Empowered by Innovation NEC

This guide explains the installation, configuration and operation of the Xn120 Telephone System including the exchange line and telephone connections.
Further information will be supplied with any optional equipment that you have purchased.
Please keep all information supplied for future reference.

Regulatory Notice.
Refer to the Declaration of Conformity related to the product at the end of this document.
Warning: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Xn 120

Xn120

Getting Started Guide
Rev 1.1 (January 2005)
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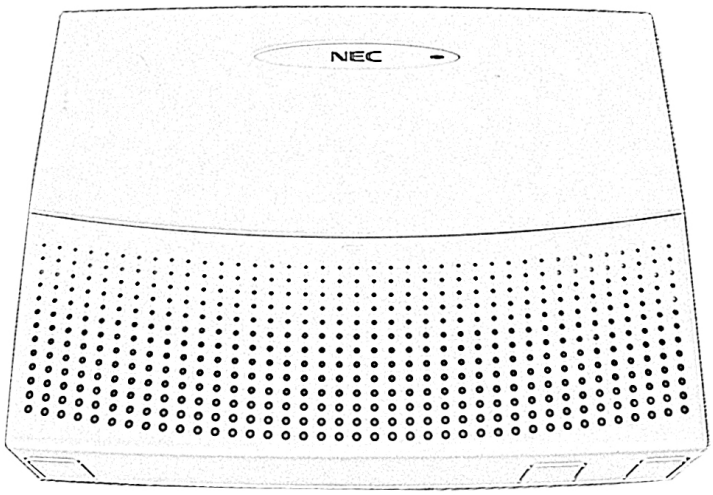
Contents

What is the Xn120?



The Xn120 system consists of a main unit with a base board pre-installed.
The Xn120 telephone system will allow the connection of up to three exchange lines plus eight telephones. The eight telephones can be either Xn120 system telephones or normal telephones.
The Xn120 can have an external music source connected that can be played to callers placed on hold.
There is also a connection for an external paging system.

It can also accommodate optional parts to expand the system or connect ISDN BRI lines. Further more, there are optional expansion units available to increase the number of exchange lines and telephones that can be connected. Separate guides are supplied with the optional equipment.

All equipment will operate when the Xn120 is installed as shown in this guide, it is not necessary to make any changes to the system configuration.
With the default settings:

- Each telephone will function and is assigned an extension number.
- Calls received on the exchange lines will ring at telephone number 200.
- Each telephone can make outside calls by dialing 9.
- Each exchange line is presented at a Function Key with busy lamp indication.

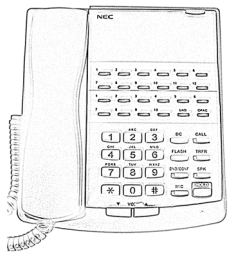
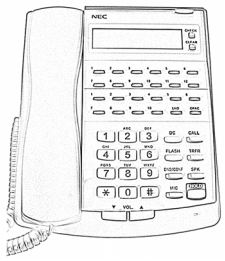
Outside lines

You can connect up to three analogue exchanges lines to the Xn120.

- The exchange lines must be loop start type.
- The Xn120 will also detect Caller ID sent by the Network Provider. The Caller ID must be the ring alert type with FSK signaling.
- Each line is connected via an RJ11 6/4 way socket. Three cables are supplied with the Xn120 to connect to the exchange lines supplied by your Network Provider.

Xn120 System Telephones

There are two types of Xn120 System phones available.

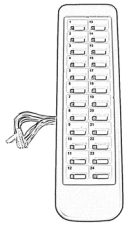
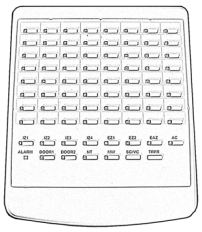
Feature	Available on the Xn120 Talk		Available on the Xn120 Vision	
Programmable Keys	Yes	12 with lamps 10 without lamps	Yes	12 + 10 with lamps
LCD Display	No		Yes	2 lines x 20 character
Hands free	No	Talkback only	Yes	
Accept 24 button console	No		Yes	
Wall mount kit	Yes	Built in	Yes	Built in
				

You can connect up to 8 Xn120 system telephones to any of the station connections. (If you need more telephones you will need to install optional cards). The Xn120 system telephones have feature keys and illuminated function keys that can be tailored to your own requirements.

The Xn120 system telephones with an LCD display will show information about who is calling you, the call you are on or the feature you are using.

- Each telephone is connected to the Xn120 via an RJ11 6/4 way socket. The cables are supplied with the telephone.

There are also two types of Xn120 Consoles available.

Feature	Available on the 24		Available on the 64	
Programmable Keys	Yes	24 with lamps	Yes	64 with lamps
Fixed feature keys	No		Yes	14 keys
Connection method	Connects into any Xn120 Vision phone.		Connects into any hybrid extension port via an RJ11 cable.	
Wall mount kit	No		No	
				

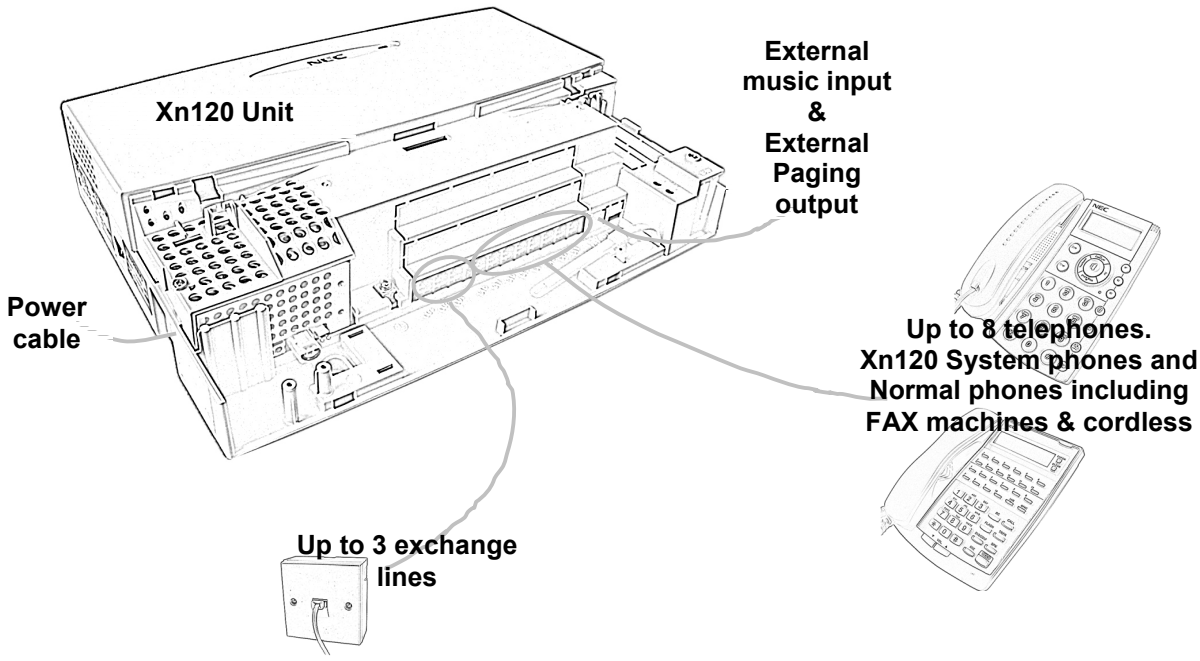
Normal Telephones

You can connect up to 8 normal telephones or cordless phones to any of the station connections.

- The telephones can be dial pulse or DTMF dialing.
- They can have Hook Flash or Timed Break Recall.
- The Xn120 can send Caller ID to the normal telephone.

System Connection Diagram

Diagram showing Xn120 unit, exchange line connections, Xn120 system phones and External music input/Paging output.



Optional Items	
008 Expansion Card 8 Extension ports Installed onto the main board in the Xn120 unit. **308 Expansion card** 3 Exchange lines + 8 Extension ports Installed onto the main board in the Xn120 unit. **2PGDU Card** Installed onto the main board in the Xn120 unit. For 2 door unit and 2 external page amplifiers, external MOH inputs, or audio input/output. 2 Relay contacts available that can be assigned to any of the door units or audio ports. **EXIFU Card** For adding expansion cabinets, Call Logging, Ethernet connection and CF card slot Installed onto the main board in the Xn120 unit.	**20OPBOX** For ISDN BRI cards. 2 slots available per unit. Plugs onto the right side of the Xn120 unit. **Xn120 Expansion cabinet** For more lines, stations and BRI. Provides the same card capacity as the main cabinet. Each expansion cabinet requires a dedicated power cable. Connected to the EXIFU card in the Main Xn120 unit via an RJ45 cable. **64DSS console** Provides 64 programmable keys and 14 fixed feature keys. Gives operator type functionality. **24DLS console** Provides 24 additional function keys for the 12TXD Xn120 phones.

Installation Procedure

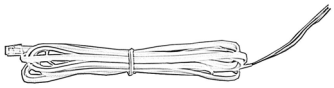
1 **Unpack all items and check for damaged or missing parts.** See page 7 for details.	
2 **Are you are replacing an existing telephone system ?** See page 8 for details.	If so, it is recommended that you do not disconnect all of the exchange lines or telephones until you are certain that the Xn120 is installed and operating correctly. You can move each exchange line to the Xn120 while you are testing at step 9.
3 **Mount the Xn120 system on the wall.** See page 9 for details.	***!*** Within suitable cabling distance from the exchange lines. ***!*** Within suitable distance from a power socket and Earth point. ***!*** Check the other installation considerations in section 3. ***!*** If you have any optional parts to install please check any installation considerations in the documentation supplied with each item.
4 **Connect the telephones.** See page 11 for details.	
5 **Connect the exchange lines.** See page 14 for details.	
6 **Connect the External MOH Device.** See page 15 for details.	
7 **Connect the External Paging Amplifier.** See page 16 for details.	
8 **Connect the power and switch on the Xn120.** See page 17 for details.	
9 **Test the system.** See page 19 for details.	
10 **Configure the Xn120 to the customer's requirements.** See page 21 for details.	
11 **Install any optional equipment.** See page 40 for details.	You can install each item in turn and test it before you install the next item.
12 **Consider the operation during power failure**	**! Important** Ensure that you can make/receive calls in the event of a power cut or system failure.

1- Unpack the System.

1 x Xn120 system
1 x Wall mounting template

1 x Power cord

4 x Fixing screws



3 x Exchange line cables (3 metre RJ11 to bare wire)
8 x Telephone cables (3 metre RJ11 to bare wire)
1 x External MOH/Paging cable (3 metre RJ11 to bare wire)
Getting Started Guide

Additional Items Required:

- Cross head screwdriver.
- 4 Wall fixing plugs suitable for the type of wall.
- Solid wire for extending telephone cabling:
  Recommended cable type: Twisted pair (CW1308 or similar specification)
  Conductor diameter: 0.4 to 0.6 mm
  Maximum cable length: (with 0.5 mm diameter cable)
  Xn120 system telephone – 300 metres
  Normal telephone – 1125 metres

If you need to extend the exchange line cables:

- Solid wire for exchange line cables:
- Recommended cable type: Twisted pair (CW1308 or similar specification)
- Conductor diameter: 0.4 to 0.6 mm

2- Replacing an Existing Telephone System

If you are replacing your existing telephone system with the Xn120 we recommend that you check the following.

- Do not disconnect all of the lines or extensions from your existing telephone system. If for any reason you have problems installing the Xn120 you will need your old system in working order to continue your business.
- If you plan to use existing telephone cabling within your building check :
    - The cable is similar to CW1308 specification (see the Glossary for help).
    - There are 4 wires (2 pairs) available to each Xn120 system phone location.
    - You will need an RJ11 socket for each Xn120 system phone and 64DSS console.
- Move the exchange lines / normal telephones one at time and test each one before moving over the next.

3- Wall Mount the Xn120 system

Installation Considerations:

- To avoid electric shock or damage do not plug in or turn on the system power before completing the installation.
- Avoid working with the system during electrical storms.
- Use the power cord supplied with the product.
- Do not bundle power cords together, the cords may overheat.
- Ensure the system has a suitable Earth Ground connection.

Environmental Considerations – Be sure the system is not:

- In direct sunlight or in hot, cold or humid places.
- In dusty areas or in areas where sulfuric gasses are produced.
- In places where shocks or vibrations are frequent or strong.
- In places where water or other fluids may come into contact with the equipment.
- In areas near electric welders or machines that emit high frequency radiation.
- Near computers, microwaves, air conditioners etc.
- Near radio antennas (including shortwave).

- If you are installing the optional expansion box or expansion cabinets ensure there is sufficient wall space and ventilation. Refer to the wall mounting diagrams below.

