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An illustration of a dog's head, likely a Bernese Mountain Dog, with brown, white, and black fur, looking forward.

***VisualPET***

**15-15-8000**

**1U MiniPC**

**NZFS Sky TNPP**

**Flex Decode**

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### **15-15-8000 1U MiniPC Vpet Message Router**



The 15-15-8000 is an enhanced message router design using the intelligence of Salcom VisualPet software.

This combination creates a new direction for message routing, display and logging. VisualPet allows new technologies to be bought to the remote sites including TCP/IP based protocols like SMTP (email), HTTP (web browser), TNPP via IP and remote login / management. New message delivery options like SMS can also be implemented.

The configuration for the NZFS 15-15-8000 uses a Pentium500 miniPC running WindowsXP and Salcom VisualPet to decode inbound messages from either a Salcom Flex Decoder or the NZFS Sky Paging Network and pass these messages to a Salcom 15-15 Paging Transmitter.

The 15-15-5000 or 15-15-9000 (15-15-5000 + Intergrated Flex Receiver) Transmitter retains all the current options required by NZFS – Four programmable inputs, local test page button, PDT selcall acknowledge and Sky Decoder reset timer.

VisualPet contains a database of valid pagers and will convert the received Sky or Flex Pager RIC's into valid codes for transmitting to crews.

### **Additional Features**

The 15-15-8000 supports the use of a standard LCD display along with connections to four RS232 serial ports, one Ethernet port, two USB, Keyboard and mouse.

The Ethernet port allows remote connection or the use of TCP/IP protocols for message reception or delivery.

The LCD display can be switched off for power savings without any compromise of 15-15-8000 functionality.

VisualPet can be configured to display and transmit ALL Sky TNPP messages for system tests or diagnostics.

Log files can be created for each Stations messages sent and saved on a daily basis. These logs can be retrieved using the remote login feature. Eg:

```
00:30:01 0999746 (HALC321, FEIL281) 111-VEG SANDON RD HALCOMBE. (XStr TE  
RAKEHOU RD/MOUNT STEWART HALCOMBE RD) .TOI TOI ON FIRE THREATENING  
SHELTER BELT. #W748388.
```

```
00:30:04 0999578 (HALC321, FEIL281) 111-VEG SANDON RD HALCOMBE. (XStr TE  
RAKEHOU RD/MOUNT STEWART HALCOMBE RD) .TOI TOI ON FIRE THREATENING  
SHELTER BELT. #W748388.
```

```
00:32:18 0999102 (MANU301) 111-MIN TAKANINI. (XStrMILL RD/AIRFIELD RD) .CAR  
FIRE. #A707046.
```

Due to the flexibility of the VP Router software, changes to the display content and layout are easily implemented. The software also allows the addition of new protocols and data types without hardware changes.

### **VisualPet – Security**

To access any configuration, contacts or router screens within VisualPet a password is required. This stops unauthorized users from changing contacts or setting within VP Router and possibly causing the system to stop working correctly.

The default password is: salcom for access to any password configured screens

**VP Router – Configurations**

There are two default configurations for the 15-15-8000, TNPP Sky or Flex Decode, which can be interchanged using a simple tool called Vpet Config (see Vpet Config section below)

Once a configuration has been selected the 15-15-8000 will only need administration of the crew pager codes (contacts).

The 15-15-8000 does not require any mouse or keyboard to operate.

Connection to the 15-15-8000 for administration is done via a local Keyboard and Mouse or Cat5 Ethernet crossover cable or via connection across the NZFS IP network.

The 15-15-8000 runs VNC as the remote desktop admin tool. The 15-15-8000 is factory configured with an IP of 192.168.1.150 and once VNC is connected the password of "salcom" will bring up the 15-15-8000 desktop.

Once a configuration has been installed the main window label will display the configuration and version number.

Ie:

NZ FIRE SKY PAGING TERMINAL V2.1

NZ FIRE FLEX PAGING DATA TERMINAL V2.1

### Sky TNPP Configuration

The crew pager codes are controlled in VisualPet as “Contacts”. Each contact will be made up of the receive RIC code sent via TNPP across the Sky network (“Label”) and the destination code for delivery through the 15-15 Transmitter.



A Sky decoder will output serial RS232 data to the NZFS VP Router 15-15-8000, this data consists of NZFS implementation of TNPP data packets.

Sky serial data example:

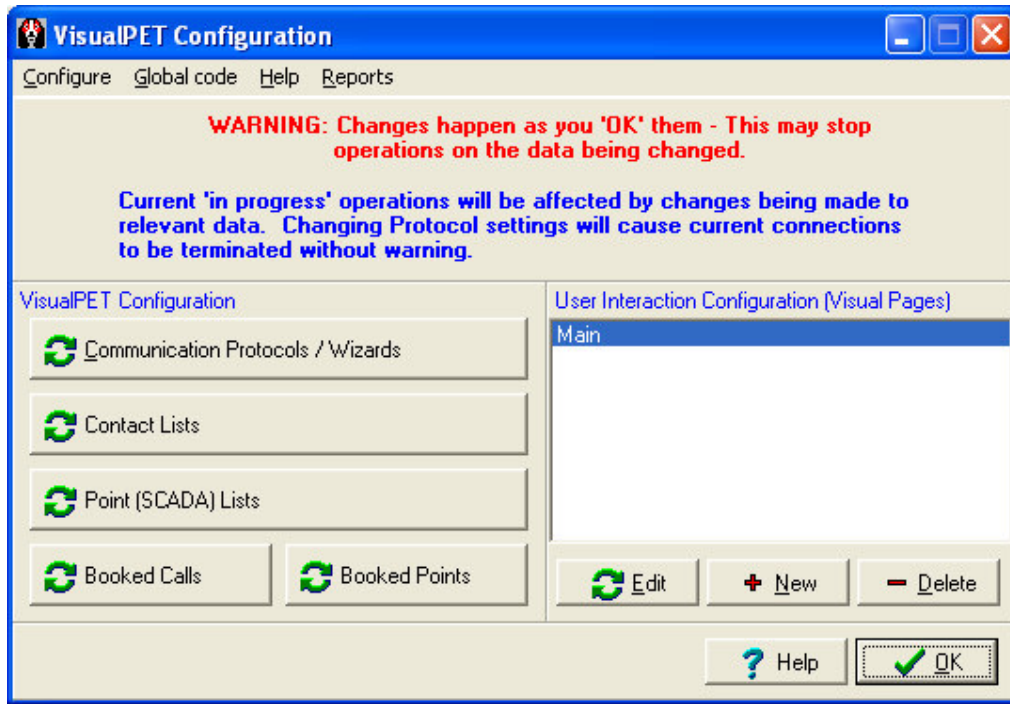
[01]e004ee777749[02]FA00`01234567THIS IS A TEST PERIODIC PAGE SEQUENTIAL NUMBER 9651 [03][8b][8e]

