



EV4500
ET4300
810-ECA
800-EFM

Technical Guide for Installation and Maintenance

Please read before using telephone.

Technical Guide for Installation and Maintenance

What is the Epic System?

The Epic System is a 4-Line 16 Station Intercom Speakerphone with Caller ID that provides small businesses with tremendous capabilities that, until now, have only been available in larger, complex systems costing much more.

The Epic System is very easy to install, there's no complicated wiring or central controller unit; the brains are built into each phone. Simply plug the phones into your wall outlets and jacks and your ready to go!

Important note – The advanced features of this telephone work by sending a data or inter-com signal over Line 1.

Important Notes on DSL:

The micro filters that may have been provided by the DSL provider to prevent interference with telephones are NOT compatible with these Epic telephones, since these same filters will also block the data signals of the system from traveling between the phones.

DSL Installation Option A:

(preferred method)

The solution is to have a DSL data splitter installed at your network interface/D-Mark point. This way there will be one unfiltered line going directly to your DSL modem, and there will be one DSL filter with the entire Epic system behind this filter.

DSL Installation Option B:

If you are a current DSL customer and your DSL service is provided over line 1 you have the option of reversing the line cords in all telephones, this will move the DSL service over to line three of the telephone sets. This will prevent the DSL from interfering with the advanced features of the Epic phone system.

Getting Started

Important note – The structured wiring for the Epic System can either be “Daisy Chained” (Fig. 1 below), or “Homerun” (Fig. 2 below).

We recommend using “Twisted Pair” cable whenever possible.

The total cumulative length of cabling in the installation should not exceed 1000 feet.

Fig. 1. Daisy Chain Wiring – All phones are wired together into a single loop.

