

1.1. Failover Profile in Detail

The codec Connection Manager will handle multiple connections, such as dual channel ISDN or POTS, or a POTS and an ISDN connection together. The codec can reconnect a lost connection either by using the *Auto reconnect* or *Automatic Redial* functions within the codec.

It is also possible to purchase the optional failover (*Failover Profile*) solution to create a backup program feed. An example of this could be an ISDN connection with one or two 'B' channels in use and a POTS connection that can be in *Standby* mode.

Failover Profile is a very advanced function and many users will not need to use it. Essentially it allows the user to create backup profile connections to ensure the continuity of critical signals such as main program links. For this function to work satisfactorily, you must ensure that matching configuration files (i.e. a POTS backup for an ISDN connection) are loaded on both the master and slave codecs. These files contain matrix, profile and phonebook information. The following information will explain reconnecting lost connections in detail and help you to understand what the best reconnection solution for your situation is.

1.1.1. How Can We Manage Connections?

To understand how reconnecting and how failover operates, it is useful to know how the following functions operate within **Tieline G3** codecs:

- ✔ *Automatic Redial*;
- ✔ *Failover profile*; and
- ✔ *Auto reconnect*.

If you are programming a failover connection, it is important understand how the codec will operate if a main connection is lost. The codec will:

- ✔ First look at the *Automatic Redial* settings and if the codec is programmed to redial a certain number of times, it will attempt to redial the previous connection.
- ✔ If *Automatic Redial* is not set, or the redials have completed, then the codec will look to see if a *Failover profile* has been programmed within the codec's main connection profile. If programmed, it will attempt to activate the *Failover profile* settings.
- ✔ If *Failover profile* is disabled, the codec will redial the lost connection if *Auto reconnect* is enabled within the codec.

Now that you have an understanding of the connection prioritization procedure within the codec, we can look at how to set a failover connection in more detail.

Important note:

If you are using the *Failover profile* function with your codec, we recommend that you don't activate the *Auto reconnect* function as they will conflict with each other.

1.1.2. Which Solution is Best for My Situation?

Determining what you want the codec to do and how to program it is easy -once you understand how a codec manages connections.

In simple terms, if you simply want the codec to redial a connection if it is interrupted for some reason, it is best to either set *Automatic Redial* or *Auto reconnect* within the codec. The basic difference between these two connections is that you can set the amount of redials using *Automatic Redial*, whereas *Auto reconnect* will continue to redial until a connection is made. In addition, with *Automatic Redial* you will need to initiate the call by dialing manually when the connection is lost. It will then automatically try to redial. With *Auto reconnect*, the codec will automatically try to redial when a connection is lost.

If you purchase the failover option from **Tieline** you can also program more complex failover reconnections into your codec. Failover can be divided into two parts. First, there is simple failover which utilises codec user functions to reconnect. Second, there is a more complex failover setup which allows you to use *Standby* connections and which gives you the ability to program profiles into the codec if a connection is lost.

1.1.3. Enabling a Codec for Failover Operation

Once you have purchased the option from **Tieline**, to use failover functions you will need to input a 12 digit code into your codec. To access the **Failover Enable** menu on the codec, which allows you to enable failover, please do the following:

- ✔ Press SOFTKEY 4 on the codec to access the **Menu** submenus;
- ✔ Scroll using the MS to **Configuration** and press the MS to select it;
- ✔ Then scroll to **Advanced** with the MS and select this option;
- ✔ Scroll to **Failover Enable** and select this option;
- ✔ Select **Enable** and then enter the code that you have been given by **Tieline**.

Your codec will now be programmable for failover configurations.

1.1.4. Programming Simple Failover via a User Function

Simple failover can be programmed by simply enabling failover in the codec via the **Failover Enable** menu in the codec and then programming a User Function to initiate the failover. The benefit of using simple failover is that you won't need to create a new profile to program as the *Failover profile*. You can simply use the same manual default profile or other profile you have created, and that you are using for your main connection. (This can't be done if you are using a *Standby* connection running concurrently. You will need to program a more complex failover connection).

With the new **Tieline Phonebook Editor** it is also possible to change the profile by dialing a new phone book entry that has a different profile associated with it.

