

STMF protocol, GSM/Next Generation Networks and telecare home units

PRODUCT BULLETIN

Over recent weeks, a number of statements have been made by telecommunications operators (e.g. Sky, Talk Talk) who employ GSM and/or Next Generation Networks (NGNs), with regards to the compatibility of Telecare Home units on their networks. The TSA has also sent out an advice notice on this subject.

The following should provide clear advice on the action you should take when encountering GSM/NGNs and enable you to ensure the most appropriate telecare devices are being deployed.

Background

Until recently companies such as Sky and Talk Talk have acted simply as telephone call resellers enabling them to bill customers directly for telephone calls made whilst the user continues to pay BT for telephone line rental. However since OFCOM's decision to increase competition in the telephone market there has been an increasing number of suppliers offering full telephone services in the UK. These suppliers are now starting to roll out their own networks (NGNs) enabling them to offer services independently of BT's network including the billing of the customer's line rental.

The position on BT's own NGN deployment continues to evolve with recent announcements of 21CN programme changes. The new networks incorporate the latest digital (IP, internet protocol) technology to drive cost efficiencies for the host company and as a result may cause protocol signalling issues.

Protocol signalling issues arise where analogue phone line connections are retained to the user's home. However, where Next Generation Access (NGA) is in place, with fully digital connection to the home, then a further issue arises. Here, Analogue Telephone Adapters (ATAs) are used in the home, to allow normal analogue telephone equipment, including alarm equipment, to connect to IP networks. In a significant number of cases these ATAs will interrupt and re-transmit Dual Tone Multi Frequency (DTMF) signalling tones, again corrupting DTMF alarm signal communication.

What action should be taken?

When Tunstall became aware of the effect IP technology can have on DTMF protocols it firstly worked with BT to test current Tunstall DTMF protocols, to confirm the extent of any operational impact (as described above). Tunstall also went on to develop a new protocol signalling method, known as Sequential/Single Tone Multi Frequency (STMF), to overcome the DTMF interception problems apparent in NGA and some NGN networks.

The patented STMF protocol was tested on mobile networks and has proved to be reliable even where DTMF protocols had been shown to fail. As a result, Tunstall launched the Lifeline Connect+ (GSM compatible) home unit that utilised the new STMF protocol initially to ensure GSM network compatibility. This STMF communication method has also been tested successfully in several European countries where digital (NGA) home connections are more prevalent, and where the ATA problem of DTMF interception would otherwise be encountered.

More recently, Tunstall has carried out testing of both the DTMF and STMF protocols with the Sky and Talk Talk networks. These tests show that whilst no complete failures occurred the DTMF protocol does on occasion have to retry in order to successfully communicate with the monitoring centre. Whereas the STMF protocol performed resiliently and successfully transmitted first time on all tests.

Therefore, where telecare users are already using NGNs or may use one in future, Tunstall advises that the STMF protocol should be used (for more detail on STMF please see the Q&A section below). It is also important to ensure a regular test regime, in line with TSA guidelines, is in place.

Summary

- Tunstall’s DTMF protocols have been tested on NGNs and whilst no complete failures occurred the DTMF protocol does on occasion have to retry in order to successfully communicate with the monitoring centre.
- The STMF protocol has also been tested on NGNs and performed resiliently and successfully transmitted first time on all tests.
- Tunstall recommends that the STMF protocol should be used where the communication to the monitoring centre is over a GSM network or NGN (e.g. Sky, Talk Talk)
- Lifeline Connect and Connect+ home units manufactured after week 07 year 10 can support STMF, but may need configuring see below for more information.
- As a result, the GSM compatible Lifeline Connect+ (part number 53000/640) is no longer required and has been withdrawn from new sales.

Should you have any questions regarding this announcement please call the Telecare Helpdesk on 01977 660204.

STMF protocol Q&A

What do I need to support the STMF protocol?

In order to utilise STMF protocol, STMF enabled home units must be connected to a compatible PNC monitoring centre. For more information on whether your monitoring centre is compatible please contact your Tunstall Account Manager. Where STMF protocol is being used for the first time, the PNC monitoring centre will require a CSE visit to update the ‘limcode’ configuration for the system. Please contact **01977 660551** to arrange this visit.

Which home units support the STMF protocol?

If you have older units currently deployed on NGNs we advise that they are replaced by the below home units that support STMF protocol. The week/year is clearly visible on all home unit labels (see below for more information).

Description	Manufacture date range (Wk Yr)	STMF included	Action required to use STMF
GSM-compatible Lifeline Connect+ 53000/640	All	Yes	None, quick code 9002 can be used to always use STMF
Lifeline Connect and Connect+ 53000/340, 53000/350, 53024/340	Between 14 09 and 07 10	Yes	Need to be configured to use the protocol using PC Connect (V1.23), see below for the instructions
Lifeline Connect+ 53000/3X0, 53000/3X0, 53024/3X0	07 10 or later	Yes	None, quick code 9002 can be used to always use STMF
<i>Lifeline Connect</i> 52000/3X0, 52000/3X0	<i>Between 07 10 and 10 11</i>	<i>Yes</i>	<i>Need to be configured to use the protocol using PC Connect (V1.23), see below for the instructions</i>
<i>Lifeline Connect</i> 52000/3X0, 52000/3X0	<i>11 11 or later</i>	<i>Yes</i>	<i>None, quick code 9002 can be used to always use STMF</i>

How do I configure a compatible home unit to use STMF?

