Model No. : L-TR68B

1. The L-TR68B is a 2-way security system featured with remote engine start and can be installed to work with any vehicle with its normal voltage of 12 volt.
2. The L-TR68B' s circuit is designed to suit both the manual gear and the auto-transmission gear car for remote engine starting**.**
3. The L-TR68B has 2 different engine start time circuit for remote starting of both gasoline engine and diesel engine.

Installation of the major components

Choice of place for main control module

Install this behind the dashboard at the suitable position, near the ignition cylinder (within 60 cm from it) but far from the heat source and water tank.

- **Siren**

Choose its location in the engine compartment [far from the heat source and water tank, and free from the
engine' s moving parts]. Drill a hole of 1/8 in drill at the selected place and secure the siren using the mounting bracket, facing the siren downward or in the horizontal position.

- **Hood switch**

While in arm mode or remote engine running, this helps the main control module detect the hood' s status .It must be installed on the grounded metal surface. Drill a hole of 1/4 inch at the selected place and secure the hood switch and adjust it. [The switch must have negative output when the hood is opened, and becomes neutral when the hood is closed.]

Dash LED Status indicator

During the security standby mode, this performs as a visual indicator against attempted theft and also is the current status indicator of the system. During programming of system features, the LED' s flashing pattern provides feedback as a confirmation for different active modes being achieved. Mount the LED at a suitable area to ensure better visibility either from inside or outside of the vehicle.

Override switch

System' s programming can be done using override switch as in the manual entry into valet mode manual arm/disarm. It may not require concealment because the main system itself has other multi-security features. Then connect it with the system' s modules for valet switch.

RF transmitter module/ call button

This is integral part of the main system for transmitting / receiving and paging by push button. Select its mounting place to insure the best transmission range. It is suggested to fix it on the left or right upper area of the interior side of the windshield, using the double stick tape included. Be sure not to block driver's view.

Anti –carjack switch

While ignition "ON", entry and exit of anti-carjack mode can be done by this switch. Select the mounting place within reach of the driver but must be a concealed place Drill a 5/32 inch hole for mounting it. Connect one end of its wire to the system's negative and the other to the anti-carjack wire from the main system.
[This wire gets negative input to make the main system to enter anti-carjack mode]

Shock sensor

While in arm mode, this helps the main system detects impacts upon the vehicle. It must be fixed onto the chassis or stable metal surface.[keeping far from heat source , water tank and vehicle's transmitter module] .Adjust it for the optimal sensitivity. While in arm mod twist the adjustment pole to the (+) direction to make it more sensitive and to the (-) direction for lesser sensitivity. [Strike with your palms or shake the vehicle' s body and observe if the LED turns on in green color during light impact and it turns on in red color during heavy impact.]

※ Wire installation guide

This is the 2-way security system with remote engine start features. While the system is action, L-TR68B' s circuit interaction during remote controlling is the same situation with an ignition key. As the starter circuit differs depending on the car manufacturers, the main system's circuit must be verified before wiring.

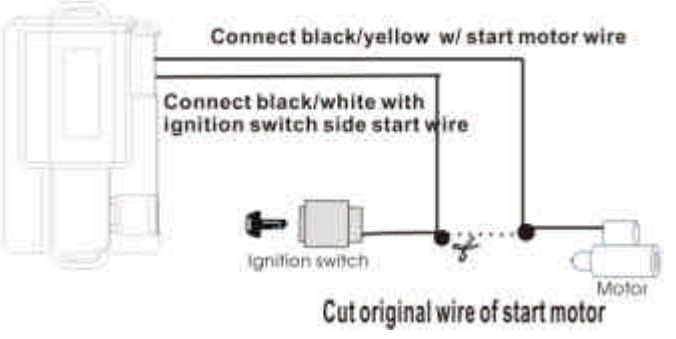
THE 6 PIN MAIN POWER HARNESS WIRE:

1. Black/yellow trace wire: Connect this to the wire from the start motor wire

Firstly locate the ignition switch wire which shows +12V when the ignition switch is turned to "Start position" . Cut this wire as in below illustration. Then connect the black/yellow trace wire

with wire from the start motor. The installing details are as below：

※ This kind of connection will enable the start kill during alarm trigger.



2. Blue wire: output connecting wire for ACC

This provides the current needed by ACC. Locate the wire of the ignition switch area that shows (+) 12 v when the ignition key is turned to "ACC" and " ignition" position . Connect this wire with the blue wire. But this wire must be "0" volts when the ignition key is turned to " start" position.