1 You will need a minimum of 560mm x 680mm (W x H) wall space for the Xn120 system.

The system is 360mm x 279mm (W x H)

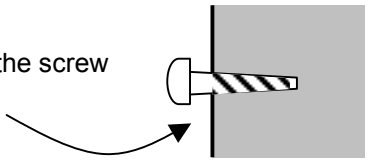
! You will need more space if you are installing the optional units:

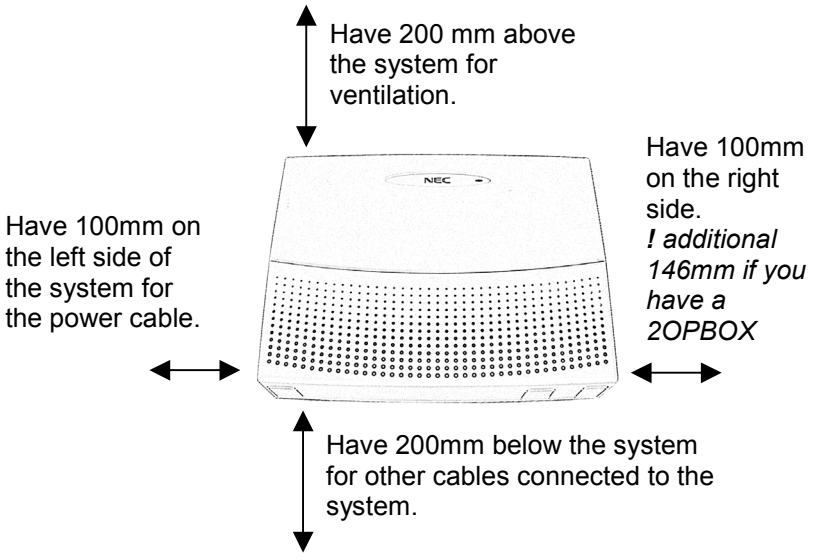
- 20OPBox
- Expansion cabinets

Refer to the installation instructions supplied with these units.

Use the wall mount template supplied to mark the four screw locations. Ensure that you use the correct wall plugs for the type of wall.

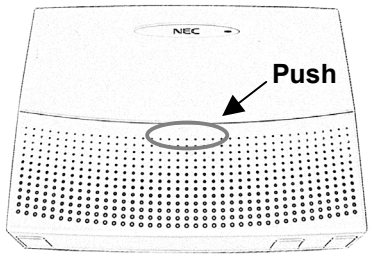
Leave approximately 3~5mm of the screw protruding from the wall.

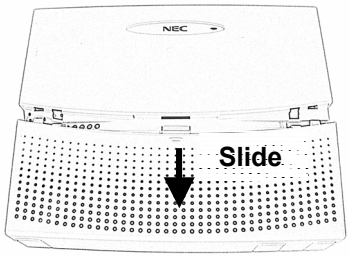




2

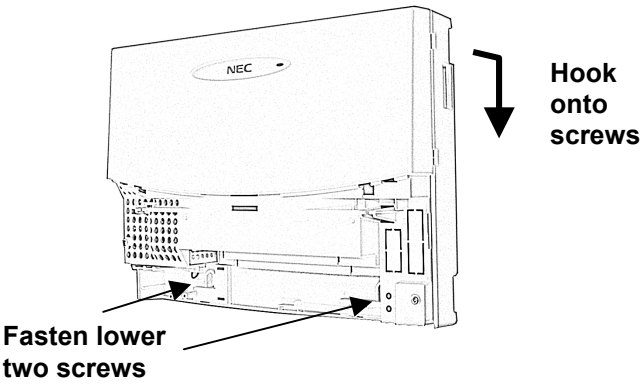
Remove the sub cover of the Xn120.





Hook the Xn120 onto the wall mount screws.

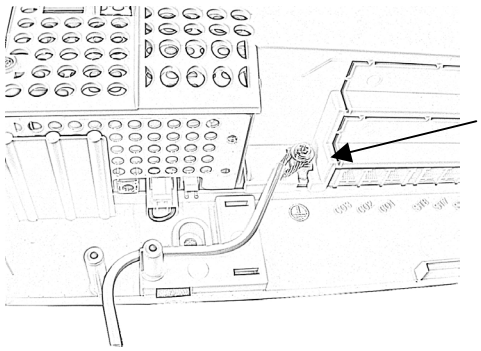
Tighten the lower screws to secure the unit to the wall.



3 Earth the Xn120 system.

Caution: If this cable is not installed or requires disconnection, then the telecommunication network connection(s), CO and/or ISDN, must be disconnected <u>first</u> from the Xn120.

Important. The system <u>must</u> have a permanent Earth Ground connection to a verified Earth point using a minimum of 2.5mm^2 green/yellow cable.
The Earth connection must have no other purpose than connecting to the Xn120 unit.



The Earth point is located on the left side under the sub cover.

4- Connect the Telephones

Precautions for Cabling:

- Do not run the cable with a power cable, computer cable etc.
- Do not run the cable near any high frequency generating equipment.
- Use cable protectors if the cables are run on the floor.
- Aerial distribution wiring is not allowed.

Connecting the Xn120 System Phones

The Xn120 system phones can be connected to any of the eight RJ11 telephone sockets labelled ST1 to ST8 in the Xn120 unit.

The Xn120 is supplied with RJ11 to bare wire cables for connection to optional distribution frames.

! Check Power Fail Operation later in this guide, ST8 can be used to provide a working telephone should the power be disconnected from the Xn120.

Use the line cord supplied with the system telephone.

The line cord supplied with the Xn120 system telephones can be plugged directly into the RJ11 sockets labelled ST1 to ST8 in the Xn120 unit.

OR

Use the RJ11 to bared wire cables (supplied with the Xn120) and RJ11 sockets.

If you need to extend the telephone cables:
Fit an RJ11 socket at the location the telephone is required, run a telephone cable back to the distribution frame. Connect to one of the sockets labelled ST1 to ST8 using one of the RJ11 to bared wire cables supplied.

- Ensure that you connect the 4 wires as shown otherwise the telephone will not initialize.
- Use CW1308 or similar telephone cable.
- Maximum cable length is 300 metres (with 0.5 mm diameter conductor).

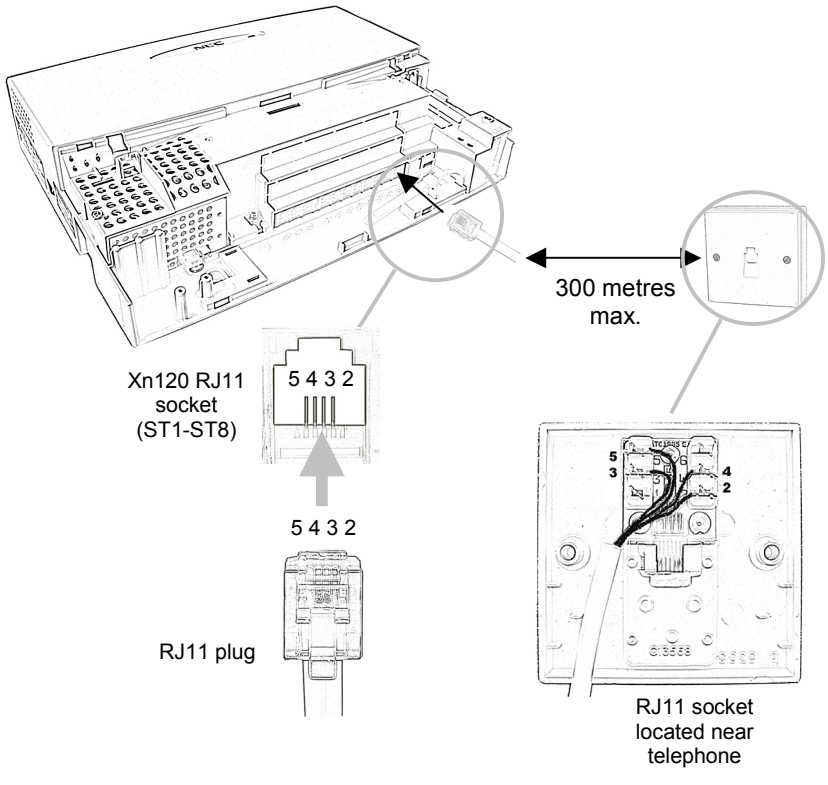
Connections:

Xn120 ST socket	RJ11 socket
Pin 2 black	Pin 2
Pin 3 red	Pin 3
Pin 4 green	Pin 4
Pin 5 yellow	Pin 5

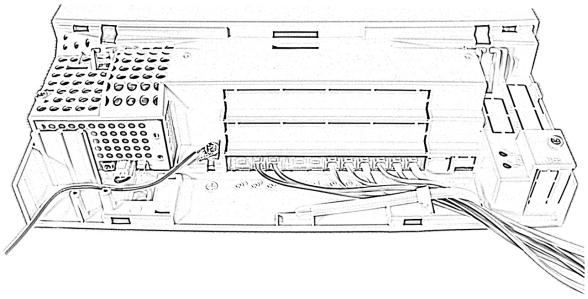
! The connections are polarity sensitive, you must connect as shown.

! Ensure that you use a separate twisted pair for the speech and data:
Pins 3 & 4 (speech)
Pins 2 & 5 (data)
This will ensure that you can reach the maximum cable length of 300 metres.

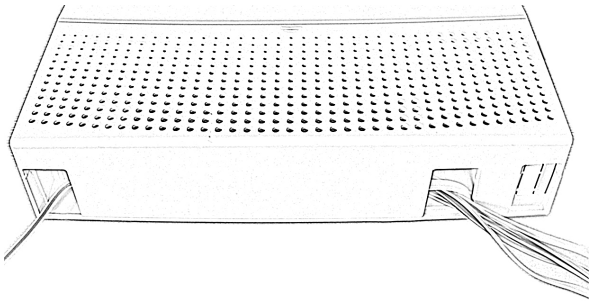
! Identify each RJ11 socket with its connection number (ST1 to ST8). This will help you configure the system later.



Route the cables into the lower side of the system. Use cable ties to secure the cables.



Remove the breakouts of the sub cover before re-fitting onto the system.



OR

Use the telephone cables supplied with the Xn120 and RJ45 sockets.

Refer to the diagram above for the pin numbering of the Xn120 RJ11 sockets.

Connections:

Xn120 ST socket	RJ45 socket
Pin 2 black	White/green
Pin 3 red	Blue/white
Pin 4 green	White/blue
Pin 5 yellow	Green/white

! The connections are polarity sensitive, you must connect as shown.

! Ensure that you use a separate twisted pair for the speech and data:
Pins 3 & 4 (speech)
Pins 2 & 5 (data)
This will ensure that you can reach the maximum cable length of 300 metres.

! Identify each RJ45 socket with its connection number (ST1 to ST8). This will help you configure the system later.

Connecting the Normal Phones

The normal phones can be connected to any of the eight RJ11 telephone sockets labelled ST1 to ST8 on the Xn120.

The Xn120 is supplied with RJ11 to bared wire cables for connection to optional distribution frames.

! Check Power Fail Operation later in this guide, ST8 can be used to provide a working telephone should the power be disconnected from the Xn120.

Use the line cord supplied.

If the line cord supplied with the telephone has an RJ11 plug it can be plugged directly into the RJ11 sockets labelled ST1 to ST8 in the Xn120 unit.

OR

Use the RJ11 to bared wire cables (supplied with the Xn120) and Line Jack Units.

If you need to extend the telephone cables:
Fit a Master type Line Jack Unit (LJU) at the location the telephone is required, run a telephone cable back to the distribution frame. Connect to one of the sockets labelled ST1 to ST8 using one of the RJ11 to bared wire cables supplied.

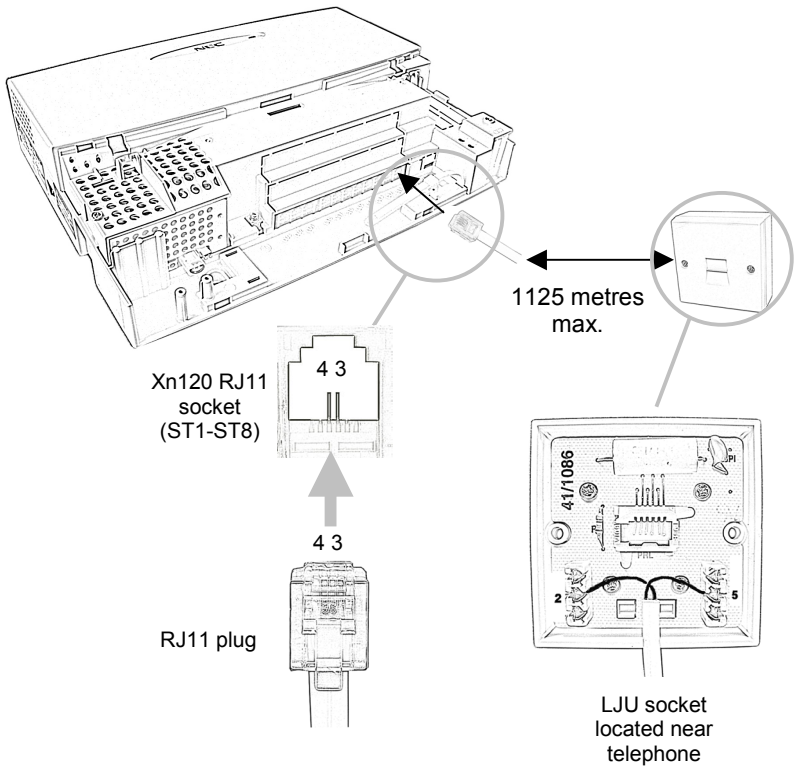
- Ensure that you connect the 2 wires as shown otherwise the telephone will not operate correctly.
- Use CW1308 or similar telephone cable.
- Maximum cable length is 1125 metres (with 0.5 mm diameter conductor).

