

# Data Controller (DC)

Remote Start

Direct Plug (T-Harness) Solution

## FT-CHR2-DC Installation Manual



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**FTX**

**Arctic Start**

FT-CHR1-DC

FT-CHR2-DC

FT-CHR3-DC

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## Introduction

The following installation manual is intended for experienced and authorized Firstech technicians only. We highly recommend that you contact your local Firstech dealer and seek professional installation. Call 888-820-3690 or visit our websites at [www.compustar.com](http://www.compustar.com) or [www.firstechllc.com](http://www.firstechllc.com) to locate your nearest dealer. If you require additional or replacement Firstech remotes and / or online support please visit [www.compustar.com/dealersupport](http://www.compustar.com/dealersupport). If you require additional Chrysler, Dodge, or Jeep remotes, please call and/or visit your nearest Chrysler, Dodge, or Jeep dealership.

Caution: The Manufacturer's warranty will be void if this product is installed by anyone other than an authorized Firstech dealer. Firstech reserves installation support services to authorized dealers only.

This manual may change frequently. Please check [www.compustar.com/dealersupport](http://www.compustar.com/dealersupport) for updates.

## Kit Contents

FT-CHR2-DC controllers include the following parts:

- CM-CHR (control module)
- Installation Guide (dealer only)
- Users Manual (consumer)
- T-Harness
- 8pin Wire harness
- Valet Button
- 2x 1k ohm Resistors
- 1x 500 ohm Resistors

RF Kits with remote(s), Antenna, and Antenna Cable are not included with the FT-CHR2-DC.

Firstech remotes and antennas are modular and are not specific to the control modules. You have the ability to pair almost any matching Firstech remotes and antenna to the CM-CHR. This includes 4 and 6 pin antennas.

If you have any questions in regards to the FT-CHR2-DC please contact an authorized distributor or us directly at 1.888.820.3690, Monday through Friday, 8 AM to 5 PM PST.

## Installation Basics

If you are new to installing Firstech Remote Starts and / or Alarms, we highly recommended that you thoroughly review this manual prior to installation.

Key Point to Consider Before Installation:

### **Updating Firmware**

A computer with an internet connection is required if you must update the firmware of the CM-CHR. A Fortin module (PN# Flashlink updater) is required in order to update and program this module. The CM-CHR must be programmed to the vehicle prior to remote starting the vehicle. Learn how to program the module to the vehicle on page 8.

### **Supports 4 Pin and 6 Pin Antennas**

The CM-CHR supports both Firstech 4 Pin and 6 Pin antennas. This will work with all current RF kits as well as the new ones.

### **New Option Menus**

It is important to familiarize yourself with all the options as it will save time in most applications. For instance, Option 1-04 controls the double pulse unlock feature on all CM6 series control modules.

### **Computer updatable processors visit [www.firstechonline.com](http://www.firstechonline.com)**

The CM-CHR series control modules are equipped with some of the most powerful processors available today. This flexibility allows for on-demand computer updating capabilities in the event of a version update or change. All CM-CHR series control are updateable.

## Placement and Use of Components

**IMPORTANT:** The placement and use of components are critical to their performance and performance of this system.

### **Antenna and Cable**

If you are adding a Firstech RF-Kit to the CM-CHR Firstech antennas are calibrated for horizontal installation at the top of the windshield. The cable that connects the antenna to the control module must be free from any pinches or kinks. Installing the antenna in areas other than the windshield may adversely affect the effective transmitting distance of Firstech remotes.

