⚠️ <u>Update Alert</u>: **Firmware updates are posted on the web on a regular basis. We recommend that you check for firmware and/or install guide updates prior to installing this product.**

Installation Guide

The TL8 firmware for DBALL2 is an all-in-one door lock and override module compatible with specific Lexus and Toyota vehicles. This guide supports the installation of a DBALL2 in Remote Start Ready (RSR) mode. This solution offers three (3) configuration options to control your system: 3x OEM Lock Remote Start Activation, RF System or SmartStart (all sold separately).

⚠️ This module can only be flashed and configured using XpressVIP at www.directechs.com or using the Directechs Mobile application for smartphones. Refer to the Module Programming section for more information.

Remote Start Ready (RSR) is a function that enables the interface module to remote start the vehicle completely on its own. Consequently, there is no need for an aftermarket or an OEM remote starter in order to start the vehicle from a distance.

IMPORTANT:

- No takeover feature is available. The vehicle will shut down as soon as a door is opened.

- To remote start the engine, the hood, hatch, and all doors must be closed.

Index

SmartStart Compatible

SmartStart is equipped with D2D, which means it can be connected to an interface module and used in Remote Start Ready (RSR) mode without the use of a remote starter. See the **Module Programming** section for more information.

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Vehicle Application Guide

The table below lists the vehicles and features which are compatible with this product. Refer to the following pages for more information on installation wiring, programming and troubleshooting for these vehicles.

Vehicles	2017	2016	2015	2014	PK-Immobilizer Bypass-Data No Key Req'd	AV-Parking Lights Control	DL-Arm Factory Security	DL-Disarm Factory Security	DL-Door Lock Control	DL-Door Unlock	DL-Driver Priority Unlock	RS-3x LOCK START (Start control using OEM Remote)	RS-3x LOCK STOP (Stop control using OEM Remote)	RS-RAP Shut Down (Retained ACC Power)	RS-Remote Start Ready	RS-SmartStart	RS-Tach / RPM Output	SS-Entry Monitoring ALL Door Pins	SS-Entry Monitoring Hood Pin	SS-Entry Monitoring Trunk/Hatch Pin	SS-Factory Alarm Trigger Monitoring	ST-Brake Status (foot brake)	ST-Ignition Status
Lexus																							
IS 200t (Smart Key)	6	1			•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
IS 250 (Smart Key)			1	1	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
IS 300 (Smart Key)	6	1			•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
IS 350 (Smart Key)	6	1	1	1	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
NX 200t (Smart Key)	2	2	2		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
NX 300h (Smart Key)	2	2	2		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
RC 350 (Smart Key)		1	1		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
RC F (Smart Key)			1		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
RX 350 (Smart Key)	4	4			•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
RX 450h (Smart Key)	4	4			•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Toyota																							
Highlander (Smart Key)	5	3	3	3	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Highlander Hybrid	5	3	3	3	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Tacoma (Smart Key)	3	3			•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

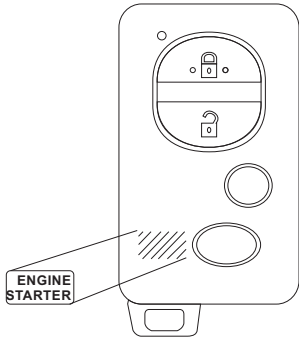**Legend:**

AV: Horn & Lights Control

DL: OE Door Lock & Alarm Controls

FOB: Sync CAN Interface w/FOB Remote

PK: Transponder & Immobilizer Override

RS: Remote Start & Engine Controls

SS: Integrated Security & Monitoring

ST: Function/Feature Status

How to Know if the Vehicle is Equipped with an OEM Remote Starter

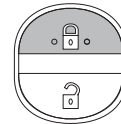| 1- An "ENGINE STARTER" sticker should be on the remote.	2- Remote start the OEM remote starter: Press the remote control's lock button twice within 2 seconds, then press and hold the lock button for 3 seconds.
	The parking lights flash after 3 seconds. The engine starts and the parking lights flash repeatedly for 20 seconds.

x2 **&** **Press & Hold for 3 seconds**

Important OEM Remote Starter Information

- **If the vehicle is equipped with a physical add-on Lexus/Toyota OEM Remote Starter:**
  The factory remote starter must be permanently disconnected before programming the Directed interface as both modules cannot coexist. See locating the OEM Remote Start on the next page.

- **If the vehicle is equipped with a BCM enabled Lexus/Toyota OEM Remote Starter:**
  The vehicle does not have a physical remote starter and only one module can be programed at a time. In this case temporally disable the OEM remote start system using the following process:
    1. Remove the fuse powering the OEM Remote Starter.
       See locating the fuse powering the OEM Remote Starter on the next page.
    2. Perform a module reset, see « **Module Reset** » section.
    3. Perform the Module Programming steps, see « **Module Programming** » section.

After programming is successful replace the fuse powering the OEM Remote Starter.
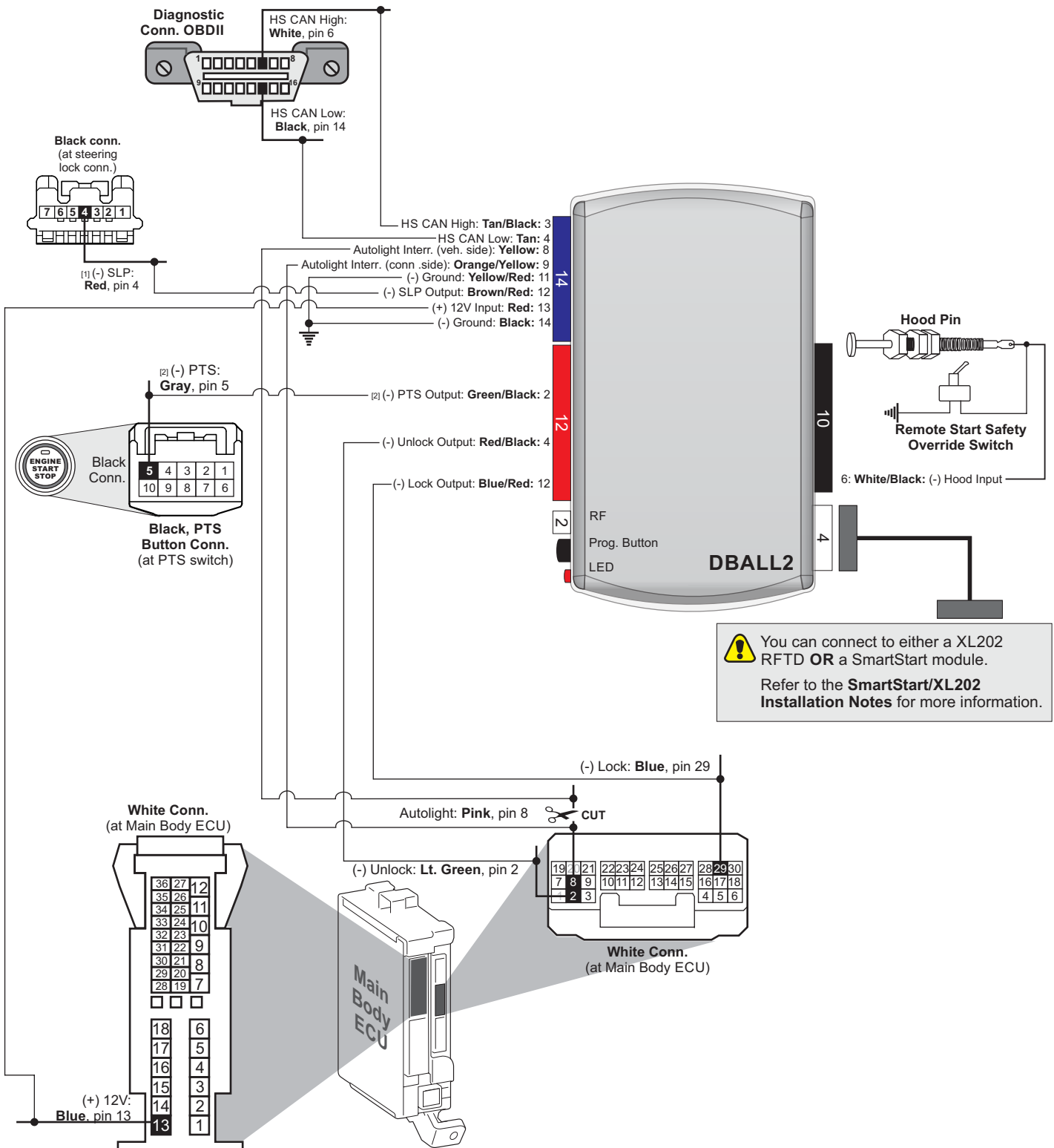
OEM Remote Start Fuse Location

Make	Model	Fuse Location	Fuse Name	Fuse Value
Lexus	IS 200t (Smart Key)	Engine room relay box, right side of engine compartment.	DCM	5A
Lexus	IS 250 (Smart Key)	Engine room relay box, right side of engine compartment.	DCM	5A
Lexus	IS 300 (Smart Key)	Engine room relay box, right side of engine compartment.	DCM	5A
Lexus	IS 350 (Smart Key)	Engine room relay box, right side of engine compartment.	DCM	5A
Lexus	NX 200t (Smart Key)	Engine room relay box, right side of engine compartment.	DCM	5A
Lexus	NX 300h (Smart Key)	Engine room relay box, right side of engine compartment.	DCM	5A
Lexus	RC 350 (Smart Key)	Engine room relay box, right side of engine compartment.	DCM	5A
Lexus	RC F (Smart Key)	Engine room relay box, right side of engine compartment.	DCM	5A
Lexus	RX 350 (Smart Key)	Bottom of instrument panel junction box, under drivers dash.	DCM	7.5A
Lexus	RX 450h (Smart Key)	Bottom of instrument panel junction box, under drivers dash.	DCM	7.5A

Physical OEM Remote Start Location

Make	Model	OEM Remote Start Location
Lexus	IS 250 (Smart Key)	Behind glove box, high in passenger kick panel.
Lexus	IS 350 (Smart Key)	Behind glove box, high in passenger kick panel.
Toyota	Highlander (Smart Key)	Behind glove box, high in passenger kick panel.
Toyota	Highlander Hybrid	Bottom of instrument panel junction box, under drivers dash.

Installation Type 1

Diagnostic Conn. OBDII

HS CAN High: **White**, pin 6

HS CAN Low: **Black**, pin 14

Black conn. (at steering lock conn.)

7 6 5 4 3 2 1

[1] (-) SLP: **Red**, pin 4

HS CAN High: **Tan/Black**: 3
HS CAN Low: **Tan**: 4
Autolight Interr. (veh. side): **Yellow**: 8
Autolight Interr. (conn .side): **Orange/Yellow**: 9
(-) Ground: **Yellow/Red**: 11
(-) SLP Output: **Brown/Red**: 12
(+) 12V Input: **Red**: 13
(-) Ground: **Black**: 14

14

[2] (-) PTS: **Gray**, pin 5

12

[2] (-) PTS Output: **Green/Black**: 2

(-) Unlock Output: **Red/Black**: 4

(-) Lock Output: **Blue/Red**: 12

ENGINE START STOP

Black Conn.

5 4 3 2 1
10 9 8 7 6

Black, PTS Button Conn. (at PTS switch)

2

RF

Prog. Button

LED

DBALL2

10

Hood Pin

Remote Start Safety Override Switch

6: **White/Black**: (-) Hood Input

4

⚠️ You can connect to either a XL202 RFTD **OR** a SmartStart module.

Refer to the **SmartStart/XL202 Installation Notes** for more information.

(-) Lock: **Blue**, pin 29

Autolight: **Pink**, pin 8   ✂ **CUT**

(-) Unlock: **Lt. Green**, pin 2

White Conn. (at Main Body ECU)

36 27 | 12
35 26 | 11
34 25 | 10
33 24 | 10
32 23 | 9
31 22 | 8
30 21 | 7
29 20 | 7
28 19 |

18 | 6
17 | 5
16 | 4
15 | 3
14 | 2
13 | 1

(+) 12V: **Blue**, pin 13

Main Body ECU

19 20 21 | 22 23 24 | 25 26 27 | 28 29 30
7 8 9 | 10 11 12 | 13 14 15 | 16 17 18
2 3 | | | 4 5 6

White Conn. (at Main Body ECU)

[1] **SLP**: See « **Locating Steering Lock Connector in Vehicle** » in vehicle wiring reference chart.
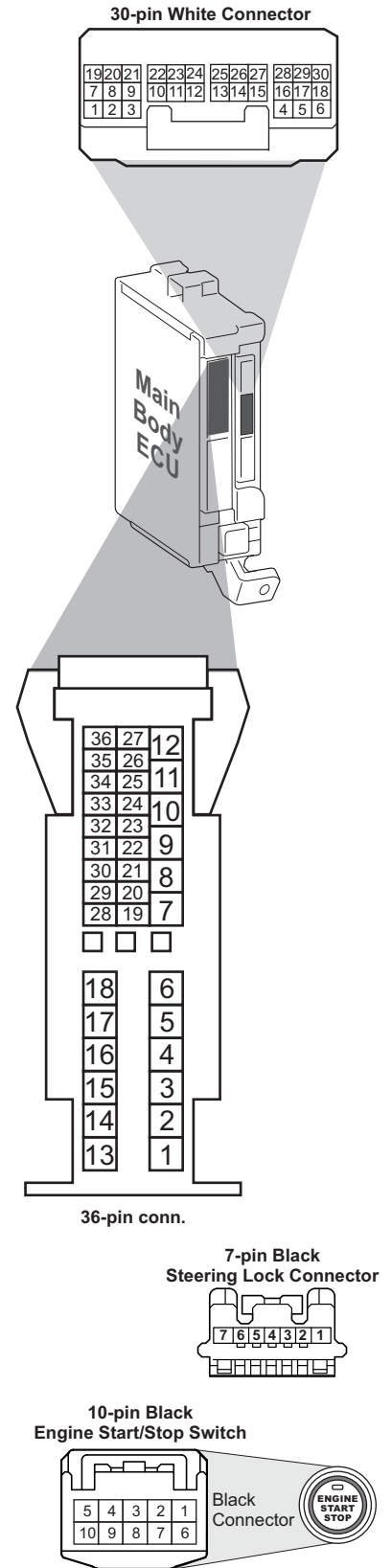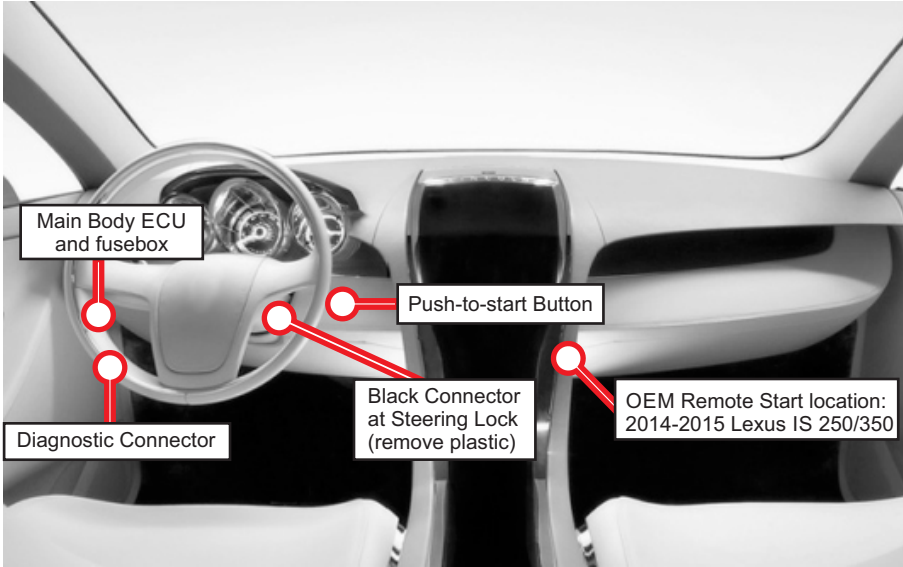
[2] Only required for Pit Stop Mode.