Once you have enabled **Failover Enable** within the codec you will need to create a User Function within the codec by using the **Functions** menu within ToolBox software. This

User Function will tell the codec to failover to a new connection as it is programmed within the **Add/Edit Function** menu. In the following example, the main connection is via an ISDN B channel and the failover connection is POTS.

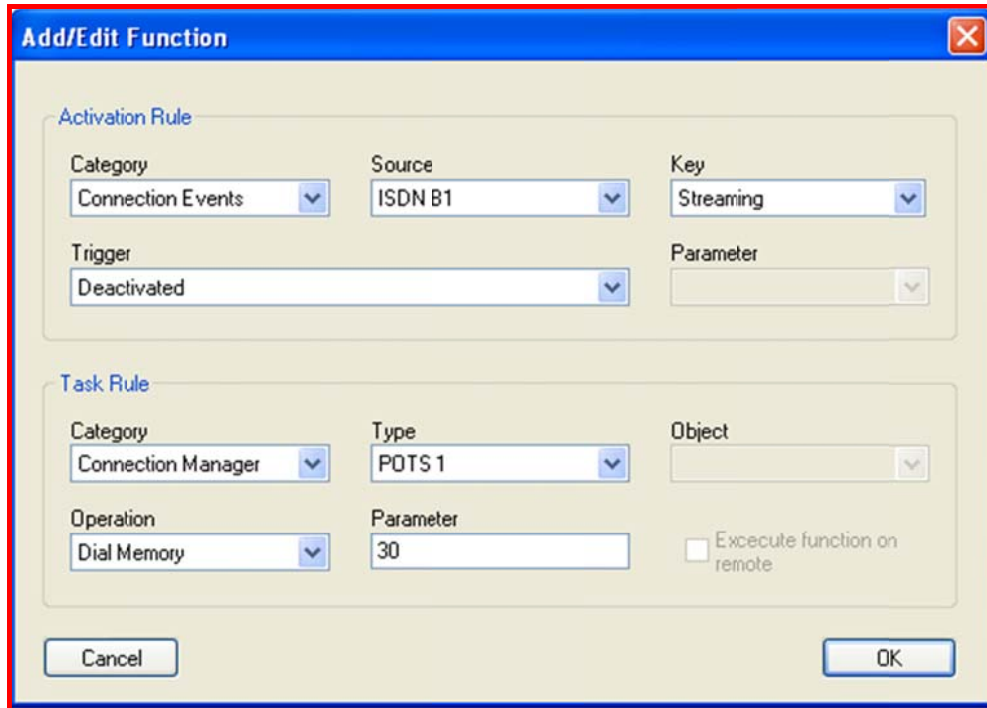


Figure 1: Simple Failover User Function

Note that if audio streaming is deactivated for some reason on the *ISDN B1* connection, the codec *Connection Manager* is set to dial a POTS connection via *POTS 1*. The number to dial is set to be phone number 30, which has been programmed into the *Phonebook Editor*. This phone number can have a POTS dialing profile associated with it so the codec will automatically load the new profile when the user function is activated.

1.1.5. Limitations of Simple Failover

The main limitation of simple failover via user functions is that the connection is down for the period that it takes to redial a new connection. This can be eliminated by using more complex failover methods, which are explained in the following sections.

For more information on programming User Functions, please see the **Functions** menu section within this manual.

WARNING: Please ensure that you don't set *Automatic redial* or *Auto reconnect* if you are creating a User Function as previously shown – otherwise it will conflict with the Connection Manager settings.

