ANALOG MODEM
MDM56

The MDM56 external analog modem has been designed for remote communication with the SATEL-made alarm control panels. It is commercially available in two versions, designated MDM56 CA and MDM56 PC. The MDM56 CA is dedicated for installation with the INTEGRA or CA-64 alarm control panels, and the MDM56 PC - with the computer. Both versions differ by accessories supplied with the modem.

Besides the modem, the MDM56 PC set includes: 12V DC power supply unit, telephone splitter, telephone cable, RS-232 cable for connecting the modem to computer, and user manual.

The MDM56 CA set includes, apart from the modem itself: cable to connect power from the control cable, telephone cable with one RJ-11 plug, RS-232 cable for connecting the modem to control panel port, and user manual.

Modem Properties

- Interaction with computer (DLOAD10, DLOAD64, DLOADX, GUARD64, GUARDX), as well as with SATEL-made INTEGRA and CA-64 alarm control panels.
- Maximum data transmission rate: 56 kb/s.
- Supported protocols: ITU-T V.90, V.34, V.32bis, V.32., V.23, V.22bis, V.22, Bell 212A as well as v.21 and Bell 103 (the last two being used for communication with modems built in the alarm control panels).
- Configuration by means of AT commands sent from computer via RS-232 interface.
- Automatic recognition of the RS-232 port transmission rate.
- Power supply with 12V direct voltage, typical for alarm systems.
- Communication with the user by means of built-in buzzer and LED indicators.
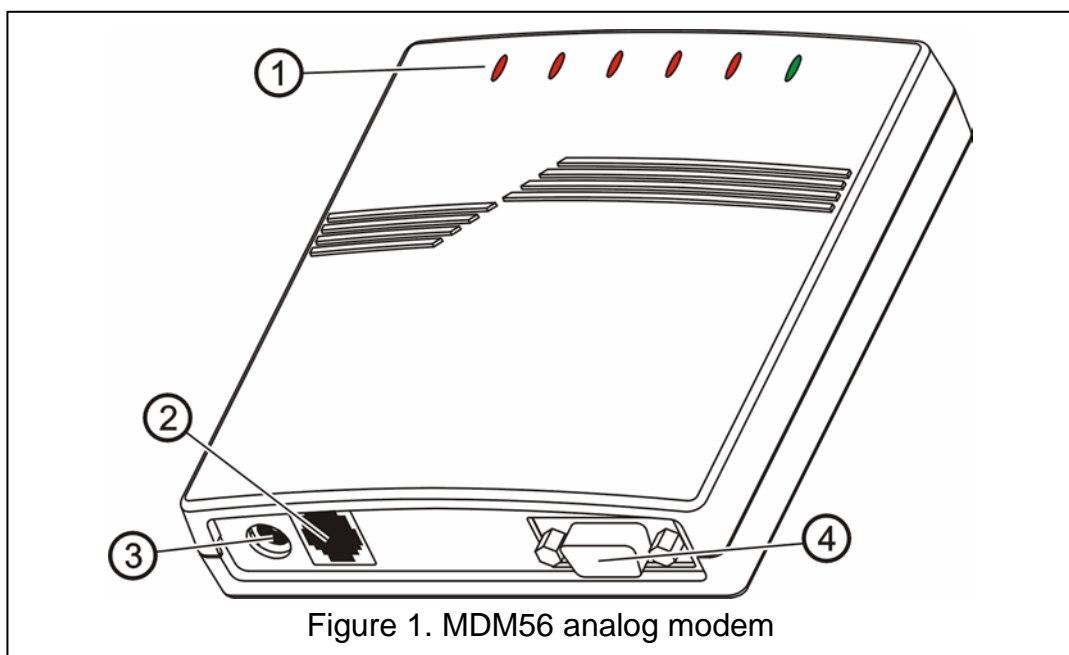
Modem Description

Figure 1. MDM56 analog modem

Explanations for Figure 1:

1 − **LED indicators:**

    PWR - power supply

    RI   ring indicator

    CTS - modem work readiness

    OH   unused

    TX   - sending data through RS-232port

    RX   - receiving data through RS-232 port

2 − **RJ-11 jack** for connecting analog telephone line.

3 − **power socket** for connecting power from power supply unit or alarm control panel.

4 − **RS-232 socket** for connecting modem to computer or alarm control panel.

Connecting Modem to Computer

In order to connect the modem to a computer you must:

1. Connect the RS-232 modem port to the RS-232 computer port.

2. Connect telephone line to modem RJ-11 jack (a telephone line splitter may be connected to the RJ-11 jack before, so that another subscriber's device can operate in parallel with the modem).

3. Connect power supply unit to the modem.

NOTES:

- *For the control panel to be programmed / operated via the telephone line, the latest version of firmware must be installed, as required for the particular control panel (DLOAD10, DLOAD64, DLOADX, GUARD64, GUARDX). You can download the current version of the program from the website www.satel.pl/eng/products/software.php*

- *When used with SATEL's firmware, the MDM56 modem need not be installed on the computer as a new device. Select "Satel MDM56" as the modem type in the program configuration settings.*

- *If the control panel is to answer calls in the so-called "**single call**" mode, set the parameter of the "**number of rings** before answer" to be not more than **3** for the MDM56 modem. If it is necessary to program more rings before answer, use the "**double call**" mode for establishing communication.*

Connecting Modem to Control Panel

The MDM56 modem can be connected to the INTEGRA series and CA-64 control panels as the so-called "external modem". These control panels are provided with a built-in modem, but its transmission rate is limited to 300 bauds. Adding an external modem enables programming with the same speed as when the computer is directly connected to the control panel RS-232 port.

