CiD Radio Transmitter

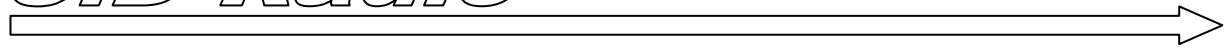*User's Guide*

FW ver: 2.2.xx
(12-08-2004)

http://cdrs.try.hu

Table of Contents

1. Introduction

The user part of CiD radio transmitter is a part of a radio network of DRR radio receiver and DRR REP repeater designed for transmission of security signals on 450 MHz frequency. Cid radio transmitter works as an adapter between the local alarm system and the radio network.

1.1 General features

- Flexible CiDuni radioprotocol, 4/2 and global Contact ID transmission
- Encrypted by user key, no unauthorized "listening in" and saturation
- Programmable transmitter parameters (repetition, pause)
- Programmable receiver ID
- Multi-account management (compatible with CiD v1.x.xx versions)
- Manual test and field strength monitor
- 3 programmable contact input. (NC, NO, positive, negative and EOL)
- Programmable Contact ID event for each input and (0-999) zones
- Programmable hangup time at alarm and restore
- Swinger Limit.
- Power monitor: Battery and AC status report
- Power reports: Contact ID code can be set or disabled
- Programmable timer before power reports
- Programmable test report, optional Contact ID code
- In-built telecommunicator (TELCOM), telephone station and monitoring station emulator
- Peripherial telephone switcher unit (TEL-SW) control
- Telephone line monitoring: Adjustable or disabled Contact ID code
- Contact ID, Ademco Express and 4/2 pulse (10-20bps) formats
- 3 optional "handshake" sequence
- 4/2 event transmission without re-coding
- Serial input (SERIAL) for Paradox panels
- Optional serial formats: Esprit v2.xx, v3.xx, Spectra v2.xx

1.2 Modifications since versions v1.x.xx

- Modified radioprotocol (CiD42 replaces CiDuni)
- User encryption
- Global Contact ID and 4/2 transmission
- Manual test report with field strength
- More power monitoring reports (AC status)
- More ContactID filter criteria

CiD Radio transmitter version v2.x.xx is compatible with DRR version v1.x.xx only!

2. Version

CiD radio supports "Firmware" update, otherwise, it is important to clarify the structures of versionnumbers:

v< **Main version** >.< **Sub version** >.< **built** >   e.g.: v2.0.22

Main version: Identifies major changes effect the operation of the system: (e.g.: v1.x.xx → CiD42, v2.x.xx → supports CiDuni protocol)

Sub version: Identifies minor modification or repairs.

Built: Identifies optional or country dependant programo versions. Currently available builts (in Hungary):

> **.11** → FSK1150, CiDuni protocol (for systems with RT-44 tramsmitters)

> **.22** → FSK1200, CiDuni protocol (for new installations, consist CiD and DRR devices only)

> **.31** → FSK1200, CiDuni protocol (First EU version)

Note: Updates of CiD radio transmitters distributed in other countries can not be used in Hungarian systems!

3. Installation

CiD radio transmitter requires hardware and software installation, as well. The complete setup can be performed by a Windows software.

3.1 RintAdm software installation

The current version has a setup program (Setup) which install the application to the computer similar to Windows wizards. The setup scans the system for older versions. If it finds an older version, the setup offers automatic uninstallation. You have to proceed it in order to use the latest version any time. After the uninstall, run setup again to install the latest version. Questions asked in installation process must be answered Yes (or Next), mostly. The setup lists the prior versions.(Later can be viewed in file "Version.rtf") After the successful installation a start icon can be found in Start menu.

3.2 RintAdm

After starting the program, the below window appears. At the first sight, the only modification to older versions is the CodeKey button, but the main difference is in the parameters.

 The Setup program cooperates with the hardware only when the J3 Jumper (TELCOM/SERIAL) is in open state (TELCOM)!

Parameter modification

After connecting the hardware (CID_RD module), choose the serial port (Com1 – Com4). In proper work, the name and version of the hardware appears in the status line. Then "PC ← CiD" and "CiD → PC" buttons will be available. The arrows show the direction of data transmission.

Push "PC ← CiD" button to download the parameters from the module (bottom left line indicates the process) and the parameter structure updates. If there is no parameter
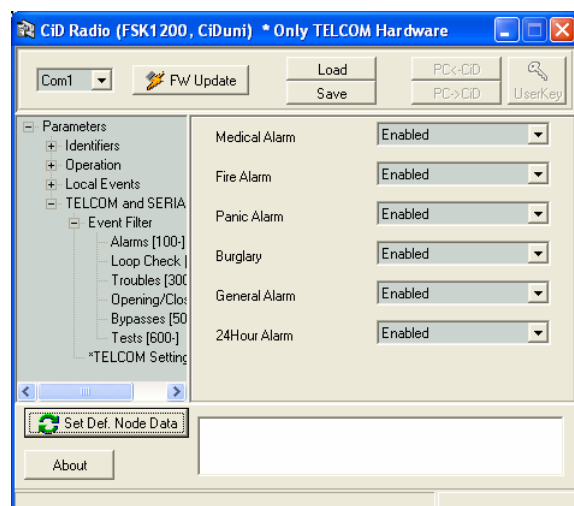
loading (from module or file), the defaults can be seen.

Push the "PC → CiD" button to upload the parameters to the module. Up and Downloadind are always executable functions (even in communication) considering that the downloaded parameters will be immediately activated. E.g.: If you switch an opened input from GND->ALARM mode to NC->ALARM mode, ALARM report will be generated immediately.

Parameters can be saved into file using Save button, and loaded by the Load button. File operations are available even without hardware, so you can pre-edit parameters and download them on-site.

The saved files are not compatible with prior versions, loading them may cause undesired errors!!!

To edit parameters, choose the appropriate element of the left side tree structure then the objects will be available on the right side. Move the mouse cursor above the object to see the detailed description in the lower part of the window.

To set the default values of the parameters use „Node Data to default" button. The button sets all selected „tree" and „branches" to default. To set all parameters to default, select „Parameters" main branch.

After opening, the software always verifies compatibility level. This verifies the simirality of registry allotment of the hardware to that of the software. If the compatibility is questionable, a message window offers the options.

Firmware Update (FW update):

The „FW update" feature updates the software manages CiD radio. View the version of the update software by pressing the "Version" button (after FW Version). The current version of the module appears in the bottom status line after selecting the Com port. When there is difference between the versions, use „FW Update" button to prevent compatibility problems. The update takes approx. 1 minute, during which the system completely shuts down (no LEDs) only the red line indicates the process in the bottom line. After download the radio restarts (like reset). If problem occurs during download (connection lost), it must be repeated, because there will be no system restart until the program is completed. If you desired to repeat an interrupted download, after selecting the Com port the following trouble message appears „Peripherial unit connection lost!". Because no program is able to run (is able to verify itself), only a „bootloader" loading program is doing the update. After activating „FW Update" the update can be completed. Before you start updating, a message window will inform you about the changes of the new version.

Always use the FW version corresponding to your system (last numbers: x.x.11 ,x.x.22 ,x.x.31), otherwise the receiver will be unable to decode the transmission!!!

Sometimes, after version change the parameter registry allocation will change (parameters of additional services), then at restart the radio sets all registry to default. It is recommended to check parameters after updating.

When version v1.x.xx is updated to version v2.x.xx, all parameter will be set to default!

3.3 Connecting CiD radio transmitter

Never use CiD radio transmitter without antenna because the not properly connected state during transmission may cause permanent damage to the system!!!

