

Karel MS48

Telephone System

*Programming
Guide*



Edition 3.2

KAREL

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INTRODUCTION

This Programming Guide provides an overall reference on the programs of KAREL MS48 Telephone System and its accessories. The explanations in the guide are intended for the technicians dealing with the programming of the system.

Most of the programming can be made from the telephone of the system supervisor whereas some of the programs have to be entered from the telephone of the operator. By default, the operator is the system supervisor.

This guide is formed up of eight main chapters and an appendix:

- 1) System Programming Guide: Basic programs including the extension, line, flexible numbering and the system programs are explained.*
- 2) EVM48 Programming Guide: The programs for setting the EVM48 parameters of the system are given and should be referred if there is an EVM48 Voice Mail installed on the system.*
- 3) Call Record Listing Facilities Programming Guide: The programs for setting the CRL parameters of the system are given and should be referred if there is a CRL output device connected to the system.*
- 4) DY26 Programming Guide: The program for setting the DY26 parameter of the system is given and should be referred if there is a DY26 Doorphone connected to the system.*
- 5) IA12 Programming Guide: The programs related to the IA12 ISDN Adaptor of the system are given and should be referred if ISDN Adaptor is to be used with the system.*
- 6) Remote Programming Guide: The methods on how to remotely program the system and the relevant programs are explained.*
- 7) Software Troubleshooting Guide: Commonly faced software implementation errors are given. These hints will help in locating customer complaints.*
- 8) Appendix: This part consists of a table. The varieties of the features with respect to the countries are given in this table.*

GENERAL DEFINITIONS

In this guide the explanations of the programs are given in a fixed format;

The header line: Name and the default base code of the program are given. For the programs that have to be entered from the telephone of the operator the phrase "operator only" is used.

Description: Brief description of the program is given.

Activate/Cancel: Codes to activate and deactivate the programs are given. (Note that these sections are used only when the related program has different activation and cancellation codes.)

Parameters: Parameters of the program with their description are given.

Default Value: Default values of the program parameters are given.

Notes: Supplementary notes, restrictions and remarks related to the program are given.

IMPORTANT

- a. In the header line the default base code of the program is given.
- b. The examples given throughout this guide are for default 2-digit extension and line numbers.

Please keep in mind that you may change the default program codes and extension numbers given in examples by *Flexible Numbering* facility.

ABBREVIATIONS

The following table gives the meanings of the abbreviations used throughout this guide.

AOC	:	Advice Of Charge
BDP	:	Busy Display Panel
C.O.	:	Central Office
CRL	:	Call Record Listing
DDI	:	Direct Dialing In
DISA	:	Direct Inward Subscriber Access
DP	:	Dial Pulse
DTMF	:	Dual Tone Multi-Frequency
ISD	:	International Subscriber Dialing
ISDN	:	Integrated Services Digital Network
MSN	:	Multiple Subscriber Numbering
STD	:	Subscriber Trunk Dialing

I. PROGRAMMING MODE

I.1. PROGRAMMING MODE ENTRY (877777)

Puts the system in the programming mode and thus allows entering the program codes.

877777

- **NOTES**

1. Just after entering the programming mode, the “Pr” LEDs on the BDPs of KAREL Consoles turn on.
2. To prevent the entry of irrelevant program codes, the system waits for 60 seconds to start entering the first program code. If a program code is not entered within this 60 seconds period, “877777” should be dialed again to restart the programming mode. The duration of the programming mode is automatically extended by 60 seconds with each program code that has been correctly entered.

I.2. PROGRAMMING MODE EXIT (877778)

Exits the programming mode. Entering this code stores the program updates in the non-volatile memory and thus prevents loss of these updates.

877778

- **NOTES**

1. The system also exits the programming mode automatically after the 60-second period as explained in *Programming Mode Entry*. However, this code must always be dialed to exit programming mode so as to ensure that the program codes are saved in the non-volatile memory.
2. After exiting the programming mode, the “Pr” LEDs on the BDPs of KAREL Consoles turn off.

I.3. PROGRAMMING MODE ENTRY LOCK (837)

Prohibits unauthorized users from putting the system in programming mode using the System Supervisor telephone.

837 P Q

- **PARAMETERS**

- P : System Supervisor's password.
- Q = 3 : Programming mode entry is locked
- = 2 : Programming mode entry is unlocked.

I.4. ENTERING PROGRAMMING CODES

As explained in the following pages, each program code consists of a set of numbers.

For most of the programs, it is necessary to enter the complete code. In such cases, the internal dial tone is received to confirm the correct entry of the program.

For some programs, the coding should be stopped before the entry of the entire code. In such cases, you should hang up to complete the program. In such codes, "Hang Up" is designated with the symbol "✳" at the end of the program.

IMPORTANT

As the first step in programming, *Country Setting* program must be entered to load the country specific parameters.

II. EXTENSION PROGRAMS

II.1. SYSTEM SUPERVISOR (803)

Allows changing the System Supervisor who puts the system in programming mode, enters most of the program codes and exits the programming mode.

803 E

- **PARAMETERS**

E : Extension number.

- **BY DEFAULT**

803 11 is active.

II.2. EXTERNAL CALL AUTHORITY (887)

Allows setting the *External Call Authority* of the extensions, so as to control the outgoing calls of the extensions by call type. The program can be entered both in *Day* and *Night Modes* so as to set different *Day* and *Night Mode External Call Authorities*.

887 E [9] P

- **PARAMETERS**

E : Extension number.

[9] Optional parameter

If entered, P parameter is valid for all extensions starting from E up to the last physical extension.

P = 0 : Intercom.

= 1 : Intercom, local and restricted common pool.

= 2 : Intercom, local, long distance and restricted common pool.

= 3 : Intercom, local, long distance, international and unrestricted common pool.

= 4 : Intercom and unrestricted common pool.

= 5 : Intercom, local and unrestricted common pool.

- **BY DEFAULT**

887 11 1 and 887 12 9 0 are active.

- **NOTES**

1. Extensions with restricted common pool authority levels can call common pool numbers only within their authority levels.
2. P = 0 works as P = 1 for the operator, in *Day Mode*.

II.3. CALL PREFIX RESTRICTION (8007/8008)

Allows defining prefixes to restrict the external calls starting with these prefixes.

- **ACTIVATE**

8007 P Q

- **CANCEL**

8008

- **PARAMETERS**

- P = 0 : None of the extensions can dial numbers starting with prefix Q in *Day* and *Night Modes*.
- = 1 : None of the extensions can dial numbers starting with prefix Q in *Night Mode*.
- = 2 : None of the extensions can dial long distance numbers starting with prefix Q after dialing the STD code in *Day* and *Night Modes*.
- = 3 : Extensions with *External Call Authority Level "1"* cannot dial the local numbers starting with prefix Q in *Day* and *Night Modes*.
- = 4 : Extensions with *External Call Authority Level "1"* can dial long distance numbers starting with prefix Q after dialing the STD code in *Day* and *Night Modes*.
- = 5 : Extensions with *External Call Authority Level "1"* can dial the local numbers starting with prefix Q only, in *Day* and *Night Modes*.
- Q : Prefix (at most 3 digits).

- **BY DEFAULT**

No prefixes are defined.

- **NOTES**

1. If Q is one or two digits, you have to hang up to complete the program sequence.
2. At most 10 different restrictions can be entered. If more than 10 restrictions are to be entered, error tone is received after dialing "8007".
3. Even if the prefix is defined to have less than 3 digits, then the call is barred after the extension dials the third digit when P = 4 or 5.
4. When "8008" is dialed to cancel the program, all prefixes are cleared.

II.4. CALL PREFIX RESTRICTION OVERRIDE PERMISSION

(887 E 8)

887 E [9] 8 P

- **PARAMETERS**

E : Extension number.

[9] Optional parameter

If entered, parameter P is valid for all extensions starting from E up to the last physical extension.

P = 0 : E cannot override call prefix restrictions.

= 1 : E can override call prefix restrictions.

- **BY DEFAULT**

887 11 9 8 0 is active.

II.5. ACCESS GROUP

(801)

Allows defining extension groups to allocate certain lines to those extension groups.

801 E P

- **PARAMETERS**

E : Extension number.

P = 00, 01, ..., 14 : Extensions can access only the lines allocated to their groups by *Access Group Line Matching* program.

= 15 : Extensions can access all lines except for the lines that are marked as unavailable by *Access Group Line Matching* program.

- **BY DEFAULT**

801 E 00 is active for all extensions.

II.6. ACCESS GROUP LINE MATCHING (802)

Allows allocating lines to the access groups defined by *Access Group* program.

802 T P (P P P ,,,,,)

- **PARAMETERS**

T : Line number.

P = 00,...,14 : Access group numbers (defined by *Access Group* program) to which T is to be allocated.

P = 15 : T is unavailable for all extensions.

- **BY DEFAULT**

802 T 00 is active for all lines.

- **NOTES**

1. P = 00,...,14:

After each entry of an access group number, instead of giving internal dial tone, the system allows entering new access group numbers. Hence, by a single entry of this program, a single line can be allocated to at most 15 access groups at a time. If it is desired to allocate T to less than 15 access groups, you should hang up after entering the last access group number.

2. If P is set to 15, the system gives internal dial tone and does not allow entering any more access group numbers.

3. The following example is given to clarify the entry of the program.

To:

- Mark line 04 as unavailable,
- Allocate line 01 to the access groups 01, 02 and 03,
- Allocate lines 02 and 03 to the access group 02,

The codes to be dialed are:

- 802 04 15,
- 802 01 01 02 03 and hang up,
- 802 02 02 and hang up,
- 802 02 03 and hang up.

The program can be entered both in *Day* and *Night Modes* so as to set different *Day* and *Night Mode PBX Groups* to serve the following purposes:

1. The extensions in the same *PBX Group* can answer the calls ringing at each other's telephone by using *Group Call Pick Up* methods.
2. *Follow Me (Busy)* and *Follow Me (No Answer)* facilities are active among the extensions in the same *PBX Group*.
3. The extensions in the same *PBX Group* can activate *Parallel Extensions* facility; so that the incoming external calls ringing on their telephones, will ring on the next three extensions in the same *PBX Group* as well.
4. *Paging-Group* can be activated by dialing any extension number in the *PBX Group*.

- **ACTIVATE**

805 E₁ E₂

- **CANCEL**

805 E₁ E₁

- **PARAMETERS**

E₁ : The first extension number.

E₂ : The second extension number.

- **BY DEFAULT**

805 E₁ E₁ is active for all extensions.

- **NOTES**

1. Entering this code more than once, as many extensions as desired can be included in a *PBX Group*. However, these extensions must form a chain; that is, E₁ of an entry of the program must be equal to the E₂ of the previous entry of the program.
2. To delete a *PBX Group*, the program must be canceled for each extension in the *PBX Group*.

II.8. PBX GROUP PARAMETERS

(8026)

8026 P Q R S

- **PARAMETERS**

- P = 0 : *Follow Me (No Answer)* in *PBX Groups* is disabled.
= 1 : *Follow Me (No Answer)* in *PBX Groups* is enabled.
- Q = 0 : *Follow Me (Busy)* in *PBX Groups* is disabled for external calls.
= 1 : *Follow Me (Busy)* in *PBX Groups* is enabled for external calls.
- R = 0 : *Follow Me (Busy)* in *PBX Groups* is disabled for internal calls.
= 1 : *Follow Me (Busy)* in *PBX Groups* is enabled for internal calls.
- S = 0 : An extension can pick up a call ringing on another extension in the same *PBX Group* by dialing "5" (*Dial Call Pick Up*).
= 1 : An extension can pick up a call ringing on another extension in the same *PBX Group* just by lifting handset (*Automatic Call Pick Up*).

- **BY DEFAULT**

8026 1 1 1 0 is active.

- **NOTES**

The modification of one of the parameters will be valid for all *PBX Groups*.

II.9. FLASH DISABLE

(8071)

Allows controlling the use of "*" / "#" keys / *Programmable Facility Keys* and *Hook Switch* by the extensions.

8071 E [9] P Q

- **PARAMETERS**

- E : Extension number.
[9] Optional parameter
If entered, parameters P and Q are valid for all extensions starting from E up to the last physical extension.
- P = 0 : E cannot use "*" / "#" keys for refreshing the internal dial tone & for *Hook Flash* respectively. If E has a DTMF set with 4 x 4 keypad, he is not allowed to use *Programmable Facility Keys* on his keypad as well.
= 1 : E can use "*" / "#" keys for refreshing the internal dial tone & for *Hook Flash* respectively. If E has a DTMF set with 4 x 4 keypad, he can use *Programmable Facility Keys* on his keypad as well.
- Q = 0 : E cannot use *Hook Switch* for *Hook Flash*.
= 1 : E can use *Hook Switch* for *Hook Flash*.

- **BY DEFAULT**

8071 11 9 1 1 is active.

- **NOTES**

1. The parameter P affects only the extensions with DTMF telephone sets.
2. The system releases the DTMF channels dedicated to the extensions with P = 0, 20 seconds after these extensions dial the last DTMF digit. These extensions cannot activate some system features (*Call Back, Busy Extension Signaling, Intrusion, Door-Opener While Talking To The Doorphone*) 20 seconds after the last DTMF digit they dial.

II.10. INTRUSION AUTHORITY (806)

806 E [9] P

- **PARAMETERS**

E : Extension number.

[9] Optional parameter

If entered, parameter P is valid for all extensions starting from E up to the last physical extension.

P = 0 : E cannot activate *Intrusion*.

= 1,...,6 : E can intrude only the extensions with lower *Intrusion Authority Levels*.

= 7 : E can intrude every extension.

- **BY DEFAULT**

806 11 7 and 806 12 9 0 are active.

- **NOTES**

1. Parameter P controls only the permission for *Intrusion* activated by dialing "0".
2. *Do Not Disturb* activated by an extension does not function for the calls of the other extensions with higher *Intrusion Authority Levels*, except for the following cases :
 - a. *Do Not Disturb* activated by an extension functions for the calls from the operator without any authority limitations.
 - b. *Do Not Disturb* activated by an extension with a Karel Feature Phone operates for the calls from all the other extensions without any authority limitations.
3. *Intrusion Authority* also controls *Executive – Secretary Mode*. Among the two *Executives* with different *Secretaries*, the one whose *Intrusion Authority Level* is higher than or equal to the other can call the other directly.

II.11. AUTO-DIAL / INTRUSION PERMISSION (8073)

8073 E [9] P Q

- **PARAMETERS**

E : Extension number.

[9] Optional parameter

If entered, parameters P and Q are valid for all extensions starting from E up to the last physical extension.

P = 0 : E cannot activate *Auto-Dial*.

= 1 : E can activate *Auto-Dial*.

Q = 0 : E cannot activate *Intrusion*.

= 1 : E can activate *Intrusion*.

- **BY DEFAULT**

8073 11 9 1 0 is active.

- **NOTES**

1. Parameter Q controls the permission for *Intrusion* activated by dialing "5".
2. Q = 0 for the operator and it cannot be changed.

II.12. EXTERNAL CALL PICK UP / TARGET FOR CALL FORWARDING PERMISSION (8074)

8074 E [9] P Q

- **PARAMETERS**

E : Extension number.

[9] Optional parameter

If entered, parameters P and Q are valid for all extensions starting from E up to the last physical extension.

P = 0 : E cannot pick up the incoming external calls ringing on the operator or the ringing extension by dialing "3".

= 1 : E can pick up the incoming external calls ringing on the operator or the ringing extension by dialing "3".

Q = 0 : Extensions cannot forward their calls to E.

= 1 : Extensions can forward their calls to E.

- **BY DEFAULT**

8074 11 9 1 1 is active.