Follow the instructions below to connect the modem to the control panel (for details, refer to the installer manual of the corresponding control panel):

1. Connect the modem RS-232 port to the control panel RS-232 port.

2. Screw one end of the telephone cable to the TIP and RING terminals in the control panel (in parallel to the telephone line), and connect the other end to the modem RJ-11 jack.

3. Screw one end of the power cable to the control panel +12V power output (the black wire with white strip) and the COM terminal (the black wire), and plug the other end in the modem power supply socket. The proper connection of power supply is signaled by PWR LED coming on.

NOTES:

- *If the DWNL-RS function (i.e. programming through RS port) is activated in the control panel, deactivate it before you start programming the control panel through the external modem.*

- *If there are problems with establishing communication, the data transmission speed should be reduced by lowering the maximum baud rate in the modem configuration window.*

Modification of MDM56 Modem Settings with AT Commands

The RS-232 port enables the MDM56 modem to be connected to the computer, which makes it possible to modify settings of the equipment, using AT commands and the *Terminal* type program. The entered command should be preceded by the "AT" prefix and confirmed with the <CR> (ENTER) character.

$ - Display current settings of main AT commands
A   - Answer incoming call
A/   - Repeat the last command (neither "AT" prefix or <CR> ending are required)
Dn   - Dial number
        This command dials the entered telephone number. It is ended with one or more modifiers.
        Modifiers:
        ;   - return to AT command mode
        P   - pulse dialing
        T   - tone dialing
        W   - wait 12 s for number dial tone
En   - Device local echo
        E0   - echo disabled
        E1   - echo enabled (default setting)
Hn   - Handset "hook select" control
        H0   - go on-hook (modem disconnected)
        H1   - go off-hook
Mn   - Set speaker mode
        M0   - speaker always OFF (default setting)
        M1   - speaker ON when dialing, until a carrier signal is detected
        M2   - speaker always ON
On   - Return from command mode to data transmission mode
        O0   - return to data transmission mode
        O1   - return to data transmission mode with speed equalizing (full retrain)
        O2   - return to data transmission mode and renegotiation of data transmission format
Qn   - Result code display option (modem responses to commands)
        Q0   - enable result codes (default setting)
        Q1   - disable result codes
Sn   - Operations on S registers
S$ - Display values of all S registers
Sn?   - Display value of S register "n" number
Sn=x - Enter "x" value to Sn register ("n" and "x" are decimal numbers)
Vn   - Command selects format of result codes (numeric or verbose).
        V0   - Numeric result codes
        V1   - Verbose result codes (default setting)
Xn   - Selection of the set of connection result messages
        X0   - basic set, without check for control panel signal and busy signal;
        X1   - extended set, without check for control panel signal and busy signal
        X2   - extended set, with check for control panel signal
        X3   - extended set, with check for busy signal
        X4   - extended set, with check for control panel signal and busy signal (default setting)

Yn   - Long space disconnect control option
   Y0   - disabled (default setting)
   Y1   - enabled
Z   - Modem reset
&$ - Display current settings of AT& registers
&Gn   - Reduction of data transmission speed
&G5   - 4.8 kbps max.
&G6   - 7.2 kbps max.
&G7   - 9.6 kbps max.
&G8   - 12 kbps max.
&G9   - 14.4 kbps max
&G10 - 16.8 kbps max.
&G11 - 19.2 kbps max.
&G12 - 21.6 kbps max.
&G13 - 24 kbps max.
&G14 - 26.4 kbps max.
&G15 - 28.8 kbps max.
&G16 - 31.2 kbps max.
&G17 - 33.6 kbps max.
&Hn   - Selection of data transmission format
&H0   - V.90 with automatic speed reduction (from 56 kbps to 300bps)
&H1   - V.90 only (from 56 kbps to 28 kbps)
&H2   - V.34 with automatic speed reduction (from 33.6 kbps to 300bps)
&H3   - V.34 only (from 33.6 kbps to 2400 bps)
&H4   - ITU-T V.32bis with automatic speed reduction (from 14.4 kbps to 300 bps)
&H5   - ITU-T V.32bis only (from 14.4 kbps to 4800 bps)
&H6   - ITU-T V.22bis only (2400 kbps lub 1200 bps)
&H7   - ITU-T V.22 only (1200 bps)
&H8   - Bell 212 only (1200 bps)
&H9   - Bell 103 only (300bps)
&H10 - ITU-T V.21 only (300 bps)
&H11 - V.23 (1200/75 bps)

Technical Data

Nominal supply voltage .... 12V DC ±15%

Average current consumption 110mA

Protocols: ...... ITU-T V.90, V.34, V.32bis, V.32., V.23, V.22bis, V.22, Bell 212A, v.21, Bell 103

Working temperature range (Class II): .... -10° to +55°C

Housing dimensions... 125x114.5x31mm

The latest EC declaration of conformity and certificates are available for downloading on website   **www.satel.pl**   C E

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