### NZFS Contacts

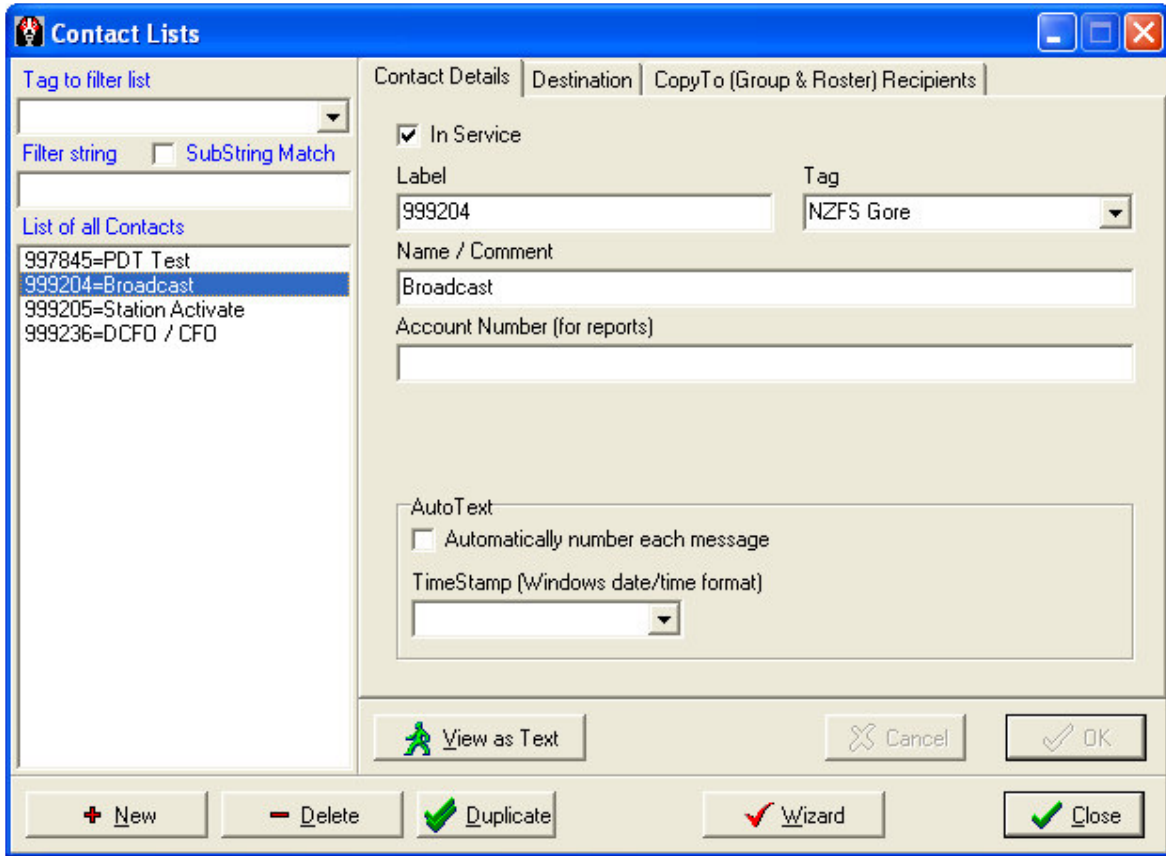
To add a contact **File > Configure** from the main screen.



Then from the menu shown click the button labeled **Contact Lists**.



The screen below will appear and from here contacts can be added, modified and deleted:



The opening/default tab is **Contact Details**

The **List of all Contacts** shows current contacts within VP Router. The highlighted contact (**999204=Broadcast**) is therefore the contact whose details are shown under the **Contact Details** tab.

The **In Service** box allows the option of taking a contact out of service without losing the detail.

The **Label** is the contacts ID within the router. This is the field where the TNPP RIC that will be decoded is added. **NOTE:** Do not include leading zeros ie if code = 0999205 enter 999205

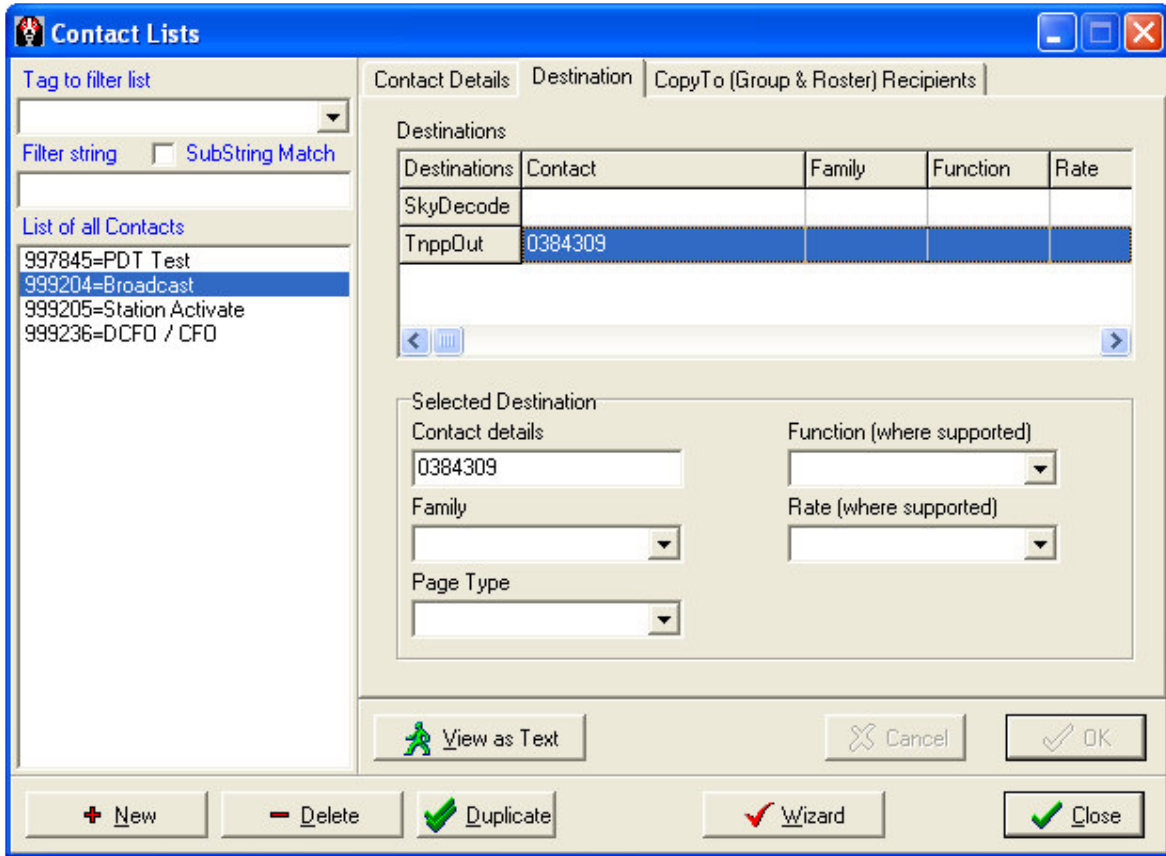
The **Name / Comment** field is where you can attach a more suitable name or comment about a contact.

