

# SYSTEM OPERATION GUIDE

## MDK 70

### DIGITAL CALLING MODULE

#### A) HOW TO WRITE A MESSAGE ON THE DISPLAY AND RECORD IT

The following procedure enables the user to enter 6 different messages in the index. This operation can be carried out while the unit is operating, without opening the external keypad.

Proceed as follows:

- Keep key **ENT** pressed. After 10" you will hear a BEEP;
- Release **ENT** and enter code 778899. A little dash will be displayed on the top left corner;
- Using keys 1 and 2, the letters will start to scroll in alphabetical order, backward and forward (depending on whether key 1 or 2 is pressed). Once the right letter is found, press key 5 so that it will remain on the top left corner and the cursor will move one position to the right. Proceeding in the same way, complete the message by pressing keys 1,2 and 5. If the message contains more than 32 characters or you wish to add another message, just press key "↓" to go to the second memory location; then, enter the second message following the same procedure. Once the procedure is over, press **ENT** to store everything.

The system will return to standby mode and a black square will be displayed on the bottom right corner, to state the presence of a stored message.

To delete the message stored just press **ENT** for 10", then at the BEEP sound enter code 778899 to access the stored messages. With key "↓" and "↑" find the message to be deleted and press key "X". The message will be immediately deleted. To delete all 6 existing messages, press key "X" six times, after selecting each time the next location.

Once the operation is over, press **ENT** to return MDK70 to standby mode.

#### B) MDK70 CONFIGURATION

Using this procedure, the module is set to carry out the functions requested for its particular usage in the unit. For this purpose three different jumper sets are placed on the rear part of the device and they have to be programmed using the 10 micro shunt supplied together with central unit (fig. 1)

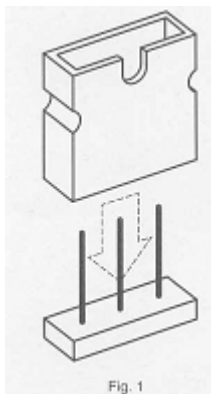


Fig. 1

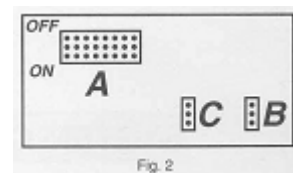


Fig. 2

Fig. 2 shows the location of the programming jumper sets.

**B1)** Group A allows you to check the following:

- If the central unit will operate as the primary or secondary unit;
- In which one of the four stored languages (Italian – English – French – Spanish) the messages will be displayed;
- If the function "busy" is provided.

Fig. 3 shows the function of every single jumper

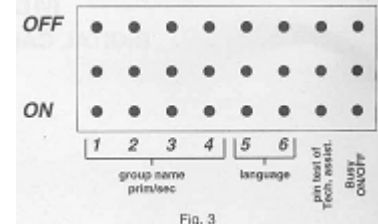


Fig. 3

The first four jumper are used to give a "name" to the MDK 70 unit (from **0** to **9** for a secondary units and from **A** to **F** for the primary units).

The following table shows the correspondences between the group name and the jumper position (tab. 1)

Please note that the primary units from **A** to **F** are directly defined with the digits from **10** to **15**.

NAME	JUMPERS POSITION	USERS THAT CAN BE CALLED	
0	OFF ON [grid]	from 0 to 999	Secondary
1	OFF ON [grid]	from 1000 to 1999	"
2	OFF ON [grid]	from 2000 to 2999	"
3	OFF ON [grid]	from 3000 to 3999	"
4	OFF ON [grid]	from 4000 to 4999	"
5	OFF ON [grid]	from 5000 to 5999	"
6	OFF ON [grid]	from 6000 to 6999	"
7	OFF ON [grid]	from 7000 to 7999	"
8	OFF ON [grid]	from 8000 to 8999	"
9	OFF ON [grid]	from 9000 to 9999	"
A <sup>(10)</sup>	OFF ON [grid]	ALL	Primary
B <sup>(11)</sup>	OFF ON [grid]	ALL	"
C <sup>(12)</sup>	OFF ON [grid]	ALL	"
D <sup>(13)</sup>	OFF ON [grid]	ALL	"
E <sup>(14)</sup>	OFF ON [grid]	ALL	"
F <sup>(15)</sup>	OFF ON [grid]	ALL	"

Tab. 1

It is very important that all MDK 70 devices of the same unit have different “name”, otherwise any IRD 70 network cards will not work correctly.

