Troubleshooting Guide
9702 Series

Satellite Solutions for Mobile Markets

11200 Hampshire Avenue South, Bloomington, MN 55438-2453
Phone: (800) 982-9920 Fax: (952) 922-8424
www.kingcontrols.com

1305-AUTO REV G: 9702/9702-LP TROUBLESHOOTING GUIDE
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</tr>
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**IMPORTANT!:** There are two separate ranges of serial numbers each with its own specific information.

Section 3 covers basic information common to all serial numbers unless noted.
Section 4 covers serial numbers 269999 and lower.
Section 5 covers serial numbers 270000 and higher.
Section 6 covers reference information common to all serial numbers unless noted.

Note: For more detailed installation information, please refer to the 9702/9702-LP Installation and Operating Instruction Manual available on our website at www.kingcontrols.com.
The King Controls Service Department is dedicated to providing its dealers and customers with the highest possible level of satisfaction and service.

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 Customer ID Number (or Case Number) and then clearly define the proper course of action to follow. If any work is to be performed or parts replaced, a Service Order Number will also be issued. Additionally, the King-Dome technician will create a call log to aid in properly documenting the warranty claim.

**IMPORTANT!**

For warranty reimbursement, you must call King Controls for a Service Order Number **BEFORE** performing any work: (800) 982-9920.

(Please have serial number and model of unit available when calling.)
SECTION 2  WARRANTY INFORMATION

Every King-Dome Satellite System is covered by a **TWO YEAR PARTS AND ONE YEAR LABOR** limited warranty from the date of original purchase. (Upgrade kits are one year parts only.)

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 (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 King-Dome Diagnostic Keypad #1844.

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.
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**
   a) flashes a variety of colors for about one minute
   b) RED-flashing
   c) GREEN-flashing (may start flashing RED again)
   d) GREEN-steady

   **SYSTEM STATUS**
   unit performs self-diagnostic
   search in progress
   potential satellite found
   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.
To use the Keypad with the 9702 & 9702-LP Automatic, simply unplug the existing controller and plug in the Keypad.

1. Displays elevation.

2. When locked onto a satellite, moves the dish 9° to the east.

3. Displays signal strength.

4. Unit continues search.

5. When locked onto a satellite, moves the dish 9° to the west.

6. Displays system status.
   - 21-22: Checking elevation motor circuit
   - 31-32: Checking azimuth motor circuit
   - 55: Unit searching for satellite
   - 66: Potential satellite found
   - 77: Unit fine tuning for highest possible signal strength
   - 88: Unit locked on satellite
   - 99: No satellite found
   - 0L or 1L: Open coaxial line

Note: 9702-LP units with SN 269999 and lower do not display codes 21-32.
# DISPLAY CODES

**All Serial Numbers**

<table>
<thead>
<tr>
<th>ENTER CODE</th>
<th>INFORMATION DISPLAYED</th>
</tr>
</thead>
<tbody>
<tr>
<td>* 80 #</td>
<td>Elevation zone (1-16)</td>
</tr>
<tr>
<td>* 82 #</td>
<td>Mode</td>
</tr>
<tr>
<td></td>
<td>45 = 15” automatic</td>
</tr>
<tr>
<td></td>
<td>55 = 15” manual</td>
</tr>
<tr>
<td></td>
<td>65 = 12” automatic</td>
</tr>
<tr>
<td></td>
<td>75 = 12” manual</td>
</tr>
<tr>
<td>* 98 #</td>
<td>Software revision</td>
</tr>
</tbody>
</table>

---

# PROGRAMMING CODES

**All Serial Numbers**

<table>
<thead>
<tr>
<th>ENTER CODE</th>
<th>PROGRAMMING</th>
</tr>
</thead>
<tbody>
<tr>
<td>* 01 # thru * 16 #</td>
<td>Programs Elevation zone (see Zone Maps in Reference Section).</td>
</tr>
</tbody>
</table>
TROUBLESHOOTING BLOCK TIMES
All Serial Numbers

Note: See www.kingcontrols.com for detailed instructions.