II.13. OUTGOING CALL TIME-OUT (801 E 9)

Allows controlling the duration of the outgoing external calls of the extensions.

- **ACTIVATE**

801 E 9 P

- **CANCEL**

801 E 9 *

- **PARAMETERS**

E : Extension number.

P = 02,...,20 : The duration in minutes that E is allowed to use for his outgoing external calls.

- **BY DEFAULT**

No *Outgoing Call Time-Outs* are defined for the extensions.

- **NOTES**

E hears a short warning beep 15 seconds before the call is terminated.

II.14. INCOMING CALL TIME-OUT (8084)

Allows limiting the incoming external calls of the extensions with the duration defined by *Outgoing Call Time-Out* program.

8084 P

- **PARAMETERS**

P = 0 : The duration that is defined by *Outgoing Call Time-Out* program does not apply for the incoming external calls.

= 1 : The duration that is defined by *Outgoing Call Time-Out* program applies for the incoming external calls as well.

- **BY DEFAULT**

8084 0 is active.

- **NOTES**

The extension hears a short warning beep 15 seconds before the call is terminated.

Allows defining extensions to ring in parallel with the operator for the incoming external calls.

- **ACTIVATE**
8085 E

- **CANCEL**
8086

- **PARAMETERS**

E : Extension number.

- **BY DEFAULT**

No *Parallel Operators* are defined.

- **NOTES**

1. At most 4 different *Parallel Operators* can be entered. If more than 4 *Parallel Operators* are to be entered, error tone is received after dialing "8085".
2. If a *Parallel Operator* is busy when there is an incoming external call, the next extension in his *PBX Group* program does not ring in parallel with the operator.
However, if the operator is busy when there is an incoming external call, the incoming external call rings on the next extension in the operator's *PBX Group*, but not on the *Parallel Operators*.
3. Even if a *Parallel Operator* activates *Follow Me* facility, incoming external calls still ring on this *Parallel Operator* but not on the *Follow Me* extension. However, if the operator activates *Follow Me* facility, incoming external calls ring on the *Follow Me* extension, but not on the *Parallel Operators*.
4. If the operator or the *Parallel Operators* activate *Follow Me (No Answer)* facility, the incoming external calls are not diverted to the *Follow Me (No Answer)* extensions.
5. *Parallel Operators* cannot use *Parallel Extension Enable* facility.
6. If "8086" is dialed to cancel, then all *Parallel Operators* are cleared.
7. Once a *Parallel Operator* is defined, it will be automatically enabled.

Allows defining a *Hot Line* for an extension so that the extension can do one of the following just upon lifting handset:

1. Call another extension.
2. Access any idle line.
3. Access a specific line.
4. Call the number stored in the 97th or 98th or 99th common pool, which may be used for emergency calls.

• **ACTIVATE**
804 E₁ P Q

• **CANCEL**
804 E₁ E₁

• **PARAMETERS**

E₁ : Extension number.

P = E₂ : E₁ calls extension E₂.

= 09 : E₁ accesses any idle line.

= 07 T : E₁ accesses T, where T is line number.

= 03 : E₁ immediately calls the number stored in common pool 97.

= 04 : E₁ immediately calls the number stored in common pool 98.

= 05 : E₁ immediately calls the number stored in common pool 99.

Q = 0 : Connection between E₁ and P is established immediately.

= 1 : Connection between E₁ and P is established 4 seconds after E₁ lifts handset. E₁ can activate any other facility as well within these 4 seconds.

• **BY DEFAULT**

804 E₁ E₁ is active for all extensions.

• **NOTES**

1. It is not allowed to enter parameter Q if P = 03, 04 or 05.

2. A *Hot Line* cannot be assigned to the operator.

3. P = E₂ or E₁:

If Flexible Numbering is activated on the system and if E₂ or E₁ is beginning with 0, "0E₂ or 0E₁" should be entered.

4. If P = 03, 04, 05, or Q = 0; the extension is prohibited from using his "X" & "#" keys, *Hook Switch* and *Programmable Facility Keys*, even after *Hot Line* is canceled.

5. If P = 03, 04, 05:

- When *Hot Line* is activated, the *External Call Authority Level* of the extension is automatically set to "3".

- When *Hot Line* is cancelled, the *External Call Authority Level* of the extension is automatically set to "0".
- Even if all lines are occupied when the extension lifts the handset, the system releases one of the lines and assigns this line to the extension.
- Even if the telephone is locked when the extension lifts the handset, the extension accesses a line and starts calling the common pool number. There is no need to dial the password as the telephone automatically becomes unlocked.

II.17. DISA / AUTO ATTENDANT INACCESSIBLE EXTENSION (801 E 8)

801 E 8 P

- **PARAMETERS**

E : Extension number.

P = 0 : The extension can be accessed directly by the parties calling through DISA / Auto Attendant lines.

= 1 : The extension cannot be accessed directly by the parties calling through DISA / Auto Attendant lines.

- **BY DEFAULT**

801 E 8 0 is active for all extensions.

II.18. HOTEL ROOM DEFINITION (8028)

8028 E P

- **PARAMETERS**

E : Extension number.

P = 0 : E is not a hotel room extension.

= 1 : E is a hotel room extension.

- **BY DEFAULT**

8028 E 0 is active for all extensions.

- **NOTES**

1. A hotel room extension is not allowed to use the following user facilities:
 - a. Password Define, Password Update, Phone Lock, Calling From Locked Phone.
 - b. Private Pool Entry, Calling From Common Pool, Calling From Private Pool, Last Number Redial.

- c. Auto-Dial (Last Number), Auto-Dial (Private Pool), and Auto-Dial (Common Pool).
 - d. Call Back.
 - e. Busy Extension Signaling.
 - f. Intrusion.
 - g. Paging An Extension, Paging-Group, Paging-All.
 - h. External Call Pick Up, Selective Call Pick Up, Group Call Pick Up.
 - i. Do Not Disturb.
 - j. Background Music.
 - k. Parked Call Retrieve.
 - l. Programmable Facility Keys.
 - m. Hook-Flash.
 - n. Follow Me, Follow Me (No Answer), Remote Follow Me.
2. A hotel room extension cannot be a target for *Remote Follow Me*, *Follow Me* and *Follow Me (No Answer)*.
 3. A hotel room extension cannot be included in a *PBX Group*.
 4. A *Hot Line-External Number* cannot be assigned to a hotel room extension.
 5. A hotel room extension cannot be accessed directly from DISA and Auto Attendant lines.
 6. A hotel room extension can call all other extensions. However, only the operator and the authorized extensions can call the hotel room extensions. (See *Hotel Room Access Permission* as well.)
 7. By default, none of the hotel room extensions can use their “*” / “#” keys. However, by *Flash Disable* program, the hotel room extensions can be allowed to use their “*” keys.

II.19. HOTEL ROOM ACCESS PERMISSION (8029)

8029 E P

- **PARAMETERS**

- E : Extension number.
 P = 0 : E cannot call hotel room extensions.
 = 1 : E can call hotel room extensions.

- **BY DEFAULT**

8029 11 1 for the operator and 8029 E 0 for other extensions are active.

- **NOTES**

1. Extensions with *Hotel Room Access Permission* can use *Meet Me (Operator)* facility as well.
2. P = 1 for the operator and it cannot be changed.

Allows limiting the total number of metering pulses that an extension can use during his outgoing external calls. Especially useful in hotel applications.

- **ACTIVATE**

8079 E P

- **CANCEL**

8079 E *, or 8079 E 0000

- **PARAMETERS**

E : Extension number.

P = 0001,...,9999 : Total number of metering pulses that E is allowed to use during his outgoing external calls.

- **BY DEFAULT**

No *Toll Accounts* are defined for the extensions.

- **NOTES**

1. When a *Toll Account* is defined for an extension, his account is decremented by one for each metering pulse received through the C.O. line during his ongoing external call.

If the extension uses all of his account, he is not allowed to make outgoing external calls anymore.

If the account of an extension becomes zero during his ongoing conversation, his call is terminated.

2. The *Toll Account* limits the outgoing external calls of the extensions only on the lines for which,
 - There are real metering pulses, and
 - *Pulse Price* is activated, and
 - External call authorities of the extensions are checked (see *Line Parameters* program.)

III. LINE PROGRAMS

III.1. LINE STATUS AND SIGNALING

(89)

89 T [9] P Q

- **PARAMETERS**

T : Line number.

[9] Optional parameter

If entered, parameters P and Q are valid for all lines starting from T up to the last line.

P = 0 : The line is out of service.

= 1 : The line is in service.

= 2 : The line is in service for incoming calls only.

Q = 0 : The line is in DP signaling mode.

= 1 : The line is in DTMF signaling mode.

- **BY DEFAULT**

89 01 9 0 is active.

- **NOTES**

It is not allowed to enter parameter Q if P = 2 or 0.

Allows defining various parameters for a line.

800 T E₁ P Q R S (to be entered in *Day Mode*)

800 T E₂ (to be entered in *Night Mode*)

- **PARAMETERS**

T : Line number.

E₁ : *Day Mode* ringing extension number.

E₂ : *Night Mode* ringing extension number or fax extension number.

P = 0 : T can be accessed by *Automatic Line Access* or *Selective Line Access*.

= 1 : T can only be accessed by *Selective Line Access*.

Q = 0 : External call authorities of the extensions are checked on T.

= 1 : External call authorities of the extensions are not checked on T.

R = 0 : *Fax Router* is not active on T.

= 1 : *Fax Router Mode 1* is active on T. (See notes below.)

= 2 : *Fax Router Mode 2* is active on T. (See notes below.)

S = 0 : The external calls coming from T in *Night Mode* are automatically answered by EVM48 provided that the Auto Attendant message 08 (*Night Mode Greeting Message*) is entered.

= 1 : The external calls coming from T in *Night Mode* are not answered by EVM48.

- **BY DEFAULT**

800 T 11 0 0 0 0 (in *Day Mode*) and 800 T 11 (in *Night Mode*) are active for all lines.

- **NOTES**

1. Parameter P:

P = 1 is especially useful when T is connected to one of the extensions of another exchange to form a tie line.

2. Parameter Q:

a) Q = 1 is especially useful when T is connected to one of the extensions of another exchange to form a tie line.

b) When Q = 1, extensions can access T without the need to dial their password even if their telephone is locked.

3. Parameter R:

If R = 0, then E₂ is the night ringing extension whereas if R = 1 or R = 2, E₂ is the fax extension. The items below explain this in detail.

- a) R = 0 sets the ringing extensions for *Day* and *Night Modes*.
- E₁ is the ringing extension for the incoming calls through T, in *Day Mode*.
 - *Night Mode* part of the program need not to be entered. Then the operator is the ringing extension for the incoming calls through T, in *Night Mode*.
If *Night Mode* part of the program is entered as well, E₂ will be the ringing extension for the incoming calls through T, in *Night Mode*.
- b) R = 1 sets the ringing extension for *Day Mode* and activates *Fax Router Mode 1* on T.
- The *Night Mode* part of the program must be entered as well so as to define E₂ as the fax extension.
 - In *Day Mode*, E₁ is the ringing extension for the incoming calls through T. When E₁ answers the call the systems checks the incoming tone.
 - * If it is a fax call, it is diverted to E₂. If E₂ does not answer the call for 6 ringing periods, the call is diverted to E₁. T is released if E₁ does not answer the call for 9 ringing periods.
 - * If it is not a fax call, E₁ goes on conversing.
 - In *Night Mode*, the system answers all incoming calls through T automatically and then checks the incoming tone. In the meantime, the external caller waits with ring-back tone as long as 10 seconds.
 - * If it is a fax call, it is diverted to E₂. T is released if E₂ does not answer the call for 6 ringing periods.
 - * If it is not a fax call, it is diverted to the operator and T is released if the operator does not answer the call for 5 ringing periods.
- c) R = 2 sets the ringing extension for *Day Mode* and activates *Fax Router Mode 2* on T.
- The *Night Mode* part of the program must be entered as well so as to define E₂ as the fax extension.
 - In *Day Mode*, the system answers all incoming calls through T automatically and then checks the incoming tone. In the meantime, the external caller waits with ring-back tone as long as 10 seconds.
 - * If it is a fax call, it is diverted to E₂. T is released if E₂ does not answer the call for 6 ringing periods.
 - * If it is not a fax call, it is diverted to E₁. T is released if E₁ does not answer the call for 9 ringing periods.
 - In *Night Mode*, the system answers all incoming calls through T automatically and then checks the incoming tone. In the meantime, the external caller waits with ring-back tone as long as 10 seconds.
 - * If it is a fax call, it is diverted to E₂. T is released if E₂ does not answer the call for 6 ringing periods.

* If it is not a fax call, it is diverted to the operator and T is released if the operator does not answer the call for 5 ringing periods.

4. Parameter S:
 - a) Unless an EVM-DE card is installed on the system, it is not allowed to enter parameter S.
 - b) When S = 0, EVM48 answers the external parties calling the system in *Night Mode* even when Auto Attendant is not activated by the operator.
 - c) Even when S = 0, EVM48 does not answer the external parties calling the system through non-Auto Attendant or non-DISA lines in *Night Mode* if *Fax Router Mode 1* or *Mode 2* is activated by the parameter R.
 - d) When S = 1, Auto Attendant lines function as non-Auto Attendant lines in *Night Mode*.
5. Line Ringing Assignment & *Parallel Operators*:
 - a) If the *Day* or *Night Mode* ringing extensions are different from the *Parallel Operators*, the incoming calls through T ring only on these ringing extensions, not on the *Parallel Operators*.
 - b) If the *Day* or *Night Mode* ringing extensions are one of the *Parallel Operators*, the incoming calls through T ring on all *Parallel Operators* except for the operator.

III.3. FOLLOW ME BUSY LINE (8050)

Allows defining groups of lines, so that the extensions who try to access a busy line by *Selective Line Access* are connected to the next line in the same group. The program can be entered both in *Day* and *Night Modes* so as to set different *Day* and *Night Mode* groups of lines.

- **ACTIVATE**

8050 T₁ T₂

- **CANCEL**

8050 T₁ T₁

- **PARAMETERS**

T₁ : The first line number.
T₂ : The second line number.

- **NOTES**

1. Entering the same code "8050" more than once, as many lines as desired can be included in a line group. However, these lines must form a chain; that is, T₁ of an entry of the program must be equal to the T₂ of the previously entered program.
2. To delete a line group, the program must be entered for each line as "8050 T₁ T₁".

Allows marking a line as DISA or Auto Attendant, so as to allow a remote user to access the extensions directly without the help of the operator.

1. The remote users calling through DISA lines receive a special DISA dial tone for 15 seconds during which they should dial the desired extension number.
2. The remote users calling through Auto Attendant lines receive a special DISA dial tone after the *Auto Attendant Greeting Message* for 8 seconds during which they should dial the desired extension number. After dialing the extension number, the Auto Attendant facility guides the remote user by the pre-recorded Auto Attendant messages. See *EVM48 Programming* section as well to have more details about how the parties calling the system through Auto Attendant lines are served.

8070 T P

- **PARAMETERS**

T : Line number.
P = 9 : DISA line.
= 8 : Auto Attendant line.
= 0 : Normal line.

- **BY DEFAULT**

8070 T 0 is active for all lines.

- **NOTES**

1. The party calling through the DISA / Auto Attendant line must have a DTMF telephone set to be able to dial the extension number.
2. If the party calling through the DISA line fails to dial an extension number during the special DISA dial tone, he is transferred to the operator or the ringing extension. The call rings on the operator or the ringing extension for 6 ringing periods and is released automatically at the end of 6 ringing periods if it is not answered.
3. The party calling through the DISA line can:
 - Refresh the special DISA dial tone by pressing “*” key. By this way, he can call another extension if the extension he called is busy or not answering.
 - Drop the line by pressing “#” key.
4. If the extension called through DISA line is busy or not answering, the system gives the party another 15 seconds to call another extension. By this way, the party is allowed to make 9 trials to establish a call. If he fails to establish a call within 9 trials, the call is transferred to the operator or the ringing extension and rings for 5 ringing periods and is released automatically at the end of 5 ringing periods if it is not answered.

