



Research & Vehicle Technology
“Infotainment Systems Product Development”

Feature – Lost Passive Key (LPK) v2

**Infotainment Subsystem Part Specific
Specification (SPSS)**

Version 1.0

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Version Date: November 30, 2021

FORD CONFIDENTIAL



Revision History

Date	Version	Notes	
November 30, 2021	1.0	Initial Release	



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1 Overview

Lost Passive Key Strategy is a feature that reminds the user that the vehicle is still running while the key is outside of the vehicle. This spec pertaining to this feature is about the user enabling or disabling this feature.
The difference between original and variant 2 features is the type of signals being used to do data transfer.



2 Architectural Design

2.1 LPK-CLD-REQ-466599/A-Lost Passive Key Client

Lost Passive Key Client: Client is the module that provides the interface to the user to enable or disable the feature. Also, the user can be notified of the feature state.

2.2 LPK-CLD-REQ-466600/A-Lost Passive Key Server

Lost Passive Key Server: The server controls the feature behavior. Upon getting user request to enable/disable the feature it can proceed with the user request and notify the client of the feature state.

2.3 Logical Signal Mapping

The CAN signals mentioned throughout this document shall refer to the CAN signal's logical name. The logical names shall be mapped to their actual CAN signal names. Please use the table below to perform the mapping. The InfoCAN database file is the master file for the actual CAN signal names. Note: There may be cases where the actual CAN signal name is used in this documentation.

Logical Name	CAN Signal Name
LFeatureRq	LostPKChirp_D_RqMnu
LFeatureSt	LostPKChirp_D_Stat

2.4 LPK-IIR-REQ-397051/A-LPK Client Rx

2.4.1 MD-REQ-397053/A-LFeatureSt

LFeatureSt: This signal provides the feature state to the user.

Parameter	Parameter meaning
0x0	NULL
0x1	Disable
0x2	Enable
0x3	Not Configured

2.5 LPK-IIR-REQ-397052/A-LPK Client Tx

2.5.1 MD-REQ-397054/A-LFeatureRq

LFeatureRq: This signal is sent from the client to the server. It provides the user's request to the server.

Parameter	Parameter meaning
0x0	Null
0x1	Disable
0x2	Enable
0x3	Not Configured



3 General Requirements

3.1 LPK-REQ-397060/A-Feature Availability

None of the requirements of this feature will be applicable if the feature has been configured as disabled.



4 Functional Definition

4.1 REQ-427779/A-Lost Passive Key Strategy

4.1.1 LPK-REQ-466578/A-Feature State Request

To change the state of the feature the client shall transmit the signal LFeatureRq. The parameters of the signal function like below:

LFeatureRq(Null) is used when booting up and there isn't any user request to change feature state.

LFeatureRq(Disable) this is sent when user wants to disable an already active feature. This signal will be sent for as long as the user doesn't make another request to change feature state or ignition cycle the vehicle.

LFeatureRq(Enable) This state is sent for as long as the user wants the feature to be enabled. The state of the signal will keep this value until user presses the button again or ignition cycles the vehicle.

The last value available in the signal (0x3) is not used by client.

4.1.2 LPK-REQ-466579/A-Feature Status Update

Server provides various parameters in the signal. Their purposes are:

LFeatureSt(0x0 - Null) - This value is used during initialization or if there has been no client request to change the horn chirp state after factory setting.

LFeatureSt(0x1 Disabled)- This value tells the client that Horn Chirp is disabled.

LfeatureSt(0x2 Enabled) – This value tells the client that Horn Chirp is enabled.

Last value (0x3) is not used.

4.1.3 Use Cases

4.1.3.1 ***LPK-UC-REQ-397056/A-Horn Chirp Enable***

Actors	Vehicle driver
Pre-conditions	Horn Chirp is disabled
Scenario Description	User enables the feature on Client HMI
Post-conditions	Client sends user request to Server Server enables the feature and notifies the client. Client updates the feature state indicator.
List of Exception Use Cases	
Interfaces	Client HMI

4.1.3.2 ***LPK-UC-REQ-397057/A-Horn Chirp Disable***

Actors	Vehicle driver
Pre-conditions	Horn Chirp is enabled
Scenario Description	User disables the feature on Client HMI
Post-conditions	Client sends user request to Server Server disables the feature and notifies the client. Client updates the feature state indicator.

