

Troubleshooting Guide



Satellite Solutions for Mobile Markets

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www.kingcontrols.com

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SECTION 1 INTRODUCTION

The King Controls Service Department is dedicated to providing its dealers and customers with the highest possible level of satisfaction and service.

Welcome to King Controls.

The satellite TV market is expanding and changing. The King Controls Service Department stays up to date with the latest information to assist you in keeping troubleshooting and repair time to a minimum.

When calling our service department, a King-Dome technician will issue a Service Order Number and then clearly define the proper course of action to follow. Additionally, the King-Dome technician will create a call log to aid in properly documenting the warranty claim.

Remember, for warranty reimbursement, you must call King Controls for a Service Order Number *before* performing any work.

SECTION 2

WARRANTY INFORMATION

Every King Controls Satellite System is covered by a **TWO YEAR PARTS AND ONE YEAR LABOR** limited warranty from the date of original purchase.

This warranty does not cover installation and external wiring, or refurbished units. This warranty also does not apply where:

- The product has been abused, misused, improperly installed or improperly maintained.
- Repairs have been made or attempted by others that are not certified by King Controls to do such repairs.
- Repairs are required because of normal wear and tear.
- Alterations have been made to the product.

PROCESSING A WARRANTY CLAIM

Note: Only King Controls certified dealers are authorized to perform warranty evaluations and repairs.

- 1) Technician must first determine if the unit is under warranty by verifying original owner and date of original purchase. Dealer must provide one of the following when submitting a warranty claim:
 - copy of original purchase receipt, or
 - if unit was installed by an OEM, verification of in-service date
- 2) Technician must call King Controls to get a Service Order Number (1-800-982-9920). TECHNICIAN MUST NOT PROCEED WITHOUT A SERVICE ORDER NUMBER.
 - A King-Dome technician will issue a Service Order Number and advise technician on how to proceed.
- 3) After repairs are completed, the following must be sent to King Controls:
 - Defective Part (Warranty Labor Claim will not be processed until part is returned.)
 - Warranty Consideration Form
 - Copy of Work Order
 - Proof of Purchase

KEY POINTS

- 1) Technician must have the proper King-Dome Diagnostic Tool.
- 2) For units in service longer than one year, the customer is responsible for labor time.
- 3) Installation parts (coax, power and data cables, etc.) are not covered.

4) Replacement parts (including domes) are sent directly from King Controls. **DO NOT USE NEW PRODUCT FOR WARRANTY REPLACEMENT WITHOUT WRITTEN AUTHORIZATION FROM KING CONTROLS.**

- 5) Technician must call King Controls before performing any work for which warranty labor reimbursement will be submitted to King Controls. A King-Dome technician will issue a Service Order Number and specify the allotted time for the repair. If repairs will take longer than the allotted time, and the servicing dealer wishes to receive proper reimbursement, the technician must receive prior authorization to exceed the allotted time.
- 6) Warranty claims must include: proof of purchase, Warranty Consideration Form with Service Order Number, and copy of work order with labor time which matches that allotted by King Controls.
- 7) King Controls shall reimburse the servicing dealer for warranty work at their published labor rates.
- 8) Enclose paperwork with defective part. Clearly mark the Service Order Number on outside of box.

TROUBLESHOOTING BLOCK TIMES

Time is listed in minutes.

9630, 9630-LP AUTOSCAN	
Level Can and Circuit Board	60
Elevation Motor Assembly	60
Azimuth Motor Assembly	60
LNB with position marked	60
Elevation Calibration Procedure	30
9702 AUTOMATIC	
Circuit Board and LNB Kit	60
Elevation Motor Assembly	60
Internal Main LNB Coax	45
9702-LP AUTOMATIC	
Level, Circuit Board, LNB Kit	60
Elevation Motor Assembly	60
Azimuth Motor Assembly	60
9760/62, 9760/62-LP, 9762-SW	
Upper Rotary Cable	45
Tuner	45
Display	30
RF Board	60
Compass Stick	45

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Section 3

AUTOSCAN 9630, 9630-LP

IMPORTANT! Some of the 9630 and 9630-LP functions have changed slightly starting with serial number 170000. This section is divided into two parts corresponding to the two serial number ranges.