Supplying AC connection only could be sufficient to program the device but in order to protect the transmitter stage connect the antenna (or a 75ohm/5W EOL), as well. The radio is ready to operate in the 10-14V territory, so it's recommended to use battery also (e.g.: 12V/1.2Ah)

In the following figure the connector allocation of CiD radio can be seen:
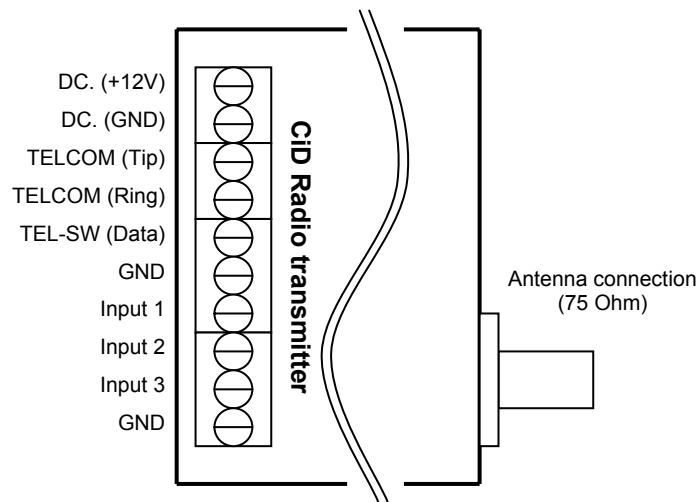
- DC +12V: Connect UPS +12V terminal of the alarm panel to this terminal. If possible,place the transmitter close to the panel or use thicker wires (because of the voltage drop). During transmission the transmitter requires max. 700mA, causing that the AUX terminal of the panel can not support the transmitter and the siren simultaneously! In that case, it is recommended to connect the transmitter to the battery terminals of the panel.

- DC GND: The DC negative terminal of the alarm system. If the positive terminal is connected to the Battery, don't connect the GND also to the Battery! Because (in general) the circuit of the alarm panel measures the charging current between the negative terminal of the battery and the GND terminal, connecting these two terminal may disturb the charger.

- TELCOM (Tip - Ring): Telecommunicator terminal. It can be used with transmitters with TELCOM!

- TEL-SW (Data): Telephone switcher unit, two way data signal. (Described later)

- GND: Similar to AC GND. Do not connect to the panel to prevent ground loop. It can be used to connect ground free detectors or to shield.

- 3 Contact Input: Alarm panel output, detector or panic button can be connected to the input. Their relay level and polarity is software controlled.

4. Operation

According to the block scheme of CiD transmitter it can receive signal from three sources:

1. Local events: Contact inputs, AC power monitoring, test and telephone line monitoring

2. TELCOM: Emulates telephone connection for the alarm communicator.

3. SERIAL: for peripherial RS-232 format data reception. (ESPRIT, SPECTRA and direct)

The last two sources can't be used simultaneously, jumper J3 (refer to attached connection drawing) in open state allows TELCO, in closed state allows SERIAL function.

```
                              ──────────►   Contact ID messages

                              ──────────►   4/2 messages
```

	Code Key Country code + User Code Key
	Identifiers - Account ID - Receiver ID **Transmitter parameters**

Input 1-3 → **Local events**
- Inputs
- AC power
- Test
- Line monitoring
- Reset

Event buffer
(ContactID or 4/2)
„Open only after alarm" filter ,
Swinger limit

Telephone → **TELCOM interface**
- Contact ID
- Ademco Exp.
- DTMF (4/2)

Account code shifting (0-15)
- Fixed shift
- Fixed + Partition
- Fixed + TELCO account xxx[X]

RS232 → **SERIAL interface**
- ESPRIT
- SPECTRA
- Simple 1 byte

Contact ID event filter
According to conditions defined for event groups

J3 Jumper

Open: TELCOM
Closed: SERIAL

J3 allows transmitter programming in open state only!

For detailed description of menu items, refer to Appendix.

4.1 Transmission Control

As it mentioned above FW version v2.x.xx transmits messages in CiDuni format.

Main features of the format:

- 4/2 and Contact ID format transmission

- Considers the length of data. E.g.: If a Contact ID event consists no zone or partition information the default zero value will be transmitted.

- User Code Key: protects radio traffic by customizing it (Described later)

CiDuni can be a one-way protocol. CiD radio uses this mode. The protocol can be set in *Parameters → Operation → Transmitter parameters*.

It functions similarily to prior versions.

Account ID

In the menu *Parameters → Identifiers* you can define the accountnumber of the radio (base). Local events will be reported on this identifier and it is the base of shifts. Use shifts if you don't want local and TELCOM (or SERIAL) events to be reported on the same account number. In the case of similar account numbers there can be events which are the same in both cases so their source will not be defined by the monitoring station. There is another solution for the problem besides the Contact ID encoding. (The old 4/2 version was more critical.)

Receiver ID

The receiver ID has no traffic control function if you use CiDuni or acknowledgement protocol (in the repeater network), so the user can use it by will. If it has no defined function it' recommended to keep the default value (1) on behalf of later compatibility. For more information on using receiver ID, refer to DRR User's Guide.

Code Key (User Code Key)

Since it is a very important parameter in the proper function of the system it has separete button in RintfAdmin software. Every time the downloading software connects to the hardware it verifies the setting of the default key (0000). If it is set to default the software sends a warning message.

The values of the key must be integrated in the entire radio network. Each service must have its own key in the 0001 - FFFF territory. Since the key is confidental it is writeable only.

The definition of key is independent from the up- or downloading of parameters, after definition it will be stored in the radio. Since the software does not store the key you can perform the action in each new device!

Event buffer

The event buffer temporarily stores the events until the transmitters repeats. Maximum of 16 events can be stored in the buffer. Jam or data loss may occur if the incoming data is more than the outgoing. To releive the jam the transmitter monitors the size of the event buffer and, if there is too many events it reduces the number of repetitions speeding up the draining of the buffer. In case of overflow it generates an (1 624) "EVENT LOG OVERFLOW" local event. The system doesn't acknowledges the event until it has room in the buffer to prevent TELCOM jam. In such case overflow report will also be generated but no event will be lost! There is no such management for SERIAL events, so data loss may occur!

When "Opening report only after alarm" function is activated the event buffer transmits the Opening report only if previously alarm occured with the assigned account number. Each account shift (0-15) has its own registry. The opening report cancels alarm status preventing the

next opening to be transmitted. In Contact ID events the standard code table, in 4/2 events the CiD42 code table defines whether the type of the event is opening or alarm.

Event Bypass

If at least one of the event sources (Local, TELCOM or SERIAL, 4/2) has Event Bypass enabled the event buffer functions in a different method. With Bypass disabled each new event stored in different data cell until all repetion done. When Event Bypass is enabled the system scans the data cells for the new comming event. If the event already exists the system increases the counter value assigned to the event and restarts the timer assignerd to the event group. If the event is repeated four times during the defined period the system generates a "Swinger Bypass" (1 575) local report and restricts the further repetition of the event. When the timer ellapses the data cell assigned to the event will be deleted from the event buffer. Event sources with Event Bypass disabled have no restriction in the number of event repetitions.

The Event Bypass has a unique feature, if the event repeated several times during a short period (shorter than the transmitter is able to transmit), some repetitions will be lost even before the "Swinger bypass"! The event will be transmitted at least one time during the period for sure! Security systems in normal operation are never supposed to transmit similar events (e.g. alarm) in such a short period. For settings refe to menu *Parameters → Operation → Event Bypass*.

4.2 Local Events

Local events are generated by the radio itself. For settings, refer to menu *Parameters → Local Events*. Local event features Contact ID type and always reported with the base account number. Local events not affected by Event Filter.

Inputs

The radio consists 3 independently programmable contact inputs. The input can be NC,NO or (10k resistor) EOL type. Input function can be set in menu *Parameters → Local Events -> Input → 1-3 input*. The attached connection drawing presents the connection of each function mode. Each input has a timer to set (0-2550 sec) in order to delay the next event transmission from the input. In case of the new (e.g. alarm) and restore separete timer can be defined.

Example:

Alarm delay: 30 sec

Restore delay: 120 sec

In the above example, alarms will be reported maximum in every 30 seconds, but restore report will be generated only if no alarm occured in the last 120 seconds.