5. DISA Lines and Fax Router:

If *Fax Router Mode 1* or *Mode 2* is activated on a line which is marked as DISA as well, the Fax Router works only if EVM48 is installed on the system and DISA Greeting Message is recorded. Otherwise Fax Router does not work.

6.

IMPORTANT

Unless the operator activates Auto Attendant, the Auto Attendant lines function as normal lines.

7. If the party calling through the Auto Attendant line fails to dial an extension number during the special Auto Attendant dial tone, he is transferred to the operator or the ringing extension. The call rings on the operator or the ringing extension for 6 ringing periods and is released automatically at the end of 6 ringing periods if it is not answered.

8. Auto Attendant Lines and Fax Router:

If *Fax Router Mode 1* or *Mode 2* is activated on a line which is marked as Auto Attendant as well, the external calls coming through that line will be answered as below:

The system checks the tone coming from the line while *Auto Attendant Greeting Message* is being read to the party and diverts the call to the fax extension if it detects a fax tone.

III.5. PERMANENT VOICE LEVEL (8025)

Allows adjusting the voice level of the lines permanently.

8025 T P

- **PARAMETERS**

T : Line number.

P = 1 : Receive voice level is increased, transmit voice level is decreased permanently.

= 0 : The default receive and transmit voice levels are used.

- **BY DEFAULT**

8025 T 0 is active for all lines.

- **NOTES**

Since increasing the receive voice level may result in disrupting the speech depending on the C.O. line characteristics on lines, the result of this code should be tested carefully.

IV. SYSTEM PROGRAMS

IV.1. COUNTRY SETTING (8009)

Allows setting the country code of the system software so that some parameters special for the country are loaded.

8009 P

- **PARAMETERS**

- P = 0 : The standard program parameters are active.
= 1 : The program parameters special to Greece are active.
= 2 : The program parameters special to Poland, Pakistan and India are active.
= 3 : The program parameters special to Portugal are active.
= 4 : The program parameters special to Spain are active.
= 5 : The program parameters special to Russia, Crimea and Georgia are active.
= 6 : The program parameters special to Romania are active.
= 7 : The program parameters special to Malta are active.
= 8 : The program parameters special to Republic of South Africa are active.

- **BY DEFAULT**

8009 0 is active.

- **NOTES**

1. The parameter P is not cleared even after the system is reset.
2. Once the value of the parameter P is changed, the system must be reset by the code "8259" or "7459" to load the parameters of the new country.
3. The explanations in all Karel guides are given for parameter P = 0 of this program. Changing this parameter for the desired country may cause changes in some features. The *Country Settings* table in *Appendix 1* gives the list of the features that are subject to change upon use of this program.
4. Make sure to refer to the *Country Settings* table in *Appendix 1* to see the deviations of the standard parameters or codes of the features depending on this program.

IV.2. STD / ISD CODES

(800019)

Allows selecting the STD and ISD codes of your own country.

800019 P

- **PARAMETERS**

P = 0 : STD code = 0 / ISD code = 00
= 9 : STD code = 9 / ISD code = 99

- **BY DEFAULT**

Defined by the parameter of the *Country Setting* program.

IV.3. AUTOMATIC NIGHT MODE

(883)

Allows switching the system between *Day* and *Night Modes* automatically, everyday at predetermined times.

- **ACTIVATE**

883 hhmm_s hhmm_e

- **CANCEL**

883 ✕

- **PARAMETERS**

hhmm_s : Starting time of the *Night Mode* in the format of hour (00-23) and minute (00-59).
hhmm_e : Ending time of the *Night Mode* in the format of hour (00-23) and minute (00-59).

IV.4. AUTOMATIC PARALLEL OPERATORS

(884)

Allows activating and deactivating the predefined *Parallel Operators* on the system automatically, everyday at predetermined times.

- **ACTIVATE**

884 hhmm_s hhmm_e

- **CANCEL**

884 ✕

- **PARAMETERS**

hhmm_s : Starting time of the *Parallel Operators* in the format of hour (00-23) and minute (00-59).
hhmm_e : Ending time of the *Parallel Operators* in the format of hour (00-23) and minute (00-59).

IV.5. DAILY AUTOMATIC SERVICES (8098)

Allows activating and deactivating *Night Mode* and/or *Parallel Operators* and/or *Auto Attendant* on the system automatically, on a daily basis.

- **ACTIVATE**
8098 P Q R

- **CANCEL**
8098 P 9

- **PARAMETERS**

- P = 1 : Night Mode.
- = 2 : Parallel Operators.
- = 3 : Auto Attendant.
- Q = 0 : Saturday.
- = 1 : Sunday.
- = 2 : Monday.
- = 3 : Tuesday.
- = 4 : Wednesday.
- = 5 : Thursday.
- = 6 : Friday.
- R = 0 : Service P is inactive throughout the day Q.
- = 1 : Service P is active throughout the day Q.

- **BY DEFAULT**

8098 1 Q 0, 8098 2 Q 0 and 8098 3 0 is active for all days.

- **NOTES**

The *Daily Night Mode/Daily Parallel Operators/Daily Auto Attendant* service is not deactivated at midnight in case *Automatic Night Mode/Automatic Parallel Operators/Automatic Auto Attendant* program is entered. Instead, the service remains active until the ending time of *Automatic Night Mode/Automatic Parallel Operators/Automatic Auto Attendant* program.

IV.6. BUZZER & RELAY FACILITIES (809)

Allows enabling the system buzzer and setting the relay to control some external electrical devices.

809 P

- **PARAMETERS**

- P = 0 : The cabinet buzzer is enabled.
- = 2 : The cabinet buzzer is disabled.
- = 1 : The relay is used for *External Ringer Control*.
- = 3 : The relay is used for *External Announcement Control*.
- = 6 : The relay is used for *External Music Source Control*.
- = 7 : The relay is used for *Door-Opener Control*.

- **BY DEFAULT**

809 0 and 809 7 are active.

- **NOTES**

1. The parameter values that control the cabinet buzzer and the relay are exclusively independent from each other, i.e. the cabinet buzzer and the relay can be controlled independently from each other.
2. P = 0: The buzzer rings in parallel with the ringing extension when there is an incoming external call.
3. P = 1: When the system detects the ring signal for an incoming external call, it activates the relay and the relay remains active with the cadence of the ring for the complete ringing period.
4. P = 3: If an *External Announcement System* is connected to MS48, the system activates the relay when an extension intends to make announcement by *Calling The Doorphone* facility and the relay remains active until the extension hangs up.
5. P = 6: If an *External Music Source* is connected to the system and if it is enabled by the operator, then the system activates the relay when an extension makes hook flash to park / hold his ongoing call or activates *Background Music* facility. The relay remains active until the call is retrieved or the extension cancels *Background Music* facility.
6. P = 7: If a Door-Opener System is connected to the system, the system activates the relay when an extension accesses the *Door-Opener* and the relay remains active for a programmable period of time.

IV.7. RELAY ACTIVATION TIME (8094)

Allows changing the activation time of the relay provided that the relay is used in *Door-Opener Control* mode.

8094 P

- **PARAMETERS**

- P = 00 : The relay is activated for 1 second.
P = 01,...,99 : The relay is activated for P x 0.1 seconds.

- **BY DEFAULT**

8094 00 is active.

IV.8. RECALL TIME (8082)

Allows changing the recall time of the parked calls.

8082 P

- **PARAMETERS**

P = 03,...,25 : The recall time of the parked calls is P x 10 seconds.

- **BY DEFAULT**

8082 06 is active.

- **NOTES**

The recall time for the multiple parked calls of KAREL Feature Phones, which is 3 minutes, is not affected by this program.

IV.9. LINE FLASH TIME (8099)

Allows changing the disconnection duration of the C.O. line when *Line Flash* is activated.

8099 P

- **PARAMETERS**

P = 02,...,20 : The disconnection time of the C.O. line is P x 100 milliseconds.

- **BY DEFAULT**

8099 06 is active.

IV.10. AUTOMATIC HOLD (8089)

Allows putting the incoming calls on hold automatically if they are not answered within the programmed time.

8089 P

- **PARAMETERS**

P = 01,...,99 : The call is put on hold after P seconds.
= 00 : The call is not put on hold, instead the external caller keeps receiving ring-back tone until the operator or the ringing extension answers him.

- **BY DEFAULT**

8089 00 is active.

- **NOTES**

1. The external calls that are put on hold are in the queue of the operator or the ringing extension.
2. If *Music On Hold* is activated by the operator, the external party hears music while he is put on hold. Otherwise, he receives short “beep”s from his handset.
3. If the *Wait Message* is recorded by the System Supervisor, the external party first receives this message and then hears music or receives short “beep”s.

IV.11. EQUAL LOAD ON LINES (8027)

Allows assigning equal load on lines when *Making External Calls by Automatic Line Access* is utilized. Especially useful to have equal call charges on all lines.

8027 P

- **PARAMETERS**

- P = 0 : The highest numbered line is received by *Automatic Line Access*.
= 1 : The least recently accessed line is received by *Automatic Line Access*.

- **BY DEFAULT**

8027 0 is active.

IV.12. MULTIPLE PARKED CALL RETRIEVE METHOD (808)

Allows setting the operator's retrieve method for his multiple parked calls.

808 P

- **PARAMETERS**

- P = 1 : *Time Selective Pick Up*: The operator retrieves the parked calls in the order of their waiting period; i.e. the one parked first is retrieved first.
= 0 : *Line Selective Pick Up*: The operator has to specify the line number while retrieving the parked call.

- **BY DEFAULT**

808 1 is active.

IV.13. DEFINING FORCED ACCOUNT CODES (8003)

Allows defining passwords for account codes to be used by the extensions in *Forced Account Coded External Calls* facility. Especially useful for the sites where some extensions need to make external calls using any telephone without any authority limitations.

- **ACTIVATE**
8003 P Q

- **CANCEL**
8003 P *

- **PARAMETERS**

P = 01,...,99 : The account code.
= 00 : The passwords of all account codes are cleared.
Q = 000,...,250 : The password of the account code.

- **BY DEFAULT**

8003 00 is active.

- **NOTES**

The account codes that do not have defined passwords are used to make *Account Coded External Calls*, i.e. **the extensions can use the account codes that do not have defined passwords only within their External Call Authority Levels.**

IV.14. DTMF FLASH TIME (801 E 7)

Allows setting the minimum duration of DTMF tone that can be detected by the system as hook-flash when “#” key is pressed.

801 E 7 P

- **PARAMETERS**

E : Extension number.
P = 1 : The minimum duration is 80 milliseconds.
= 0 : The minimum duration is 200 milliseconds.

- **BY DEFAULT**

801 E 7 0 is activate for all extensions.

- **NOTES**

IMPORTANT

It is not recommended to set the minimum duration to 80 milliseconds unless it is absolutely necessary, for the sake of eliminating the possibility of voice activated hook-flash, that happens if the system captures the DTMF tone of “#” key from voice.

Allows setting the system to regenerate the DTMF numbers dialed by the extensions.

8088 P

- **PARAMETERS**

- P = 0 : DTMF tones dialed from extension telephones are directly transmitted to the DTMF marked C.O. lines.
- = 1 : DTMF tones dialed from extension telephones are regenerated by the system and then transmitted to the DTMF marked C.O. lines.
- = 2 : The system checks the tone on the C.O. line when an extension accesses a DP marked line. If it detects the C.O. dial tone, it transmits the internal dial tone to the extension. Extension can dial numbers without hearing the C.O. dial tone, but the system waits for 10 seconds to detect a tone on the C.O. line and then transmits the numbers that the extension dials to the C.O. line. If the system cannot detect a tone for 10 seconds, it does not transmit the numbers dialed by the extension to the C.O. line.

- **BY DEFAULT**

8088 0 is active.

- **NOTES**

If "8088 2" is entered and the system cannot detect a tone on the C.O. line, the external calls are recorded if they are not terminated in a programmable period of time called *CRL Time Filter*. (See *Call Record Listing Facilities Programming* section-*CRL Time Filter* as well.)

IV.16. LEAST COST ROUTING

(8006)

Allows setting the system to check the numbers dialed by extensions to find the most economical route for establishing the calls.

When an extension activates *Automatic Line Access* by dialing "9", instead of the C.O. dial tone, he receives the internal dial tone. Then, the system compares the digits he dials with the pre-programmed prefix table and as soon as it finds a match, it calculates the most economical route based on the pre-programmed parameters. After such a match is found, a line is selected (it may be a specific line related with the prefix or any idle line) and a prefix of at most 4 digits (if present) is added in front of the digits extension dials and this number is sent to the C.O. If no match is found, any idle line is accessed and the number is sent to the C.O., after the 6th dialed digit.

IMPORTANT

It is not recommended to use this program unless necessary (if more than one operator with different rates are not available in your country).

- **ACTIVATE**
8006 L P Q R S T U

- **CANCEL**
8006 00

- **PARAMETERS**

All information for LCR is stored in a 40-row table.

- L : Location number (01,..., 40).
- P : Prefix (at most 6 digits) that the system compares with the dialed digits.
- Q : Prefix (at most 4 digits) that the system adds in front of the dialed number.
- R : Line number through which the external number with prefix Q is dialed (01,...,12).
- S : The starting and ending hours of LCR.
- T : Day information (0,...,8).
- U : Indicative charge pulse period in seconds (000,...,250).

As can be seen, each location in the LCR table starts with a prefix (at most 6 digits) that will be compared with the first 6 dialed digits. The second parameter is again a prefix (at most 4 digits) that the system will add in front of the dialed numbers. The third parameter determines if dialing should be made via a specific line. The fourth parameter is the starting and ending hours of the time period. The fifth parameter is the day info. A specific day, weekday or weekend may be programmed. The last parameter is the pulse period info, which may be used for selecting the route costing least. The number entered here is the pulse period in seconds and the highest means the cheapest.

1. Parameter L:
 - a) At most 40 different locations can be defined.
 - b) Dialing "8006 L" and then hanging up clears the specified location.

2. Parameter P:

- a) If the prefix is less than 6 digits, then skip the rest of the digits by dialing “#” in place of each digit.
- b) Whenever the extension gives a break of 3 seconds while dialing the digits:
 - The system compares the whole dialed number with prefix P of each location in the table. If it finds a match, the digits are dialed according to the matching location.
 - If it does not find a match, it omits the last dialed digit and checks the remaining dialed number. The system repeats this procedure until the first dialed digit to find a match.
 - If it does not find a match even after checking down to the first dialed digit, it does not give a line to the extension. Instead, the system waits the extension to dial up to the 6th digit.

E.g. When the following codes are entered:

8006 01 4##### 09## *
8006 02 42##### 0532 *
8006 03 423#### 0542 *
8006 04 4231## 0562 *
8006 05 0##### 0535 *

- If the extension dials “42” and waits, the system sends this number to the C.O. as “0532 42”.
- If the extension dials “423” and waits, the system sends this number to the C.O. as “0542 423”.
- If the extension dials “018” and waits, the system sends this number to the C.O. as “0535 018”.
- If the extension dials “567” and waits, the system does not send this number to the C.O. Instead, the system waits the extension to dial the next 3 digits.

3. Parameter Q:

If the prefix is less than 4 digits, then skip the rest of the digits by dialing “#” in place of each digit.

E.g.: If the prefix to be compared is “44” and the prefix that the system will dial in front of “44” is “09” then dial the code as “8006 L 44#### 09## ...”.