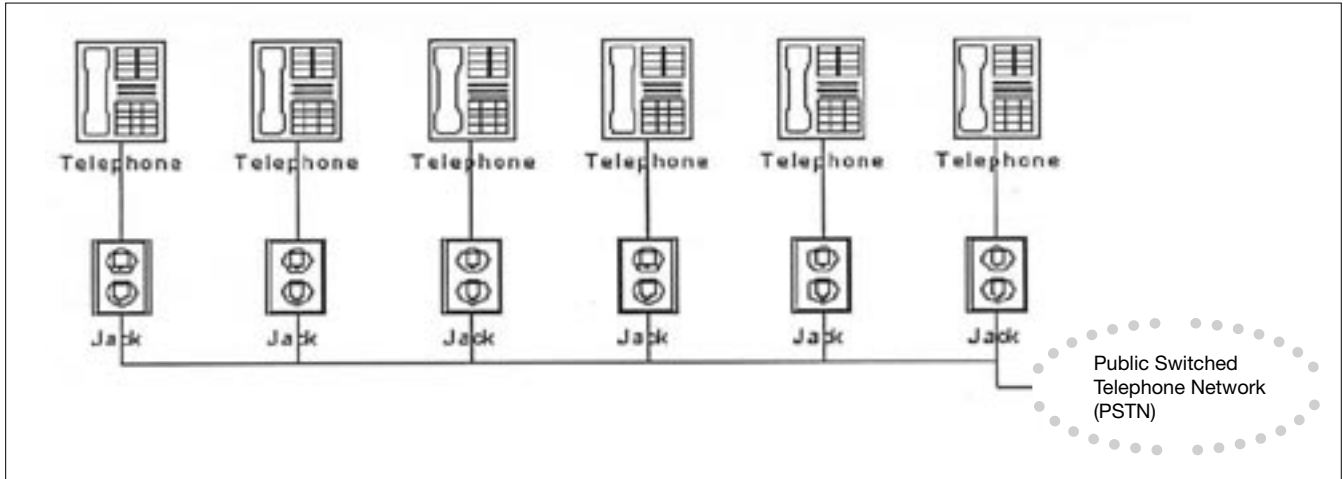
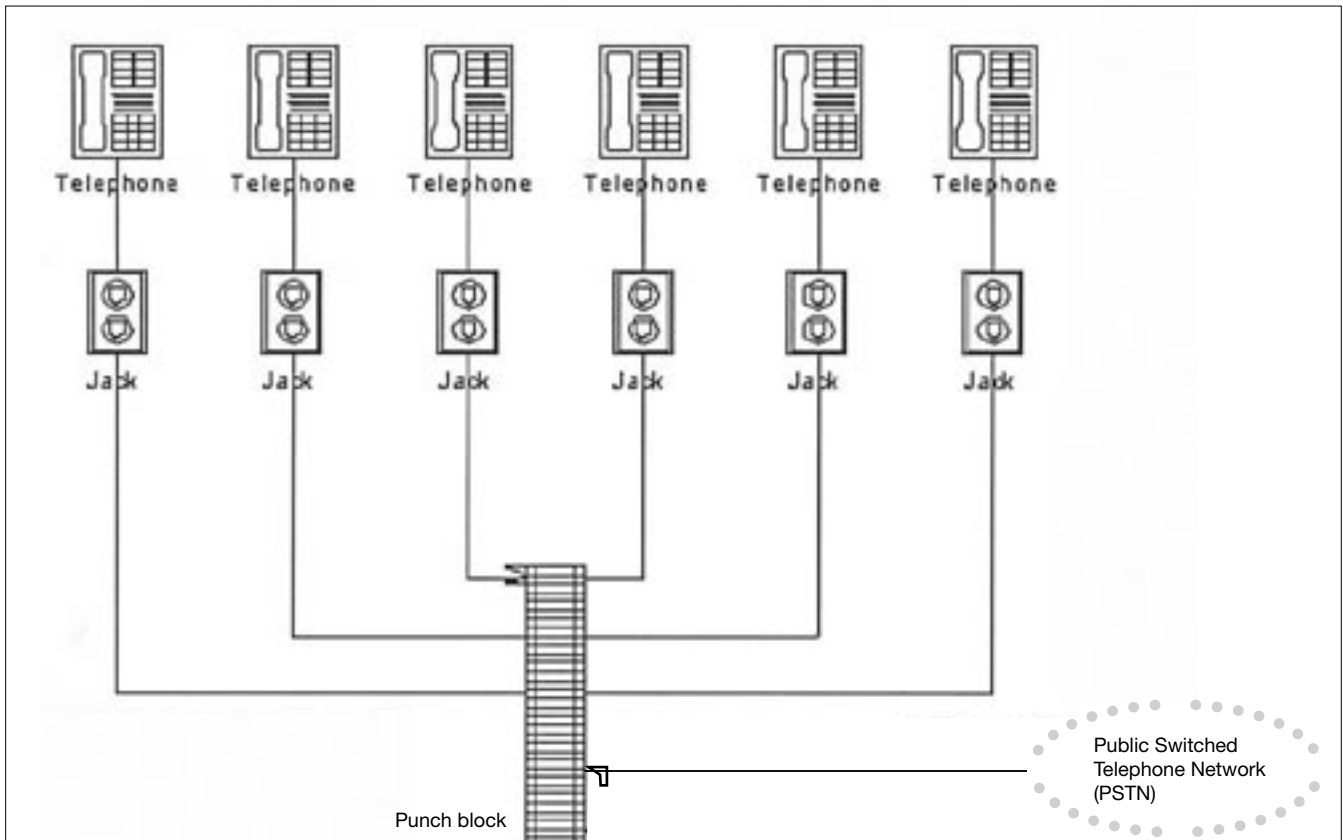


Fig. 2. Star Wiring Configuration – each phone jack is independently wired to the central point.



Installing Your System

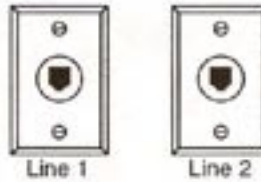
In order for you to properly connect your EPIC System to an existing wiring system, it is important that you understand its configuration.