⚠️ With the exception of the OBDII Diagnostic connector, all adapters are displayed from the wire side (unless specified otherwise).
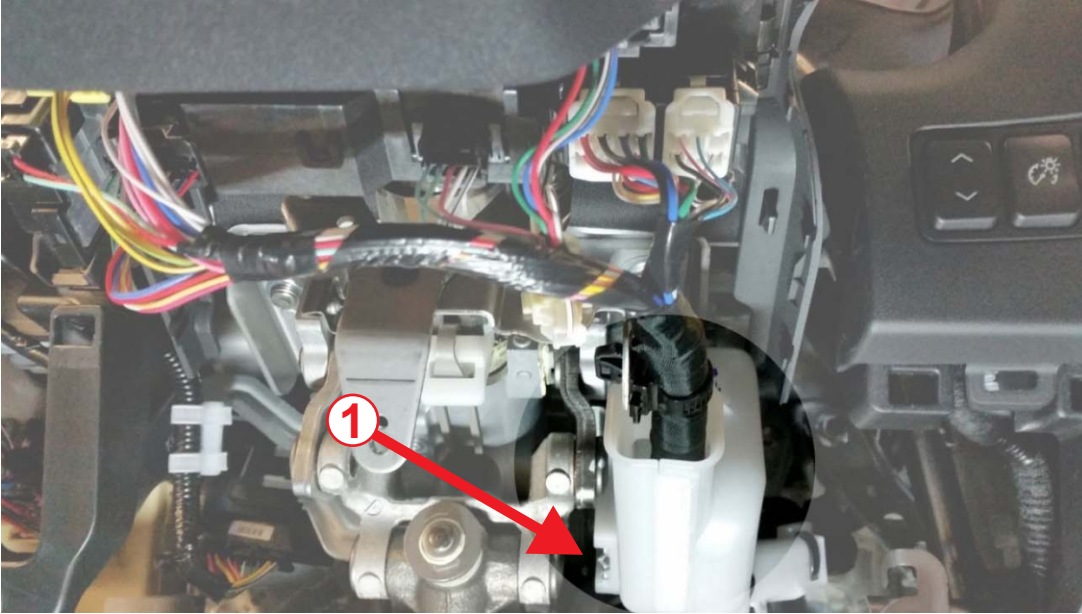
Type 1 - Vehicle Wiring Reference Charts

Wire information				Connector Information		
Function	Color	Pin	Polarity	Location	Color	Pin
Lexus IS 200t (Smart key) 2016						
SLP	Red	4	(-)	Steering lock connector.	Black	7
PTS	Gray	5	(-)	Engine start/stop switch.	Black	10
HS CAN High	White	6	Data	OBDII.	White	16
HS CAN Low	Black	14	Data	OBDII.	White	16
Autolight	Pink	8	Cut	Main body ECU.	White	30
Lock	Blue	29	(-)	Main body ECU.	White	30
Unlock	Lt. Green	2	(-)	Main body ECU.	White	30
12V	Blue	13	(+)	Main body ECU.	White	36
Lexus IS 250 (Smart key) 2014-2015						
SLP	Red	4	(-)	Steering lock connector.	Black	7
PTS	Gray	5	(-)	Engine start/stop switch.	Black	10
HS CAN High	White	6	Data	OBDII.	White	16
HS CAN Low	Black	14	Data	OBDII.	White	16
Autolight	Pink	8	Cut	Main body ECU.	White	30
Lock	Blue	29	(-)	Main body ECU.	White	30
Unlock	Lt. Green	2	(-)	Main body ECU.	White	30
12V	Blue	13	(+)	Dash fuse box.	White	36
Lexus IS 300 (Smart key) 2016						
SLP	Red	4	(-)	Steering lock connector.	Black	7
PTS	Gray	5	(-)	Engine start/stop switch.	Black	10
HS CAN High	White	6	Data	OBDII.	White	16
HS CAN Low	Black	14	Data	OBDII.	White	16
Autolight	Pink	8	Cut	Main body ECU.	White	30
Lock	Blue	29	(-)	Main body ECU.	White	30
Unlock	Lt. Green	2	(-)	Main body ECU.	White	30
12V	Blue	13	(+)	Main body ECU.	White	36
Lexus IS 350 (Smart key) 2014-2016						
SLP	Red	4	(-)	Steering lock connector.	Black	7
PTS	Gray	5	(-)	Engine start/stop switch.	Black	10
HS CAN High	White	6	Data	OBDII.	White	16
HS CAN Low	Black	14	Data	OBDII.	White	16
Autolight	Pink	8	Cut	Main body ECU.	White	30
Lock	Blue	29	(-)	Main body ECU.	White	30
Unlock	Lt. Green	2	(-)	Main body ECU.	White	30
12V	Blue	13	(+)	Main body ECU.	White	36
Lexus RC350 (Smart Key) 2015-2016						
SLP	Red	4	(-)	Steering lock connector.	Black	7
PTS	Gray	5	(-)	Engine start/stop switch.	Black	10
HS CAN High	White	6	Data	OBDII.	White	16
HS CAN Low	Black	14	Data	OBDII.	White	16
Autolight	Pink	8	Cut	Main body ECU.	White	30
Lock	Blue	29	(-)	Main body ECU.	White	30
Unlock	Lt. Green	2	(-)	Main body ECU.	White	30
12V	Blue	13	(+)	Dash fuse box.	White	36
Lexus RC F (Smart Key) 2015						
SLP	Red	4	(-)	Steering lock connector.	Black	7
PTS	Gray	5	(-)	Engine start/stop switch.	Black	10
HS CAN High	White	6	Data	OBDII.	White	16
HS CAN Low	Black	14	Data	OBDII.	White	16
Autolight	Pink	8	Cut	Main body ECU.	White	30
Lock	Blue	29	(-)	Main body ECU.	White	30
Unlock	Lt. Green	2	(-)	Main body ECU.	White	30
12V	Blue	13	(+)	Dash fuse box.	White	36

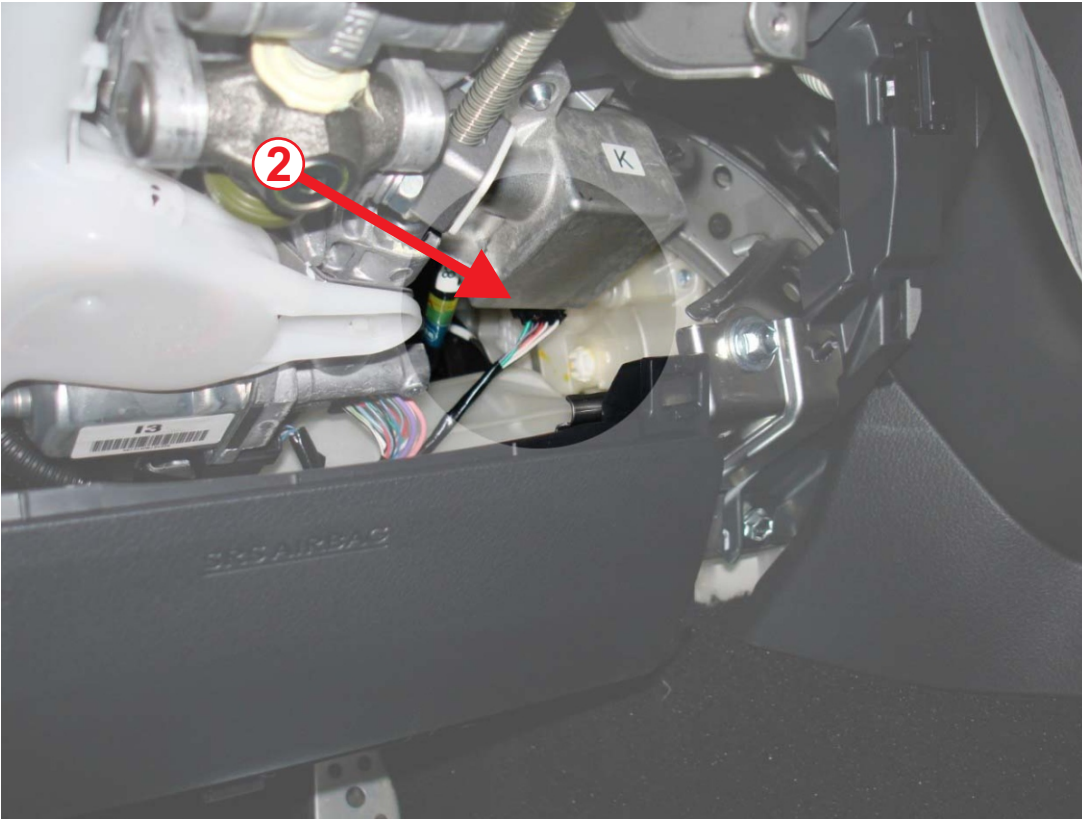## Type 1 - Locating Components and the OEM Remote Starter

Main Body ECU and fusebox

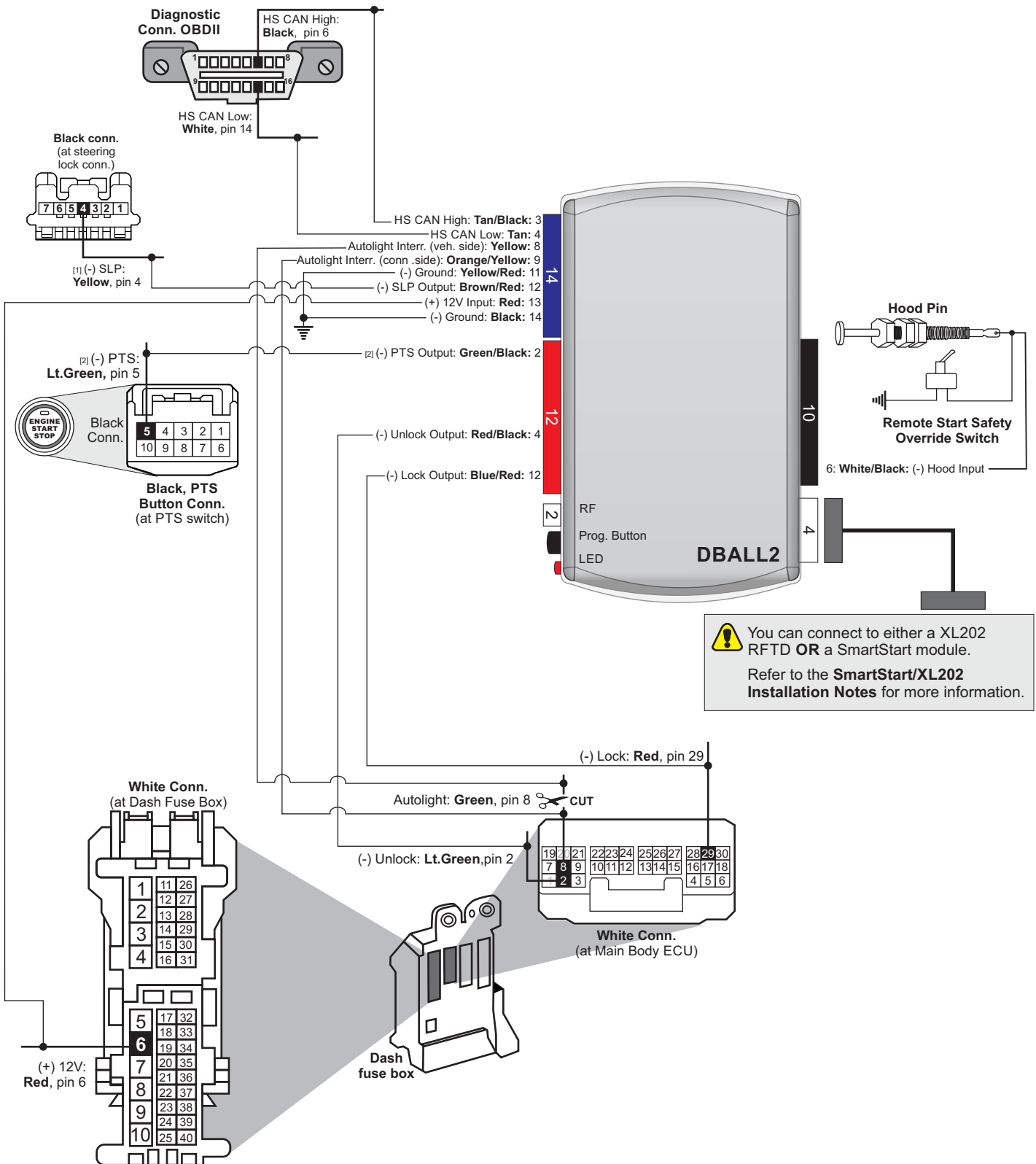Push-to-start Button

Diagnostic Connector

Black Connector at Steering Lock (remove plastic)

OEM Remote Start location: 2014-2015 Lexus IS 250/350

30-pin White Connector

19	20	21		22	23	24		25	26	27		28	29	30
7	8	9		10	11	12		13	14	15		16	17	18
1	2	3										4	5	6

Main Body ECU

36	27	12
35	26	11
34	25	
33	24	10
32	23	9
31	22	
30	21	8
29	20	7
28	19	

18	6
17	5
16	4
15	3
14	2
13	1

36-pin conn.

