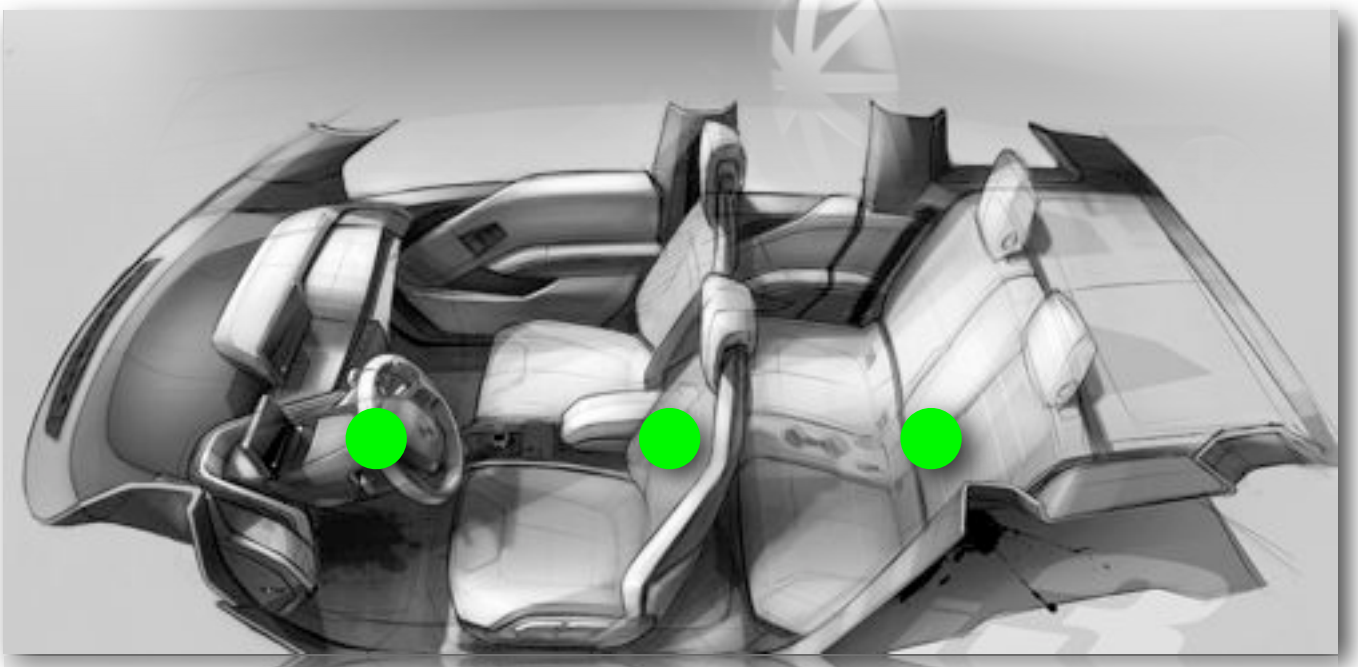




PROXIMITY TRANSMITTER LOCATION

VOLVO KEYLESS DRIVE
C30
C70





SPECIFICATION

BATTERIES	4 X AAA NiMh RECHARGEABLE OR ALKALINE
BATTERY LEVEL	BATTERY LEVEL INDICATION ON LCD SCREEN
BATTERY LIFE	> 5 HOURS(BASED ON 750 mA/h NiMh
WEIGHT	115 Grams
OSCILLOSCOPE MODE	20mS/Div (SLOW) 10mS/Div (FAST) SCAN MODE : 2 SECONDS ACROSS SCREEN
SIZE	90 mm (W) x 170 mm (H) x 38 mm (D)
CURRENT CONSUMPTION	90 mA
TRANSPONDER TEST	125kHz Amplitude Modulation 134.2kHz Frequency Shift Keying (FSK) Audible Tone for Data signal
LCD	Backlit Blue 128x64 dots
OPERATING TEMPERATURE RANGE	32 to 122 Degrees F or 0 to 50 Degrees Celsius
RADIO FREQUENCY TEST	150 to 999 MHz Resolution : 0.1 MHz GRAPH & OSCILLOSCOPE MODES
INFRA RED TEST	UNIVERSAL DETECTION RECEIVER
COIL ANTENNA TEST	Dual 125kHz/134.2kHz SENSING
PROXIMITY SIGNAL TEST	125kHz to 134kHz RANGE BAR GRAPH and OSCILLOSCOPE MODES

CONTACT INFORMATION

The Diagnostic Box
24 Helmers Way
Chillington
Kingsbridge
Devon
TQ7 2EZ
United Kingdom

Tel : +44 1548 580348
Fax : +44 1548 580348

Email : info@thediagnosticbox.com

Web : www.thediagnosticbox.com

Skype : diagnosticbox

DECLARATION of CONFORMITY

DECLARATION OF CONFORMITY

Manufacturer's Name:	The Diagnostic Box
Manufacturer's Address:	24 Helmers Way
	Chillington
	Kingsbridge
	Devon
	TQ7 2EZ
	United Kingdom
Product Name:	Transponder Tester
Product Model:	TDB003
Conforms to:	Specifications
	EN 55022:1998, A1: 2000 + A2: 2003
	EN 55024:1998, A1: 2001 + A2: 2003
Following the Provisions of	EMC Directive: 89/336/EEC

TDB003 December 2014

Product conforms to class A emission standards

Signed : Mr G Chambers

Signed on behalf of The Diagnostic Box

CE