The following are the most common multiple line situations. They consist of either one or both types of standard telephone jacks: The RJ11 Single Line Jack and the RJ14 Double Line Jack. Your system should match one of them.

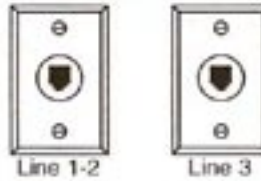
2 incoming lines with
1 wall jack



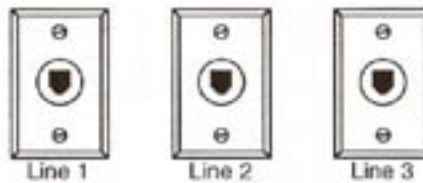
2 incoming lines with
2 wall jacks



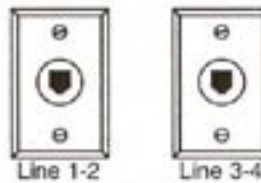
3 incoming lines with
2 wall jacks



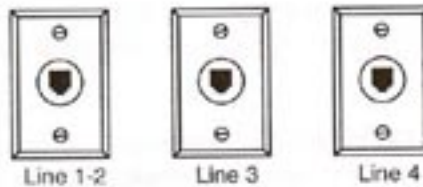
3 incoming lines with
3 wall jacks



4 incoming lines with
2 wall jacks



4 incoming lines with
3 wall jacks



4 incoming lines with
4 wall jacks



Up to 16 Epic System telephones may be connected to form your office/home configuration. Each phone must be assigned a different station number, from 11 to 26.

Important note – Each Epic System telephone must be connected to the same Line 1 telephone number for proper operation. The remaining lines may or may not be connected to each station as you desire.

Standard Installation:

Your Epic telephones come factory-set for a standard “Shared” installation, which is also called “square” in telephone terminology. This means that Line 1 is to be connected to the same Line 1 telephone number at all the stations. Line 2 is to be connected to the same Line 2 telephone number at all the stations, and so on for Lines 3 and 4.

This is the desired setup for most installations, and if this is how you will be connecting your Epic System, you do not need to change any of the line connection settings in the telephones. You need only connect the phones to the telephone lines, and then follow the instructions on page 9 to be sure that you have connected the telephone numbers in the same order to each station.

Installations with Private Lines, Auxiliary Lines, and Unconnected Lines:

You may wish to connect private lines to Lines 2, 3 or 4 at some or all of your tele- different telephone number than the corresponding line at the other stations. These sort of installation requirements are common in Centrex environments, or in companies where clusters of telephones share common lines. In addition you may wish to leave some lines unconnected at some stations.

If your installation has any of these requirements, carefully fill out the worksheet on the following page and use it as a guide as you connect the telephone lines to your Epic telephones.

Mark each line at each station as Shared, Private, Aux or Unconnected.

Refer to the following page “Setting Up Private, Auxiliary and Unconnected Lines” if you are not sure of the meaning of these terms.

Installing Your System

Installation Worksheet

Station Number	User's Name or Telephone Location	Line 1	Line 2				Line 3				Line 4				
		Tel #	Shared	Private	L2 Aux1	Unconnected	Shared	Private	L3 Aux1	Unconnected	Shared	Private	L4 Aux1	L4 Aux2	Unconnected
		<input type="text"/>													
Stn. 11		Shared													
Stn. 12		Shared													
Stn. 13		Shared													
Stn. 14		Shared													
Stn. 15		Shared													
Stn. 16		Shared													
Stn. 17		Shared													
Stn. 18		Shared													
Stn. 19		Shared													
Stn. 20		Shared													
Stn. 21		Shared													
Stn. 22		Shared													
Stn. 23		Shared													
Stn. 24		Shared													
Stn. 25		Shared													
Stn. 26		Shared													
Stn. 27		Shared													
Stn. 28		Shared													

Note that line 1 must be “Shared” at all stations, meaning that Line 1 must be connected to the same telephone number at all stations.