The fifth and sixth jumper are used to select, according to table 2 the language you wish to use:

Language	Jumpers position
ITALIAN	OFF ON
ENGLISH	OFF ON
SPANISH	OFF ON
FRENCH	OFF ON

Tab. 2

**NEVER** connect the seventh jumper, as it has been planned only for testing operations during production phase. The eighth jumper is used to activated the “busy” function. In the unit with a single external group, its position is of no importance. If the unit has several external keypads, the operating mode of the “busy” function varies according to whether the group is a primary of a secondary one. A secondary group (e.g. no 3) will switch to “busy” only when a primary group calls a scale 3 user (numbers from 3000 to 3999). A primary group will switch to “busy” every time it calls another primary group. If a secondary group (e.g. no 4) is calling the primary group will switch to “busy” only if it tries to call a scale 4 user (number from 4000 to 4999). Table 3 shows the jumper position with “busy” function in or out.

BUSY NO ACTIVATED	OFF ON
BUSY ACTIVATED	OFF ON

Tab. 3

### EXAMPLE

Suppose we have to configure our unit as follows:

- Secondary scale 2
- Italian language
- “busy” function activated

first of all we connect the micro shunt on jumper **C** (programming) in position **NO**. Now we insert the jumpers relating to group **A**. As we wish to configure the secondary group 2, we obtain from table 1 the position of the first 4 micro shunts:



Fig. 4

Now our MDK 70 operates as a secondary unit of scale 2. To have the messages displayed in Italian, position the micro shunts on jumpers 5 and 6, according to table 2, which reads as follows:



Fig. 5

Jumper 7 has to be free.

To activate the “busy” function, the micro shunt on jumper 8 must be **ON** (as shown on table 3). Fig. 6 shows the setting of Group A, once the programming procedure is over:



Fig. 6

**B2)** Jumper B is used to adapt the impedance of the inner circuits to the different unit characteristics.

For further details on how to use this jumper, please refer to the chapter INSTALLING NORMS and, in any case, they will also be specified on the system diagrams.

Table 4 shows the two possible configurations of this jumper.

IMPEDANCE	Jumper position
High impedance (18KΩ)	LINE H L
Low impedance (1.5KΩ)	LINE H L

Tab. 4

**B3)** Jumper C is preset for emergency programming and it has to be set on **NO**.

Programming	SI
Stand by	NO

Tab. 5

### B4) MDK 70 ADJUSTMENT

On the rear part of MDK 70 you will find two adjustment trimmers:

- trimmer **TIMER**: with this trimmer you can adjust the activation time of the electric lock from a minimum of 1” to a maximum of 1’.
- trimmer **⊙**: this trimmer is factory set to the best value. In any case it is used to adjust the contrast of the black words on the display.

### C) PROGRAMMING THE MDK 70

MDK 70 can be programmed as follows:

- 1) in local mode with keypad
- 2) copying already programmed indexes from another MDK 70
- 3) with personal computer
  - a. in local mode
  - b. in remote mode by modem
- 4) With MINITEL
  - a. In local mode
  - b. In remote mode by modem
- 5) With several MDK 70 in data network (with optional card IRD 70)
  - a. With MINITEL in local mode
  - b. With MINITEL in remote mode by modem
  - c. With local personal computer
  - d. With remote personal computer, by modem

In any case it is necessary to program the unit in "locale" with the keypad at least once, as you have to define whether MDK 70 is equipped with the network interface IRD 70 or not. If it is present, you have to decide which MDK 70 will operate as the network Master.

#### C1) LOCAL MODE PROGRAMMING WITH KEYPAD

When MDK 70 is working, the display reads "Press and look for name ↓ or ↑": this condition will be called operating mode.