Connections:

Xn120 ST socket	LJU socket
3 red	2
4 green	5

! The connections are not polarity sensitive.

! Ensure that you use a twisted pair for the speech:
Pins 3 & 4 (speech)
This will ensure that you can reach the maximum cable length of 1125 metres.



! Identify each line jack unit with its connection number (ST1 to ST8). This will help you configure the system later.

Route the cables into the lower side of the system. Use cable ties to secure the cables.

See diagram on page 12.

5- Connect the Exchange Lines

The exchange lines can be connected to any of the three RJ11 sockets labelled CO1 to CO3.

Make a note of each exchange line number (i.e. the number dialed to ring the line) and its CO connection to the Xn120. You will need this when you configure the Xn120.

Xn120 CO number	Exchange line dialing number (e.g. 01509 643100)
CO1	
CO2	
CO3	

! Check Power Fail Operation later in this guide, CO1 can be used to provide a working telephone should the power be disconnected from the Xn120.

Precautions for Cabling:

- Do not run the cable with a power cable, computer cable etc.
- Do not run the cable near any high frequency generating equipment.
- Use cable protectors if the cables are run on the floor.
- Aerial distribution wiring is not allowed.
- Use lightning protectors for each exchange line.

Use the cables supplied with the Xn120.

The exchange line cables supplied with the Xn120 can be used to connect to the lines supplied by your Network Provider.

! Ensure each line has a lightning protection device included.

OR

Use pre-formed telephone cables (not supplied).

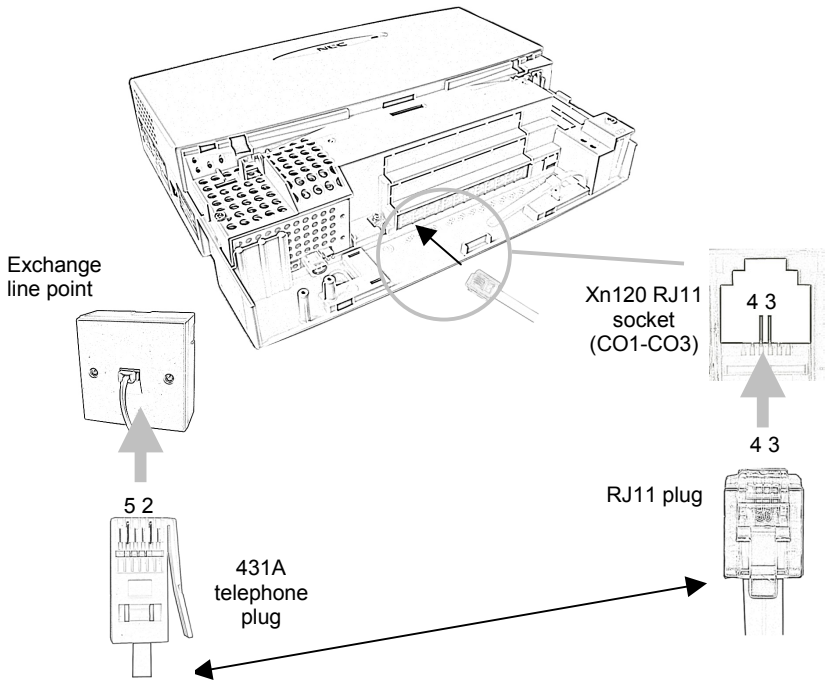
Connections:

Xn120 CO socket	LJU socket
3 red	2
4 green	5

! The connections are not polarity sensitive.

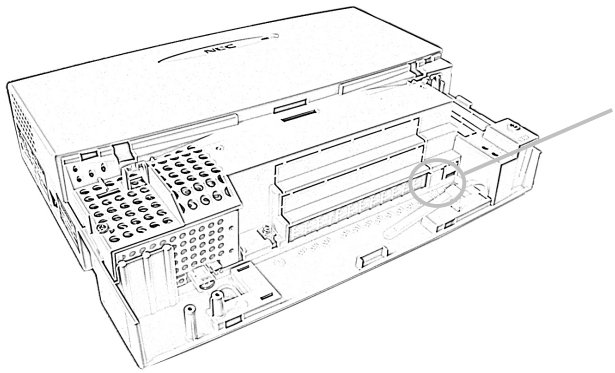
If the exchange lines are terminated with an LJU you can use a separate pre-formed cable to connect each line to a CO socket of the Xn120 unit.

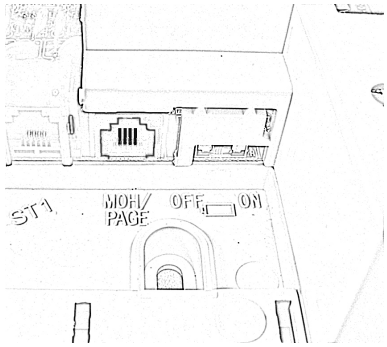
- Ensure that you connect the 2 wires as shown otherwise the line will not operate correctly.
- Use CW1308 or similar telephone cable.
- Fit lightning protectors to each line.



6- Connecting the External Music on Hold Device

The external music device is connected to the RJ11 socket labelled MOH/PAGE located under the sub cover to the right of the ST1-ST8 sockets.
An RJ11 cable is supplied with the system.
The external music device is not supplied with the Xn120.





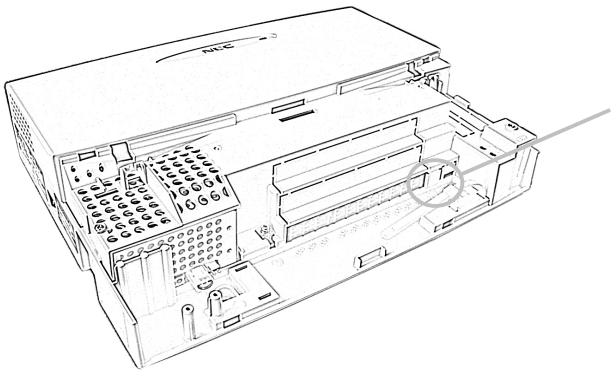
The connections of the RJ11 plug supplied with the Xn120:

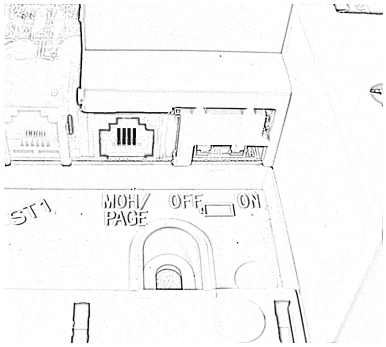
Xn120 MOH/PAGE socket	Description	Specification
3 red 4 green	External MOH input	Impedance: 600 Ohm @1KHz Nominal input level: 250mV (-10dBm) Maximum input level: 1V RMS

! The connections are not polarity sensitive.

7- Connecting the Xn120 to an External Paging System.

The external paging system is connected to the RJ11 socket labelled MOH/PAGE located under the sub cover to the right of the ST1-ST8 sockets.
An RJ11 cable is supplied with the system.
The external paging system is not supplied with the Xn120.





The connections of the RJ11 plug supplied with the Xn120:

Xn120 MOH/PAGE socket	**Description**	**Specification**
2 black 5 yellow	External Paging output	Impedance: 600 Ohm @1KHz Nominal output level: 250mV (-10dBm) Maximum output level: 400mV RMS

! The connections are not polarity sensitive.

8- Connect the Power & System Start Up

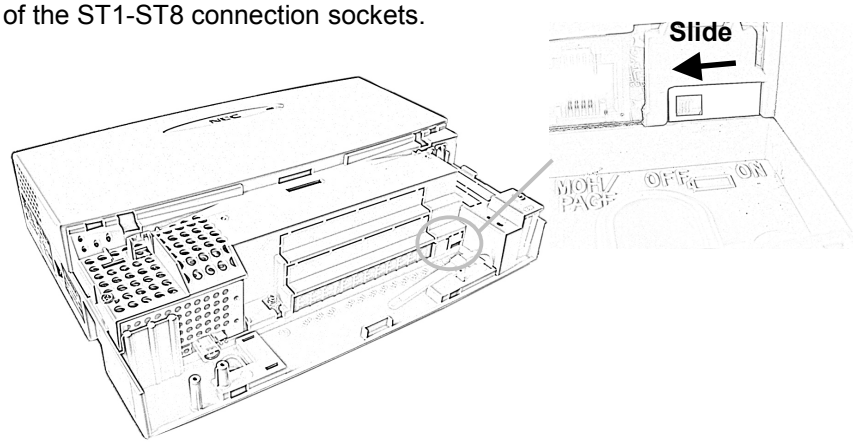
The power cable is plugged into the left side of the unit via an IEC-C13 socket using the cable supplied with the Xn120.

Before connecting the power:

- Ensure the power switch on the left side of the unit of OFF.
- Ensure the power is switched off at the source.

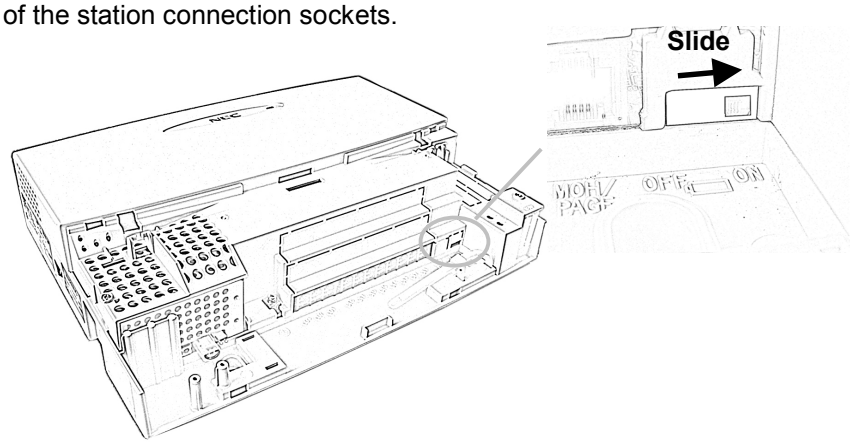
System Start Up – First Time

! The first time you start up the Xn120 it is important to clear the system memory. This will ensure that the system is set to the default configuration.

1	Set the NORMAL switch to the OFF position. This will ensure that the system is set to the default configuration.	The NORMAL switch is located under the sub cover on the right side of the ST1-ST8 connection sockets. 
2	Switch ON the power at the source. Switch ON the power switch on the left side of the Xn120 unit.	The lamp within the cover of Xn120 will come on
3	Wait for 2 minutes while the system starts up.	The Xn120 system telephones will 'click' while the system starts up. If you have a Xn120 system telephone connected that has an LCD display it will show: SUN 0 0 00AM while the system is starting up.
4	When the start up is complete the Xn120 phones will show time and date. You can set the time/date when you configure the system, see later in this guide.	If you have a Xn120 system telephone connected that has an LCD display it will show the time/date, for example: MON 13 9:34AM 200 EXT 200 when the system has started up successfully.

5 ***! Important***
Set the NORMAL switch to the ON position.

The NORMAL switch is located under the sub cover on the right side of the station connection sockets.



Switching the Xn120 OFF

! Be sure that no calls are in progress otherwise they will be cut off.
Turn the power switch off on the left side of the Xn120 unit.

System Start Up – Retain Customer Configuration

This is the normal operation for powering the Xn120 on.
Before you power on the system check that the NORMAL switch is set to ON. This will ensure that the system memory retains your configuration.

System Start Up – Default Configuration

CAUTION! This will erase any customer configuration in the battery backed memory.
Before you power on the system check that the NORMAL switch is set to OFF. This will ensure that the system is set to the default configuration.

9- Test the System

Test the Xn120 System Telephones
At each phone in turn.

1	Press the SPK button.	If you hear system dialing tone the phone has initialised correctly, press SPK to clear. If you do not hear dialing tone move to step 2.
2	Check the connections.	Check the connections from the phone to the Xn120, ensure all 4 wires are connected as shown in 4- Connect the Telephones on page 11.
3	Plug phone into the ST connection at the Xn120 unit.	If you have used telephone cable and RJ11 sockets to extend the connections. Plug the phone directly into the ST connection at the Xn120 unit using the line cord supplied with the system phone. If the phone does not initialise correctly then move to step 4.
4	Swap the phone.	Try another Xn120 system phone plugged directly into the ST connection using the line cord supplied with the phone.