1.1.6. Complex Failover Setups: The Standby Connection and Failover Profile Relationship

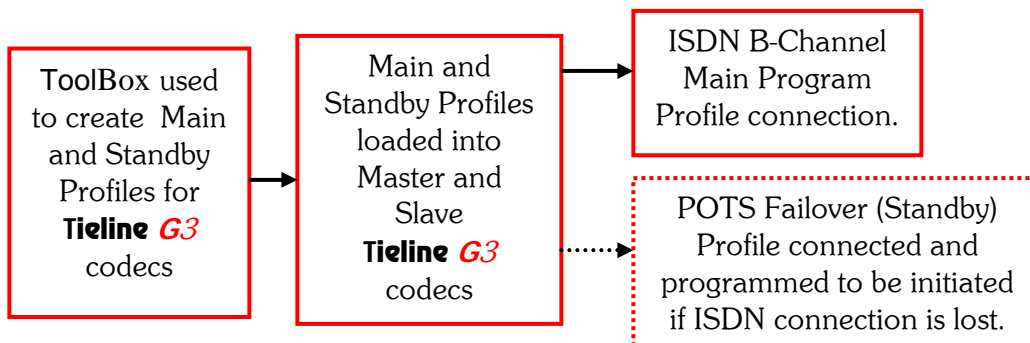
A *Standby* connection can run concurrently with a main connection as a backup program connection. Previous elements of this section of the manual have discussed how to set up a connection. A *Standby* connection is set the same way as other connections - the only difference is that you check the *Standby* box in **ToolBox** to create the connection.

If you wish to use set up a *Standby* connection and utilize the *Failover profile* facility, you will need to ensure the following has been set up:

1. A *Standby* connection, i.e., *Connection no. 2*, is programmed with a phone number and the *Port* and *Codec channel* has been programmed into the main program connection's profile.
2. *Failover profile* on the main connection has been set to the profile which will be used for the *Standby* connection.

For example, if your main program connection is via either one or two ISDN B channels, a *Standby* POTS connection can be connected alongside the main connection, but no audio will be sent unless the main connection fails. Only then will the connection go active and an encoder be assigned to this connection.

To assist in conceptualizing this, in the flow chart example below, the codecs have been configured to have a main connection for program sound via an ISDN B-channel and a *Failover* or *Standby* connection via a POTS connection.



To set up this configuration, you need to set up the main ISDN *Connection no 1* as the primary connection. In *Connection no 2* set up the same connection information as the settings in the *Failover profile*, in this case the POTS connection. You need to ensure that the same phone number and *Port* is set up in *Connection No 2* of the ISDN main profile as the POTS failover profile that you have set, and check it as the *Standby connection*.

Following is an image showing how you would set up *Connection 2* in your main profile, as per our example. Note that the *Standby* box is checked, the *Connection type* is POTS and that *Port 1* is checked. All these settings are the same as those made in the *Failover*

profile. In addition the phone Number matches the POTS Failover profile that is programmed.

The *Codec channel* doesn't need to be allocated in this connection because it will not be sending audio until failover is initiated, i.e. it is in *Standby* running concurrently with the main connection. When failover occurs, the *Failover profile* settings will be activated and these should have the *Codec channel* allocated.

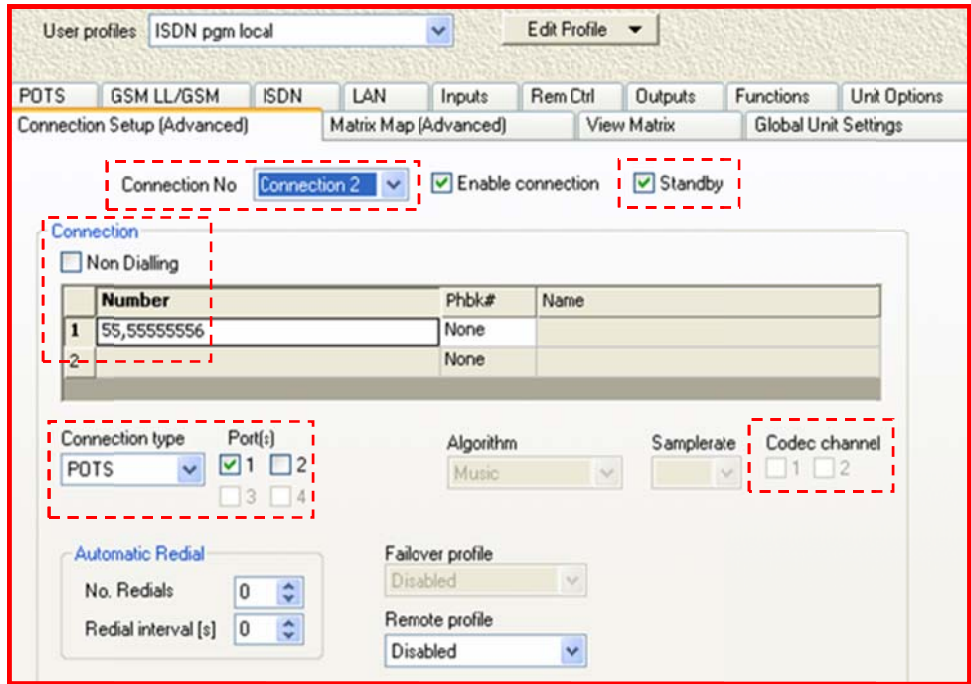


Figure 2: Failover Connection Dialing and Port Allocation Programmed into a Main Profile