Press key X for at least 7" till a BEEP sounds and then release it. *PASSWORD* will be displayed: within 4" enter password 77777 (default password). The main menu will be displayed:

1 – INDEX                      2 – CLOCK  
3 – TX/RX                      4 – EXIT

##### C1.1) Index programming

Press key 1 to enter the names in the electronic index. The display reads "WAIT PLEASE" and after ten seconds the first memory location will appear. By pressing keys 1 or 2 the letters and the numbers will start to scroll in alphabetical order forwards (key 1) or backwards (key 2). Once you find the letter you need, press key 5 and the selected letter will be displayed on the top left corner. The cursor will move one position to the right.

Select the second letter with the same procedure using key 1 or 2 and then press key 5 again to move forward to the next position. Repeat this procedure to store all the other letters of the name and surname (max 28 letters). You can change any letter at any moment by moving the flashing cursor backwards with key 4. once the user's name is correctly typed, press **ENT** to save it. The flashing cursor will move automatically to the fourth case to last on the bottom right corner. Using the number keys on the keypad, insert the user's own personal calling code, which will be saved by pressing **ENT**. Then the display will show "OPEN DOOR CODE" on the first line and the cursor will flash on the second line. Now it is possible to introduce the user's own personal door opening code of 6 digits by using the numerical keypad.

Press **ENT** to save it. By pressing key ↓ or ↑, it is possible to move to the previous or following memory locations and change the user's name or add a new one.

Once the whole index programming is completed, press key X to return to the main menu.

The message "WAIT PLEASE" will be displayed for about 50" and then the display goes back to standby mode. All the users' names are now registered in alphabetical order.

Press key 4 to exit the programming mode and return to the operating status.

#### Example of index programming

Let's enter the name MARIO ROSSI, calling code 4237 and personal door opening code 083266.

Proceed as follows:

- Press key X for 7" and enter password 77777. the display will read

1 – INDEX                      2 – CLOCK  
3 – TX/RX                      4 – EXIT

- Press key 1. the first memory location will be shown on the display. If it is not vacant, enter new data over the old or find a free location with the keys ↓ or ↑  
The cursor will be on the top left corner of the display.

-----  
----- 0000

- Press key 1 or 2 to scroll the letters up to letter M

M -----  
----- 0000

- Press key 5, the cursor will move one character forward
- Repeat the same operations up to letter A

MA -----  
----- 0000

- Following the same procedure, complete user's name and surname
- Press **ENT**, the cursor will move to the location indicating thousands
- Press key 4, number 4 is displayed

MARIO\_ROSSI ---  
----- 4000

- Complete the calling code by entering 2,3 and 7

MARIO\_ROSSI ---  
----- 4237

- Press **ENT** and the display will read

OPEN DOOR CODE  
-

- With the number keys enter the personal door opening code by pressing 0,8,3,2,6,6

OPEN DOOR CODE  
083266

- Press **ENT** and then key X to end programming. The display will read:

WAIT PLEASE

After maximum 90" the system returns to the main menu

- Press key 4 to exit from programming and return to the operating mode.

### C1.2) How to program the timetable for the “postman” codes

This function allows the opening of the door during the day and a specified period of time. When the unit is in operating mode, after pressing key *X* for 7” and entering the password, press key 2 (watch selection): the display will read

YEAR:00                      MON:00  
DATE:00                      DAY:0

**NOTE:** random numbers could be shown instead of 00

Using numerical keys enter the correct date starting from the last two digits of the year, then the month, the date and the week day (1=Monday, 2=Tuesday etc.). At the end press **ENT**.


The display will read

HOUR:  
00:00:00

Using the numerical keys enter the current time. Then press **ENT**.

The display will read

DOOR OPEN 00:00  
MON CLOSED 00:00

Using the numerical keys, enter the beginning and entering time of the opening service “postman”. During this period of time the postman secret code or the button  will be active for opening of the door. After entering beginning and ending time on Mondays, press key ↓.

The display will then read

DOOR OPEN 00:00  
TUE CLOSED 00:00

Using the numerical keys do the same for Tuesday and all the other days of the week. Then, press **ENT**.