The event code can be defined according to the attached Contact ID table. 00 disables the report. The type of event will be generated automatically. E.g. Alarm → 1 130, restore → 3 130
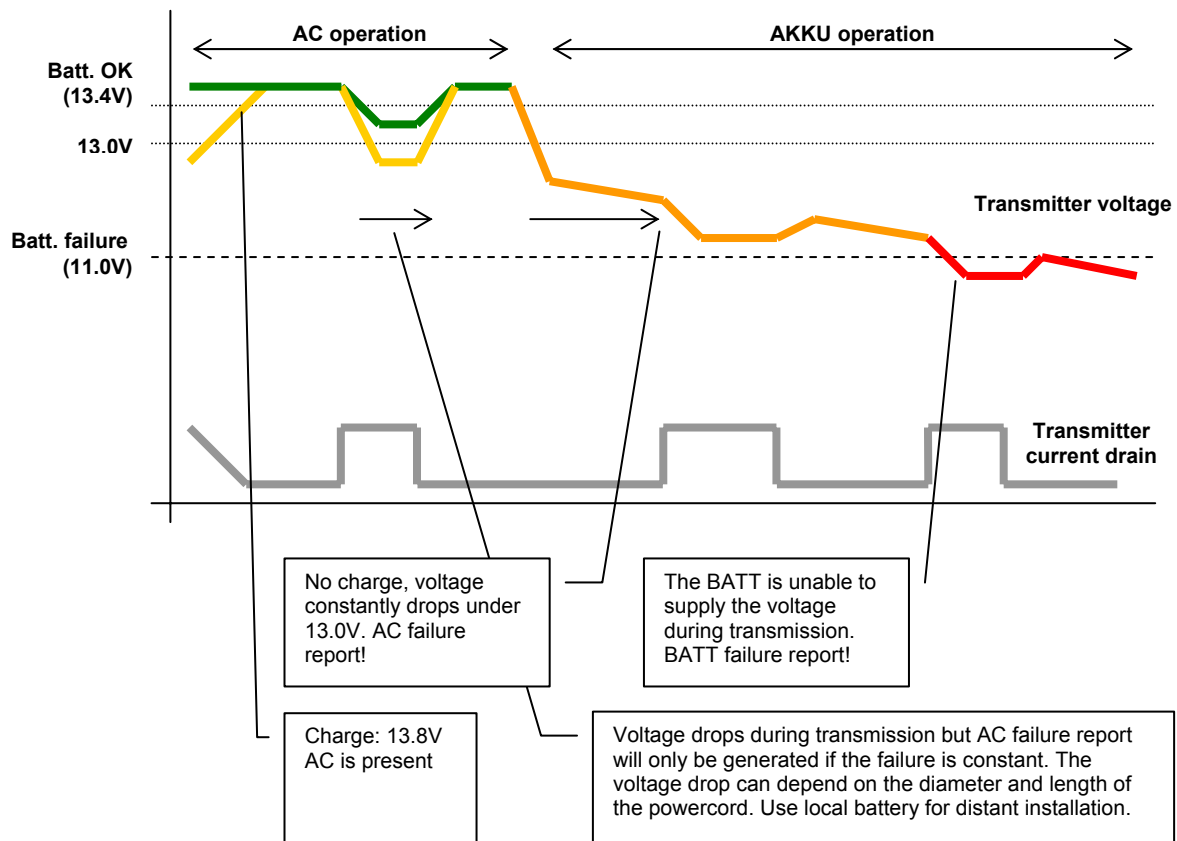
For each input the zone number can be defined between 0 and 999. (Default the input number 1-3). By this setting the radio is able to report the local and TELCOM (or SERIAL) signals with the same account number. Just define higher value for the input zone number then the highest zone number of the alarm panel. E.g. For an 8-zone panel set the input zones to 9, 10 and 11, so the monitoring station will be able to define the source of the signal clearly.

Battery supervision

In the new version has expanded battery supervision feature. CiD radio measures voltage by an analogue-digital converter (factory calibrated) to present every time the momentary voltage value.

Radios supplied voltage by the alarm system. This voltage changes between 10 and 14V according to the existence of charging (AC).

The figure shows the change of voltage:

Batt. OK (13.4V)
13.0V
Batt. failure (11.0V)

AC operation | AKKU operation

Transmitter voltage

Transmitter current drain

No charge, voltage constantly drops under 13.0V. AC failure report!

The BATT is unable to supply the voltage during transmission. BATT failure report!

Charge: 13.8V AC is present

Voltage drops during transmission but AC failure report will only be generated if the failure is constant. The voltage drop can depend on the diameter and length of the powercord. Use local battery for distant installation.

The figure presents that the voltage measurement defines the AC and battery status as well. The measurement is interfered by the increased current drain during transmission, in accordance with the diameter and length of the powercord. Such problems can be prevented by the proper delay timers. In general, the delays must be longer then the longest transmission time (max 10-15 sec). Except Low Battery report, when there is no sufficient voltage it must be reported immediatelly. The default were longer in the prior v1.x.xx version. AC and battery reports can be disabled.

Operating conditions can be defined in menu *Parameters → ocal Events → Battery Supervision*.

This setup is also suitable for installations where battery installed with the radio because of the distance (1.2Ah is sufficient). In case of other power setup the reports must be disabled.

Telephon Line Monitoring

If TELCOM hardware is installed and enabled the system reports its status. There are two types of reports:

1. No TEL-SW switcher module installed, the alarm panel communicator directly connected to CiD radio: To the alarm panel side a 100kOhm (+-5%) resistor must be connected. The system monitors if the wire is broken and sends TELCOM wire failure and restore report. The shortcan not be monitored because it can be dial in, as well! **If the service is used the Telco monitoring function must be disabled in the alarm panel communicator since the cyclic measuring signals may interfere the radio!**

2. If TEL-SW is installed, the alarm panel communicator connects to the main line using the switcher: Unit TEL-SW monitors the exstence of main line, in such case the radio will report that status. (Unit TEL-SW described in later sections)

The standard Contact ID table defines TELCO 1 and TELCO 2 events as well. You can set which of the above two will be reported by the radio separating local and panel repoted events.

Event codes of line monitoring can be defined in menu **Parameters → Local Events → Telephone Line**.

Test (periodical test)

The radio is able to generate test reports locally by a relative timer. The cycle time and the delay after reset can be defined. The delay is useful when you desired to set the daily report transmission to a proper time. (A time with low traffic is recommended) Unfortunatelly, this option is effective only when you program the radio locally by a laptop.

Example for delay:

The daily report is deisred at about midnight:

Testcycle: 24 hour, 00 minute

Now, the time is 14:30PM meaning that it is 9 hours and 30 minutes to midnight. Define this value as the parameter of Test Delay. In menu Parameters → Operation →After Download download the modified parameters to the radio. Restart the radio (disconnect then reconnect AC power).

There are two Contact ID codes to be selected in order to separate the panel test report and the local test report.

Set Test parameters in menu **Parameters → Local Events → Test**.

4.2 TELCOM and SERIAL

There are several similarities between the two source:

Contact ID event filter: Contact ID programming is easy in the panels, there is no need to bother with typing report codes, just simply set the format. This will cause that every event will be reported. In the latest panels the report can be enabled or disabled individually but this solution looses the advantage of the Contact ID.

It's not recommended to overload the radio network with unnecessary signals, therefore, the events must be filtered by the transmitter. The Monitoring Station is to define the events allowed in the network and to save them to file and use them as template when programming new accounts. The advantage is that it is independent from panel type and input source (TELCOM or SERIAL).

Account shift: The Account Shift is a method to separate local and peripherial events. As described above, by the Contact ID code table this problem can be solved even for one single account as well. Partition shift would be useful if a panel manages more accounts physically.

Parameters of account shift can be found in menu **Parameters → Identifiers → TELCOM and SERIAL**. The method of account generation can be defined with a fixed shift value.

The next table shows the possible method of account generation:

Event source	Transmitted account code according to settings		
	Shift only	Partition number	TELCOM account xxx[X]
Local event	Account ID	Account ID	Account ID
TELCOM 4/2 event	Account ID + Shift	Account ID + Shift	Account ID + Shift + TELCOM xxx[X]
TELCOM Contact ID	Account ID + Shift	Account ID + Shift + Partition(Group)	Account ID + Shift + TELCOM xxx[X]
SERIAL ESPRIT, SPECTRA events	Account ID + Shift	Account ID + Shift + Partition(Group)	Account ID + Shift
SERIAL 1 byte protocol	Account ID + Shift	Account ID + Shift	Account ID + Shift

If the shift is 0 every event will be assigned to one account code. The maximum shift value is 15, the higher value will be set to 15.

„Shift Only" option:

If the value of shift is higher then 0 the local and TELCOM or SERIAL events will be reported with different account numbers.

„Shift According to Partition" option:

Partition information consisted by the SERIAL protocols (except Simple), in TELCOM it consisted by the Contact ID protocol. If the panel is not partitioned it sends 0, if partitioned it sends 1,2,3 … values. All event will be reported with partition number 1, only partition dependent events (open/close. Alarm) will be reported with other partition numbers. Some panels send technical reports with partition number 0.

