

Call Recorder Manual

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1 Introduction

The Call Recorder is an audio recorder with certain special features:

- It has been specially designed to record telephone conversations
- It has connections for a microphone, a telephone headset and a telephone line
- It records digitally
- It starts and stops recording automatically (or manually, if preferred)
- It archives the recordings to facilitate searching
- It highly compresses recordings, resulting in a large storage capacity
- It can encrypt recordings using the optional Crypto Card for a high level of security
- It can interface with computers and networks using the Ethernet interface and TCP/IP protocol with the built-in FTP server

The Call Recorder can be configured to **automatically** record from any one of five possible signal sources

- A telephone line that goes through the recorder
- A telephone conversation conducted while the Call Recorder itself is in use as a telephone
- A telephone line that is being monitored
- The telephone handset
- A microphone

There are three different types of Call Recorder:

- The Hard Disk Call Recorder, with an internal hard disk and a high capacity of 1950 or 3900 hours

- The Flash Call Recorder, with enough memory to record the occasional conversation and a capacity of 3.5 or 7 hours
- The LS120 Call Recorder, with exchangeable LS120 disks each having a capacity of about 32 hours.

The Call Recorder can function as a recorder only, but also as a telephone or telephone answering machine, whichever you prefer.

1.1 Connecting to the Telephone Network to Record Calls

There are four ways of connecting the Call Recorder to the telephone network:

1. **As a stand-alone unit.** The Call Recorder functions as a telephone which records the conversations conducted over it.
2. **In series with a normal telephone.** The Call Recorder automatically records the conversations on the normal telephone, but can itself still be used as a telephone at any time. A call on the normal phone can be monitored on the Call Recorder, both via the headset and the built-in loudspeaker. The recorder is activated by the line current as soon as the handset of the telephone is taken off the hook.



Call Recorder being used as a telephone

3. **Via the handset connection of the telephone.** The recorder is activated when words are spoken into the handset and switches itself off when no sound has been detected for a certain period of time.
4. **Parallel to a telephone line which is being monitored.** When connected in this way, the line is not led through the recorder, so the recorder cannot monitor the hookswitch. In principle a telephone line could be tapped this way. It is used most often, however, to connect to a

switchboard at some central point. The switchboard determines the beginning and the end of the recording via the external contact. If there is no external contact the recorder is activated when people speak on the line, and de-activated when nothing has been said for some time.

1.2 Capacity of the Recorder

The Call Recorder can be set to operate seven different audio compression techniques. The standard quality is meant for storage of telephone calls, and is comparable in quality to GSM; it is the one most often used by our customers.

In those cases where the quality of the recordings is of special importance, it is possible to set a lower compression factor; the advantage is a significant gain in quality, the disadvantage a lower storage capacity. When only telephone conversations are being recorded, little is gained because the quality of the telephonenumber itself is a limiting factor. High quality will make a difference, however, when one is recording a meeting, for instance.

It is also possible to set a higher compression factor to raise the storage capacity. The highly compressed G.723 Low Rate still offers an acceptable recording quality though to most listeners it will be obvious that this is highly compressed audio.

The various compression techniques are interchangeable. All you need to do is change the settings prior to recording. When the recordings are played, the recorder will recognize the compression method used.

The table below gives an overview of the capacity of every model dependant on the compression method used.

	No. 1390 hard disk	No. 1391 hard disk	No. 1380 flash memory	No. 1382 flash memory	No. 1370 LS120 floppy
Digitalk (standard)	1950 hours	3900 hours	4 hours	8 hours	31 hours
G.729	2080 hours	4160 hours	4,5 hours	9 hours	33 hours
G.728	1040 hours	2080 hours	2,25 hours	4,5 hours	16,5 hours
G.723 High Rate	2500 hours	5000 hours	5,5 hours	11 hours	41,5 hours
G.723 Low Rate	3145 hours	6290 hours	6,5 hours	13 hours	50 hours

G.711 ALaw	260 hours	520 hours	0,5 hours	1 hours	4 hours
G.711 μ Law	260 hours	520 hours	0,5 hours	1 hours	4 hours

1.3 The differences between the three types of Call Recorder.

The table above shows that there are three different types of Call Recorder: one with a hard disk, one with an internal flash memory and one with an exchangeable LS120 disk. Each type of recorder treats the medium it records from in a different way. The capacity of the storage medium has no consequences for the way a Call Recorder operates. A recorder with a hard disk of limited capacity operates in exactly the same way as one with a high capacity, for instance.

1.3.1 The Hard Disk Call Recorder

A Call Recorder with a hard disk will automatically create space for new recordings by erasing the oldest ones when the disk is close to full capacity. This should be taken into account, and recordings that need to be kept longer should be archived. It should present no practical problems, because the capacity of this type of recorder is sufficient to store conversations of several years.

The maximum number of recordings that can be stored in the recorder with a hard disk is 500,000 for all models, which means there are no practical restrictions.

When after several years of use the hard disk is approaching its full capacity, the recorder will give a warning signal well in time for the user to check if there are any objections to the oldest recordings being overwritten.

1.3.2 The LS120 Call Recorder

An LS120 Call Recorder not only has the capacity of the floppy disk at its disposal, but also an internal flash disk, which is equal to that of article no. 1280 (flash disk 16Mb). This implies that when the floppy disk is full, some four hours of recording time will be left, leaving ample time to place a new disk in the recorder.

The Call Recorder with a LS120 drive makes all its recordings in the (flash) memory. Every night these recordings are automatically stored on the LS120 disk. When space is about to run out, a warning will appear on the display, and a new LS120 should be placed in the disk-drive of the recorder.

It is also possible to manually copy the recordings onto the LS120 disk, In this way several copies can be made, if this is required.

The maximum number of recordings that can be kept on an LS120 disk is 2048.

1.3.3 The Flash Call Recorder

The Flash Call Recorder has two important areas of application:

- applications in which recordings only occasionally need to be stored permanently
- Applications in which the computernetwork continually centrally archives recordings (e.g. at least once a day)

In **the first application** the capacity has therefore been split into two parts, unlike the Hard Disk Call Recorder.

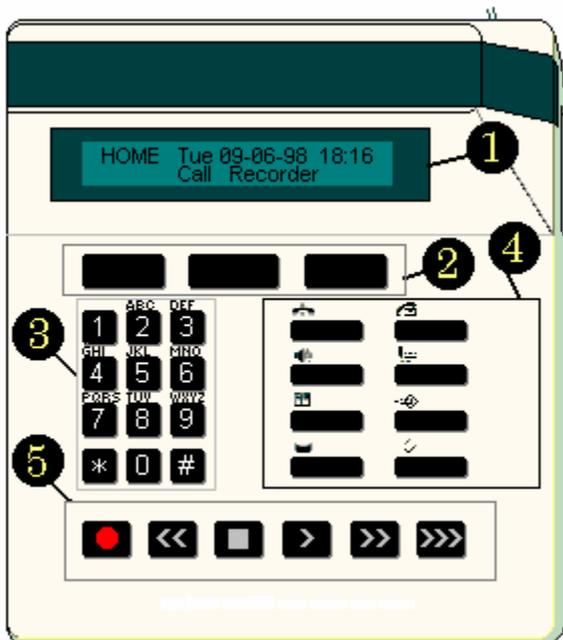
One half of its memory works just like a Hard Disk Call Recorder, continually overwriting the oldest recordings. The other half of the memory serves as an archive. A recording in the archive will be kept until it is erased by the user. By pressing on the red button, for instance, the user is able to place a recording in the archive.

When the archive is about to reach its limit, i.e. no more than 30 minutes of standard quality recording can be added, a warning will be displayed on the screen. Recordings will need to be erased, but before this is done, they can be archived in a PC.

In **the second application** this type of recorder works just like a Hard Disk recorder. Its entire capacity is utilised, and when the memory is full up, the oldest recordings will be overwritten. It is essential that our Call Recorder Archive Software has been installed on the network and automatically archives the recordings at least once a day. In the case of automatic archiving, using a Flash Call Recorder is more economical than using a Hard Disk Call Recorder.

There is no limit to the number of recordings in this type of Call Recorder other than the capacity of the memory.

1.4 Some Terminology



For clarity the following terms are used to refer to the recorder's controls:

1: LCD or display	The screen that gives the user information
2: Softkeys	The keys under the display that perform the function on the display
3: Telephone keys	The keys 0 and 1 to 9, * and #
4: Function keys	The keys with their function shown above them as

	a pictogram
5: Recording keys	The keys  ,  ,  ,  ,  and  , similar to those on a cassette or video recorder

The following terms are used to describe the recording keys:

	Record key
	Rewind key
	Stop key
	Play key
	Fast forward key
	Special Call Recorder key for selecting the next recording

The following are the function keys:

	Telephone key
	Loudspeaker key
	Telephonebook key
	Disk key (for model with hard disk or flash disk)
	Disk key (for model with LS120 floppy disk)
	Call Recorder key
	Audio Recorder key

	Answering Machine key
	Menu (Configuration) key

2 Installing the Call Recorder

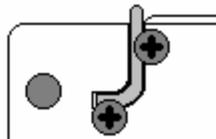
2.1 Unpacking

The Call Recorder comes supplied with the following parts:

- headset
- mains supply adapter
- telephone cable with 2 jack plugs having six contacts
- adapter plug for the local telephone network, when applicable
- short coiled telephone cable with 2 jack plugs having 4 contacts
- metal rest for the headset, and a small plastic bag with two screws and rings for mounting it
- this manual
- one LS120 disk (only with model 1370)

2.2 Mounting the Headset Rest

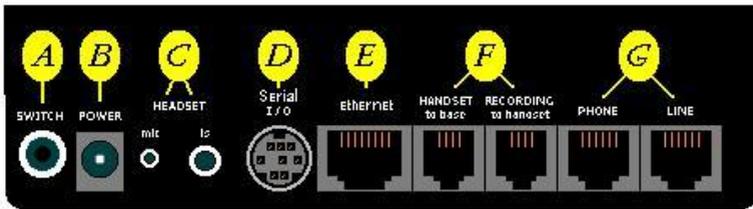
The headset rest has two square corners on one side. These should be pressed firmly into the L-shaped groove at the bottom of the recorder, and then tightly screwed in with the two screws and rings supplied.