The **Tag** field can be used for the Station name.

The **AutoText** and **Time Stamp** options allow messages to contain incremental numbering plus current Time and Date stamps



The **Destination** tab is used to select where a message to the contact is to be delivered.



The **Destinations** box will show a list of installed protocols for message delivery.

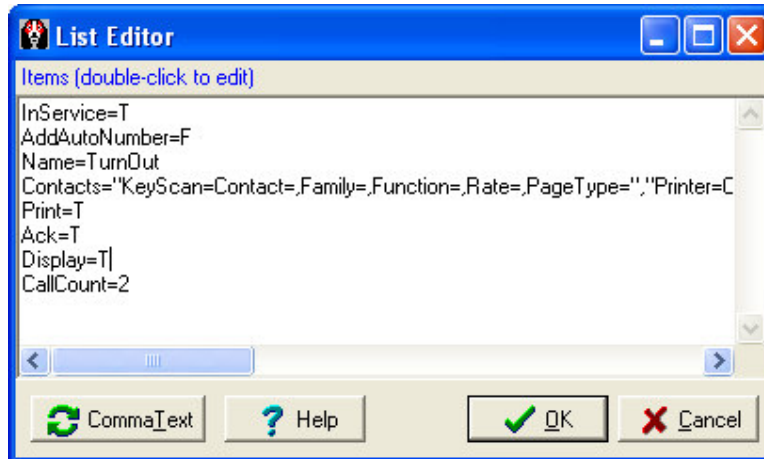
The above example has two destinations with only the **TNPP\_Out** option having a contact entered. The **TNPP\_Out** destination requires the seven digit RIC code ( 0384309 ) in the **Contact details**. This is the RIC code the message will be sent to by the 15-15 transmitter.

The function (Level) can be changed in the drop down menu from 1 to 4

Once all contact details are entered a click on the **OK** will save the settings.

## PDT Ack, Printer Output and Display Message

Control of the PDT Ack relay, content to the Printer or Displaying the message for the current **Contact** is achieved by using the **View as Text** button. By pressing the button a dialog window will open as below:



**Printer Output** is controlled from the line states:

Print=F

This means for the contact selected there will not be any output sent to printer. By changing the string to:

Print=T

The printer output will be enabled.

*Note that if there no "Print=T" or "Print=F" then the default is print output **enabled***

**PDT Ack** is controlled from the line states:

Ack=F

This means for the contact selected there will not be any acknowledge output on the relay. By changing the string to:

Ack=T

The PDT Ack relay output will be enabled.

*Note that if there no "Ack=T" or "Ack=F" then the default is PDT Ack output **disabled***

**Display Message** is controlled from the line states:

Display=F

This means for the contact selected the message received will NOT be shown on the main display.

Display=T

Any received message will be displayed.

*Note that if there is no "Display=T" or "Display=F" then all messages will be **displayed***

Once the Printer, Display and PDT Ack setting are completed click **OK** to save and exit.

The **Close** button bottom right of the **Contacts** window will return user to the Main screen.