<table>
<thead>
<tr>
<th>Component</th>
<th>Time in Minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circuit Board and LNB Kit</td>
<td>45</td>
</tr>
<tr>
<td>Elevation Motor Assembly</td>
<td>45</td>
</tr>
<tr>
<td>Internal Main LNB Coax</td>
<td>30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Time in Minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level, Circuit Board, LNB Kit</td>
<td>45</td>
</tr>
<tr>
<td>Elevation Motor Assembly</td>
<td>45</td>
</tr>
</tbody>
</table>

You must call King Controls before performing any warranty work.

(800) 982-9920
SECTION 4

SERIAL # 269999 AND LOWER

9702, 9702-LP WIRING DIAGRAMS FOR FLOWCHARTS
Serial Number 269999 and lower

[Diagram of wiring connections and flowcharts]

Page 8
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.
Continued from Previous Page.

Verify the unit is programmed for the correct service provider:
Press * 81 #
(21=DIRECTV)
(22=Dish Network)

YES

Is your service provider DIRECTV?

NO

Display reads 22, but it should read 21:

Press:
* 96 #
* 66 #
* 21 #
* 45 #

GO TO THE CHECK SWITCH SCREEN. Verify "No switchbox detected". If there is a switchbox, run the test.

NO

Go back to the channel screen by pressing the VIEW button.

YES

Go to the Signal Meter Screen and select transponder 19.

SEARCH BOX
Press and hold 0 three (3) seconds to initiate search.

Keypad flashes 21 continuously.
(Azimuth/Elevation micro switches not found.)

Keypad flashes 22 continuously.
(Elevation micro switch not found.)

Keypad flashes 31 continuously.
(Azimuth micro switch not found.)

Does Keypad display 21, 22, 32, and start flashing 55 within one minute?

YES

NO

Remove shipping bolt and shipping strap.

Are shipping bolt and shipping strap removed?

YES

Call King Controls CODE 248

Continued on Next Page.
When the Keypad starts flashing 55, press 3.

Keypad displays 00.

Numbers fluctuate, but are under 12.

Call King Controls: CODE 249

Potential satellite found. Press 9.

Are the numbers fluctuating between 12-23?

NO

Are there ANY line of sight obstructions?

NO

Does the Keypad flash 55 continuously then change to flashing 99?

YES

Dome has performed a complete search of the sky and has not found a potential satellite.

Move to a position with a clear line of sight to the satellite. Return to SEARCH BOX on previous page.

NO

YES

Call King Controls: CODE 251

Press 9. Is the Keypad flashing 55, and then eventually 66, 77?

YES

NO

NO

Return Loop from Next Page.

Continued on Next Page.
9702-LP KEYPAD FLOWCHART
Serial Number 269999 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.

Call King Controls for a Service Order Number before starting this flowchart.

Turn on TV and Receiver. Make sure receiver is properly set to work with King Dome.

Turn on Keypad (press ON)

Does the Keypad turn on using "Direct to Circuit Board" cable?

NO

YES

Call King Controls, CODE 209

Call King Controls, CODE 201

Call King Controls, CODE 202

Are there 12 volts at the circuit board?

YES

NO

Check power harness connections. Are there 12 volts at the circuit board now?

YES

NO

Are there 12 volts at the power harness at the base of the dome?

YES

NO

External Power-Harness problem. Not warrantable by King Controls. Call King Controls, CODE 203

Does the Keypad turn on?

NO

NO

No power to Dome Unit or Keypad cannot communicate with Dome Unit.

YES

Are there 12 volts on the power harness at the base of the dome?

YES

NO

Continued on Next Page.
Continued from Previous Page.

**Call King Controls: CODE 204**

- **NO**
  - Are there 13-18 volts at the base of the King Dome on the Main coax?
    - **YES**
      - **D**
        - Are there 13-18 volts on the black coax (labeled Ph2 Receiver) on the CB?
          - **NO**
            - Call King Controls. CODE 265
          - **YES**
            - Call King Controls. CODE 206
        - **NO**
          - Call King Controls. CODE 207
    - **NO**
      - Are there 13-18 volts on the top coax cable at the LNB?
        - **YES**
          - Call King Controls. CODE 206
        - **NO**
          - Call King Controls. CODE 207

- **YES**
  - Display reads OL or 1L (open coax line).
  - Call King Controls. CODE 265