4. Parameter R:

If the parameter is to be skipped, a “#” should be dialed. In such a case, the dialing is established through any idle line.

E.g.:

- If “09” is to be dialed in front of “44” through line 12, then dial the code as “8006 L 44#### 09## 12...”.
- If “00” is to be dialed in front of “333” through any line, then dial the code as “8006 L 333#### 00## #...”.

5. Parameter S:

If the parameter is to be skipped, a “#” should be dialed. In such a case, the dialing is established regardless of the time at which the call is established.

E.g.:

- If "09" is to be dialed in front of "44" through line 12 between 02:00 and 08:00, then dial the code as " **8006 L 44#### 09## 12 0208...**".
- If "0212" is to be dialed in front of "5" through any line at any time, then dial the code as " **8006 L 5##### 0212 # # ...**".

6. Parameter T:

- 0 : Saturday.
- 1 : Sunday.
- 2 : Monday.
- 3 : Tuesday.
- 4 : Wednesday.
- 5 : Thursday.
- 6 : Friday.
- 7 : Every weekday.
- 8 : Weekend.

If the parameter is to be skipped, a "#" should be dialed. In such a case, the dialing is established regardless of the day information.

E.g.:

- If "09" is to be dialed in front of "44" through line 12 between 02:00 and 08:00 only on Wednesdays, then dial the code as " **8006 L 44#### 09## 12 0208 4...**".
- If "0212" is to be dialed in front of "5" through any line between 08:00 and 17:00 everyday, then dial the code as " **8006 L 5##### 0212 # 0817 # ...**".

7. Parameter U:

If the parameter is to be skipped, a "#" should be dialed. Skipping means "least cost".

E.g.: If the following codes are dialed at the same time:

8006 01 44#### 09## 12 0208 # 100

8006 02 44#### 0532 07 0210 # 250

8006 03 44#### 0542 09 0211 # #

The numbers starting with "44" are dialed after the prefix "0542" through line 09 even between 02:00 and 08:00 since the 3rd location contains the least cost entry.

8. It is meaningless to ignore the parameters L, P and Q, as far as the idea of LCR is concerned. However, the succeeding parameters after Q may be skipped (all of them at the same time). In such a case, it is enough just to dial "X" in place of the skipped parameters.

E.g.: If "09" is always to be dialed in front of "44" through any idle line, then the code be can be entered as " **8006 L 44#### 09## X**".

- **NOTES**

1. Provided that CM48-W (version 1.06 or better) is used as the CRL output device, the determination of the call types (local, long distance and International) and charging of the calls are made with respect to the digits dialed directly from the extension telephones. Otherwise, the digits entered by parameter Q of the program are used as the references for the determination of the call types and charging of the calls.
2. After dialing "9", since the system cannot know which line will be used at that time, the status of all lines are checked and the extension receives busy tone if all lines are busy.

But even if dial tone is received it does not mean that an idle line will be available. Following may happen after the system stops the comparison:

- If the line is busy, the extension receives busy tone.
 - If the number to be sent to the C.O. is beyond the *External Call Authority* of the extension or this number is restricted by the "8007" coded *Call Prefix Restriction Program*, then he receives error tone.
 - If the line through which dialing will be established is not assigned to the access group of the extension, the extension receives error tone.
3. If no line is assigned to the access group of the extension or if the external call authority of the extension is "0", then the extension receives error tone just after dialing "9" to access a line.
 4. The "8007" coded *Call Prefix Restriction Program* restricts the calls of extensions only if the prefix to be restricted is just the same as the one entered by parameter P or Q of the LCR program.

8007 0 11 (None of the extensions can dial numbers starting with 11)

8007 2 12 (None of the extensions can dial long distance numbers starting with 12 after dialing the STD code (0 by default))

8007 3 44 (Extensions with local call authority levels cannot dial local numbers starting with 44)

8006 01 13#### 1###*(Numbers starting with 13 are sent to C.O. as 13...)

8006 02 15#### 11##*(Numbers starting with 15 are sent to C.O. as 11 15...)

8006 03 11#### 32#*(Numbers starting with 11 are sent to C.O. as 32 11...)

8006 04 12#### 0###*(Numbers starting with 12 are sent to C.O. as 0 12...)

8006 05 16#### 012#*(Numbers starting with 16 are sent to C.O. as 012 16...)

8006 06 012### 4##*(Numbers starting with 012 are sent to C.O. as 4 012...)

8006 07 43#### 4###*(Numbers starting with 43 are sent to C.O. as 4 43...)

8006 08 44#### 112#*(Numbers starting with 44 are sent to C.O. as 112 44...)

8006 09 53#### 44##*(Numbers starting with 53 are sent to C.O. as 44 53...)

- Extensions will be able to dial 13, but not 15 and 11.
- Extensions will be able to dial 12, but not 16 and 012.
- Extensions with local call authorities will be able to dial 43, but not 44 and 53.

5. Once LCR is activated, the parameter of 8088 coded *DTMF Dialing* program takes the value "1", i.e. the system always regenerates the digits dialed by the extensions before sending them to the C.O.
6. If the numbers stored in the private pool or common pool start with the prefixes defined by parameter P of any LCR location, then the system sends these numbers to the C.O. with the prefix defined by parameter Q of the LCR location.
7. If the automatic dialer is activated for the numbers starting with the prefixes defined by parameter P of any LCR location, then the system sends these numbers to the C.O. with the prefix defined by parameter Q of the LCR location.
8. "#9" coded *Line Flash* feature does not work if LCR is activated, since the system gives internal dial tone to the extension when he dials "9".
9. If a line is entered as parameter R of an LCR location, then this line can be accessed upon dialing "9" even if it is marked as *Selective Line Access Only* by the 800 coded program.
10. Even if the system is set not to check external call authority levels of extensions on a specific line by the 800 coded program; if the line is accessed after dialing "9", the external call authorities are checked when LCR is activated.
11. If a line is entered as parameter R of an LCR location and if this line is included in a line group by the 8050 coded program; the LCR algorithm dials the external number from the next line in the group when the line specified by the parameter R is busy.

E.g. If the following programs are entered,

8006 L 44## 09#### 12*(Numbers starting with 44 are sent to C.O. as 09 44 from line 12...)

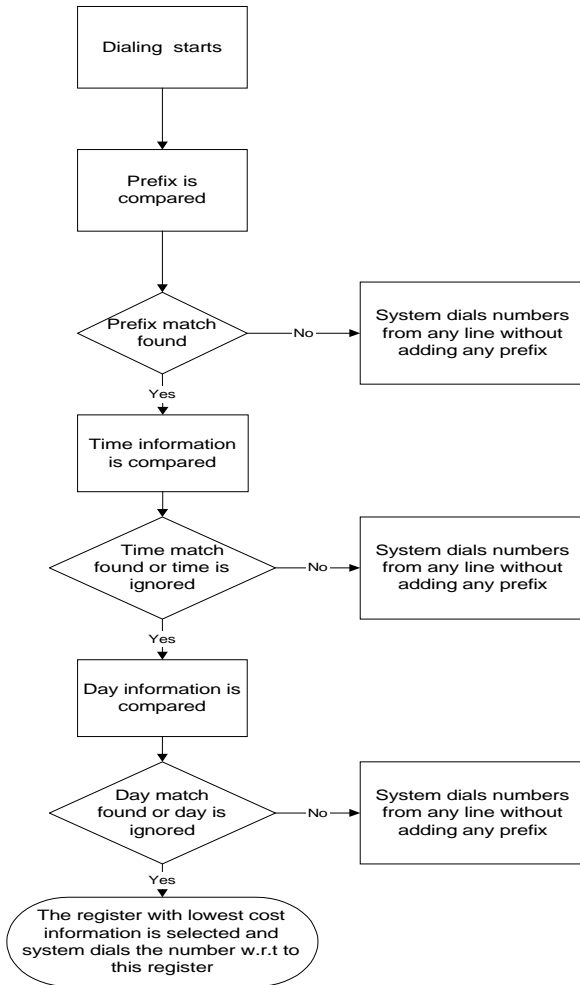
8050 12 01

8050 01 12 (Lines 12 and 01 are included in a group)

- When line 12 is busy, numbers starting with 44 are sent to C.O. as 09 44 from line 01.

12. A line cannot be transferred before the LCR algorithm starts sending the external number to the C.O.
13. *Selective Line Access* (7 + line no), *External Call Diversion* (835), and *Remote Line Access* (9 + password) are not affected by LCR.

The system makes comparison between the digits that the extensions dial and the LCR locations in the following manner:



IV.17. LINE CHECK SERVICE (OPERATOR ONLY)

(827 or 747)

Activates the dial tone detector on the system to detect the C.O. dial tone on lines and thus to determine the status as well as the signaling mode of the lines.

827 or 747

- **NOTES**

1. Once activated, the lines will be out of service for a while. Therefore, make sure that there are no ongoing external calls on the system before activating this code.
2. Once activated, the dial tone detector starts to check the lines. Then, it puts the lines with C.O. dial tone:
 - *In Service For Incoming Calls Only* if they were *In Service For Incoming Calls Only* before the service is activated,
 - *In Service* otherwise. These lines are also marked as *DP* or *DTMF* after a signaling test.

On the other hand, lines without C.O. dial tone are put:

- *In Service For Incoming Calls Only* if they were marked as *In Service* before the service is activated.
- *Out Of Service* otherwise.

Provides different initialization options for several tables of the system.

745 P

- **PARAMETERS**

- P = 0 : Parameters of *Flash Disable, Intrusion Authority, Auto-Dial / Intrusion Permission, External Call Pick Up / Target For Call Forwarding Permission* and *Voice Mail Facilities Authority* programs are set to their default values.
- = 1 : Parameters of *Line Parameters* and *Line Status and Signaling* programs are set to their default values.
- = 2 : Parameters of *Access Group* and *Access Group Line Matching* programs are set to their default values.
- = 3 : *Remote Follow Me / Follow Me* facilities activated by the extensions in *Day Mode* are canceled.
- = 4 : 1. *Remote Follow Me / Follow Me* facilities activated by the extensions in *Night Mode* and *PBX Groups* defined for both *Day* and *Night Modes* are canceled.
2. *Follow Me Busy Line* programs activated both in *Day* and *Night Modes* and *Fax Router Modes* (activated by *Line Parameters* program) are canceled.
- = 5 : All *Hot Line* programs are canceled.
- = 6 : All *External Call Diversions* are canceled.
- = 7 : The key functions defined by *Programmable Facility Keys* facility are set to their default values.
- = 8 : All system and user parameters except for common and private pool numbers are set to their default values.
- = 9 : All system and user parameters are set to their default values and common and private pool numbers are cleared.

- **NOTES**

1. P = 8:
"8258" can be used as well as "7458".
2. P = 9:
"8259" can be used as well as "7459".

V. FLEXIBLE NUMBERING

Flexible Numbering facility allows changing extension and feature access codes as well as single digits, thus the whole numbering plan of the system; except for the line numbers.

A table to help entering *Flexible Numbering Plan* is given at the end of this section. It is recommended to fill this table first and then begin *Flexible Numbering* to prevent any possible mismatches.

V.1. FLEXIBLE NUMBERING INITIATION (8869)

This code loads the initial parameters to the *Flexible Numbering Access Table* and activates *Flexible Numbering*. The initial parameters in the *Flexible Numbering Access Table* are the same as default codes except for the following:

- a. The extension numbers are set to 3-digit numbers (from 111 to 150) as soon as this code is entered, even if the system capacity is 4/12 or 6/18.
- b. The doorphone access code becomes 110, even if the system capacity is 4/12 or 6/18.
- c. The relay activation code becomes 100.

8869

• NOTES

1. This code must always be dialed before entering the *Flexible Numbering* for the first time to load the *Flexible Numbering Access Table*.
2. If errors occur while entering a *Flexible Numbering Plan*, this code can be dialed to restart the *Flexible Numbering* from the default values.
3. This code must not be entered when the factory set *Flexible Numbering Access Table* is modified and this modified access table is going to be further updated, as this code loads the factory set *Access Table*.

Allows modifying the physical numbers of the extensions as well as the doorphone access and relay activation codes.

- **MODIFY**

886 E_p E_n

- **CLEAR**

886 E_p ✕

- **PARAMETERS**

E_p = 111,...,150 : The 3-digit physical extension numbers.
= 110 : Doorphone access code.
= 151 : Relay activation code.
E_n : The flexible extension number of E_p.

- **NOTES**

1. E_n can be 1, 2, 3 or 4 digits. If E_n is less than 4 digits, then you have to hang up after dialing E_n to complete the program sequence.
2. **886 E_p**:
 - a. If you dial "**886 E_p**" and then hang up, E_p is cleared. In that case none of the users can access E_p and the calls made by E_p appear with the extension number "**0000**".
Clearing a physical extension number is especially useful when there is a coincidence:
If the flexible extension number to be defined coincides with any existing extension number, error tone is received after entering the program. Then the existing extension number has to be cleared or changed first to be able to allocate this number to another extension.
 - b. Note that, once *Flexible Numbering* is activated, the access table is loaded for all extensions no matter what the system capacity is. Therefore, the numbers of non-existing extensions cannot be assigned to the existing extensions, before clearing the numbers of those non-existing extensions.
(E.g. Error tone is received when "**886 111 150**" is dialed before 150 is cleared, even when the system capacity is 4/12.)
3. If the entry of the program results with an error tone, the coinciding number will be seen on the display of the telephone set provided that a KAREL Console or Feature Phone is used.
4. Though the relay activation code becomes 100 just after the initiation of *Flexible Numbering*, this code requires the entry E_p = 151 if the relay activation code is to be changed.
5. Regardless of the flexible extension number, this program always requires the entry of 3-digit physical extension number for E_p.

Allows substituting the first digits of feature and program codes with desired digit(s).

- **MODIFY**

88600 D_p D_n

- **CLEAR**

88600 D_p ✕

- **PARAMETERS**

D_p : The digit (0,3,4,...,9).

D_n : The substitute for D_p.

- **NOTES**

1. D_n can be 1, 2, 3 or 4 digits. If D_n is less than 4 digits, then you have to hang up after dialing D_n to complete the program sequence.

2. **88600 D_p** :

a. If you dial "**88600 D_p**" and then hang up, D_p is cleared. Clearing a digit is especially useful when there is a coincidence:

If the substitute to be defined coincides with any existing digit, error tone is received after entering the program. Then the existing digit has to be cleared or changed first to be able set this digit as a substitute of another digit.

IMPORTANT

b. If "8" is accidentally cleared by dialing this code before a new code is assigned for "8", or if you forget the new access code for "8", the system will reject every code (including the program codes) beginning with 8. In that case (provided that a KAREL Console or Feature Phone is used):

Press "8" until "88" is seen on the display of the telephone, dial "77777" to enter the *Programming Mode*, press "8" once more until "88" is seen on the display of the telephone and then dial "869" to restart *Flexible Numbering*.

3. The substitutes are not valid for the codes which are dialed while receiving busy tone and overflow tone and during ongoing conversations.

(E.g. Even if 0 is changed to another digit, the users still activate *Intrusion* facility by dialing 0.)

4. If the entry of the program results with an error tone, the coinciding number is seen on the display of the telephone set provided that a KAREL Console or Feature Phone is used.

5. In addition to the first digit, this program can change any other digit of the codes as well. A list that shows the affected system codes upon changing digits by this program is given at the end of this section.

IMPORTANT

As can be seen from that list, the biggest code change occurs when “8” is changed by *Flexible Numbering*. Therefore, it is recommended not to change the access code of “8” unless it is absolutely necessary.