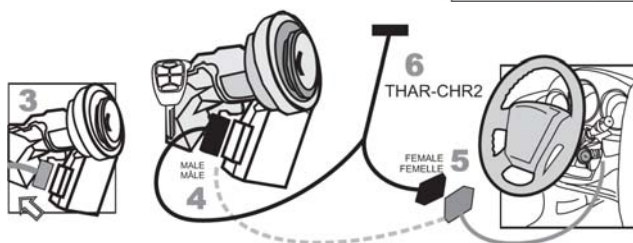
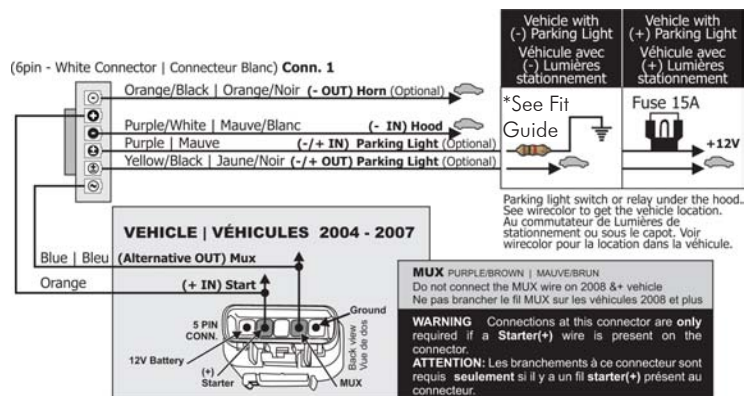
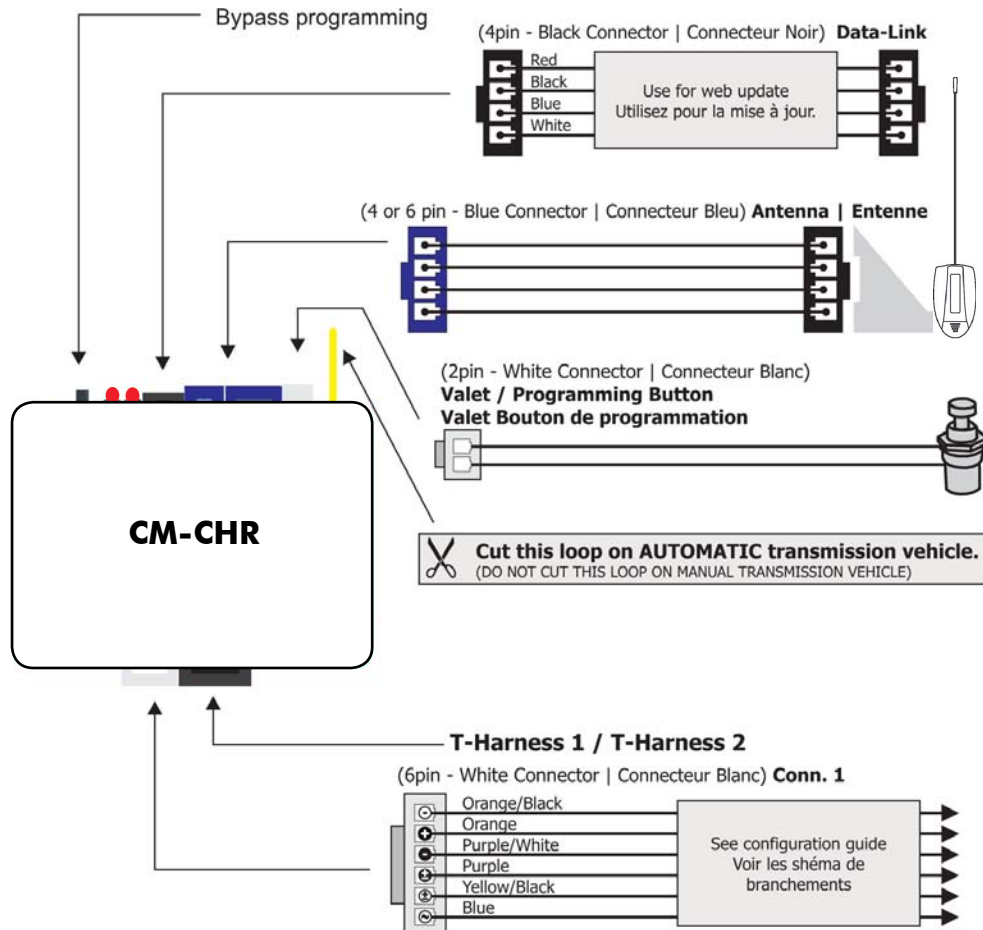
**Fit Guide**