2.3 Connecting the Call Recorder

The way the Call Recorder is connected depends upon the intended use. The available connections are listed below.

- A** Connection for a footswitch and/or start recording switch
- B** Connection for external mains supply
- C** Connection for headset/microphone/external speakers
- D** Connection for link to computer
- E** Connection to a 10BaseT ethernet hub/switch
- F** Connection for recording via the handset of the telephone
- G** Connection for recording via telephone and telephone line



Every application requires the following connections to be made:

- B** Connect the external mains supply adapter to **B**
- C** Connect the headset to **C**

The use of the headset itself is not compulsory. A separate microphone, or multi media speakers, could be connected to the headset/microphone port as well.

Use as a Telephone

In this application the Call Recorder itself is used as the only telephone. This is possible when there is an analog telephone connection for non-system-bound telephones. When the Call Recorder is used in this way it should be connected as follows:

- G** Connect the telephone line to the '**LINE**' port

The telephone cable with the RJ12 jacks that comes supplied with the Call Recorder should be used for this. It is an American type of cable that is becoming increasingly popular outside America.

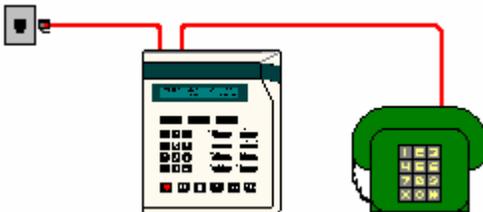
If you still have an old-fashioned wall socket, the telephone cable can be connected with the adapter supplied.

Use in Combination with an Analog Telephone

In this application the Call Recorder and the telephone stand side by side. The following should be connected:

- G** **Connect the telephonenumber to the 'LINE' port**
 Connect the telephone to the 'PHONE' port

If you have a normal analog extension, you will now be able to use both the recorder and the telephone for making calls. All calls will be recorded.



If your phone has been equipped with a special local plug, it can easily be connected onto the adapter plug supplied.

Use in Combination with a System-Bound Analog Telephone

In this application the Call Recorder and telephone stand side by side. The following should be connected:

- G** **Connect the telephonenumber to the 'LINE' port**
 Connect the telephone to the 'PHONE' port

If you own a telephone that is system-bound (i.e. that is part of the in-house telephone network) but is analog in its functioning, only the phone can be used for making calls, not the recorder. The recorder will record all calls made

on the telephone. There is a possibility that the recorder will not always register the numbers you dial.

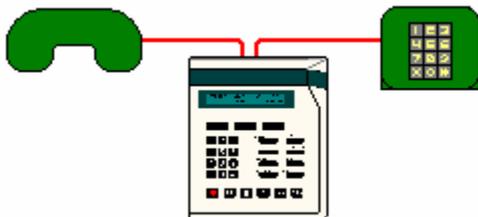
If your phone has been equipped with a special local plug, this can easily be connected onto the adapter supplied.

Use with Entirely Digital and ISDN Telephones

In this application the recorder and the telephone stand side by side. When used in this way the recorder taps the conversation on the cable between the telephone and the telephone handset. The following should be connected:

- F** **Disconnect the cable of the telephone handset from the side of the phone, and connect it to the 'HANDSET RECORDING' - 'to handset' port**
Use the short cable supplied to connect the old connection to the telephone handset on the phone to the 'HANDSET RECORDING' - 'to base' port

If you have a modern telephone, the cable of the handset will fit straightaway. You might own a telephone with an integral cable, in which case a special



cable may need to be made. Alternatively you could possibly swap your phone with someone else's in your firm who owns a more modern model.

Note: This method of connecting may mean that two jumpers within the recorder have to be adjusted. They can be found at the back of the recorder and are marked: JP3.

JP3 enables you to adapt the Call Recorder to a different wiring from the cable between your telephone and telephone handset. Normally the inner two wires serve the loudspeakers, while the outer two serve the microphone, or the other way round: so either MLLM or LMML. In this case the jumpers JP3 are in the correct position.

The alternative is that the pairs of wires lie next to each other, according to the schedule MMLL. If that is the case, the recorder can be adjusted by placing both the jumpers on JP3 that are normally directed towards the left side (on pin 1 and 2 and on pin 4 and 5) of the recorder so that they directed to the right side of the recorder (that is on pin 2 and 3 and on pin 5 and 6).

In order to do so it is necessary for you to open the recorder. If this is too difficult for you, your supplier will gladly assist you.

NB: *You may have noticed that this way of connecting works for every type of telephone, so should be the preferred one. There are two drawbacks to this method, however. One is that the recorder cannot distinguish between a free and an engaged telephone line, and will stop recording when there is a longish pause, for instance when you walk away from your telephone to get something, occasionally resulting in two recordings of one conversation. The other drawback is that the recorder cannot be used as an answering machine or telephone when connected this way.*

Use as a Normal Audio Recorder

When the Call Recorder is in use as a recorder, apart from the power supply, only the normal audio connections are used, i.e. 'HEADSET mic' (microphone) and 'HEADSET ls' (loudspeaker).

Use of the Footswitch (option)

The only additional connection needed is:

A **Connect the footswitch to the 'SWITCH' port**

Use of an External Contact as Start Switch

The only additional connection needed is:

A **Connect the external switch to the 'SWITCH' port**

Connecting to the PC (with optional PC software)

If you have PC software for the Call Recorder, the PC should be connected as follows:

For a direct serial connection:

- D Connect the PC cable to the ‘PC’ port on the Call Recorder, and to Com 1 or Com 2 on the PC**

The throughput of a serial connection is rather slow but this type of connection can be made with almost any PC

For a connection over the LAN or internet:

- E Connect the ethernet port of the recorder with a hub or switch of your network using a standard network patch cable**

This is the preferred way for an office environment with several recorders.

For a direct connection between the ethernet port of the recorder and the ethernet port of a PC

- E Connect the ethernet port of the recorder with the ethernet port of the PC using a special crossover cable**

In this way a very fast connection between a PC and a recorder can be established for applications where there is only one PC and one recorder. When such a fast connection is required but the PC has no ethernet card but does have a USB port, as is common on notebook PC's, a USB to ethernet adapter can bridge the gap and offer a cost efficient high speed connection.

2.4 Turning on the power

Connect the mains supply adapter to the mains. The display will show the following text:



RESET

Followed by:



INIT

Ending with for instance:

```
Monday    19-08-01 10:53  
Call Recorder
```

Sometimes the following message is displayed:

```
Monday    01-01-00 00:00  
***The clock is Wrong***
```

This means that the clock has not been configured yet, and should first be set to the right date and time. How to do this is explained in the next chapter, which covers configuring the Call Recorder.

3 Configuring the Call Recorder

A newly installed Call Recorder needs to be configured for the desired applications. The configuring menu can be reached by pressing . You will then be asked to answer a few important configuring questions, regarding the clock, for example, or, in one of the sub-menus, the telephone settings.

In this chapter only configuring the recorder for use as a call recorder is discussed.

3.1 Aspects of Configuring

Access to the recorder may have been secured with a password. At delivery this is not yet the case.

When installing, you will find the options represented by the softkeys indicated on the display. You can scroll through the options with the recorder keys.



selects the previous menu function



selects the next menu function (similar to 'NEXT')

3.1.1 Recording From:

Press  and you will see:

Record from : Line		
NEXT	CHANGE	STOP

This selects the source from which the recorder will **automatically** record.

By repeatedly pressing the 'CHANGE' softkey, you can select one of three possible sources:

- **Line**, if the telephone line has been connected to the recorder

- **Handset**, if the handset has been connected to the recorder
- **Microphone**, if you want to record automatically from the microphone

The recorder can only record automatically if the source of the signal has been correctly set.

3.1.2 Setting the Start Signal

The display will show:

Start:	Series	off-hook
NEXT	CHANGE	STOP

It is important to know which signal the recorder uses to start and stop a recording. These are the possibilities:

Phone in series

The telephone has been connected to the Phone port of the recorder. The recorder reacts to the current that flows from the telephone exchange to the appliance when the handset is taken off the hook, which is an extremely reliable method. However, it can only be used when one is recording from the line.

Phone in parallel

In this case the recorder and the phone have been connected in parallel. The recorder reacts to the voltage level. It is another very accurate way of determining the beginning and end of a telephonce conversation. **The huge drawback** of this method, however, is that recording starts as soon as the connection between the recorder and the line is interrupted. For this reason it is recommended that it should only be used when the recorder has to listen to a line that may not be led via the recorder. This method can only be used when recording from the line.

Speech detection

In this case the recorder reacts to a signal on the line. Speech detection should be used in combination with “Signal Setting”, which is discussed below. Speech detection is not advisable when one is recording from the line, as the recorder might be set off by not just speech, but by any other signal on the line, such as a ring from the phone.

Opening contact or Closing Contact

These settings are used when the “Switch” port of the recorder is connected to an external contact such as can be found in various telephone exchanges and apparatuses. Recording starts whenever the external contact opens or closes.

Manually

Of course it is also possible to start recordings manually. When manual recording has been selected, recording is started by pressing the Record button and stopped by pressing the Stop button. **Note:** This setting is an exception because the normal function of the Record button is not to start a microphone recording, but to answer the question from which source one is recording: line, handset or microphone.

3.1.3 Signal Setting

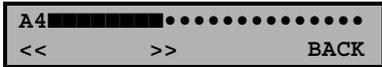
This question concerns the level of the signal above which the recorder will automatically start to record. Only when speech detection has been selected in the preceding question will the following question be shown on the display:

```
Signal Setting
NEXT      CHANGE      STOP
```

To set this select ‘CHANGE’ and the signal level measure will appear on the display:

```
A4●●●●:● | ●●●●●●●●●●●●●●●●
<<      >>      BACK
```

Any signal made now will be graphically represented in the following way:



A signal beyond the bar is sufficient to start the recorder, with the bar indicating the minimum signal level necessary for recording to start. The colon indicates the switch-off level. Recording stops when the signal stays below the switch-off level for a certain time (manufacturer's setting is 10 seconds). Normally the switch-off level will be lower than the switch-on level, so that recording will take place even if somebody speaks in a low voice.