6. Regardless of the substitute of the digit, this program always requires the entry of digit itself as D_p .

V.4. FLEXIBLE FEATURES (8860)

Allows modifying the access codes of some frequently used features.

- **MODIFY**

8860 F_p F_n

- **PARAMETERS**

F_p : The abbreviated feature code, as given in the table below.

F_n : The flexible code of the feature with the abbreviated code F_p .

- **NOTES**

1. Parameter F_p :

<u>F_p</u>	<u>Feature</u>	<u>Default Code</u>
10	Parallel Operators	856
11	Background Music	857
12	Night Mode Activate	858
13	Programming Facility Keys	859
14	EVM48 Features	864
15	Paging-Group	865
16	Paging-All	866
17	Paging An Extension	867
18	Night Guard Service	869
19	Auto Attendant	874
20	Night Mode Cancel	878
21	Night Mode Activate	879
22	Selective Call Pick Up	82
23	Password Define / Password Update	836
24	Phone Lock	837
25	Reminder & Wake-Up Services	838
26	Time Setting	88
27	Auto-Dial (Last Number & Private Pool)	77
28	Auto-Dial (Common Pool)	78
29	Follow Me	85
30	Follow Me (No Answer)	86

31	Remote Follow Me	855
32	Marked External Calls	790
33	Account Coded External Calls / Forced Account Coded External Calls	797
34	Password Dialing From Another Extension	799
35	Hotel Room Tidiness / Vacancy	730
36	Hotel Room Query	731
37	Hotel Room Check-In /Check-Out	732
38	Permanent Absent Message	737
39	Meet Me	738

2. F_n can be 1, 2, 3 or 4 digits.

If F_n is less than 4 digits, then you have to hang up after dialing F_n to complete the entry of the program.

3. If F_n coincides with any existing code, error tone is received after entering the program. Then the existing code has to be cleared or changed first to be able to allocate this code to another feature.
4. If the entry of the program results with an error tone, the coinciding number will be seen on the telephone set provided that a KAREL Console or Feature Phone is used.

V.5. CLEARING ALL EXTENSION NUMBERS (8868)

Allows clearing the access codes of all extensions, the doorphone access and relay activation codes.

8868

• **NOTES**

If there are too many coincidences with the *Flexible Numbering Plan* to be entered and the existing access codes, this code can be dialed to ease the entry of the new access codes for the ports.

V.6. RESETTING THE ACCESS TABLE (8867)

Allows clearing the entire *Flexible Numbering* and retrieving the default codes of all features / programs as well as 2-digit physical extension numbers (*for capacity of 4/12 or 6/18*) or 3-digit physical extension numbers (*for other capacities*).

8867

V.7. SAVING THE ACCESS TABLE (8866)

Once *Flexible Numbering* is activated, the new codes are kept in the volatile memory. Entering this code stores the *Access Table* in non-volatile memory and thus prevents loss of *Flexible Numbering Plan* in case of a power failure.

8866

V.8. DOWNLOADING THE ACCESS TABLE (8865)

Entering this code, the *Flexible Numbering* can be loaded from non-volatile memory to the volatile memory.

8865

- **NOTES**

This code is especially useful for the following cases:

- a. If there is a loss in the *Flexible Numbering Plan* kept in the volatile memory, this code can be entered to load the *Flexible Numbering Plan* from the non-volatile memory.
- b. If additions are to be made to the existing *Flexible Numbering Plan*, this code can be entered to start making modifications.

ACCESS TABLE

Access Code	New Access Code	Access Code	New Access Code
0		3	
4		5	
6		7	
8		9	
856 (Parallel Operators)		857 (Background Music)	
858 (Night Mode Activate)		859 (Facility Keys)	
864 (EVM48 Prefix)		865 (Paging-Group)	
866 (Paging-All)		867 (Paging An Extension)	
869 (Night Guard Code)		874 (Auto Attendant)	
878 (Night Mode Cancel)		879 (Night Mode Activate)	
82 (Selective Call Pick Up)		836 (Password Define)	
837 (Phone Lock)		838 (Reminder & Wake-Up Services)	
88 (Time Setting)		77 (Auto-Dial (Last Number & Private Pool))	
78 (Auto-Dial (Common Pool))		85 (Follow Me)	
86 (Follow Me (No Answer))		855 (Remote Follow Me)	
790 (Marked External Calls)		797 (Account Coded External Calls / Forced Account Coded External Calls)	
799 (Password Dialing From Another Extension)		730 (Hotel Room Tidiness / Vacancy)	
731 (Hotel Room Query)		732 (Hotel Room Check-In/Check-Out)	
737 (Permanent Absent Message)		738 (Meet Me)	
151 (Relay Activation)		110 (Doorphone)	
111		112	
113		114	
115		116	
117		118	
119		120	
121		122	
123		124	
125		126	
127		128	
129		130	
131		132	
133		134	
135		136	

137		138	
139		140	
141		142	
143		144	
145		146	
147		148	
149		150	

FEATURE CODES AFFECTED BY FLEXIBLE NUMBERING

1. Codes affected when 0 is changed to D_n:

Access Code	Description	New Access Code
0	Calling The Operator	D _n
# 0 E	Serial Call Transfer	# D _n E

2. Codes affected when 3 is changed to D_n:

Access Code	Description	New Access Code
3	External Call Pick Up	D _n
3	Parked Call Retrieve (for operator)	D _n
# 3	Call Park (for operator)	# D _n

3. Codes affected when 4 is changed to D_n:

Access Code	Description	New Access Code
4	Parked Call Retrieve	D _n
# 4	Call Park	# D _n
4 T	Multiple Parked Call Retrieve	D _n T
4 M	Listening To General Purpose Auto Attendant Messages	D _n M
44 E	Parked Call Retrieve (From Another Extension)	D _n 4E
864	EVM48 Features	86D _n

4. Codes affected when 5 is changed to D_n:

Access Code	Description	New Access Code
5	Calling From Common Pool, Group Call Pick Up	D _n
# 5	Three Party Conference	# D _n
# 55	Temporary Receive Voice Level Adjustment	# D _n 5
825	Table Initialization	82D _n
855	Remote Follow Me	85D _n
865	Paging-Group	86D _n

5. Codes affected when 6 is changed to D_n:

Access Code	Description	New Access Code
6	Calling From Private Pool	D _n
# 6	Line-Line Connection	# D _n
60	Last Number Redial	D _n 0
826	Common Pool Listing	82D _n
856	Parallel Operators	85D _n
866	Paging-All	86D _n

6. Codes affected when 7 is changed to D_n:

Access Code	Description	New Access Code
7	Selective Line Access	D _n
730	Hotel Room Tidiness / Vacancy	D _n 30
731	Hotel Room Query	D _n 31
732	Hotel Room Check-In / Check-Out	D _n 32
737	Permanent Absent Message	D _n 37
738	Meet Me Call	D _n 38
739	System Error Query	D _n 39
740	Beeper Deactivate	D _n 40
741	Beeper Activate	D _n 41
742	Headset User	D _n 42
744	System Parameter Update	D _n 44
745	Table Initialization	D _n 45
746	Common Pool Listing	D _n 46
747	Line Check Service	D _n 47
748	Remote Programming Entry	D _n 48
749	Remote Programming Exit	D _n 49
77	Auto-Dial (Private Pool), Auto-Dial Cancel (Last Number / Private Pool)	D _n 7
770	Auto-Dial (Last Number)	D _n 70
78	Auto-Dial Activate / Cancel (Common Pool)	D _n 8
790	Marked External Calls	D _n 90
797	Account Coded External Calls, Forced Account Coded External Calls	D _n 97
799	Password Dialing From Any Extension	D _n 99
827	Line Check Service	82D _n
857	Background Music	85D _n
867	Paging An Extension	86D _n

7. Codes affected when 8 is changed to D_n:

Access Code	Description	New Access Code
80	Common Program Code Prefix	D _n 0
81	Call Back	D _n 1
82	Selective Call Pick Up	D _n 2
825	Table Initialization	D _n 25
828	Remote Programming Entry	D _n 2D _n
83	Do Not Disturb	D _n 3
832	Music On Hold	D _n 32
833	Date Setting	D _n 33
834	Common Pool Entry	D _n 34
835	External Call Diversion	D _n 35
836	Password Define / Password Update	D _n 36
837	Phone Lock	D _n 37
838	Temporary Reminder Service	D _n 38
8387	Permanent Reminder Service	D _n 387
83879	Permanent Reminder Message	D _n 3879

8388	Wake-Up Service	D _n 388
8389	Temporary Reminder Message	D _n 389
83889	Wake-Up Message	D _n 3889
839	Parameter Listing	D _n 39
84	Private Pool Entry	D _n 4
85	Follow Me	D _n 5
855	Remote Follow Me	D _n 55
856	Parallel Operators	D _n 56
857	Background Music	D _n 57
858	Night Mode Activate/Room Monitoring	D _n 5D _n
859	Programmable Facility Keys	D _n 59
86	Follow Me (No Answer)	D _n 6
864	EVM48 Features Prefix	D _n 64
865	Paging-Group	D _n 65
866	Paging-All	D _n 66
867	Paging An Extension	D _n 67
874	Auto Attendant Activation	D _n 74
876	CRL Features Prefix	D _n 76
877	Listing Level & Media	D _n 77
8777	CRL Time Filter	D _n 777
877777	Programming Mode Entry	D _n 77777
877778	Programming Mode Exit	D _n 77778
8778	Pulse Price	D _n 778
878	Night Mode Cancel	D _n 78
879	Night Mode Activate	D _n 79
88	Time Setting	D _n 8
883	Automatic Night Mode	D _n 83
884	Automatic Parallel Operators	D _n 84
885	Automatic Auto Attendant	D _n 85
886	Flexible Numbering Prefix	D _n 86
887	External Call Authority & Call Prefix Restriction Override Permission	D _n 87
889	Executive-Secretary Mode	D _n 89
89	Line Status And Signaling	D _n 9

8. Codes affected when 9 is changed to D_n:

Access Code	Description	New Access Code
9	Automatic Line Access	D _n
# 9	Line Flash	# D _n
829	Remote Programming Exit	82D _n
859	Programmable Facility Keys	85D _n
869	Night Guard Watch	86D _n

I. AUTO ATTENDANT PROGRAMS

I.1. AUTOMATIC AUTO ATTENDANT ACTIVATION (885)

Allows activating and deactivating the Auto Attendant services automatically, everyday at predetermined times.

- **ACTIVATE**
885 hhmm_s hhmm_e
- **CANCEL**
885 *
- **PARAMETERS**
hhmm_s : Starting time of the Auto Attendant services in the format of hour (00-23) and minute (00-59).
hhmm_e : Ending time of the Auto Attendant services in the format of hour (00-23) and minute (00-59).

I.2. SINGLE KEY MENUS (8087)

Allows defining new single-digit access codes for extensions or EVM48 features to be used by the parties calling the system through Auto Attendant lines.

- **ACTIVATE**
8087 P Q
- **CANCEL**
8087 P *
- **PARAMETERS**
P = 0,1,...,9 : The new access code.
Q : The extension number or any EVM48 feature code.
- **NOTES**
 1. When entered, the external party calling from an Auto Attendant line activates the code Q by keying in P.
 2. Q can be 1, 2, 3 or 4 digits. If Q is less than 4 digits, then you have to hang up after dialing Q to complete the program sequence.
 3. While forming single key menus it is highly recommended to pay special attention in order not to match some single key menus with some existing feature codes.

E.g. If a single key menu with 0 is to be formed, then the caller cannot access the operator by pressing 0. In such a case another menu should be formed to call the operator. For example:
8087 8 0, 8087 0 411.

So the callers may call the operator by pressing 8 and listen to the message number 11 by pressing 0.

I.3. AUTO ATTENDANT RECORD GAIN (86447) **(OPERATOR ONLY)**

Allows adjusting the voice record level of Auto Attendant messages.

86447 P

- **PARAMETERS**

P = 1,2,...,8 : The voice record level, where 1 is the lowest voice level and 8 is the highest voice level.

- **BY DEFAULT**

86447 4 is active.

- **NOTES**

IMPORTANT

The operator should disable Auto Attendant before entering this program.

I.4. AUTO ATTENDANT MESSAGE ENTRY (864)

Allows recording Auto Attendant messages which are read to the parties who call the system through Auto Attendant lines under appropriate states of Auto Attendant operation.

864 P + Message

- **PARAMETERS**

P = 00 : Auto Attendant Greeting Message.
= 01 : Missing Digit Message.
= 02 : Busy Extension Message.
= 03 : No Answer Message.
= 04 : Invalid Number Message.
= 05 : Wait Message.
= 06 : Inaccessible Extension Message.
= 07 : Transfer Message.
= 08 : Night Mode Greeting Message.
= 09 : DISA Greeting Message
= 10 : Password Message.
= 11...23 : General purpose messages.

00. Auto Attendant Greeting Message :

This message is the first message that is read to all the parties calling the system through Auto Attendant lines.

01. Missing Digit Message:

This message is read to the parties who fail to dial all the digits of an extension number.

02. Busy Extension Message:

This message is read to the external parties if the called extension is busy. Upon receiving this message,

- a. The external party can enter the queue of the busy extension by dialing "5".
- b. If EVM48 offers Voice Mail facilities as well, the external party can leave a message to the busy extension by dialing "82".

03. No Answer Message:

This message is read to the external party if the extension does not answer the call for 20 seconds. Upon receiving this message, if EVM48 offers Voice Mail facilities as well, the external party can leave a message to the extension by dialing "82".

04. Invalid Number Message:

This message is read to the external parties who dial invalid numbers.

05. Wait Message:

This message is read to the external party in the following cases:

- a. If the operator is busy when the external party is being transferred to the operator.
- b. If the external party enters the queue of a busy extension by pressing "5".
- c. If *Automatic Hold* is activated. In this case the line need not to be marked as Auto Attendant.

Upon receiving this message, if *Music On Hold* is activated by the operator, the external party hears the music. Otherwise, he receives short "beep"s.

06. Inaccessible Extension Message:

This message is read when the external party tries to access an extension that is marked as inaccessible.

07. Transfer Message:

This message is read when the external party cannot establish a call in four trials (As an exception, the external party is allowed to make only two trials for unanswered calls and invalid number dialing) and hence transferred to the operator or the ringing extension.

In this case, the call rings on the operator or the ringing extension for 5 ringing periods and the line is released at the end of 5 ringing periods.

08. Night Mode Greeting Message:

If entered, this message will be read to all of the external parties calling the system in Night Mode. Upon receiving this message, if the party calling the system through the Auto Attendant line fails to dial an extension number within 8 seconds, the line is released automatically.

09. DISA Greeting Message:

This message is read to the parties calling the system through DISA lines, even when the operator does not activate Auto Attendant.

10. Password Message:

This message is read to the users that have passwords when they want to use some Voice Mail facilities, even when the operator does not activate Auto Attendant.

11...23. General Purpose Messages:

To provide the external parties with more information, these messages can be entered and the external party can be informed about the contents of the general purpose messages by the *Auto Attendant Greeting Message*.

After being informed about a *General Purpose Message*, the external party can listen to this message by dialing "**4 + message number**".

E.g. Auto Attendant Greeting Message: "Welcome to our company. Dial 411 for the exchange rates or the extension number."

11th General Purpose Message: "Exchange rate is as follows..."

The external party who wants to learn the exchange rates listens to the 11th General Purpose Message by dialing 411.

• **NOTES**

1. **IMPORTANT**

The operator should disable Auto Attendant before entering messages.