3. Black/white wire: Connect this wire from the ignition key switch start motor wire

Firstly locate the ignition switch wire which shows +12V when the ignition switch is turned to "Start position" . Cut this wire and connect the black/white trace wire with the wire from wire of the ignition switch. Refer to the above illustration.

4. Red wire: + 12 v power source # 1

Locate the 12v wire of the ignition switch and connect it with this. This supplies (+) 12V power with over 40 amps current ,regardless of position of the ignition key . This supplies power source for ACC, ignition # 1 , ignition # 2 , start wires and their relays.

5. Yellow wire: output connecting wire for ignition # 1

This provides the current required for the running of engine. Locate the wire of the ignition switch area that shows (+) 12 v when the ignition key is turned to "ignition" and "start" position Connect this wire with the yellow wire.

6. Green wire: output connecting wire for ignition # 2

Locate the wire of the ignition switch area that shows (+) 12 v when the ignition key is turned to " ignition" and "start" . Connect this wire with the green wire.

Note：In some vehicles, this wire shows "0" volts while the engine is starting or cranking. But ir some vehicles, this provides +12 v current. Program this as required. [Refer to RF Features Program Table 1, line 7th] 。

- **THE 18 PIN INPUT/OUTPUT HARNESS WIRE**

1. Red wire: system power 12 V (+) 15 A input

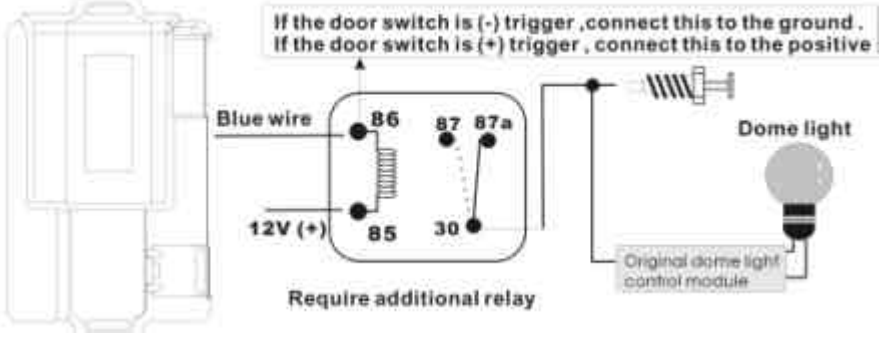
This wire supplies power to the system main module locate the 12v wire of the ignition switch and connect it with this. This supplies (+) 12V power with over 15 amps current connect this wire to the positive .

2 Blue wire: dome light (-) output at 300ma

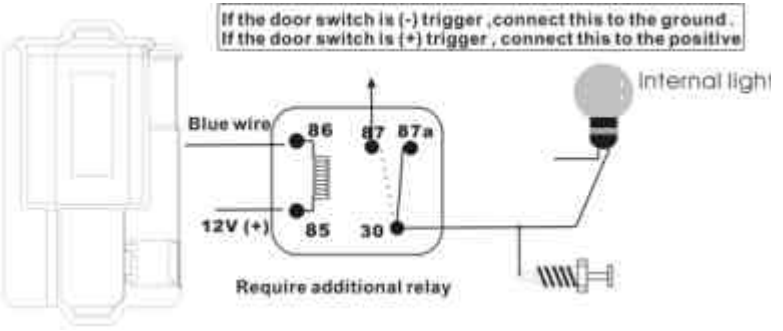
Dome light trigger: While the main system from arm to disarm or "alarm run away" modes, this wire provides (-) 300mA current to turn the dome light on through the external relay. Installation differs depending on the types of vehicles.

A TYPE: This installation of this wire is not needed for vehicle with a dome light controlled by door lock/unlock action.

B TYPE: An additional relay is required for vehicle with original dome light whose device is controlled by driver door switch trigger. The installing details are as below. [Refer to feature program table, item 14 with setting at 0.8 sec]



C TYPE: For the vehicle with no dome light, an additional relay is required. The installing details are as below.[Refer to RF Feature Program Table, line 14th for setting at 6sec]