The display will read

CODES CHOICE:  
1 – YES 2 – NO

If you enter 1, the display will read *YES* on the bottom right, if you enter 2, *NO* will appear.


After selecting *YES* or *NO*, press **ENT**.

- If you select *YES*, the “postman” will have to use his personal door opening code to activate the electric lock during the pre-selected hours. The display will read

OPEN DOOR CODE

Using the numerical keys enter the door opening codes. It is possible to record up to 6 different codes. After entering the first code, press ↓ and enter a new one.

When programming is finished (it is not necessary to enter all the available codes) press **ENT** to return to the main menu and press 4 for the operating mode.

- If you select *NO* the “postman” will only have to press the  button to activate the electric lock during the pre-selected hours.

Press **ENT** for the main menu and then 4 to return to the operating mode.

### C1.3) How to change the PASSWORD

- Press key *X* for at least 7”
- Release it at BEEP sound. The display will read *PASSWORD*; enter the password (the password programmed by Bitron is 77777)
- If the password is correct, the main programming menu will appear
- Press key *X* for at least 7” and release it after the BEEP. The display will now read the current password

PASSWORD: XXXXX

- Digit the new password with the numerical keypad; in case of a mistake type 5 digits anyway and then try again.
- When the new password is displayed correctly, press **ENT**. MDK 70 will return to the operating mode.

### C1.4) Set MDK 70 to function in a data network with other MDK 70's (with an IRD 70)

This option is used to program the whole system with a single terminal, MINITEL or PC, either in local or remote mode, with the accessory interface IRD 70.

Bitron supplies the MDK 70 with the network function disabled. It is possible to enable it, by correctly following the procedure. It is extremely important that only one MDK 70 functions as a MASTER.

- Press key *X* for at least 7”
- Release it after the BEEP and enter the password
- If the password is correct, the main menu will appear
- Keep key *X* pressed for 7”
- Release it when you hear the BEEP. The current password will be displayed
- Press **ENT**, the display will now read  
485 LINK ENABLE  
1 – YES 2 – NO

- Press key 1 to activate controlling of accessory IRD 70 by MDK 70
- Press key 2 to deactivate controlling of IRD 70 if the unit is not equipped with it. Press **ENT** to confirm.
- Using key 2, MDK 70 will return to the operating mode; using key 1 the display will read:  
485 NET MASTER  
1 – YES 2 – NO

- Press 1 if the MDK 70 you are working on is the one connected to the programming terminal PC or MINITEL or MODEM, via IRD 70
- Press 2 if MDK 70 is linked to an IRD 70 which is not connected to the programming terminal
- Press **ENT** to confirm selection and MDK 70 will return to operating mode.

**WARNING:** Only one single MDK 70 shall function as network master. You can only use one single programming terminal (Modem, PC or MINITEL) connected exclusively to the IRD 70 linked to the MDK 70 programmed as the network master.

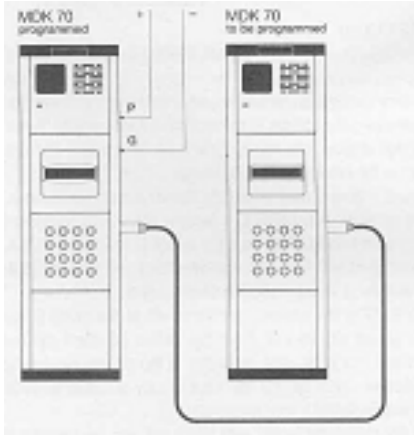
**C1.5)** The rear jumper PROGRAM allows the operator to activate the programming mode without the password.

- Moving the jumper to YES, the display will show the main programming menu
- Option 4 (EXIT), although displayed, is not active

- Refer to the previous chapters for the programming steps
- In order to exit the programming mode and return to the operating one, move the jumper to NO.

## C2) PROGRAMMING MDK 70 WITH ANOTHER MDK 70

When an MDK 70 has already been programmed, it is able to transfer data to another MDK 70. necessary condition is that the programmed MDK 70 is powered or directly connected to the unit where it is already working or otherwise in the lab with a 12 ÷ 15 Vd.c. power supply. Connect the positive pole to terminal P and the negative one to terminal G.