Below is a table with the functions at your disposal when setting the signal level:

Key	Function
Softkeys << en >>	Move the swith-on level - indicated by the bar
⏪ ⏩	Move the switch-off level - indicated by the colon (:)
0 to 7	Set the level of both simultaneously from 0 to 7
#	By pressing # the channel (microphone or loudspeaker) on which the recorder starts is changed (only when lifting the handset). Also important for setting the amplification for each channel
*	By repeatedly pressing * the amplification factor of each channel can be individually adapted from 0 to 7

Tip: Sometimes the microphone of the telephone produces a significant signal even when the handset is on the hook. This would set off the recorder if somebody close to the phone were to speak in a loud voice. You can prevent this by simply selecting the opposite channel before recording.

3.1.4 Procedure for setting the signal level of speech detection

This paragraph is only applicable to the use of speech detection.

Setting the signal level for speech detection is sometimes found difficult. However, setting it correctly only has to be done once, will prevent future problems, and boosts the quality of recording.

We advise you therefore to adjust your Call Recorder to your handset in the way described below. Before you start adjusting, all cables should have been properly connected.

Proceed as follows:

1. Enter the menu via the menu key
2. Select "lifting the handset" with the 'CHANGE' softkey
3. Press the 'MORE' softkey. You will now see the "start" menu
4. With the 'CHANGE' softkey select "speech-detection"
5. Press the 'MORE' softkey. The display will now say "signal setting"
6. Press the 'CHANGE' softkey.

You have now reached the graphical screen for adjusting the signal level and the start and stop levels.



In order to get the correct settings dial a telephone number and with the help of the person on the other end set the Call Recorder .

When connected proceed as follows:

1. Check if the signal comes to about halfway along the scale when speaking.
2. If the signal remains continuously in the lower half, select * to increase the amplification (A 4 changes to A5, A6, A7)
3. If the signal is well beyond the middle during a normal conversation, continue pressing * until you see A0, A1, A2 appear.
4. Now press the # key. You will see the B channel (display says B4)

5. Check the amplification just as you did with the A channel, and adjust if necessary. It is quite possible that one of the two channels reacts in a totally different way from the other. This is normal as one channel represents the speaker in the handset, whereas the other one represents the microphone of the handset. It is important that both the local speaker and the recipient can be seen properly on 1 channel.

If the previous instructions have been executed properly, you will be certain of a good quality recording. Next the start and stop levels will have to be set as well. These are important to ensure that the Call Recorder will start and stop a recording as accurately as possible. It is done as follows in the same menu:

1. Press the # key till it shows the A channel.
2. The starting level is represented by a vertical bar (|) on the display.
3. Check that the signal exceeds the start level during a conversation.
4. Change the start level by moving the softkeys<< or >> to the left or right to adjust it when necessary.
5. The stop level is indicated by a colon (:) on the display .
6. Check if the signal drops to below the stop level when you put the handset down (often the signal disappears altogether).
7. Move the stop level with the normal << and >> keys to the left or right until it is about 1 or 2 points to the right of the signal, if visible. If no signal is visible at all, set the stop level at the 2nd point.
8. Make another telephone call.
9. NOTE! During a normal conversation the signal should not drop below the stop level on either channel A or B. Check this by interchanging between the channels with #.
10. Press the 'BACK' softkey.
11. Press the 'STOP' softkey.

The procedure is now completed. You are advised to test that the Call Recorder is indeed working properly. This is done as follows:

1. Start a telephone call (the Call Recorder should start recording).

2. Record a minimum of 1 minute of conversation.
3. Replace the handset.
4. Check that recording stops automatically (this should take about 10 seconds).
5. Press the "Call Recorder" key.
6. Press the 'LAST' softkey.
7. Listen to the conversation and check that it is of sufficient quality.
8. Press the 'STOP' softkey.

If this test went well and the conversation has been recorded without interruptions or other malfunctions, the Call Recorder is ready for use. If the conversation did not sound good, or the recording did not stop, we advise you to repeat the procedure described above carefully. Some telephones connected via the handset cannot easily be adjusted, depending on the type of handset. An alternative solution would be to start manually or with a start contact, but this is only necessary on rare occasions.

3.1.5 Setting the Telephone



The Telephone Settings menu contains data about the working of the recorder as a telephone and telephone-answering machine. This will be discussed in more detail in chapter 7.2, but is unimportant when configuring the recorder for the first time.

3.1.6 Setting the Recorder



The Recorder Settings are also not of pressing importance when configuring for the first time. These additional configuration possibilities will be discussed in chapter 4.

3.1.7 Network settings

```
Network Settings
NEXT      MENU      STOP
```

The Network Settings are also not of pressing importance when configuring for the first time. These additional configuration possibilities will be discussed in chapter 11.

3.1.8 Card Code

```
Change Card Code
NEXT      MENU      STOP
```

This question will only appear when the optional Call Recorder Crypto Card has been inserted. The possibilities offered by the Crypto Card will be discussed in chapter 12.

3.1.9 Quality of Recording

```
Recording Quality: DigiTk
NEXT      CHANGE     STOP
```

This allows you to select the compression factor used when the digitalised recording is being stored. Lower compression uses up more memory but gives a better quality recording. See paragraph 1.2 for a detailed discussion of this subject. It is advisable to leave it at the manufacturer setting 'Digitalk' when using the Call Recorder for the first time.

3.1.10 Setting the Clock

```
Clock: Mo 29-03-01 16:48
NEXT      CHANGE      STOP
```

To set the clock select 'CHANGE'. The day is set with the telephone keys: Sunday is 1, Monday 2, etc. The telephone keys are also used to edit date and time. The **<<** and **>>** keys are used to place the cursor in the position that is to be changed. Then select 'STORE' to confirm, or 'CANCEL' to undo the editing.

```
Clock: Mo 29-03-01 16:48
STORE                                CANCEL
```

3.1.11 Setting the Password

```
Password Active:      No
NEXT      CANCEL      STOP
```

The password can be activated to safeguard the recordings, the settings, and the functions of the LS120 disk (if applicable).

When the password is activated, the recorder will ask you to enter the code:

```
Password:              0000
STORE      CANCEL
```

NOTE: *Never activate the password if you are uncertain whether you can remember it. The recorder has been very well safeguarded, and if you forget the password you will have a big problem. The password is not active at delivery, and has been set at 0000.*

3.1.12 Selecting the Language

Language:	English	
NEXT	CHANGE	STOP

A selection of languages has been installed. Once you have selected an option here configuration is complete.

3.1.13 Reset all Values

This is the last question of the main menu.

Reset all values:	No
CHANGE	STOP

If you select 'CHANGE' all previous values will be reset to the manufacturer's settings.

4 Operating the Call Recorder

This chapter covers the operation of the Call Recorder and additional options for configuring it.

4.1 Automatic Recording

The Call Recorder has been designed to record automatically. You can test this by starting a telephone conversation. The display will show the following text:

```
Recording Call!  
10-08-00 14:20 00:01:33
```

When the call is over the display will briefly show the following message:

```
STORE
```

This means the call has been recorded and stored in the memory.

4.2 Manual Recording

It is of course also possible to record manually. Two situations can occur:

You have chosen to record (telephone calls) automatically

Even when you have chosen to record automatically, it is still possible to start a microphone recording. To do so press  and  simultaneously.

You have chosen to start recording manually

In our experience this is rarely done. When the recorder is started it will record from the signal source selected: line, handset or microphone. With this setting it is sufficient to press  to start recording.

4.3 Operating Options while Recording

The following functions are available while recording:

Pause Recording

You can pause recording by pressing the Play key once. Recording is restarted if you press Play again.

Stop Recording

Recording is stopped when you press the Stop key. Now either select 'store' or 'cancel'. A new recording of the rest of the call can be started by simultaneously pressing the Record and Play key.

Storing a Recording and Starting a new one

By pressing the '>>>' key the recording that was being made will be stored, and a new one will be started.

Archiving Recordings: Only for flash disk recording

The Flash Disk Recorder has a permanent archive. By pressing the Record key while making a recording, you will permanently archive it; it will not be overwritten. The recorder will have to be instructed manually if the recording is to be erased after all.

4.4 Search and Play

A Call Recorder will first have to search for a recording before playing it. The recordings have been sorted on date and time. If you are searching for a recording, it will be selected from all the recordings present in the memory.

The hard disk version: will search on the hard disk.

The flash disk version: will search in the permanent archive and in the working memory.

The LS120 version: will search on the LS120 disk present and in the working memory.

Searching is possible on the basis of date and time, and of code.

4.4.1 Searching and Finding Recordings

When  is pressed the following text is displayed:

Playback Calls		
SEARCH	LAST	STOP

Listen to the latest recording by pressing the 'LAST' softkey. The recording will be played straight away.

If the 'SEARCH' softkey is pressed the display will say:

Calls from 31-03-01		
SEARCH	CODE	STOP

The date can now be changed, either by filling in the exact day, or typing in a * for day, date and year.

Next press the 'SEARCH' softkey, after which the Call Recorder will make a selection.

The first recording of the selection made will be displayed, as will the total number of recordings found.

```

31-03-01 09:53 1/46
SEARCH CODE STOP

```

The  and  keys allow you to scroll backwards and forwards in the selection made. The recordings can be played with the  key.

Apart from the date, a code can also be entered when starting a search.

The recorder will automatically enter the telephone number as 'code' for outgoing calls. If number recognition is available, it will do the same for incoming calls.