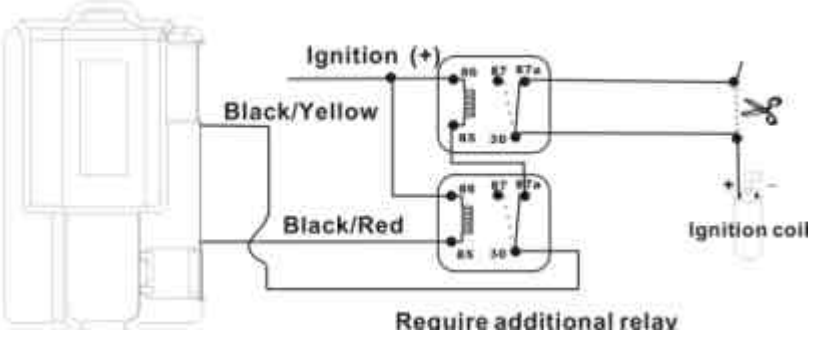


3 Black w/ Red trace wire: ignition # 3 or bypass V.A.T.S. (-)output at 300ma

While the system is in remote engine start mode; this feeds (-) 300ma current. Some vehicles need this circuit for the engine running .If there is no such device, an additional relay is required for the control of light.

4 Black w/ Yellow trace wire: start killer (-) output 300ma

When the main system is armed and remote start engine running time this feeds (-)pulse of 300ma which. If this circuit will be used to kill ignition or disrupt the gas pump, a 3 pin black/red and 2 external relays are required .Refer to the following installation guide.



5 Yellow w/ Red trace wire: Active channel # 2 ,output (-) 300ma

When the remote transmitter activates this channel, this feed (-) 300ma output which, needs an additional relay, to control the device as required.

Note: Refer to RF Features Program Table , line 4th for programming.

6 Grey w/ Black trace wire: tachmeter input singal

This wire diagnoses the success of engine start done by the remote control unit. Locate the signal wire of the tachometer.[Use the multi-meter adjusting for the measurement DC voltage. Locate the tach wire which shows 0, 5, 12 V while the ignition key is turned " ON" , and shows 2~12v when the engine is running. connect this wire with Grey w/ Black trace wire In case the tach wire is hardly located, it is suggested to have the Grey w/ Black trace wire connect grounded. In this case, the diagnosis for the engine running is detected by means of the noise in voltage】.

※ In the case that the main system diagnoses the engine running by means of RPM signal, refer to the 3th line of the RF program table for setting at the maximum 3000 ms.

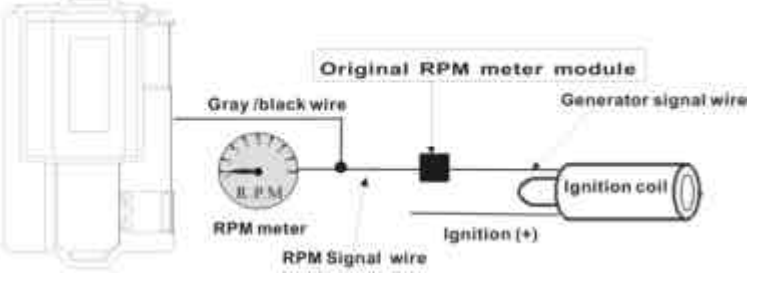
※ For the installer to verify the main system diagnosing success of engine run by RPM signal, it is recommended to observe the LED status indicator to be sure of proper RPM wire connection. The LED status will indicate differently depending on the wire connection modes.

※【**LED might have 3 indication modes within 5 sec at the end of cranking**】

(1) The LED stays on ： Engine cranking stops immediately after engine run success, neglecting the remaining rank time. This confirms the proper RPM wire connection.

(2) The LED stays on ：After engine success engine ranking goes on through the maximum crank time of 3000ms (= 3 sec). This indicates that the RPM wire happens to be connected to the generator.

(3) The LED does not light on：After engine success engine cranking goes on through the maximum crank time of 3000ms (= 3 sec). This indicates that the RPM wire is improperly connected. In such case, the main system diagnoses engine run by means of noises in voltage.



7 Blue w

If the door switch is （+）trigger, connect this with the Blue w/ Red trace wire. If the door is （—） trigger, leave the Blue w/ Red trace wire unconnected.

8 Orange w/ White trace wire: trunk switch (-) trigger input

If the trunk switch is （—） trigger, connect trunk switch pin with the orange w/ white trace wire

9 Black wire : ground(-)

This wire supplies current for the main module and needs to be grounded on a stable metal surface in the installation.

※ Improper wiring can cause problem and even disable engine start.

10 Green w/ Black trace wire: (+) parking light output with +12 v at 7.5 A

While the system is in action, the main system feeds, through onboard relay, different times of (+) 12 v current for lamp signal. Locate the left or right parking light wire from the direction indicator switch and connect it.

※ Both wires of left and right parking light from direction indicator switch must have positive output.

11 Green w/ Yellow trace wire: (+) parking light output with +12 v at 7.5 A

While the system is in action, the main system feeds, through onboard relay, different times of (+) 12 v current for lamp signal. Locate the left or right parking light wire from the direction indicator switch and connect it.