7-pin Black Steering Lock Connector

| 7 | 6 | 5 | 4 | 3 | 2 | 1 |

10-pin Black Engine Start/Stop Switch

| 5 | 4 | 3 | 2 | 1 |
| 10 | 9 | 8 | 7 | 6 |

Black Connector

ENGINE START STOP

Type 1 - Locating SLP in the Vehicle
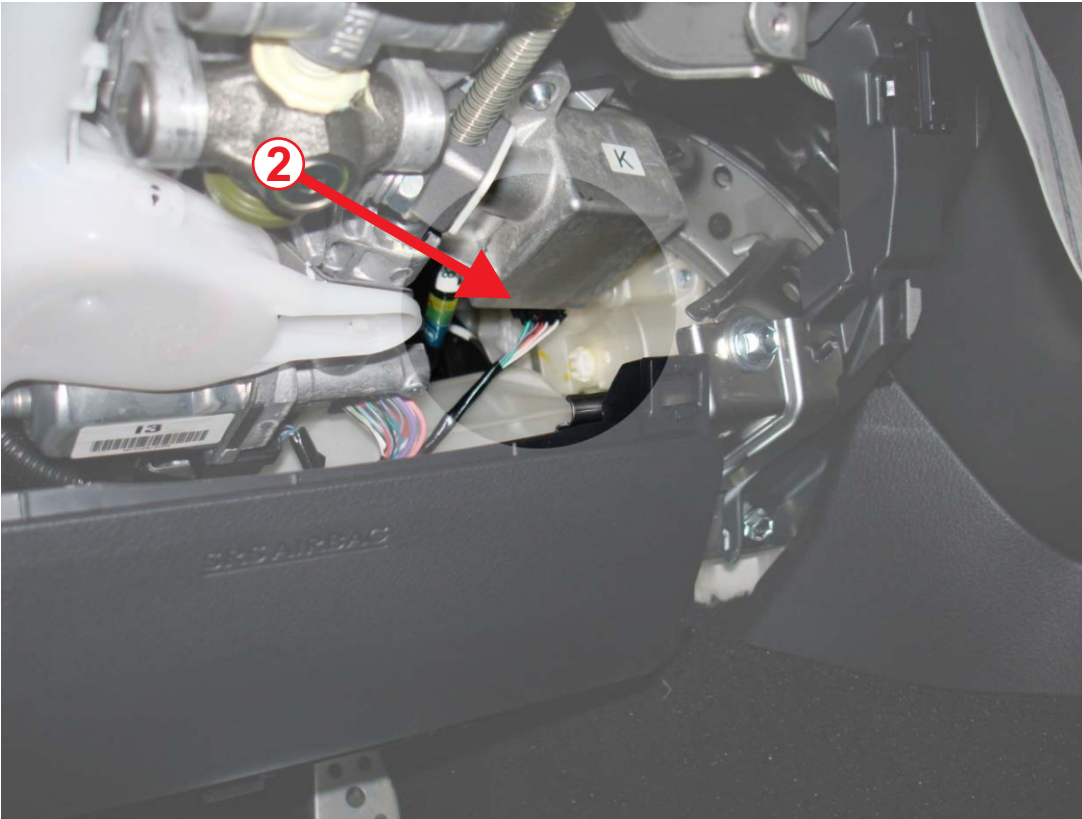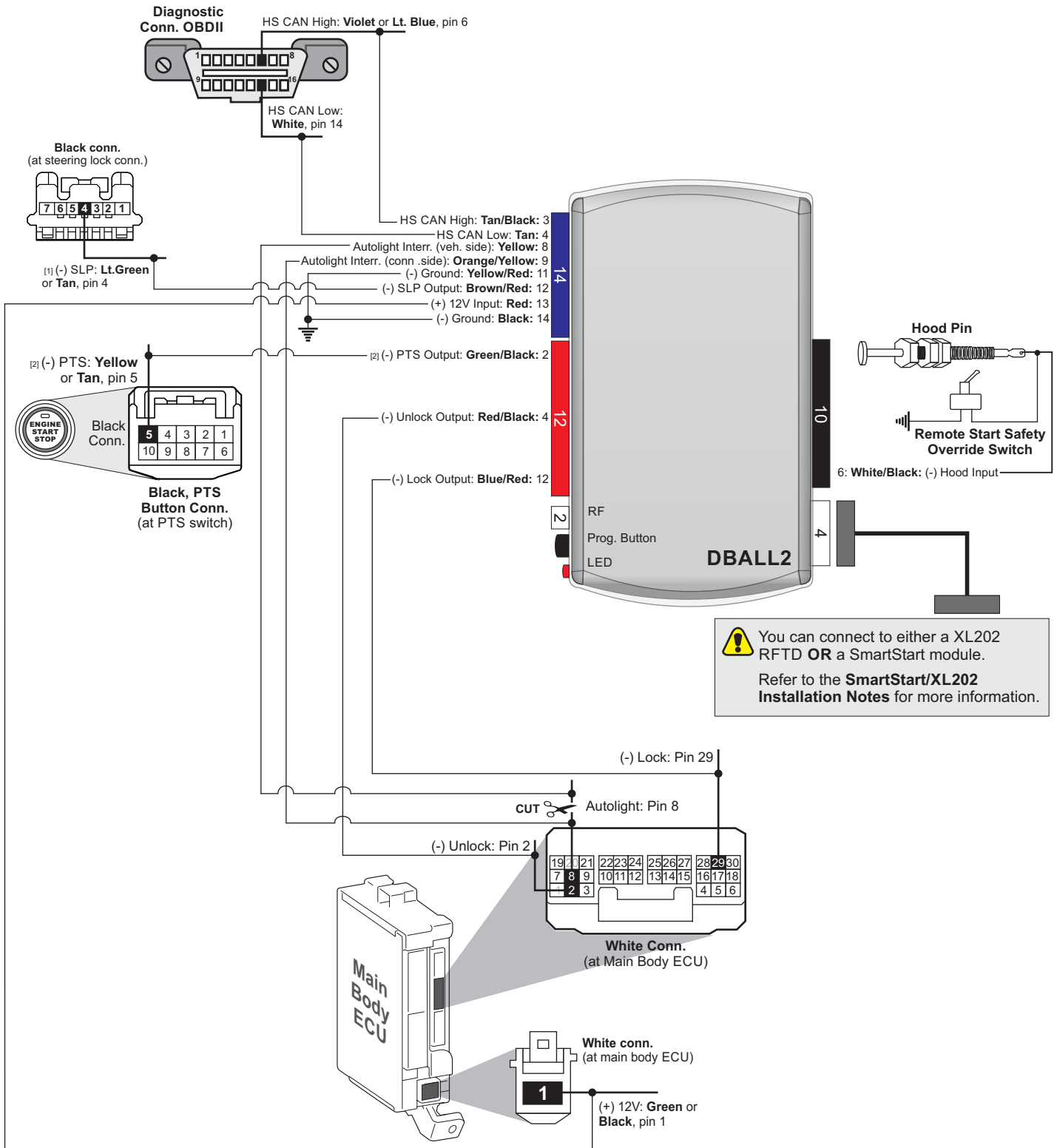
1. To gain access to the SLP connector, remove metal clip to remove the white plastic housing.

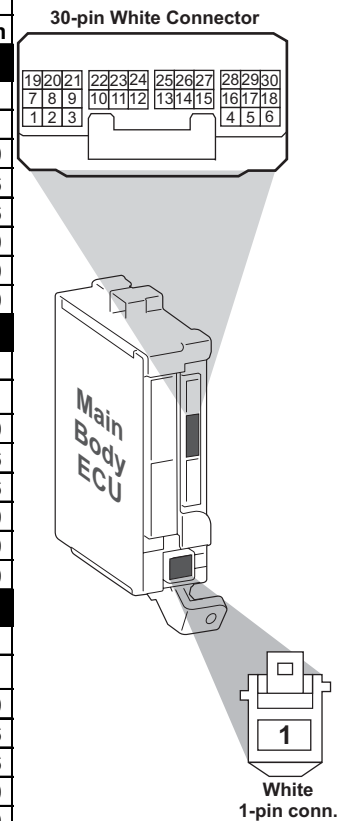2. Move the white plastic housing over enough to access the SLP connector.

Installation Type 2

Diagnostic Conn. OBDII

HS CAN High: Black, pin 6

HS CAN Low: White, pin 14

Black conn.
(at steering lock conn.)

7 6 5 **4** 3 2 1

[1] **(-) SLP: Yellow,** pin 4

HS CAN High: **Tan/Black:** 3
HS CAN Low: **Tan:** 4
Autolight Interr. (veh. side): **Yellow:** 8
Autolight Interr. (conn .side): **Orange/Yellow:** 9
(-) Ground: **Yellow/Red:** 11
(-) SLP Output: **Brown/Red:** 12
(+) 12V Input: **Red:** 13
(-) Ground: **Black:** 14

14

[2] **(-) PTS: Lt.Green,** pin 5

ENGINE START STOP

Black Conn.

5 4 3 2 1
10 9 8 7 6

Black, PTS Button Conn.
(at PTS switch)

[2] **(-) PTS Output: Green/Black:** 2

(-) Unlock Output: **Red/Black:** 4

(-) Lock Output: **Blue/Red:** 12

12

2 RF

Prog. Button

LED

DBALL2

Hood Pin

10

Remote Start Safety Override Switch

6: **White/Black:** (-) Hood Input

4

⚠ You can connect to either a XL202 RFTD **OR** a SmartStart module.

Refer to the **SmartStart/XL202 Installation Notes** for more information.

(-) Lock: **Red,** pin 29

Autolight: **Green,** pin 8 ✂ **CUT**

(-) Unlock: **Lt.Green,** pin 2

White Conn.
(at Dash Fuse Box)

1   11 26
2   12 27
3   13 28
    14 29
    15 30
4   16 31

5   17 32
6   18 33
    19 34
7   20 35
    21 36
8   22 37
    23 38
9   24 39
10 25 40

(+) 12V: **Red,** pin 6

19 20 21   22 23 24   25 26 27   28 29 30
7   8   9   10 11 12   13 14 15   16 17 18
2   3   4   5   6

White Conn.
(at Main Body ECU)

Dash fuse box

[1] **SLP**: See « **Locating Steering Lock Connector in Vehicle** » in vehicle wiring reference chart.
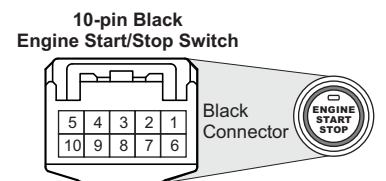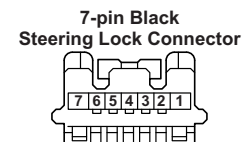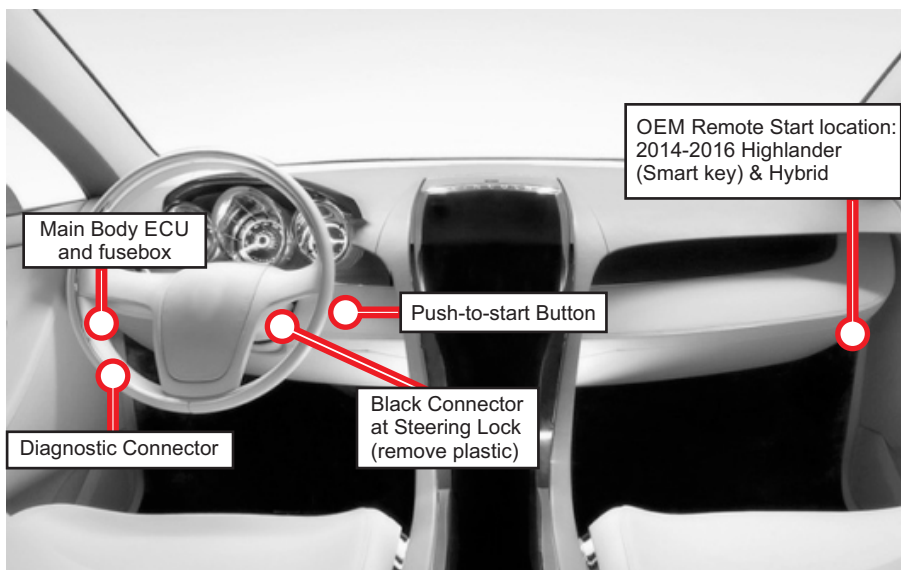[2] Only required for Pit Stop Mode.
⚠ With the exception of the OBDII Diagnostic connector, all adapters are displayed from the wire side (unless specified otherwise).

DIRECTED

Type 2 - Vehicle Wiring Reference Charts

Wire information				Connector Information		
Function	Color	Pin	Polarity	Location	Color	Pin
Lexus NX200t (Smart Key) 2015-2017						
SLP	Yellow	4	(-)	Steering lock connector.	Black	7
PTS	Lt. Green	5	(-)	Engine start/stop switch.	Black	10
HS CAN High	Black	6	Data	OBDII.	White	16
HS CAN Low	White	14	Data	OBDII.	White	16
Autolight	Green	8	Cut	Bottom of dash fuse box.	White	30
Lock	Red	29	(-)	Bottom of dash fuse box.	White	30
Unlock	Lt. Green	2	(-)	Bottom of dash fuse box.	White	30
12V	Red	6	(+)	Bottom of dash fuse box.	White	40
Lexus NX300h (Smart Key) 2015-2017						
SLP	Yellow	4	(-)	Steering lock connector.	Black	7
PTS	Lt. Green	5	(-)	Engine start/stop switch.	Black	10
HS CAN High	Black	6	Data	OBDII.	White	16
HS CAN Low	White	14	Data	OBDII.	White	16
Autolight	Green	8	Cut	Bottom of dash fuse box.	White	30
Lock	Red	29	(-)	Bottom of dash fuse box.	White	30
Unlock	Lt. Green	2	(-)	Bottom of dash fuse box.	White	30
12V	Red	6	(+)	Bottom of dash fuse box.	White	40

Locating Components in the Vehicle

Main Body ECU & Dash Fuse Box

Push-to-start Button

Black Connector at Steering Lock (remove plastic)