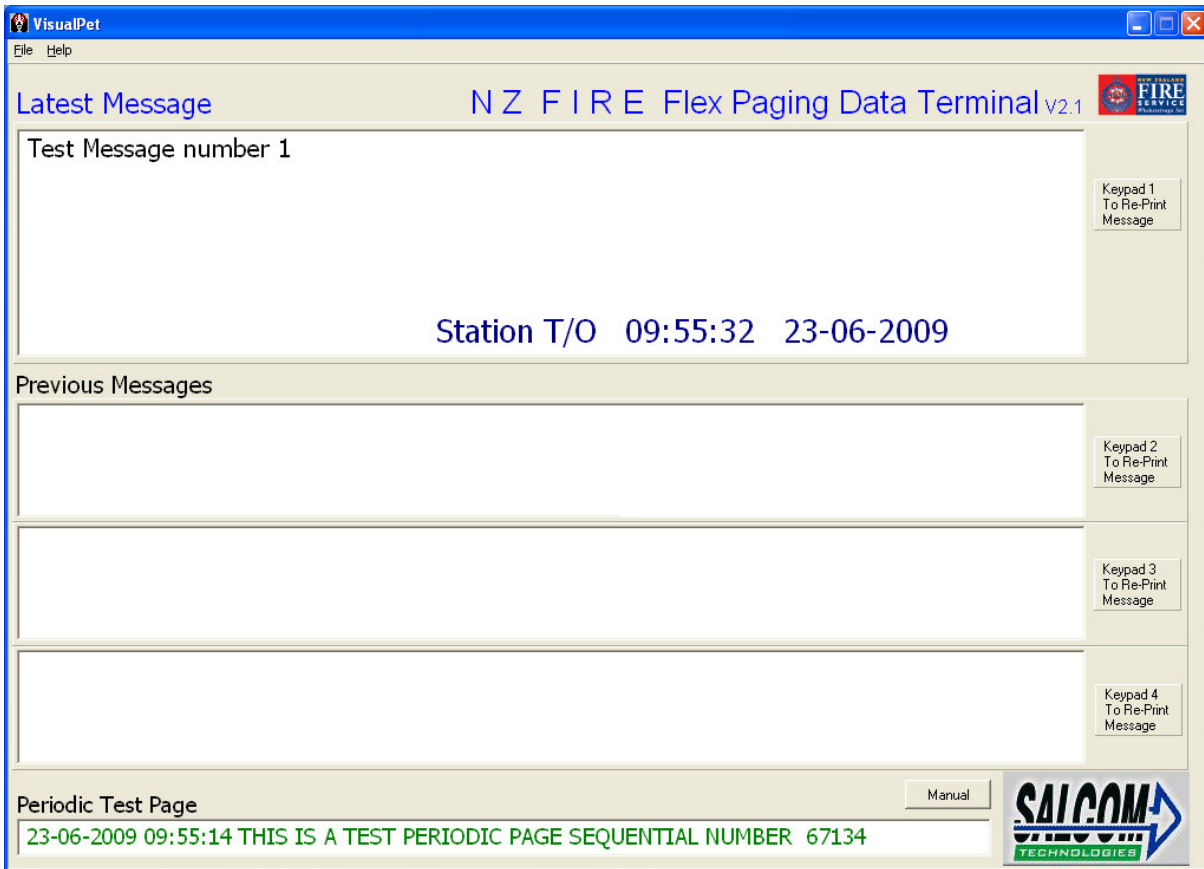
**Flex Decode Configuration**

The Flex receiver doesn't output the actual received RIC, instead it sends the memory location of the programmed field where the flex RIC is stored.

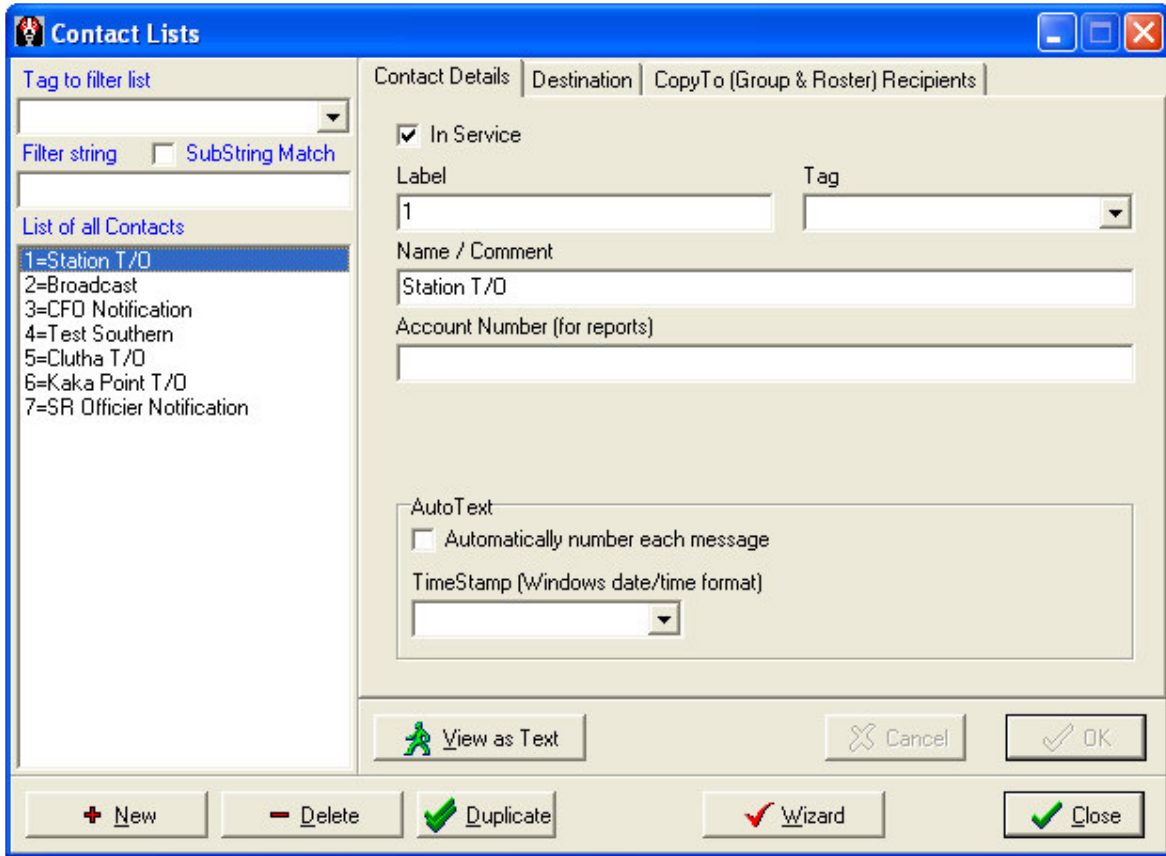
ie: If the Flex receiver is programmed to decode 998765 in memory location 1, when a message is received for RIC 998765 the serial data will contain only the memory location.

Eg: Memory Location 1 is programmed to 998765 and a message is received for that RIC, therefore serial data is:

FLEX (1)This is the message<cr>



**Contacts**



The contacts for the Flex configuration are based on the memory location data received from the Daviscomm Flex receiver. The Daviscomm memory locations are sequential from 1 to 16, with 16 programmed to receive the Telecom Periodic test message.

The **List of all Contacts** shows current contacts within VP Router. The highlighted contact (**1=Station T/O**) is therefore the contact whose details are shown under the **Contact Details** tab.

The **In Service** box allows the option of taking a contact out of service without losing the detail.