※ Both wires of left and right parking light from direction indicator switch must have positive output.

12 Black w/ White trace wire: disarm original alarm (-) output at 300ma

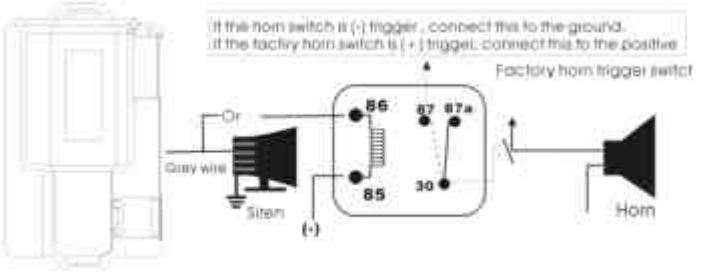
When the main system enters remote engine start mode, this circuit provides –300ma current for 1.5 sec. [For vehicle with chip-controlled anti-theft system, this circuit needs installation of additional accessory or relay to by-pass such immobilization]. This does not need installation on the car without anti-theft chip.

13 Grey wire: Siren （+） output 1.5 A

For different action by main system; the main system feeds different (+) 12v for alert signal.

Connect this wire with the red wire of the siren or use an additional relay to connect with the original horn.

※ (Refer to RF Features Program Table , line 6th)



14 Yellow w/ Blue trace wire: for Active channel #3 or 2 stage door lock output (-) 300ma

One of the options can be chosen as required. (a) active channel # 3 and (b) 2 stage door unlock [for 1st stage to open the driver's door and for 2nd stage to open all other doors].

(A) active channel # 3:

If this option is chosen, when the remote transmitter activates this channel, it feeds (-) 300ma pulse current whose pulse time can be programmed. An additional accessory is required for the control of other device.

Note: Refer RF Features Program Table, line 10th & 5th for pulse time programming.

(B) 2 stage door unlock:

If this option is chosen, when the remote transmitter activates this channel, it feeds (-) 300ma pulse current whose pulse timing can be programmed. An additional relay is required for the control of door lock/unlock .

Note: Program it as required by referring to RF Features Program Table ,line 10th

15 Yellow w/ Black trace wire: active channel # 1 for trunk release (-) output of 300ma

When remote activates this channel it feeds 1 sec. (-) 300ma current output. An additional relay is required for the trunk release.

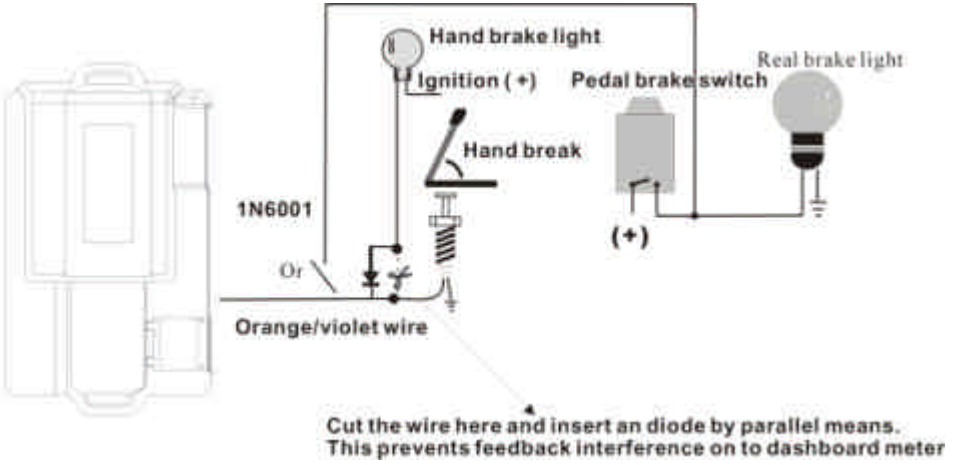
With addition of external relay, this wire can be used for trunk release. But the vehicle must have motor for trunk release.

16 Orange/violet trace wire: Wire for hand brake (or) rear brake light (-) 300ma input

There must be a negative current during the remote engine starting for the main system to allow for the remote engine start. While starting the engine remotely , if there is not any negative current on this wire the engine immediately shuts down. There are 2 options for this wire connection.

(A) Connect this wire with the wire of rear brake light (whose wire has negative current if the petal bake is not used because of the current loop from the rear brake light). The current of rear brake light turns positive when the brake pedal is pressed

(B) Connect this wire with the wire from hand brake (i.e hand brake switch) which has negative current if the hand brake is pulled up. The hand brake wire becomes positive if it is depressed. An diode needs to be installed during installation as in the diagram below.