Test the Normal Telephones
At each phone in turn.

1	Lift the handset.	If you hear system dialing tone the phone is working correctly. If you do not hear dialing tone move to step 2.
2	Check the connections.	Check the connections from the phone to the Xn120, ensure both wires are connected as shown in 4- Connect the Telephones on page 11.
3	Plug phone into the ST connection at the Xn120 unit.	If you have used telephone cable and LJU sockets to extend the connections. Plug the phone directly into the ST connection at the Xn120 unit using an RJ11 line cord (ensure the line cord connections are correct). If you do not hear dial tone when you lift the handset then move to step 4
4	Swap the phone.	Try another normal phone plugged directly into the ST connection using the RJ11 line cord.

Test the Exchange Lines
Test each line in turn, only test the lines that you have connected.
Use a Xn120 system phone that you have previously confirmed is working correctly to test the exchange lines.

1	**To test CO1** At a Xn120 system phone lift the handset and dial 805 01	If you hear exchange dialing tone the line is working correctly. If you do not hear exchange dialing tone move to step 2.
2	Check the connections.	Check the connections from the exchange line to the Xn120, ensure both wires are connected to CO1 as shown in 5- Connect the Exchange Lines on page 14.

3	**To test CO2** At a Xn120 system phone lift the handset and dial 805 02	If you hear exchange dialing tone the line is working correctly. If you do not hear exchange dialing tone check the connections from the exchange line to the Xn120, ensure both wires are connected to CO2 as shown in 5- Connect the Exchange Lines on page 14.
4	**To test CO3** At a Xn120 system phone lift the handset and dial 805 03	If you hear exchange dialing tone the line is working correctly. If you do not hear exchange dialing tone check the connections from the exchange line to the Xn120, ensure both wires are connected to CO3 as shown in 5- Connect the Exchange Lines on page 14.

10- Configure the Xn120

The getting started guide will cover the most frequently used configuration options. For advanced configuration please refer to the Xn120 System Manual.

Before you configure your system it is important that you:

- Ensure the power will not be turned off to the Xn120, otherwise you will lose any changes you have made that were not previously saved to battery backed memory.
- Ensure that the NORMAL switch is set to ON before you commence, otherwise you could lose your entire configuration. Refer to System Start Up for information.
- Have a diagram of your exchange lines and telephones.
- Plan your requirements before you start.

While you configure your system it is important that you:

- Exit configuration mode periodically, this will save your changes into battery backed memory. They will not be lost if the power is removed.
- Fill out the configuration sheets as you go so that you have a record of your configuration.
- Make small changes, exit configuration mode and test the changes. Do not make all your changes at once as this can make testing very difficult.
- Record your changes as you can only 'undo' them by re-entering the previous values.
- Do not unplug the phone. If it is unplugged by mistake then plug it back in, wait for the display to show time and date and then press HOLD to return to the configuration mode. Your changes will not be lost.

The Xn120 consists of exchange lines and telephones connected to the 008/308 cards you have installed. Within the Xn120 configuration the exchange lines are referred to as trunks and the telephones as extensions. When the Xn120 is started up as shown in this guide all the equipment will operate, it is not necessary to make any changes to the system configuration.
With the default settings:

- Each telephone will function and is assigned an extension number.
- Calls received on the exchange lines will ring at telephone number 200.
- Each telephones can make exchange line calls by dialing 9.
- Each exchange line is presented at a Function Key with busy lamp indication.

How to change the Xn120's Configuration

The configuration is stored in battery backed memory within the Xn120. You can change the configuration via any Xn120 system phone that has an LCD display.
When you have made your changes the Xn120 will automatically save the configuration into memory.

Check the User Guide for other options

There are some options that are set via normal service codes, for example:
System Phone Book – with service code 853.
Telephone Names – with service code 800.

Entering Configuration Mode

- You will need a Xn120 system phone with an LCD display.
- The phone should be idle (no call in progress).

1	Press SPK (do not lift the handset)	You will see -	MON 27 16:28PM 200 EXT200
2	Dial Service Code # * # *	You will see -	Password
3	Dial password 12345678	You will see -	Password@@@@@@@@
4	Press HOLD	You will see -	_Program Mode

Selecting the Program Number

- Each configuration setting within the Xn120 is identified by a Program Number (eg 22-05-01).

1	Ensure the LCD display shows:	_Program Mode
2	If it is not displayed press the DC key several times to step back.	
3	Now enter the Program Number e.g 22 05 01 with the numeric keys of the Xn120 phone.	22-05-01 Trunk1 Mode1 IRG =1

Using the System Phone Keys to Make Changes

- During configuration mode use the keys at the system phone to select the program item and change its value etc.
- The LCD display will show the current program item, the editing point is shown by a flashing curser.

SPK	Save changes and exit configuration mode.
Numeric keys 1 to 9 * and #	Alphanumeric entry keys. Entered at the curser location.
HOLD	Confirm the entry and step on to the next.
DC	Step back one level. Current entry is not confirmed.
DND/CONF	Delete one character to the left of the curser.
CLEAR	Delete all characters to the right of the curser.
LND	Move the curser one character to the left.
OPAC	Move the curser one character to the right.
Vol. up	Confirm the entry and step to the next item shown at the top right of the display.
Vol. down	Confirm the entry and step to the previous item shown at the top right of the display.
FLASH	Move the curser to the next entry point.

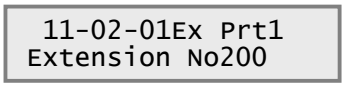
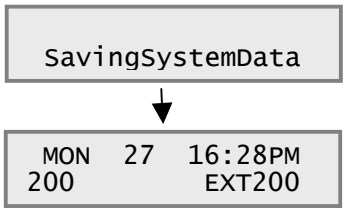
Making Changes

- With the Program Number entered and the curser positioned at the first entry you can change the value by entering the new one with the numeric keys of the Xn120 phone.
- When you have entered the new value press HOLD to confirm it and move to the next entry.
- You can also press HOLD to step on to the next if you did not make any changes to the entry.

Exiting Configuration Mode

- When you exit configuration mode your changes will be saved into the battery backed memory.

! Until you exit any changes you have made are stored in temporary memory and will be lost if the power is switched off to the Xn120.

1	Press HOLD to confirm your current entry.	
2	Press DC several times.	
3	Press SPK. When the save is complete the phone returns to normal operation.	

Time & Date Setting

You may want to change this setting if:

- The time and date on the Xn120 phones is not correct.

Program 10-01-01
Time and date setting for the system.

```
10-01-01
Year          03
```

- Enter the last two digits of the year (e.g 04) you can overwrite the current entry.
- Press HOLD to confirm the entry and step to the next option.

```
10-01-02
Month         11
```

- Enter the two digits of the month (01-12).
- Press HOLD to confirm the entry and step to the next option.

```
10-01-03
Day           24
```

- Enter the two digits of the date (01-31).
- Press HOLD to confirm the entry and step to the next option.

```
10-01-04
Week(1:Sun)    4
```

- Enter one digit for the day of the week (1-7).
  1 = Sunday, 2 = Monday, 3 = Tuesday etc.
- Press HOLD to confirm the entry and step to the next option.

```
10-01-05
Hour          16
```

- Enter the two digits for the hour (24h format).
- Press HOLD to confirm the entry and step to the next option.

```
10-01-06
Minute        48
```

- Enter the two digits for the minutes (00-59).
- Press HOLD to confirm the entry and step to the next option.

```
10-01-07
Second        00
```

- Enter the two digits for the seconds (00-59).
- Press HOLD to confirm the entry and step to the next program number.
- Press DC several times when you are done to return to the Program Mode.
- (Press SPK to save changes and exit if you are finished).

Telephone Ringing Assignment.

You may want to change this setting if:

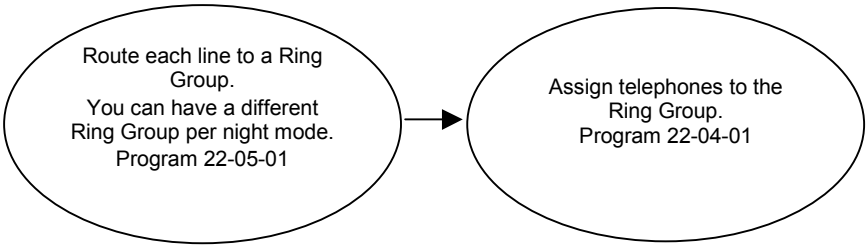
- You want one, or more, exchange lines to ring at one or more telephones.
- You want a dedicated exchange line to ring at a specific telephone.
- You want exchange lines to ring at a different locations throughout the day or at the weekend.

System Operation:

The ringing assignment is achieved by pointing the exchange line to Incoming Ring Groups. The ring group then contains the telephones that will ring.

- Route each exchange line to an Incoming Ring Group (IRG) in Program 22-05-01. A line can route to a different IRG in each night mode.
- You then place telephones into IRG's in program 22-04-01, a phone can be a member of more than one IRG. Up to 32 telephones can be entered per IRG.

The default operation is for each exchange line to ring at telephone 200.
The day/night mode is selected by keys at a Xn120 telephone, simply press the key that corresponds to the mode you require.



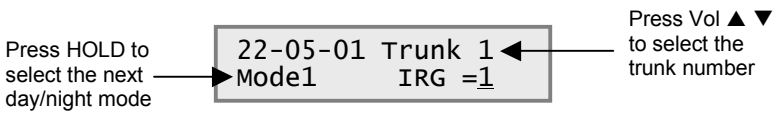
1 **Program 22-05-01**

The Incoming Ring Group (IRG) number is assigned to the exchange lines.

Different IRG's can be assigned to each exchange line to give different ring assignment throughout the day.

Default Setting:
Each line (CO1, CO2 & CO3) is assigned to Incoming Ring Group (IRG) number 1.

Default Setting:
There are up to 8 settings available.
IRG number 1 is used for all 8 settings.
Therefore, each exchange line will ring at IRG 1 (and therefore telephone number 200, regardless of the time of day.

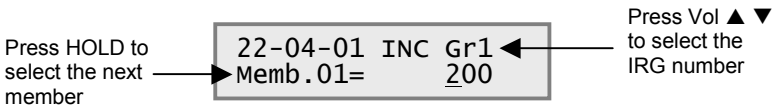


- Enter the new IRG number (1-25), you can overwrite the current entry.
- To remove an entry press CLEAR.
- Press HOLD to confirm the entry and step to the next day/night mode.
- Press DC several times when you are done to return to the Program Mode.
- (Press SPK to save changes and exit if you are finished).

2 **Program 22-04-01**

The telephones are placed into ring groups (IRG's).

Default Setting:
Telephone number 200 is a member of IRG number 1.

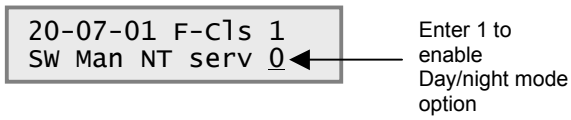


- Enter the new telephone number, you can overwrite the current entry.
- To remove an entry press CLEAR.
- Press HOLD to confirm the entry and step to the next member.
- Press DC several times when you are done to return to the Program Mode.
- (Press SPK to save changes and exit if you are finished).

3 **Program 20-07-01**

Turn on the day/night mode option.

Default Setting:
Day/night modes can not be changed by any telephones.



- Enter 1 to enable the option, you can overwrite the current entry.
- Press HOLD to confirm the entry.
- Press DC several times when you are done to return to the Program Mode.
- (Press SPK to save changes and exit if you are finished).

4 **Assign a key to each mode**

Choose a telephone that will be able to change the day/night mode.

! Exit Configuration Mode. The keys are set at the telephone itself, not within Xn120 configuration mode.

Default Setting:
There are no keys set to day/night modes on any of the telephones.

1. At the telephone that you want to be able to change the day/night mode press SPK.
2. Dial service code **851**
3. Press the Programmable Function Key you want to set (its current setting is shown if you have an LCD display). Use one of the block of 10 keys for your day/night mode keys.
4. Dial **09** followed by the mode number 1 to 8.

1 = Day	5 = Day 2
2 = Night 1	6 = Night 2
3 = Mid-Night 1	7 = Mid-Night 2
4 = Rest 1	8 = Rest 2

5. Repeat steps 3. and 4. for further keys/modes.

See also:
Outgoing Exchange Line Access to give a telephone a dedicated line for outgoing calls.

Configuration Sheet: Telephone Ringing Assignment

With defaults shown.

Place the telephones into Ring Groups.

IRG Number	List of telephones that will ring Prg 22-04-01
IRG 1	Default=200
IRG 2	
IRG 3	
IRG 4	
IRG 5	
IRG 6	
IRG 7	
IRG 8	
IRG 9	
IRG 10	

Up to 25 IRG's are available, only 10 are listed as this is normally sufficient.
Up to 32 telephones can be entered per IRG. Try to keep the number of ringing telephones to a minimum.