Make & Model	Years							Install Type, Wire Colors, and Locations										
	2005	2006	2007	2008	2009	2010	2011	Mux Wire	Location	Starter Wire	Location	Parking Light	Polarity	Location	Hood Pin	Location	Horn Wire	Location
<b>Chrysler</b>																		
200							*	Purple/Brown	1	N/A		White/Purple	(+)	3	Purple/Lt. Blue	6	Dk. Green/Purple	7
300-300C	*	*	*					Purple/Brown	1	Pink/Green	1	White/Brown	(-)	2	Purple/Lt. Blue	6	See Pg 6	8
				*				N/A		N/A		White/Brown	(-)	2	Purple/Lt. Blue	6	See Pg 6	8
Aspen			*	*	*			N/A		N/A		Pink/Red	(-)	2	Purple/Blue	6	Dk. Green/Purple	7
Sebring			*	*	*	*		N/A		N/A		White/Purple	(+)	3	Purple/Lt. Blue	6	Dk. Green/Purple	7
<b>Dodge</b>																		
Avenger				*	*	*		N/A		N/A		White/Purple	(+)	4	Purple/Lt. Blue	6	Dk. Green/Purple	7
Caliber			*					Purple/Brown	1	Pink/Blue	1	White/Purple	(+)	4	Purple/Orange	3	Dk. Green/Purple	7
				*	*	*	*	N/A		N/A		White/Purple	(+)	4	Purple/Orange	3	Dk. Green/Purple	7
Charger		*	*					Purple/Brown	1	Pink/Green	1	White/Brown	(-)	2	Purple/Lt. Blue	6	See Pg 6	8
Dakota			*	*	*	*	*	Purple/Brown	1	Pink/Green	1	Pink/Red	(-)	2	Purple/Lt. Blue	6	Dk. Green/Purple	7
Durango			*	*	*		*	Purple/Brown	1	Pink/Green	1	Pink/Red	(-)	2	Purple/Lt. Blue	6	Dk. Green/Purple	7
Magnum	*	*	*	*				Purple/Brown	1	Pink/Green	1	White/Brown	(-)	2	Purple/Lt. Blue	6	See Pg 6	8
Nitro			*	*	*	*	*	N/A		N/A		White/Purple	(+)	3	Purple/Lt. Blue	6	Dk. Green/Purple	7
Ram		*	*	*				Purple/Brown	1	Green/Yellow	1	White/Green	(-)	2	Purple/Lt. Blue	6	Dk. Green/Purple	7
<b>Jeep</b>																		
Commander		*	*					Purple/Brown	1	Pink/Orange	1	See Pg 6	(-)	5	Purple/Lt. Blue	6	See Pg 6	8
Compass			*					Purple/Brown	1	Pink/Blue	1	White/Purple	(+)	3	Purple/Lt. Blue	6	Dk. Green/Purple	7
				*	*	*	*	Purple/Brown	1	N/A		White/Purple	(+)	3	Purple/Lt. Blue	6	Dk. Green/Purple	7
Grand Cherokee	*	*	*					Purple/Brown	1	Pink/Orange	1	See Pg 6	(-)	5	Purple/Lt. Blue	6	See Pg 6	8
Liberty				*	*	*	*	N/A		N/A		White/Purple	(+)	3	Purple/Lt. Blue	6	Green/Purple	7
Patriot			*	*	*	*	*	N/A		N/A		White/Purple	(+)	3	Purple/Lt. Blue	6	Dk. Green/Purple	7
Wrangler			*	*	*	*	*	N/A		N/A		White/Purple	(+)	4	Purple/Lt. Blue	6	Dk. Green/Purple	7

1. Ignition Harness
2. Parking Light Switch
3. Drivers Kick
4. Passenger Kick
5. Parking Light Relay Under Hood
6. Hood Pin Switch (if equipped)
7. Steering Column Harness
8. Horn Relay Under Hood

**FT-CHR2-DC Installation Guide**

**Wiring Diagram**



For Parking Lights to function you must connect the Purple wire to either (-) ground through a resistor or (+) 12 Volts through a 15 amp fuse. See the Fit Guide Table on page 5 for more info.

## Wiring Descriptions

### **Connector 1 (CN1), 8 Pin T-Harness**

Connect the supplied T-Harness to this connector.  
(Refer to the vehicle specific wire diagram for component and wire location.)

### **Connector 2 (CN2), 6 Pin**

Pin 1 Orange/Black: (-) Horn Output

Connect this wire to the horn trigger wire. On select vehicles this wire will connect directly to the horn honk relay located in the under hood fuse box.

Pin 2 Orange: (+) 12v Starter output

Connect this to the (+) 12v Starter wire on the vehicles ignition switch.

Note: Not all vehicles will require this wire for installation. See fit guide for vehicle application, wire color, and location.

Pin 3 Purple/White: (-) Hood Trigger Input

This wire will monitor that the status of the hood. If this wire is grounded the remote start will not function. If the alarm feature is turned on and system is armed this will trigger the alarm alert if the hood is opened. While the hood pin is not required for installation we highly recommend that it is hooked up to prevent accidental starting of the vehicle while it is being serviced.