The code always operates in connection with the date, so if you are searching by code, remember to also fill in the dates desired. If you want to find all calls with a certain telephone number, fill in the datespan as follows:

```

Calls from **-**-**
SEARCH CODE STOP

```

Next select 'CODE' and fill in the number, e.g.:

```

Code = 0793617181
SEARCH CODE STOP

```

Subsequently press 'SEARCH' for a selection to be made.

4.4.2 The Function of the Recorder Keys Before and During Playback

The uses of the recorder keys before and during playing back the recordings are:

	Before playback	Starts playing the selected recording
	During playback	Pauses playback
	During pause	Resumes playback

	Before playback	Selects the next recording in the selection of recordings
	During playback	Fast forwarding. This is done with increasing speed so that the right place is rapidly found even in long recordings
	Before playback	Starts playing the recordings one after the other
	During playback	Starts playing the next recording in the selection
	Before playback	Selects the previous recording in the selection
	During playback	Fast rewinding. This is done with increasing speed so that the right place is rapidly found even in long recordings
	During playback	Stops playback

The uses of the telephone keys during playing back the recordings are:

1 10 seconds back	2 next message	3 10 seconds forward
4 60 seconds back	5 pause	6 60 seconds forward
7	8	9

300 seconds back		300 seconds forward
* 30 minutes back	0 stop	# 30 minutes forward

4.5 Recorder Settings

This paragraph discusses the 'Recorder settings'. These settings are not needed upon first time installation but will allow you to fine-tune the operation of your recorder later.

4.5.1 Access to Recorder Settings

Recorder settings can be found in the main menu:

```

Recorder settings
NEXT      MENU      STOP

```

When the 'MENU' softkey is pressed, the first option appears:

4.5.2 Card Always Needed

```

Card Always Needed: No
NEXT      CHANGE    BACK

```

It is possible to set the recorder so that all recordings are made via the CryptoCard option. This will prevent recordings being made that the card option does not protect against interception. You will not be able to use the telephone without the CryptoCard.

4.5.3 Minimum Time of Call

Minimum call time:	5S	
NEXT	CHANGE	BACK

This sub-menu determines the minimum time of call of all automatic recordings. Setting a minimum time avoids saving recordings of, for instance, somebody taking the phone off the hook by mistake.

4.5.4 Notification Tone

Notification tone:	No	
NEXT	CHANGE	BACK

The notification tone is meant to warn the person you are speaking to that the conversation is being recorded. This is obligatory in the U.S.A. if there is a chance that one or both of the people talking is unaware that the conversation is being recorded. It is not common practice in Europe to use a notification tone.

4.5.5 Asking to Store or Delete

Ask store/delete:	No	
NEXT	CHANGE	BACK

At the end of a recording the recorder can ask whether it should be stored or deleted. If you choose to activate this function, the recorder will give a prompt after each recording with beeps and the following display:

Searchcode =	_____	
STORE	60	DELETE

The user should then press the softkey of his choice, but if there is no reaction, the recorder will count down from 60 to 0 before saving the recording after all.

4.5.6 Beep after storage

Beep after store:	No	
NEXT	CHANGE	BACK

This option refers to a short beep the recorder will sound at the time of storage to notify the user.

4.5.7 Silence Period

Silence Period:	10.0s	
NEXT	CHANGE	BACK

This is the period during which the sound has to be below the level set on the signal level meter to stop recording. The period can be increased when a recording is often switched off, and then restarted, if nothing is being said for a longer period of time during a conversation.

4.5.8 Playback Volume

Playback Volume:	20	
NEXT	CHANGE	BACK

This option sets the preferred playback volume. Once the recorder has started playing, the volume can be regulated further with the help of the middle- and left soft keys in the same way the volume is adjusted when you make a telephone call (in that case indicated by the + and – signs).

4.5.9 Microphone Amplification

Mic. Amplification:	4	
NEXT	CHANGE	STOP

The microphone can be set at four different values. You will need to experiment to determine which value is the right one for your microphone. The factory setting is correct for the microphone of the headset that comes with the recorder. In any case, the amplification factor only needs to be configured once when the microphone is first used; thereafter, the recording level will automatically be adjusted. As a rule it will therefore not be necessary to change the microphone amplification when the sound level goes up or down during a recording.

4.5.10 Use of the Foot Switch

Use Foot Switch:	Yes	
NEXT	CHANGE	STOP

By pressing 'CHANGE' you can enable or disable the foot switch option. The foot switch option should not be set to 'Yes' if a foot switch is not attached.

5 Operating a Hard Disk Call Recorder

Chapter 4 covered the basic functions of the Call Recorder. This chapter gives additional instructions for a recorder with a hard disk. The owners of a different type of recorder need not concern themselves with this chapter.

5.1 Introduction

The Hard Disk Call Recorder is meant for continuous automatic recording. The hard disk will be written to until it is full, at which point the oldest recordings will be automatically overwritten. In practice, these overwritten recordings are likely to be very old and will have long served their purpose so they can safely be deleted. The user should be aware of this process, however, and know how to check the current contents of the disk in his recorder.

5.2 The disk functions

The disk function key  can be used to retrieve information about the contents of the hard disk in the recorder.

```
Free space: 2430 Hours
NEXT                               STOP
```

The first function is to display the number of hours recording time still available on the hard disk. When this becomes 0 after several years of recording, the next function will become important:

```
Oldest record.: 06-23-00
NEXT                               STOP
```

This shows you when the oldest recording still on the hard disk was made.

Total recordings: 14325 STOP

The third function informs the user of the total number of recordings on the hard disk. This is the total of recordings from all sources: telephone, answering machine and microphone.

6 Operating a Flash Call Recorder

The previous chapter covered the basic functions of the Call Recorder. This chapter will discuss the additional instructions for a recorder with a flash disk. The owners of a different type of recorder need not concern themselves with this chapter.

6.1 Introduction

As with every Call Recorder, the Flash Call Recorder is meant for continuous automatic recording. Because its memory is small, recordings are overwritten after a relatively short period of time.

The Flash Call Recorder is meant to solve the problem of only occasionally wanting to save a highly important recording, such as a threatening phone call, for instance. For that purpose the memory has been split into a continuous part that will be overwritten again after some time, and an archive that stores a recording until it is erased by the user.

At delivery the space in the archive is about 2 hours. The continuous memory of model 1370 can store about 2 hours, and of model 1371 about 6 hours. The ratio between the archive and the continuous memory can be changed by your supplier, if required. (If this is done, the recordings present in the recorder will be lost.)

6.2 Archiving

If the red Record key is pressed during recording, or later when playing the recording, it will be stored in the archive. Note that it is still possible to archive a recording, even after recording has finished. Only after the total capacity of the continuous part has been reached (2 hours for model 1170 and 6 hours for model 1171), will archiving be impossible, because the recording will definitely have been overwritten. To summarize:

- To archive during recording press the Record key
- To archive after recording find the recording. If it is indicated on the display, or if it is playing, press the Record key to archive. The recorder will then ask for confirmation of your request.

- An alternative way of archiving is to press the softkey underneath the word 'STORE' on the display. It functions in the same way as the record key.
- If a recording has already been archived, the 'STORE' option will not be shown on the display.

6.3 Search and Listen

When recordings are being searched, the archived ones are shown first. These can be recognized because the 'STORE' option does not appear on the screen. For the rest, 'SEARCH' and 'LISTEN' function just like they do in the other recorders.

6.4 Management of the Archive

When the  key is pressed while the Flash Recorder is at rest, the free space in the archive will be shown, expressed in minutes. When the archive is approaching full capacity, recordings should be erased.

To erase recordings:

- Make a selection of recordings to be erased in the same way as you do when playing a recording
- Only select archived recordings, with the 'STORE' option not showing on the display
- Check if you really want to erase the recording in question
- Erase the recording by selecting 'CODE' and then 'ERASE'

7 Operating an LS120 Call Recorder

Chapter 4 covered the basic functions of the recorder. This chapter gives additional instructions for a recorder with an (exchangeable) LS120 disk. The owners of a different type of recorder need not concern themselves with this chapter.

7.1 Introduction

The LS120 Call Recorder has a 16Mb working memory. Without use of the LS120 disk a maximum of 4 hours of recordings can be stored in the working memory. This aspect of the operation is explained in more detail below.

Basically, the LS120 recorder works as follows:

- After a maximum of 4 hours of recording, the recordings need to be stored on a disk. This normally happens automatically during the night, and takes a maximum of 10 minutes
- When the disk has been filled with about 30 hours of recordings it needs to be changed

This has the following consequences:

- The recorder needs to be left switched on at night so that it can record onto the disk
- If for some reason the recorder cannot copy the recordings onto the disk in time (once every 4 hours of recording), a warning will appear on the display. In that case you should copy them manually.
- After about 30 hours of recording the display will state that the disk is full; replace it with an empty one.

7.2 The LS120 disk

The LS120 disk is a modern type of floppy disk with a very high capacity of 120 megabytes, available from any shop selling computer supplies.

The disk drive can also take normal floppy disks, but their capacity is limited to a mere 1.44 megabytes, which is only enough for about 25 minutes of recordings. However, normal floppy disks are quite useful for storing a single recording.

Before use, a new LS120 disk will be formatted so that it can take 2048 recordings, rather than the 512 files which is the norm in the PC world. The recorder will format a new empty LS120 disk automatically so users need not concern themselves with this. The new formatting by the Call Recorder is compatible with use in a PC.

Just like a floppy disk or a CD, an LS120 disk sometimes refuses to work when it is not quite in the right position in the drive. No information will be lost if this happens because the recorder stores it in the working memory as it is recording. Simply eject the disk and insert it again.

If the recorder spots an error on an LS120 floppy, it will mention this on the display. If this is the case, the Play key can be pressed again to complete the request. The recorder will then play the recording again (and also subsequent recordings) and neglect the errors on the floppy. The mention of an error does not mean that all information on the disk has been lost. If the error keeps on occurring, you could have the disk verified, to check if it is advisable to continue using the disk for further recording.

7.3 Disk Functions

Press  to start the disk functions. The disk functions are scrolled through by pressing the 'NEXT' softkey or the  and  keys.