Please make sure you are using the correct procedure for the serial number of the unit you are working on. Each procedure notes the serial number range at the top of the page.

Note: For more detailed installation information, please refer to the 9630 & 9630-LP Installation and Operating Instructions Manual available on our website at www.kingcontrols.com.

PART ONE: Serial Number 169999 and lower

Basic Operation

- 1. Turn TV and satellite receiver on.
- 2. Go to the signal meter screen on TV. Choose transponder number:

Dish Network #11 DIRECTV #19

- 3. Enter local zip code on signal meter screen to determine satellite elevation. If you do not know your local zip code, determine your elevation from the elevation maps in the Reference Section.
- 4. Press **UP** arrow on King-Dome Controller to turn King-Dome on.

Note: The King-Dome Controller will count down from 99 to 00 and then display **OH.**

5. Press **UP** or **DOWN** arrow on King-Dome Controller to display dish elevation and match to elevation on TV signal meter screen or elevation from the elevation maps in the Reference Section.

IMPORTANT! In Step 6, as soon as you begin holding the right arrow, you must continuously monitor the TV signal meter screen until signal appears on TV.

- Press and hold **RIGHT** arrow until Controller begins flashing "77." **Remember, you must watch for signal strength on TV!** Dish will automatically perform a 360 degree scan for satellite. When signal strength appears on TV, momentarily press **ANY BUTTON** to stop the dish from rotating.
- Press the UP, DOWN, LEFT or RIGHT arrows to fine tune signal strength to the highest possible number on TV signal meter screen. Enjoy your programming!

Controller automatically shuts off after 2 minutes.







9630, 9630-LP KEYPAD FUNCTIONS

Serial Number 169999 and lower

To use the Keypad with the 9630 & 9630-LP AutoScan, simply unplug the existing controller and plug in the Keypad.



9630, 9630-LP WIRING DIAGRAMS FOR FLOWCHART

Serial Number 169999 and lower





9630, 9630-LP KEYPAD FLOWCHART

Serial Number 169999 and lower

IMPORTANT!

Before performing any warranty work, you must call King Controls for a Service Order Number.

Note: Non-warrantable issues are indicated by, but not limited to, grey boxes in flowcharts.



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ON OFF

123 456 789

* 0 #



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PART TWO: Serial Number 170000 and higher

Basic Operation

- 1. Turn TV and satellite receiver on.
- Go to the signal meter screen on TV.
 Choose transponder number: Dish Network #11
 DIRECTV #19
- 3. Enter local ZIP code on signal meter screen to determine satellite elevation. If you do not know your local zip code, determine your elevation from the elevation maps in the Reference Section.
- Press and hold UP/ON arrow on King-Dome Controller for <u>3 FULL SECONDS</u> to turn King-Dome on.
 - Note: The Controller will flash a series of codes and then display its elevation. Wait for the Controller to steadily display the elevation before continuing (about 10 seconds).
- 5. Press **UP** or **DOWN** arrow on King-Dome Controller to match elevation on Controller to elevation on TV signal meter screen or elevation from the elevation maps in Reference Section.

IMPORTANT! In Step 6, as soon as you begin holding the right arrow, you must continuously monitor the TV signal meter screen until signal appears on TV.

- Press and hold **RIGHT** arrow until Controller begins <u>RAPIDLY</u> flashing its clock position (7-10 seconds).
 Remember, you must watch for signal strength on TV! Dish will automatically perform a 360 degree scan for satellite. When signal strength appears on TV, momentarily press ANY BUTTON to stop the dish from rotating.
- 7. Press the **UP**, **DOWN**, **LEFT** or **RIGHT** arrows to fine tune signal strength to the highest possible number on TV signal meter screen. Enjoy your programming!



9630, 9630-LP KEYPAD FUNCTIONS

Serial Number 170000 and higher

To use the Keypad with the 9630 & 9630-LP AutoScan, simply unplug the existing controller and plug in the Keypad.

9630, 9630-LP WIRING DIAGRAMS FOR FLOWCHART

Serial Number 170000 and higher

9630, 9630-LP KEYPAD FLOWCHART

Serial Number 170000 and higher

Before performing any warranty work, you must call King Controls for a Service Order Number.