Important note – If you have circled anything other than “Shared” on the worksheet, you must follow the instructions below to set each phone as you have marked on the worksheet.

Setting Up Private, Auxiliary and Unconnected Lines

To program:

1. Press PROGRAM.
The display will read “Program...”
2. Press the soft key under NEXT repeatedly, until “Line Connections” appears in the display, and then press ENTER.

The display will show the current line connection setting for Line 2.

3. Press the soft key under CHANGE repeatedly, until the desired line connection setting for Line 2 is displayed.

The choices are:

L2: SHARED (factory setting)

L2: PRIVATE

L2: L2 AUX1

L2: UNCONNECTED

4. Press the soft key under NEXT to see the current setting for Line 3, and repeat steps 3 and 4 to change the settings for Lines 3-4.
5. Press PROGRAM to exit.

While you must share the same Line 1 telephone number at all the stations, you may choose to leave some lines unconnected at particular stations or to connect private or AUXiliary lines to Lines 2, 3 or 4 at particular stations.

SHARED: This is the factory setting for all lines, and is the setting you use if the particular line is connected at this station to the same telephone number as the corresponding line at the other stations.

PRIVATE: Use this setting at any telephone that is connected to a different telephone number than the corresponding line at the other stations. For example, you may connect your private telephone number to Line 3 at your station instead of connecting your station to the shared Line 3. In this example, you would set Line 3 at your station as PRIVATE.

AUX: Use this setting if two or more stations are connected to a different telephone number than the corresponding line at the other stations, but they share the same number among themselves. For example, you may connect a group of stations to a separate Line 3 telephone number than the rest of the system, yet they share that same Line 3 telephone number among themselves. In this example, you would set Line 3 at these stations to “L3 AUX1.”

Note that you can have up to one auxiliary Line 2, one auxiliary Line 3, and up to two auxiliary Line 4’s.

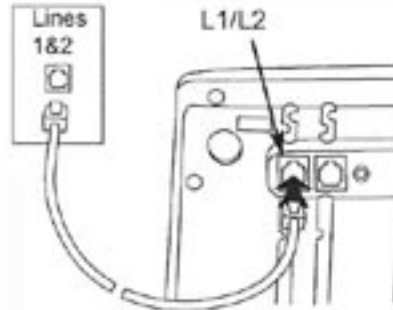
UNCONNECTED: Use this feature at any telephone that is not physically connected to all of its lines. For example, you may install an EPIC 4- line telephone in a room that is currently wired for only lines 1, 2 and 3. In this example, you would set Line 4 at this station as UNCONNECTED.

Install Desk/Table Top Phone

1. Connect First Line Cord

Connect one end of a long telephone line cord to the jack on the bottom of the telephone labeled L1/L2.

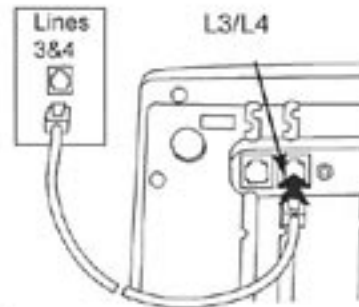
Connect the other end directly to the wall jack labeled lines 1 & 2.



2. Connect Second Line Cord

Connect one end of a long telephone line cord to the jack on the back of the telephone labeled L3/L4.

Connect the other end to the wall jack(s) labeled Lines 3 & 4 in the same manner as described in the previous step.



3. Connect Handset

Plug either end of the coiled handset cord into the handset and the other end into the jack on the side of the telephone.

Place the handset in the cradle.

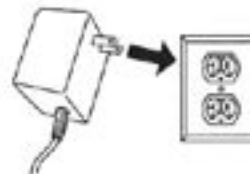


4. Connect Power Cord

Plug the AC power cord into the adapter jack on the bottom of the telephone.