17 Blue w/ Black trace wire: door switch（-）trigger input

If door switch is (-)trigger output, connect this door switch with blue w/ black wire. But for door switch with （+） trigger output, leave the Blue w/black wire unconnected.

18 Orange w/ Gray trace wire: hood switch (-) trigger input

Connect the orange w/ gray trace wire with hood switch's output wire.
When the hood is closed this wire provides "0" current and the main system allows engine start.
When the hood is opened, this wire feeds (-) output. The main system will not allow engine start。

2 s black PIN for switch-controlled anti-carjack

1. Violet wire: for current input for anti-carjack manual switch
2. Black wire: for ground connection for anti-carjack manual switch

4 S black PIN shock sensor harness

1. White wire: (-) trigger wire for heavy impact
2. Blue wire: (-) trigger wire for light impact
3. Black wire: Neutral at normal time but feeds negative output during arm mode
4. Red wire: (+) 12V current for shock sensor power source

5 S white PIN RF transmitter case harness

1. Black wire: (+)5 V DC for RF transmitter power source
2. Black wire: RF data input/output
3. Black wire: Ground
4. Black wire: (-) Output
5. Black wire: temperature sensor page-out call data (-) input

2 SS white PIN over switch

1. Grey wire: over-ride switch input
2. Black wire: override switch ground output

2 S white PIN LED

1. Red wire: LED (+) output
2. Black wire: LED (-) output

3 S black PIN for remote TX power choice

This is for use in selection of different TX power to get different communication ranges

External wire loop of main module to differentiate gear modes

This is used in selecting manual or auto transmission gear mode. For auto gear mode, keep the wire loop intact.

For manual gear mode, cut this wire loop

6 M PIN DOOR LOCK/UNLOCK HARNESS

While the main system operates lock/unlock action . This harness controls internal relay "unlock" and "lock".

※ Program the door lock/unlock output current time as required.[Refer to RF Features Program Table ,line 9th]

＊ Lock relay has wire connection as below:

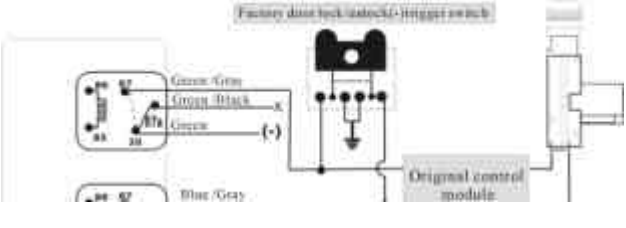
1. PIN Blue wire is the common pin for terminal # 30 of the relay
2. PIN Blue w/gray wire is the N/O pin for terminal # 87 of the relay
3. PIN Blue w/black wire is the N/C pin for terminal # 87a of the relay

＊ Unlock relay has wire connection as below:

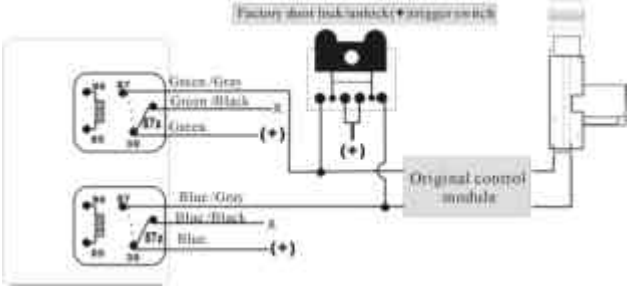
4. PIN Green wire is the common pin for terminal # 30 of the relay
5. PIN Green w/gray wire is the N/O pin for terminal # 87 of the relay
6. PIN Green w/black wire is the N/C pin for terminal # 87a of the relay

Installation differs depending on the car factory. Refer to one of the illus. below.

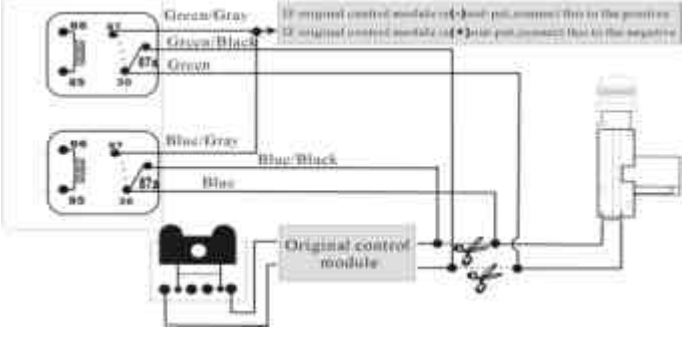
Wiring diagram (1) : The vehicle must have factory door lock relay control module and negative triggering