Assign the Ring Groups to the Exchange Lines.

Day/Night Mode Number	Trunk 1 Prg 22-05-01 default=IRG1	Trunk 2 Prg 22-05-01 default=IRG1	Trunk 3 Prg 22-05-01 default=IRG1
1			
2			
3			
4			
5			
6			
7			
8			

Turn on the ability to change the mode.

Mode Change	Setting Default=0 (off)
20-07-01	

Assign Keys at the telephone(s) that will change the mode. A phone with an LCD is preferable.

- This is not done within the Xn120 Configuration mode, Keys are changed by dialing a Service Code at the telephone itself. This is explained further in the User Guide.
- You will need a separate key for each mode you are using.
- The key for the current mode will light red, to change the mode just press the appropriate key.

Telephone	Mode 1	Mode 2	Mode 3	Mode 4	Mode 5	Mode 6	Mode 7	Mode 8
	Key	Key	Key	Key	Key	Key	Key	Key
	Key	Key	Key	Key	Key	Key	Key	Key

Note:

- Plan your requirements as the ring assignment is the most important operation of your telephone system. It's your customers that will be ringing you!
- Try to keep the number of ring modes to a minimum, 3 per day is sufficient (normal day working, lunch times and evenings for example). You may want an additional mode to cover the weekend.
- Do not have too many phones in a ring group, remember that calls can be answered by pressing the Function Keys at the Xn120 phones, see also Call Pickup in the Feature Guide.

Example Configuration.

- You have 3 exchange lines (trunks) connected.
- Trunks 1 & 2 (CO1) needs to ring at extensions 200 and 202 during the day time working.
- At lunch times they should ring at extension 205.
- In the evenings and at weekends they should go to an answer phone, the answer phone is connected to ST8 so is extension number 207.
- Trunk 3 (CO3) is a dedicated line and should go to telephone 206 at all times.
- Telephone 200 will have Function keys to change the mode for day, lunch etc.

Step 1
Place the telephones into an IRG for each of the modes (day time, lunch time, evenings and weekends).

IRG Number	**List of telephones that will ring** Prg 22-04-01
IRG 1	200, 202 (day time)
IRG 2	205 (lunch time)
IRG 3	207 (evenings and weekends)
IRG 4	206 (at all times)

Step 2
Assign the IRG number to each trunk for the modes you will use.

Mode	**Trunk 1** Prg 22-05-01	**Trunk 2** Prg 22-05-01	**Trunk 3** Prg 22-05-01
1 Day	IRG 1	IRG 1	IRG 4
2 Lunch	IRG 2	IRG 2	IRG 4
3 Evening & Weekend	IRG 3	IRG 3	IRG 4

Step 3
Turn on the ability to change the ring mode for day time, lunch time, evenings etc.

Mode Change	**Setting**
20-07-01	1 (on)

Step 4
Assign modes 1 (Day), 2 (Lunch) and 3 (Evenings/Weekends) to keys at telephone 200.

6. At telephone 200 press SPK.
7. Dial service code **851**
8. Press Key 7 (Its current setting is shown if you have an LCD display).
9. Dial **09** followed by **1** for the mode number.
10. Repeat steps 3. and 4. for Key 8 = mode 2 and Key 9 = mode 3.

Telephone	**Mode 1**	**Mode 2**	**Mode 3**
200	Key 7	Key 8	Key 9

Telephone Ringing Style

You may want to change this setting if:

- You want to change the ringing style of outside and internal calls to telephones.

System Operation:
The ringing patterns are set for the system by Program 20-15-01
The default setting is:
Outside calls have a single ring pattern of 2 seconds on / 1 second off.
Internal calls have a double ring pattern of 0.4 seconds on / 0.2 seconds off / 0.4 seconds on / 2 seconds off.

1 **Program 20-15-01**

20-15-01 sets the ring pattern for outside calls.
(Most users would expect a double ring for outside calls so set this option to 8)

```
20-15-01
TRK Normal INC 8
```

- Enter the ring pattern for outside calls, you can overwrite the current entry. (3 is a single ring, 8 is a double ring).
- Press HOLD to confirm the entry and step to the next option.
- Leave this item set to 8, Press HOLD to step to the next item.

```
20-15-03
Internal INC   3
```

20-15-03 sets the ring pattern for internal calls.
(Most users would expect a single ring for internal calls so set this option to 3)

- Enter the ring pattern for internal calls. (3 is a single ring, 8 is a double ring).
- Press HOLD to confirm the entry and step to the next option.
- Press DC several times when you are done to return to the Program Mode.
- (Press SPK to save changes and exit if you are finished).

Internal Call Ringing Mode

You may want to change this setting if:

- You want to change the way internal calls to telephones are presented. Internal calls can either ring the phone or voice announce where the caller can speak directly to the loudspeaker of the phone they are calling

System Operation:
The mode is set for the system by Program 20-02-12
The default setting is Voice Announce mode.

1 **Program 20-02-12**
Select the mode for internal calls.

! Most users prefer ring mode so set this option to 1.

```
20-02-12
ICM Call Type   1
```

- Enter the mode for internal calls, you can overwrite the current entry. (1 is Ring mode, 0 is Voice Announce mode).
- Press HOLD to confirm the entry.
- Press DC several times when you are done to return to the Program Mode.
- (Press SPK to save changes and exit if you are finished).

Outgoing Exchange Line Access

You may want to change this setting if:

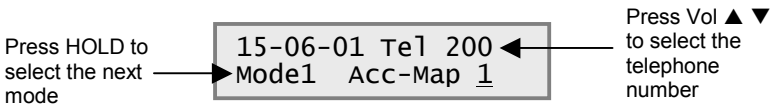
- You want a dedicated exchange line for one of the telephones (eg FAX and PDQ machines).

System Operation:
Each telephone is assigned a Trunk Access Map (TAM) number.
The TAM number is then given the access properties for each of the exchange lines.
The default operation is that all telephones have access to any exchange line.

1 **Program 15-06-01**
Give the telephone a TAM number.

You can specify a different TAM number for each day/night mode.
See Changing the Telephone Ringing Assignment for the modes you may be using.

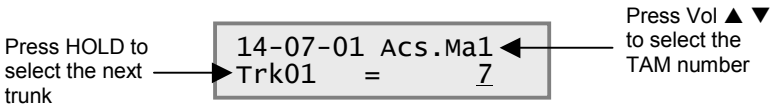
Default Setting:
All telephones have TAM number 1.



- Enter the TAM number (1-51) for each mode (1-8), you can overwrite the current entry.
- Press HOLD to confirm the entry and step to the next mode.
- Press DC several times when you are done to return to the Program Mode.
- (Press SPK to save changes and exit if you are finished).

2 **Program 14-07-01**
Give each exchange line the access properties for the TAM number.

Default Setting:
Each exchange line (CO1, CO2 & CO3) has full access (Property type 7) for TAM number 1.
Therefore every telephone can access any of the trunks.



- Enter the access properties (0-7) for each trunk, you can overwrite the current entry.
  0 – No access
  1 – Outgoing only
  2 – Incoming only
  3 – Retrieve held call only
  4 – Outgoing and retrieve held call
  5 – Incoming and retrieve held call
  6 – Incoming and outgoing
  7 – Incoming, outgoing and retrieve held call
- Press HOLD to confirm the entry and step to the next mode.
- Press DC several times when you are done to return to the Program Mode.
- (Press SPK to save changes and exit if you are finished).

See Also:
Changing the Telephone Ringing Assignment.

Configuration Sheet: Outgoing Exchange Line Access

With defaults shown.

Give each telephone a TAM number.

Prg 15-06-01	**TAM Number for each day/night mode** Default=TAM1 for all modes							
Telephone	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
200								
201								
202								
203								
204								
205								
206								
207								

There are 51 TAM numbers available.

Give each exchange line the access properties for the TAM number.

Prg 14-07-01			
TAM Number	**Trunk 1**	**Trunk 2**	**Trunk 3**
1	7	7	7
2	0	0	0
3	0	0	0
4	0	0	0
5	0	0	0

Values available:
0 – No access
1 – Outgoing only
2 – Incoming only
3 – Retrieve held call only
4 – Outgoing and retrieve held call
5 – Incoming and retrieve held call
6 – Incoming and outgoing
7 – Incoming, outgoing and retrieve held call

Although there are 51 TAM numbers available only 5 are listed as this is normally sufficient.

Caller ID

You will need to enable this setting if:

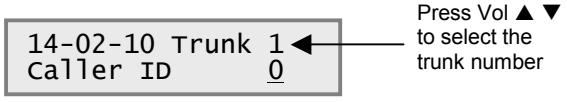
- You have Caller ID service supplied on your outside lines.
- You have normal telephones that are Caller ID compatible.

The Xn120 can detect the Caller ID and display it on the LCD display of the Xn120 system phones.
It can also be available at a normal phone that is Caller ID compatible.

System Operation:
You will need turn on the Caller ID detection for each trunk that it will be received on.
You will also need to turn on Caller ID for each of the normal telephones that are Caller ID compatible.

Program 14-02-10
Turn on Caller ID for each trunk.

Default Setting:
14-02-10 is set to 0 (Caller ID is turned off) for each trunk.

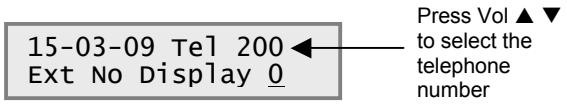


- For each trunk enter 1 to turn on Caller ID, you can overwrite the current entry.
- Press HOLD to confirm the entry and step to the next option.
- Press DC several times when you are done to return to the Program Mode.
- (Press SPK to save changes and exit if you are finished).

Program 15-03-09
Turn on Caller ID for each normal telephone that is Caller ID compatible.

You do not need to change this option for the Xn120 system phones.

Default Setting:
15-03-09 is set to 0 (Caller ID is turned off) for each telephone.



- For each telephone enter 1 to turn on Caller ID, you can overwrite the current entry.
- Press HOLD to confirm the entry and step to the next option.
- Press DC several times when you are done to return to the Program Mode.
- (Press SPK to save changes and exit if you are finished).

See Also:
There are no other related settings.

Configuration Sheet: Caller ID

With defaults shown.

Turn on the Caller ID for each trunk.

Prg 14-02-10	
Trunk number	**Setting** Default= 0 Off
Trunk 1	
Trunk 2	
Trunk 3	

Turn on the Caller ID for each normal telephone.

Prg 15-03-09	
Telephone	**Setting** Default=0 Off
200	
201	
202	
203	
204	
205	
206	
207	

Recall for Normal Telephones

You may want to change this setting if:

- You have normal telephones connected and the RECALL key does not work correctly. This is highlighted when you press the RECALL key but the call is not placed on hold.
- The RECALL is also referred to as Timed Break Recall (TBR).

System Operation:

The Xn120 must be configured with the correct RECALL timing that matches the normal telephones that you have connected.

Program 82-04-04

Set the system to detect a RECALL duration of 70 to 125mS (for normal UK time break recall operation).

You will need to change three options within this program.
82-04-04=13
82-04-07=14
82-04-08=25

Default Setting:

The Xn120 will accept a RECALL duration of 105mS to 1000mS

```
82-04-04
Max.Break TM 13
```

- Change the setting to 13 (this is equivalent to 65mS).
- Press HOLD 3 times to confirm the entry and step to the next option.

```
82-04-07
Max.Break TM 14
```

- Change the setting to 14 (this is equivalent to 70mS).
- Press HOLD to confirm the entry and step to the next option.

```
82-04-08
Max.Break TM 25
```

- Change the setting to 25 (this is equivalent to 125mS).
- Press HOLD to confirm the entry and step to the next option.
- Press DC several times when you are done to return to the Program Mode.
- (Press SPK to save changes and exit if you are finished).

Configuration Sheet: RECALL Timing

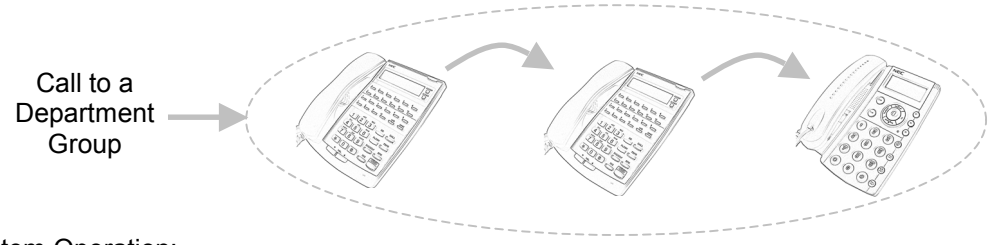
With defaults shown.

	82-04-04 default=20 (100mS)	**82-04-07** default=22 (105mS)	**82-04-08** default=200 (1000mS)
Setting			
Equivalent duration (mS)			

Department Groups

You may want to change this setting if:

- You have people that work within a group and you want to be able to call anyone within the group. The call will ring at anyone that is available within the group. If they do not answer, the call will step to the next member.