7.3.1 Copying the Memory

The first disk function is 'copy memory'. The display will show:

Copy Memory		
NEXT	START	STOP

All recordings in the memory will automatically be copied onto the disk at night. There may be situations when this is not sufficient or when you want to make your own copies:

- Two (or more) copies of the recordings need to be made
- Several people using the same recorder each want to save their own recordings and do not want others to listen to them

You will need two or more LS120 disks; possibly all users of the recorder can have their own disks, or you have several yourself. At the end of the working day press . Next, press the 'START' softkey and the display will say:

Copy Memory		
YES	START	NO

Press 'YES' and all recordings not yet on the disk will be copied onto the disk. The progress of the copying can be followed on the display. The display will say:

Copy completed		
AGAIN	ERASE	STOP

1. Press 'AGAIN' and the disk will be ejected so that another copy can be made; Simply insert another disk
2. Press 'ERASE' and the disk will be ejected with the recorder asking permission to erase the memory. You can watch the progress of this on the display. The person working with the recorder next inserts his or her own disk; nobody but yourself will be able to listen to the previous recordings.
3. Press 'STOP' and the disk will be ejected so that you can insert another disk. The recordings in the memory not yet on this disk will be automatically copied onto it at night.

The disk drive functions are found by pressing .

7.3.2 Free Space on Disk

Free Space on Disk		
NEXT	START	STOP

Press 'START' and the recorder will calculate the remaining time available on the disk. The display might say the following, for example:

Free: 19.243.008 bytes
5,0 hours BACK

7.3.3 Verifying a Disk

Verify Disk		
NEXT	START	STOP

Press 'START' and the disk will be checked for errors. This will take quite some time. The progress of this verification process will be shown on the display. Verifying is only necessary if an LS120 floppy repeatedly refuses to work. Verification checks to see if a disk can still be used. If errors are found, it is advisable not to use the disk for recording anymore, but the fact that an error has been found does not mean that all information on the disk is lost. Experience has shown that most of the information on the disk will remain available.

7.3.4 Erasing Memory

Erase Memory		
NEXT	START	STOP

This function allows you to erase the recordings from the memory in the recorder. This should only be done after you have copied the memory onto the disk.

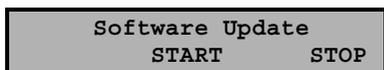
7.3.5 Automatic Copying

Automatic Copy: 03:00
NEXT CHANGE STOP

This function allows you to determine the time when the recorder should automatically copy the recordings from the memory onto the disk. Fill in a time when the recorder is normally not in use. It is also possible to switch off automatic copying.

Note: *If automatic copying is switched off, the working memory will fill up over time. The oldest recordings will be overwritten continuously to make place for new recordings. It will be up to you to ensure that the memory is copied in time (within four hours of recording time). It is also possible to determine yourself whether you want to save recordings and to copy them onto the disk individually. If a partly filled memory is about to run out of space the recorder will warn you a number of times with a sound signal and a statement on the display.*

7.3.6 Software Update



This function allows the recorder to load a new software version from the disk. The recorder recognizes the necessary files; in this way the software could also be partially updated.

7.4 Copying One Recording

It is possible to copy only one recording from disk to memory and vice versa. This can be useful if the recording needs to be kept separately. It is done as follows:

If the Recording is in the Memory:

- Select the recording
- Press 
- Confirm the request to copy

If the Recording is on the Disk:

In this situation the recorder assumes that you want to copy the recording onto another disk

- Select the recording to be copied
- Press 
- Confirm the order to copy
- The disk is ejected after copying
- Insert another disk
- Confirm the request to copy
- The recording is copied onto the new disk

If you only wanted to copy into the memory, do not confirm the request to copy the second time. In that case the original disk can be put back into the drive.

7.5 Playing Back from a Disk

A full disk can be put back into the recorder at any time, and all recordings on the disk can be played back. The Call Recorder will still record even with a full disk in place.

After a full disk has been listened to, the present working disk should be replaced to enable the recorder to copy the recordings of that day onto the working disk at night.

Note: Please be aware that if you try to locate recordings on an older disk, you will find not only the recordings on the disk, but also the recordings of the calls of that day which are still in the memory.

7.6 LS120 Disks and your PC

If your PC has an LS120 disk drive, the disks recorded in the Call Recorder can be placed in the drive of the PC and from there copied to whichever

medium you desire. It does not matter that the Call Recorder has formatted the disks in a different way.

Using Call Recorder Archive Software is the best way of importing recordings from the Call Recorder into a PC. This software will enable you to play the recordings via the loudspeakers of your PC, or convert them without any loss of quality into the audio format ADPCM, which can be played by any PC with a sound card.

8 The Call Recorder in use as a telephone

The Call Recorder not only records, it can also be used as a telephone for analog telephone lines. A reason to do so would be that many users prefer to have as few pieces of equipment on their desk as possible. Call Recorder users will have to accustom themselves to phoning with a headset, but people who often ring from their desks will soon see its advantages compared to a handset.

8.1 Operating the Call Recorder as a Normal Telephone

The Call Recorder is operated similarly to a normal telephone.

Dialling a Number - traditional

Press . The display will show:

```
Dial a number:
FLASH      REPEAT   VOLUME
```

and the dialling tone can be heard. Either key in the number or press the 'REPEAT' soft key to repeat the number last dialled. Recording will start automatically. After dialling the display will show:

```
Recording call!
10-08-98 14:20 00:01:33
```

At the end of the call the line is disconnected by pressing .

Dialling a number – GSM style

It is possible to key the number in first, like one does with a GSM phone, and then to press the telephone key next to make a connection.

When keying in the number you might read, for example:

Number: 0793617181		
STORE	CLEAR	STOP

The advantage is that the number can be changed or erased and another one keyed in before you call. It could also be entered first in the telephone book. In order to erase a number, press  and to erase the entire line press the 'CLEAR' softkey.

Recorder functions while making a telephone call

When the phone is in use all normal recorder functions such as stopping or pausing the recording are available, while as are the following operating options:

Adjusting the Sound Level

At times when the display does not show any functions for the softkeys, the user can adjust the sound level of the headset and/or the inbuilt loudspeakers by repeatedly pressing the softkey on the right. There are seven possible levels. The standard level is the one configured by the user upon installation.

Using the Telephone Book

Saving Numbers in the Telephone Book

The Call Recorder has an 800 number memory, in which telephone numbers can be pre-programmed. To operate it, follow these steps:

- Type in a number
- Press the 'STORE' softkey
- Type in the name by repeatedly pressing the letter keys
- Press the 'STORE' softkey
- Check the name and number on the display
- Press the 'STORE' softkey

When a telephone number is being saved, special effects can be added to it:

-  Adds a 'hookflash' (connect key)
-  Waits for a dialling tone
-  Pauses a short while during dialling

The letter typed in last can be erased with  and the action can be broken off with .

Dialling a Number from the Telephone Book

Press . Next type the first letter of the name you are looking for: e.g. twice 6 to search for an M. The list with numbers can then be scrolled up and down with the  and  keys. Press  to start dialling.

Transferring a Call

If the Call Recorder is connected to an internal exchange, it is possible to transfer a call on the Call Recorder to another telephone. In principle this is done in the same way it would be done with a normal telephone. In most cases it is sufficient to press the 'FLASH' softkey, to type in the number of the other telephone and to disconnect.

Transferring a Call from the Call Recorder to another Phone in Series.

When a call initiated on or received by the Call Recorder has to be transferred to another phone in the series, proceed in the following way:

- Pick up the handset of the normal telephone
- Switch off the Call Recorder by pressing on the  key. You can now talk on the normal telephone.

8.2 Configuring the Telephone Functions

Configuring allows a detailed 'fine-tuning' of the telephone functions. Please remember that the telephone functions only work for a Call Recorder that has been set to 'Telephone', the first question in the configuration menu.

To get to the telephone configuration menu, first press the  key and then choose the 'Telephone settings' menu. It offers the following options:

8.2.1 Telephone Active or not

Telephone active:	Yes	
NEXT	CHANGE	BACK

If the telephone is de-activated here, the telephone-functions and the telephone answering machine cannot be used.

8.2.2 Hook Flash and Earth Flash

There are two installation questions referring to the operation of the 'FLASH' softkey.

Put on hold:	Hook-Flash	
NEXT	CHANGE	BACK

The possibilities are Hook-flash or Earth-flash. The type of telephone exchange you have will determine which one of these should be selected. Both methods are in common use.

Hook-Flash time:	100ms	
NEXT	CHANGE	BACK

The duration of the hook-flash or earth-flash can also be set.

8.2.3 Waiting after Dialling

Wait after dial:	2.5s	
NEXT	CHANGE	BACK

This refers to the time between the moment the telephone is taken off the hook and the start of the recording, when the recorder registers the number that you dial and stores it as a search code. Don't make the waiting time too long or you might miss the beginning of the conversation.

8.2.4 Caller ID

Caller ID:	No	
NEXT	CHANGE	BACK

This refers to caller ID, the system that allows you to be informed about the telephone number of the caller. Caller ID is a function of the telephone network that is available in some countries and that you have to subscribe to. It will not work on an in-house telephone system. Only enable caller ID when you have subscribed to the function. When enabled the Call Recorder will store the telephone number of incoming calls exactly in the same way as it stores telephone numbers of outgoing calls. This will allow you to search by telephone number and to read the telephone number from the display when listening to a recorded call.

8.2.5 K-break Detection (UK only)

K-break detection:	Yes	
NEXT	CHANGE	BACK

Analog telephone lines in the United Kingdom use a K-break to indicate to a telephone that a call has been answered. K-break detection is important because it allows a telephone answering machine to determine when a call is over and the recording should be stopped. If your Call Recorder is not directly connected to an analog telephone line, it is better to switch off the K break detection.

8.2.6 Answering

Rings to Answer on:	1	
NEXT	CHANGE	BACK

Rings Always Answer:	Off	
NEXT	CHANGE	BACK

These two parameters determine under which circumstances the answering machine in the Call Recorder will answer a call.