Note: Non-warrantable issues are indicated by, but not limited to, grey boxes in flowcharts.

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Section 4

AUTOMATIC 9702, 9702-LP

- IMPORTANT! Some of the 9702 and 9702-LP functions have changed slightly starting with serial number 170000. Please make sure you are using the correct procedure for the serial number of the unit you are working on. Each procedure notes the serial number range at the top of the page.
- Note: For more detailed installation information, please refer to the 9702 & 9702-LP Installation and Operating Instructions Manual available on our website at www.kingcontrols.com.

9702, 9702-LP BASIC OPERATION All Serial Numbers

1. Turn on TV and Receiver. "Searching for Satellite" or similar will appear on TV screen.

2. On King Dome controller, press and hold ON/SEARCH for 3 FULL SECONDS. Power light turns steady GREEN.

STATUS LIGHT

- flashes a variety of colors a) for about one minute
- b) blinks RED

c)

SYSTEM STATUS unit performs

self-diagnostic

- search in progress potential satellite blinks GREEN (may start blinking RED again) found
- d) turns steady Green

- satellite found
- 3. Can you view your desired programming?

Note: Receiver may require 2 minutes to download program information.

- YES: Turn King-Dome off and enjoy.
 - **IMPORTANT!** Do not turn off the controller until you have found your desired satellite and programming.
- NO: Press the ON/SEARCH button for one second to continue search. Repeat step until you are locked onto the correct satellite.

Hand Held Controller

9702 & 9702-LP KEYPAD FUNCTIONS All Serial Numbers

To use the Keypad with the 9702 & 9702-LP Automatic, simply unplug the existing controller and plug in the Keypad.

DISPLAY CODES

All Serial Numbers

ENTER CODE	INFORMATION DISPLAYED		
* 80 #	Elevation zone	(1-16)	
* 82 #	Mode	45 = 15" automatic 55 = 15" manual 65 = 12" automatic 75 = 12" manual	
* 98 #	Software revision		

PROGRAMMING CODES

All Serial Numbers

ENTER CODE	PROGRAMMING
* 01 # thru * 16 #	Programs Elevation zone (see Zone Maps in Reference Section).

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9702, 9702-LP WIRING DIAGRAMS FOR FLOWCHARTS

Serial Number 169999 and lower

9702 KEYPAD FLOWCHART Serial Number 169999 and lower

IMPORTANT!

Note: Non-warrantable issues are indicated by, but not limited to, grey boxes in flowcharts.

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ON OFF

4 5 6

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9702-LP KEYPAD FLOWCHART

ON OFF 1 2 3

456 789 *0#

Serial Number 169999 and lower

IMPORTANT!

Before performing any warranty work, you must call King Controls for a Service Order Number.

Note: Non-warrantable issues are indicated by, but not limited to, grey boxes in flowcharts.

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9702, 9702-LP WIRING DIAGRAMS FOR FLOWCHART

Serial Number 170000 and higher





9702, 9702-LP KEYPAD FLOWCHART

Serial Number 170000 and higher



Before performing any warranty work, you must call King Controls for a Service Order Number.

Note: Non-warrantable issues are indicated by, but not limited to, grey boxes in flowcharts.



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Section 5

REFERENCE 9630, 9630-LP 9702, 9702-LP

ELEVATION MAP FOR DIRECTV 101

All Serial Numbers



ELEVATION MAP FOR DISH NETWORK 110

All Serial Numbers



ELEVATION MAP FOR DISH NETWORK / DIRECTV 119

All Serial Numbers



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ZONE MAP FOR DIRECTV 101

Serial Number 169999 and lower



ZONE MAP FOR DIRECTV 101

Serial Number 170000 and higher



ZONE MAP FOR DISH NETWORK 119

Serial Number 169999 and lower



ZONE MAP FOR DISH NETWORK 119

Serial Number 170000 and higher



DEFINITION OF TERMS 9630, 9630-LP, 9702, 9702-LP All Serial NUmbers





DIRECT TO CIRCUIT BOARD CABLE

9630, 9630-LP, 9702, 9702-LP All Serial Numbers

IMPORTANT! Only the Direct to Circuit Board Cable will work for this procedure. A standard phone cord <u>WILL NOT WORK</u>.