Thread the power cord into the recessed groove.

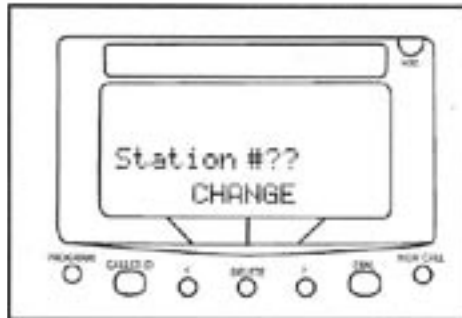
Plug the AC adapter into an electrical outlet not controlled by a wall switch.



Assigning Station Number

To program:

1. Press PROGRAM.
The display will read "Program..."
2. Press the soft key under NEXT.
The display will show the currently assigned station number.
3. Press the soft key under CHANGE repeatedly, until the desired station number is displayed.
The choices are Station #11 through Station #26
4. Press PROGRAM to exit.



Until a telephone is assigned a station number, the telephone will not operate. The choices are Station #1 through and the display will read "station #7?". Station #26 To assign this telephone a station number, simply press the soft key under CHANGE 4 Press PROGRAM to exit repeatedly until the desired station number is displayed.

Important note – The "soft keys" referenced above, are located under the LCD display. These are the "< DELETE >" buttons. The functionality of these buttons will change depending on the instruction written above the button in the LCD. For example, in the above illustration "CHANGE = the "DELETE" button.

Verifying Proper Installation

First, verify that line 1 is connected to the same telephone number at all the telephones.

1. Press the line 1 button at one of the telephones. The line 1 LED should be green, the speakerphone LED should be red, and dial tone should be heard from the speaker.
2. Now go to each of the other stations and make sure that each line 1 LED is red.

Next, make sure that lines 2, 3 and 4 are connected the same at all the phones by following the following steps at each telephone:

1. Press the line 1 button. The line 1 LED should be green, the speakerphone LED should be red, and dial tone should be heard from the speaker.
2. Dial the telephone number for line 2. The line 2 LED should flash slowly. If the line 2 LED does not flash, then line 2 is improperly connected to this telephone.
3. If this telephone utilizes line 3 and/or line 4, repeat steps 1 and 2, substituting the respective phone numbers in step 2.

Troubleshooting

Important note – The following troubleshooting techniques are *mandatory* to effectively troubleshoot the Epic system. These steps should be performed in the order listed below.

1. Verify proper installation

See Page 9 of the “ET4300 User Guide” for instructions.

2. Reset the phone

See “Instructions for resetting the ET4300 telephone” below.

3. Move the unit

To another working area to find out if the problem remains at the original location, or if the problem follows the telephone set to the new location.

4. Change the part

Replace the AC transformer if the phone does not power up. Change the handset & cord if there are audio problems such as static or no audio on the handset itself.

Notes on SYSTEM WIDE problems:

Please keep in mind that these telephones and feature modules communicate with one another over the internal line one wiring. They share data and are able to intercom one another using RF (radio frequency signals). Keeping this in mind, any incompatible equipment such as a DSL micro filter or any other brand multi-line telephone set connected to line one can cause a wide range of problems. Please remember to keep line one void of any third party device if possible.

Important note – System wide problems are most likely caused by one particular phone, feature module or other incompatible device connected to the system.

I cannot over emphasize the importance of verifying proper installation, resetting and re-initializing the phone system when problems arise.

If you suspect any telephone, feature module or other piece of equipment to be causing problems disconnect it, and recheck the system. If your problem persists you might need to disconnect one phone at a time (process of elimination) to find the malfunctioning unit.

It might also to be helpful to disconnect all the phones and accessories first, and then start by adding one unit at a time (the process of addition) testing the operation of the system each time you add, or remove a phone or module from service.