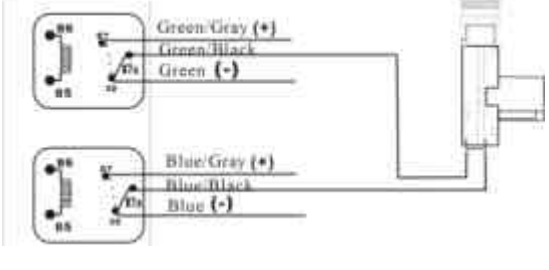
Wiring diagram (2) : The vehicle must have factory door lock relay control module and positive triggering



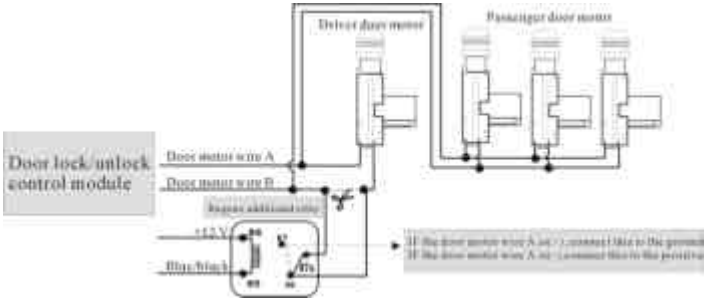
Wiring diagram (3) For the vehicle with pre-installed door lock relay control module which is fixed behind the control module



Wiring dia



Wiring diagram (5) Installing details for 2 stage unlock



※ RF Features Programming

(1) Set the main system to the Disarm mode but in audible mode.

(2) Turn the ignition "ON" (Engine must not be running.)

(3) Press and release the override switch 6 times

(4) Turn the ignition "OFF" {siren chirps 6 times confirming it has entered active programming mode.

(5) While in the active programming mode, each press on override switch is followed by one **chirp** and each fifth press is followed by a **long chirp.** Chirping pattern enables the programmer to know which features active mode he has achieved. Within 10 sec, change the default in each active feature mode by pressing assigned button.(as shown in the **Default** ***change by remote' s button*** column. The factory default is described in the shaded background.

RF Features Program Table		Default change by remote' s button			
Press times of override switch	RF features active mode with factory default	Press button K Ⅰ	Press button KⅡ	Press & hold button K Ⅰ	Press &hold button KⅡ
1 time	Engine runtime upon remote start for 5/10/15/20 min	□5	□**10**	□15	□20

2 times	Temp-controlled engine start at -5º /-10º /-20º /-30º	☐**-5º**	☐-10º	☐-20º	☐-30º
3 times	Crank time for each remote start 800ms/1200/1800ms/3000ms	☐**800ms**	☐ 1200ms	☐ 1800ms	☐ 3000ms
4 times	CH # 2 output pulse time 0.8s/10s/30s/ and ON/OFF	☐**0.8s**	☐10s	☐30s	☐On/off
5 times	CH # 3 output pulse time 0.8s/10s/30s/ and ON/OFF	☐**0.8s**	☐10s	☐30s	☐On/off
6 times	Siren or Horn choice	☐**100ms** Siren	☐ 10ms Horn	☐ 15ms Horn	☐ 20ms Horn
7 times	Choice of ignition 2 wire output upon cranking	☐**On**	☐Off	☐Off	☐Off
8 times	Engine start delay of on 2s/10s upon ignition (different fuel)	☐**2S**	☐10s	☐10s	☐10s
9 times	Door lock/unlock output current of 0.8s/ 3.6s	☐**0.8s**	☐3.6s	☐3.6s	☐3.6s
10 times	2 step Door unlock (or) Channel # 3	☐Ch #3	☐2 step	☐2 step	☐2 step
11 times	Door lock/unlock upon ignition OFF/note	☐**0 FF**	☐note 1	☐note 2	☐note 3
12 times	Auto rearm ON/OFF	☐**ON**	☐OFF	☐OFF	☐OFF
13 times	Arm delay time for 6s/30s upon door lock	☐**6s**	☐30s	☐30s	☐30s
14 times	Dome light output pulse time	☐**6s**	☐0.8s	☐0.8s	☐0.8s
15 times	Remote LCD's temp. display mode of car (Celsius/ Fahrenheit)	☐ C	☐ F	☐ F	☐ F
16 times	Parking light 10 sec auto-flash. upon door-open OFF /ON	☐**OFF**	☐ON	☐ON	☐ON
※ For future reference, installer is recommended to mark each box after selection of function mode.					