OBDII Diagnostic Connector

30-pin White Connector

Dash fuse box

40-pin White

10-pin Black
Engine Start/Stop Switch

Black Connector

7-pin Black
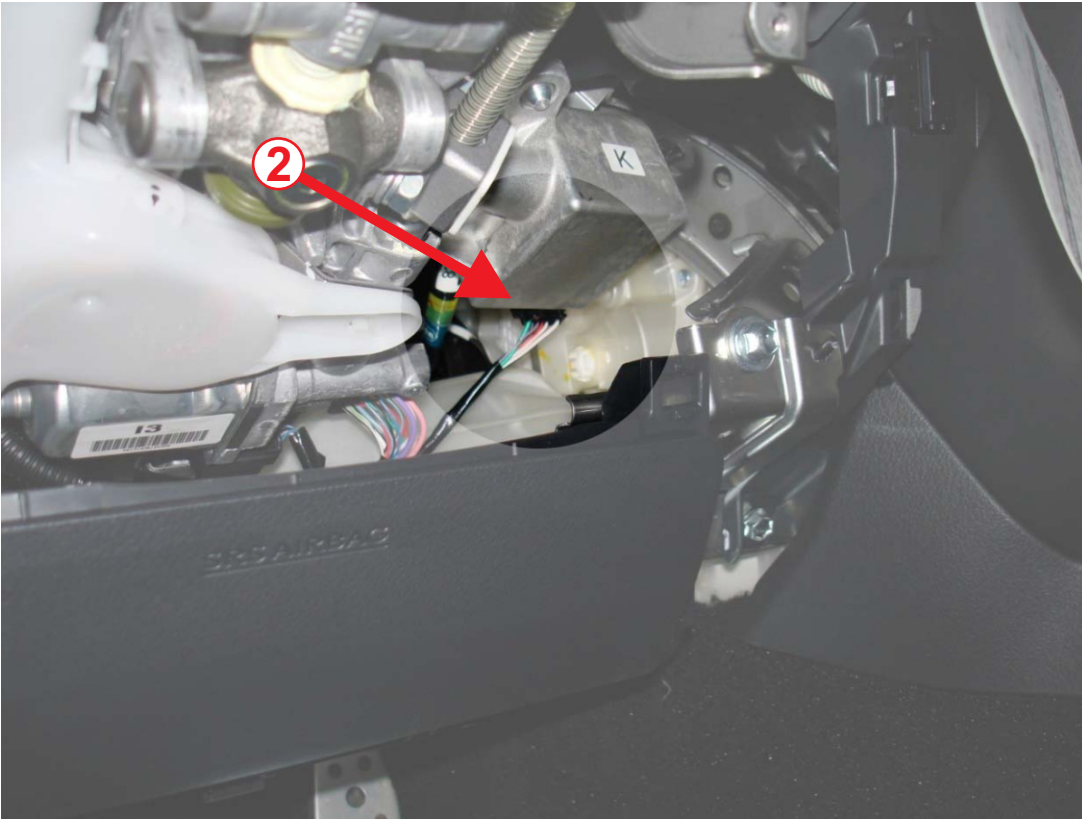**Steering Lock Connector**
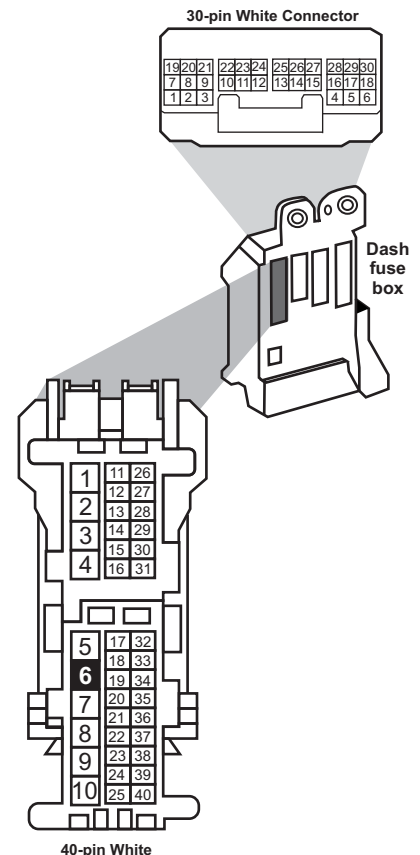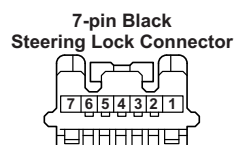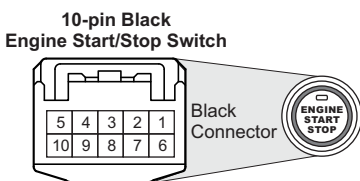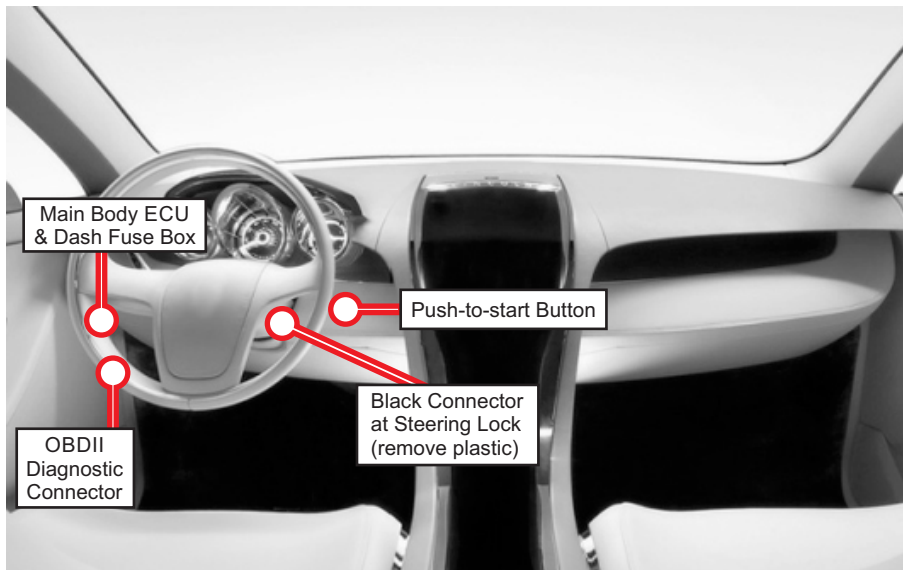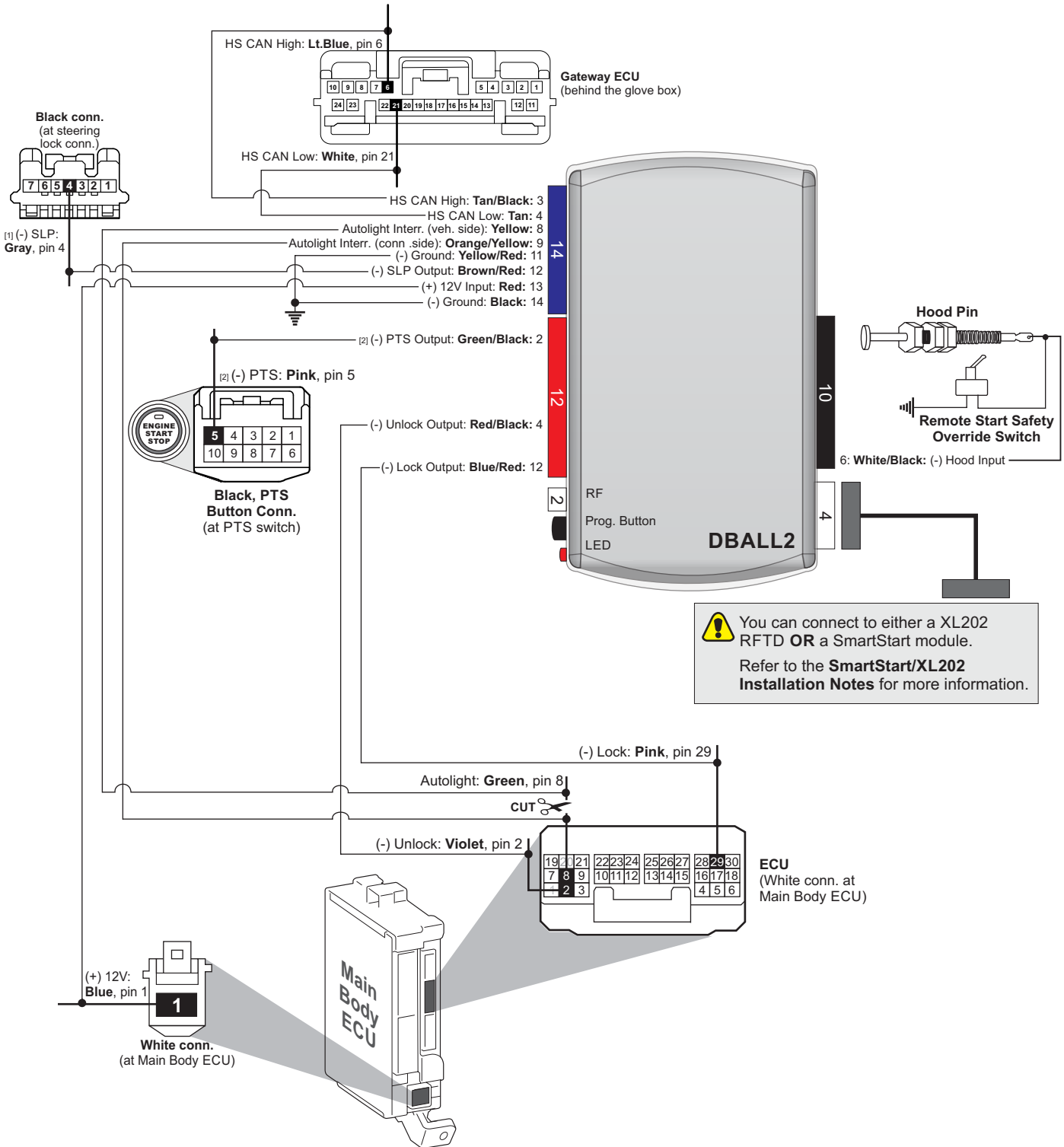
Type 2 - Locating SLP in the Vehicle

1. To gain access to the SLP connector, remove metal clip to remove the white plastic housing.

2. Move the white plastic housing over enough to access the SLP connector.

Installation Type 3

Diagnostic Conn. OBDII

HS CAN High: **Violet** or **Lt. Blue**, pin 6

HS CAN Low: **White**, pin 14

Black conn.
(at steering lock conn.)

7 6 5 4 3 2 1

[1] (-) SLP: **Lt.Green** or **Tan**, pin 4

HS CAN High: **Tan/Black:** 3
HS CAN Low: **Tan:** 4
Autolight Interr. (veh. side): **Yellow:** 8
Autolight Interr. (conn .side): **Orange/Yellow:** 9
(-) Ground: **Yellow/Red:** 11
(-) SLP Output: **Brown/Red:** 12
(+) 12V Input: **Red:** 13
(-) Ground: **Black:** 14

[2] (-) PTS: **Yellow** or **Tan**, pin 5

[2] (-) PTS Output: **Green/Black:** 2

(-) Unlock Output: **Red/Black:** 4

ENGINE START STOP

Black Conn.

5 4 3 2 1
10 9 8 7 6

Black, PTS Button Conn.
(at PTS switch)

(-) Lock Output: **Blue/Red:** 12

RF
Prog. Button
LED

DBALL2

14
12
2

10
4

Hood Pin

Remote Start Safety Override Switch

6: **White/Black:** (-) Hood Input

⚠️ You can connect to either a XL202 RFTD **OR** a SmartStart module.

Refer to the **SmartStart/XL202 Installation Notes** for more information.

(-) Lock: Pin 29

CUT ✂ Autolight: Pin 8

(-) Unlock: Pin 2

19 20 21 | 22 23 24 | 25 26 27 | 28 29 30
7 | 8 | 9 | 10 11 12 | 13 14 15 | 16 17 18
2 | 3 | | | 4 5 6

White Conn.
(at Main Body ECU)

Main Body ECU

White conn.
(at main body ECU)

1

(+) 12V: **Green** or **Black**, pin 1

[1] **SLP**: See « **Locating Steering Lock Connector in Vehicle** » in vehicle wiring reference chart.

[2] Only required for Pit Stop Mode.

⚠️ With the exception of the OBDII Diagnostic connector, all adapters are displayed from the wire side (unless specified otherwise).
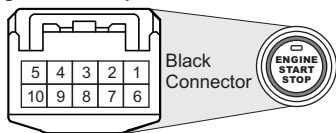
DIRECTED

Type 3 - Vehicle Wiring Reference Charts

| Wire information				Connector Information			
Function	Color	Pin	Polarity	Location		Color	Pin
Toyota Highlander (Smart Key) 2014-2016							
12V	Green	1	(+)	Dash fuse box.		White	1
SLP	Lt. Green	4	(-)	Steering lock connector.		Black	7
PTS	Yellow	5	(-)	Engine start/stop switch.		Black	10
HS CAN High	Violet	6	Data	OBDII under driver dash.		White	16
HS CAN Low	White	14	Data	OBDII under driver dash.		White	16
Autolight	Black	8	Cut	Main body ECU.		White	30
Lock	Violet	29	(-)	Main body ECU.		White	30
Unlock	Lt. Blue	2	(-)	Main body ECU.		White	30
Toyota Highlander Hybrid 2014-2016							
12V	Green	1	(+)	Dash fuse box.		White	1
SLP	Lt. Green	4	(-)	Steering lock connector.		Black	7
PTS	Yellow	5	(-)	Engine start/stop switch.		Black	10
HS CAN High	Violet	6	Data	OBDII under driver dash.		White	16
HS CAN Low	White	14	Data	OBDII under driver dash.		White	16
Autolight	Black	8	Cut	Main body ECU.		White	30
Lock	Violet	29	(-)	Main body ECU.		White	30
Unlock	Lt. Blue	2	(-)	Main body ECU.		White	30
Toyota Tacoma (Smart Key) 2016-2017							
12V	Black	1	(+)	Dash fuse box.		White	1
SLP	Tan	4	(-)	Steering lock connector.		Black	7
PTS	Tan	5	(-)	Engine start/stop switch.		Black	10
HS CAN High	Lt.Blue	6	Data	OBDII.		White	16
HS CAN Low	White	14	Data	OBDII.		White	16
Autolight	White	8	Cut	Main body ECU.		White	30
Lock	Lt.Blue	29	(-)	Main body ECU.		White	30
Unlock	Green	2	(-)	Main body ECU.		White	30

30-pin White Connector

Main Body ECU

White 1-pin conn.

Locating Components and the OEM Remote Starter

OEM Remote Start location: 2014-2016 Highlander (Smart key) & Hybrid

Main Body ECU and fusebox

Push-to-start Button

Diagnostic Connector

Black Connector at Steering Lock (remove plastic)

7-pin Black Steering Lock Connector
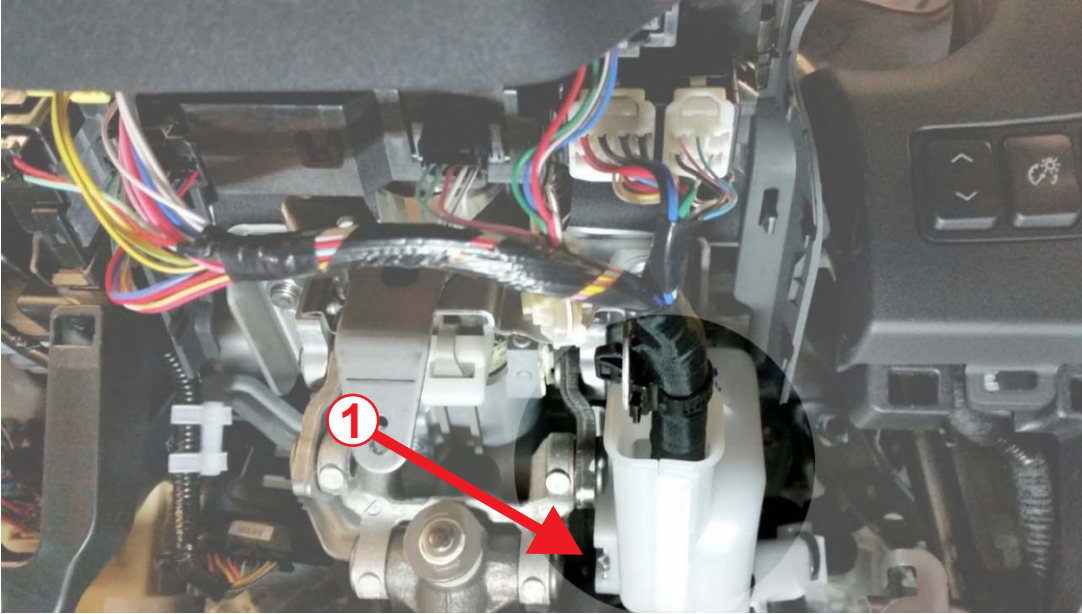
10-pin Black Engine Start/Stop Switch

