

CELLULAR PHONE

TROUBLESHOOTING

BE1KL-01

1. DOCKING PORTABLE TYPE:

- Determine whether the complaint involves use in portable mode, mobile mode or both.
- Verify the complaint: If the problem is described as intermittent, attempt to reproduce the conditions during the problem. If the complaint cannot be verified, do not change any components.

HINT:

If problem relates to static, or service or dropped calls, please see section on "CELLULAR SYSTEM PERFORMANCE".

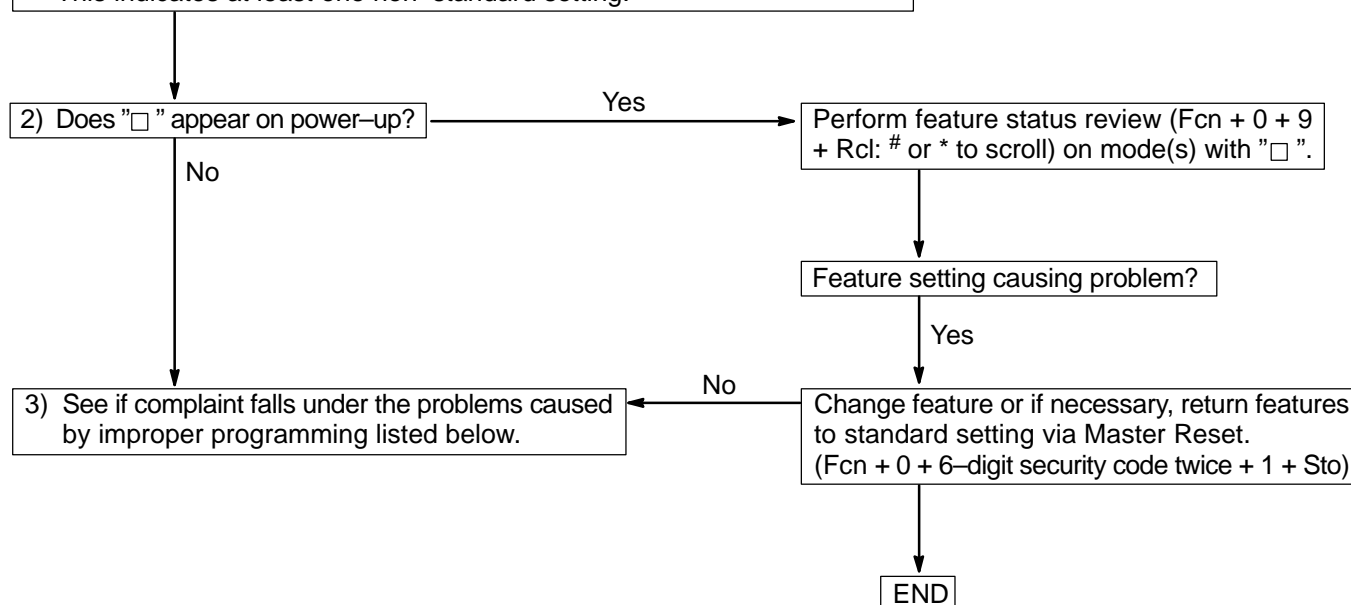
- Always suspect programing first, especially for recently installed and/or programmed phones. This includes both feature and NAM programming (See section entitled "Programming Check").
- If the problem is determined to be in the hardware, refer to the flow diagrams listed by mode and complaint.

HINT:

- If phone functions properly in portable mode, it is highly unlikely the portable (handset) is the problem in mobile mode.
- If in mobile mode, phone powers up "LOANER", the transceiver is not "Docking Portable" transceiver (possibly a mobile only transceiver) or the portable is not a "Docking Portable" unit.

2. PROGRAMING CHECK – FEATURES

1) Check to see if "□" appears at power up in both portable and mobile modes. This indicates at least one non-standard setting.