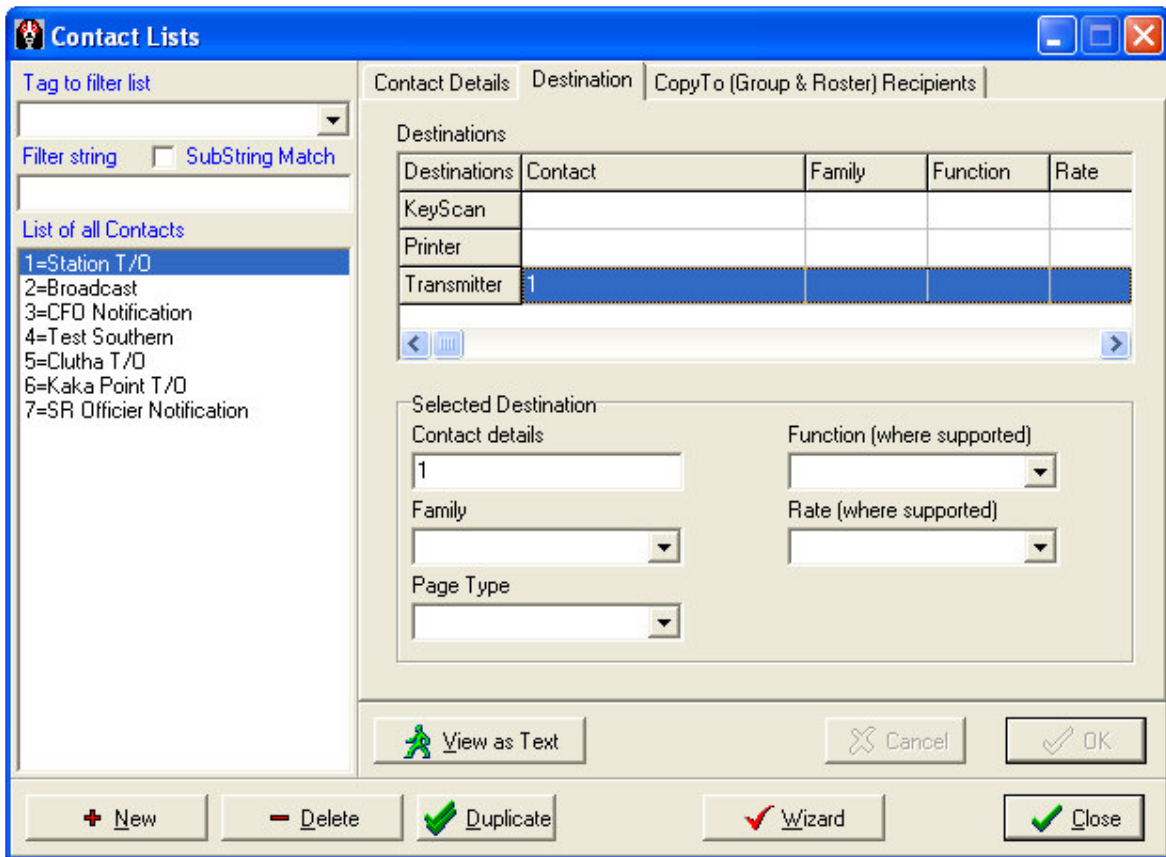
The **Label** is the contacts ID within the router. This is the field where the Daviscomm memory location is entered.

The **Name / Comment** field is where you can attach a more suitable name or comment about a contact.

The **Tag** field can be used for the Station name.

The **AutoText** and **TimeStamp** options allow messages to contain incremental numbering plus current Time and Date stamps

The **Destination** tab is used to select where a message to the contact is to be delivered.



The **Destinations** box will show a list of installed protocols for message delivery.

The above example has three destinations with only the **Transmitter** option having a contact entered. The **Transmitter** destination requires the Daviscomm memory location in the **Contact details**.

The 15-15-9000 Transmitter is programmed to accept the Daviscomm Flex protocol, this means the transmitter is able to receive messages from VisualPet or directly from the Daviscomm Flex Receiver.

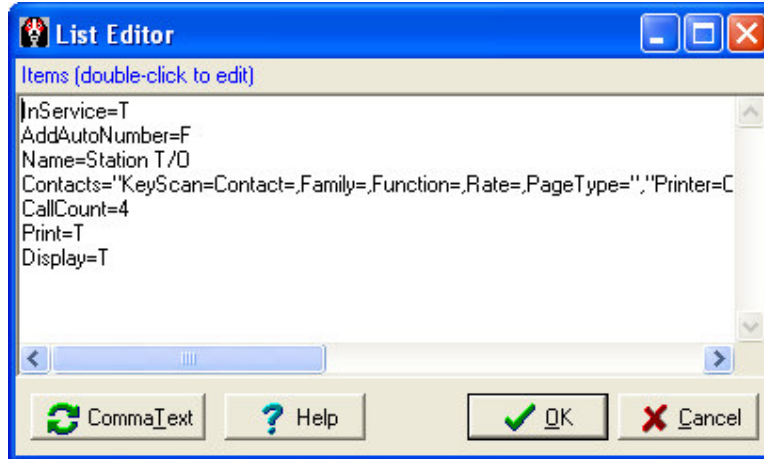
The function (Level) , Family, Rate, Pager Type are not supported for the Daviscomm Flex receivers.

The translation from the Daviscomm memory location to an actual Pager RIC is done by the 15-15-9000, The 15-15 programming also controls the Pager Level .

Once all contact details are entered a click on the **OK** will save the settings.

## Printer Output and Display Message

Control of content to the Printer or Displaying the message for the current **Contact** is achieved by using the **View as Text** button. By pressing the button a dialog window will open as below:



**Printer Output** is controlled from the line states:

Print=F

This means for the contact selected there will not be any output sent to printer. By changing the string to:

Print=T

The printer output will be enabled.

*Note that if there no "Print=T" or "Print=F" then the default is print output **enabled***

**Display Message** is controlled from the line states:

Display=F

This means for the contact selected the message received will NOT be shown on the main display.

Display=T

Any received message will be displayed.

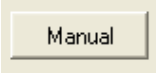
*Note that if there is no "Display=T" or "Display=F" then all messages will be **displayed***

The ability to Ack a message is done in the 15-15-9000 programming using the RIC translation table. (see 15-15-9000 manual)

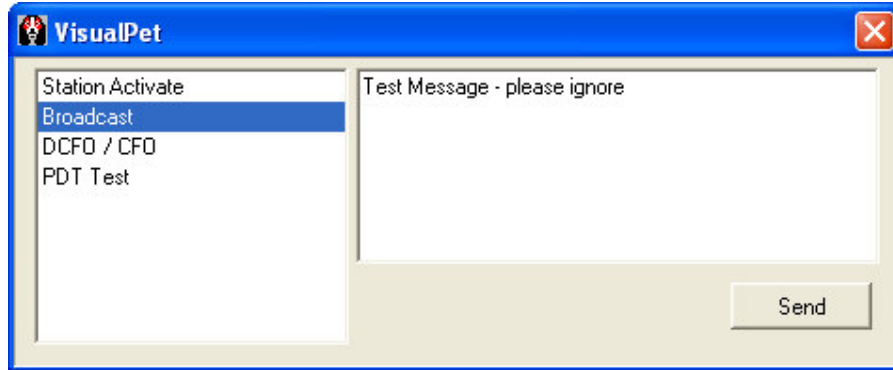
Once the Printer and Display setting are completed click **OK** to save and exit.