Black Connector
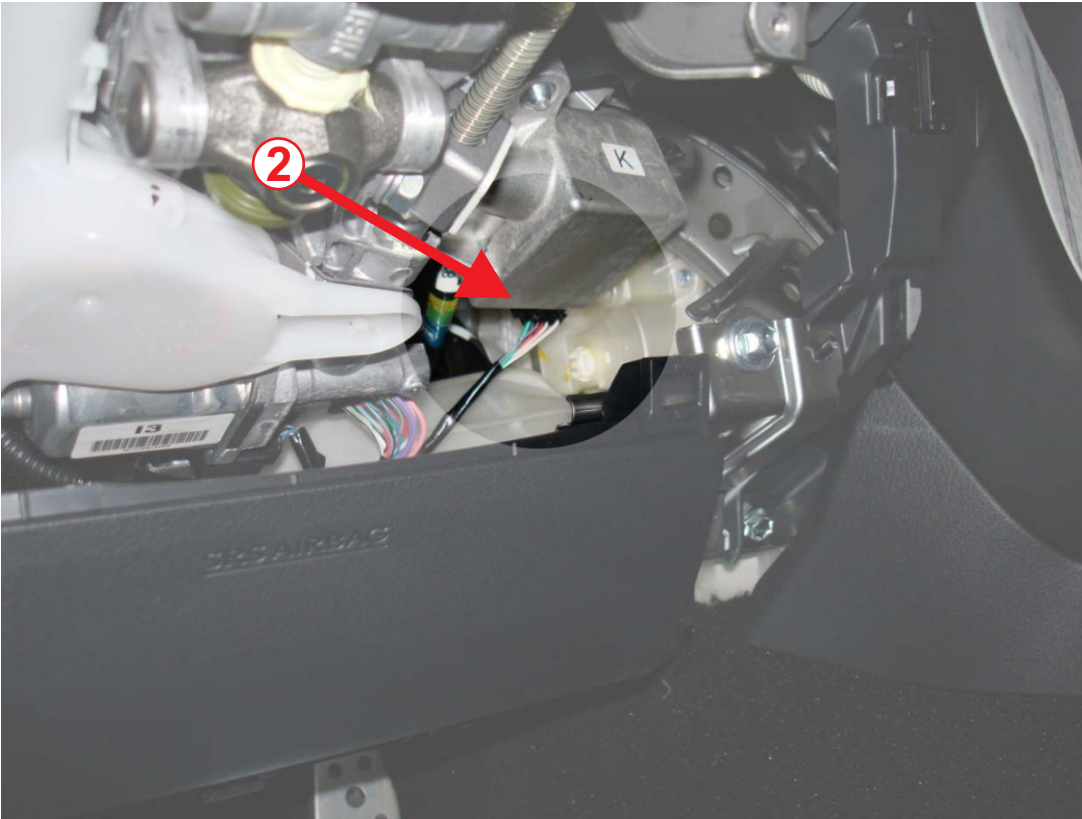
ENGINE START STOP
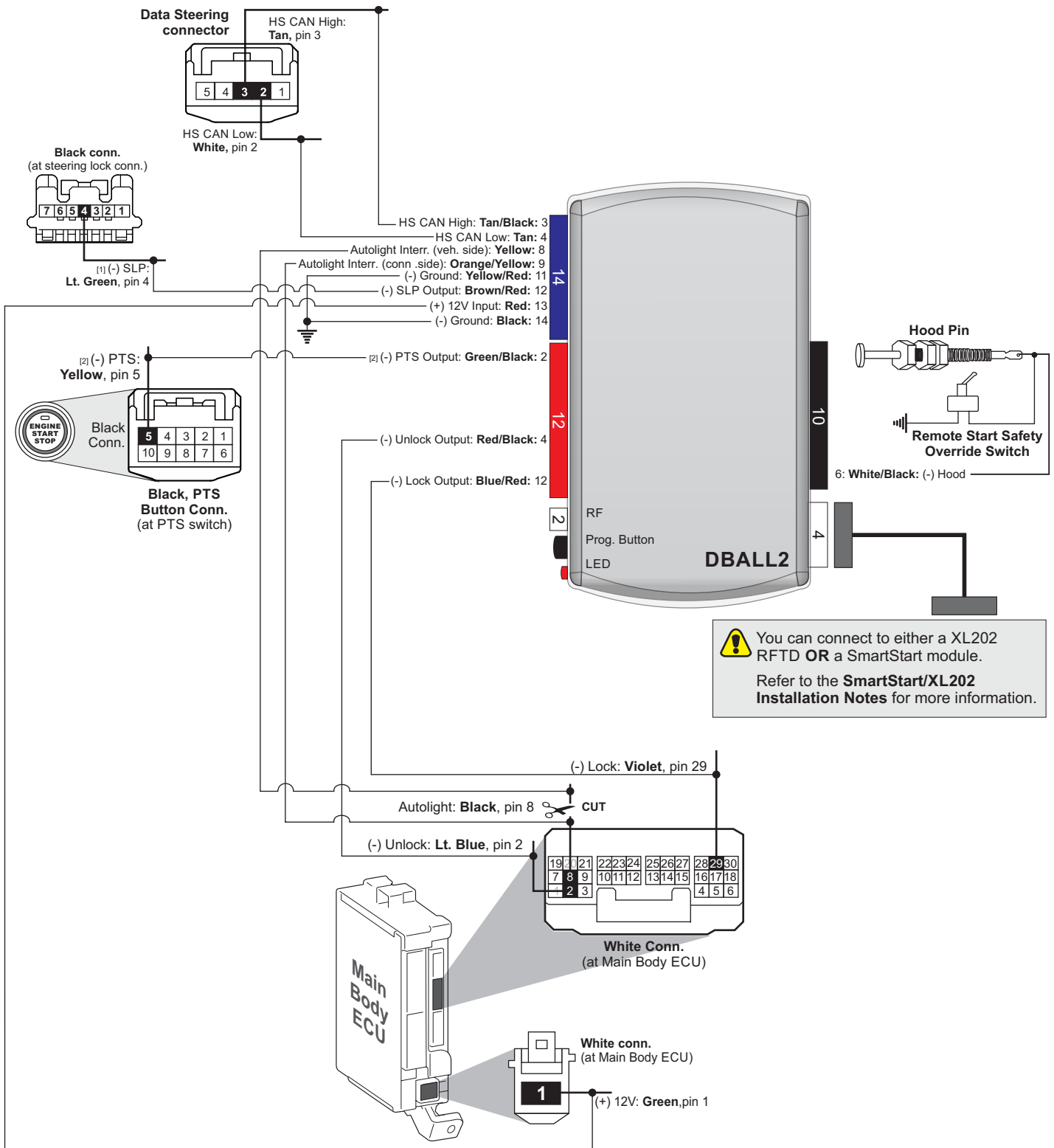
Type 3 - Locating SLP in the Vehicle

1. To gain access to the SLP connector, remove metal clip to remove the white plastic housing.

2. Move the white plastic housing over enough to access the SLP connector.

Installation Type 4

HS CAN High: **Lt.Blue**, pin 6

Gateway ECU
(behind the glove box)

| 10 | 9 | 8 | 7 | 6 | | | 5 | 4 | 3 | 2 | 1 |

| 24 | 23 | | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | | 12 | 11 |

HS CAN Low: **White**, pin 21

Black conn.
(at steering lock conn.)

| 7 | 6 | 5 | 4 | 3 | 2 | 1 |

[1] (-) SLP: **Gray**, pin 4

HS CAN High: **Tan/Black: 3**
HS CAN Low: **Tan: 4**
Autolight Interr. (veh. side): **Yellow: 8**
Autolight Interr. (conn .side): **Orange/Yellow: 9**
(-) Ground: **Yellow/Red: 11**
(-) SLP Output: **Brown/Red: 12**
(+) 12V Input: **Red: 13**
(-) Ground: **Black: 14**

Hood Pin

14

[2] (-) PTS Output: **Green/Black: 2**

[2] (-) PTS: **Pink**, pin 5

| 5 | 4 | 3 | 2 | 1 |
| 10 | 9 | 8 | 7 | 6 |

ENGINE START STOP

Black, PTS Button Conn.
(at PTS switch)

(-) Unlock Output: **Red/Black: 4**

(-) Lock Output: **Blue/Red: 12**

12

10

Remote Start Safety Override Switch

6: **White/Black: (-)** Hood Input

2

RF

Prog. Button

LED

DBALL2

4

⚠ You can connect to either a XL202 RFTD **OR** a SmartStart module.

Refer to the **SmartStart/XL202 Installation Notes** for more information.

(-) Lock: **Pink**, pin 29

Autolight: **Green**, pin 8

CUT ✂

(-) Unlock: **Violet**, pin 2

19	20	21		22	23	24		25	26	27		28	29	30
7	8	9		10	11	12		13	14	15		16	17	18
	2	3										4	5	6

ECU
(White conn. at Main Body ECU)

Main Body ECU

(+) 12V: **Blue**, pin 1

| 1 |

White conn.
(at Main Body ECU)

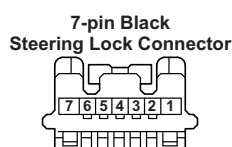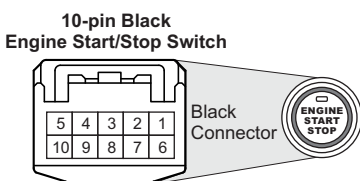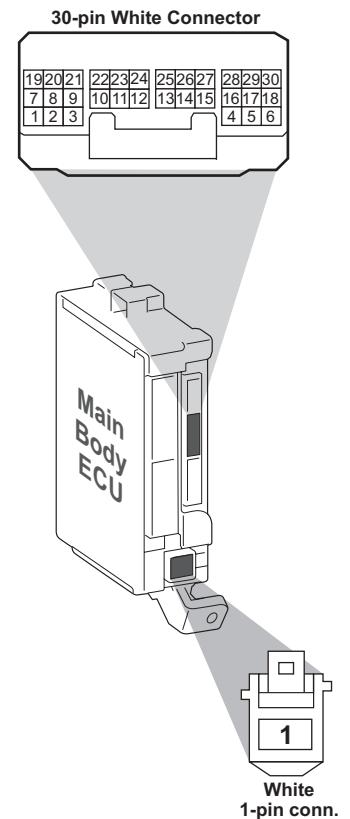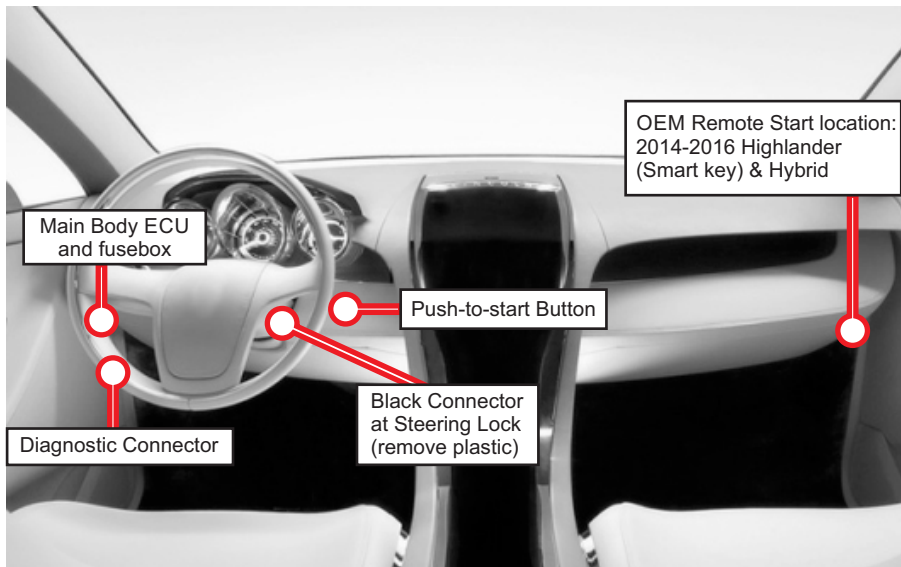[1] **SLP**: See « **Locating Steering Lock Connector in Vehicle** » in vehicle wiring reference chart.

[2] Only required for Pit Stop Mode.

⚠ Unless specified otherwise, all connectors are displayed from the wire side, with the exception of the OBDII diagnostic connector.
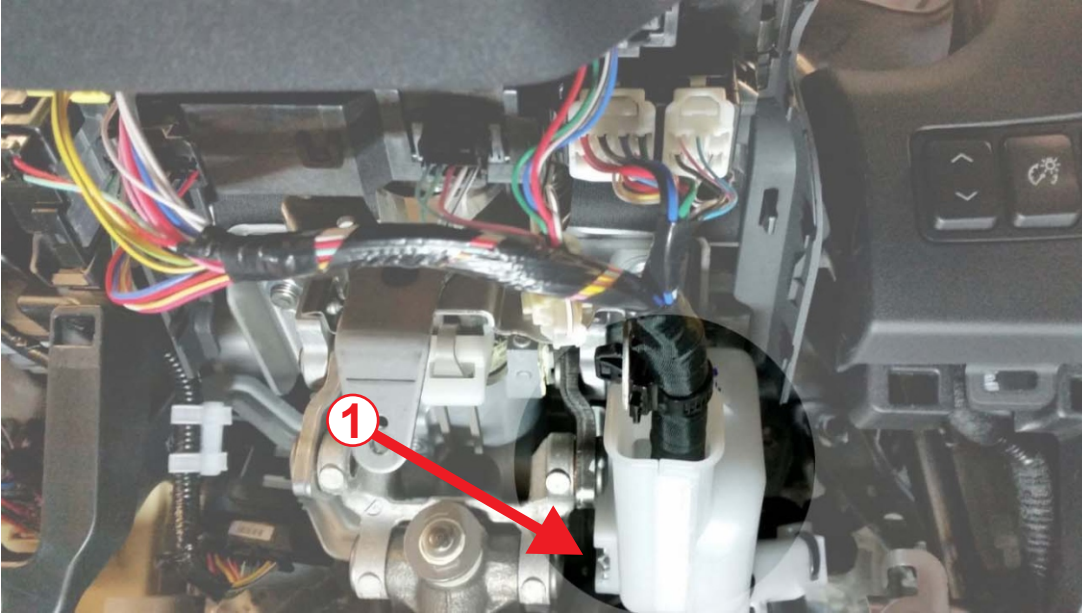
Type 4 - Vehicle Wiring Reference Charts

Wire information				Connector Information		
Function	Color	Pin	Polarity	Location	Color	Pin
Lexus RX350 2016-2017						
12V	Blue	1	(+)	Dash fuse box.	White	1
SLP	Gray	4	(-)	Steering lock connector on steering column.	Black	7
PTS	Pink	5	(-)	Engine start/stop switch.	Black	10
HS CAN High	Lt. Blue	6	Data	Network Gateway ECU behind glovebox.	Black	24
HS CAN Low	White	21	Data	Network Gateway ECU behind glovebox.	Black	24
Lock	Pink	29	(-)	Main body ECU.	White	30
Unlock	Violet	2	(-)	Main body ECU.	White	30
Autolight	Green	8	Cut	Main body ECU.	White	30
Lexus RX450h (Smart key) 2016-2017						
12V	Blue	1	(+)	Dash fuse box.	White	1
SLP	Gray	4	(-)	Steering lock connector on steering column.	Black	7
PTS	Pink	5	(-)	Engine start/stop switch.	Black	10
HS CAN High	Lt. Blue	6	Data	Network Gateway ECU behind glovebox.	Black	24
HS CAN Low	White	21	Data	Network Gateway ECU behind glovebox.	Black	24
Autolight	Green	8	Cut	Main body ECU.	White	30
Lock	Pink	29	(-)	Main body ECU.	White	30
Unlock	Violet	2	(-)	Main body ECU.	White	30

Locating Components in the Vehicle

30-pin White Connector

Main Body ECU and fusebox

Push-to-start Button

Diagnostic Connector

Black Connector at Steering Lock (remove plastic)