Pin 4 Purple: (+/-) 12v Parking Light Input

This wire will be connected to a (+ or -) source depending on the parking lights requirement for activation. This will determine the output on the Yellow/Black wire Pin 5.

Pin 5 Yellow/Black: Parking Light Output

This wire output is determined by the Purple wire input. Refer to the Fit Guide Table on pg. 5 for polarity, wire color, and location.

Pin 6 Blue: Data Mux Output

Connect this wire to the Mux wire at the ignition switch.

Note: This wire is required for all CHR-2 installations. See fit guide for vehicle application, wire color, and location.

### **Connector 3 (CN3), 2 Pin Valet Switch**

Connect your 2 Pin Valet Switch for programming and Valet Mode features.

### **Connector 4 (CN4), 6 Pin Antenna**

Connect your 6 Pin antenna cable to this port. Compatible with 1 or 2 Way remote kits.

### **Connector 5 (CN5), 4 Pin Antenna**

Connect your 4 Pin antenna cable to this port. Compatible with 1 or 2 Way remote kits.

### **Connector 6 (CN6), 4 Pin RS-232 Port**

This connector is used for updating of the CM-CHR module.

## Installation & Programming

Follow these steps when installing and programming the FT-CHR2-DC to the vehicle:

**STEP 1:** Disconnect the ignition plug from the ignition barrel.

**STEP 2:** Connect the T-Harness to the CM-CHR.

**STEP 3:** Connect the male connector of the T-Harness to the ignition barrel.

**STEP 4:** Connect the ignition plug to the female connector of the T-Harness.

**STEP 5:** Press the FT-CHR programming switch while inserting the T-harness into the module. The Red LED will illuminate to indicate you are in programming mode, release the programming button.

**STEP 6:** Turn the key to the on position. The LED will begin to flash rapidly.

**STEP 7:** Turn the key to the off position and remove the key.

**STEP 8:** Press the lock button on the vehicle's OEM remote. If no OEM remote is present, tap the programming button on the CM-CHR. The LED will turn off to indicate the module has been programmed.

## Remote Programming Routine

**IMPORTANT:** The CM-CHR must be programmed to the vehicle prior to programming Firstech remotes. See above for module programming instructions.

**STEP 1:** Turn the ignition on.

**STEP 2:** Press and hold the Valet Switch until the LED flashes, then release

**STEP 3:** Press and release the valet-switch once. The parking lights will flash once to confirm.

**STEP 4:** Press and release the brake pedal once.

**STEP 5:** On each transmitter press the button for one second (maximum 4 transmitters), and the parking lights will flash to confirm.

**STEP 6:** Turn off the ignition.



**Programming Multiple Remotes:** After the confirmation flash given in STEP 5, code additional remotes by tapping Button I on two way remotes or the Lock button on one way remotes. The parking lights will flash once confirming each additional remote. The CM-CHR can recognize up to 4 remotes (at any given time.)

To add additional Remotes: Repeat STEPS 1 through 6.

**Option Programming Tables**

		Option Group					
Feature	Default - 1	Option - 2	Option - 3	Option - 4	Option - 5	Option - 6	
Button	1 or Lock	2 or Unlock	3 or Trunk	4 or Start	1 + 3 or Lock + Trunk	2 + 3 or Unlock + Trunk	
1	Add Remote	Program Driver 1					
3	Crank Time	Increase	+++++	++++ (Default)	+++	++	Decrease
4	Run Time (Gas/Diesel)	15/31	9/17	2/4			
5	Alarm Options	Off	On				
6	Unlock Before / Lock After	Off	Lock/Unlock	Lock Only	50 ms		
7	Ignition Door Locks	Off	Lock/Unlock	Unlock Only			
9	Passive Arming	Active	Passive No Lock	Passive w/Lock			
11	Horn Confirmation	Off	On				
13	Confirmation Time	Long	Short				
14	Alarm / Starter	Starter Only	Alarm and Starter	Alarm Only			
15	Auto Rearm	Off	On				
16	Timer Start	3 Hours	1.5 Hours	3 Hours for 5min	1.5 Hours for 5min		
17	Domelight Delay	Off	On				
18	Diesel Timer	Off	15 sec.	8 sec.			
19	Turbo Timer	Off	2 min	4 min			
20	Tach Mode	Data Tach	Voltage Sensing		8 Sec Crank	8 Sec Crank + Supervision by Data Tach	Supervision and Crank by Data Tach
21	Start Attempts	2	1	3			
23	Master Option Reset	Reset					
26	Hybrid Vehicle	Off	On				
29	Alarm Duration	30 sec.	60 sec.	120 sec.			
30	Valet Code	Ign On, Valet Button 3 Times	Ign On, Valet Button 3 Times then Hold 3 Sec	Ign On, Valet Button 4 Times then Hold 3 Sec	Ign On, Valet Button 5 Times then Hold 3 Sec	Ign On, Valet Button 6 Times then Hold 3 Sec	Ign On, Valet Button 7 Times then Hold 3 Sec
33	Reservation Mode	Refer to Option Menu Descriptions					
36	Valet Mode						
37	Double Security Stop	Off	On - Shuts motor off if door opened before unlock pressed				
38	OEM Remote Control	On	Off				