System Operation:

The telephones are placed into Department groups. There are 32 groups available.
The group is given a number (pilot number) that you dial to reach the group.
You can choose the following options for each group.

- How the calls will ring around the group – either in a set order of priority or randomly at any telephone.
- Try each telephone once or keep hunting – your call can ring at each available telephone in the group and if not answered stay at the last member or keep trying each member.
- How long each member rings before the call will step on to the next one available.

Program 16-02-01
Place the telephones into a department group.

A telephone can be a member of one group.

Priority is in order 1-99 (high-low)

Default Setting:
All telephones are in department group 1

```
16-02-01 TEL 200
Extension Grp  1
```

Press Vol ▲ ▼ to select the telephone number

- For each telephone enter the group number (1-32) that it is a member of, you can overwrite the current entry.
- Press HOLD to confirm the entry and step to the priority option.

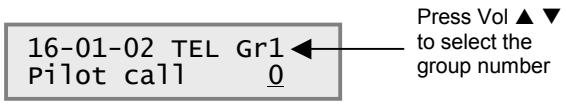
```
16-02-02 TEL 200
Priority       1
```

Press Vol ▲ ▼ to select the telephone number

- For each telephone enter the priority number (1-99), you can overwrite the current entry.
- Press HOLD to confirm the entry and step to the next telephone.
- Press DC several times when you are done to return to the Program Mode.
- (Press SPK to save changes and exit if you are finished).

Program 16-01-02
Select how calls ring around the department group.

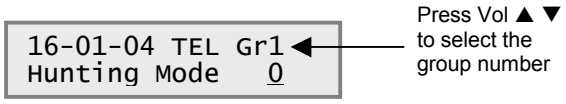
Default Setting:
Calls ring in priority order within the department group.



- For each group select the ring mode, you can overwrite the current entry.
  0 = Priority order
  1 = Random order
- Press HOLD to confirm the entry and step to the next option.
- Press DC several times when you are done to return to the Program Mode.
- (Press SPK to save changes and exit if you are finished).

Program 16-01-04
Select how many times the calls try each member of the department group.

Default Setting:
Calls try each telephone once.

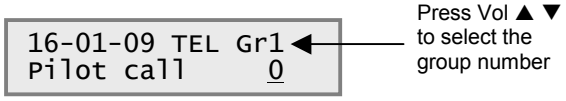


- For each group select the hunting mode, you can overwrite the current entry.
  0 = Calls try each telephone once
  1 = Calls continue trying the telephones
- Press HOLD to confirm the entry and step to the next option.
- Press DC several times when you are done to return to the Program Mode.
- (Press SPK to save changes and exit if you are finished).

Program 16-01-09
Select how long calls ring at each member of the department group.

You can use this option to turn off the step on operation by setting the time to 0 seconds.

Default Setting:
Calls ring each member for 15 seconds.



- For each group select the ring duration (0-64800 seconds), you can overwrite the current entry.
  0 seconds will stop the call stepping on.
- Press HOLD to confirm the entry and step to the next option.
- Press DC several times when you are done to return to the Program Mode.
- (Press SPK to save changes and exit if you are finished).

Program 11-07-01
Give the department group a pilot number.

Try to use a number that is easy to remember.
For example use:
Pilot number 501 for group 1
Pilot number 502 for group 2
etc.

Default Setting:
There are no pilot numbers assigned.

- For each group enter the pilot number (3 digits required) you will dial to reach the group.
- Press HOLD to confirm the entry and step to the next group. If you duplicate a number you will see Duplicate Data, the entry will be removed and you can enter a new number.
- Press DC several times when you are done to return to the Program Mode.
- (Press SPK to save changes and exit if you are finished).

See Also:
There are no related settings.

Configuration Sheet: Department Groups
With defaults shown.

Telephone number	**Department Group number** 16-02-01 default=1	**Priority number** 16-02-02
200		1
201		2
202		3
203		4
204		5
205		6
206		7
207		8

Department Group number 1-32	**Pilot Number** 11-07-01	**Ring in priority/random** 16-01-02 default=0 Priority	**Try once or continually** 16-01-04 default=0 Once	**Ring time before step on** 16-01-09 default=15 seconds
1				
2				
3				
4				

There are 32 groups available, only 4 are listed as this is usually sufficient.

Create an Internal Paging Group

You may want to change this setting if:

- You want to make a paging call. The paging will be broadcast out of the loudspeakers of the Xn120 system phones.
  Paging is useful if you have staff that leave their desk and you need to contact them.

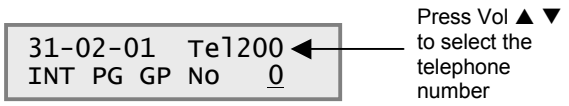
System Operation:
You add the Xn120 system phones into a paging group. There are 32 paging groups available.

Program 31-02-01
Place the telephones into paging groups.

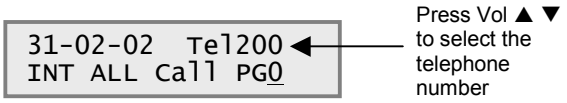
You can only broadcast the paging call out of the loudspeakers of Xn120 system phones, not normal telephones.

The internal all call page option is not mandatory, you can leave this set to 0.

Default Setting:
None of the telephones are in a paging group.



- For each telephone enter the paging group number (0-32, enter 0 to remove the phone from a group), you can overwrite the current entry.
- Press HOLD to confirm the entry and step to the next option.



- Enter 1 to place the telephone in the Internal All Call Page option
- Press DC several times when you are done to return to the Program Mode.
- (Press SPK to save changes and exit if you are finished).

See Also:
There are no related settings.

Configuration Sheet:
With defaults shown.

Telephone	Page Group Number 31-02-01 default=0 None	All call page 31-02-02 default=0 No
200		
201		
202		
203		
204		
205		
206		
207		

External Music Device

You may want to change this setting if:

- You want to play the external music source to callers that are placed on HOLD.

System Operation:

You will need to connect the external music device to the MOH/PAGE socket of the Xn120 and select the external device for the music on hold.

The external music device is not supplied with the Xn120 system. Refer to Connecting the External Music on Hold Device in this guide for details of connecting the external music device.

Program 10-04-01

Select the device used for the music on hold tune.

Default Setting:

The Xn120's own tune is played to callers placed on hold.

```
10-04-01
Hold Music Set  0
```

- Enter 1 to select the external device (enter 0 to select the Xn120 tune), you can overwrite the current entry.
- Press HOLD to confirm the entry and step to the next option.
- Press DC several times when you are done to return to the Program Mode.
- (Press SPK to save changes and exit if you are finished).

Note. You can also use this option to turn off the Xn120 tune. If you set the option to 1 (external) but there is no external music device connected to the external music on hold input (MOH input) the held callers will hear silence.

11- Install Optional Equipment

Refer to the installation guide supplied with each optional item for instructions.

- Before you install any optional item you must power off the Xn120 system.
- You may find it easier to install each item individually rather than all at the same time. Power on the Xn120 after each item is installed and test it before continuing.
  ! Ensure you power off the Xn120 before installing the next item.

12- Power Fail Options

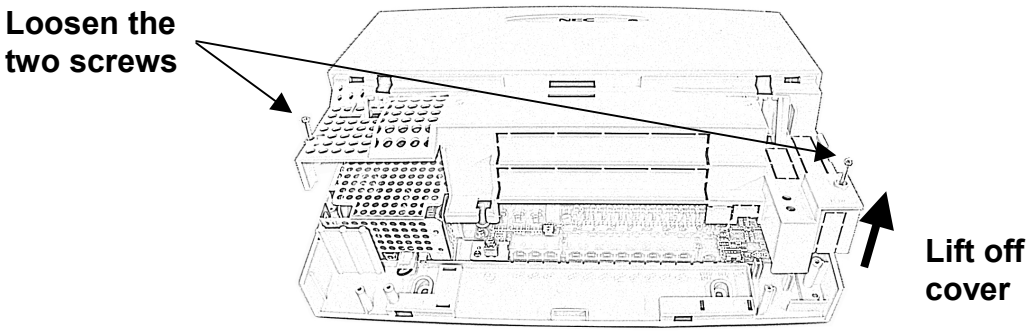
IMPORTANT
You must be able to make outside calls in the event of a power failure

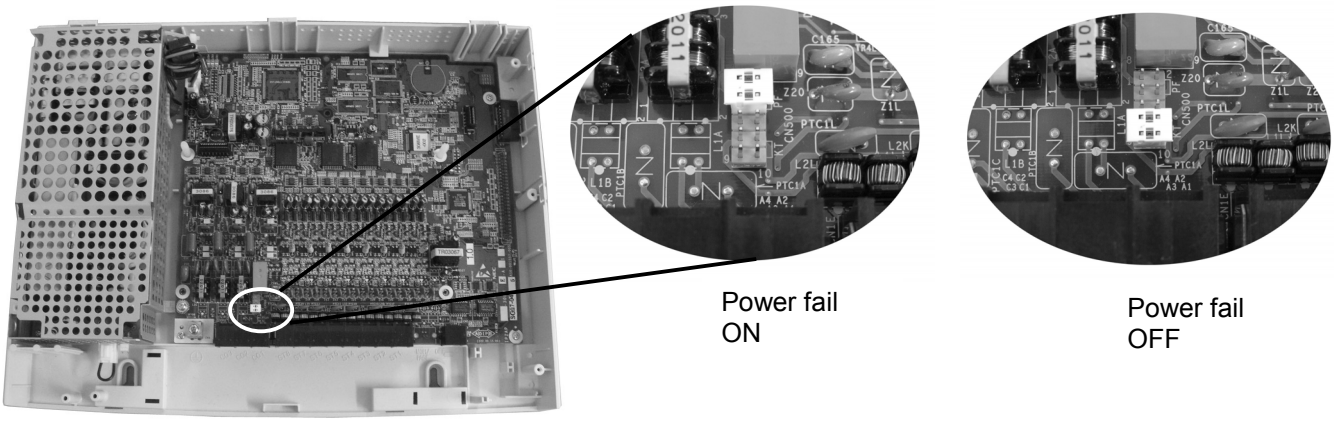
There are various options available for power failure operation.

1. Plug a normal telephone directly into the exchange line socket.
If your exchange lines are provided with a normal telephone socket you can unplug the Xn120 connection and plug a normal telephone into the socket to make/receive calls.
You can plug a phone in each exchange line socket if you wish.

! Do not attempt to plug a Xn120 system phone into an exchange line socket – you will damage the phone.

2. Use the power fail setting on the Xn120.
This will require a normal telephone connected to telephone socket ST8 of the Xn120 and an exchange line connected to CO1.
You must set the power fail link (CN500) on the Xn120 main board, see the diagram below.
Remove the sub cover of the Xn120 unit.
Loosen the two screws and remove the Main cover of the Xn120.





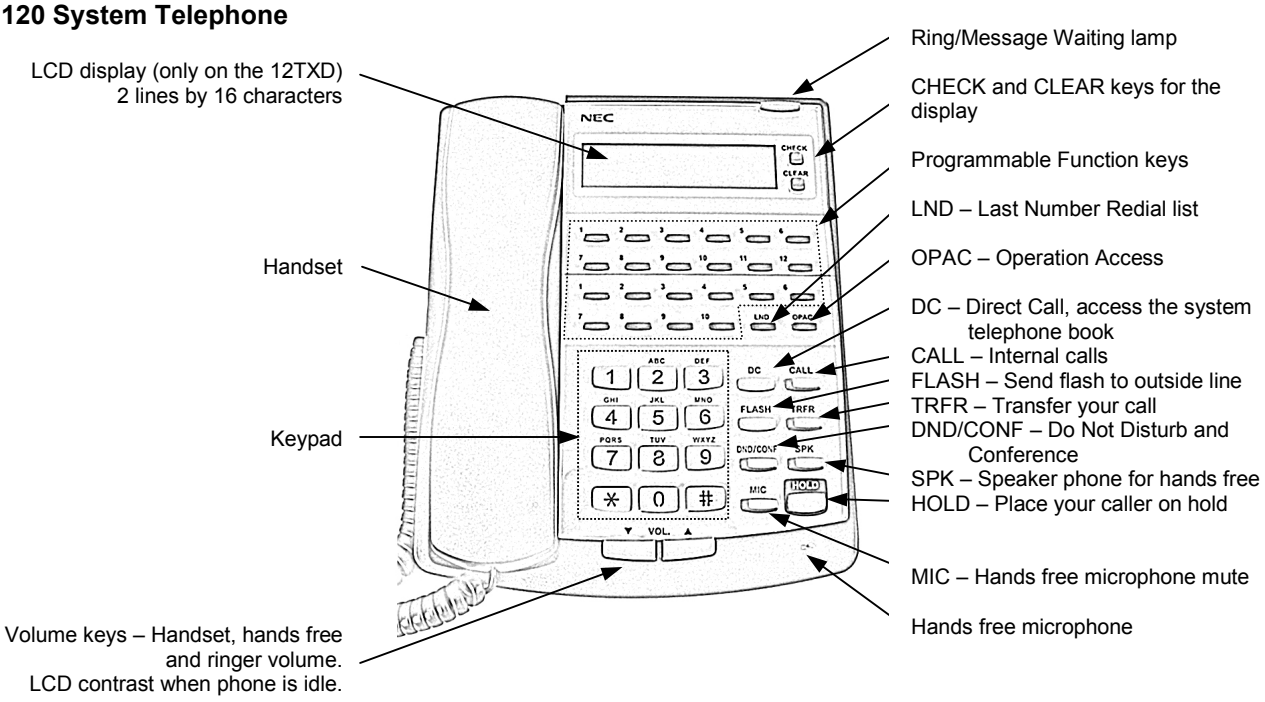
When Power Fail is set to ON (marked PF on the card):
When the power fails (or the Xn120 is switched off) Exchange line CO1 is automatically connected to the normal telephone plugged into socket ST8.
When the Xn120 is powered on the telephone in socket ST8 will operate as a normal Xn120 telephone.
You can not use a Xn120 system phone in socket ST8 with the power fail link set to PF.