RF Features Program Table explanation

1. Engine runtime upon remote start for 5/10/15/20 min : Choice of engine runtime after engine starting by remote unit.
2. Temp-controlled engine start at -5º /-10º /-20º /-30º : If this feature is turned ON , the engine will auto start at the selected temp. and will be running at the pre-set run time (Refer to iten 1)
3. Crank time for each remote start : Following each remote engine start, engine will crank for

the 1st pre-set time. If engine fails to start after the 1st crank time, engine will try staring for the 2nd crank time (with extended 200ms add-up) with total 4 cranking times. If the engine starts still fails after the 4th crank time, the system stops starting.

※ Select 3000ms crank time if the main system has circuit connection with tachometer's RPM wire. (Setting of 3000ma is a must in such case)

4. CH # 2 output time 0.8s/10s/30s/on.off :Choice of the output pulse time of Active channel # 2. Short press on buttons KⅠ、KⅡ、individually for the choice of different pulse time .Press & hold button KⅡ each time can turn this function ON/OFF.
5. CH # 3 output time 0.8s/10s/30s/on.off : Choice of the output pulse time of Active channel # 3. Short press on buttons KⅠ、KⅡ、 individually for the choice of different pulse time .Press & hold button KⅡ each time can turn this function ON/OFF.
6. Siren or Horn chirp time choice：Remote control each time minimum chips time is 10ms with its maximum at 100ms. **Any choice of such settings effects the pulse time when ARM /DISARM mode is done by a remote control unit. The pulse time varies depending on any of such settings and thus determines the volume of siren or horn.**

※ While the "ALARM RUN AWAY" function is activated, the pulse output may differ according to different settings as below：

A. If siren is set for 100ms, the pulse output continues for 30 sec.
B. If horn is set for any of □ Horn 1 **10ms**, □Horn 2 **15ms** , □Horn 3 **20ms, the pulse output is intermittent for a duration of 30 sec during which pulse continues for 6 sec followed by 2 sec rest.**

7. Choice of ignition 2 wire output upon cranking : Choice of whether or not to feed a current output on ignition 2 during cranking .
8. Engine start delay of 2s/10s upon ignition: Choice for different fuel cars. Set the delay time of 2sec for gasoline car and set it at 10sec for diesel car which needs glow plug pre-heat。
9. Door lock/unlock output current of 0.8s/ 3.6s : Set 0.8sec current for power door-locking system . Set 3.6s current for vacuum door-locking system.
10. Set the channel # 3 or 2 stage door unlock : The selected function will be activated using CH3 column.
11. Door lock/unlock on ignition : Choice of door auto lock/unlock when the ignition is turned ON/OFF

Note 1. Car door is not locked upon ignition. It will immediately unlock when the ignition is OFF.

Note 2. Door is locked 10 sec after the ignition is ON. It will immediately unlock when the

ignition is OFF.

Note 3. Door is locked 30 sec after the ignition is ON. It will immediately unlock when the ignition is OFF.

※ If the car door is opened while the ignition is ON, the auto lock is disabled.

12. Auto rearm ON/OFF : Choice of auto lock /arm back if car door is not opened within 30 sec after the system is remote-disarmed .
13. Arm delay time for 6s/30s upon door lock : The main system enters actual arm mode after 6sec or 30sec delay from locking to order for some vehicles to bypass original dome light device needed for door trigger.
14. Dome light output pulse time : Choice of dome light delay time. Choose 6sec delay if your car has no dome light. Choose 08 sec if it has dome light .
15. Remote LCD's temp. display mode of car (Celsius/ Fahrenheit): Choice of display mode of car's interior temp. in Celsius or Fahrenheit mode.
16. Parking light 10 sec auto-flash. upon door-open OFF /ON. Choice of whether to have 10 sec parking light auto-flash each time the car door is opened.

※ How to restore RF Features to factory default settings.