**Enter *01# on the Keypad**

- **NO**
  - Display reads 21.
  - **Enter *06#**
    - *06#
    - *06#
    - *22#
    - *45#

- **YES**
  - Does the Keypad display a '10 or 00'?
    - **NO**
      - Verify all coax cables are connected properly.
      - Does the Keypad now display 10 or 00?
        - **NO**
          - Display reads OL or 1L (open coax line).
          - Call King Controls. CODE 265
        - **YES**
          - Call King Controls. CODE 206

- **YES**
  - Does the Keypad read 22?
    - **NO**
      - Put dome into manual mode (Press *55#) and check high and low limits.
    - **YES**
      - continued on next page.
Continued from Previous Page.

Are the limits within range?
H 60-65
L 11-15

NO → Call King Controls.
 CODE 209

YES → Press and hold the 4 or 5 key until the unit moves far enough for the clock position on the keypad to change (about 10 seconds).

NO → Does the clock position change?
YES

Are the shipping restraints removed?

NO → NO → Remove shipping restraints.

Call King Controls.
 CODE 209

Turn the Keypad off then back on.

DIRECTV
Go to the signal meter screen and select transponder 19.

Dish Network
Go to the Check Switch screen. Verify “No switchbox detected” If there is a switch box detected, run the test.

Go back to the channel screen by pressing the VIEW button.

Continued on Next Page.
SECTION 5  SERIAL # 270000 AND HIGHER

9702, 9702-LP WIRING DIAGRAMS FOR FLOWCHART
Serial Number 270000 and higher

[Diagram of wiring connections and flowchart]
9702, 9702-LP KEYPAD FLOWCHART
Serial Number 270000 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.
Continued from Previous Page.

1. Does the Keypad display a 10 or 00? [NO]
2. Verify all coax cables are connected properly.
3. Does the Keypad now display 10 or 00? [YES]
4. Display reads OL or 1L (open coax line).
5. Are there 13-18 volts at the base of the King Dome on the Main coax? [C]
   - [NO] Call King Controls CODE 274
   - [YES]
     - Are there 13-18 volts on the black coax (labeled P12 Receiver) on the CB? [D]
       - [NO] Call King Controls CODE 275
       - [YES] Are there 13-18 volts on the top coax cable at the LN9? [E]
         - [NO] Call King Controls CODE 277
         - [YES] Call King Controls CODE 276

Continued on Next Page.
Continued from Previous Page.

**DIRECTV**
Go to the Signal Meter Screen and select Transponder 19.

**Dish Network**
Go to the Check Switch Screen. Verify "no switch box detected."
If there is a Switch Box detected, run the test.
Go back to the Signal Meter Screen and select Transponder 11.

---

**SEARCH BOX**
Press and hold 0 three (3) seconds to initiate search.

**Keypad**

- Does Keypad display 21, 22, 32, and start flashing 55 within one minute?

  - **NO**
    - Keypad flashes 21 continuously. (Azimuth/Elevation micro switches not found.)
    - Keypad flashes 22 continuously. (Elevation micro switch not found.)
    - Keypad flashes 31 continuously. (Azimuth micro switch not found.)

  - **YES**
    - Remove shipping belt and shipping strap.

**Shipping**

- Are shipping belt and shipping strap removed?
  - **NO**
  - Call King Controls, CODE 278
  - **YES**
When the Keypad starts flashing 66, press 3.

- Keypad displays 00
  - Numbers fluctuate, but are under 12.
  - Potential satellite found, Press 9.
    - Call King Controls, CODE 279

- Numbers fluctuate, but are above 36.
  - Call King Controls, CODE 280

- Are the numbers fluctuating between 12-30?
  - NO
    - Are there ANY line of sight obstructions?
      - NO
        - Doma has performed a complete search of the sky and has not found a potential satellite. Press 9.
      - YES
        - Move to a position with a clear line of sight to the satellite. Return to SEARCH BOX on previous page.

- YES
  - Press 9. Is the Keypad flashing 55, and then eventually 66, 77?
    - NO
      - Call King Controls, CODE 281
    - YES
      - Continue on Next Page.
Continued from Previous Page:

Does the Keypad display 88 within 5 minutes?