When Power Fail is set to OFF (marked KT on the card):
When the power fails (or the Xn120 is switched off) Exchange line CO1 is not automatically connected to socket ST8.
When the Xn120 is powered on the telephone in socket ST8 will operate as a either a normal Xn120 telephone or Xn120 system phone, depending on which type is plugged in.
You can use a Xn120 system phone in socket ST8 with the power fail link set to KT.

Administrators User Guide

There are also user guides for the System Phone and Normal Phone supplied with the Xn120 system.

Xn120 System Telephone



Receiving Internal Calls

You can choose one of two ways that calls will arrive at your Xn120 system phone.
The default method is Voice Calling where calls to your phone will not ring, they will announce directly out of the loudspeaker. You can reply hands free by talking towards your phone or lift the handset for more privacy.
Alternatively, you can have calls ring your phone. You answer the call by pressing the SPK key for hands free or lifting the handset.

To select the Voice Calling method:
While your phone is idle, press SPK and dial Service Code 821. Press SPK to end.

To select the ringing method:
While your phone is idle, press SPK and dial Service Code 823. Press SPK to end.

Calling another Telephone.

You can call another telephone by simply going off hook and dialing its number.

The default telephone numbers are 200 to 207.
If you have a Xn120 system phone with an LCD display your telephone number will be displayed at the lower left when your phone is idle.

Press **SPK** for speakerphone or **lift the handset.**	Example: **SPK**	MON 27 16:28PM	
Dial the telephone number.	**201**	MON 27 16:28PM CALL EXT 201	If the phone is available it will ring. You will hear two beeps or ringback tone.
	or		or
		MON 27 16:28PM BUSY EXT 201	If the phone is in use your call will not ring. You will hear busy tone.

Receiving Outside Calls

If your phone is a member of a ring group then outside calls may ring at your phone.
An outside call will flash its line key and indicate the line name on the LCD display of the Xn120 system phones.
If you have Caller ID enabled your display will indicate the calling number.

You can answer a call ringing at your phone by lifting the handset.
If you are not a member of the ring group you can answer the call by pressing the flashing line key or using Call Pickup.

Placing an Outside Call

The simplest way to place an outside call is to lift the handset and dial 9, the system will seize a free line and you will hear exchange dial tone.
Continue by dialing the number you require.

If you have a Xn120 system phone you can also seize the line by pressing an idle line key.
The line is idle when the lamp is off.

Placing a Call on HOLD

While you are on a call you can place it on hold.
The caller hears music.

If you have a Xn120 system phone you place the call on hold by pressing the HOLD key.
You can remain off hook or go on hook.
Outside calls will flash its LINE KEY, press the flashing LINE KEY to retrieve the held call.
Internal calls will flash your CALL key, press the CALL key to retrieve the held call.
If you went on hook and forgot to retrieve the held call it will ring you back after 90 seconds.

If you have a normal phone you place the call on hold by pressing the RECALL key.
You should remain off hook, to retrieve the held call press the RECALL key again.
If you go on hook the held call will ring you back immediately, lift the handset to answer the ring back call.

Transferring a Call to a Co-Worker

You may want to pass your call on to another telephone, for example when you have answered an outside call and they want to speak to one of your co-workers.

There are various ways you can pass the call to one of your co-workers:

Before you can transfer the call you must place it on HOLD, see Placing a call on Hold above.

If you have a Xn120 System Phone.

HOLD and Transfer:

Press HOLD to place the call on hold. The caller will hear music.
You can now dial the telephone number of your co-worker.
You can either,
a) Press the TRFR key or go on hook while you are ringing your co-worker. The held call will ring at your co-worker's phone.
If your co-worker does not answer the held call it will ring you back after 30 seconds.
Or
b) Wait for your co-worker to answer and announce that you have a call for them, then press the TRFR key or go on hook to transfer the call through.

HOLD and press LINE KEY (Outside Calls Only)

Press HOLD to place the call on hold, the LINE KEY will flash green. The caller will hear music.
You can now dial the telephone number of your co-worker or make a Page call with Service Code 801.
Announce the line key number of the held call.
You co-worker can press the line key or dial Service Code 772 and the line number 01-03.

If you have a Normal Telephone.

Hold and Transfer.

Press the RECALL key to place the call on hold.
Dial the telephone number of your co-worker.
You can either,
a) Go on hook to transfer the call. If they don't answer the held call will ring you back after 30 seconds.
Or
b) Wait for your co-worker to answer and announce that you have a call for them, then go on hook to transfer the call through.

Function Keys

Customize your Xn120 phone by storing features under your Programmable Function Keys.

For example, to forward your calls just press your Call Forward function key instead of dialing 848.

There are many different features that you can store under a function key, only the most common are covered by this guide.

Xn120 system phones have 22 function keys. They are arranged in blocks of 12+10 keys.

! The block of 12 Function keys are pre-set to line keys, it is recommended that you keep these. Line keys make handling your outside calls much easier.
This guide explains the setting of the block of 10 keys.
! You can not have the same function assigned to more then one key at a phone. If you try to duplicate a key you will hear a long reject tone.
You can check your keys by pressing the CHECK key (at a phone with an LCD display) and then pressing the functions key.

Line Key.
Will give you lamp indication for the exchange line. There are pre-set line keys on all Xn120 phones.
Off – Idle. You can press the key to place an outgoing call.
Green, double flashing – You have the line.
Green, flashing – You have place the line on hold. Press the key to retrieve the held call.
Red – Another telephone is using the line.
Red, flashing – Another telephone has placed the line on hold. Press the key to retrieve the held call.
Red, fast flashing – the line is ringing. Press the key to answer the call.

DSS (Direct Station Select) key.
Will give you lamp indication for your co-workers telephone:
Off – Idle
On – Busy
Flashing – DND or Call Forward set
You can also press the key to place a call to your co-worker.
You can also store outside numbers under a DSS key.

Caller ID List.
Will give indication of outside calls that you have received or missed. This key is only of use if you have an LCD display to view the caller list.
Off – There are no new or saved calls in the list.
On – There are no new calls but you have one or more saved calls.
Flashing – You have new missed calls.
Press the key to view the list, scroll up/down with the volume keys.

Day/Night Mode.
Will allow you to change the mode of the system, see Telephone Ringing Assignment.
You have a separate key for each mode that you will use.
Only one of the keys can be active, press the key to activate the mode.
Off – The mode is not active.
On – The mode is active.

Paging.
Will give indication of the page zones.
Off – The page zone is not in use.
On – The page zone is in use.
Press the key to make a paging call.

Function Keys (Cont'd)

Clearing a Function Key

Press **SPK**

Dial Service Code **851**.

Press the function key that you want to clear.

Dial **000**

Press another function key if you have more to clear
or
Press **SPK** to end.

Example:

SPK

```
MON  27  16:28PM
```

851

```
KEY PROGRAM
```

Press Key 1

```
KEY PROG KEY 13
        FORWARD
```

000

```
KEY PROG KEY 13
     NOT DEFINE
```

SPK

```
Mon  27  16:28PM
200      EXT 200
```

You may want to clear your function key(s) before you set it to a new type.

The current setting of the function key will be displayed.

The block of 10 function keys will show as keys 13 to 22 on the display.

Setting a Function Key

Press **SPK**

Dial Service Code **851**.

Press the function key that you want to set.

Dial the two digit code for the new function.
See below for each function key type.

Example:

SPK

```
MON  27  16:28PM
```

851

```
KEY PROGRAM
```

Press Key 1

```
KEY PROG KEY 13
     NOT DEFINE
```

The current setting of the function key will be displayed.

See below for each function key type.

01 for a DSS key.

Enter the telephone number of your co-worker.
Or enter the outside number, include the 9 to seize a line.

Press **HOLD** to confirm the number

Press **SPK** to end.
Or another function key if you have more to set.

01

```
KEY PROG KEY 13
       DSS    0
```

203

```
KEY PROG KEY 13
             203
```

HOLD

```
KEY PROG KEY 13
       DSS  203
```

SPK

```
Mon  27  16:28PM
200      EXT 200
```

If you make a mistake just press the function key again to go back and retry or press SPK to quit.

You will hear a short confirmation tone.
If you hear a long reject tone the key has not been set.

Function Keys (Cont'd)

08 for a Caller ID List key. Press **SPK** to end. Or another function key if you have more to set.	**08** **SPK**	KEY PROG KEY 13 CALL HISTORY Mon 27 16:28PM 200 EXT 200	You will hear a short confirmation tone. If you hear a long reject tone the key has not been set.
09 for a Day/Night mode key. Enter the day/night mode number (1-8) Press **SPK** to end. Or another function key if you have more to set.	**09** 1 **SPK**	KEY PROG KEY 13 NIGHT SERVICE 0 KEY PROG KEY 13 NIGHT SERVICE 1 Mon 27 16:28PM 200 EXT 200	You will hear a short confirmation tone. If you hear a long reject tone the key has not been set.
21 for a Page zone key. Enter the zone number (1-9) Press SPK to end. Or another function key if you have more to set.	**21** 1 **SPK**	KEY PROG KEY 13 PAGE GROUP 0 KEY PROG KEY 13 PAGE GROUP 1 Mon 27 16:28PM 200 EXT 200	You will hear a short confirmation tone. If you hear a long reject tone the key has not been set.
22 for an All Call Page key. Press SPK to end. Or another function key if you have more to set.	**22** **SPK**	KEY PROG KEY 13 PAGE INT ALL Mon 27 16:28PM 200 EXT 200	You will hear a short confirmation tone. If you hear a long reject tone the key has not been set.

Telephone Names.

You can assign the name of the user to each of your telephones.
The name will be displayed on the LCD display when you make/receive internal calls.
The name can be up to 12 characters in length.

Naming a Telephone

Press **SPK**

Dial Service Code **800** for naming telephones.

Dial the number of the telephone you want to name.

Enter the new name using the characters above the keypad as a guide.
Press # to move to the next character.
Press # # to insert a space.

Press **HOLD** to confirm the new name.
You can enter the next telephone number that you want to re-name or press **SPK** to end.

Example:

SPK

```
MON  27  16:28PM
```

800

```
ENTER NAME
ICM DIAL
```

204

```
ENTER NAME   204
         EXT 204
```

The current name is displayed.

22
444
555
#
555

```
ENTER NAME   204
   -BILL
```

HOLD

```
ENTER NAME
ICM DIAL
```

You will hear a short confirmation tone.

SPK

```
Mon  27  16:28PM
200      EXT 200
```

Call Forward

Use Call Forwarding to redirect your calls to another extension.

With Call Forwarding, you're sure your calls are covered when you are away from your work area.

Call Forwarding will reroute calls ringing your extension, including calls transferred from another extension. You must enable Call Forwarding from your phone. To redirect your calls if you are at another phone, use Call Forward Follow Me.

There are four types of Call Forwarding:

842 Call Forwarding Immediate with Both Ringing
All calls forward immediately to the destination, and both the destination and your extension ring.

843 Call Forwarding when Busy
Calls forward when your extension is busy.

845 Call Forwarding when Not Answered
Calls forward when your extension is not answered.

848 Call Forwarding Immediate
All calls forward immediately to the destination, and only the destination rings.

Setting Call Forward

Press **SPK**

Dial the Service Code for the call forward type.
842 Both ring
843 Busy
845 Not Answered
848 Immediate

Dial **1** if you want to set up a new call forward.
Dial **0** if you want to cancel a call forward you have already set.

Dial the telephone number of the destination you want to forward your calls to.

Press **SPK** to end.

Example:

SPK

```
MON  27  16:28PM
```

848

```
SET FORWARD
1:SET 0:CANCEL
```

You can also assign the call forward feature to function key on the Xn120 Phones.
See Function Keys.