Network Gateway ECU

Main Body ECU

10-pin Black
Engine Start/Stop Switch

Black Connector

ENGINE START STOP

7-pin Black
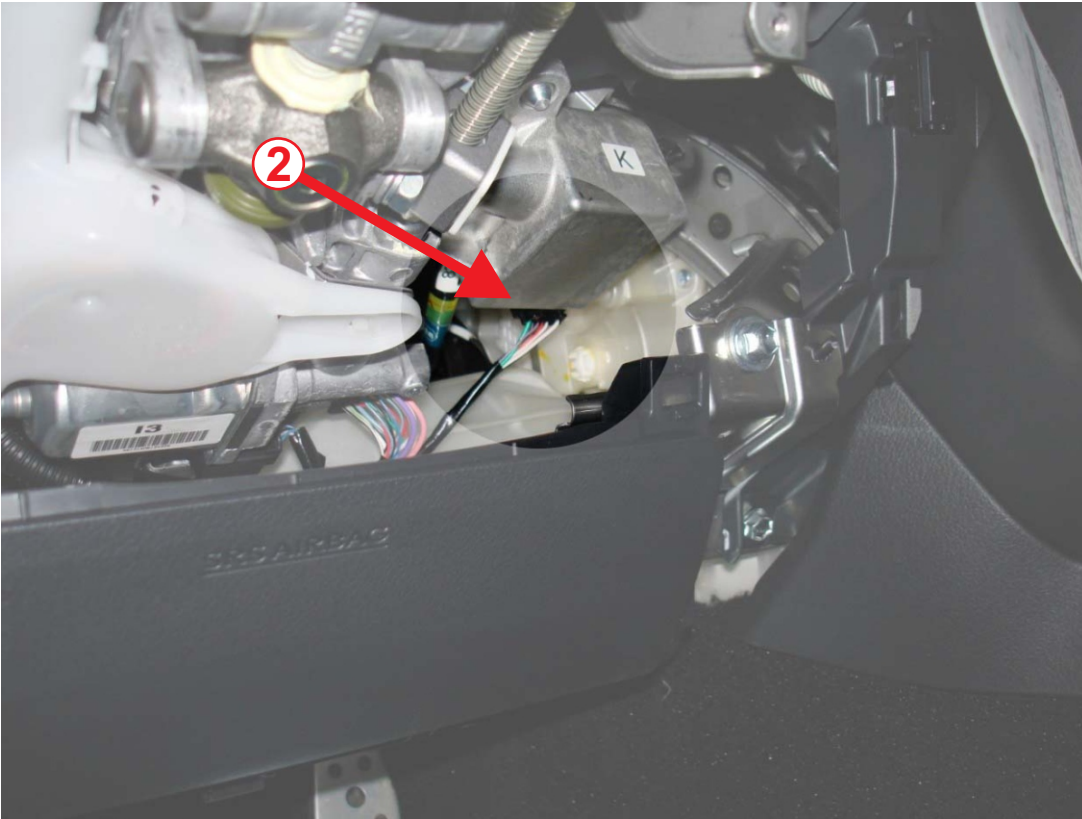**Steering Lock Connector**

White 1-pin conn.
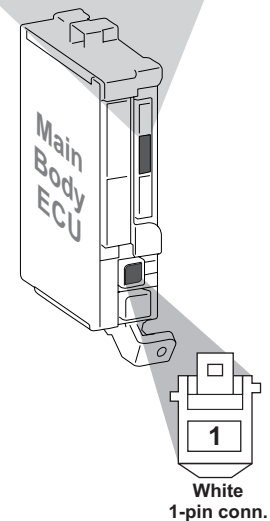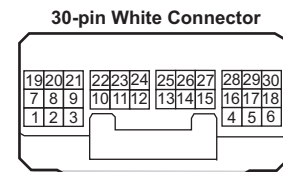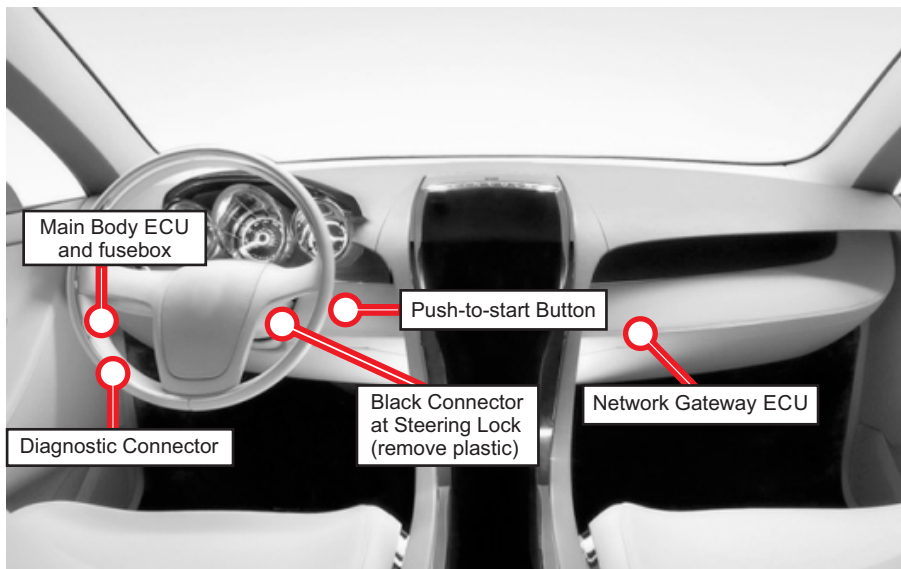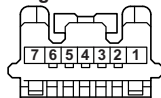
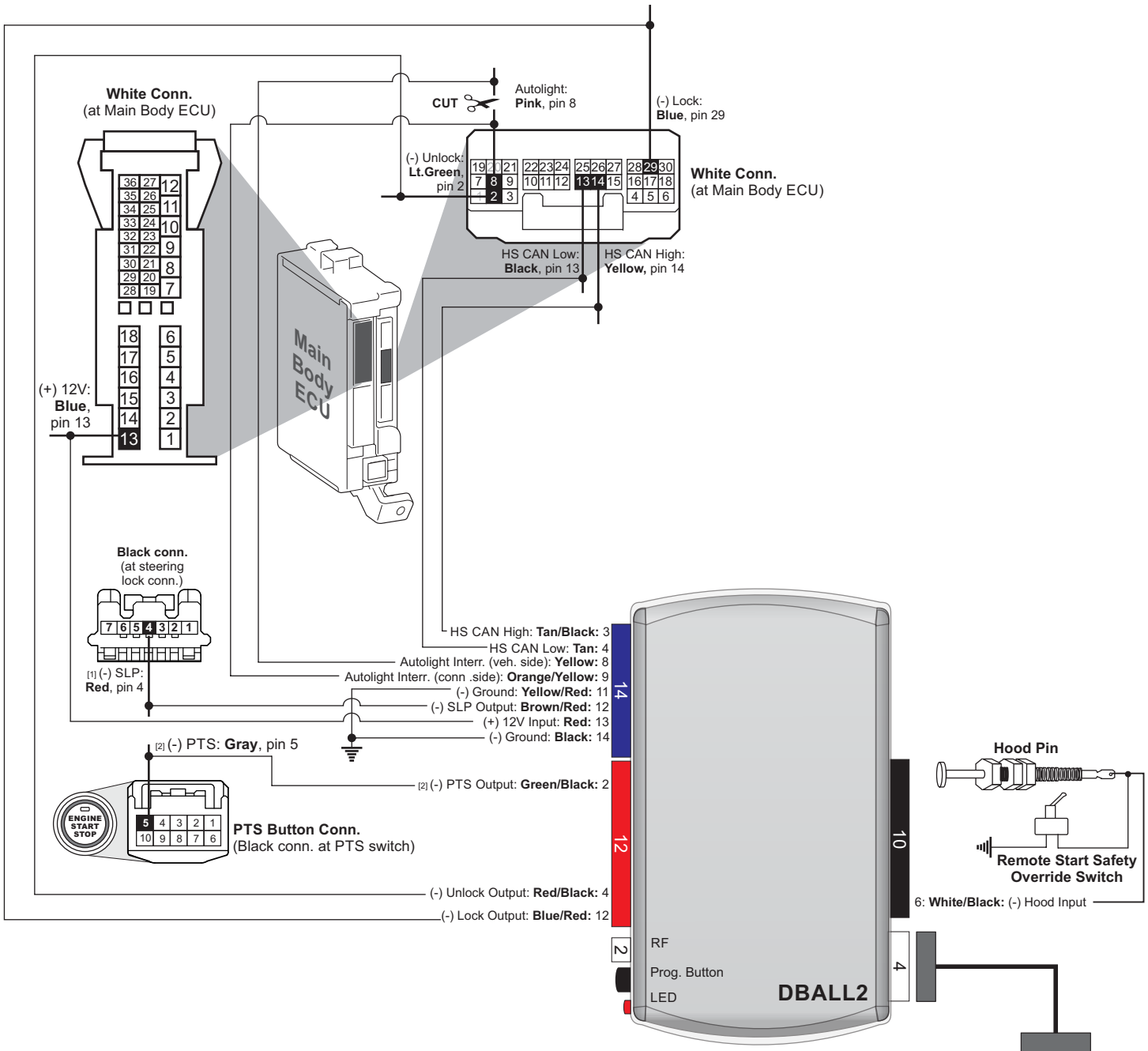## Type 4 - Locating SLP in the Vehicle

1. To gain access to the SLP connector, remove metal clip to remove the white plastic housing.

2. Move the white plastic housing over enough to access the SLP connector.

Installation Type 5

Data Steering connector

HS CAN High: **Tan,** pin 3

5 4 **3 2** 1

HS CAN Low: **White,** pin 2

Black conn.
(at steering lock conn.)

7 6 5 **4** 3 2 1

[1] (-) SLP: **Lt. Green**, pin 4

HS CAN High: **Tan/Black:** 3
HS CAN Low: **Tan:** 4
Autolight Interr. (veh. side): **Yellow:** 8
Autolight Interr. (conn .side): **Orange/Yellow:** 9
(-) Ground: **Yellow/Red:** 11
(-) SLP Output: **Brown/Red:** 12
(+) 12V Input: **Red:** 13
(-) Ground: **Black:** 14

14

[2] (-) PTS: **Yellow**, pin 5

[2] (-) PTS Output: **Green/Black:** 2

Black Conn.

ENGINE START STOP

5 4 3 2 1
10 9 8 7 6

Black, PTS Button Conn.
(at PTS switch)

(-) Unlock Output: **Red/Black:** 4

12

(-) Lock Output: **Blue/Red:** 12

2 RF
Prog. Button
LED

DBALL2

Hood Pin

10

Remote Start Safety Override Switch

6: **White/Black:** (-) Hood

4

⚠️ You can connect to either a XL202 RFTD **OR** a SmartStart module.

Refer to the **SmartStart/XL202 Installation Notes** for more information.

(-) Lock: **Violet**, pin 29

Autolight: **Black**, pin 8 ✂ **CUT**

(-) Unlock: **Lt. Blue**, pin 2

19 20 21 22 23 24 25 26 27 28 29 30
7 8 9   10 11 12   13 14 15   16 17 18
2 3   4 5 6

White Conn.
(at Main Body ECU)

Main Body ECU

White conn.
(at Main Body ECU)

1 (+) 12V: **Green**,pin 1

[1] **SLP**: See « **Locating Steering Lock Connector in Vehicle** » in vehicle wiring reference chart.

[2] Only required for Pit Stop Mode.

⚠️ Unless specified otherwise, all connectors are displayed from the wire side, with the exception of the OBDII diagnostic connector.

Type 5 - Vehicle Wiring Reference Charts

Wire Information				Connector Information		
Function	Color	Pin	Polarity	Location	Color	Pins
Toyota Highlander (Smart Key) 2017						
12V	Green	1	(+)	Dash fuse box.	White	1
PTS	Yellow	5	(-)	PTS switch.	Black	10
HS CAN High	Tan	3	Data	Steering sensor on steering column.	Blue	5
HS CAN Low	White	2	Data	Steering sensor on steering column.	Blue	5
SLP	Lt. Green	4	(-)	Steering lock connector.	Black	7
Autolight	Black	8	Cut	Main body ECU.	White	30
Lock	Violet	29	(-)	Main body ECU.	White	30
Unlock	Lt. Blue	2	(-)	Main body ECU.	White	30
Toyota Highlander Hybrid 2017						
12V	Green	1	(+)	Dash fuse box.	White	1
PTS	Yellow	5	(-)	PTS switch.	Black	10
HS CAN High	Tan	3	Data	Steering sensor on steering column.	Blue	5
HS CAN Low	White	2	Data	Steering sensor on steering column.	Blue	5
SLP	Lt. Green	4	(-)	Steering lock connector.	Black	7
Autolight	Black	8	Cut	Main body ECU.	White	30
Lock	Violet	29	(-)	Main body ECU.	White	30
Unlock	Lt. Blue	2	(-)	Main body ECU.	White	30

Locating Components and the OEM Remote Starter

Main Body ECU and fusebox

Diagnostic Connector

Push-to-start Button

Black Connector at Steering Lock (remove plastic)

OEM Remote Start location: 2014-2016 Highlander (Smart key) & Hybrid

30-pin White Connector

Main Body ECU

White 1-pin conn.

10-pin Black
Engine Start/Stop Switch

Black Connector

ENGINE START STOP

7-pin Black
**Steering Lock Connector**

Data Steering sensor

Type 5 - Locating SLP in the Vehicle

1. To gain access to the SLP connector, remove metal clip to remove the white plastic housing.

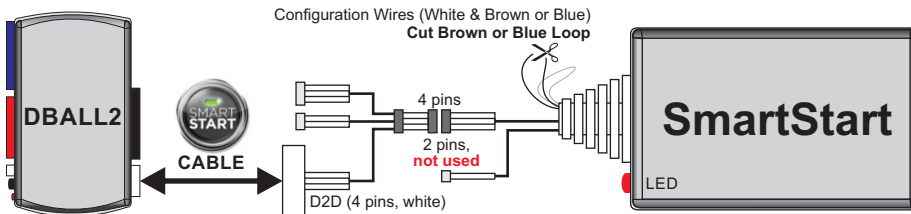2. Move the white plastic housing over enough to access the SLP connector.

Installation Type 6

White Conn.
(at Main Body ECU)

CUT ✂

Autolight:
Pink, pin 8

(-) Lock:
Blue, pin 29

(-) Unlock:
Lt.Green,
pin 2

White Conn.
(at Main Body ECU)

HS CAN Low:
Black, pin 13

HS CAN High:
Yellow, pin 14

Main Body ECU

(+) 12V:
Blue,
pin 13

Black conn.
(at steering lock conn.)

[1] (-) SLP:
Red, pin 4

HS CAN High: **Tan/Black:** 3
HS CAN Low: **Tan:** 4
Autolight Interr. (veh. side): **Yellow:** 8
Autolight Interr. (conn .side): **Orange/Yellow:** 9
(-) Ground: **Yellow/Red:** 11
(-) SLP Output: **Brown/Red:** 12
(+) 12V Input: **Red:** 13
(-) Ground: **Black:** 14

Hood Pin

Remote Start Safety Override Switch

6: **White/Black:** (-) Hood Input

[2] (-) PTS: **Gray**, pin 5

[2] (-) PTS Output: **Green/Black:** 2

ENGINE START STOP

PTS Button Conn.
(Black conn. at PTS switch)

(-) Unlock Output: **Red/Black:** 4
(-) Lock Output: **Blue/Red:** 12

RF
Prog. Button
LED

DBALL2

⚠ You can connect to either a XL202 RFTD **OR** a SmartStart module.

Refer to the **SmartStart/XL202 Installation Notes** for more information.

[1] **SLP**: See « **Locating Steering Lock Connector in Vehicle** » in vehicle wiring reference chart.

[2] Only required for Pit Stop Mode.

⚠ With the exception of the OBDII Diagnostic connector, all adapters are displayed from the wire side (unless specified otherwise).

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Type 6 - Vehicle Wiring Reference Charts

Wire Information				Connector Information		
Function	Color	Pin	Polarity	Location	Color	Pins
Lexus IS200t (Smart Key) 2017						
SLP	Red	4	(-)	Steering lock connector on steering column.	Black	7
PTS	Gray	5	(-)	Engine start/stop switch.	Black	10
HS CAN High	Yellow	14	Data	Main body ECU.	White	30
HS CAN Low	Black	13	Data	Main body ECU.	White	30
Autolights	Pink	8	Cut	Main body ECU.	White	30
Lock	Blue	29	(-)	Main body ECU.	White	30
Unlock	Lt. Green	2	(-)	Main body ECU.	White	30
12V	Blue	13	(+)	Main body ECU.	White	36
Lexus IS300 (Smart Key) 2017						
SLP	Red	4	(-)	Steering lock connector on steering column.	Black	7
PTS	Gray	5	(-)	Engine start/stop switch.	Black	10
HS CAN High	Yellow	14	Data	Main body ECU.	White	30
HS CAN Low	Black	13	Data	Main body ECU.	White	30
Autolights	Pink	8	Cut	Main body ECU.	White	30
Lock	Blue	29	(-)	Main body ECU.	White	30
Unlock	Lt. Green	2	(-)	Main body ECU.	White	30
12V	Blue	13	(+)	Main body ECU.	White	36
Lexus IS350 (Smart Key) 2017						
SLP	Red	4	(-)	Steering lock connector on steering column.	Black	7
PTS	Gray	5	(-)	Engine start/stop switch.	Black	10
HS CAN High	Yellow	14	Data	Main body ECU.	White	30
HS CAN Low	Black	13	Data	Main body ECU.	White	30
Autolights	Pink	8	Cut	Main body ECU.	White	30
Lock	Blue	29	(-)	Main body ECU.	White	30
Unlock	Lt. Green	2	(-)	Main body ECU.	White	30
12V	Blue	13	(+)	Main body ECU.	White	36