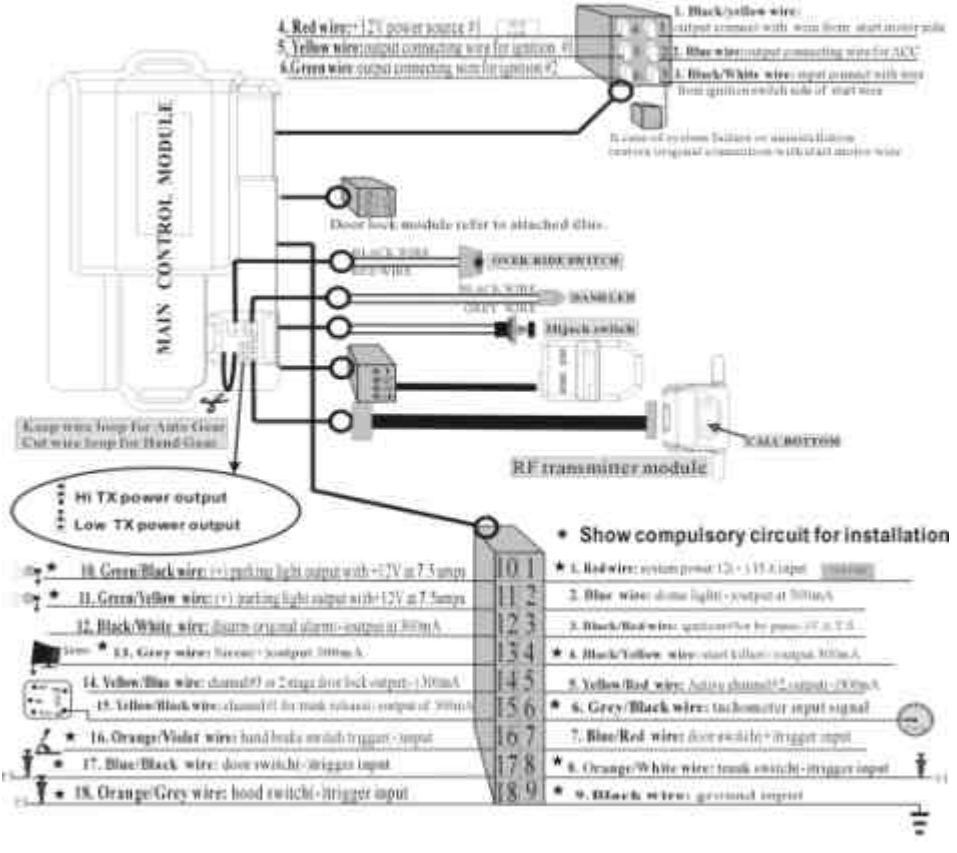
Step (1). Turn the ignition ON (Engine must not be running.)

Step (2) . Press the over-ride switch 10 times

Step (3). Turn the ignition OFF {Siren chirps 10 times, confirming the program active mode is initiated}。

Step (4) .Press override switch 1time which is followed by 1 siren chirp confirming the system has restored RF Features to the factory default settings.

Step (5). Press and release remote unit's button K I which is followed by 1 buzz of remote unit to restore RF Features to factory default settings.


MAIN CONTROL MODULE
Door lock module refer to attached diss.
RF transmitter module
Hi TX power output
Low TX power output
Show compulsory circuit for installation

The Wintercronics Co., Ltd. Model: L-TR68B (referred to as the EUT in this report) is a Transceiver of car alarm security system. It offers wireless remote control, ideal for use in vehicle security system to activate the function of central door lock control system and car searching except the alarm system.

A major technical descriptions of EUT is described as following:

A). Fundamental Frequency: 433.92 MHz

B). Modulation : Pulse Modulation

C). Antenna Designation: Non-User Replaceable (Fixed)

D). Power Supply: DC 12V via control box.

E). Receiver type : Superheterodyne

Fundamental Frequency	433.92MHz
Power Source	12V Battery
Transmitting Time	Periodic ≤ 5 seconds
Associated Receiver	FCC DOC

FCC Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two condition.(1).this device may not cause harmful interference (2).this device must accept any interference received, including interference tha may cause undesired operation

Warning:

Note: This equipment has been tested and found to comply with the limits fo digital device, pursuant to Part 15 of FCC Rules. These limits are designed t provide reasonable protection against harmful interference in a residentia installation. This equipment generates, used and can radiate radio frequenc energy and, if not installed and used in accordance with the instructions, ma cause harmful interference in to radiate communications. However, there is n guarantee that interference will not occur in a particular installation. If thi equipment does cause harmful interference to radio or television reception which can be determined by turning the equipment off and on, the user i encouraged to try to correct the interference by one or more of the followin measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different form that to whic the receiver in connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference: and

(2) This device must accept any interference received: including interference tha may cause

undesired operation.

THE MANUFACTURER IS NOT RESPONSIBKE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT.SUCH ODIFICATIONS COULD VOID THE USER' S AUTHORITY TO OPERATE THE EQUIPMENT.

Note: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modification to this equipment. Such modification could void the user's authority to operate the equipment.