2. Except for *Invalid Number Message*, *Wait Message* and *Transfer Message*, the parties listening to the Auto Attendant messages can dial numbers without the need to wait until the end of the message.
3. Except for *Wait Message*, *Transfer Message* and *Password Message* the external parties have 8 seconds to dial an extension number. If they cannot dial a number within 8 seconds, they will be transferred to the operator or the ringing extension. In this case, the call rings on the operator or the ringing extension for 6 ringing periods and the line is released at the end of 6 ringing periods.
4. If the Auto Attendant message that is going to be entered already exists, then the old message is automatically cleared. A dual frequency tone is received while the old message is being cleared. The new Auto Attendant message can be entered when this tone is over.

5. You should hang up to complete entering a message. Since the DTMF tone of the “*” key is also recorded as a part of the Auto Attendant message, it is highly recommended not to use “*” key to hang up.
6. The Auto Attendant capacity should be considered and as short and explanatory messages as possible should be entered. If the Auto Attendant capacity is exceeded while entering a message, the recording is stopped immediately and internal dial tone is returned.
7. The block diagram at the end of this chapter gives a brief idea about how the parties calling the system through Auto Attendant lines are guided via Auto Attendant messages.
8. The examples to the Auto Attendant messages are given at the end of this chapter.

I.5. CLEARING ALL THE AUTO ATTENDANT MESSAGES (86444) **(OPERATOR ONLY)**

Allows clearing all Auto Attendant messages in case there is something wrong with the Auto Attendant messages or the Auto Attendant capacity is totally full.

86444

- **NOTES**

1. IMPORTANT

The operator should disable Auto Attendant before entering this program.
--

2. While the messages are being cleared, silence is received from the handset. After all messages are cleared, the internal dial tone is received again.

I.6. SINGLE MESSAGE CLEAR **(OPERATOR ONLY)**

(8644)

Allows clearing a specific Auto Attendant message in case there is something wrong with the message.

8644 P

- **PARAMETERS**

P = 00...23 : Auto Attendant message number.

- **NOTES**

1. IMPORTANT

The operator should disable Auto Attendant before entering this program.
--

2. While the message is being cleared, a dual frequency tone is received from the handset. After the message is cleared, the internal dial tone is received again.

II. VOICE MAIL PROGRAMS

II.1. VOICE MAIL CAPACITY (86449) (OPERATOR ONLY)

Allows adjusting the voice mail message capacity.

86449 P

- **PARAMETERS**

- P = 0 : Standard voice mail capacity of 15 minutes per EVM-DE card.
= 1 : Voice mail capacity of 20 minutes per EVM-DE card.

- **BY DEFAULT**

86449 0 is active.

- **NOTES**

1. **IMPORTANT**

The operator should disable Auto Attendant before entering this program.

2. If P = 1; the record quality is impaired to a certain extent, but the difference cannot be recognized by human ear.

II.2. VOICE MAIL FACILITIES (8072) AUTHORITY

Allows setting the authorities of extensions for using Voice Mail facilities, according to the traffic running on EVM48.

8072 E [9] P Q

- **PARAMETERS**

- E : Extension number.
[9] Optional parameter
If entered, parameters P and Q are valid for all extensions starting from E up to the last physical extension.
- P = 0 : E cannot leave messages at other extensions.
= 1 : E can leave messages at other extensions.
- Q = 0 : E cannot record his external calls and cannot lock his messages.
= 1 : E can record his external calls and lock his messages.

- **BY DEFAULT**

8072 11 9 1 0 is active.



Figure 1- Operation of EVM48 in *Day Mode* on an Auto Attendant line when *Fax Router Mode 1* or *Mode 2* is activated as well.

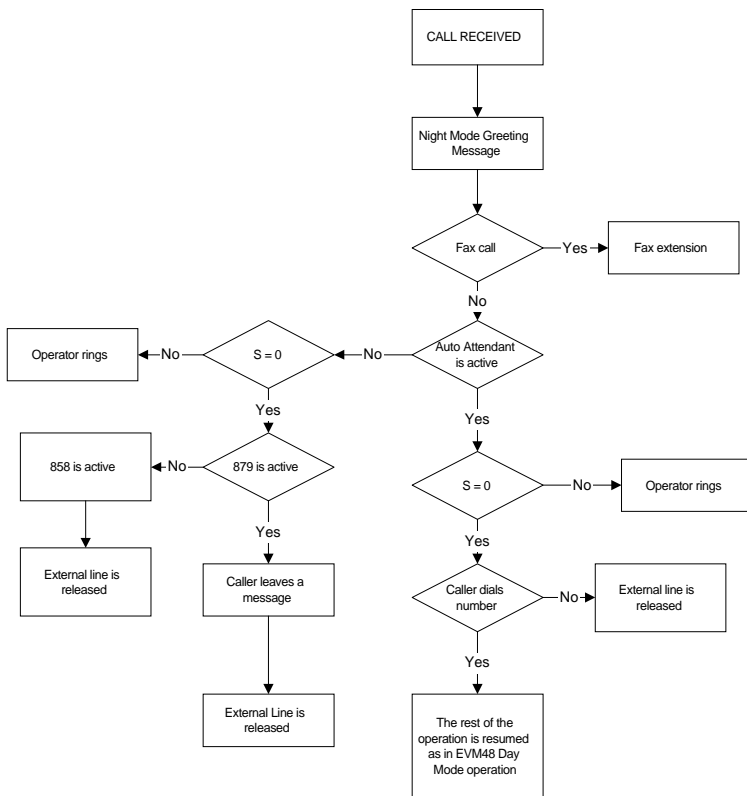


Figure 2 - Operation of EVM48 in *Night Mode* on a line when *Night Mode Greeting Message* is recorded and *Fax Router Mode 1* or *Mode 2* is activated.

The parameter “S” in Figure 2 is the last parameter of the *Line Parameters* program.

The two figures above show the states when the relevant Auto Attendant messages are read to the external parties as well.

Below, there is list of examples to those Auto Attendant messages.

Auto Attendant Greeting Message (00)	“Welcome to our company. Please dial the extension number, 411 for the sales department, 412 for the technical department, 413 for the financial department or wait to be connected to the operator.” (The external party listens to the 11 th , 12 th and 13 th general purpose messages (see the examples below) if he dials 411, 412 or 413 respectively.)
Missing Digit Message (01)	“The extension number has to be two digits. Please try again.”
Busy Extension Message (02)	“The extension is busy. You may dial 5 to enter his queue, or dial 82 to leave him a message or call another extension.”
No Answer Message (03)	“The extension is not answering. You may dial 82 to leave him a message, or call another extension.”
Invalid Number Message (04)	“The number you have dialed is invalid. Please try again.”
Wait Message (05)	“Please hold on.”
Inaccessible Extension Message (06)	“The extension cannot be reached directly. Please try another extension.”
Transfer Message (07)	“You will be connected to the operator, please hold on.”
Night Mode Greeting Message (08)	“Sorry, we are closed until 8 in the morning. You may leave a message within 30 seconds after hearing the beep.”
DISA Greeting Message (09)	“Welcome to our company. Please dial an extension number or wait to be connected to the operator.”
Password Message (10)	“Please dial your password.”
General Purpose Message (11)	“Dial 128 to learn the prices, 119 to place an order.”
General Purpose Message (12)	“Dial 130 for the hardware problems, 149 for the software problems.”
General Purpose Message (13)	“Dial 125 for the invoices.”

I. CALL CHARGING PROGRAMS

MS48 systems offer different call charging methods, which are listed below:

METHOD 1

This method can be used when there are real metering pulses on the lines.

Programs

Pulse Price program should be entered for the lines.

Charge Calculation

Call charge = Unit pulse price x Total number of metering pulses

Note

Unit pulse price is defined by *Pulse Price* program.

METHOD 2

This method can be used when there are no metering pulses but *Polarity Reversal* facility is available on the lines.

Programs

Pulse Price, *Polarity Reversal*, *Tariff Table* and *Time Table* programs should be entered.

Charge Calculation

Call charge = Unit pulse price x $\frac{\text{Call duration}}{\text{Unit duration}}$

Note

1. Unit pulse price is defined by *Pulse Price* program.
2. Call duration is calculated by *Polarity Reversal* program.
3. Unit duration is defined by *Tariff Table* and *Time Table* programs.
4. The result of $\frac{\text{Call duration}}{\text{Unit duration}}$ is rounded up to the next higher integer.

METHOD 3

This method can be used when there are neither metering pulses nor *Polarity Reversal* facility on the lines.

Programs

Pulse Price, *CRL Time Filter*, *Tariff Table* and *Time Table* programs should be entered.

Charge Calculation

Call charge = Unit pulse price x $\frac{\text{Call duration}}{\text{Unit duration}}$

Note

1. Unit pulse price is defined by *Pulse Price* program.
2. Call duration is calculated by *CRL Time Filter* program.
3. Unit duration is defined by *Tariff Table* and *Time Table* programs.
4. The result of $\frac{\text{Call duration}}{\text{Unit duration}}$ is rounded up to the next higher integer.

IMPORTANT

Among the above described three methods, Method 1 is the most exact way to calculate the cost of a call.

If there is *Polarity Reversal* facility on the lines, Method 2 can be used to calculate exact starting time of the call, thus the exact call duration.

However, if Method 3 is to be used, the system calculates the cost approximately as the *CRL Filter Time* can only make an estimation of call durations trying to detect some C.O. tones.

The programs required for these three charging methods are explained in the following pages.

I.1. PULSE PRICE (8778)

Allows defining a unit pulse price to serve the following purposes:

1. If there are real metering pulses on the C.O. line, the system can start detecting these metering pulses and calculate the cost of the calls according to the number of metering pulses received during the outgoing calls.
2. If there are no real metering pulses on the C.O. line, the system uses the unit pulse price to calculate the cost of the outgoing calls using *Tariff Table* and *Time Table* programs.

- **ACTIVATE**

8778 T P

- **CANCEL**

8778 T *

- **PARAMETERS**

T : Line number.

P = 00001,...,65000 : The unit pulse price.

- **BY DEFAULT**

No pulse price is defined for any lines.

I.2. POLARITY REVERSAL (80222)

Allows activating the *Polarity Reversal* detection for lines where the C.O. provides *Polarity Reversal* facility, thus determining the exact starting time of the outgoing calls.

80222 T P

- **PARAMETERS**

T : Line number.

P = 0 : The system cannot detect *Polarity Reversal* on T.

= 1 : The system can detect *Polarity Reversal* on T.

- **BY DEFAULT**

80222 T 0 is active for all lines.

- **NOTES**

1. When P = 1, the system does not record the calls established through the lines where the *Polarity Reversal* is not detected.
2. If the C.O. is providing *Polarity Reversal* facility and if parameter P = 1, the system uses *Polarity Reversal* to calculate the duration of the outgoing external calls in the following way:
 - The polarity is reversed by the C.O. when the external party lifts his handset and this reversal is noted as the starting time of the call.
 - The time when the extension hangs up is noted as the ending time of the call.

Thus,

Call duration = Ending time of the call - Starting time of the call

I.3. CRL TIME FILTER (8777)

Allows adjusting the duration that the system uses to detect the starting time of outgoing calls.

8777 P

- **PARAMETERS**

P = 10,...,90 : CRL Time Filter (in seconds).

- **BY DEFAULT**

8777 30 is active.

- **NOTES**

The system uses the *CRL Time Filter* to detect the starting time of the outgoing external calls in the following way:

After an extension dials an external number, the system tries to detect the starting time of the call by checking the C.O. tones, i.e. ring-back, busy or overflow tone. After detecting such a tone, the system tries to detect the approximate time when this tone stops and uses this time as the starting time of the call.

If the system cannot detect a valid tone within the *CRL Time Filter*, it starts to record the call as "Starting time = Line Access Time + *CRL Time Filter*".

I.4. **TARIFF TABLE** **(8023)**

Allows preparing a *Tariff Table* for charging the outgoing calls.

- **ACTIVATE**

8023 P Q R

- **CANCEL**

8023 9

- **PARAMETERS**

- P = 1 : The tariff for local calls is developed.
 = 2 : The tariff for long distance calls is developed.
 = 3 : The tariff for international calls is developed.
 Q = 0 : The standard tariff is developed.
 = 1 : The economical tariff is developed.
 R = 001,...,250 : The unit duration (in seconds) which the system uses to charge calls.

- **NOTES**

Using this program, a table which can be simply figured as below can be formed:

	Standard Tariff	Economical Tariff
Local Calls	R ₁	R ₂
Long Distance Calls	R ₃	R ₄
International Calls	R ₅	R ₆

While calculating the cost of calls, the system decides to use *Standard* or *Economical Tariff* by comparing the starting time of the call with parameters of *Time Table* program. (See *Time Table* program as well.)

Allows determining the starting and ending times of the economical tariff to be used by *Tariff Table* program.

- **ACTIVATE**

8024 hhmm_s hhmm_e

- **CANCEL**

8024 ✕

- **PARAMETERS**

hhmm_s : Starting time of the economical tariff in the format of hour (00-23) and minute (00-59).

hhmm_e : Ending time of the economical tariff in the format of hour (00-23) and minute (00-59).

- **NOTES**

If this program is not entered, all external calls are charged with respect to *Standard Tariff*.

II. LISTING PROGRAMS

II.1. LISTING LEVEL / MEDIA (877)

Allows setting the types of the calls to be recorded and selecting the device to which the reports will be output.

877 P Q

• PARAMETERS

- P = 0 : No calls are recorded.
- = 1 : Only the international outgoing calls are recorded.
- = 2 : Only the international and long distance outgoing calls are recorded.
- = 3 : All outgoing external calls are recorded.
- = 4 : All outgoing external calls and missed incoming external calls are recorded.
- = 5 : All outgoing and incoming external calls are recorded.
- Q = 0 : The output device is the PC or any serial printer in NORMAL mode.
- = 1 : The output device is any serial printer in CONDENSED mode.
- = 2 : The output device is the KY16 Mini Printer.

II.2. COUNTER RESET (8769) (OPERATOR ONLY)

Allows resetting the counter of the call records.

8769

Allows excluding calls of a specific port from call records. Especially useful when the relevant port is connected to another system via tie line, or the relevant extension makes confidential external calls.

8083 P Q

- **PARAMETERS**

- P = E : Extension number.
- P = T : Line number (for capacity = 4/12 or 2 6/18 and when *Flexible Numbering* is not active)
- P = 0T : Line number with a prefix 0 (for other capacities or when *Flexible Numbering* is active)
- Q = 0 : Calls of P are recorded.
- Q = 1 : The external calls terminated by E or the calls made through T are not recorded.

- **BY DEFAULT**

8083 P 0 is active for all extensions and lines.

Allows defining the extension that rings when the DY26 user presses the ring button. The program can be entered both in *Day* and *Night Modes* so as to set different *Day* and *Night Mode* ringing extensions for DY26.

805 P E

- **PARAMETERS**

- P = 10 : DY26 user access code (for capacity = 4/12 or 6/18 and when *Flexible Numbering* is not active)
= 110 : DY26 user access code (for other capacities or when *Flexible Numbering* is active)
E : Extension that will ring when the DY26 user presses the ring button.

- **BY DEFAULT**

805 10 11 is active.

- **NOTES**

1. When the DY26 user presses the ring button, the telephone of the ringing extension rings with a special cadence until he answers the doorphone call.
2. When the DY26 user presses the ring button, if the ringing extension is busy he hears short beeps for each pressing of the ring button and DY26 user receives silence.

I. MARKING LINES

(89)

Allows enabling the recognition of the IA12 ISDN Adaptor by the system and marking two successive lines connected to the IA12 ISDN Adaptor as ISDN lines.

89 T 12 P Q

- **PARAMETERS**

T : Line number.

P = 1 : The first IA12 ISDN Adaptor connected to the system.

= 2 : The second IA12 ISDN Adaptor connected to the system.

= 3 : The third IA12 ISDN Adaptor connected to the system.