Once the malfunctioning unit is isolated, it is important to completely power it down (remember to remove the battery if one is in-

stalled) then unplug the AC adapter from the phone. You should always reset the unit by reinitializing the software after the unit is powered back up. I cannot over emphasize the importance of verifying proper installation, resetting and reinitializing the phone system when problems arise.

Instructions for resetting the ET4300 telephone:

1. Remove the battery from your phone and please leave it out.
(Please note: a battery is not necessary for normal operation.)
2. Unplug the AC adapter from your phone (power cord).
3. Wait 30 seconds.
4. Re-connect the AC adapter, and wait for 10 seconds.
5. Press the program button once and release it.
6. Press the headset button twice, and release it.
7. Dial 2503 on the dial pad and wait for 30 seconds.
8. At this point the display will read “Station Change??” and all of the line buttons will flash red.
9. Press the “Delete” button once and release it, then press the “Program” button once and release it. This completes the re-booting procedure.

Top Ten Questions to ask when troubleshooting

- 1. Is line one the same on all phones?**
In order for the ET4300 to work correctly it is mandatory that line one be the same on all phones and feature modules.
- 2. Is this a new installation?**
It would be helpful to determine (if possible) what type of cabling is being utilized and how many telephones / lines are connected.
- 3. Was the system ever working properly?**
If so, when did things stop working?
- 4. What changed prior to the system failing?**
Try to establish the point in time when the system failed, does this correspond with something being disconnected or added to the system.
- 5. Is there any other brand of equipment installed on the phone lines?**
Try to determine if there are any incompatible devices connected to the shared phone lines. Have the customer remove all third party equipment from the phone line prior to troubleshooting further.
- 6. Is there DSL installed?**
The DSL micro filter is not compatible with the ET4300. Line one must remain un-filtered for the phone system to operate normally.
- 7. Have you disconnected or moved any of the equipment?**
If the system was functioning normally and then failed after disconnecting one or more phones or feature modules... resetting and verifying proper installation should correct the issue.
- 8. Are you using all the supplied parts that came with the unit?**
It is very important that all the supplied parts are used... especially the AC adapter and line cords.
- 9. Was there a power outage?**
If the phones have experienced a power outage, and the system is malfunctioning, reset the system. Please be sure to remove the battery prior to resetting the phone. After resetting the phone install fresh alkaline batteries. Please note: The alkaline batteries should be renewed every three months to ensure trouble free operation.
- 10. Is it happening on Speaker as well as Handset?**
If the customer is experiencing bad audio on the handset (buzzing, static etc.) have them try using the speakerphone and see if the problem persists. If the problem goes away, replace the handset, (with one that works properly) to determine if the original handset is malfunctioning. TMC will replace the bad handset for the customer.

One or More Lines Not Working	<p>Are they using the supplied line cords?</p>
	<p>Are the line cords securely plugged into the line cord inputs (not the “Data Fax” jack)? Remember the wall bracket must be removed to access these connection points on the telephone set. Are the line cords secured into the wall jacks as well?</p>
	<p>Is the problem happening on more than one phone?</p> <p><i>Method 1</i> – If you suspect any telephone, telephone accessory i.e. (splitters, couplers, modular duplex jacks) or feature module to be causing “system wide” problems disconnect it, and check the remaining phones in the system.</p> <p><i>Method 2</i> – It might also be helpful to disconnect all the phones and accessories first, and then start by adding one unit at a time testing the operation of the system each time you add, or remove a phone or module from service.</p>
	<p>Are there any phones installed that are working properly on all four lines?</p> <p><i>Solution</i> – If so you can use this working location to test the non-working telephone to verify its operation at this working location.</p>
	<p>Reset the phone (see resetting procedure for your particular model).</p> <p><i>Possible issue</i> – The programming allows you to set lines 2, 3 and 4 as unconnected; this setting may be incorrect and has turned the line off on the problem phone.</p>
Static	<p>First determine if the static is isolated to one phone or if it is system wide (see notes on system wide problems). Is the static happening on one or more lines? (If the equipment is causing static, most likely it will appear on all lines)</p>
	<p>Is the static happening on speaker as well as handset? If the problem is on handset only... the handset may need to be replaced.</p> <p><i>Solution</i> – Test the phone using a handset from another phone.</p>

