

Paging, PA

DESCRIPTION



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PAGING FACILITY

1.1

GENERAL

The paging facility enables persons to be accessed, who are beyond hearing distance of the ring signals from their own telephone, from telephones, PBX operator consoles or external lines.

A person who is assigned the paging facility is informed of an incoming call in that his/her portable, individual radio receiver (staff locator) is activated (selective paging) or his personal code is signaled acoustically/visually via lamp displays erected at various places in the building (universal paging).

When the sought person (the pagee) is reached by the call he can answer from the nearest extension in the PBX and gain speech connection with the person who has requested paging (the pager).

1.2

ADDRESSING A PEGEE

The person or group of persons the pager wishes to reach are paged on the basis of the directory numbers in the PBX.

- A person with assigned extension number is paged with this extension number. Note that the number range is 2-5 digit numbers, i.e. 6-10 digit extension number cannot be paged.
- A person lacking own extension telephone, e.g. visitor, is paged via an extra directory number used for paging purposes. Note that the range of the extra directory numbers is 2-5 digits.
- A group of persons, who the pager wishes to access at the same time, are paged via a common directory number used for paging purposes.

The directory number can be affiliated to an arbitrary paging code. The paging code is the address of the radio receiver for selective paging or a lamp code for visual paging, See Figure 2 Sequence for a paging call with answer on page 4.

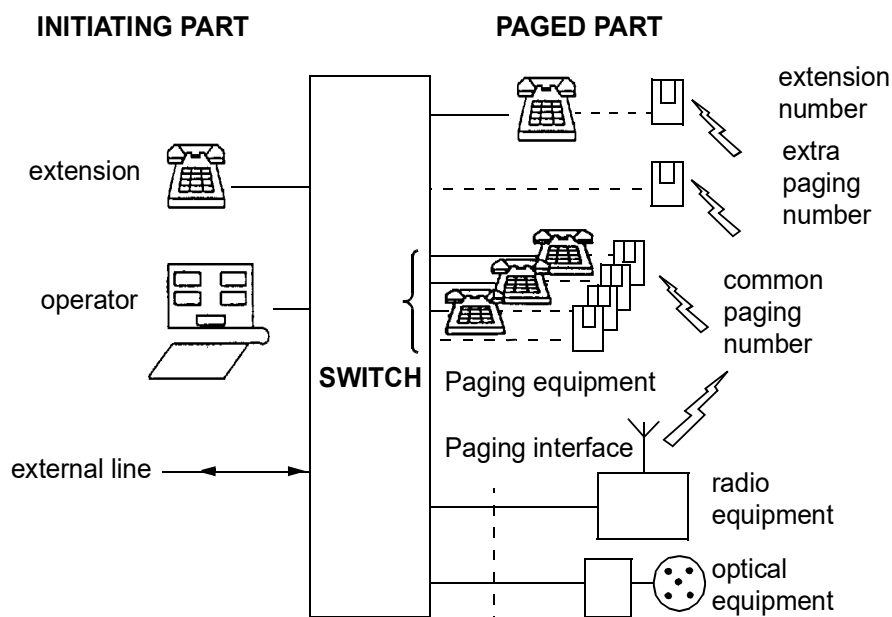


Figure 1: Paging: an overview

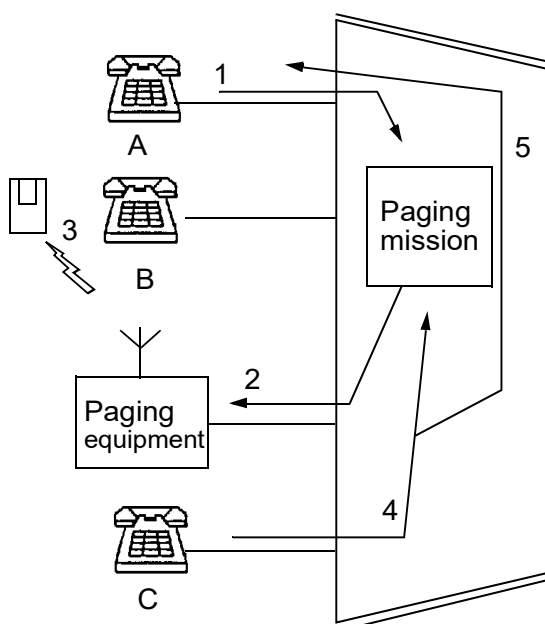


Figure 2: Sequence for a paging call with answer

1. A paging job is initiated from A (pager)
2. Peripheral paging equipment is seized
3. Code is transmitted to B-party's (pagee's) receiver
4. B-party answers with procedure via telephone C
5. Speech connection A-C