The **Close** button bottom right of the **Contacts** window will return user to the Main screen.

## Test Messages

A test message can be sent from VisualPet by clicking the  on the main window:

A window allows selection of a contact and message to be sent by clicking the **Send** button.



The test message window will automatically close after the send button has been pressed.

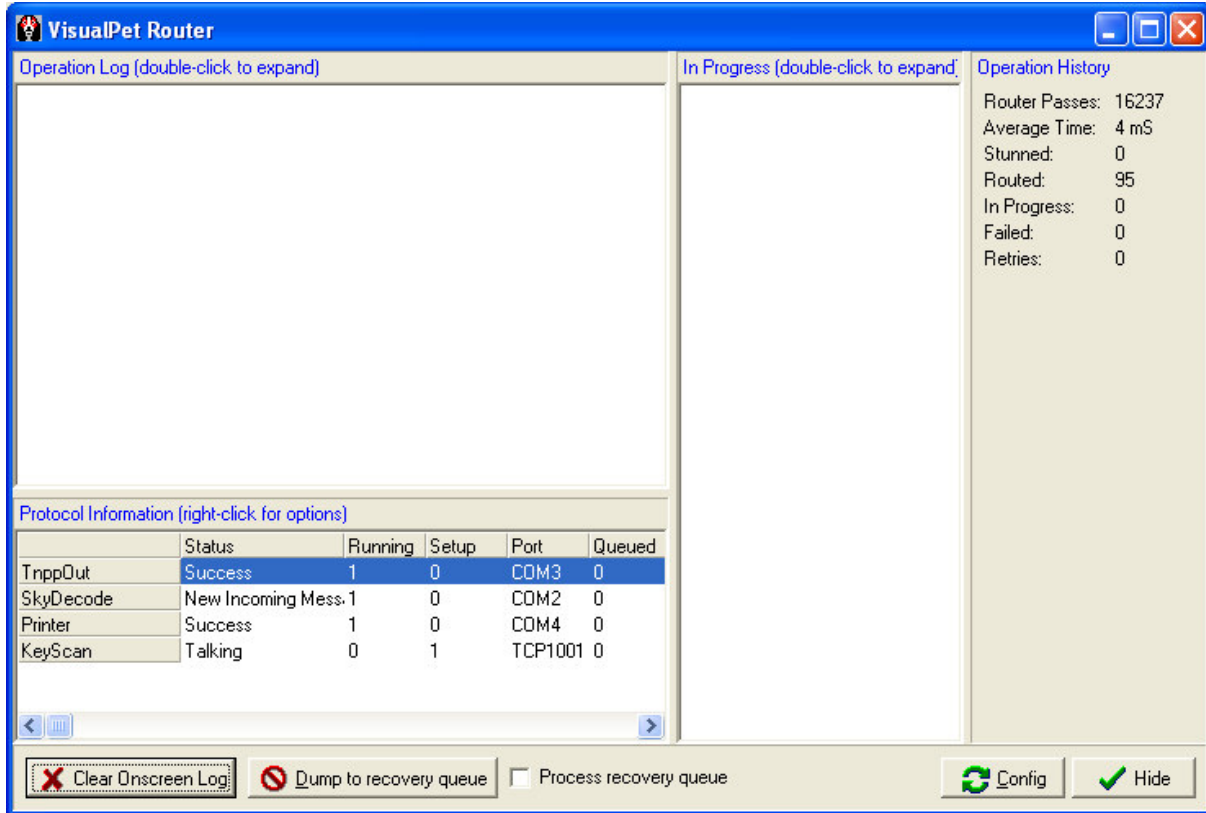
## Reprinting Messages

The 15-15-8000 allows any onscreen messages to be reprinted on demand. There are two methods for reprinting the messages:

1. Using an attached mouse, click the button beside the message window to resent it to the attached printer.
2. By pressing the Keys 1 to 4 on an attached full size or numeric only keyboard. Key 1 will print the top window, Key 2 the next window down etc.. Key 4 prints the lowest window.

**Message Router**

The message router allow users to see the transactions and messages being accepted and delivered by VisualPet. To view the router screen use **File > View Router**, this will display the screen below:



The router screen displays information about each message into and out of VisualPet. The top left screen shows all messages that have been recently routed.

The bottom left shows the status and port settings for all running protocols. (nb: you may see protocols here that were not available in the delivery options for a contact, this is because some of the protocols shown here are input only).

The **Clear Onscreen Log** button will clean the operation log screen

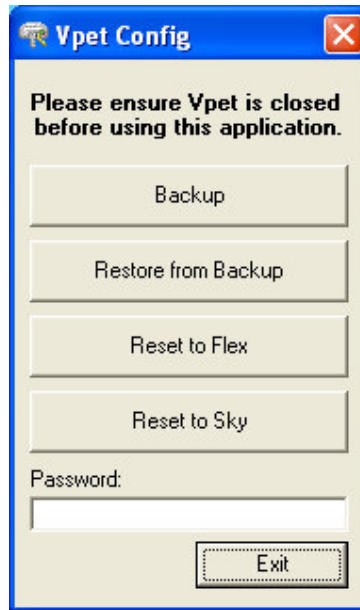
The **Operation History** top right will show how many messages have been successfully routed, are in progress or have failed.



### **Configuration Changes – Vpet Config.exe**

Before making changes to the configuration of VisualPet the application must be closed. Use File > Close to shut down VisualPet, password if requested is 'salcom'

On the 15-15-8000 desktop is an icon to run VpetConfig.exe. Once VpetConfig is running there are a range of options for making VisualPet changes.



The Backup option will copy the current VisualPet configuration to a backup folder. It is recommended that before making changes a backup is made.