The next image shows the *Failover profile's* settings. Please note that the phone *Number* and *Port* settings are the same as in *Connection 2* (shown previously) of the main ISDN connection. In addition, a codec channel has been allocated which will facilitate sending a program signal if the failover profile is activated. Also, please note that the *Remote profile* is set to be the same profile as the *POTS failover* profile. This is so that the *POTS failover* profile will be loaded onto both codecs as required in the event of failover being activated.

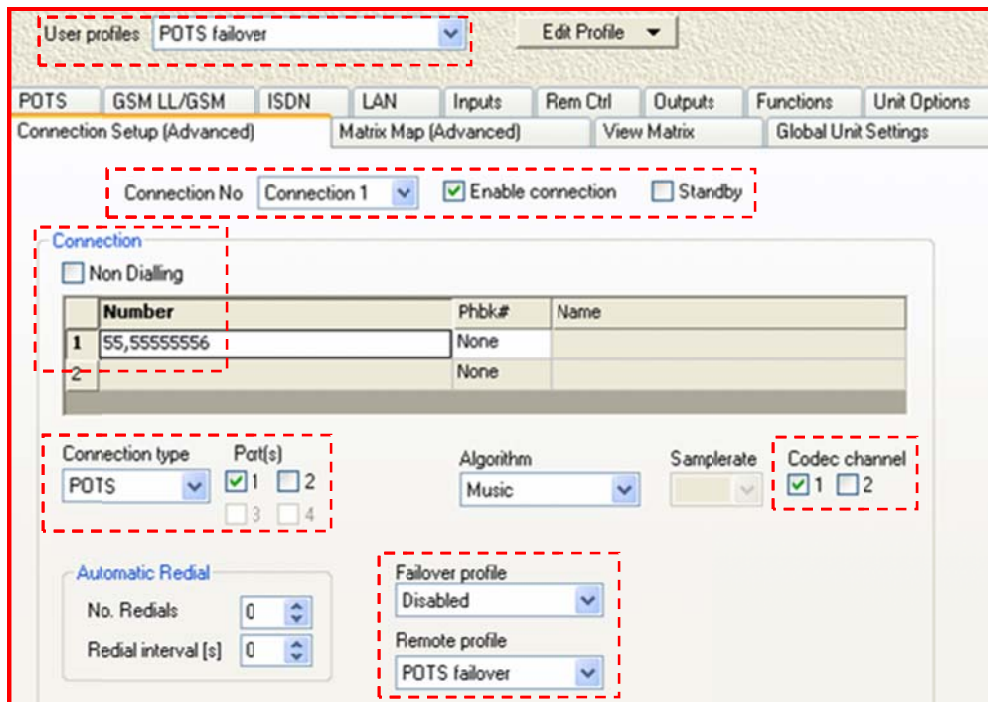


Figure 3: Failover Profile Connection Settings

The next image displays the main connection settings. You will note that the main connection *User profile* is called *ISDN pgm local* and is set as a single B channel connection. You will also note that the *Failover profile* is set to be a preprogrammed *POTS failover* profile.

Remote profile on the remote codec is set to match the local ISDN main connection and is called *ISDN pgm remote*. *Remote profile* settings match the local codec's settings and will initiate the backup POTS connection if it is required (in other words, a matching *POTS failover* profile is also loaded into the remote codec and will become active in the event of failover being activated).