1.3 EQUIPMENT FOR PAGING

The PBX undertakes a paging job in cooperation with peripheral paging equipment. For radio paging the peripheral equipment comprises radio transmitter with control part and a number of paging receivers. For visual paging the peripheral equipment embraces the lamp displays and their control equipment. The PBX is interconnected with the peripheral paging equipment via an interface, see Figure 1 Paging: an overview on page 4.

1.4 INITIATION OF PAGING

A paging job is initiated with a procedure plus wanted directory number or automatically by the PBX as diversion. The paging job is stored in the PBX, the wanted number is converted into paging code and seizure of the peripheral paging equipment is undertaken. Codes is transmitted via radio or lamp displays, See Figure 2 Sequence for a paging call with answer on page 4.

Paging can be initiated from all extension telephones and PBX operator consoles in the PBX.

Normally it is possible to initiate only one paging mission at the same time to one particular extension or extra or common paging number. However, with a Market Dependent Parameter (MDP) it is also possible to allow several pagings at the same time to the same object. This function is called queuing to paging. The function is not used with speech paging, neither in an isolated LIM.

1.5 ANSWER TO PAGING

In principle an answer to paging is executed as a meet me function. From an arbitrary extension the pagee dials an answer procedure whereafter normal speech connection to the pager is established. At the same time the paging job is disconnected and the peripheral equipment is released for other calls latest during this phase, see Figure 2 Sequence for a paging call with answer on page 4.

Answers to paging jobs can be initiated from all extension telephones and PBX operator consoles in the PBX.

In the event that the pagee has obtained the A-number of the pager by automatic number transmission he can answer by calling the pager's A-number.

If queuing to paging is allowed and there are several paging missions activated to the same object (extension, extra or common paging number) they will be answered so that the oldest one is answered first, then the second oldest and so on.

1.6 MAIN TYPES OF PAGING

Three main types of paging can be used in the PBX. Most radio paging systems on the market deal with all main types.

- Simple paging via meet me answer.

The paging receiver whistles or vibrates on activation.

Answer is undertaken via a procedure whereafter speech connection is established between pager and pagee.

- Paging by voice via radio. Oneway or bothway speech connection is established from the PBX via radio to the receiver, that is activated. Answer by a procedure (meet me) is also possible.
- Paging with automatic transmission of digit information (A-number) to a display in the receiver. Answers to internal calls are achieved by the pagee calling the received A- number. Answers to external and extended calls are undertaken via a procedure (meet me). The calling party number (A-number) can have the range 2-10 digits.

2 PROCEDURES

2.1 STANDARD PAGING

2.1.1 GENERAL

The basic principle employed when the paging facility is put into operation in a PBX is that the great majority of the PBX extension users shall not need to be aware of more than one type of paging (see Chapter 1.6 Main types of paging on page 5). This is termed standard paging in the PBX and can be initiated via two alternative procedures:

- prefix procedure for DTMF-signaling
- suffix procedure on no reply and on busy

Standard paging can also be initiated automatically in the PBX via diversion.

Initiation via a suffix procedure and automatic initiation are possible provided that traffic categories (traffic matrix and trunk call discrimination, TCD) permit traffic from the pager, A, to the pagee, B. On initiation via a prefix procedure the traffic categories are not checked.

Exchange data are used to determine which main type of paging is to be standard. The alternatives are:

- Oneway paging with meet me answer
- Voice paging via radio
- Paging with transmission of A-number and answer by the pagee calling A.