CiD module derives account shift from partition number according to the following:

Example 1:

    Account code = 1000, Shift = 1, Panel not partitioned.

    Transmitted account code = 1000 + 1 + 0 = 1001

Example 2:

    Account code = 1000, Shift = 1, Two partitions. (A,B)

    Transmitted account code (Partition A) = 1000 + 1 + 0 = 1001

    Transmitted account code (Partition B) = 1000 + 1 + 1 = 1002

The above examples represent that actually the account number is increased by the value *partition number -1*. This method prevents lacks in account code distribution. In Example 1 account code 1000 (local) and account code 1001(TELCOM) is used. In Examle 2 account number 1000 (local), 1001(Partition A) and 1002 (Partition B) is used. If you don't want to use local events (Event codes disabled by 00) set 0 as shift.

„Shift according to TELCOM account ID: (xxx[X])" option:

The shift in TELCOM can be in accordance with the panel account ID (Accont). Then, only the value of the last digit (xxx[0-9]) will increase the account number. The function is useful when you desire to transmit partition information and the panel doesn't have Contact ID protockol, but several account number can be defined.

Example:

    Account code (CiD) = 1000, Shift = 1, First alarm generated by account code 1234, Second alarm generated by account code 1235

    Transmitted account codes (First account) = 1000 + 1 + 4 = 1005

    Transmitted account code (Second account) = 1000 + 1 + 5 = 1006

4.3 TELCOM

The prior versions of CiD radio preferred DTMF formats (ContactID, Ademco Express and DTMF 4/2) only. These formats can be set for almost every panel. There are many old panels present, they use „pulse" formats only.

Existing formats:

Handshake	Data speed	Carrier	Name
1400 Hz	10 bps	1900Hz	ADEMCO slow (4/2, 4/2+P)
1400 Hz	10 bps	1800Hz	- (4/2, 4/2+P)
1400 Hz	20 bps	1900Hz	SILENT KNIGHT fast (4/2, 4/2+P)
2300 Hz	20 bps	1800Hz	SESCOA, RADIONICS (4/2, 4/2+P)
DualTone		DTMF	DTMF 4/2
DualTone		DTMF	Ademco Express (4/2)
DualTone		DTMF	Contact ID

Besides the above formats every 10-20bps on 1400 and 2300 Hz (1800,1900Hz) 4/2 and 4/2+parity format can be receiverd. Since 4/2 protocol doesn't consists verification (parity) it receives every block twice, and transmits only when they match. In Parity format the parity sum verifies the transmission.

The Radio doesn't accept 3/1, 3/2, 4/1 formats and their expanded versions, and the 40 bps data speed as well!

Since the radio transmits a fixed 4/2 code the attached CiD42 report codes must be set in the panel in order to the proper reception. The current version doesn't support 4/2 event filter. Events can be filtered by programming 00 in the panel to the events you don't want to be reported.

TELCOM (as default) identifies line formats according to the following sequence:

| Handshake	Settings	Line format
First	1400/2300Hz	ContactID or other DTMF formats
Second	2300Hz	Fast pulse (20 bps) formats
Third	1400Hz	Slow pulse (10bps) or DTMF formats

The above settings result succesful reception with every know formats. To change the settings only usefu when you use some of the "pulse" formats. Then, first you have to set the handshake frequency featuring the format (e.g. 1400Hz) and to restrict the others.

In 1400Hz and 2300Hz handshake the time can be defined, 1 sec (1000ms) is suitable in general. For TELCOM settings refer to menu *Parameters → TELCOM and SERIAL → TELCOM Settings*.

TEL-SW Telephone Switcher Module

The module verifies the existence of main line, and to switch to the inner line of CiD radio if required. TEL-SW continuously „listens" the line and when it notices the own number of CiD radio it switches the line and handles the call. The radio automatically notices the connected unit and sends report of the main line status according to the settings in menu *Parameters → Local Events → *Telephone Line*.

The Telephone Monitoring is a critical function because TEL-SW is unable to perceive the fact of dial up, therefore, only the numbers of Tone call support the only information.
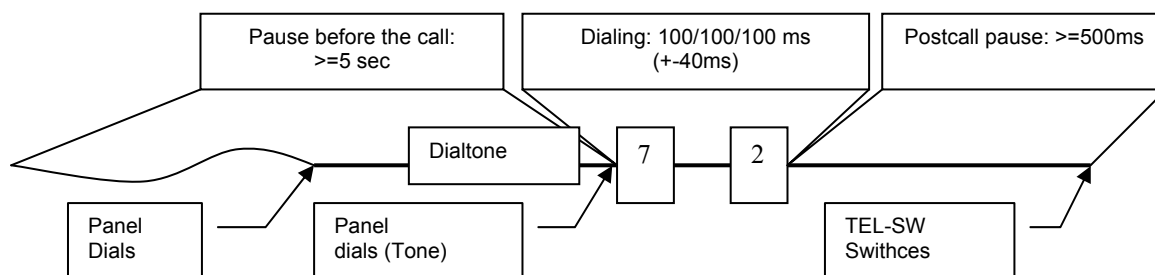

The phone number of the radio is 72 (default). Numbers will be accepted according to the following timer conditions. These conditions are similar to the automatic structure of call. Program the number 72 (or [PAUSE]72) into the panel to call CiD Radio.

TEL-SW module provides the following services:

- Telephone line failure report on radio

- Backup report on radio, in case of line failure

- Dual report on phone and radio

- In case of Radio communication, the remote programming option through telephone line still remains

The maximum length of wires between the Radio and TEL-SW is 1-2 meters. Important to connect the 12V power supply according to the connection drawing.

The line monitoring circuit is designed to percept the existence of the line even if it is busy. (Uline >= 3V). In case of opto connected panels the line voltage during call is 6-8V, in case of older, transformer connected panels the voltage may be lesser confusing the device. In such case connect a 56 Ohm 1/4W resistor serial between TEL-SW and the panel, that will increase the line voltage but not effects the communication.
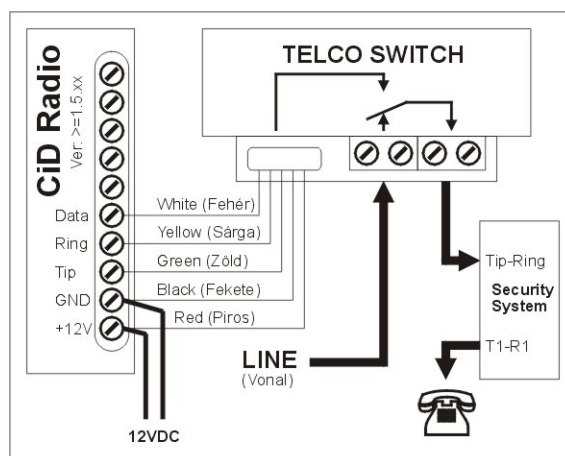
4.4 SERIAL

When using serial protocols it is sufficient to define the type of panel according o the software version (It can be found on the top of the panel main processor). SERIAL protocol can be actviated only when the jumper JP3 is in closed position!

SERIAL format can be selected in option **Parameters → Operation: Serial Interface**:

Serial format	Supported panels
ESPRIT V2.xx	728 old series (Partition A,B)
ESPRIT V3.xx	728 new series (PartitionA,B)
SPECTRA V1.xx	Old series
SPECTRA V2.xx	New series
Direct 1byte protocol	For direct dontrol of CiD module, for general usage.

Simple (Direct) one byte protocol:

Features	Settings
Speed:	9600 baud
Data bits:	8 bit
Stopbit:	1 bit
Parity:	Nincs
Signal strength:	TTL (5V) Start = 0, Stop = 1

The way the module recognises each received byte:

Upper digit (Bit 7 – Bit 4) **1-F**	Lower digit (Bit 3 – Bit 0)

The value 00 is not recognised.

„0"s in the lower or upper digit will automatically converted to „A". (e.g. 05 → A5 , 50 → 5A)

No partition information, therefore, only fixed shift can be used for account code generation. If the buffer is full the events will be lost!

Only 4/2 transmission operates with one byte protocol!

5. Examples

In the following section some practical examples will be introduced. We always use defaults in parameter settings. There are different methods to set the radio to default:

- Hardware method: Disconnect power from the radio. Short cut **J1 – registry reset** point with jumper then reconnect power. After power up the radio, the fast flashing of the red (Tx) LED indicates that the deleting process is about to start (at this point you can cancel it). When the flashing ends the deleting process is done. Remove the jumper.