The Restore from Backup option will allow navigation to a folder containing a previous configuration. Before using the Restore option the password field will need to be populated, default is "salcom"

Reset to Flex installs a default Flex configuration which requires the contacts data to be configured before using the 15-15-9000. Before using the Reset option the password field will need to be populated, default is "salcom"

Reset to Sky installs a default Sky configuration which requires the contacts data to be configured before using the 15-15-9000. Before using the Reset option the password field will need to be populated, default is "salcom"

Once the option has been completed Exit the VpetConfig application and restart VisualPet from the Desktop icon.

Salcom VisualPet – Software Overview

VisualPet software configurations allow the routing of messages from multiple input sources to multiple output destinations, ie:

Inputs:

Salcom 11-36 Fone Page	PET / TAP	TNPP	Free Form Scripted Protocols
Email ( SMTP / POP )	Internet	Selcall	X25 Pacnet

Outputs:

Salcom Paging Transmitters	PET / TAP	Selcall	Email (SMTP / POP )
Free Form Scripted Protocols	Internet	X25 Pacnet	TNPP

The Free Form Scripted Protocols allow scripted configuration of just about any industry protocol. Salcom can create protocols to suit any application where a message or packet of information needs to be monitored, routed and delivered.

Protocols can be configured to operate using RS232 serial or TCP/IP. Eg: TNPP or PET over IP for long distance or network message delivery connections

Salcom can create and add specific protocols for any type of message or information delivery, including SCADA applications. Protocols for handling SMS from specific cellular modems, SMS IP based gateways, XML data via IP, Flex and POCSAG Decoders are other examples.

Each message route allows delivery to multiple destinations from a single source message. The VP Router can translate contact, message type, and specific protocol information for any inbound and outbound message. For example an inbound PET message can be forwarded onto a pager through a 12-62 with a copy sent via email and TNPP to another paging vendor.

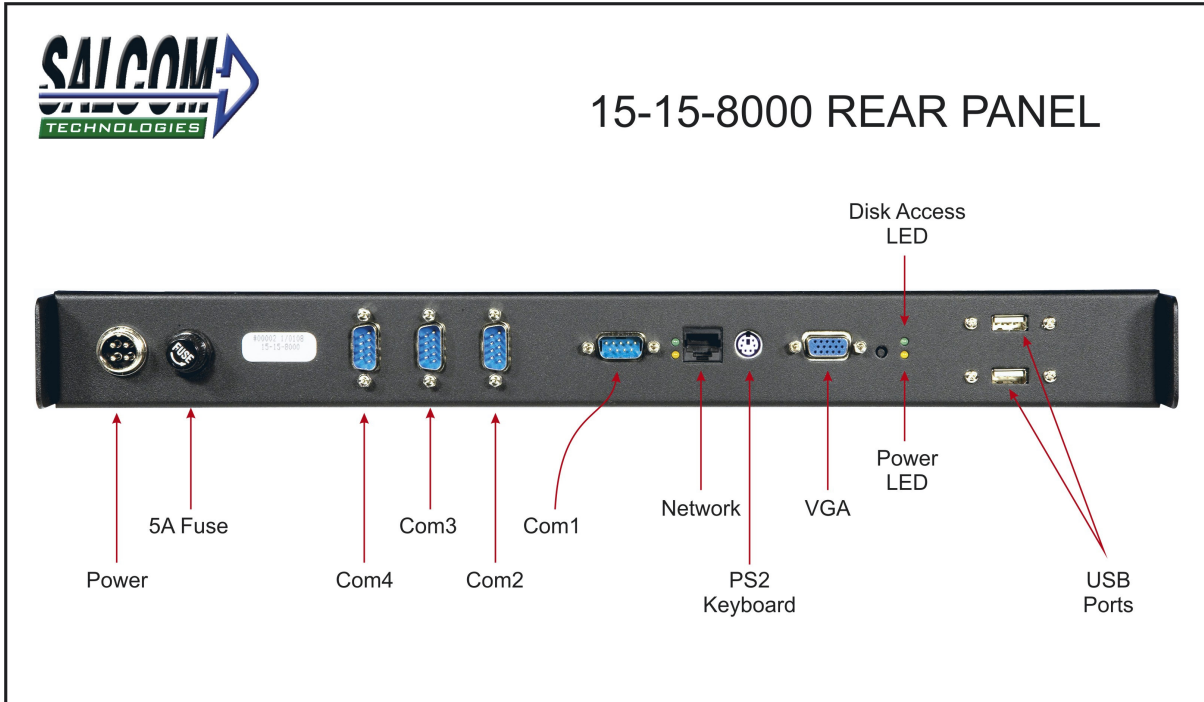
Multiple inbound and outbound messages can be handled at one time, with complete logging of all message transactions.

A message delivery failure from a lost serial or ethernet connection can generate an alarm route which will contain the connection, contact and message that failed.

Contacts within the router are easily added, modified and deleted.

**15-15-8000 Connections**

Note: position of connectors may differ depending on 15-15-8000 cabinet model.



The Power connector is the Salcom standard 15-15 plug. 12V DC.  
Current consumption, up to 3A on startup, Typ 1A fully operational.

- Com1: Connect to the DavisComm Flex receiver
- Com2: Connect this port to the Sky Decoder output
- Com3: Connect this port to the 15-15-5000 Transmitter
- Com4: Connect this port to the Printer

The Network port is used for connection via the VNC remote management software.

The PS2 port can be used to add either a mouse or keyboard (both using supplied adapter)  
-- see the USB ports.

The VGA connector is for connecting the Display.

The USB will support a mouse and keyboard, connecting a mouse or keyboard via USB will mean the 15-15-8000 will not require a reboot to recognize new hardware.  
The USB port will also support a Flash Drive for the addition or removal of software and/or log files etc...