- **NO**
  - Does the Keypad flash 66, 77 then go back to flashing 55?
    - **YES**
      - Unit could not find a signal strong enough to lock onto the satellite.
      - Call King Controls. CODE 252
    - **NO**
      - Keypad flashes 66, 77 for more than 5 minutes.
      - Call King Controls. CODE 283

- **YES**

Is your service provider DIRECTV?

- **YES**
  - Go to the “Point Dish Screen” by pressing MENU 6, 1, 1 and select transponder #11.

- **NO**

Does the receiver say “Locked Echosat 119”?

- **YES**
  - Correct satellite found.

- **NO**
  - Exit Point Dish Screen by pressing “view/view TV” button on remote.

Is there non-fluctuating signal strength on transponder 19?

- **YES**
  - Correct satellite found.

- **NO**
  - Press and hold the 5 key for 2 seconds to continue search.

Return Loop to Previous Page.
RETURN SHIPPING
All Serial Numbers

IMPORTANT! When returning a unit, you must package it in the box from the replacement unit. Use all included internal packaging, and be sure to attach outer feet removed from new unit.

If you are returning a unit and do not have a King Controls box, call King Controls for a return shipping box and kit (800 982-9920).

1. Turn rotating bracket to align shipping bolt hole(s) with hole(s) in base. (Some units may only have one shipping bolt.)

2. Insert shipping bolt(s) thru washer(s) and base and FINGER TIGHTEN into rotating bracket.

3. Lower dish arm. (Gently push on dish and arm simultaneously. Lower until arm is just about to touch mechanical stop.)

4. Insert tie strap thru plastic spacer and base, loop around dish arm for 15" models or through P-clamp for 12" (LP) models, and back through base.

5. Terminate tie strap. (DO NOT OVER TIGHTEN TIE STRAP.)

6. Attach (4) outer feet from replacement unit with lock washers and nuts.

7. Fasten dome cover to base. MAKE SURE YOU ARE USING CORRECT SCREW TYPE. Tighten screws until washers deform slightly.
Return Shipping Diagram

**IMPORTANT!** DO NOT OVER TIGHTEN SHIPPING BOLTS.
FINGER TIGHTEN ONLY.

Note: Some units may have only one shipping bolt.
This page intentionally left blank.
ZONE MAP FOR DIRECTV 101
Serial Number 270000 and higher
ZONE MAP FOR DISH NETWORK 119
Serial Number 269999 and lower
ZONE MAP FOR DISH NETWORK 119
Serial Number 270000 and higher
IMPORTANT! Only the Direct to Circuit Board Cable will work for this procedure. A standard phone cord WILL NOT WORK.

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.
Note: Newer King-Dome models feature a two part foot. This enables the dome unit to be easily removed from the roof of the vehicle without compromising the roof seal.

IMPORTANT! Be sure to disconnect all cables from the back of dome unit before removing from roof.

Permanent Feet remain fastened to vehicle roof.

DISCONNECT ALL CABLES BEFORE REMOVING DOME UNIT FROM ROOF!
AZIMUTH: Circular rotation around the vehicle.
Like a clock face: front of vehicle is 12:00, rear is 6:00.

ELEVATION: Angle in degrees measured from the ground plane.
## Warranty Consideration Form

<table>
<thead>
<tr>
<th>Service Center Name</th>
<th>Customer Name *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>King-Dome Serial Number * / Model Series /</td>
</tr>
<tr>
<td></td>
<td>Date of Original Purchase or Installation *</td>
</tr>
<tr>
<td>Phone No.</td>
<td>Make, Model and Year of Vehicle</td>
</tr>
<tr>
<td>Name and Title of person working on King-Dome</td>
<td>Customer I. D. Number</td>
</tr>
</tbody>
</table>

**Service Order Number * (RMA Number) ** REQUIRED

<table>
<thead>
<tr>
<th>Repair Date(s)</th>
<th>Total Labor Time (Hours)</th>
<th>Return Shipping Charges (Ground Only)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>________________________</td>
<td></td>
</tr>
<tr>
<td></td>
<td>@ Hourly Rate of __________</td>
<td></td>
</tr>
</tbody>
</table>

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.