3. PROGRAM CHECK – BY PROBLEMS**(a) Related to NOT BEING ABLE TO PLACE OR RECEIVE CALL**

- (1) Check E.S.N. given to system provider (place portable in test mode: press # + 38 + # and use "*" to scroll). This ESN also can be seen on the back of the portable when the battery is removed.
- (2) Phone must be programmed in portable mode. If the phone is programmed in mobile mode, the phone will not be able to place calls.
- (3) Check NAM programming in portable mode. Check programming parameters as provided by programming guide and system provider(s). Check for proper two phone number programming if applicable. Note that the NAM programming in mobile mode is only used as a method to program the lock and security codes in mobile mode.
- (4) Check Selectable System Scan for improper setting. Setting to SCAN A, SCAN B, Home, or ROAM can cause "No Service" or "ROAM" conditions. Remember portable and mobile modes each have separate Selectable System Scans.
- (5) Check service level, for call restrictions. (Set to service level 4 for full use)

Service level	Command Module	Voice Recognition
1	only locations 1, 2, 3 function	access denied
2	fully functional	fully functional
3	disable	access denied
4	fully functional	fully functional
5	only allows use with numbers 7 digits or less	only allows use with numbers 7 digits or less
6	fully function	fully function

- (6) If 2 phone number operation has been programmed (Step 10, 2nd phone number. bit 1 = on, 0 = off), ensure currently active number is correct and registered for service (Rcl # to check).

(b) Related to NOT BEING ABLE TO UNLOCK PHONE

The phone in portable and mobile modes has separate unlock and security codes. They are not downloaded upon power-up. Check unlock codes in both portable and mobile modes. Attempt to unlock phone with unlock code corresponding to its mode.

(c) Related to FEATURES NOT BEING ACCESSIBLE

The security code is needed to access some features. Confirm security codes in both portable and mobile modes, and attempt feature access with correct code.

CELLULAR SYSTEM PERFORMANCE INFORMATION

Most complaints relating to the performance of the cellular telephone are not due to a malfunction of the Lexus Telephone System or the Cellular Network itself. It is more likely that the cause lies in the characteristics inherent to wireless communications.

Radio signals both transmitted and received by the cellular telephone work best when there is an unobstructed path between the vehicle's antenna and the network's "base site" antennas.

Because of the reflecting characteristics of the cellular phone radio signal, directed and reflected signals may reach the antenna at the same time. ("multipath"). They cancel each other out creating small "islands" where audio "nulls" occur. As the car moves through these spots, the caller will hear a momentary flutter. This same characteristics cause "ghost" images in television when an airplane flies over.

Multipath can also cause a "cross-talk" phenomenon, where the driver may temporarily hear another cellular conversation.

Other common symptoms which may occur in a cellular conversation are:

Symptom**Cause**

Static

Lack of coverage or "Multi-path" condition.

Crosstalk
(co-channel or adjacent channel
interference or receiver
intermodulation.)

The cellular telephone has captured a "voice channel" from another base site due to weak coverage or multi-path condition. This is a landline or system coverage problem.

Dropped calls

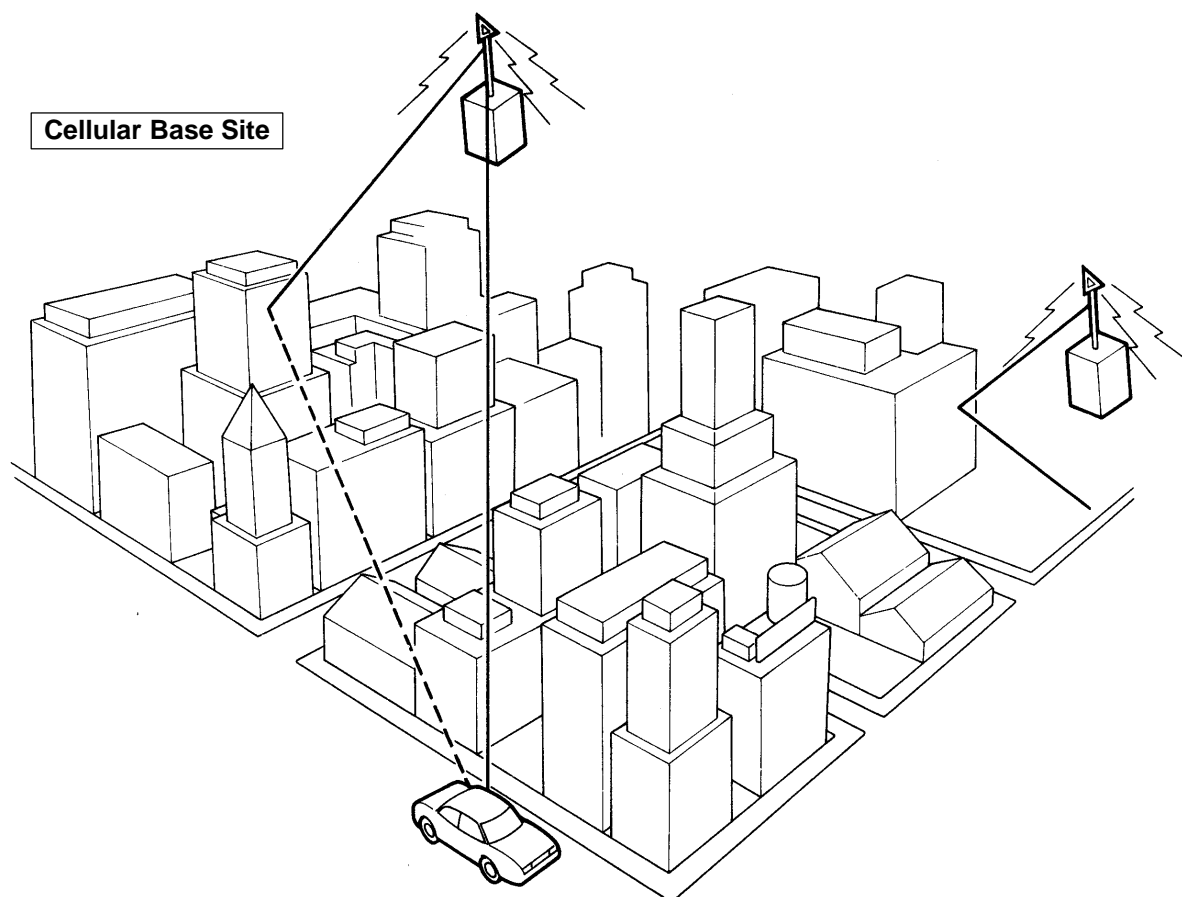
Weak coverage area, multi-path condition, or "system" drop.