Lifeline Connect+ home units manufactured since week/year 07 10 (Lifeline Connect week/year 11 11) have already been configured to allow the STMF protocol to be utilised. Therefore no special configuration is required for these home units. If a DTMF failure does occur then the home units will automatically switch to STMF protocol for subsequent alarm dial attempts and will then continue to use STMF in preference to DTMF for all future alarm calls.

Where customers know they are deploying a Lifeline onto either a mobile network or a NGN and the PNC monitoring centre is STMF compatible, the unit can be configured to always use STMF protocol for every alarm dial attempt by using the following quick code.

- 9000 Unit chooses DTMF or STMF (Default status)
- 9001 Unit always uses DTMF
- 9002 Unit always uses STMF (should be used for operation on GSM and NGNs)

How do I identify the week/year of manufacture for home units?

The manufacture week and year can be identified on the label on the underside of the home unit and also on the packaging label:

Packaging label

The week/year is identified using the first four digits of the home unit's serial number.
This unit was manufactured in week 04 year 08.

Product label

On this label the week/year is identified separately. This unit was manufactured in week 31 year 08.

PROGRAMMING INSTRUCTIONS (ON NEXT PAGE)

How to programme using PC Connect

The following provides instructions on how to configure Lifeline Connect+ manufactured between 14 09 and 07 10 and Lifeline Connect manufactured between 14 09 and 10 11 to utilise STMF protocol.

Please note PC Connect V1.23 or later is required. PC Connect can be downloaded from uk.tunstall.com/lifeline-vi

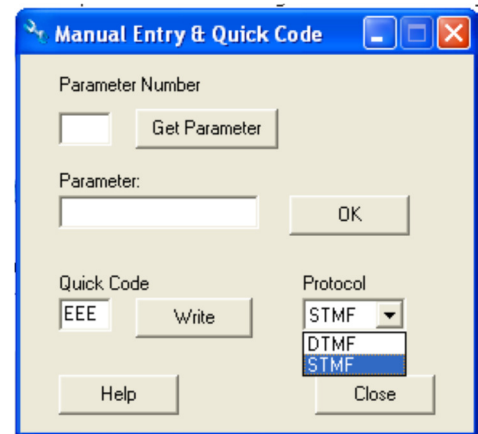
Step 1 – Connect the Lifeline to your computer via the TAPIT interface and run PC Connect software.

Step 2 – Click 'Manual Entry & Quick Code' icon.

Step 3 – In the Protocol drop down box select 'STMF' then click close.

Step 4 – On the main PC Connect screen, click the 'Write' icon then 'Write only modified parameters'


Step 5 – STMF protocol has now been turned on. The unit will still try to use its DTMF protocol first however should a DTMF failure occur then the home unit will now automatically switch to STMF protocol for subsequent alarm dial attempts and will then continue to use STMF for all future alarm calls.



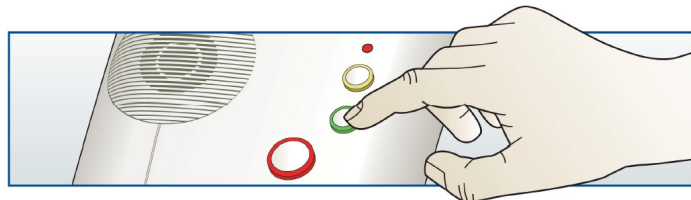
When deploying a Lifeline onto either a mobile network or a NGN and the PNC monitoring centre is STMF compatible, the unit can be configured to always use STMF protocol for every alarm dial attempt by using quick code 9002. Quick codes can be entered using either PC Connect (Manual Entry & Quick Code icon) or using a telephone connected to the Lifeline unit (see below).

How to program using a telephone keypad (quick codes)

Using the following quick codes, Lifeline Connect+ home units (manufactured since week/year 07 10) and Lifeline Connect home units (manufactured since week/year 11 11) can easily be set to use DTMF or STMF.

Step 1 – Connect a telephone directly to the socket on the home unit labelled .

Step 2 – Place the home unit into programming mode by pressing and holding down the green cancel button until it beeps (approx 5 seconds). The home unit announces 'Programming mode' and the red alarm button flashes slowly.



Step 3 – Lift the handset of the telephone and enter the quick codes listed below:

9000	Unit chooses DTMF or STMF (Default status)
9001	Unit always uses DTMF
9002	Unit always uses STMF (should be used for operation on GSM and NGNs)