- Software method: Connect the radio to the computer as in usual, run RintfAdmin (CiD2xxx) software. After opening the port, select menu **Parameters** (top of the menustructure) then press **Node data to default** button. Upload default settings to radio by pressing **PC→CiD** button.

The difference between the two methods is that the hardware method resets the User Key also (sets to 0000).

In the examples we doesn't change the transmitter parameters (they are suitable).

Example1: Contact Inputs

Input connection	Input progress	Event Code
1: To the siren output (positive connection) of the panel	+12V → ALARM, NC → RESTORE	PRG: 1A - 140 General Alarm
2: Panic button (NO) between the input and the GND	GND → ALARM, NC → RESTORE	PRG: 0D - 120 Panic Alarm
3: Tamper switch (NC) between the input and the GND	NC → ALARM, GND →RESTORE	PRG: 18 - 137 Tamper

In the above setting we can set the zone settings of inputs to 000 in order to receive clear and obvious reports. Zone numbers could be useful for maintenance (to identify the source!)

There is a bug in the above setting: If the user press the panic button in short successions the report will be transmitted several times unnecessarily. There are two ways to solve the problem:

- Program Event Delay for Input 2 (5 minutes recommended): **Alarm Delay = 300 sec, Restore Delay = 300 sec**

- Enable Event Bypass for Local Events (this method disables every local event during the defined time): **Local event monitor - Enabled, Alarm Delay = 5 mins** (If we enter 0 for Trouble Delay the event bypass for troubles will be disabled)

We gain power from the AUX (or Battery) of the alarm system. If we don't modify the defaults the system will report Battery and AC status, as well.

Don't forget to set the account code (or the User Key)!

Example 2: Contact Inputs and ESPRIT V3xx SERIAL

Input connection	Input progress	Event code, zone number
1: Panic button (NO) between the input and the GND	GND → ALARM, NC → RESTORE	PRG: 0D - 120 Panic Alarm Zone number: 101
2: Tamper switch (NC) between the input and the GND	NC → ALARM, GND →RESTORE	PRG: 18 - 137 Tamper Zone number: 102

We can set higher values for the zone numbers (101,102,103) to identify them when the report is the same as the panel's.

For SERIAL programming define settings **Operation: Serial Interface - ESPRIT V3xx**.

It is recommended to enable Event Bypass when using SERIAL: **Operation → Event Bypass: TELCOM/SERIAL monitoring - Enable**

Event Bypass can also be aenabled for Local events to prevent Panic button repetition: **Operation → Event Bypass: Local Event Monitoring - Enable**

You can modify the default 15 mins but please, consider if a PIR connected to the panel's input goes wrong or repeatedly sends alarms caused by an airflow. Then the first four signals and a "Swinger Bypass" report with the fourth signal will be transmitted immediately. If the false alarms still appear and the cycle time is less than 15 mins the system will restricts alarms towards the radio network. The Monitoring Station will probably recognise the first signals as burglary and take steps. When the system turns up to be defective it won't bother the monitoring station unecessarily. Too short delay time decreases the effectivity of the function, too long (max 60 mins) delay time may leave time for burglary without sending alarm to the monitoring station! Note that the bypass is always applied to one event, e.g. if zone 1 alarm is bypassed, zone 2 alarm remains active!

ESPRIT panels don't use Swinger Limit on the SERIAL output, therefore, the radio manages the function!

In case of partitioned system, the Contact ID Group consists which partition originates the report from. Local events never consist partition information!

If the partitions of the partitioned system are assigned to different accounts use settings **Identifiers → TELCOM and SERIAL → Generate Account Code: Partition Number**. This way the first partition (local events, technical information of panel) will be reported with the assigned account number, the second partition will be reported with account number + 1. nonetheless the Group extension will consists the partition number!

Don't forget to set the account code (or the User Key)!

After programming is finished, close jumper J3 otherwise the radio will be unable to receive ESPRIT serial messages!

Example 3: Contact Inputs and TELCOM (Contact ID)

Input connection	Input progress	Event code, zone number
1: Panic button (NO) between the input and GND	GND → ALARM, NC → RESTORE	PRG: 0D - 120 Panic Alarm Zone number: 101
2: Tamper switch (NC) between the input and GND	NC → ALARM, GND →RESTORE	PRG: 18 - 137 Tamper Zone number: 102

We can set higher values for the zone numbers (101,102,103) to identify them when the report is the same as the panel's.

In genral, there's no need to modify the radio settings for TELCOM to operate. In the panel we must set the phonenumber to Tone (Pulse dialing is not supported) 72. The radio emulates the dialtone for the panel, therefore, the pause before the numbers is not needed. Set the communication format to ContactID in the panel. In the panel definie the account number (e.g. 9999), if we don't define it the communication will be false. The account number is not important for the radio since it uses its own account numbers (in special cases the last digit may count).

Event Bypass can be programmed similarly to the previous example but most of the panels has such kind of automatism. (e.g. Auto Shutdown)

There are many ways of transmitting partition information, refer to the previous example.

Don't forget to set account code (or User Key)!

Example 4: TELCOM (pulse 4/2)

The version v2.x.xx of CiD radio is able to use 4/2 signal transmission by CiDuni radioprotocol. Local events will be transmitted in Contact ID format only. Usual monitoring softwares receive only one code type per account number, for this reason transmitting local Contact ID and TELCOM 4/2 events by the same account code is not recommended (no transmission problem until DRR receiver). There are several methods to prevent this:

- Use version v1.x.xx (Cid42-es) of CiD radio. This solution is not recommended because it breaks the uniformity of the radio link and the encrypting will also be impossible.

- Set the TELCOM and SERIAL shift to 1 to report local and TELCOM events on different account numbers (Local → Account number, TELCOM → Account number + 1) The only problem with this solution is that each real account will be administrated by two different account number.

- Use a monitoring software which is able to manage different formats. This is the most expendiential solution possible.

Before performing any settings in the radio verify the overlappings between the formats used by the radio and the panel. It's recommended to use the fastest format:

- DTMF 4/2 e.g. Ademco Express

- If the panel supports parity format on 10-20bps

- If none of the aboves is supported set 2300Hz, 20bps format (almost every panel is able to transmit it)

The radio according to the default settings identifies the formats in accordance with the handshake sequences, since the DTMF is the first it is recommended to modify the format.

20bps, 2300Hz:

First handshake: 2300Hz pulse

Second handshake: None

Third handshake: None

With 4/2 formats there is only one way for the panel to manage partitions:

Use the fourth digit of the panel's account code as the shift. It can be used only when the panel supports partitions with individual account codes (or shift value). For detailed description of the feature, refer to section **„Shift according to TELCOM account ID: (xxx[X])": Option**.

Don't forget to set theaccount code (or User Key)!

Example 5: Using TEL-SW Telephone Switcher Module

TEL-SW module can be used with Contact ID and 4/2 formats, as wel. There is no need to program the module in the radio, after connection the system will automatically recognise it and all phone status report will be received from the module so far. But the panel needs some settings acording to the function we desired to use the nodule:

1. The radio only supervises the existence of the telephone line without managing communication. The radio is only to report telephone fault. This is not an economical solution, its only advantage is that the panel doesn't require any settings.

2. The radio supervises the telephone line and manages communication if required (only with knonw formats, Contact ID is recommended). Perform the following panel settings:

Replace the primary telephone number by the number of the Monitoring Station using telephone. If the line exists the reports will be transmitted to this number.

Replace the secondary telephone number with [PAUSE]72, it will be sent towards the radio. For the function of PAUSE refer to section TEL-SW Telephone Switcher Module.

It's recommended to program the same format to both telephone number (Contact ID or 4/2).

Set the backup report function mode in the panel. If the report is failed to be transmitted to the primary phone number after a given number of attempts it will be attempted to be transmitted to the secondary phone number (before the panel reports communication failure).

It is recommended to set the same account number in the panel and the radio if the telephone and radio reports are sent to the same monitoring station.