2.1.2 INITIATION OF STANDARD PAGING FROM EXTENSIONS

- Prefix procedure for DTMF-signaling.
Lift the handset, wait for dial tone and dial: *81*D2 where D2 = the directory number of the pagee.
- Suffix procedure on no reply or on busy
 - extension does not answer (ring tone), dial: 7 (or press soft-key for SIP phones)
 - extension is busy (busy tone), dial: 7

Note: Prefix code 81 and suffix code 7 are variable market data.

If other codes have been selected for a market this will be stated in the documentation for the relevant application system. SIP and H.323 phones do not support suffix procedure. Mitel 6700/6800/6900 SIP phones support a soft-key as an alternative to suffix digit.

2.1.3 INITIATION FROM PBX OPERATOR CONSOLE

- Prefix procedure for DTMF-signaling on PBX operator console. Free PBX operator console or PBX operator console with one connected party.
Dial: *81*D2# where D2 = wanted directory number
- Suffix procedure

In the PBX operator console the suffix procedure is represented by a function button for start of standard paging (paging button). A free PBX operator console or PBX operator console with one connected party.

Dial: D1 + paging button where D1 = wanted directory number.

- On recall to PBX operator, e.g. on no reply

Dial: The paging button

Paging is started to the number that caused the recall.

2.1.4

AUTOMATIC INITIATION OF PAGING

The PBX starts standard paging automatically in the following cases:

- Directly on a call to a free extension who has requested follow me to the paging facility.
- Directly on a call to a free extension, who has activated diversion and the divert position is the paging facility.
- On time out, after a call to a free extension, who has requested diversion on no reply and the divert position is the paging facility.
- Directly, on a call to a busy extension, who has requested diversion on busy and the divert position is the paging facility.
- Directly on calls to extra and common directory numbers used for paging.

2.2

PAGING VIA SPECIAL PROCEDURES

2.2.1

VOICE PAGING VIA RADIO

For voice paging via radio the pager can supply a verbal message to which the pagee listens on his paging receiver.

Paging can be initiated from extensions, PBX operators and external lines with special category via the procedures:

- Prefix procedure for DTMF-signaling
Dial: *81*D2# where D2 = the wanted directory number

2.2.2

PAGING WITH ARBITRARY DIGIT TRANSMISSION TO DISPLAY ON RECEIVER

Via the procedure an arbitrary digit message can be sent to the display on the paging receiver.

Paging can be initiated from extensions and PBX operators via procedures.

- Prefix procedures for DTMF-signaling
Dial: *81*D2*M# where D2 = the wanted directory number and M = selectable digit message 1-8 or 10 digits.

2.2.3

ALARM AND ALARM ACKNOWLEDGMENT TO PAGING EQUIPMENT

Via the alarm procedure it is possible to initiate a paging call that alarms one or more paging receivers. The call origin, i.e. source of the call, is sent to the display of the paging receivers automatically.

With the alarm acknowledgment procedure a person who has received the alarm via his paging receiver can acknowledge it. The procedure is used when the alarm demands acknowledgment in the peripheral paging equipment. Alarm and alarm acknowledgment can be initiated from extensions and PBX operators with the procedures:

- Initiation of alarm via the prefix procedure for DTMF-signaling.
Dial: ***810*D2(*M)#** where D2 = wanted directory number and M = arbitrary digit message, 1-4 digits or 1-5 digits.
The digit message can be omitted if so desired.
- Acknowledgment of alarm via prefix procedure for DTMF-signaling.
Dial: ***820*D2(*D1)#** where D2 = alarm acknowledgment number and D1 = identity, 1-4 or 1-5 digits, of the acknowledger.
The identity can be omitted if so desired.

Alarm and alarm acknowledgment cannot be initiated via suffix.