Call King Controls before performing this procedure.

Note: Warranty does not cover external wiring.

The Direct to Circuit Board Cable (supplied by King Controls) is used to verify that the data cable in the external wire harness is good.

Leave the external wire harness connected to the back of the dome unit.

Connect the Direct to Circuit Board Cable between the Keypad and the circuit board and press ON. The Keypad should turn on.



2 PART REMOVABLE DOME FEET



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Section 6

TRAC-KING 9760, 9762 9760-LP, 9762-LP

IMPORTANT! Some of the 9762 and 9762-LP functions have changed slightly starting with serial number 362652. Please make sure you are using the correct procedure for the serial number of the unit you are working on. Each procedure notes the serial number range at the top of the page.

Note: For more detailed installation information, please refer to the 9760/62 and 9760/62-LP Installation and Operating Instructions Manual available on our website at www.kingcontrols.com.

9760/62 & 9760/62-LP BASIC OPERATION All Serial Numbers

Note: This example is for the DTV 101 satellite in Region 2-North Central. The information on your controller will vary depending on the satellite and region you have chosen.

1. Turn on TV and satellite receiver. "Searching for Satellite Signal" or similar should appear on TV.



Note: The Trac-King must remain powered on to maintain a signal. If you are going to be stationary and wish to continue watching TV, **DO NOT TURN THE SYSTEM OFF.**

SET REGION

All serial Numbers

Note: Setting the current region reduces satellite acquisition time.



SET SATELLITE SERVICE

All Serial Numbers



Note: The King Controls HD TV Converter Box (#9747 or #9747-AM) is required to receive HD programming from the DIRECTV satellite at 110 W.



Note: **For DIRECTV Subscribers**: The satellite setting allows the user to select the satellite and service provider of choice. For DIRECTV subscribers, the Trac-King can also track a secondary or alternate satellite.

Example: If you are a subscriber to the DIRECTV service most of the programming that you will be watching will be transmitted from the satellite located at 101 degrees. You may also subscribe to programming that is transmitted from another satellite located at 119 degrees. In order to receive programming from both satellites you can either select an individual (DTV 101) satellite manually from the display or you can select a multiple (DTV 101/119) satellite setup. The multiple satellite selection will automatically switch between satellites (DTV 101/119) based on the channel or programming that you select on the Satellite Receiver (multi-satellite capable receiver is required). Please keep in mind that the programming may pause (freeze frame) or pixelate while the antenna acquires and locks onto the new satellite.

The multiple satellite setting will work only if your satellite receiver is set up to work in oval dish mode. Consult your satellite receiver manual for instruction.

It is not recommended to use the DTV 101/119 setting unless there is programming on the DTV 119 satellite that you specifically subscribe to.

For Dish Network Subscribers: Use the procedure on the previous page to switch between the 110 and 119 satellites.

TROUBLESHOOTING

All Serial Numbers

IMPORTANT! Before performing any warranty work, you must call King Controls for a Service Order Number.

Note: The Keypad is not used with the Trac-King product line. All diagnostics and troubleshooting are performed with the end-user controller.

SYMPTOM	POSSIBLE SOLUTION
Controller does not power up.	Check: tuner is connected to power supply. controller is connected to tuner. power supply is plugged into 110 VAC outlet.
Controller remains in "Power Up, Please Wait" condition.	Disconnect power supply for 15 seconds, then reconnect. Verify voltage on coax at dome unit is 24 volts. Inspect rotary joint cable, then reseat (inside dome unit). Inspect all coax cables and verify connections are snug but not overly tight (inside and outside dome unit).
Controller displays "Load Error."	Disconnect power supply for 15 seconds, then reconnect. Inspect rotary joint cable, then reseat (inside dome unit).
Controller displays "AZ FAULT." Dish cannot rotate.	Verify shipping bolt(s) removed (bottom of dome unit). Disconnect power supply for 15 seconds, then reconnect. Perform MECHANICAL CALIBRATION (back of this section). Perform OPTION 21 RE-INITIALIZE and 0-RECALIBRATE (back of this section). Reseat ribbon cables (inside dome unit).