Locating Components in the Vehicle
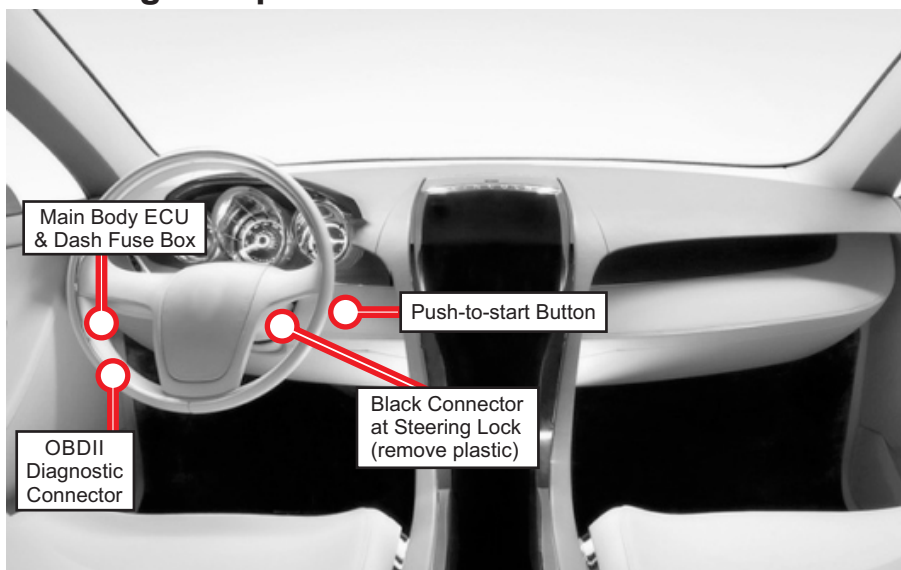
Type 6 - Locating SLP in the Vehicle

1. To gain access to the SLP connector, remove metal clip to remove the white plastic housing.

2. Move the white plastic housing over enough to access the SLP connector.

Page 24
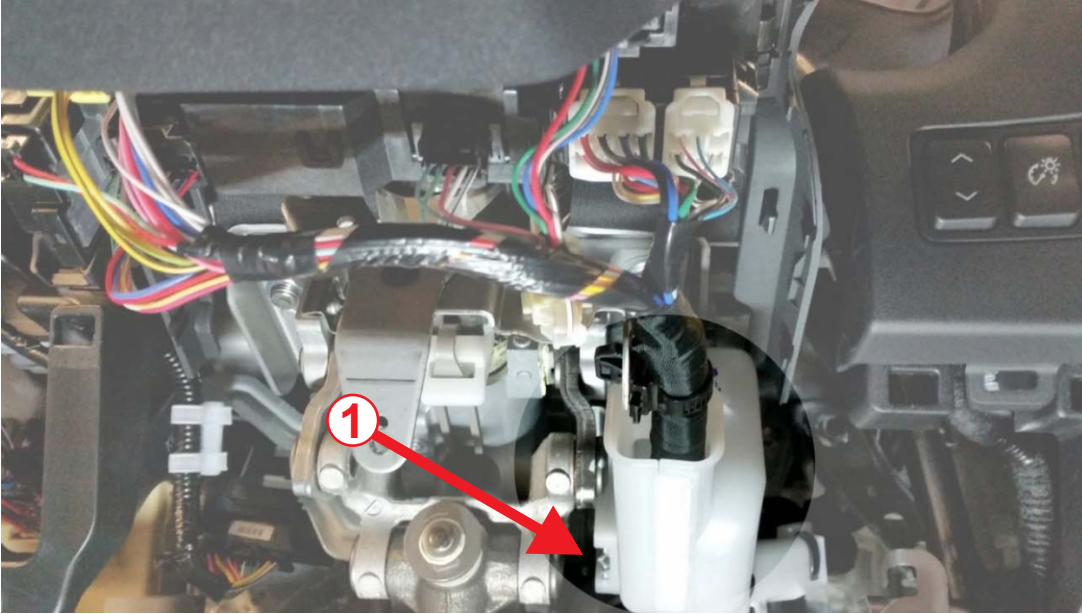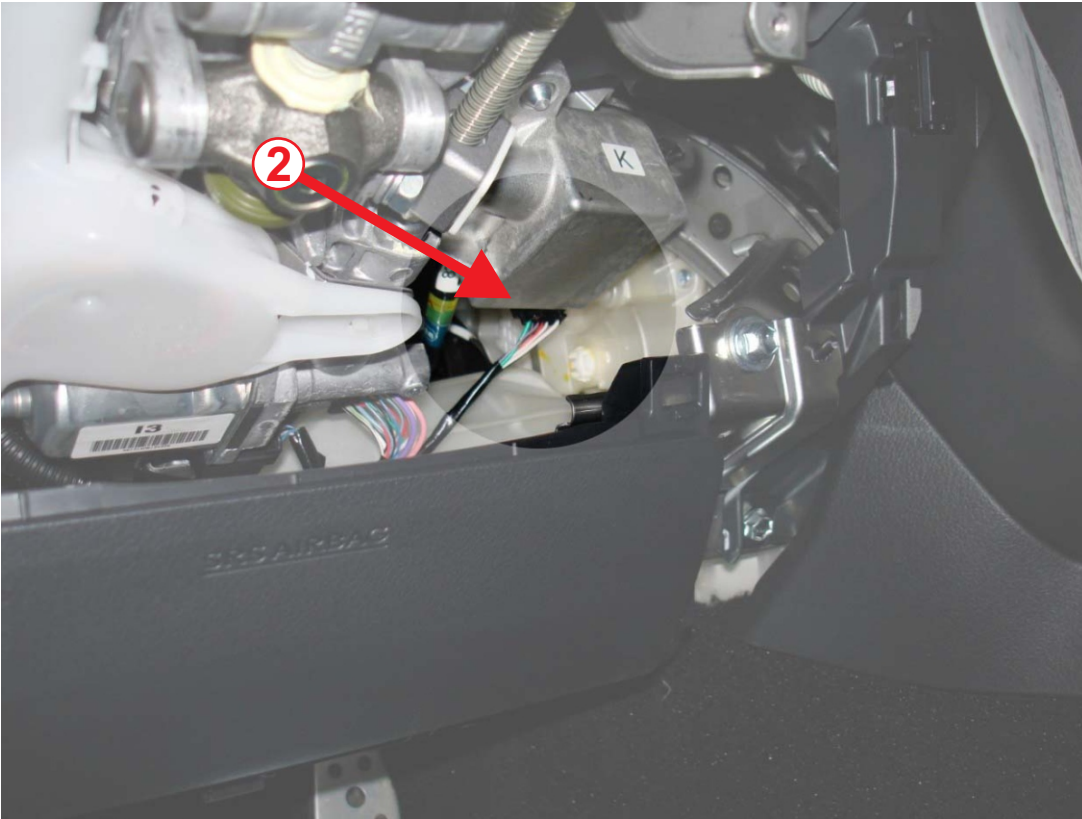
SmartStart/XL202 Installation Notes

The DBALL Remote Start Ready (RSR) solution offers three (3) configuration options to control your system: 3x OEM Lock Remote Start Activation, RF Kits or SmartStart (all sold separately). This section provides specific installation information for SmartStart and XL202.

SmartStart Revision A

SmartStart is **optional** and not included. It MUST be purchased separately.

Configuration Wires (White & Brown or Blue)
Cut Brown or Blue Loop
DBALL2
SMART START
CABLE
4 pins
2 pins, **not used**
D2D (4 pins, white)
SmartStart
LED

⚠ The modules must be connected in a specific order. Refer to the **Module Programming** section for more information.

SmartStart Revision B

SmartStart is **optional** and not included. It MUST be purchased separately.
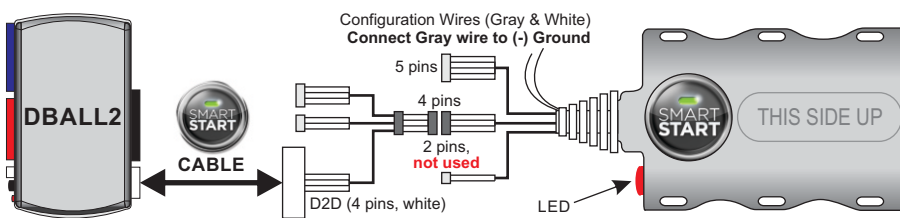
Configuration Wires (Gray & White)
Connect Gray wire to (-) Ground
DBALL2
SMART START
CABLE
5 pins
4 pins
2 pins, **not used**
D2D (4 pins, white)
SMART START THIS SIDE UP
LED

⚠ The modules must be connected in a specific order. Refer to the **Module Programming** section for more information.

RF Kit

The **optional** XL202 and antenna are not included and MUST be purchased separately.

DBALL2
D2D DATA TO DATA
XOVER
LED
XL202
4
4
Prog. Button
Antenna
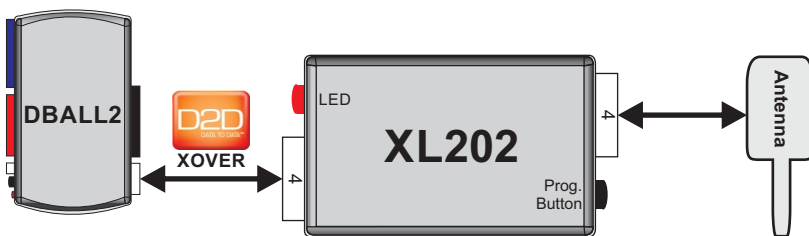
⚠ 1. Use the D2D Crossover (XOVER) cable that is provided with XL202, and NOT the one in the DBALL2 package.
2. The modules must be connected in a specific order. Refer to the **Module Programming** section for more information.

RF Kit & PKE Combination

Refer to the Passive Keyless Entry (PKE) Installation Guide (N2102T) for detailed wiring information.

RF Kit, PKE & SmartStart BT Combination

Refer to the Passive Keyless Entry (PKE) Installation Guide (N2102T) for detailed wiring information.

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Module Programming

⚠ Refer to the LED Diagnostics section for more information and for troubleshooting purposes.

Important

Make all the required connections to the vehicle, as described in the wiring diagram(s) found in this guide, and double check to ensure everything is correct prior to moving onto the next step.

Note: Before connecting either the XL202 or SmartStart module to DBALL2, it is important to ensure that the proper feature and function programming is selected using XpressVIP (version 4.5 or higher). Visit www.directechs.com to download the latest version of the application.

Warning! To take advantage of advanced features, you must use XpressVIP 4.5 (and higher) or the Directechs Mobile app.

Flashing a module using your computer:
1. Connect the interface module to your computer using the XKLoader2.
2. Go to www.directechs.com using Internet Explorer, and select the **Config for RSR** button.
3. Follow the instructions to select your vehicle, installation type, and configure your options.
4. Once you have configured the firmware options, click on the **FLASH** button.

Flashing a module using your smartphone or tablet
1. Connect the interface module to your XKLoader3.
2. Launch the Directechs Mobile app on your smartphone or tablet.
3. Select **FLASH YOUR MODULE** and follow the on screen instructions.

SmartStart Installation

⚠ The DBALL2 module **must** be disconnected from any power source before SmartStart can be connected to it. Failing to do so could damage DBALL2.

a. To ensure that the D2D communication between SmartStart and DBALL2 works properly, the Gray wire must be connected to a ground source (**Rev B** SmartStart), and the Brown or Blue loop must be cut (**Rev A** SmartStart).

b. Do **NOT** connect the 2-pin harness (on SmartStart). Power and ground will be provided by the DBALL2 D2D connector.

Connect SmartStart to DBALL2 using the D2D port.
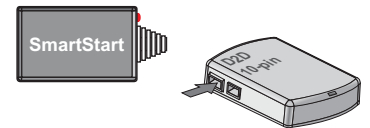
OR

XL202 Installation

Connect XL202 to DBALL2 using the D2D port.

---
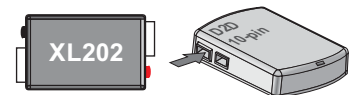
1 Connect the 10-pin, 12-pin and 14-pin harnesses to DBALL2, then wait until the LED turns ON solid red.

& Solid

---
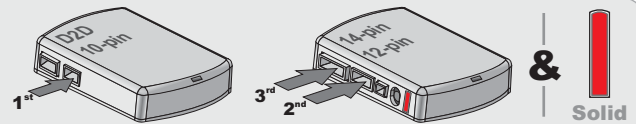
2 Press the Push-to-Start (PTS) button <u>twice</u> to turn the ignition ON. The green LED turns ON for 3 seconds.
If the module flashes orange, your vehicle is equipped with a factory remote starter. See section 'Important OEM Remote Starter Information' on page 3.

Note: If the transponder programming was skipped, the LED turns on solid orange for 3 seconds then shuts OFF when programming is done.

PUSH 2X **&** Solid x3 Secs

---

3 Press the PTS button <u>once</u> more to turn the ignition OFF.

PUSH 1X

You have successfully completed the module programming sequence.

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Module Reset

A module reset will only erase programming performed in the previous steps. All settings (firmware) and settings flashed to the module using the web config tool will not be affected.

1 If required for your installation, connect the 10-pin & 12-pin harnesses to the module. Press and hold the programming button, then connect the 14-pin harness to the module.
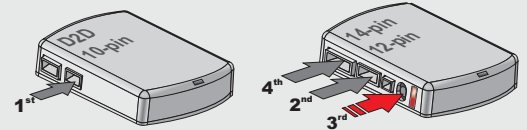
2 Wait 3 seconds until the LED turns ON solid orange then release the programming button. The LED turns ON solid red.

Solid   Release   Solid

Hard Reset

Warning Against Executing a Hard Reset!
A hard reset will revert the flashed firmware back to its default settings. Depending on the installation, some settings (such as RFTD and D2D options) may have to be reconfigured. See the **Feature & Option List** section of this guide.

1 If required for your installation, connect the 10-pin & 12-pin harnesses to the module. Press and hold the programming button, then connect the 14-pin harness to the module.
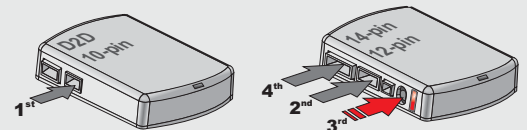
2 Wait 3 seconds until the LED turns ON solid orange, and wait 10 more seconds until the LED starts to flash orange and red.

Solid   Flashes

3 Release the programming button. The LED turns ON solid red.

Release   Solid

Feature & Option List

It is recommended to configure all the features and options listed below using the configuration tool found on the module flashing page on www.directechs.com. The web offers more options; however, manual configuration of the features is possible using the information on this page.

* Default Option

Feat.	Operation	Flashes/Option	Description
1	RFTD Output Type	1. No RF Output*	Module is connected to a remote starter using a standard installation.
		2. RFTD Output	Module is connected to an XL202 using an RSR or RXT installation (when available).
		3. SmartStart	Module is connected to SmartStart using an RSR or RXT installation (when available).
2	Unlock Driver Priority	1. Driver priority*	Unlocks only the driver door when the button is first pressed, and unlocks all doors when it is pressed a second time within 5 seconds.
		2. All	Unlocks all doors when the button is first pressed.
3	Smart OEM Alarm Control	1. Disabled	The OEM alarm will not be controlled by DBALL upon remote start. No disarm or arm command will be executed at the beginning or end of the sequence; it must be controlled by the Remote Starter.
		2. Safelock	Smart OEM Alarm Control will behave like a standard Safelock feature on a remote starter. It will unlock at the beginning of the sequence, and relock after start and shutdown.
		3. Enabled*	Smart OEM Alarm Control will synchronize with the OEM alarm so that it will disarm and rearm the vehicle in the remote start sequence, only when required. The reason for this is, factory alarm control must often be done by lock or unlock operation. This could create unnecessary actions on door lock modules, such as the horn to honk. When possible, Smart OEM Alarm Control will monitor the alarm and door lock status to detect if the disarm or rearm is required. If the vehicle is unlocked or is not equipped with factory alarm, the disarm/rearm will not be executed. Smart OEM Alarm Control will also monitor the remote starter actions so that the factory alarm control is not done twice. A remote starter, for which the Safelock feature is active, will work perfectly with this option and will make it invisible to the user.
4	Motorized Hatch Equipped	1. Not Equipped*	The vehicle is not equipped with an automatic trunk/hatch opening system.
		2. Equipped	The vehicle is equipped with an automatic trunk/hatch opening system.