The first option refers to the situation in which the answering machine is active; the second one refers to the situation when it is not. The answering machine is switched on manually, for example when leaving the office.

8.2.7 The Settings of the Telephone Ring

Ring Variation:	1x6	
NEXT	CHANGE	BACK

Ring Frequency:	1400+250	
NEXT	CHANGE	BACK

Ring Volume:	15	
NEXT	CHANGE	BACK

Ring Variation

Ring variation allows you to program the number of bleeps per ring, and how long they last for.

Ring Frequency

Each ring is split into a sequence of a few double tones, the frequency of which can be programmed with this parameter.

Ring Volume

This parameter sets the loudness of the ring. The setting 'Off' is used to switch off the ring of the Call Recorder

8.2.8 Use of Speaker with Answering Machine

```
Speaker after Answer: On
NEXT      CHANGE      BACK
```

This parameter allows you to listen to the telephone answering machine via the speaker. When it is switched to 'On', the loudspeaker will automatically turn itself on when a message is being spoken into the answering machine, so that you could pick up the phone yourself if you wanted to.

8.2.9 Maximum Message Time

```
Max. Message time: 120s
NEXT      CHANGE      BACK
```

The maximum length of a message recorded onto the answering machine can be set with this function, and can be varied between 30 and 7650 seconds. Programming a long maximum message time is no problem, because recording is stopped automatically at the end of the message, or when the connection is broken off.

It is also possible to set the maximum message time to “Off” so that it will not allow a message to be left.

9 The Telephone Answering Machine

A Call Recorder connected to a normal analog telephone line can be used as a telephone answering machine. Its use as a telephone answering machine does not hinder its use as a Call Recorder. The telephone answering machine can be operated from the desk, as well as remotely.

9.1 Desk-Top Operation

9.1.1 Switching On and Off

The answering machine can be switched on and off by pressing . You will see:

```
Answering Machine
SEARCH    WELCOME    ON
```

Press the 'ON' softkey.

The display will indicate that the recorder is going to function as a telephone answering machine.

```
Monday    12-04-99 16:36
Answering Machine
```

9.1.2 Welcome Messages

There is a maximum of 30 different welcome messages available, and if this facility is used, one should be careful to select the right message every time the answering machine is left on. How the answering machine can be programmed is described below:

Recording and Playing a Welcome Message

Press . Press the 'WELCOME' softkey. The display says:

```
Welcome message
SYSTEM   DELETE   STOP
```

With the help of the recorder keys a new welcome message can now be recorded or listened to.

As usual, recording is done with the recorder keys. Press the 'RIGHT' softkey if you are happy with the recording; press the 'WRONG' softkey if you want to break off recording.

A maximum of 30 possible messages can be recorded, played and used by typing in the following:

0-9	Select welcome message 0 to 9
#0-#9	Select welcome message 10 to 19
*0-*9	Select welcome message 20 to 29

If any message other than 0 is chosen this will be indicated on the display:

```
Welcome message 14
SYSTEM   ERASE   STOP
```

9.1.3 Playing Back Messages

If any messages have come in during your absence the display will say:

```
AWAY   Mo 19-08-98 17:09
      4 new Messages
```

Press  to listen to them. The Call Recorder will start playing them straight away.

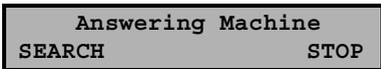
The messages can be played again with the help of the recorder keys, which have the same function here as they have when telephone call recordings are being played back.

Afterwards you can decide whether you want to store them or delete them.

Tip: You have another chance to store or delete the messages later if no new recording (message, memo or call) has yet been started. Just press  after you have pressed .

9.1.4 Playing Old Messages

If messages have not been erased straight after being played, they can be played again later. Press , and then the 'SEARCH' softkey.



Press the 'SEARCH' softkey if you want to listen to old messages. Next, the messages are searched for on the basis of the date and search code.

9.2 Operating the Call Recorder Remotely

9.2.1 Introduction

The messages in the answering machine can be played remotely, and the welcome message and password can be changed remotely as well. The precondition is that the Call Recorder answers your call, which it can only do if the answering function has been switched on before the office was left, or if it has been programmed to 'always answer' the telephone after a set (large) number of rings.

When the Call Recorder is dealing with messages received remotely, it uses spoken statements that have been, or can be, stored in its memory. These would take up rather a lot of space in a Flash Call Recorder or a LS120 Call Recorder, but in a Hard Disk Call Recorder the space they take is negligible. For this reason the statements are already present in a Hard Disk Call Recorder at delivery, while the memory of the Flash and LS120 models only

contains a subset of them, sufficient to maintain a basic functioning of the answering machine. If a Flash recorder or LS120 recorder is regularly being used to play messages remotely, you could speak in these statements into the Call Recorder yourself, or have your supplier put the manufacturer's statements in for you. When they have been added, the Flash and LS120 models function just like the hard disk one.

9.2.2 Entering the Password

When the Call Recorder is called and functions as an answering machine, the welcome message will be played. If a 1 is entered while you are listening to the message, the Call Recorder will ask for your password, the same one used to limit entry to the keyboard. The password will need to be keyed in with a 'wicket' (#) at the end.

Next the menu will ask you to select one of the following options:

1	Playing new messages
3	Selecting a welcome message (not with Flash / LS120)
5	Changing the password (not with Flash / LS120)
6	Changing the welcome message (not with Flash / LS120)
9	Disconnect

9.2.3 Listening to New Messages Remotely

When you enter a 1 in the menu, the new messages will be played.

If, as is the case at delivery, system messages 0 to 9, 188 to 200, and 210 to 259 are present in the system, the date and time of entry of each message will be mentioned.

While the messages are being played, there are control options. The telephone keys can be used to play the messages back and forth according to the following scheme:

1	10	2	next	3	10
seconds		message		seconds	

back		forward
4 60 seconds back	5 pause	6 60 seconds forward
7 300 seconds back	8 stop	9 300 seconds forward
*	0	#

Messages that have been listened to remotely, remain stored as new messages. This has been done to prevent people 'at home' missing a message. With remote access the messages are played again and again. To prevent this happening, press 0 five times after you have listened to them. This marks them as having been listened to.

9.2.4 Selecting a Different Welcome Message Remotely

The welcome message can be changed to any one of the maximum thirty messages stored. After you have selected this option in the first menu, the recorder will ask you to enter the number of the welcome message.

9.2.5 Changing the Password Remotely

Option 5 in the menu allows you to change the password remotely. After the new code has been entered, it will be read out to you first as a check. Simply follow the spoken instructions.

9.2.6 Changing the Welcome Message Remotely

The menu also offers you the option of speaking in a new welcome message, or choosing a different message from a number of messages spoken in previously. Again, just follow the spoken instructions.

9.2.7 Switching the Answering Machine on Remotely

Even if set on 'home', the Call Recorder can be programmed to answer the phone when it rings for a very long time. By doing so the recorder will automatically switch itself to 'away'. The next time somebody calls, the Call Recorder will answer immediately.

9.2.8 Changing the System Messages

When the Call Recorder is operated remotely, a number of spoken statements are used, the so-called system messages. They have a permanent function, but can be adapted to fit your requirements. A possible reason could be that you prefer all messages to be spoken by the same voice. It is not advisable to change the system messages: a lot of work is involved, and the only person who ever hears them is the owner of the Call Recorder.

To change the system messages proceed as follows:

- Press 
- Press the 'WELCOME' softkey
- Press the 'SYSTEM' softkey
- Enter the number of the system message
- Record or play the message with the help of the recorder keys
- After recording, listen to the message with the recorder keys, confirm the change with the 'STORE' softkey, or cancel it with the 'CANCEL' softkey.

The following system messages are present at delivery; those printed in bold are the only ones present in Flash or LS120 recorders:

Date and Time

When the Call Recorder reads out a message remotely, it starts by mentioning the date and time it came in. The following system messages are used for this:

0-9	'zero' to 'nine'
188 to 199	'January' to 'December'
200	'hour'
210-259	'ten' to 'fifty nine'

Answering Machine

The welcome message is also saved as system message 300. It would normally be accessed by first pressing 'answering machine', and next 'WELCOME'. A caller would hear the following two system messages on the answering machine:

300	Welcome message. At delivery this is: 'This is a telephone answering machine. Unfortunately we cannot help you personally at the moment. Please leave a message after the tone including your name and number.'
303	'Your message has been saved.'

Most users will only want to change these two system messages. The other messages are only used when the owner accesses the recorder remotely.

Operating Remotely

The following system messages help the owner when operating the recorder remotely:

304	'No new messages received'
310	'To listen to the new message press 1. To select a different welcome message, press 3. To change your password, press 5. To record a new welcome message, press 6. To disconnect, press 9'.
311	'Enter your password'
312	'Your password is:

313	'To save, press 1; to start again, press 2; to cancel, press 3.'
314	'The password code has been saved.'
315	'To record a new welcome message, press 1; to play the current welcome message, press 2; to cancel, press 3.'
316	'To record a new welcome message, press 1; to play the new welcome message, press 2; to cancel, press 3; to start using the new welcome message, press 4.'
317	'The new welcome message is in use now.'
320	'Enter the number of the welcome message.'
321	'This welcome message does not exist.'
322	'The welcome message selected is:'
323	'To confirm your selection, press 1; To play the message to check it, press 2; To cancel, press 3.'
324	'The change has been processed.'
330	'You have listened to all of the new messages.'
335	'To listen again, press 1; to go back to the menu, press 3; to disconnect, press 9.'
339	'You will now be disconnected. Goodbye!'

10 The Call Recorder as a Normal Recorder

The Call Recorder can be used as an audio-recorder at any time, with the same high capacity it has when recording telephone calls. If you are conducting a normal conversation, for instance, and the headset is on the rest, just press the recording button, and the conversation will be recorded.

Note: *The Call Recorder cannot operate as a telephone or call recorder while it is recording through the microphone.*

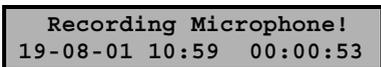
Experience has shown that the Call Recorder is mainly used as an audio-recorder in meetings, to facilitate note taking.