**Option Menu Descriptions**

- 1 Add Remote(s) **(For use with Firstech Remotes)**  
This option allows you to program (Firstech) remotes to the CM-CHR. This option will not time out until the ignition is turned off and the valet button is pressed.
  
- 3 Crank Time  
Use this option if you set Option 20 to Voltage Sensing. This option will increase or decrease the crank time if the default time is not enough or too much.
  
- 4 Remote Start Run Time  
This option gives you 4 different settings for the remote start run time. Gas and Diesel run times are determined by option 18. 18-1 (GAS) / 18-2&3 (Diesel)  
The available options are:
  1. 15 min. Gas / 30 min. Diesel
  2. 9 min. Gas / 17 min. Diesel
  3. 2 min. Gas / 4 min. DieselImportant! Check with your local state laws as the maximum allowed idle time may vary.
  
- 5 Alarm Options  
Changing this option to Setting 2 will turn on the alarm option of the CM-CHR. This option also sets Options 7, 9, 14, and 15.
  
- 6 Unlock before and Lock after remote start **(Programmable with aftermarket remote(s))**  
Some vehicles with a factory alarm may require this option to be enabled.
  1. Off
  2. Unlocks the doors before remote start, locks after starting, and locks after shutdown
  3. Lock only after remote start and after shutdown
  4. 50 ms
  
- 7 Ignition Door Locks
  1. Off
  2. Locks doors after starting with key and unlocks after the ignition is turned off.
  3. Unlocks the doors after Ignition is turned off.
  
- 9 Passive Arming  
This option will arm the system 30 seconds after the last door is closed.
  1. Off
  2. Passive Arming without doors locking
  3. Passive Arming with doors locking.

- 11    Horn Confirmation  
This option will output to trigger the horn any time the system is locked and unlock. The Horn wire must be hooked up to use this option.
1.    Off
  2.    On
- 13    Horn Output Duration  
This will change the time that the horn wire outputs
1.    Long
  2.    Short
- 14    Alarm / Start Option  
This changes the feature of the module to be a starter, alarm, or alarm/remote start.
1.    Remote Start Only
  2.    Alarm and Remote Start
  3.    Alarm Only
- 15    Auto Relock  
This function will lock the doors in 30 seconds if the doors are unlocked and no doors are opened.
1.    Off
  2.    On
- 16    Timer Start  
Changes the times for timer start function. User must activate this option thru the remote in order to activate this feature.
1.    Every 3 hours for the selected programming option 4
  2.    Every 1.5 hours for the selected programming option 4
  3.    Every 3 Hours for with a 5 minute run time
  4.    Every 1.5 hours with a 5 minute run time
- 17    Domelight Delay  
This option ignores the door trigger when arming/locking the doors or remote starting the system.
- 18    Wait to Start  
This option is used for diesel vehicles with glow plugs that must warm up prior to cranking.
1.    Off
  2.    15 Second Delay
  3.    8 Second Delay