2.3

ANSWER PROCEDURES

2.3.1

SELECTIVE ANSWER PROCEDURE

If the paging system permits several concurrent paging jobs in the PBX then the wanted number must be stated together with the answer procedure in accordance with the following:

- Prefix procedure for DTMF-signaling.
Dial: ***82*D2#** where D2 = wanted number

2.3.2

SHORT ANSWER PROCEDURE

If only one person at a time can be paged in the PBX only the answer code needs to be given:

- Prefix procedure for DTMF-signaling
Dial: ***82#**

3 **PAGING IN COMBINATION WITH PBX OPERATOR FACILITIES**

Traffic cases in which the PBX operator can use or encounter paging are described below. The PBX operator's procedures for initiation of paging are described in the section "Initiation from PBX operator console".

3.1 **EXTENDING VIA PAGING ON NO REPLY OR ON BUSY**

After a recall to the PBX operator has been obtained on no reply or on busy, extending with paging can be undertaken if the pagee has a paging receiver. Extending before reply or after reply via paging and camp on with call announcement can be used. For extending with call announcement recall to the PBX operator takes place when the pagee answers.

3.2 **DIRECT EXTENDING VIA PAGING**

The PBX operator can extend directly via paging to an extension, extra directory number or common paging number. Also in this case paging before reply or after reply and camp on with call announcement are possible.

3.3 **EXTENSION HAS ONGOING INTERCEPTION BY PAGING FACILITY**

On extending to an extension, that has ongoing follow me or direct diversion to the paging facility, paging will be started automatically after the PBX operator has selected the extension number. Extending can take place in the same manner as in point Extending via paging on no reply or on busy.

3.4 **PBX OPERATOR INITIATES OWN PAGING**

The PBX operator can initiate paging on her own behalf. To avoid the PBX operator console being blocked while waiting for a reply the call can be monitored. Both sides of the PBX operator console can be used for paging calls.

3.5 **ON REPLY FROM THE PAGING FACILITY**

After extending with monitoring or camp on for call announcing has taken place the reply to the paging call comes as a recall. On recall the number of the answer position appears on the console display. After answer the PBX operator can interconnect pagee and pager.

On normal extending to the paging facility before reply the PBX operator will not be involved in the reply. If the PBX operator does not extend before a reply is obtained the reply will be indicated on the PBX operator display.

A reply to paging via a procedure can be undertaken from the PBX operator console in the same manner as from an extension telephone.

3.6 NO REPLY TO A PAGING CALL

If the pagee does not reply to a paging call, recall to the PBX operator will ensue after a predetermined period of time. Paging can then be terminated by clearing or be continued by repeated extending. If paging continues and the pagee still does not answer a new recall will take place after a time. When the maximum paging time has been exceeded the recall arrives with the congestion (blocking) message.

3.7 ABSENCE (OFF DUTY)

When a paging receiver is in the charging compartment it is not possible to undertake paging to it. This is indicated by means of a special symbol on the PBX operator console. The symbol lights for a while after the paging has initiated when paging equipment discovers that the receiver is absent. If extending has taken place recall will ensue.

3.8 VOICE PAGING

If the paging equipment permits page with verbal messages these can be undertaken by the PBX operator, in conjunction with call extending also. The extension symbol on the console flashes when the speech path has been established and changes to a steady glow when the speech time expires. Answer via meet me can thereafter be obtained. The PBX operator can extend voice paging before or after answer.