### C2.1) Hardware connection

Connect the MDK 70 to be programmed to the one already programmed using the appropriate 8-pin DIN plug cable supplied. (The DIN sockets are located on the side of the MDK 70). The MDK 70 to be programmed is now activated and after a few seconds the display will read  
*"LOOK FOR THE NAME PRESSING ↓ OR ↑"*

- Press key X of the already programmed unit for 7", after the BEEP release the key and enter the right password. The following menu will be displayed:

1-INDEX                      2-CLOCK  
3-TX-RX                      4-EXIT

- Select option 3 on the keypad. The display will read:  
1-MASTER      2-SLAVE
- Select the MASTER option by pressing key 1 and the display will read:

*"TX!STAND BY"*

In order to exit this function, in case of a mistake, simply press key X and you will return to the main menu.

- Press key X of the programmed unit for 7", after the BEEP release the key and enter the right password. The following menu will be displayed:

1-INDEX                      2-CLOCK  
3-TX-RX                      4-EXIT

- Select option 3 on the keypad. The display will read:

1-MASTER      2-SLAVE

- Select the SLAVE option by pressing key 2, the display will read

*"RX!STAND BY"*

and immediately afterwards

*"RX ACTIVE"*

A number increasing up to a maximum of 400 will appear at the bottom of the display, thus indicating the memory location received up to that point.

- Once programming is over, the display of the receiving MDK 70 will read

*"DATA OK!"*,

while the transmitting MDK 70 will display

*"TRANSMISS. END"*.

This operation requires about 4 min.

- Press **ENT** on both MDK 70/s to return to the main menu. Key 4 turns the unit to operating mode
- Disconnect the DIN cable
- If data communication errors occur during programming, please repeat the procedure from the beginning.
- A programmed MDK 70 can be reprogrammed: the new data will completely replace the old.

**NOTE:** programming concerns: name index, calling codes, co-owners door opening codes, door opening service codes, timing activation schedule for the service codes. The watch/calendar function is not active, you can activate it in manual mode ( with keypad) or with PC or MINITEL.

## C3) PROGRAMMING WITH PC

### C3.1) Programming with remote PC via Modem

#### C3.1.1) MODEM SELECTION

Any modem with serial port for 1200 bps is suitable for the connection. If MINITEL is the interface on the other end of the phone line, your modem must have a CCITT V23 protocol: modems are usually equipped with V21, V22, V22bis protocol, but you can easily find devices offering a wide protocol range.

#### C3.1.2) MODEM CONNECTION TO THE MDK 70

For the connection use the cable supplied which has a DIN plug without cap and a 25 DIN male connector.

Connect the socket on the side of MDK 70 (DIN plug) and the modem RS232 connector (25 DIN male terminal). If the modem is small enough, it can be housed in the MDK 70 blind module, otherwise an un-inverted extension for RS232 must be used to connect the cable to the modem, remember that it should not be longer than 10 Mt.

Connect the modem to the phone line and to the power supply (see modem user's guide). Afterwards close the MDK 70 unit and press key ↓ to initialize the modem and activate it. It will not be necessary to re-initialize it again.

BITRON VIDEO has tested TRUST AE1414 modem (suited to answer to MINITEL). The PC, too, should be equipped with a modem. Please note that the 2 modems must be previously set in order to communicate using the same protocol; refer to the modem's guide for the correct procedure.

### C3.1.3) SOFTWARE CONNECTION

Together with the MDK 70 unit, you will receive a 3.5" floppy disk with the communication system software. Do not load the software directly from the disk; first copy it under a dedicate directory on the hard disk. The lowest PC configuration has to be 386 DX processor, 4Mb RAM, VGA and you need at least 1 Mb available on the hard disk.

To install the specific software: create a directory

```
C:\>MD DIGITAL ←
C:\>CD DIGITAL ←
C:\DIGITAL> (insert the Bitron Video floppy disk in drive A) ←
C:\DIGITAL>copy a: *.*c ←
When the copying is over, just enter CIT1 to start the program
C:\DIGITAL>CIT1 ←
After a few seconds the program main menu will be displayed
```

#### WARNING:

the program works only in DOS, not in WINDOWS.