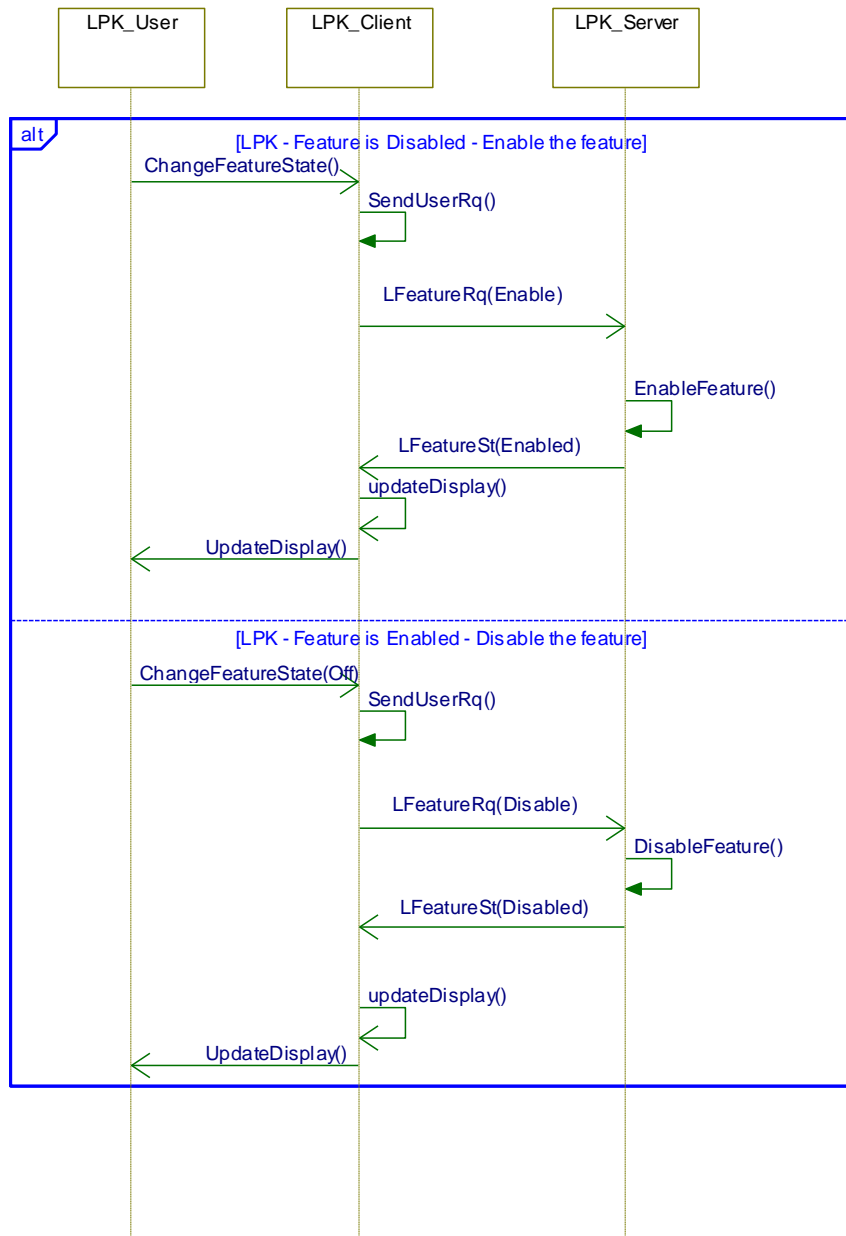
**List of Exception
Use Cases****Interfaces**

Client HMI

4.1.4 White Box Views

4.1.4.1 Sequence Diagram

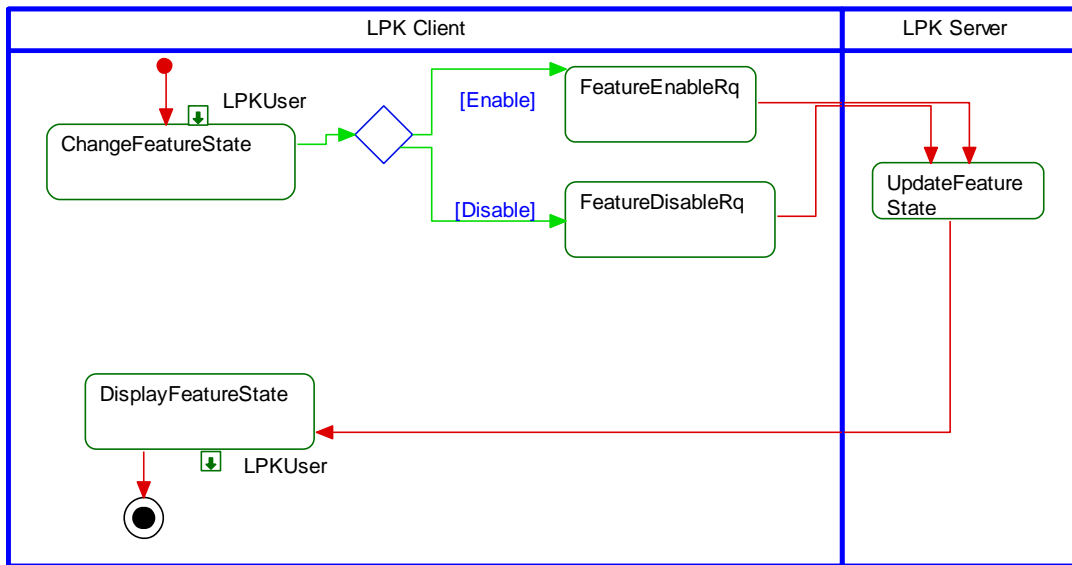
4.1.4.1.1 LPK-SD-REQ-466573/A-Feature Operation SD





4.1.4.2 Activity Diagram

4.1.4.2.1 LPK-ACT-REQ-466574/A-Feature Operation AD





5 Appendix: Reference Documents

Reference #	Document Title
1	
2	
3	
4	
5	