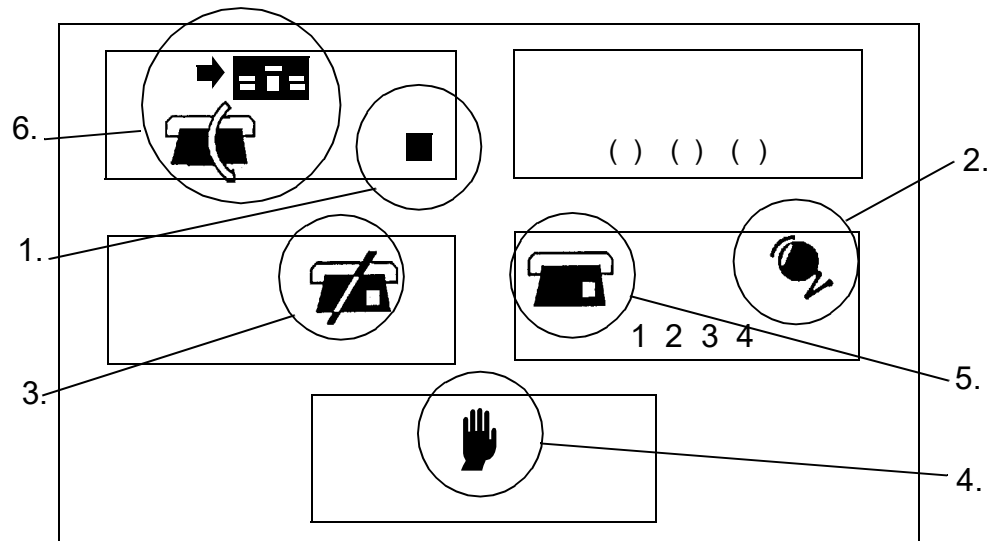
3.9 MESSAGE PAGING

A digit message of maximum ten digits can be transmitted via a special procedure, provided that the paging receiver possesses a display.

3.10 ALARM

The PBX operator can initiate alarm and alarm acknowledgment to paging equipment.

3.11

CONSOLE SYMBOLS USED FOR PAGING, SYMBOLIC
CONSOLE

- 1) Indicator for paging calls.
Steady glow for ongoing paging call.
Flashes for queue to paging equipment.
- 2) Ring control message.
Together with symbol 1 indicates an ongoing paging call.
- 3) Absence message.
Paging receiver is in the charging compartment.
- 4) Congestion (blocking) message.
This is obtained in the following cases (together with symbol 1):
 - Equipment busy or not functioning.
 - Paging already in progress to wanted number.
 - Total paging time has expired.
 - Wanted number missing or has wrong type of paging receiver.
- 5) Extension symbol.
Flashes for voice paging or answer to paging
- 6) Recall.
Together with symbol 1 this indicates recall in respect of a paging call.
If symbol 5 flashes this indicates recall on reply to a paging call.

4 PAGING IN COMBINATION WITH OTHER FACILITIES

4.1 SPEECH STATE AFTER ANSWER VIA A PROCEDURE

After answer via a procedure from an extension telephone the call is regarded in the same manner as though it were established directly between the two parties. The paging equipment is disconnected completely after answer via a procedure.

4.2 INQUIRY

Initiation of paging and answer to paging can be undertaken in the inquiry state.

4.3 ALTERNATION SIGNAL AND TRANSFER

4.3.1 PAGING WITH MEET ME ANSWER

A alternation signal during ongoing paging, i.e. while waiting for meet me answer, leads to disconnection of paging and return to the parked party. Transfer can be undertaken before and after answer.

4.3.2 PAGING WITH TRANSMISSION OF DIGIT INFORMATION TO PAGER'S DISPLAY

A alternation signal during ongoing paging leads to the extension being connected to the parked party once more. Paging continues automatically and is disconnected when the message has appeared on the display of the pager's receiver.

4.3.3 VOICE PAGING VIA RADIO

A alternation signal during the wait for a voice channel and after terminated radio speech during the wait for meet me leads to disconnection of the paging and return to the parked party as a consequence. During ongoing speech via radio the inquiry signal will be ignored. The alternation signal leads to disconnection of the radio channel and return to the parked party.

On transfer a category check is undertaken to verify that the parked party, if an external line, is entitled to initiate voice paging. If transfer is permitted it can be undertaken both before and after answer.

4.4 INTERCEPTION, DIVERSION

Interception by the paging facility can be undertaken both as follow me and as diversion. Paging is undertaken as standard paging by the PBX.

4.4.1 FOLLOW ME

On a call to an extension with ongoing follow me to the paging facility, paging will be started immediately.

4.4.2 DIVERSION

Diversion to a paging receiver can take place directly, on no reply and on busy. The extension shall have paging as an individual divertee position and activated diversion. On direct diversion paging will be started immediately. No ring signals are received at the telephone. On no reply paging will commence after a predetermined time. After paging has been started ring signals at the telephone will cease.