In hte above case the following reports will be transmitted from the system presumed:

Events	Reports (Account: Event code → name)
- Closing report (primary tel.number)	0001: 1 401 → Close by User #User 1
Telephone line fault	
Radio reports line failure and switches the line, therefore the panel will not recognise the line fault.	0001: 1 352 → New: Telco 2 Fault
- Burglary (primary tel. Number) The panel attempts to report to the primary tel.number but the radio disregards it.	
- Burglary repetition (secondary tel.number, the radio manages)	0001: 1 130 → New: Burglary
- The radio receives the further reports	
Telephone line restored	
The radio reports the line restore	0001: 3 352 → Restore: Telco 2 Fault
- Opening (primary tel.number)	0001: 3 401 → Open by User #User 1

Red: Radio communication   Blue: Telephone communication

In the above example introduces that the monitoring station experiences continuous communication and no events will be lost. Since both system reports to the same account number the event history can be backtracked in the event log. This solution provides high security system structure with remote programmable panel.

By default the radio recognises telephone fault referring Telco 2 in order not to be confound with Telco 1 events sent by the panel. (The setting can be modified or disabled)

Contact ID Event Filter

The above example did not mention event filtering. It might be useful for the radio network monitoring to prevent unimportant signals and signals not require furhter procedure. Therefore the signal filtering is the transmitter's task.

Essentially the signals can be divided into three groups:

- Alarms: Burglary, tamper, panic reports

- Arming: User and automatic opening/closing reports

- Technical reports: Trouble, power, bypass reports

Consider that the monitoring station is to manage the first and the third group only. This is the most common point of view therefore, CiD radio offers different types of opening/closing report filter.

- <u>Opening report only after alarm</u>: If enabled Contact ID opening/closing events will be reported once only after alarm. This can be useful when false alarm occurs followed by immediate user open event because in such case it may be obvious for the monitoring station that no burglary occured. On the other hand, the procedure will be taken. Enable option **Operation: Opening Report – Only After Alarm** oto enable the feature.

- <u>Opening / Closing event filter</u>: The event filter restricts the defined event groups.

Since opening reports are usually generated in the same time and temporarily overload the radio network it is useful to limit them.

Test Reports

By default the radio transmits 2 test reports a day. This means that only the radio out of function for a day at least can be filtered. The automatism of filtering of the „non chesked in" radios depends on the monitoring software. The radio offers the scheduling of tests (by a shift value) but it is useful only when the radio can be programmed on-site and its timer can be set to accurate during the maintenance. For Test settings refer to section **Test (Cyclic Test)**.

Appendix:

Menu overview
Programmable Contact ID codes
Detailed connection drawing

Menu	Value (default)	Description
Identifiers		
Account ID	0001-9999	Local reports will be transmitted with this ID. TELCOM, SERIAL account code (according to the below settings) generated by a shift The maximum shift is 15.
Receiver ID	1-15	ID of the Monitoring receiver.
↳ **TELCOM and SERIAL**		
Account code generation	• Shift only • Partition number • *TELCOM account xxx[0-9]	Partition generation: 0 -> none or first (A) partition, 1...14 -> second (B)...15 partition. The TELCOM account refers to the last (fourth) digit of the panel account code. E.g. 123[4]
TELCOM, SERIAL shifz	0-9	Account code (TELCOM,SERIAL) = Account code + [TELCOM,SERIAL shift] + [Account code generetion option] (Default: 0 no shift)
4/2 conversion	0-15	The conversion table used by the receiver for decoding can be defined. (Default: 0)
Operation		
Test report	• Fixed time • From report	Test report will be generated in a defined time or the last report restarts the test cycle. (Default: Fixed time)
Report after Reset	• Groundstart report • No Groundstart report	If set the status of inputs, battery and telephone will be reported after reset. (Default: Groundstart report)
Opening report	• Always • Only after alarm	Opening and closing reports can be generated always or only after alarm. The setting is applied for local, TELCOM and SERIAL events as well! (Default: Always)
After download	• Testclock restart • Disabled	After downloading the parameters the set operation will be executed. (Default: Disabled)
Serial interface	• ESPRIT V2.xx • ESPRIT V3.xx • SPECTRA V1.xx • SPECTRA V2.xx • DIRECT one bit:	Select the ESPRIT version: The serial interface is active only when jumper JP3 is ON then TELCOM functions are disabled! (Default: ESPRIT V2.xx)
↳ **Event Bypass**		
Local Event Monitoring	• Enabled • Disabled	If enabled: If an event repeated four times within the time set for the event type it will be blocked until the time ellapsed. If the event not received during the set time it will be enabled again. The option prevents the repeated events caused by zone trouble. (Default: disabled)
TELCOM/SERIAL monitoring	• Enabled • Disabled	If enabled: If an event repeated four times within the time set for the event type it will be blocked until the time ellapsed. If the event not received during the set time it will be enabled again. The option prevents the repeated events caused by zone trouble. (Default: disabled)
Alarm Delay [mins]	0-60 (15)	If the event is repeated more than four times during the set time it won't be transmitted anymore. The repeated event restarts the timer. (Default: 15 mins)
Trouble Delay [mins]	0-60 (15)	If the event is repeated more than four times during the set time it won't be transmitted anymore. The repeated event restarts the timer. (Default: 15 mins)
4/2 Monitoring	• Enabled • Disabled	If enabled: If an event repeated four times within the time set for the event type it will be blocked until the time ellapsed. If the event not received during the set time it will be enabled again. The option prevents the repeated events caused by zone trouble. (Default: disabled)
4/2 Delay	0-60 (15)	If the event is repeated more than four times during the set time it won't be transmitted anymore. The repeated event restarts the timer. (Default: 15 mins)
↳ **Transmitter Parameters**		
Transmitter Boot Time [msec]	200-1000 (400)	The time out after power on the transmitter. (Default: 400msec)
Block Repetition	2-15 (3)	Number of repetitions during a transmission. The value affects transmission time! (Default: 3)
Number of Transmissions	2-15 (3)	A report will be transmitted the set times. (Default: 3)
Minimum Pause [sec]	3-60 (5)	The minimum time between two transmissions.

		(Default: 5)
Random Transmission Pause [sec]	• 0-3 sec • 0-7 sec • <u>0-15 sec</u> • 0-31 sec • 0-63 sec	The maximum value of random intervals between transmissions. (Default: 0-15)
Number of Blocks during Transmission	10-250 (<u>21</u>)	Set the maximum number of blocks within a transmission. Collision (too many events) may overwrite the setting! (Default: 21)
Local Events		
↳ **Inputs**		
↳ **1-3 Input**		A menüpontok 1-3 bemeneteken megegyeznek
Input Operation	• <u>GND->ALARM,NC->REST</u> • +12V->ALARM,NC->REST • NO,NC->ALARM,10k->REST • NC->ALARM,GND->REST • NC->ALARM,+12V->REST	Set the criteria results alarm and restore. (Default: GND -> ALARM, NC ->REST)
Alarm Delay [sec]	<u>0</u>-2550	No report after the last alarm report until the set time ellapsed. (Default: 0)
Restore Delay [sec]	<u>0</u>-2550	No report after the last restore report until the set time ellapsed. (Default: 0)
Event Code	00-87 (<u>11</u>)	The set code will be reported if alarm occurs on the input. For Contact ID codes refer to this manual. 00 means no report. (Default: 11->130)
Zone number	000-999 (<u>1,2,3</u>)	The zone (or user) with the defined number will be assigned to the event. (Default: Input number)
↳ **Battery Supervision**		
Battery OK Voltage [mV]	12,5-15V (<u>13,4V</u>)	Above the defined voltage the module sends Battery OK report. (Default: 13400mv -> 13.4V)
Battery Failure Voltage [mV]	10,0-12,0V (<u>11,0V</u>)	Below the defined voltage the module sends Battery Failure report. (Default: 11000mv -> 11.0V)
Battery OK Delay [sec]	5-255 (<u>60</u>)	Battery OK report will be reported with the defined delay. (Default: 60)
Battery Failure Delay [sec]	1-255 (<u>1</u>)	Battery Failure report will be reported with the defined delay. (Default: 1)
Battery Event	• No report • <u>Battery report[302]</u>	If set, report will be generated when the power voltage level meets the charge level.(Default: BATTERY report)
AC Failure Delay [sec]	1-255 (<u>60</u>)	AC Failure Delay. If the battery voltage is below 13.0V during the defined time there is no charge. (Default: 60)
AC Event	• No report • <u>AC report[301]</u>	If the BATTERY voltage is below 13.0V during the defined time there is no charge. (Default: AC jelentés)
↳ ***Telephone Line**		Only with radio with TELCOM installed
*Telephone Event Code	• No report • <u>Telco 1 [351]</u> • Telco 2 [352]	The module supervises the 100kOhm EOL resistor if the phone is hanged up. If the resistance can be measured the line is OK. With TEL-SW unit the option is relates to main line! (Default: Telco 1)
↳ **Test**		
Test Cycle [hours]	0-255 (<u>12</u>)	Test Cycle in hours. (Default: 12)
Tesztciklus [perc]	<u>0</u>-59	Tesztciklus percben. (Default: 0)
Test Shift [hours]	<u>0</u>-23	The value of the first Shift after RESET in hours. (Default: 0)
Test Shift [Mins]	<u>0</u>-59	The value of the first Shift after RESET in mins. (Default: 0)
Test Event	• No report • Cycl. Test[602] • Cycl. RF Test[603]	If set, the radio generates test event. (Default: Cyclic RF test)
TELCOM and SERIAL		
↳ **Event Filter**		
↳ **Alarms [100-]**		
Medical Alarm	• Disabled • <u>Enabled</u> • New Event only	Medical alarms and restorals. (Contact ID: 100 - 109) (Default: Enabled)
Fire Alarm	• Disabled • <u>Enabled</u> • New Event only	Fire alarms and restorals. (Contact ID: 110 - 119) (Default: Enabled)
Panic Alarm	• Disabled	Panic alarms and restorals. (Contact ID: 120 - 129) (Default: Enabled)