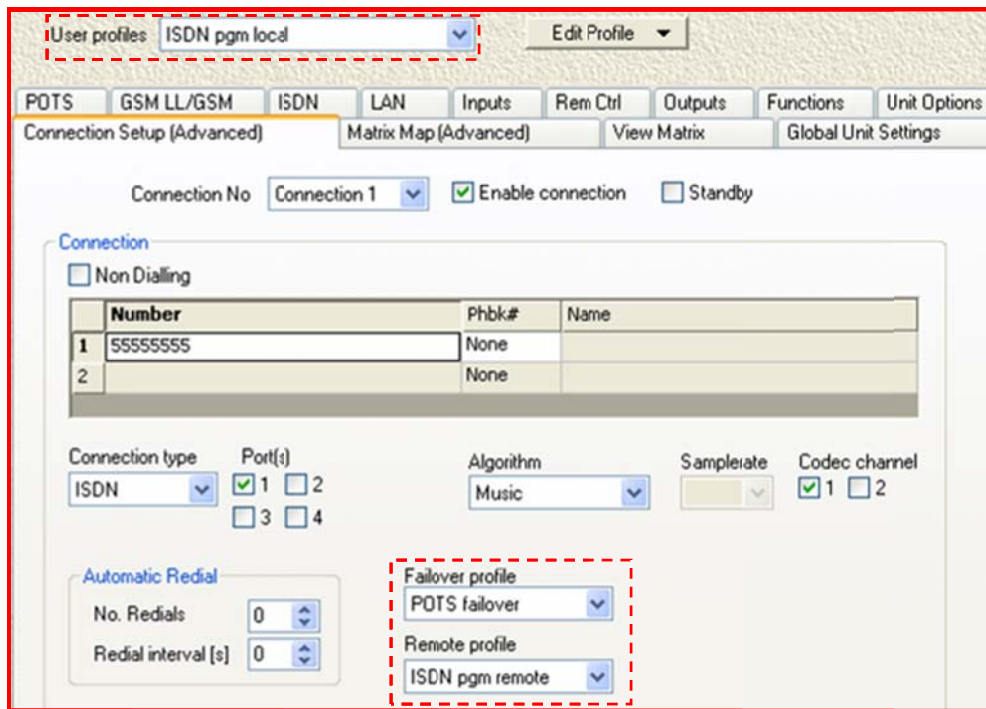


Figure 4: Main Profile with Remote and Failover Profile Settings

If the all the preceding settings are done correctly and the codec detects a lost main connection, it will automatically switch to the selected *Standby* connection and the POTS *Failover profile* will become the active profile on the codec LCD and within the connected codecs.

Important Connection Note:

If you don't put the same phone number (etc) in both *Connection no 2* of the ISDN profile and the POTS *Failover profile*, then if the failover connection is initiated, it will not automatically change over to the second connection running concurrently. Instead, it will dial the POTS *Failover profile* connection (this may cause up to 30 seconds delay to your program signal).

1.1.7. Non-Concurrent Connections

If you do not want your failover connection to be concurrently connected (i.e. connected while the main program connection is in use), then you wouldn't set *Connection no 2* as a *Standby* connection in your main program ISDN profile. Just set the POTS *Failover profile* as per your dialing configuration etc, and if the main ISDN program feed is lost, the POTS *Failover profile* will dial the connection to connect.

1.1.7.1. Another Reconnection Option

If you are using a single POTS connection, you could protect against a loss of signal by setting the *Failover profile* to the same profile you are using as your main POTS connection. Remember, if you decide not to use *Failover profile* and you want the codec to reconnect after the loss of a connection, you will need to either program

Automatic redial or 'check' the *Auto reconnect* function which is within the **Unit Options** menu.

Please note: The *Failover profile* facility is 'grayed' out and inactive until the *Standby* box is checked to enable the setting up of a standby connection.

Important Failover Footnote:

If you are using *Failover profile* we recommend that you should failover to a different connection type than your main connection. For example if your main connection is via an ISDN line, we recommend you failover to IP, POTS or GSM etc. This will safeguard you in case your incoming lines have been damaged or unplugged.

In addition, we recommend that you only use the *Music* or *Voice G3* algorithms for failover connections. This is because if you use other algorithms to connect, you will need to manually change the profile setting at the remote codec (*Remote profile*) in the event of a failover connection being initiated. The remote profile can change automatically if you use the *Music* or *Voice G3* algorithms.

1.2. Remote Profile

Remote profile sets the profile on the remote codec. The remote profile should match the profile on the local codec. If you are using manual default profiles this will automatically be set to reflect the profile selected on the dialling codec.