Q = 1 : Lines T and T+1 are connected to the motherboard of the IA12 ISDN Adaptor specified by the parameter P.

= 2 : Lines T and T+1 are connected to the expansion board of the IA12 ISDN Adaptor specified by the parameter P.

- **BY DEFAULT**

None of the lines are marked as ISDN.

- **NOTES**

1. T must be an odd number, i.e. 01, 03, ...

2. If a line is marked as ISDN, the successive even numbered line is marked as ISDN automatically as well.

3. When P = 3, parameter Q must not be entered as 2.

II. DEFINING MSN NUMBERS

(80042 P 01)

80042 P 01 Q R S

- **PARAMETERS**

P = 1, 2, 3 : IA12 ISDN Adaptor number (explained in parameter P of *Marking Lines* program).

Q = 1, 2 : IA12 channel number (explained in parameter Q of *Marking Lines* program).

R = 1,...,8 : Index to represent the MSN number.

S : The telephone number.

- **BY DEFAULT**

No MSN numbers are defined.

- **NOTES**

1. Once this program is entered, *Comparing MSN Numbers* program is automatically activated.

2. The number to be defined by parameter S can be at most 10 digits.

III. COMPARING MSN NUMBERS (80042 P 02)

Allows making comparisons between the numbers defined by *Defining MSN Numbers* program and the numbers received from C.O.

80042 P 02 Q R S

- **PARAMETERS**

- P = 1, 2, 3 : IA12 ISDN Adaptor number (explained in parameter P of *Marking Lines* program).
- Q = 1, 2 : IA12 channel number (explained in parameter Q of *Marking Lines* program).
- R = 1,...,8 : Index of the MSN number (explained in parameter R of *Defining MSN Numbers* program).
- S = 1 : The system makes comparison.
= 0 : The system does not make comparison.

- **BY DEFAULT**

80042 P Q 1 is active.

IV. DEFINING RINGING EXTENSIONS (8005)

Allows defining distinctive ringing extensions with respect to the ISDN numbers received from C.O. The programming should be made different for the cases given below:

- Case 1: If the line has MSN configuration or if the line has DDI configuration with single digit DDI numbers.
- Case 2: If DDI numbers are of two digits and if *Flexible Numbering* is activated on the system.
- Case 3: If DDI numbers are of two digits and if *Flexible Numbering* is not activated on the system.
- Case 4: If DDI numbers are of more than two digits.

CASE 1:

8005 T P E

- **PARAMETERS**

- T : Line number.
- P = 1,...,8 : Index of the MSN number (explained in parameter R of *Defining MSN Numbers* program).
- = 0,...,9 : DDI number received from C.O.
- E : The ringing extension number.

- **NOTES**

T must be an odd number, i.e. 01, 03, ... Once the program is entered for T, it is valid for T+1 as well.

CASE 2:

80054 T P

- **PARAMETERS**

T : Line number.

P : The prefix that the system uses in determining the ringing extension by appending it in front of the DDI number received from C.O. (e.g. If P is 10 and the DDI number received from C.O. is 20, then 1020 is the ringing extension.)

- **NOTES**

1. T must be an odd number, i.e. 01, 03, ... Once the program is entered for T, it is valid for T+1 as well.
2. P can be 1 or 2 digits.

CASE 3:

80054 T P Q

- **PARAMETERS**

T : Line number.

P : The prefix that will be used in determining the ringing extension.

Q = 1 : The system uses subtraction to determine the ringing extension.

= 0 : The system uses addition to determine the ringing extension.

- **NOTES**

1. T must be an odd number, i.e. 01, 03, ... Once the program is entered for T, it is valid for T+1 as well.
2. P can be 1 or 2 digits.
3. Parameter Q:
 - If Q is entered as 1, then P is subtracted from the DDI number received from C.O., the result is added to 100 and thus the system determines the ringing extension.
E.g. If P is 08 and the DDI number received from C.O. is 30, then ringing extension is $((30-08)+100)$ 122.
 - If Q is entered as 0, then P is added to the DDI number received from C.O., the result is added to 100 and thus the system determines the ringing extension.
E.g. If P is 09 and the DDI number received from C.O. is 30, then ringing extension is $((30+09)+100)$ 139.

CASE 4:

Only the last two digits of the DDI number received from C.O. can be processed by the system, so the program codes for Case 2 or Case 3 must be entered.

Allows defining several parameters to be used on all ISDN lines on IA12.

80040 P Q R**• PARAMETERS**

- P = 1, 2, 3 : IA12 ISDN Adaptor number (explained in parameter P of *Marking Lines* program).
- Q = 01 : Accept.
= 02 : Inform.
= 03 : Overlap.
= 04 : Bearer Select.
= 05 : Notify Indication.
= 06 : User To User Indication.
= 07 : CLIP Indication.
= 08 : CLIP Sub Indication.
= 09 : COLP Indication.
= 10 : COLP Sub Indication.
= 11 : Display Indication.
= 12 : Include Compatibility.
= 13 : DDI Digit Number.
= 99 : Reset.

For Q = 01, ..., 12 :

- R = 1 : The facility entered by Q is activated.
= 0 : The facility entered by Q is deactivated.

For Q = 13 :

- R = 1, ..., 7 : The number of DDI digits

• NOTES

1. Accept: If activated, IA12 accepts all incoming calls without making any comparison in *Bearer Capability* and MSN ISDN numbers, i.e. fax calls or data calls or etc. are all accepted.
By default Accept is deactivated.
2. Inform: If activated, the whole MSN ISDN number received from C.O. is sent from IA12 ISDN Adaptor to the MS48 system, otherwise the index defined by *Defining MSN ISDN Numbers* program is sent.
By default Inform is deactivated.
3. Overlap: If activated, IA12 is set to receive call setup info in *Nblock* format, otherwise overlap receiving is activated where C.O. sends the call setup information as succeeding information sets.
By default Overlap is deactivated.
4. Bearer Select: If activated, IA12 uses 3.1 KHz as *Bearer Capability* for outgoing calls. Otherwise, *Speech* is used as *Bearer Capability*. Normally

analog telephones with terminal adaptors use 3.1 KHz and the ISDN telephones use *Speech as Bearer Capability*.

By default Bearer Select is deactivated.

5. Notify Indication: If activated, *Notify Information* (the status of the network and the other party) is sent to the system from IA12. Otherwise this information is not sent to the system.

By default Notify Indication is deactivated.

6. User To User Indication: If activated, the *User To User Information* received from the external party is sent to the system from IA12, otherwise not.

By default User To User Indication is deactivated.

7. CLIP Indication: If activated, the *CLIP Information* (the number of the calling party) is sent to the system from IA12, otherwise not.

By default CLIP Indication is activated.

8. CLIP Sub Indication: If activated the *CLIP Sub Address Information* (the sub address of the calling party) is sent to the system from IA12, otherwise not.

By default CLIP Sub Indication is deactivated.

9. COLP Indication: If activated, the *COLP Information* (the number of the connected party) is sent to the system from IA12, otherwise not.

By default COLP Indication is activated.

10. COLP Sub Indication: If activated, the *COLP Sub Address Information* (the sub address of the connected party) is sent to the system from IA12, otherwise not.

By default COLP Sub Indication is deactivated.

11. Display Indication: If activated, the information about the status of the call and the network is sent to the system from IA12, otherwise not.

By default Display Indication is deactivated.

12. Include Compatibility: If activated, *High-Low Layer Compatibility Information* is included for the outgoing calls, otherwise not.

By default Include Compatibility is activated.

13. DDI Digit Number: Used to enter the number of DDI digits processed by the system together with parameter R.

If the DDI numbers received from C.O. are of one digit, then Q = 13 and R = 1 are entered.

If the DDI numbers received from C.O. are of two or more digits, then Q = 13 and R = 2 are entered.

By default, the DDI numbers are assumed to be of one digit.

14. Reset: When entered, the parameters of *Defining MSN Numbers, Comparing MSN Numbers, General Parameters* and *Channel Specific Parameters* programs (these programs are kept in the non-volatile memory of IA12) are set to their default values. For this option, parameter R cannot be entered.

VI. CHANNEL SPECIFIC PARAMETERS (80041)

Allows defining different parameters for the IA12 channels separately.

80041 P Q R S

• PARAMETERS

- P = 1, 2, 3 : IA12 ISDN Adaptor number (explained in parameter P of *Marking Lines* program).
- Q = 01 : Close.
= 02 : Filter Bit.
= 03 : DDI Bit.
= 04 : Restrict.
= 05 : AOC_S.
= 06 : AOC_D.
= 07 : AOC_E.
= 08 : AOC Activation.
= 09 : AOC Method.
= 10 : Point To Point.
= 11 : Restrict2.
- R = 1, 2 : IA12 channel number (explained in parameter Q of *Marking Lines* program).
- S = 1 : The facility entered by Q is activated.
= 0 : The facility entered by Q is deactivated.

• NOTES

- Close: If activated, all incoming calls will be rejected with a cause value *Call Reject*.
By default Close is deactivated.
- Filter Bit: If activated, no ISDN line numbers comparison is made for the incoming calls, otherwise comparison is made. For DDI ISDN lines, Filter Bit must be activated.
By default, Filter Bit is activated.
- DDI Digit: If activated, the ISDN line is configured as DDI, otherwise it is configured as MSN.
By default, DDI is activated.

4. Restrict: If activated, *CLIR* (Calling Line Identification Restriction) is enabled; i.e. the telephone number of the calling party is not sent to the called party, otherwise it is sent.
By default Restrict is deactivated.
5. AOC_S: If activated, and if you have subscription from C.O. per call basis, *AOC_S* (Advice Of Charge At Call Setup) is enabled. With this facility, C.O. sends the charging information to the system.
By default, *AOC_S* is deactivated.
6. AOC_D: If activated, and if you have subscription from C.O. per call basis, *AOC_D* (Advice Of Charge During Call) is enabled. With this facility, it is possible to monitor the simultaneous charge of the call.
By default, *AOC_D* is deactivated.
7. AOC_E: If activated, and if you have subscription from C.O. per call basis, *AOC_E* (Advice Of Charge At The End Of Call) is enabled. With this facility, it is possible to see the total charge of the call at the end of the call.
By default, *AOC_E* is deactivated.
8. AOC Activation: If activated, the subscription for *Advice Of Charge On Call Basis* will be enabled for outgoing calls, otherwise *Advice of Charge* will not be active. If the subscription to *Advice of Charge* facility is on permanent mode then there is no need to activate the facilities regarding *Advice of Charge*.
By default AOC Activation is deactivated.
9. AOC Method: If activated, the information coming from C.O. about the *Advice Of Charge At Call Setup* is sent to the system from IA12, otherwise it is not sent.
By default AOC Method is activated.
10. Point to Point: If activated, the ISDN line is set to match *Point To Point* configuration, otherwise it is set to match *Point To Multi-point* configuration.
By default *Point To Point* is deactivated for the IA12 motherboard and activated for the EXP-IA12 expansion board.
11. Restrict2: If activated, *COLR* is activated; i.e. the telephone number is not sent to the calling party as *COLP* (Connected Line Identification Presentation), otherwise it is sent.
By default Restrict2 is deactivated.

I. GENERAL

Remote Programming facility is one of the best and efficient ways for software maintenance, especially for the systems that are under operation at customer site.

Instead of losing so much time and effort on the way to the customer, the technician in charge may use *Remote Programming* facility to enter all the programming codes as well as some user features.

This section gives information about the facilities that the technician can use via *Remote Programming* facility. The following terminology is used throughout the section:

- Technician : The technician making *Remote Programming*.
- Operator : Operator of the system at the customer site.
- Remote Programming* line : The line used for *Remote Programming* at the customer site.

IMPORTANT NOTES FOR THE TECHNICIAN THAT USES REMOTE PROGRAMMING FACILITY

- a) If the technician is an extension of another system:
 - I. The technician must be using a DTMF telephone set.
 - II. The system that the technician is using must be sending the DTMF tones that he dials directly to the C.O., i.e. the system must not be processing these DTMF tones before sending them to the C.O. (E.g. If this system is MS48 system, the technician must be prohibited to use “*” / “#” keys by *Flash Disable* program.)
- b) If the technician is directly connected to the C.O. and if the *Remote Programming* line is in DP signaling mode,
 - I. Either the operator must call the technician to start *Remote Programming* or,
 - II. The technician must be using a DP-DTMF switchable telephone set and must use his telephone in DP mode to be able to call the operator. Later, he must switch his telephone to DTMF mode to be able to dial codes during *Remote Programming*.
- c) After accessing a line during *Remote Programming*, the technician has 15 seconds to dial a number. If he fails to do so, the line is released immediately and the technician receives *Remote Programming* dial tone.
- d) The technician is not allowed to make external calls longer than 50 seconds in *Remote Programming* mode.
- e) The technician must use the flexible codes if *Flexible Numbering* is activated on the system that he is remote programming.

II. REMOTE PROGRAMMING

II.1. REMOTE PROGRAMMING ENTRY (# 3828 or # 3748)

#3828 or #3748

When the operator is talking to the technician, the operator must use one of these codes to enable the system for *Remote Programming*. After entering the *Remote Programming*, the operator should hang up.

- **NOTES**

1. After *Remote Programming* is initiated, the technician starts hearing a special discontinuous dial tone and keeps on hearing this tone after each successful entry of a program or feature code.
2. If the technician fails to make a successful entry of a program or feature code, he starts receiving error tone. In such a case, he can refresh the discontinuous dial tone by pressing “*” key.

II.2. REMOTE PROGRAMMING EXIT (829 or 749 / #)

Allows exiting *Remote Programming* either by the operator or by the technician.

829 or 749 (to be entered by the operator)

(to be entered by the technician)

- **NOTES**

The system automatically releases the *Remote Programming* line, in case the technician does not enter any code for longer than 5 minutes.

III. REMOTE PROGRAMMING FEATURES

III.1. PROGRAMMING CODES

The technician can enter all the program codes (after dialing **877777** to enter *Programming Mode*) that are explained throughout this guide, except for *Remote Programming Entry*, *Remote Programming Exit* and *Least Cost Routing* codes.

• NOTES

If the technician makes *System Initialization* by codes 7451, 7458, 7459, 8258 or 8259, the *Remote Programming* line is marked as *In Service* with *DP* signaling mode.

III.2. FEATURE CODES

1. USER FEATURES:

- I. The technician can use the facilities listed below as if he is an ordinary extension of the system:
 - a) Calling An Extension.
 - b) Calling The Operator.
 - c) Making External Calls (Automatic & Selective Line Access).
 - d) Camp On.
 - e) Busy Extension Signaling.
 - f) Intrusion.
 - g) Remote Follow Me.

- II. The technician can use the facilities listed below considering the relevant notes:
 - a) **836 + E** (Where E is any extension number): The password of the specified extension is cleared and (if previously locked) his telephone is unlocked.
 - b) **837**: *Programming Mode Entry* is unlocked.
 - c) **85 + E** (Where E is any extension number): *Follow Me* and *Remote Follow Me* facilities of the specified extension are deactivated.
 - d) **86 + E** (Where E is any extension number): *Follow Me (No Answer)* facility of the specified extension is deactivated.
 - e) **859 + E + P + Q** (Where E is any extension number): *Programmable Facility Keys* of the specified extension are programmed. (See *MS48 Easy To Use Owner's Guide-Programmable Facility Keys* section for details.)
 - f) **859 99**: *Programmable Facility Keys* of all extensions are set to their default values.

2. OPERATOR FEATURES:

The technician can use the facilities below as if he is the operator:

- a) Music On Hold.
- b) Time Setting.
- c) Date Setting.
- d) Night Mode Enable (with 879).
- e) Night Mode Cancel.
- f) Common Pool Entry (without inserting pauses by pressing "#").
- g) External Call Diversion (without inserting pauses by pressing "#").