### C3.2) Programming

When you start the program, the following menu is displayed:

```
[Menu]          BITRON SpA
Configuration
Index Edit
Call
Local conn.
Exit
```

#### SISTEMA DIGITALE SERIE 70

In order to select one of the 5 available options, press key ↓ or ↑, the selected option is highlighted. Press *Enter* to confirm it.

The "*Configuration*" option allows you to select the working language and set the serial port to which the MDK 70 unit and/or the modem are connected. "*Edit Index*" enables you to enter the data (names and codes) forming an index, modify an existing one ( the index data are stored in the PC hard disk), or even delete all the stored data.

"*Call*" is the option used for the connection via modem with an MDK 70, in order to receive and/or transmit the index data. "*Local conn.*" enables the local connection via serial port with a MDK 70 unit to receive and/or transmit data. "*Exit*" is to close the program and return to DOS.

**C3.2.1)** By selecting "*Configuration*", the following menu will be displayed:

```
[Configuration]  BITRON SpA
Italian
Espanol
Francais
English
Modem Setting
ESC to Exit
```

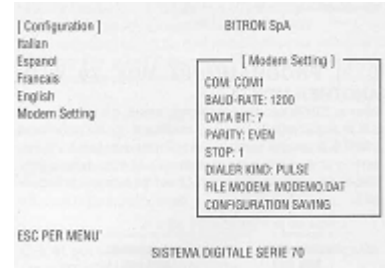
#### SISTEMA DIGITALE SERIE 70

By using keys ↓ and ↑ you can select one of the 4 languages available for the messages to be displayed, then press ←. Your selection will be memorized and if not changed the chosen language will be the one in use.

"*Modem Setting*" is used to set the communication data between the PC serial port and the modem.

"*ESC to Exit*" is used to return to the starting menu by pressing *ESC*.

If you select "*Modem Setting*", the following menu will appear:



The menu options are not active any more and by using the arrows: you can select the options of the modem setting window. Press *ESC* to close the window, the menu options become active again and any change in the window will not be stored.

The "*COM*" option is used to specify the serial port the modem is connected to. When you select it, a window will appear showing the two options "*COM1*" and "*COM2*"; once the option is selected with the arrows and confirmed with *ENT*, the window closes and the line *COM* in the main window is updated with the selected item.

"*BAUD RATE*" is the communication speed of the serial port and its values (which pop up only when the item is selected) can vary from 1200 baud to 19200 baud according to the communication speed of your modem. 1200 baud is the value usually accepted by all modems (see modem guide).

"*DATA BIT*" shows the format with which the data are transferred to the serial port, it varies between 7 and 8 (selection with arrows) according to specific indications of the modem you are using.

"*PARITY*" refers to how the data can be checked; the options are Even, Odd and None. The selection depends on the indications of the modem guide. "*STOP*" is used to indicate the number of the data stop bits sent to the serial port; the choice between 1 and 2 (see modem user's guide for the selection). With "*DIALER KIND*" you choose in which way the modem will dial the phone numbers, by pulse or tone; it is suggested to refer to the phone line carrier and the modem user's guide.

The default communication parameters for the MDK 70 unit are as follows:

```
BAUD-RATE: 1200
DATA BIT: 7
PARITY: EVEN
STOP: 1
```

"*FILE MODEM*" option allows the connection to the different modems available on the market. Bitron has provided the program with four standard files, as you can see by selecting the option and pressing *ENT*. If you are using a local connection, select file *MODEM.O*, suitable for most of the available modems.

It is very important that the modem connected to the MDK 70 unit and the one connected to the PC are set with the same parameter. Here are some setting on modems tested by Bitron:

### Digitech TOPLINK TC 2400 ST modem (connected to the computer)

Active profile:

```
B1 E1 L2 M1 Q0 V1 X1 Y0 &C1 &D0 &J0 &L0 &P0 &X0 &G0 &Y0
S00 :000 S01 :000 S02 :043 S03:013 S04 :010 S05 :008 S06 :002
```