No Dial Tone	Is there a station # assigned to the phone?
	(See information above “One or More Lines Not Working”)
	Possible Bad Handset? <i>Solution</i> – Try replacing the handset with one that works.
	Is the handset incorrectly plugged into the Data/Fax jack? <i>Solution</i> – The handset input is on the LEFT side of the telephone, the Data/Fax jack is on the right.
<hr/>	
Interference. *	The source of most interference i.e. Crosstalk, Radio Frequency Interference, Dropping Intercom calls, is due to using improper line cords i.e. 25’ non twisted pair. <i>Solution</i> – TMC offers 25’ twisted pair line cords.
	Incompatible devices such as DSL filters, other brand KSU-less phones can also cause problems. <i>Solution</i> – Have a DSL data splitter installed at your network interface/ D-Mark point. This way there will be one unfiltered line going directly to your DSL modem, and there will be one DSL filter with the entire Epic system behind this filter.
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Phones will not release hold.	Programming the phone will allow you to set lines 2, 3 & 4 as Shared, Private, Unconnected or Aux1/2. If these setting are incorrect i.e. (setting a shared line as private) the phone system will disregard the hold status of the “private” line and will not release hold on the other set’s in the system. <i>Solution</i> – Check the “Line Connection” settings and set them accordingly.
	Verify proper installation. (See user guide for your particular model phone).
	Please note: Resetting the phones will help with this problem, but please be sure to reset “line Connections” for any phones that do in fact have private or Aux. line groupings.

<p>Phones are not communicating with each other</p> <p>Not able to Intercom between Stations, display reads: (“Not Present”).</p>	<p>Please Note: These multi-line intercom speakerphones network with each another over the line one wiring; if line one is not the same on all phones they will not communicate with each other. A problem I encounter quite often is that the line cords are simply switched in the telephone or feature module i.e. Lines one and two plugged into 3/4 input, and Lines three and four plugged into the 1/2 input.</p> <p><i>Solution</i> – Verify proper installation. (See user guide for your particular model phone).</p>
	<p>Another common problem is that a DSL micro filter may be installed. These micro filters are not compatible with these multi line intercom speakerphones. These filters need to be removed in order for the telephones to communicate with one another.</p> <p><i>Solution</i> - The solution is to have a DSL data splitter installed at your network interface/D-Mark point. This way there will be one unfiltered line going directly to your DSL modem, and there will be one DSL filter with the entire Epic system behind this filter.</p>
	<p>The station number was changed or simply does not exist.</p> <p><i>Solution</i> - Verify station assignment.</p>
<p>Phone keeps losing the station assignment, keeps reverting back to “Station Change ??” with all line LED’s flashing continuously.</p>	<p>The software provides the ability to lock the station assignment so this will not continue to happen. The settings for locking down the station assignment are found under “Advanced Settings”.</p> <p><i>Solution</i> – Simply scroll to “Advanced Settings” press “Enter” then scroll right until you see “Station Normal”. Press the “Delete” button to change this setting to “locked”.</p>
<p>Phone keeps losing the station assignment, keeps reverting back to “Station Change ??” with all line LED’s flashing continuously.</p>	<p>The software provides the ability to lock the station assignment so this will not continue to happen. The settings for locking down the station assignment are found under “Advanced Settings”.</p> <p><i>Solution</i> – Simply scroll to “Advanced Settings” press “Enter” then scroll right until you see “Station Normal”. Press the “Delete” button to change this setting to “locked”.</p>