	• Enabled • New Event only	
Burglary	• Disabled • Enabled • New Event only	Burglary alarms and restorals. (Contact ID: 130 - 139) (Default: Enabled)
General Alarm	• Disabled • Enabled • New Event only	General alarms and restorals. (Contact ID: 140 - 149) (Default: Enabled)
24Hour Alarm	• Disabled • Enabled • New Event only	24Hour alarms and restorals. (Contact ID: 150 - 159) (Default: Enabled)
↳ **Loop Check [200-]**		
Fireloop Check	• Disabled • Enabled • New Event only	Fireloop events and restorals. (Contact ID: 200 - 209) (Default: Enabled)
↳ **Troubles [300-]**		
System Trouble	• Disabled • Enabled • New Event only	System troubles and restorals. (Contact ID: 300 - 319) (Default: Enabled)
Sounder (relay) Trouble	• Disabled • Enabled • New Event only	Sounder (and relay) troubles nad restorals. (Contact ID: 320 - 329) (Default: Enabled)
Peripherial Trouble	• Disabled • Enabled • New Event only	Peripherial troubles and restorals. (Contact ID: 330 -349) (Default: Enabled)
Communication Failure	• Disabled • Enabled • New Event only	Communication failures and restorals. (Contact ID: 350 - 359) (Default: Enabled)
Loop Trouble	• Disabled • Enabled • New Event only	Loop troubles (fireloop) and restorals. (Contact ID: 370 - 379) (Default: Enabled)
Sensor Trouble	• Disabled • Enabled • New Event only	Sensor troubles and restorals. (Contact ID: 380 - 399) (Default: Enabled)
↳ **Opening/Closing [400-]**		
Opening/Closing	• Disabled • Enabled • New Event only	Opening and closing events. (Contact ID: 400 -409, 440 - 449) (Default: Enabled)
Special Opening/Closing	• Disabled • Enabled • New Event only	Special opening and closing events. (Contact ID: 450 - 459, 460 - 469) (Default: Enabled)
Remote Control	• Disabled • Enabled • New Event only	Remote opening and closing events. (Contact ID: 410 - 419) (Default: Enabled)
Access (Entry)	• Disabled • Enabled • New Event only	Access (programming) and entry events. (Contact ID: 420 - 439) (Default: Enabled)
↳ **Bypasses [500-]**		
System Disable	• Disabled • Enabled • New Event only	System (sounder, relay) disable events and restorals. (Contact ID: 500 - 529) (Default: Enabled)
Peripherial Disable	• Disabled • Enabled • New Event only	Peripherial (modules) disables and enables. (Contact ID: 530 - 549) (Default: Enabled)
Communication Disable	• Disabled • Enabled • New Event only	Communication disables (e,g. Telco trouble) and restorals. (Contact ID: 550 - 560) (Default: Enabled)
Bypass	• Disabled • Enabled • New Event only	Bypasses (e.g. zone, sensor) and activations. (Contact ID: 570 - 579) (Default: Enabled)
↳ **Tests [600-]**		
Tests	• Disabled • Enabled • New Event only	Test reports. (Contact ID: 600 - 619) (Default: Enabled)
Event Log	• Disabled • Enabled	Events related to event log. (Contact ID: 620 - 629) (Default: Enabled)

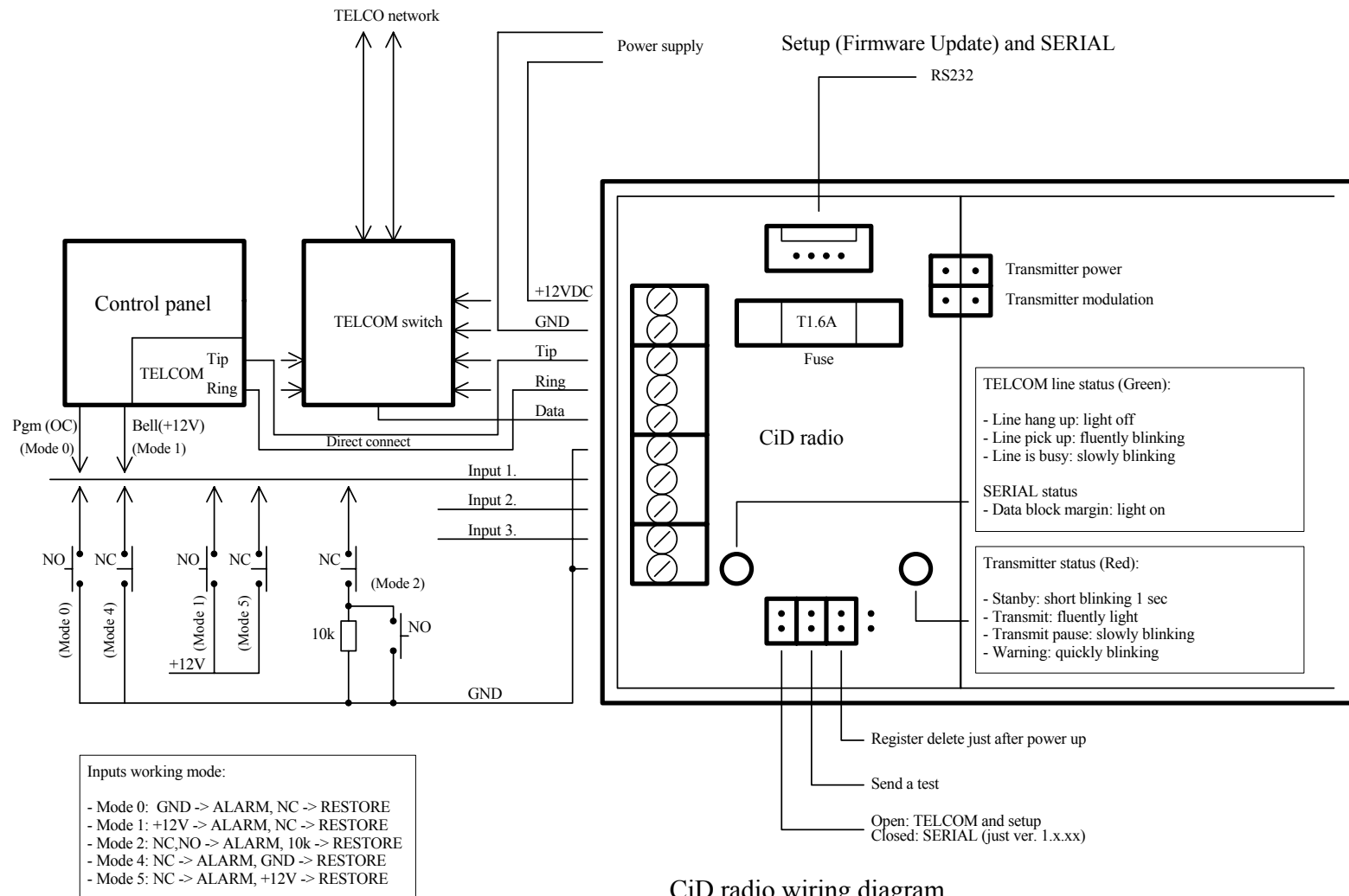|		
	• New Event only	
Schedule	• Disabled • Enabled • New Event only	Schedule (timer) modification related events. (Contact ID: 630 - 639) (Default: Enabled)
User Tracking	• Disabled • Enabled • New Event only	User Tracking related events. (Contact ID: 640 - 649) (Default: Enabled)
Miscallenuous	• Disabled • Enabled • New Event only	Miscallenuous (expanded) events. (Contact ID: 650 - 689) (Default: Enabled)
↳ ***TELCOM Settings**		
*TELCOM Telephonenumber	00-99 (72)	Communication will be initialised by dialing (Tone) the set telephonenumber. (Default: 72)
*First handshake	• No • 1400Hz pulse • 2300Hz pulse • 1400/2300Hz DTMF	Handshake sound starts communication in the panel. Sounds prefer different formats.
*Second handshake	• No • 1400Hz pulse • 2300Hz pulse • 1400/2300Hz DTMF	Handshake sound starts communication in the panel. Sounds prefer different formats.
*Thirs handshake	• No • 1400Hz pulse • 2300Hz pulse • 1400/2300Hz DTMF	Handshake sound starts communication in the panel. Sounds prefer different formats.
*Handshake Length [msec]	600-1600 (1000)	1400Hz and 2300Hz (pulse) is the handshake length. DTMF handshake has fixed value. (Default: 1000)