- 19 Turbo Timer Mode  
Allows the engine to idle for additional time after the e-brake is set and key turned off.
1. Off
  2. 2 minutes
  3. 4 minutes
- 20 Tach Mode  
Changes the method of recognizing if the vehicle is running or how it is remote started.
1. Data Tach
  2. Voltage Sensing
  4. 8 Second Crank
  5. 8 Second Crank and Data Tach
  6. Supervision and Crank by Data
- 21 Remote Start Attempts  
If the vehicle fails to start it will attempt the amount of times chosen
1. Two Times
  2. One Time
  3. Three Times
- 23 Master Reset  
Resets all options to default.
1. Reset
- 26 Hybrid  
This option changes the CM-CHR to standard assumed crank and does not monitor the tach or for voltage sensing.
- 29 Alarm Duration  
If the alarm option is turned off and the alarm is triggered this option determines the duration of the alarm.
1. 30 Seconds
  2. 60 Seconds
  3. 120 Seconds
- 30 Valet Code  
This option adjusts the method in which you can place the CM-CHR into Valet Mode. Please see the option table for available settings.
- 33 Reservation Mode
1. Default engage with remote
  2. Engage by setting holding foot brake, engage emergency brake and then releasing the foot brake.

- 36 Valet Method  
This will determine how the customer enters Valet Mode.
1. By Valet button or Lock + Trunk -or- Buttons 1 + 3 (2 Way Remote)
  2. N/A
  3. By Valet button only
- 37 Double Security Stop  
When you turn this option on the CM-CHR will shut the motor off if the door is opened before unlock/disarm is pressed.
- 38 OEM Remote Interface  
Important! In order to enable the OEM remote for remote start function, this option must be turned on.
1. On
  2. Off

### Option Programming

Prior to programming make sure that the system is unlocked, disarmed, and not in valet mode.

**STEP 1:** Turn Ignition to the on position

**STEP 2:** Press and hold the valet switch until the LED flashes, then release.

**STEP 3:** Press and release the valet switch 1-38 times for the desired menu option. The LED will flash with every press of the valet switch, the parking lights will flash (if hooked up), and the siren/horn will sound (if hooked up).

**STEP 4:** Press and release the foot brake once the desired option has been reached.

**STEP 5:** Press the lock (Option 1), unlock (Option 2), trunk (Option 3), start (Option 4), lock & trunk (Option 5), or unlock & trunk (Option 6) button on either programmed remote to select the mode, the park-lights flashes 1 to 6 time to confirm.

**NOTE:** After STEP 5 the option programming sequence will jump back to the STEP 3 so that you may continue programming.

**STEP 6:** Turn the Ignition off to exit programming. The parking lights and LED will flash 4 times.

**Troubleshooting**

Remote Start Errors	
Number of Parking Light Flashes	Reason for Error
3	Reservation Not Set
4	Valet Mode On
5	Hood Trigger **

Alarm Diagnostic Codes	
Number of Parking Light Flashes	Reason for Error
3	Door Open
5	Hood Open
6	Trunk Open
9	Ignition

Remote Start Shutdown Errors	
Number of Parking Light Flashes	Reason for Error
1	Foot or Parking Brake Trigger
3	Run Time Expired or Shut Down by Remote
4	Tach Signal Lost
5	Hood Trigger **
6	Starter Over Cranking (8 seconds)

**Valet Mode**

The Valet Mode can be enabled to prevent an accidental Remote-Start. The alarm system is not active when the system is in Valet Mode. However in while in Valet you are still able to lock and unlock the doors, and release the rear hatch/trunk. Please refer to your remote's user manual for additional Valet information.

How to Enter and Exit Valet Mode with the Valet/Programming Switch

**STEP 1:** Turn key to the ignition position.

**STEP 2:** Tap the Valet button 3 times.

**STEP 3:** LED will turn solid and remain on.

### Reservation Mode

How to set up reservation mode for manual transmission

**STEP 1:** Make sure that all doors are closed and the transmission is in the NEUTRAL position.

**STEP 2:** While the engine is running. Engage the parking brake.

**STEP 3:** Release the brake pedal.

**STEP 4:** Push the remote start button for 4 seconds. The parking lights will flash once and then remain on.

**STEP 5:** Remove the key from the ignition barrel. The vehicle will remain running with the Remote-Starter.

**STEP 6:** Exit the vehicle and close all of the doors. The Remote-Starter will stop running once all the doors are closed.

### Take Over

**STEP 1:** Unlock door with OEM or Aftermarket Remote.

**STEP 2:** Turn the ignition to the on position or tap the Push to Start (PTS) Button twice.

**STEP 3:** Press the foot brake.

### Technical Support Contacts

Firstech technical support is reserved for authorized dealers only.

Monday - Friday:                   888-820-3690  
   (8:00 am – 5:00 pm Pacific Coast Time)

Email:                                   support@compustar.com

Web:                                     www.compustar.com/dealersupport