Feature Programming

Programming
Button
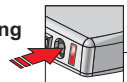
To enter feature programming routine
- Turn the ignition ON, then OFF.
- **Within 5 seconds**, press and HOLD the programming button until the LED turns ON orange (after 3 seconds). Release the Programming button.
- The LED will flash green once slowly to indicate the feature number is 1. After a short delay, the LED flashes red rapidly to indicate the current option of feature 1 (i.e. 1x green followed by 1x red indicates feature 1 is set to option 1). The flashing sequence will repeat until a new command is entered.

Changing feature options
- Press the lock/arm or unlock/disarm button on aftermarket transmitter to change the option of the selected feature. When installing the DBALL in RSR using 3x OEM Lock Remote Start Activation only, there is no aftermarket transmitter on which to press lock/unlock to change the options of the selected feature. Tapping the green or blue lock/unlock wires on the black 10-pin harness to ground will change the option for the selected feature.
- The LED flashes red rapidly the number of times equal to the current option number. After a short delay, the LED flashes green slowly the number of times to indicate the current feature. The flashing sequence will repeat until a new command is entered.

Accessing another feature
- Press and release the programming button a number of times to advance from the current feature to the next desired feature.
- The LED flashes green slowly the number of times equal to the feature number. After a short delay, the LED flashes red rapidly to indicate the current option of the current feature. The flashing sequence will repeat until a new command is entered.

When the maximum number of features or options is reached, the LED will start flashing again from the first feature or option.

Once a feature is programmed
- Other features can be programmed.
- The feature programming can be exited.

Exiting feature programming
- No activity for 30 seconds; after 30 seconds, the LED will turn ON orange for 2 seconds to confirm the end of the programming sequence.
   OR
- Press and HOLD the programming button for 3 seconds. After 3 seconds, the LED will turn ON orange for 2 seconds to confirm the end of the programming sequence.

LED Diagnostics & Troubleshooting

LED	Description	Troubleshooting
Module Programming		
Off	Module has no power.	Make sure the D2D harness is connected or that the 12 Volt is present between the red and black wires. If the 12 Volt is present, the module may be defective.
Solid red	Waiting to begin the programming sequence.	Ensure the correct programming procedure is being followed.
Flashes red & green	Initialization failed.	Reset the module and complete the programming again. If the issue persists, please contact Technical Support.
Solid orange	Transponder functions were skipped.	(If compatible) when RXT mode is not desired or convenience features are needed, please reset and reprogram the module.
Flashes green	All required CAN networks has been detected.	Normal operation.
Flashes orange	1 of 2 CAN networks has been detected.	Normal operation
Flashes orange slowly	Key2GO initiated.	Please follow the steps indicated in "Module programming" to complete the Key2GO programming.
Solid green x 3 secs	Module was successfully programmed with all functions.	Normal operation
Solid orange x 3 secs	Module was successfully programmed without transponder functions.	Normal operation.
Module Programming - Error Codes		
Flashes red x 1	CAN2 not detected.	Check the CAN2 Orange/Green and Orange/Brown wire connections. Wake up the data bus by turning the ignition on and try again. If your installation does not require this connection, skip this step by pressing the programming button 5 times.
Flashes red x 1	J1850 not detected.	Check the J1850 wire connection. Wake up the data bus by turning the ignition on and try again.
Flashes red x 2	CAN1 not detected.	Check the CAN1 Tan and Tan/Black wire connections. Wake up the data bus by turning the ignition on and try again. If your installation does not require this connection, skip this step by pressing the programming button 5 times.
Flashes red x 3	Bypass data not detected.	Check the bypass line connection. If more than one wire is used, make sure they are not inverted. Ensure the vehicle still operates correctly using the factory key.
Flashes red x 4	Bypass processing error.	The bypass calculation failed. Reset the module and try again. If the condition persists, please contact Technical Support.
Flashes red x 5	ISO 1 not detected.	The Yellow/Black wire did not detect the expected signal. Refer to "Installation (wiring diagrams & vehicle wiring reference charts)" to check the connections.
Flashes red x 6	ISO 2 not detected.	The Orange/Black wire did not detect the expected signal. Refer to "Installation (wiring diagrams & vehicle wiring reference charts)" to check the connections.
Flashes red x 7	MUX not detected.	The Violet/Green or Violet/Brown wire did not detect the expected voltage value. Refer to "Installation (wiring diagrams & vehicle wiring reference charts)" to check the connections.

LED Diagnostics & Troubleshooting

LED	Description	Troubleshooting
External module synchronization		
(Flashes red, red then orange) x 10	OBDII feature is not supported.	The diagnostic data bus was not detected, therefore the SmartStart features will be limited.
Activation Ground When Running (Status)		
Flashes green	Ground When Running (Status) command received.	The module has initialized the remote start sequence.
Flashes red & orange	Ignition ON command received.	The module has received the Ignition ON command and is processing the remote start sequence.
Flashes green quickly	Start ON command received.	The module has received the Start ON command and is processing the remote start sequence.
Flashes red x 10	PTS shutdown error.	The PTS output from the module was not activated due to safety protection.
Flashes red x 21	CAN bus incorrectly detected.	Verify the CAN1 and CAN2 connections. Refer to "Installation (wiring diagrams & vehicle wiring reference charts)" to check the connections.
Commands		
Flashes orange x 1	LOCK command received.	If the bypass module fails to flash, it did not receive the signal. Commands can come from RF or D2D.
Flashes orange x 2	UNLOCK command received.	
Flashes orange x 3	TRUNK command received.	
Flashes orange x 4	AUX1 command received.	
Flashes orange x 5	AUX2 command received.	
Flashes orange x 6	AUX3 command received.	
Shutdown codes		
Flashes green x 1	Takeover successful.	Normal operation.
Flashes red x 1	Runsafe was not disabled.	No UNLOCK command was received prior to opening the door, or the 45 second timer expired in takeover mode.
Flashes red x 2	Brake was not detected.	The brakes were not detected, which prevents the system from shutting down the vehicle.
Flashes red x 3	Smart key was not detected.	The smart key was not detected, which prevents the system from shutting down the vehicle.
Flashes red x 4	Speed was detected.	The vehicle was detected as moving, which prevents the system from shutting it down.

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Parking Light Error Codes

The parking lights on your vehicle will flash a specific number of times 3 seconds following an unscheduled shutdown or failure to start. Each flashing pattern is described below.

Flashes	Diagnostic
1	Runtime expired.
2	Over-rev shutdown.
3	Low/No RPM.
4	Transmitter shutdown.
5	Brake shutdown.
6	Hood shutdown/Remote start safety override switch is ON*.
7	Remote start safety override switch is ON*.

* If the vehicle hood status is supported through data, safety override switch input will report 7 flashes.

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Limited One Year Consumer Warranty

For a period of ONE YEAR from the date of purchase of a Directed Electronics remote start or security product, Directed Electronics. ("DIRECTED") promises to the original purchaser, to repair or replace with a comparable reconditioned piece, the security or remote start accessory piece (hereinafter the "Part"), which proves to be defective in workmanship or material under normal use, provided the following conditions are met: the Part was purchased from an authorized DIRECTED dealer; and the Part is returned to DIRECTED, postage prepaid, along with a clear, legible copy of the receipt or bill of sale bearing the following information: consumer's name, address, telephone number, the authorized licensed dealer's name and complete product and Part description.

This warranty is nontransferable and is automatically void if the Part has been modified or used in a manner contrary to its intended purpose or the Part has been damaged by accident, unreasonable use, neglect, improper service, installation or other causes not arising out of defect in materials or construction.

TO THE MAXIMUM EXTENT ALLOWED BY LAW, EXCEPT AS STATED ABOVE, ALL WARRANTIES, INCLUDING BUT NOT LIMITED TO EXPRESS WARRANTY, IMPLIED WARRANTY, WARRANTY OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF NONINFRINGEMENT OF INTELLECTUAL PROPERTY, ARE EXPRESSLY EXCLUDED; AND DIRECTED NEITHER ASSUMES NOR AUTHORIZES ANY PERSON OR ENTITY TO ASSUME FOR IT ANY DUTY, OBLIGATION OR LIABILITY IN CONNECTION WITH ITS PRODUCTS. DIRECTED HEREBY DISCLAIMS AND HAS ABSOLUTELY NO LIABILITY FOR ANY AND ALL ACTS OF THIRD PARTIES INCLUDING DEALERS OR INSTALLERS. DIRECTED IS NOT OFFERING A GUARANTEE OR INSURANCE AGAINST VANDALISM, DAMAGE, OR THEFT OF THE AUTOMOBILE, ITS PARTS OR CONTENTS, AND DIRECTED HEREBY DISCLAIMS ANY LIABILITY WHATSOEVER, INCLUDING WITHOUT LIMITATION, LIABILITY FOR THEFT, DAMAGE, OR VANDALISM. IN THE EVENT OF A CLAIM OR A DISPUTE INVOLVING DIRECTED OR ITS SUBSIDIARY, THE PROPER VENUE SHALL BE SAN DIEGO COUNTY IN THE STATE OF CALIFORNIA. CALIFORNIA STATE LAWS AND APPLICABLE FEDERAL LAWS SHALL APPLY AND GOVERN THE DISPUTE. THE MAXIMUM RECOVERY UNDER ANY CLAIM AGAINST DIRECTED SHALL BE STRICTLY LIMITED TO THE AUTHORIZED DIRECTED DEALER'S PURCHASE PRICE OF THE PART. DIRECTED SHALL NOT BE RESPONSIBLE FOR ANY DAMAGES WHATSOEVER, INCLUDING BUT NOT LIMITED TO, ANY CONSEQUENTIAL DAMAGES, INCIDENTAL DAMAGES, DAMAGES FOR THE LOSS OF TIME, LOSS OF EARNINGS, COMMERCIAL LOSS, LOSS OF ECONOMIC OPPORTUNITY AND THE LIKE. NOTWITHSTANDING THE ABOVE, THE MANUFACTURER DOES OFFER A LIMITED WARRANTY TO REPLACE OR REPAIR AT DIRECTED'S OPTION THE PART AS DESCRIBED ABOVE.

This warranty only covers Parts sold within the United States of America and Canada. Parts sold outside of the United States of America or Canada are sold "AS-IS" and shall have NO WARRANTY, express or implied. Some states do not allow limitations on how long an implied warranty will last or the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights and you may also have other rights that vary from State to State. DIRECTED does not and has not authorized any person or entity to create for it any other obligation, promise, duty or obligation in connection with this Part. For further details relating to warranty information of Directed products, please visit the support section of DIRECTED's website at: www.directed.com

920-10012-01 2013-07

This Interface kit / Data Bus Interface part has been tested on the listed vehicles. Other vehicles will be added to the select vehicle list upon completion of compatibility testing. Visit website for latest vehicle application guide. DISCLAIMER: Under no circumstances shall the manufacturer or the distributors of the bypass kit / data bus interface part(s) be held liable for any consequential damages sustained in connection with the part(s) installation. The manufacturer and it's distributors will not, nor will they authorize any representative or any other individual to assume obligation or liability in relation to the interface kit / data bus interface part(s) other than its replacement. N.B.: Under no circumstances shall the manufacturer and distributors of this product be liable for consequential damages sustained in connection with this product and neither assumes nor authorizes any representative or other person to assume for it any obligation or liability other than the replacement of this product only.

Protected by U.S. Patents: 5,719,551; 6,011,460 B1 *; 6,243,004 B1; 6,249,216 B1; 6,275,147 B1; 6,297,731 B1; 6,346,876 B1; 6,392,534 B1; 6,529,124 B2; 6,696,927 B2; 6,756,885 B1; 6,756,886 B2; 6,771,167 B1; 6,812,829 B1; 6,924,750 B1; 7,010,402 B1; 7,015,830 B1; 7,031,826 B1; 7,046,126 B1; 7,061,137 B1; 7,068,153 B1; 7,205,679 B1; Cdn. Patent: 2,320,248; 2,414,991; 2,415,011; 2,415,023; 2,415,027; 2,415,038; 2,415,041; 2,420,947; 2,426,670; 2,454,089; European Patent: 1,053,128; Pat. Pending: 2,291,306. Made in Canada.
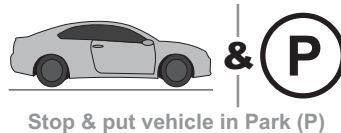
Vehicle Takeover

Note: There is no vehicle takeover in this firmware. The vehicle will shut down as soon as a door is opened.

Pit Stop Mode

The Pit Stop Mode feature is practical when you need to stop and run an errand, but wish to keep the engine running.

1 Stop the vehicle in a safe parking spot and put the gear in Park (P).

Stop & put vehicle in Park (P)

2 **Press** the button to remote start the vehicle.* The parking lights will flash <u>once</u> to indicate the vehicle is now in Pit Stop Mode.

Press remote start button*

3 It is now safe to leave the engine running and exit the vehicle with the factory remote in hand.

Note: We recommend that you always lock the doors of your vehicle when leaving it unattended.

Exit vehicle with Smart Key
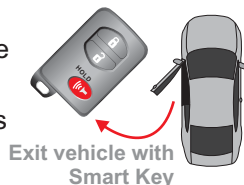
* Your aftermarket remote may differ from the model shown in the illustrations.

Remote Start Ready (RSR)

Remote Start Ready (RSR) is a function that enables the interface module to remote start the vehicle completely on its own. Consequently, there is no need for an aftermarket or an OEM remote starter in order to start the vehicle from a distance.

3x OEM Lock Remote Start Activation

This solution includes the option to remote start your vehicle by pressing the Lock button 3 times consecutively. If your vehicle allows the OEM remote to remain active while the engine is running, you may shut down your remote starter by pressing the Lock button 3 times once more.

Note: The range offered by OEM remotes is limited and typically requires you to be within eyesight of the vehicle to control it.

Parking Light Error Codes

The parking lights on your vehicle will flash a specific number of times 3 seconds following an unscheduled shutdown or failure to start. Each flashing pattern is described below.

Flashes	Diagnostic
1	Runtime expired.
2	Over-rev shutdown.
3	Low/No RPM.
4	Transmitter shutdown.
5	Brake shutdown.
6	Hood shutdown/Remote start safety override switch is ON*.
7	Remote start safety override switch is ON*.

* If the vehicle hood status is supported through data, safety override switch input will report 7 flashes.

List of Available Commands

Note that the information below is for Viper, Clifford and Python models. Icons and commands may differ depending on the remote brand and model purchased. Refer to your authorized installation center for more information.

Button(s)	Actions
🔒	Press & hold for 1 second to lock.
🔓	Press & hold for 1 second to unlock.
⟳	Press & hold for 1 second to remote start.
AUX	Press & hold for 5 seconds to activate the trunk release (optional).
ƒ x1 + AUX	Press ƒ once, then AUX to activate the rear hatch/tail glass release (optional).*
ƒ x3 + AUX	Press ƒ 3 times, then AUX to activate the panic mode.
ƒ x1 + ⟳	Press ƒ once, then ⟳ to reset the remote starter runtime.

* This output is configurable. see your authorized installation center for more information.

SmartStart Compatible

This system is compatible with Directed SmartStart 3.0. For a complete list of supported features, please visit www.mysmartstart.com.

What is SmartStart?

Now you can remote start, lock and unlock your car just by pushing a button on your smartphone; using the SmartStart App from Directed, the leader in vehicle security and remote start. The simple graphical interface gives you control over the following features of your installed remote start or security with remote start system:

• Lock/Arm
• Unlock/Disarm
• Remote Car Starter
• Trunk Release
• Panic
• Aux Channels

You can also control multiple vehicles – great for families – and assign more than one user to control a vehicle. It's easy with SmartStart!

But, this is only the beginning! SmartStart is loaded with additional features including GPS tracking, SmartSchedule, vehicle status, roadside assistance, home control, parked car finder and more.

3.0 enables a "Cloud-Connected Car" like never before, providing an entirely new level of 2-way interaction with your vehicle. Connectivity is managed through the Directed Cloud Services (DCS) network linking car, app, end user, and the Internet.

For more information, visit www.mysmartstart.com.

Notes

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