Menu element (bold)
Parameter (normal)
*: Only with installed TELCOM
Default

CID	Event name	PRG.	CID	Event name	PRG.	CID	Event name	PRG.
	MEDICAL ALARMS - 100		203	Gate Valve Sensor	2E	401	Open/Close by User	5B
100	Medical Alarm	01	204	Low Water Level	2F	402	Group Open/Close	5C
101	Personal Emergency	02	205	Pump Activated	30	403	Automatic Open/Close	5D
102	Fail to Report In	03	206	Pump Failure	31	404	Late to Open/Close	5E
	FIRE ALARMS - 110			**SYSTEM TROUBLES - 300 & 310**		405	Deferred Open/Close	5F
110	Fire Alarm	04	300	System Trouble	32	406	Cancel	60
111	Smoke	05	301	AC Loss	33	407	Remote Arm/Disarm	61
112	Combustion	06	302	Low System Battery	34	408	Quick Arm	62
113	Water Flow	07	303	RAM Checksum Bad	35	409	Keyswitch Open/Close	63
114	Heat	08	304	ROM Checksum Bad	36		**REMOTE ACCESS - 410**	
115	Pull Station	09	305	System Reset	37	411	Callback Request Made	64
116	Duct	0A	306	Panel Program Changed	38	412	Success - Download Access	65
117	Flame	0B	307	Self-Test Failure	39	413	Unsuccessful Access	66
118	Near Alarm	0C	308	System Shutdown	3A	414	System Shutdown	67
	PANIC ALARMS - 120		309	Battery Test Failure	3B	415	Dialer Shutdown	68
120	Panic Alarm	0D	310	Ground Fault	3C		**ACCESS CONTROL - 420**	
121	Duress	0E		**SOUNDER/RELAY TROUBLES - 320**		421	Access Denied	69
122	Silent	0F	320	Sounder Relay	3D	422	Access Report By User	6A
123	Audible	10	321	Bell 1	3E		**SOUNDER RELAY DISABLES - 520**	
	BURGLAR ALARMS - 130		322	Bell 2	3F	520	Sounder/Relay Disabled	6B
130	Burglary	11	323	Alarm Relay	40	521	Bell 1 Disable	6C
131	Perimeter	12	324	Trouble Relay	41	522	Bell 2 Disable	6D
132	Interior	13	325	Reversing Relay	42	523	Alarm Relay Disable	6E
133	24-Hour	14		**SYSTEM PERIPHERAL TROUBLES - 330 & 340**		524	Trouble Relay Disable	6F
134	Entry/Exit	15	330	System Peripheral	43	525	Reversing Relay Disable	70
135	Day/Night	16	331	Polling Loop Open	44		**COMMUNICATION DISABLES - 550 & 560**	
136	Outdoor	17	332	Polling Loop Short	45	551	Dialer Disabled	71
137	Tamper	18	333	Expansion Module Failure	46	552	Radio Transmitter Disabled	72
138	Near Alarm	19	334	Repeater Failure	47		**BYPASSES -570**	
	GENERAL ALARMS - 140		335	Local Printer Paper Out	48	570	Zone Bypass	73
140	General Alarm	1A	336	Local Printer Failure	49	571	Fire Bypass	74
141	Polling Loop Open	1B		**COMMUNICATION TROUBLES - 350 & 360**		572	24-Hour Zone Bypass	75
142	Polling Loop Short	1C	350	Communication	4A	573	Burg. Bypass	76
143	Expansion Module Failure	1D	351	Telco Fault 1	4B	574	Group Bypass	77
144	Sensor Tamper	1E	352	Telco Fault 2	4C		**TEST/MISC. -600**	
145	Expansion Module Tamper	1F	353	Long Range Radio	4D	601	Manual Trigger Test	78
	24-HOUR NON-BURGLARY - 150 & 160		354	Fail to Communicate	4E	602	Periodic Test Report	79
150	24-Hour Non-Burglary	20	355	Loss of Radio Supervision	4F	603	Periodic RF Transmission	7A
151	Gas Detected	21	356	Loss of Central Polling	50	604	Fire Test	7B
152	Refrigeration	22		**PROTECTION LOOP TROUBLES - 370**		605	Status Report to Follow	7C
153	Loss of Heat	23	370	Protection Loop	51	606	Listen-in to Follow	7D
154	Water Leakage	24	371	Protection Loop Open	52	607	Walk Test Mode	7E
155	Foil Break	25	372	Protection Loop short	53	621	Event Log Reset	7F
156	Day Trouble	26	373	Fire Trouble	54	622	Event Log 50% Full	80
157	Low Bottled Gas Level	27		**SENSOR TROUBLES - 380**		623	Event Log 90% Full	81
158	High Temperature	28	380	Sensor Trouble	55	624	Event Log Overflow	82
159	Low Temperature	29	381	Loss of Supervision - RF	56	625	Time/Date Reset	83
161	Loss of Air Flow	2A	382	Loss of Supervision - RPM	57	626	Time/Date Inaccurate	84
	FIRE SUPERVISORY - 200 & 210		383	Sensor Tamper	58	627	Program Mode Entry	85
200	Fire Supervisory	2B	384	RF Transmitter Low Battery	59	628	Program Mode Exit	86
201	Low Water Pressure	2C		**OPEN/CLOSE -400**		631	Exception Schedule Change	87
202	Low CO2	2D	400	Open/Close	5A			

TELCO network

Power supply

Setup (Firmware Update) and SERIAL

RS232

Transmitter power

Transmitter modulation

+12VDC

GND

Tip

Ring

Data

T1.6A

Fuse

CiD radio

Control panel

TELCOM switch

TELCOM

Tip

Ring

Direct connect

Pgm (OC)

(Mode 0)

Bell(+12V)

(Mode 1)

Input 1.

Input 2.

Input 3.

NO   NC   NO   NC   NC

(Mode 2)

10k   NO

+12V

GND

(Mode 0)
(Mode 4)
(Mode 1)
(Mode 5)

TELCOM line status (Green):

- Line hang up: light off
- Line pick up: fluently blinking
- Line is busy: slowly blinking

SERIAL status
- Data block margin: light on

Transmitter status (Red):

- Stanby: short blinking 1 sec
- Transmit: fluently light
- Transmit pause: slowly blinking
- Warning: quickly blinking

Register delete just after power up

Send a test

Open: TELCOM and setup
Closed: SERIAL (just ver. 1.x.xx)

Inputs working mode:

- Mode 0: GND -> ALARM, NC -> RESTORE
- Mode 1: +12V -> ALARM, NC -> RESTORE
- Mode 2: NC,NO -> ALARM, 10k -> RESTORE
- Mode 4: NC -> ALARM, GND -> RESTORE
- Mode 5: NC -> ALARM, +12V -> RESTORE

CiD radio wiring diagram