Clicks/occasional chopped word.

System handoff another base site.

Increased/ decreased volume at
either landline or vehicle Echo or
feedback.

The current "Voice channel" that the system has assigned to the cellular telephone has a higher or lower gain, or more or less "sidetone" compared to a previous channel.



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(d) **ADDITIONAL SYSTEM COVERAGE TIPS**

- (1) Each cellular system provides unique geographical coverage patterns which have weak signal areas within its boundaries due to topography, man-made structures, etc. Turns, sometimes switching a customer over to the other cellular system provider can make sense in providing better coverage for a customer's particular phone use area.
- (2) Enlist the customer's help in providing cellular system coverage troubleshooting information. Use of the signal strength meter can help provide the information regarding strength of the system coverage where problematic conditions occur.

(e) **SPECIFIC PORTABLE COVERAGE TIPS**

The portable is more likely to be effected by the strength of the cellular system coverage since it can be carried into more problematic locations (i.e. buildings) and since its output power is lower than the mobile. The antenna is designed for optional performance with the antenna extended.

The Customer should extend the antenna especially if the following occurs:

- Signal strength meter shows low signal strength.
- NS (no service) lights flashers or lights steadily.
- Weak signal alert is indicated.(series of beeps, "call" appears display)

**VOICE RECOGNITION TROUBLESHOOTING
(MOBILE MODE ONLY)****1. TRAINING**

Proper training is a key component to optional voice recognition results. Make sure the customer trains the phone under the following conditions.

- (a) Engine idling
- (b) Fan speed on low
- (c) User in drivers seat in normal driving position with head forward towards microphone.
- (d) User speaks in a clear, normal voice in response to the prompts.

A noticeable improvement in the recognition rate can often be made by having the user retrain the phone after using it for several weeks.

By this time he/she is more acclimated to speaking to the phone and has settled into a pattern of speaking the directory name tags.

2. PROBLEMS ENCOUNTERED

- (1) Access Denied Message Given – Service level restrictions may be in place; set service level to 4 for full use.
- (2) Name Substitution–Substitution occurs when names are too similar for proper distinction. Have the customer change problematic words to make them more distinguishable from each other. Avoid onesyllable words. Names like "Karen's Home" and "Karen's Office" have a higher probability for substitution.
- (3) Inability to Access Voice Memory Tags
 - (a) Poor voice tags–scroll through the voice memory and note those name tag locations which sound particularly weak or unclear; these voice tags could be candidates for retraining for the customer.
 - (b) Make sure the customer is saying the name exactly how he trained it.
 - (c) The user must speak louder while keeping the same tone and pitch of voice used during training, especially when background noise is significant (i.e. while travelling on the highway, in presence of loud trucks, etc.)
 - (d) Make sure the user is in the correct user mode (A or B) when speaking the voice tags.
- (4) Customer dislikes the sound of the repeated name–As described in the user's manual, "Thank you" or a beep can be programmed in place of the repeated name.