Automatic Volume Control and the Microphone

A striking feature of the Call Recorder is that it will automatically adjust itself to a weak signal level. This is asking a lot of the Call Recorder, because when it functions as a phone the microphone has to cope with a voice speaking right into it, whereas when it is recording meetings people may be quite a long distance away. Although the automatic volume control of the Call Recorder is extremely good, it is advisable to purchase a separate table microphone if the recorder is often used for meetings. The quality of recordings via the headset microphone is more than adequate for occasional use.

10.1 Recording

Recording is started by simultaneously pressing the Record and Play keys. The display will show:



```
Recording Microphone!  
19-08-01 10:59 00:00:53
```

The time counter can be seen to move during recording.

Recording is paused by pressing the Play key. When the Play key is pressed again, recording will continue, while the Stop key stops recording. Next, you can indicate whether you want to STORE the recording or DELETE it, by

pressing the appropriate softkeys. The recorder will give you 60 seconds to decide this in; if you do not, the recording will automatically be stored.

Searchcode: _____
STORE 55 DELETE

If the Play key is pressed in this situation, the recording can first be listened to, and deleted or stored later.

On a hard disk model deleted recordings can still be retrieved by pressing the Play key first, followed by , and then be stored after all; it is only really erased when a new recording is started (message, recording or call). The recording can be saved under a search code selected by you.

10.2 Search and Play

Searching and playing microphone recordings is identical to searching and playing recorded telephone calls. Press  to see the following display:

Playback Mic. Records
SEARCH LAST STOP

From here on follow the guidelines for searching and playing recorder telephone conversations.

11 The Network Interface

Every Call Recorder has been provided with a 10BaseT Ethernet interface. This type of interface is the most common one for local area networks and connection to the Internet.

The protocol chosen for communication via the Network is TCP/IP, the Internet protocol that can be used on most local area networks.

11.1 The possibilities

The main reason for developing the network interface is to offer the possibility to centrally archive the recordings, or to make a back-up copy of the recordings. The biggest advantage of the network interface is the high transport speed of big audio files, another is that they can be retrieved both via the internal network and via internet. There are other possibilities, however, and these are listed below:

- Smallscale archiving from 1 to 4 recorders onto a PC in the network with the help of the Call Recorder Archive Software
- Bulk archiving for a larger number of recorders with the help of the Call Recorder Server application (expected to be available mid 2001)
- Archiving by own applications with the help of FTP. The recorder works as a normal FTP server.
- Remote configuration by system managers via the Telnet protocol
- Audio monitor function; recordings can be listened to remotely via the loudspeakers of a PC

There are various ways in which the connection can be made, so that it is almost always possible to archive or listen remotely. The various possibilities are discussed below, from very simple to very elaborate.

- Connecting one PC with one recorder is possible by supplying the PC with a networkcard and connecting the PC via a special (crossed) cable. An even simpler way is to replace the networkcard by a USB to Ethernet adapter, available as a cable. They result in a very fast connection between the PC and the recorder.

- Connecting a PC with various recorders in the same building is possible by connecting all recorders and the PC onto the local network.
- A good example of a simple solution to get access to a number of recorders on a distant location is to work with an ISDN router with hub, as provided by several manufacturers such as Cisco or Intel. The recorders are connected to a hub, and a PC with our archive software is connected to the hub via its ISDN software.
- In a large scale application PC's and recorders are connected via the internet or an intranet.

11.2 Configuration

Configuring the network function of a Call Recorder for local use is not especially difficult, although within a company environment it is advisable for the network manager to enable the network function of the recorder. He is the person best suited to judge how the recorder should be configured to function properly with the other systems on the network.

The remote use of the recorder via the Internet or an intranet is less simple. The system manager should allow for the interaction between the recorders and the router/gateway/firewall combination that connect the local network and the wide area network.

To enable the network, look in the configuration menu for "network settings". Network configuration will involve the following questions:

Network active:	Yes
NEXT	CHANGE BACK

If you do not use the network, the answer here should be "No". The next question concerns FTP, which can be used for archiving, for example.

FTP active:	Yes
NEXT	CHANGE BACK

When FTP is not used the answer to this question should again be "No". If it is used, there are two follow-up questions:

FTP ID: 0000		
NEXT	CHANGE	BACK

This is the ID a user should give to approach a Call Recorder via FTP. There is only one possible ID.

FTP code: XXXXXXXX		
NEXT	CHANGE	BACK

The access code for an FTP session. The default setting is 0000.

The next question concerns a property of your network:

Use DHCP Server		Yes
NEXT	CHANGE	BACK

If there is a DHCP, server, the recorder will automatically be assigned an IP address (network address), in which case any application called up by the recorder will ask for the IP name of the recorder. If DHCP is not available the user will have to give an IP address himself, which will be used by any application approaching the recorder:

IP addr: 168.102.000.012		
NEXT	CHANGE	BACK

In an application with linked networks without DHCP server there will not only be a question about the IP address, but also about the IP subnet mask:

IP mask: 255.255.255.0		
NEXT	CHANGE	BACK

The IP subnet mask is only applicable for access to recorders via an Internet or intranet. Normally you will not have to change this setting.

If there is an IP subnet mask, there will be a gateway to the other network as well, and the address of this gateway will be filled in. This should also be done if there is a DHCP server.

Gateway: 0.0.0.0
NEXT CHANGE BACK

If the gateway is not applicable in your situation, you do not change anything.

If DHCP is used, the address mentioned here has come from the DHCP server and the name found in the next question will be used :

IP name: CRPeter
NEXT CHANGE BACK

Access via Internet on a network with several FTP servers, e.g. several Call Recorders, can pose problems for the router if the IP port for all FTP servers is the same. If that is the case, it may be necessary to set a number in addition to the common value of 21. In all other applications the default value of 21 should be maintained. If a different value is set the system manager should take care that there is no conflict.

IP Server Port: 21
NEXT CHANGE BACK

The next question concerns the use of the monitor function (Listening in via the network).

Monitor active: Yes
NEXT CHANGE BACK

If the monitor is active, it allows you to set the accesscode for the monitor function.

Monitor code: XXXXXXXX		
NEXT	CHANGE	BACK

11.3 Use of the network interface

The network functions are important for applications that use the network for communicating with the recorder, such as the Call Recorder Archive Software and the Call Recorder Monitor Software.

11.3.1 The FTP protocol

FTP is the standard method to ask for files via the Internet, which explains why there is a lot of software that can retrieve the files of your Call Recorder. This possibility is mainly of interest to developers, however.

Our **Call Recorder Archive Software** will be of more interest to the Call Recorder user. In order to be able to use the archive software, the network functions and FTP should be enabled. Depending on whether there is a DHCP server present in the network, the IP address or the IP name should be given as well. When both the PC with the software and the Call Recorders are connected to the net, all recordings will be archived at a very high speed via the LAN.

The use of Call Recorder Archive Software and the installation of it on the PC are explained in the helpfile that comes with the software.

11.3.2 The monitor

The monitor protocol of the Call Recorder is not standard. For this reason the monitor is of special importance for users of the **Call Recorder Monitor Software** option.

To use Call Recorder Monitor Software the network needs to have been enabled and the IP address or IP name given. The monitor function should also be operating. The PC with the software will then be able to select from the recorders present and to listen in to the conversations via the loudspeakers or headset.

The use of Call Recorder Monitor Software and its installation are also explained in the helpfile that comes with this software.

12 The Crypto Card option

The Crypto Card is, along with the Archive Software, the most important option of the Call Recorder. Every Call Recorder has been provided with an IC card reader. If a set of Crypto Cards is purchased, the recorder will automatically be able to work with them.

12.1 How a Crypto Card works

The Crypto Card works as follows:

- All recordings that are made while the Crypto Card is inside the computer are coded. These recordings can only be played if one possesses a card from the original set.
- Recordings are uniquely recognizable by the card number.
- The card has been safeguarded against playing with a pincode or, if this has been lost, with the PUC (Personal Unlock Code) provided at delivery.

As we have already seen, it is possible to configure the recorder in such a way that recording can only take place with the card.

The function of the card is as follows:

- Users who keep their cards with them can be sure that their recordings cannot be listened to without their approval.
- It is safe to transport recordings via the network or Internet, because they cannot be listened to without a card from the original set.
- If the monitor function is used, the card also protects this function against unauthorized listening in as well, so that it is safe to listen to a conversation via Internet.
- It is possible to let more than one person use the same recorder without any of them being able to listen to the recordings of the others. If necessary, the central archive can clearly indicate which recordings were made by whom.

This method of protection is similar to the protection of telebanking via Internet and the risk that this form of protection is broken is very low.

12.2 Changing the card code

The card code (PIN code of the Crypto Card) is only used when playing recordings made with the Crypto Card. Select the option “Changing the Card Code” from the settings menu. The recorder will first ask for your present card code:

```
Card code: XXXX
CONTINUE          STOP
```

Now the new card code can be input:

```
New card code: XXXX
CONTINUE          STOP
```

The code then has to be entered once more as a check:

```
Repeat code: XXXX
CONTINUE          STOP
```

Then the display will show:

```
New card code accepted
                      STOP
```

If the wrong code has been entered three times running, the recorder will automatically ask for the PUC. That will start a similar procedure with which a new card code can be entered.

The PUC code must be entered correctly. Entering an incorrect PUC code five times running will lead to the card being made invalid.

WARNING

13 Erasing a Recording

A Call Recorder will automatically erase recordings. A hard-disk Call Recorder will erase the oldest recordings; A Flash Call Recorder will erase the recordings that have not been archived, while an LS120 Call Recorder will erase the recordings in the Flash memory that have already been archived on the LS120 disk. In actual practice this means that the recorder itself will erase the recordings that are no longer needed.