1

```
SET FORWARD
ICM DIAL
```

203

```
SET FORWARD
FWD IMM> EXT 203
```

SPK

```
Mon  27  16:28PM
FWD IMM> EXT 203
```

The DND/CONF key will flash slowly and you will also hear interupted internal dial tone to indicate that you have a call forward set.

Call Pickup

Use Call Pickup when you need to answer a call ringing another telephone without leaving your phone. This lets you easily cover a co-worker's calls when they have to be away from their desk.

You can also answer an outside call by pressing the flashing line key, see Function Keys.

There are various types of call pickup. The two most used are:

Direct Call Pickup

You know which telephone is ringing, you want to pickup the call ringing this phone.

Any Call Pickup

You are not certain which telephone is ringing, you want to pickup the call whichever phone is ringing.

Direct Call Pickup

Lift the handset.

Dial Service Code **715** for Direct Call Pickup.

Dial the telephone number of the phone that is ringing

You are connected to the caller.

Example:

Lift handset

```
MON  27  16:28PM
```

715

```
MON  27  16:28PM
ICM DIAL
```

204

```
MON  27  16:28PM
CALL P/U EXT 204
```

Any Call Pickup

Lift the handset.

Dial Service Code **867** for Direct Call Pickup.

You are connected to the caller.

Example:

Lift handset

```
MON  27  16:28PM
```

867

```
MON  27  16:28PM
```

```
MON  27  16:28PM
CALL P/U EXT 204
```

You will pickup any call ringing at any telephone on the system.

Do Not Disturb

Do Not Disturb (DND) blocks incoming calls, Call Forwards and Paging announcements to your extension.
DND permits you to work undisturbed at your desk without interruptions from your phone.
When you activate DND, incoming calls still flash your line keys. While in DND, you may use your phone in the normal manner for placing and processing calls.

There are four Do Not Disturb options:
1 – Blocks your outside calls
2 – Blocks Paging, Intercom calls, Call Forwards and transferred outside calls
3 – Blocks all calls
4 – Blocks Call Forwards
0 – Cancels Do Not Disturb

Setting Do Not Disturb

Example:

Press **SPK**

SPK

```
MON  27  16:28PM
```

Dial Service Code **847** for DND.
OR
At a Xn120 phone press the **DND key**.

847
or
DND

```
SET DND
```

Enter the DND option.
1 – Blocks your outside calls
2 – Blocks Paging, Intercom calls, Call Forwards and transferred outside calls
3 – Blocks all calls
4 – Blocks Call Forwards
0 – Cancels Do Not Disturb

3

```
SET DND
DND ALL
```

You will hear a short confirmation tone.

Press **SPK** to end.

SPK

```
MON  27  16:28PM
DND ALL
```

Your DND key will light to indicate that you have DND set

Paging – Internal

Need to locate a co-worker or make an announcement? Use Internal Paging.
Your system can have All Call Internal Paging and Internal Paging zones.
When you make an All Call Paging announcement, your voice broadcasts to all Xn120 phones set to receive All Call Paging.
When you make a Zone Paging announcement, your voice broadcasts to all the idle Xn120 phones in the zone you called.
You will need to configure the paging zones before you can use this feature, see Creating a Paging Group in the configuration section.

You can als make a paging call over external speakers if you have connected the Xn120 to an external paging amplifier, see Paging External.

Making an All Call Page

Lift the handset

Dial Service Code **801** for paging.

Dial **0**

Speak into your handset, your speech will be broadcast to all Xn120 phones in the All Call Group.

Go on hook to end.

Example:

Lift handset

```
MON  27  16:28PM
```

801

```
MON  27  16:28PM
GROUP No.
```

0

```
MON  27  16:28PM
GRP CALL GRP ALL
```

Making an Page Zone Call

Lift the handset

Dial Service Code **801** for paging.

Enter the zone number **1-9**

Speak into your handset, your speech will be broadcast to all Xn120 phones in the zone.

Go on hook to end.

Example:

Lift handset

```
MON  27  16:28PM
```

801

```
MON  27  16:28PM
GROUP No.
```

1

```
MON  27  16:28PM
GRP CALL Group 1
```

Paging – External

Need to locate a co-worker or make an announcement? Use External Paging.
When you make an External Paging announcement, your voice broadcasts to the loudspeakers of your external paging system.

You will need to connect the Xn120 to an external paging amplifier before you can use this feature, see Connecting External Paging Amplifiers in the Installation section.

Making an External Page Call

Lift the handset

Dial Service Code **803** for paging.

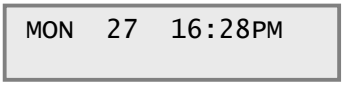
Dial **1**

Wait for the external paging tune to end.
Speak into your handset, your speech will be broadcast to the external loudspeakers.

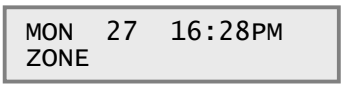
Go on hook to end.

Example:

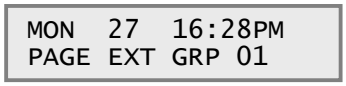
Lift handset



803



1



You will hear the external paging comfirmation tune.

System Time

You may need to change the time displayed on the Xn120 LCD display phones.

The date can only be changed within the Xn120 Configuration Mode

Setting the System Time

Press **SPK**

Dial Service Code **828** for setting the system time.

Enter the new time in 24Hour format (hh:mm)

Press **SPK** to end.

Example:

SPK

```
MON  27  16:28PM
```

828

```
MON  27  16:28PM
          828
```

1730

```
MON  27  16:28PM
      828 17 30
```

You will hear a short confirmation tone.

Telephone Book

The system Telephone Book gives you quick access to numbers you call frequently. This saves time, for example, when calling a client with whom you deal often. Instead of dialing a long telephone number, you just use the telephone book.

You will need to enter the numbers and names into the Telephone Book before you can use them.

The Xn120 phones have a DC (Direct Call) key to access the Telephone Book.

The telephone book of the Xn120 is also referred to as the ABB Dial list.

You can also store personal outside numbers under a DSS Function Key at a Xn120 phone, see Function Keys.

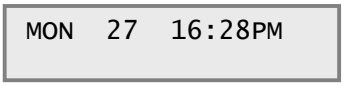
Adding a new number to the Phone Book

✓ Make a list of your telephone book entries before you start adding them into the system.

Example:

Press **SPK**

SPK



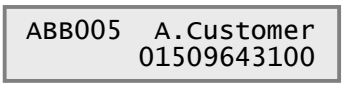
Dial Service Code **853** to add a new number.

853

Enter the location you want to add (000-999).

005

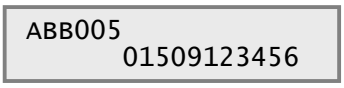
If the location is unused.



If the location is in use it will be displayed. You can overwite or press HOLD twice to skip it and try another location.

Enter the outside number. You do not need to include the trunk access code.

01509123456



Press **HOLD** to confirm the number.

HOLD

Enter the name using the characters above the keypad as a guide.
Press # to move to the next character.
Press # # to insert a space.

66
33
222

Press **HOLD** to confirm the

HOLD

You will hear a short confirmation tone.

You can enter the next location or press **SPK** to end.

Telephone Book (Cont'd)

Using the Phone Book

Press **SPK**

Dial Service Code **813** to access the telephone book.
OR
At a Xn120 phone press the **DC** key.

Enter the location you want to dial out (000-999).
The system will automatically seize a free line and dial the number.

Example:

SPK

```
MON  27  16:28PM
```

813
or
DC

005

```
Line 001
NEC     09643111
```

The full dialled number will not be displayed if it is more than 8 digits long.

To Access the Other Features.

The features of the Xn120 are accessed by dialing the Service Code, each feature has its own code.
If you have a Xn120 system phone you can also have a function key assigned for the features that you use more often.
If your Xn120 system phone has an LCD it will display the options available whilst you are using the features.
Refer to the Xn120 System Manual for full description of all other features.

Glossary

431A	4 way telephone plug. Also available as a 6 way plug (631A) which can be used in place of the 431A.
CO	Central Office. The exchange line connections of the Xn120 are labelled CO1 to CO3.
CW1308	A specification for twisted pair cable, typically used for telephone system cabling. Available from 1 to 100's of pairs. The cable is separated into coloured pairs, each pair is twisted together.
Dial Pulse	A method of dialing digits by breaking the line a set number times for each digit dialed. This can also be referred to as rotary dialed digits.
DTMF	Dual Tone Multi Frequency. A method of dialing digits (0 to 9 * and #) by sending a tone each time a button is pressed.
FSK	Frequency Shift Keying. A method of sending data by changing the frequency.
LCD	Liquid Crystal Display.
LJU	Line Jack Unit used to connect normal telephones. Also referred to as British Telecom style socket. Available as a Master or Secondary type. The Master has components fitted to provide ringing and lightning protection for the phone. The Secondary does not have the components installed and should be used to provide an additional extension from a Master LJU.
RJ11	Type of plug/socket. There are various sizes and number of connections available. The size and number of connections is determined by the two numbers following the type, for example. RJ11 4/4 way is a 4 pin type with 4 connections RJ11 6/4 way is a 6 pin type with 4 connections RJ11 6/6 way is a 6 way type with 6 connections

Declaration of Conformity

EC Declaration of Conformity

Manufacturer :- **NEC Infrontia Corporation**

Address :- **2-6-1 Kitamikata, Takasu-ku**
Kawasaki, 213-8511
Japan

declares that the product:

Type :- **XN120**

Model :- **XN120**

Intended use :- **PBX System**

complies with the essential requirements of Article 3 of the R&TTE 1999/5/EC Directive, if it used for it's intended use and that the following standards has been applied:

Safety (Article 3.1.a of the R&TTE Directive)

Applied standards	**EN 60 950-1**	**Issue**	**2001**

Electromagnetic Compatibility (Article 3.1.b of the R&TTE Directive)

Applied standards	**EN 55022**	**Issue**	**1998**
	EN 55024	**Issue**	**1998 + A1 : 2001**
	EN 61000 3-2	**Issue**	**2000**
	EN 61000 3-3	**Issue**	**1995 + A1 : 2001**

Number of annexes : **1**

NEC Infrontia, Kawasaki
(Place of declaration of conformity)

Mr. M Tamura
(Name)

Jan. 6th, 2005
(Date of declaration of conformity)

M. Tamura
(Signature)

NEC Infrontia Declaration of Conformity for XN120 System : Issue 2 Page 1 of 2

Annex 1 of the Declaration of Conformity for the XN120 System

PBX System with the following components:

Part	Description
IP2AT-924M KSU (EU)	Main Cabinet (including 3 Analogue Trunks and 8 Extensions)
IP1E-DSPDB-A1	DSP Daughter Board
IP1E-DSPDB-A2	DSP Daughter Board with Voice Mail Function
IP1E-CF-B1	Compact Flash card for IP1E-DSPDB card
IP2AT-308E-A1	3+8 Expansion unit (3 Analogue Trunks and 8 Extensions)
IP2AT-008E-A1	0+8 Expansion unit (0 Analogue Trunks and 8 Extensions)
IP2WW-2PGDU-A1	Paging Door phone card
IP2WW-EXIFU-A1	Expansion I/F with RS232 and LAN Interface
IP2WW-EXIFU-B1	Expansion I/F with RS232 Interface
IP2WW-2OPBOX	Optional Box (2 Slots)
IP1WW-4VOIPU-S1	Voice over IP Card
IP1WW-4VOIPDB-S1	Voice over IP Card Daughter board
IP1WW-2BRIU-S1	ISDN BRI card (2 Port)
IP1WW-4BRIU-S1	ISDN BRI card (4 Port)
IP2AT-924ME KSU (EU)	Expansion Cabinet
DX2E-32i/NX7E Battery Box	Battery Back Up Box
IP2AT-12TXD TEL (WH)	12 Line Display Keytelephone White
IP2AT-12TXD TEL (BK)	12 Line Display Keytelephone Black
IP2AT-6TXD TEL (WH)	6 Line Display Keytelephone White
IP2AT-6TXD TEL (BK)	6 Line Display Keytelephone Black
IP2AT-12TD TEL (WH)	12 Line Keytelephone (non display) White
IP2AT-12TD TEL (BK)	12 Line Keytelephone (non display) Black
IP2AT-6TD TEL (WH)	6 Line Keytelephone (non display) White
IP2AT-6TD TEL (BK)	6 Line Keytelephone (non display) Black
IP2AT-64DL DSS CONSOLE (WH)	64 Key Direct Line Select Terminal White
IP2AT-64DL DSS CONSOLE (BK)	64 Key Direct Line Select Terminal Black
IP2AT-24DL DLS CONSOLE (WH)	24 Key Extender Unit Terminal White
IP2AT-24DL DLS CONSOLE (BK)	24 Key Extender Unit Terminal Black
DX4NA Door Phone	Door Phone

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