I. GENERAL

MS48 system offers the users many facilities. While using these facilities the erroneous operations may take place and this may cause problems for the users. Therefore, the software structure of the system must be known in detail so that the reasons of the errors that the users face can be found and solved.

This section is to give information about the most common software problems faced in MS48 system operation and the methods that can be used to overcome these problems.

II. SOFTWARE TROUBLESHOOTING

II.1. USER FACILITIES

1. CALLING AN EXTENSION:

- a) If the extensions receive error tone upon calling an extension:
 - The called extension may be a hotel room extension.
 - The called extension number might have been changed or erased by *Flexible Numbering*. Define a new extension number by *Changing Port Codes* (886 coded) program.
- b) If another extension is ringing instead of the called extension:
 - The called extension might have activated *Follow Me* or *Remote Follow Me*.
 - The called and ringing extension numbers might have been interchanged by *Flexible Numbering*.
- c) If the called extension is ringing only once, then he might have activated *Do Not Disturb*.

2. MAKING EXTERNAL CALLS:

- a) If the extension receives error tone upon trying to access a line:
 - The extension may not have sufficient *External Call Authority*.
 - Night Mode might have been activated and *Night Mode External Call Authority* of the extension may not be sufficient.
 - The line that the extension wants to access or all the lines may be *Out Of Service*.
 - No line might have been assigned to the group that the extension belongs; or the line that he wants to access might not have been assigned to the group the extension belongs to.
 - If the extension's telephone is locked, he may be dialing a wrong password.
 - When the extension wants to activate *Calling From Common Pool* or *Calling From Private Pool* facilities, there may be no numbers stored in that pool or that pool may contain a number which is beyond the extension's *External Call Authority*.
 - There may be *Call Prefix Restriction* for the dialed number.
 - The extension might have used all his *Toll Account*, if assigned any.
- b) If the external calls of a specific extension are suddenly cut:
 - *Outgoing Call Time-Out* might have been defined for this extension.
 - An extension who is programmed for *Hot Line (External Number)* might have lifted his handset while all lines are busy.

3. MAKING ACCOUNT CODED EXTERNAL CALLS:

If the extension receives silence upon dialing the account code, this account code might have been reserved for *Forced Account Coded Calls*.

4. AUTO-DIAL:

- a) If “★” LED blinks on the display panel of an extension, this extension might have activated *Auto-Dial*.
- b) If the extension receives error tone upon trying to activate *Auto-Dial*:
 - The extension may not have *Auto-Dial Authority*.
 - Four extensions might have activated *Auto-Dial* before this extension. In this case, the extension should wait until one of the extensions terminates *Auto-Dial*.
- c) If the extension receives error tone upon trying to activate *Auto-Dial (Common Pool)* or *Auto-Dial (Private Pool)* facilities, there may be no numbers stored in that pool or that pool may contain a number, which is beyond the extension's *External Call Authority*.

5. CAMP ON:

If the extensions try to make external calls by *Automatic Line Access*, they cannot camp on the busy line.

6. INTRUSION:

- a) The extensions with the same *Intrusion Authority Level* cannot intrude each other by dialing “0” except for the ones with *Intrusion Level* = 7.
- b) The extension cannot make *Intrusion* by dialing “5” if he does not have *Intrusion Permission*.
- c) The operator cannot make *Intrusion* by dialing “5”.

7. PAGING:

- a) If the extension does not have a KAREL handsfree telephone set then that extension cannot be paged.
- b) If none of the extensions in the *PBX Group* has a KAREL handsfree telephone set, that *PBX-Group* cannot be paged.
- c) If none of the extensions has a KAREL handsfree telephone set, then *Paging-All* cannot be activated.

8. EXTERNAL CALL PICK UP:

If the extension receives error tone upon trying to pick up an external call by dialing “3”, he may not have *External Call Pick Up Permission*.

9. GROUP CALL PICK UP:

An extension receives error tone after attempting to pick up the call by the *Group Call Pick Up Method*, if the ringing extension does not belong to the same *PBX Group*.

10. CALL HOLD:

If an extension cannot put his calls on hold, then the authority to use either hook switch or “#” key to make *Hook-Flash* might not have been given to the extension.

11. THREE PARTY CONFERENCE & LINE-LINE CONNECTION:

- a) If the extension cannot activate these facilities, then he might have parked the first line by *Multiple Call Park* facility.
- b) After the connection is established:
 - The party who wants to continue the connection should be using a DTMF telephone set to be able to dial “9”.
 - If one of the parties hangs up within the first minute of the connection, the lines are released at the end of the first minute, however if they hang up after the first minute then the lines are released immediately.

12. LINE FLASH:

If an extension cannot make *Line Flash*, the system's *Line Flash Time* might not have been arranged to match the flash time of the C.O.

13. PASSWORD DEFINE / UPDATE & PHONE LOCK:

- a) The password should be between 000-250.
- b) The extension receives error tone if he enters a wrong password to cancel and update his password. After the third entry of a wrong password, he is prohibited to make further trials until the start of the next hour.
- c) The extension receives error tone upon trying to lock his telephone if he has not defined a password yet.

14. REMINDER SERVICES:

If the extension is busy at the reminder time, then the extension rings at the next minute after his telephone gets idle.

15. DO NOT DISTURB:

If *Do Not Disturb* activated by an extension without a Karel Feature Phone is not operational for some of the incoming calls, the *Intrusion Authority Levels* of the calling extensions in such cases may be higher than the one of the called extension.

16.FOLLOW ME & REMOTE FOLLOW ME:

- a) If the extensions receive error tone upon trying to activate *Follow Me* or *Remote Follow Me*:
- The extension may be a hotel room extension.
 - The extension to whom calls will be forwarded might have been prohibited to be a target for *Follow Me* and *Remote Follow Me*.
- b) If the calls are not diverted to the *Follow Me Extension*, dial “888” from this extension as *Executive-Secretary Mode* might have been canceled.

17.EXECUTIVE-SECRETARY MODE:

Among the two *Executives* with different *Secretaries*, the one whose *Intrusion Authority Level* is higher than or equal to the other can call the other directly.

18.PROGRAMMABLE FACILITY KEYS:

Only the extensions who have the authority to make *Hook-Flash*, can use the facility keys.

19.BACKGROUND MUSIC:

The extension receives error tone if the *Music On Hold* is not activated by the operator.

20.PARALLEL EXTENSIONS:

If the extension receives error tone after trying to activate *Parallel Extensions*:

- a) The extension might not have been included in a *PBX Group*.
- b) He might have been defined as a *Parallel Operator*.

21.ROOM MONITORING:

The operator cannot be monitored.

22.DOOR-OPENER:

If the extension receives error tone after trying to activate *Door-Opener*:

- a) He may not be using the correct activation code with respect to the system capacity.
- b) The relay might not have been set to control *Door-Opener*.

II.2. OPERATOR FACILITIES

1. MULTIPLE CALL PARK RETRIEVE:

If the operator cannot retrieve the multiply parked calls by 4:

- a) *Line Selective Multiple Call Park Retrieve* might have been activated.
- b) There may not be any parked call.

2. TIME & DATE SETTING:

If time or date is not changed after the operator uses *Time & Date Setting*, he might have failed to enter the codes in the required format.

3. PARALLEL OPERATORS:

If another extension is ringing with the operator when there is an incoming external call, then *Parallel Operators* might have been activated.

4. WAKE-UP SERVICE:

If the extension is busy at the reminder time, then the extension is reminded at the next minute after his telephone gets idle.

5. EXTERNAL CALL DIVERSION:

- a) If ">>" LED blinks on the display panels of Karel Consoles, *External Call Diversion* might have been activated.
- b) If *External Call Diversions* are not functioning, the system may be in day mode. Put the system in Night Mode to activate this facility.
- c) If one of the parties hangs up within the first minute of the connection, the lines are released at the end of the first minute. If one of them hangs up after the first minute, then the lines are released immediately.

6. HOTEL ROOM CHECK-IN / CHECK-OUT:

- a) If the operator receives error tone upon trying to activate these features, the extension may not be a hotel room.
- b) If the operator receives error tone upon trying to activate *Check-In*, the hotel room extension might not have been marked as clean and vacant.

II.3. EVM48 FACILITIES

1. AUTO ATTENDANT MESSAGE CLEAR:

If the operator receives error tone, Auto Attendant may be active. Dial “**8740**” to deactivate Auto Attendant.

2. AUTO ATTENDANT MESSAGE ENTRY:

- a) If the operator receives error tone upon trying to enter a message:
 - Auto Attendant may be active. Dial 8740 to deactivate Auto Attendant.
 - The capacity of EVM48 may be full. In this case dial “**86444**” to clear all the Auto Attendant messages.
- b) After the message entry, the operator should hang up instead of using “*” key to refresh the internal dial tone. Otherwise, the DTMF tone of this key is recorded as a part of the Auto Attendant message.

3. AUTO ATTENDANT MESSAGE LISTENING:

If all EVM48 channels are busy, then the user receives music if *Music On Hold* is activated by the operator (otherwise, he receives silence), until one of the channels gets idle.

4. LEAVING A MESSAGE AT AN EXTENSION:

If the extension receives error tone upon trying to leave a message at an extension:

- a) He may not have the necessary permission.
- b) The capacity of EVM48 may be full. In this case dial “**86499**” to clear the Voice Mail messages.

5. LISTENING TO THE MESSAGES LEFT AT AN EXTENSION:

- a) If the extension’s telephone is ringing for 500 milliseconds each time he hangs up and once for every 10 minutes, there may be messages left at his extension.
- b) If the extension cannot listen to his messages by dialing “**8646**”, he may be missing to dial his password.
- c) If the extension cannot listen to his messages again by dialing “**8645**”, he might have missed to lock his message while listening to it for the first time.

II.4. CRL FACILITIES

If no output can be received from the output device, the *CRL Report Media* might not have been chosen correctly by *CRL Report Level / Media* (877 coded) program.

II.5. DSS80 FACILITIES

If the user is accessing the highest numbered line upon pressing some of the DSS80 keys although these keys are not programmed for that line:

Assembled Programming might have been activated and the user might have been using the keys that are left out of the range of *Assembled Programming*.

COUNTRY SETTINGS

STANDARD CONDITIONS	COUNTRY	SPECIAL CONDITIONS
Calling the Operator and Automatic Line Access are activated by "0" and "9", respectively.	Republic of South Africa	: The digits "0" and "9" can be interchanged simply by entering the following codes : 877777 (to enter the programming mode), 8009 8 (to activate RSA parameters), 8259 (to reset the system), 8869 (to initiate <i>Flexible Numbering</i>), 8866 (to save the access table), 877778 (to exit the programming mode). See the table at the end of section V of System Programming section for the feature codes affected by this change.
Currency is not displayed on the CRL outputs	Greece	: Currency appears as "D" on KY16 outputs
The parameters of communication protocol between the PABX and the serial printer are as follows : Baud rate: 2400 bps, Parity: Even, Data : 8 bits, Stop bit : 1	Greece	: Baud rate: 4800 bps, Parity: None, Data : 8 bits Stop bit : 1
The auto-dialer calls the external number at most 15 times.	Portugal	: 3 times
	Spain	: 3 times
	Romania	: 7 times
The minimum duration of the Line-Flash is 200 milliseconds.	Spain	: 100 milliseconds
	Republic of South Africa	: 100 milliseconds
By default STD code = 0, ISD code = 00.	Poland, Pakistan & India	: STD code = 0/8, ISD code = 00
	Spain	: STD code = 9, ISD code = 00
	Russia, Crimea & Georgia	: STD code = 8, ISD code = 810
	Republic of South Africa	: STD code = 0, ISD code 09
	Portugal	: STD code = 2, ISD code 00
Parameters of "800019 P" coded STD / ISD Codes program: P = 0: STD code = 0, ISD code = 00 = 9: STD code = 99, ISD code = 99	Poland,	: P = 0 : STD code = 0, ISD code = 00
	Pakistan &	= 8 : STD code = 0/8, ISD code = 00
	India	= 9 : STD code = 9, ISD code = 99
	Spain	: P = 0 : STD code = 0, ISD code = 00 = 9 : STD code = 9, ISD code = 00
	Russia,	: P = 0 : STD code = 0, ISD code = 00
	Crimea &	= 8 : STD code = 8, ISD code = 810
	Georgia	= 9 : STD code = 9, ISD code = 99
	Portugal	: P = 0 : STD code = 0, ISD code = 00 = 9 : STD code = 2, ISD code = 00
	Republic of South Africa	: P = 0 : STD code = 0, ISD code = 00 = 9 : STD code = 0, ISD code = 09
	By default, the operator has local call authority and the other extensions have internal call authority.	Spain

By default, all lines are out of service.	Spain	: All lines are in service with DP signaling.
By default, the cabinet buzzer is enabled.	Poland, Pakistan & India	: Cabinet buzzer is disabled.
DP digit "1" is not detected as <i>Hook-Flash</i> for the external or internal calls.	Spain	: Detected as <i>Hook-Flash</i> only to hold (but not retrieve) the external call.
	Portugal	: Detected as <i>Hook-Flash</i> only to hold (but not retrieve) the external call.
Pressing "#" while storing numbers in common and private pools or while dialing external numbers corresponds to a 1 second pause.	Russia, Crimea & Georgia	: Corresponds to 2 seconds pause.
The party talking to the intruded extensions can join the conversation.	Portugal	: Hears special dial tone and cannot join conversation.
Parameter P of the "8026 P Q R S" coded <i>PBX Group Parameters</i> program: P = 0: <i>Follow Me (No Answer)</i> is disabled for internal and external calls = 1: <i>Follow Me (No Answer)</i> is enabled for internal and external calls	Spain	P = 0: <i>Follow Me (No Answer)</i> is disabled for external calls. = 1: <i>Follow Me (No Answer)</i> is enabled for external calls. <i>Follow Me (No Answer)</i> is always disabled for internal calls.
Parameter R of the "8026 P Q R S" coded <i>PBX Group Parameters</i> program: R = 0: <i>Follow Me (Busy)</i> is disabled for internal calls = 1: <i>Follow Me (Busy)</i> is enabled for internal calls	Spain	: R = 0 & 1: <i>Follow Me (Busy)</i> is disabled for internal calls.
The party calling through an Auto Attendant line receives DISA dial tone after Auto Attendant Greeting Message.	Spain	: Receives silence.
	Republic of South Africa	: Receives silence.
The line to establish the <i>Calling From Common Pool</i> or <i>Auto-Dial (Common Pool)</i> cannot be selected.	Romania	: The parameters of Common Pool Entry feature are entered as follows: 834 p * q r p: 00,...,99: Common pool no. q: 1,...,9: Line number. r: External number. Common Pool Abbreviated Dialing and Auto-Dial (Common Pool) facilities activated for common pool "p" is established through line "q".
Ring cadence for internal calls is as follows: 400 msec On / 350 msec Off / 400 msec On / 350 msec On Ring cadence for external calls is as follows: 1500 msec On / 3500 msec Off	Republic of South Africa	: For internal calls: 1500 msec On / 3500 msec Off For external calls: 400 msec On / 350 msec Off / 400 msec On / 3500 msec On
The cadence of the ring-back tone, emitted by the system when the incoming call is answered automatically due to the fax router mode 2 operation, is as follows: 800 msec On / 4000 msec Off	Republic of South Africa	: 400 msec On / 200 msec Off / 400 msec On / 3500 msec On
The system can detect metering pulses of 12 kHz.	Poland, Pakistan & India	: The system can detect metering pulses of 16 kHz.
	Greece	: The system can detect metering pulses of 16 kHz.
	Republic of South Africa	: The system can detect metering pulses of 16 kHz.