Note: Generic extensions (IP, DECT, Mobile extensions) cannot use diversion on no reply, diversion on busy or direct diversion to paging.

4.4.3 EXTENSION WITH INTERCEPTION BY PAGING FACILITY

Follow me and direct diversion to paging are undertaken irrespective of the state of the extension (free, busy, line lockout). When an extension, who has requested any form of interception to paging is paged all new diversion attempts to the paging equipment will be blocked. The same number can be the object of several concurrent paging jobs (MDP). An ongoing paging does not prevent the paged extension from initiating outgoing calls.

4.4.4 PROCEDURES

Follow me to the paging facility is requested via the following procedures:

- *218# from own telephone.
- *218*D1# for secondary number D1 from own telephone.
- *218*D1# for directory number D1 from previous follow me position.
- *218*D1# for directory number D1 from PBX operator.

Follow me to the Extra paging number facility is requested via the following procedures:

- *218*extra paging number# from any extension.

Diversion to the paging facility is requested with the normal diversion procedures for:

- direct diversion
- diversion on no reply
- diversion on busy

Interception by the paging facility is canceled by using the normal cancellation procedures or on a request for new interception by a position other than the paging facility.

Note: Generic extensions (IP, DECT, Mobile extensions) cannot use diversion on no reply, diversion on busy or direct diversion to paging.

4.4.5 BYPASS OF INTERCEPTION BY PAGING FACILITY

Interception by the paging facility can be bypassed by using the procedure bypass of interception if the categories of the initiating party permit bypass.

4.4.6 BYPASS OF INTERCEPTION ON INITIATION OF PAGING

All types of interception are bypassed automatically when paging is initiated to a directory number with ongoing interception. Paging is always started when the paging procedure is used and the number that is given in the procedure is always paged irrespective of interception.

4.5 INTRUSION AND CALL WAITING

Intrusion and call waiting are not possible during ongoing calls to the paging facility, neither while waiting for meet me answer nor during ongoing voice paging.

4.6 REROUTING

Rerouting cannot take place directly to the paging facility. The rerouting position can nevertheless have ongoing interception by the paging facility.

4.7 NON DIALED CONNECTION (HOT LINE)

Non dialed connection can take place to the paging facility using prefix procedures for DTMF-signaling (See 2.1 Standard paging on page 7 and 2.2 Paging via special procedures on page 8).

4.8 ABBREVIATED NUMBERS

DTMF-signaling procedures for initiation of and reply to paging can be inserted as suffixes to abbreviated numbers. Each abbreviated number corresponds to paging to a specific directory number. Paging procedures cannot be used in individual abbreviated numbers.

4.9 IP TERMINALS (SIP AND H.323)

All prefix procedures for initiation of and answer to paging calls and the suffix procedure for initiation can be programmed on the function buttons for single button access (name selection) on the IP terminal, if available for the used phone model.

If the prefix procedures are programmed complete with an extension number, initiation of and answer to paging to this number is initiated with one button depression only. If only parts of a suffix procedure are programmed, it may not work, since the IP terminals normally use en-bloc sending of numbers.

For IP terminals, an ongoing paging will be disconnected if it is parked.

IP terminals cannot use diversion on no reply, on busy or direct to paging.

4.10

DECT AND MOBILE EXTENSIONS

All prefix procedures for initiation of and answer to paging calls and the suffix procedure for initiation can be used by the terminal. Some models may be able to program feature keys or menus with prefix procedures for Paging.

For the DECT and Mobile extensions, an ongoing paging will be disconnected if it is parked.

DECT and Mobile extensions cannot use diversion on no reply, on busy or direct diversion to paging.

4.11

DIGITAL SYSTEM TELEPHONE

All prefix procedures for initiation of and answer to paging calls and the suffix procedure for initiation can be programmed on the function buttons for single button access (name selection) on the IP telephone. If the prefix procedures are programmed complete with an extension number are initiation of and answer to paging to this number initiated with one button depression only. If only parts of a suffix procedure are programmed then the procedure needs to be filled out to a complete procedure each time the function button is used.

In the digital system telephone an ongoing paging will be disconnected if it is parked.