There are two possible reasons why you might want to erase a recording yourself:

- To free the archive in a Flash Call Recorder
- To make sure a recording containing confidential information does not fall into the wrong hands

Every recording can be erased afterwards. One important difference between erasing a recording on the Call Recorder and erasing a file on your PC, however, is that the Call Recorder will genuinely erase the recording, so that it cannot be retrieved, whereas a recording erased by the PC is very easily found, and will only disappear if the space it takes up happens to be needed for something else. The disadvantage of erasing in the way the Call Recorder does is that it takes time to make space on the disk; the advantage is that you can be sure that the information has disappeared.

To erase a recording proceed as follows:

- Look up the conversation the way you are used to
- Press the 'CODE' softkey.
- You now see, for example:

Searchcode = 7936171		
ERASE	BACK	ERASE

- Press both 'ERASE' softkeys simultaneously.
- The display will now read, for example:

```
16-04-98 12:50 7936171
BACK      ERASE      BACK
```

- Press 'ERASE' again to confirm erasing.
- The display will say:

```
16-04-98 12:50 7936171
One moment please
```

- As has been mentioned before, this takes some time because the recording is being erased.

14 Maintenance

Experience with products similar to the Call Recorder has taught us that you can expect it to have a long life. The electronic parts of the Call Recorder do not require any maintenance, but the mechanical parts may suffer wear and tear.

14.1 Changing the Disk Drive

Please bear in mind that the life of a disk drive (hard disk or LS 120 disk) is shorter than that of the recorder itself.

- The LS120 drive should only be replaced in the unlikely event of a defect
- The hard disk should be replaced preventively in the course of the years.

The reason for this difference in approach is that the hard disk contains all recordings, and a defect could lead to all of them being lost. For this reason we advise you to replace the hard disk **preventatively after four years of use**. If, after an external accident, such as dropping the recorder, the recorder does not seem to function optimally any more, it is also better to replace the disk.

We would like to emphasize, that in most cases of a defect in the hard disk the recordings have not been lost, and can be copied onto a new hard disk by the manufacturer. Therefore it is not a good idea to start experimenting yourself with a hard disk that is not fully functioning.

When replacing a hard disk, the manufacturer will copy the old recordings onto the new disk.

15 Possible Problems & Frequently Asked Questions

This chapter lists a number of possible problems and their solutions. The questions most frequently asked are also discussed.

15.1 Possible Problems

The Call Recorder does not start recording when I pick up the handset

Possible causes are:

1. The source of signal (telephone, handset, microphone or line) has been incorrectly set
2. The connections are not correct, or might be loose.
3. The signal settings of the switching on level have not been correctly programmed.

During a conversation the recording is regularly broken off, leading to several recordings of one conversation

This problem is usually caused by an incorrect setting of the “Switching-off” signal level. In this case it has been set too high and should be reduced. Use the signal-level meter settings in the menu to correct this. Sometimes this problem occurs when there is a silence in the conversation, for instance if you have put somebody on hold, or have been put on hold yourself.

After a conversation the recording takes too long to stop, so that I have several conversations within one recording, as I made several calls close together

This is the opposite of the situation discussed above. It can normally be solved by slightly increasing the setting of the “silence” level in the recorder settings menu. The minimum time the Call Recorder needs to stop is 10

seconds by default. If you regularly make several phone calls close together press the “telephone” key in between calls to speed up this process. The current recording will be stopped, after which a new recording can be started. (see the problem below)

The Call Recorder “just” starts to record while nobody is calling

This can only happen when the recorder has been set to “line” or “handset”, and is caused by the handset picking up sound even when not being used. Some digital or semi-digital phones tend to do this. There are two solutions to this problem:

- First try using the other channel to start recording on as explained under ‘setting the start signal’ in section 3.1.2
- Alternatively try increasing the “switching-on” signal level slightly

When I listen to a recorded conversation, I can hear the one party very clearly, but the other party sounds very weak or far too loud.

This problem almost exclusively occurs when the source of the signal is a handset, because when recording from a handset two separate channels (microphone, and loudspeaker of the handset) are mixed. The difference in level between these two channels can be adjusted with the signal settings. Experiment a little bit, to find out which settings give the best result, as each telephone handset has its own characteristics.

I can phone with the Call Recorder, but do not seem to be able to transfer a call.

There are two possible causes of problems with transferring calls:

1. The Call Recorder has been incorrectly programmed. In the “Telephone settings” menu you find “Put on hold”, which can be set to “Hook-Flash” or “Earth Flash”. The next value that can be changed is the time of the flash. The supplier of your telephone exchange will be able to tell you which values are applicable to your telephone.
2. The cables between the Call Recorder and the wall connection have been incorrectly connected, thus preventing the transfer key in

exchanges that work with Earth-Flash from functioning properly. The solution is to use the correct cable.

15.2 Frequently Asked Questions

How can I make a backup of recordings if I do not have an LS120 Recorder.

There are two ways to save calls for a longer period of time:

1. Install the Call Recorder Archive software (art.no.1352) in a PC (Win95, 98, 2000, NT4). This allows you to permanently archive important calls in your PC.
2. Connect a tape or cassette recorder to the LS port of the Call Recorder, and transfer the calls you want to save.

I have the Call Recorder Archive Software; does it mean I can listen to the calls on my PC?

Yes, if your PC has a sound card. However, the standard audioformat of the Call Recorder cannot be played without Archive Software, as Archive Software exports recordings to a far less compressed format (ADPCM), which can be played on any PC. In this way recordings can be given to people on a floppy disk or sent via e-mail.

16 Accessories

There are several accessories available for your Call Recorder:

Crypto Card option, order numbers 1350, 1356 and 1357

This option has been extensively described in chapter 12.

Crypto Cards can be supplied in three different ways:

- Article 1350, set of 3 identical cards
- Article 1356, set of 6 identical cards
- Article 1357, set of 4 x 3 different normal cards and 3 master cards that can be used to play the recordings of the other cards.

Article 1357 is meant to be used as security in combination with Call Recorder Archive Software that can archive the recordings of four recorders in a PC via LAN, Internet or intranet.

Archive Software for Windows (versions 95/98/ME/2000/4.0), order number 1352

The function of this software is to archive the recordings of your Call Recorders on a PC. These recordings can be played directly from the archive via the loudspeakers of the PC.

There are two possible ways to connect to the recorder, namely via a network (LAN or Internet) and via the COM port. The network interface is many times faster than the connection via the COM port, which makes it the preferred option. If there is no network available, one should consider making a connection between the network interface of the recorder and the (possibly acquired for that purpose) network interface of the PC.

If a connection between the recorder and the PC is not possible, the software can be used to read onto the disks of recorders with LS 120 floppy disks and to present them as archive. The software can automatically archive the recordings of all 4 computers. A complete backup of all recordings can be maintained.

The software can also be used to select only important recordings and to copy them into the archive.

Monitor Software, order number 1354

Monitor Software makes it possible to listen in to the recordings of a Call Recorder via a LAN or via Internet. The user can choose from a list of recorders.

Crypto Card reader for the PC, order number 1351

The Crypto Card reader is necessary for playing recordings made with a Crypto Card on a PC. It can be used both with Call Recorder Archive Software and with Monitor Software.

Foot Switch, order number 1195

This is a useful tool when typing out recordings, especially when transcribing the minutes of a meeting. The Start, Stop, Fast-forward and Rewind functions can all be operated by foot. The Call Recorder comes supplied with a connection for the foot switch.

Table top Microphone for Recording Meetings, order number 1196

When the Call Recorder is regularly used for recording meetings, some users prefer a tabletop microphone to use of the headset microphone. Various common models can be used. The microphone referred to here is one especially designed for video conferencing, eminently suitable for recording group conferences.

Multimedia Loudspeakers, order number 1197

When the internal loudspeakers do not suffice, multi media loudspeakers with built-in amplifiers can be connected to the Is connector of the recorder.

Cable for connection with a PC, order number 1353

In order to be able to use archive software via the COM port, a special cable is needed that connects the COM port of your PC with the Call Recorder. This cable is not needed if Archive Software communicates with the Call Recorder(s) via network or Internet. The cable comes supplied with an adapter so that it is suitable for 9-pole and 25-pole communication ports.

LS120 Disks for the LS120 Call Recorder, order number 1172

This type of disk can be bought from the supplier of your Call Recorder, but any type of LS120 disk can be used.

LS120 Drive for Building into your PC, order number 1174

A PC version of this type of diskdrive can also be supplied; there are various makes available.

17 Guarantee Conditions

This chapter gives a general overview of the guarantee conditions. We can send you a copy of the complete text on request.

Your Call Recorder has a 12-month factory guarantee. The guarantee is effective for normal use only. We would like to emphasize that the guarantee is not valid under exceptional environmental conditions, such as extreme temperatures or humidity levels, nor in the unlikely event of a lightning strike. The guarantee is also not valid if the machine has not been handled properly, for example when it has been dropped, or bumped into. Hard disks are fragile.

In order to qualify for guarantee, you should contact your supplier, and show the receipt. If your supplier cannot help you, you should contact the manufacturer. The manufacturer reserves the right to determine the final date of the guarantee period on the basis of the date of production. Costs of transport to and from the supplier or the manufacturer are for the buyer's account.

We would like to stress that the guarantee is for parts only, and does not cover any costs resulting from the breakdown of the Call Recorder or its software.

18 Additional Information

Call Recorders have various extra features that have not been described in this manual. Additional information about this is given in a technical information bulletin meant for suppliers; users can order this, or download it from the Vidicode Internet websites (WWW.VIDICODE.NL or WWW.VIDICODE.COM for USA)

Subjects discussed in this technical documentation are the very extensive further configuration options, remote configuring, and how to put a new software version in the recorder.

The further configuration options concern all aspects of operation, but in our experience most people are interested in configurations related to user's access and special ways of recording.

The way in which the Call Recorder operates, can be modified by your supplier and other experienced programmers to fit in with your specific wishes. That is why it comes supplied with its own programming environment, Argus BASIC. At the moment the manual of Argus BASIC for the latest version of the Call Recorder (with IP connection and IC card) is not yet available, but it will be published via the Internet in the near future.

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