SYMPTOM	POSSIBLE SOLUTION
Display reads "EL FAULT."	 Make sure shipping tie strap is removed (back left hand side of dome unit). Disconnect power supply for 15 seconds, then reconnect. Perform MECHANICAL CALIBRATION (back of this section). Restart system. If problem persists, perform OPTION 21 RE-INITIALIZE and 0-RECALIBRATE (back of this section). Reseat ribbon cables (inside dome unit).
Only getting signal on 1/2 of transponders.	 9762 / 9762-LP and 9762-SW ONLY (SN# 360325 and lower): Verify De-stacker is installed (see Wiring Diagrams in back of this section). IMPORTANT! The De-stacker must be installed even if only one TV and receiver are used. Verify coax cables are tightly crimped with SNAP 'N' SEAL® or F-COMPRESSION style crimps only. Verify receiver is operating properly. Verify LNB type is set correctly.
Unit never locks on or locks on and drifts off of satellite.	Atmospheric moisture. Unit will lock on as weather improves. Check for obstruction in sky in direction of satellite. Select another satellite and verify unit locks on. Verify coax cables are tightly crimped with SNAP 'N' SEAL® or F-COMPRESSION style crimps only. Perform OPTION 21 RE-INITIALIZE and 0-RECALIBRATE (back of this section). Inspect all coax cables and verify connections are snug but not overly tight (inside and outside dome unit).

9762, 9762-LP WIRING DIAGRAMS FOR FLOWCHARTS

All Serial Numbers



9762, 9762-LP FLOWCHART

Serial Number 362651 and lower

IMPORTANT!

Before performing any warranty work, you must call King Controls for a Service Order Number.

Note: Non-warrantable issues are indicated by, but not limited to, grey boxes in flowcharts.



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9762 & 9762-LP FLOWCHART

Serial Number 362652 and higher

IMPORTANT!

Before performing any warranty work, you must call King Controls for a Service Order Number.

Note: Non-warrantable issues are indicated by, but not limited to, grey boxes in flowcharts.



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OPTION 21 RE-INITIALIZE AND 0-RECALIBRATE

IMPORTANT! You must call King Controls before performing this procedure.





MAGNETIC CALIBRATION

IMPORTANT! You must call King Controls before performing this procedure.

Note: To check if a Magnetic Calibration has been performed, go to Diagnostic Page H (see TRAC-KING CONTROLLER NAVIGATION at the back of this section).





IMPORTANT! During Step 7, DO NOT MOVE THE VEHICLE.



System will now perform a satellite acquisition sequence.

MECHANICAL CALIBRATION

IMPORTANT! You must call King Controls before performing this procedure.

The vehicle must remain completely still during this entire procedure.



SHOW MODE RUN

IMPORTANT! You must call King Controls before performing this procedure.



WIRING DIAGRAMS







HDTV CONVERTOR BOX SINGLE LNB / DUAL LNB



TRAC-KING CONTROLLER NAVIGATION



USER MAIN MENU

Serial Number and Software Revision Information



DIAGNOSTIC PAGES Main Page



DIAGNOSTIC PAGES A Page



DIAGNOSTIC PAGES B Page



DIAGNOSTIC PAGES D Page



DIAGNOSTIC PAGES H Page



DEFINITION OF TERMS





2 PART REMOVABLE DOME FEET



Notes:

Notes:

Notes:

WARRANTY CONSIDERATION FORM

Service Center Name	Customer Name *				
Address	King-Dome [®] Serial Number * (located on base of King-Dome or on cover of Owner's Manual)				
	Date of Original Purchase or Installation *				
Phone No.	Make, Model and Year of Vehicle				
Name and Title of person working on King-Dome [®]	Phone Log Number				

King-Dome [®] Service Order Number *				* REQUIRED

Repair Date(s)	Total Labor Time (Hours)	Return Shipping Charges (Ground Only)
	@ Hourly Rate of	

Description of Failure and Work Performed	

The following paperwork must be sent to King Controls for warranty reimbursement consideration:

- 1) Warranty Consideration Form with Service Order Number
- 2) Copy of Work Order
- 3) Proof of Purchase (Sales receipt or verification of in-service date)

Note: If returning defective part, please include with paperwork. Warranty Labor Claim will not be processed until part is returned.

KING CONTROLS"

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