### **15-15-8000 MiniPC Specifications**

- **CPU:** AMD Geode® LX800 processor, up to 500 MHz
- **System Memory:** 1 x SODIMM socket, support Double Data Rate (DDR) SDRAM, Max 512 MB, accept 128/256/512 MB, DDR333 SDRAM
- **2nd Cache Memory:** 128 KB on the processor
- **System Chipset:** AMD Geode LX800
- **BIOS:** AWARD 2Mbit Flash BIOS
- **Watchdog timer:** 255 levels timer interval
- **Expansion Interface:** PC/104
- **Battery:** Lithium 3V/196 mAH
- **Power management:** APM 1.2, ACPI supported
- **Enhanced IDE interface:** One channels supports up to two EIDE devices. BIOS auto-detect, PIO Mode 3 or Mode 4, supports UDMA 33/66 mode
- **Serial ports:** Four serial ports, 4 ports for RS-232 (COM1: DB9 connector on the front site, COM2, 3, 4: by box header), 1 port for RS-422/485 (CN18: by box header with auto-flow controller). COM2,3, 4 is with a Hirose connector 40 pin
- **Parallel port:** One parallel port, supports SPP/EPP mode
- **Keyboard/mouse connector:** Supports one standard PC/AT keyboard and a PS/2 mouse
- **Audio:** Support AC97 Audio stereo sound
- **USB:** Four USB 2.0 compliant universal serial bus ports
- **Solid State Disk (SSD)** Supports one 50-pin socket for CFC type I (type II optional)

#### **1.3.2 VGA/LVDS Interface**

- **Chipset:** AMD Geode LX800
- **Memory Size:** Optimized Shared Memory Architecture, support 64MB frame buffer using system memory
- **Resolution:** CRT resolution: up to 1600 x 1200 x 16 bpp at 100 Hz and up to 1024 x 768 x 32 bpp at 60 Hz for TFT LCD
- **LCD Interface:** Supports up to 24-bit TFT LCD (TTL signal) (PCM-9375F)
- **LVDS Interface:** Supports one channel 18-bit LVDS Interface (PCM-9375E)
- **Dual Simultaneous Display:** CRT + LCD, CRT + LVDS

**NZFS TNPP Packet Structure – NZFS Sky Only**

Below is a description of the TNPP packet structure implement for NZFS:

The NZFS implementation has incorrect information in the data block but is ignored by the decoder.  
 VP Router has TNPP Protocol for generation of genuine and NZFS packets

TNPP Packet Format [ TNPP3.8 Page 23 ]

Field Name	Number of bytes
SOH (start-of-header flag)	1
Header	12
STX (start-of-text flag)	1
Data block(s)(one or more)	N
ETX (end of text flag)	1
CRC	2

[01]e004ee777749[02]FA00`01234567THIS IS A TEST PERIODIC PAGE SEQUENTIAL NUMBER 9651 [03][8b][8e]

NZFS Packet Breakdown:

- [01] = SOH Start of Header
- e004 = destination address
- ee = inertial value
- 7777 = source address
- 49 = incremental message ID
- [02] = STX Start of Text
- F = Extended CAP Page \*\*\* incorrect
- A = APOC2400 \*\*\* incorrect
- 0 = \*\*\* incorrect not even defined
- 0 = RF Channel designator
- ' = RF Zone designator \*\*\* incorrect
- 0 = Function Code - see TNPP3.8 page 42
- 1234567 = Pager RIC or Cap Code - should be 8 chars
- THIS IS A... = Message for Transmission
- [03] = ETX End of Text
- [8b][8e] = CRC error check

NB: There is a field missing in the RIC code - should have 8

**Protocol Notes:**

NZFS TNPP Packets sent across the Sky Network contains the source address of 7777.  
 NZFS TNPP Packets sent from VP Router to the 15-15-5000 contains the source address of 1234.

The 15-15-5000 controller therefore knows from which source the TNPP Packet has been sent. A TNPP packet with the source address of 7777 means the 15-15-5000 will use the programmed RIC Translations, any other address will result in the received RIC code being used by the 15-15-5000 transmitter.

## **VisualPet Decode ALL script**

The script on the following page controls how VP Router handles inbound TNPP Packets from Sky. The script has settings that allow ALL TNPP messages to be transmitted by the 15-15-5000 (excluding the periodic test message). This can be used for testing purposes.

To access the script double click the "SkyDecode" protocol in the Router window. From the menu double click the "OnTranslate" option to view / edit the script below:

```
string time, date

sys_time = now()
time = timestr(sys_time)
date = datestr(sys_time,"dd-mm-yyyy")

// watch for the periodic ric, send to the transmitter and update the main display
if contact = "1234567"
  route "", "TnppOut", "", "", message, "contact="+contact
  pages["Main"].controls["periodic"] = date + " " +time + " " +message
  pages["Main"].controls["periodic"].fontcolour = "Green"
  periodic = 0
end if

// check if the contact received is in vpet, if so send the contact the message
// save the message into the daily log file.
if contactexists(contact)

  route contact,source,device,code,message

  date = date + ".txt"
  appendfile date,time + " " +contact + " " +message +chr(10)

else

// the code below allows optional transmitting, displaying, printing or logging of ALL NZFS
// sky paging messages received by the sky decoder.
// uncomment the sections of code required by removing the // from the front of the code lines
// see manual for further detail.

// ignore the periodic ric
if contact <> "1234567"
  // send message to transmitter ?
  // route "", "TnppOut", "", "", message, "contact="+contact

  // display message on fron screen ?
  // pages["Main"].controls["messages4"] = pages["Main"].controls["messages3"]
  // pages["Main"].controls["messages3"] = pages["Main"].controls["messages2"]
  // pages["Main"].controls["messages2"] = pages["Main"].controls["messages"]
  // pages["Main"].controls["messages"] = message

  // pages["Main"].controls["ric3"] = pages["Main"].controls["ric2"]
  // pages["Main"].controls["ric2"] = pages["Main"].controls["ric1"]
  // pages["Main"].controls["ric1"] = pages["Main"].controls["ric"]
  // pages["Main"].controls["ric"] = contact + " " +time + " " +date

  // send message to printer ?
  // route "", "Printer", "", "", message, "contact="+contact

  // save message to log file ?
  // date = date + ".txt"
  // appendfile date,time + " " +contact + " " +message +chr(10)
end if
end if

//route contact,source,device,code,message
```

By removing selected // from the code between else and end if decoding options for ALL TNPP data can be achieved.

Remove the // from "**route ""**,"**TnppOut**","**...**" and ALL TNPP message will be sent to the transmitter.

Remove the // from the "**pages["Main"]...**" lines and ALL TNPP messages will be displayed

Remove the // from the "**date =..**" and the "**appendfile...**" lines and ALL TNPP messages will be logged.

Once editing is finished click the series of "**OK**" buttons to get back to the main window.

To return the script to decode only valid VP Router contacts reopen the script and add the "//" to the front of the script code lines, clicking the series of "**OK**" buttons to return to the main window.