

CU-07 A TRACER unit

1. Unit description

The **CU-07 A Tracer unit** is a device which uses a GPS receiver to detect the position of a car, a motorcycle or cargo. The position can be ascertained any time via a single SMS command or it can be sent during the journey via the GSM network to the mass storage server of the web application where data are managed for online monitoring and the trace log. Simply said, the unit can be used both for passive locating when it only answers a single command, and for the continuous transmission of real-time data to a data-collection server. If the attempt to send the data fails, the unit saves it in its internal memory and sends it later.

Start of the journey – The accelerometer triggers the GPS module when car starts moving. It starts immediately with locating. The start of the journey is indicated by a permanently lit LED until the journey is finished (optional parameter).

End of the journey – The journey is finished automatically with a 5 minute delay from the moment the car stops. If the car continues with the journey during this 5 minute interval then the journey won't be split into independent traces. This eliminates splitting the traces because of waiting at crossroads for example.

2. Unit installation and connection

2.1. Unit installation

The unit should be installed in the vehicle interior by a professional company. It is suitable for vehicles with a 12 V or 24 V power supply and a negative earth.

Disconnect the battery before installation. Nobody should be inside a vehicle equipped with airbags while handling the battery. Some devices equipped with a memory (clock, configurations, etc) could be erased when the battery is disconnected. Avoid drilling into metal parts of the car body during installation. The manufacturer shall not be held liable for any damage caused by incorrect or unsuitable installation of the product.

2.2. Unit installation in the car

We recommend installing the unit on or under the dashboard or at a place where it has a good view towards the sky. **It is true for the correct functioning of the GPS module that the wider the angle through which the antenna can see the sky through the windscreen, the more precise the GPS location function is.** There must not be any other metal objects under or above antenna. Always install the unit according to the described orientation which means the lettering pointing down towards the ground.

2.3. Wire connections

Visibly installed unit can be easily connected to circuits of the car via the connector into the car socket for car lighter. If the unit is installed as a hidden or is permanently used in one car, we recommend to cut the connector and wires connected directly to the electric installation of the car.

- **Black - ground** – connect to the original earthing point.
- **Red - +12 V (+24 V) power supply** - connect to a cable leading from the battery. The power supply should only be connected after a thorough inspection of the whole installation!
- **White – panic input**, reacts to grounding to the GND wire. Default: not used.

2.4. Status indication with an LED indicator

The unit indicates its status with an LED indicator.

Slow flashing	Logging into the system or the GPS signal has been lost
Rapid flashing	The unit is waiting for configuration
SOS flashing (...---...)	Unit failure
Permanently lit	Motion indication, the journey is being monitored
The LED is off	Journey termination or the unit's power supply has been disconnected

2.5. SIM card

The SIM card is first inserted into its moveable holder then into the fixed holder on the PCB from the side of the unit. The moveable SIM card holder ejects when yellow button is pressed in the direction of the arrow visible on the unit. Mind the correct orientation of the SIM card and press the holder to the stop.

3. Basic unit configuration

3.1. Language selection

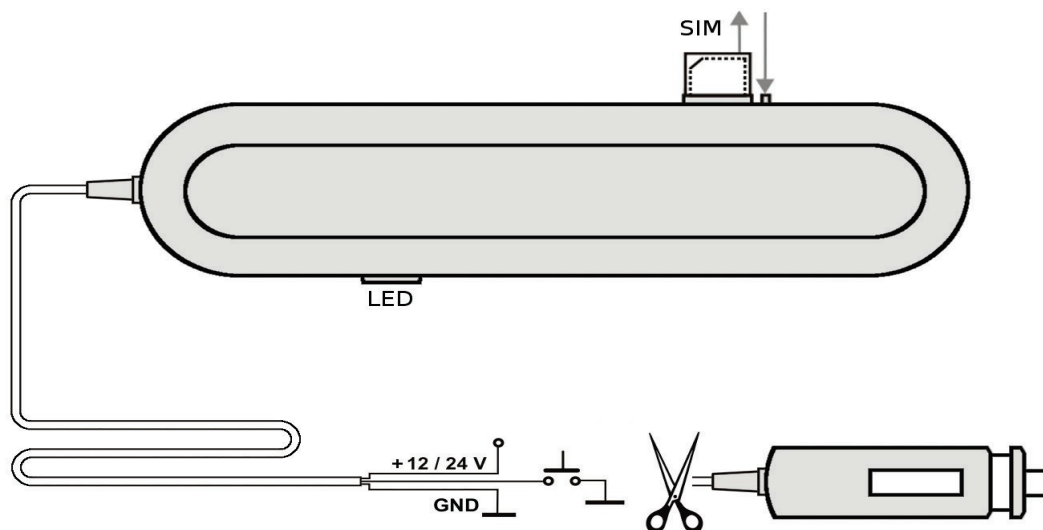
The basic unit language is English, but every unit has its language kit. For more information about language kits see www.jablotron.com, or contact your distributor. When a new language is selected, all texts will be set to the defaults of the chosen language. The rest of the unit's configuration is not changed..

Command format: MCcode LANGUAGE CZ/EN

Command example:

1234 LANGUAGE CZ (new language is Czech)

The following languages are supported by the factory default settings: Czech CZ, German DE, English EN, Spanish ES, Polish PL, Portuguese PT, Slovak SK, Serbian SR



3.2. Master code setting

The master code serves for unit programming and control. It is therefore intended to be used by a service technician or a multiple unit administrator. The master code can also be used to change user codes. The default master code is 1234. **The manufacturer recommends changing this password.** The MC code must contain 4 to 10 characters. All characters from A to Z and from 0 to 9 are accepted, it is not case-sensitive.

Command format: MCcode MC newMCcode newMCcode

Command example:

1234 MC CU654321 CU654321 (the new code will be CU654321)

3.3. Changing the user code

The user code serves for user control of the unit. It is usually used by a driver or a unit user. It is not possible to change the master code using a user code. The default user code is 1111. **The manufacturer recommends changing this password.** The UC code must contain 4 to 10 characters.

Command format: UCcode UC newUCcode newUCcode

Command example:

1111 UC AUTO988 AUTO988 (the new code will be AUTO988)

3.4. Data transmission to a data-collection server

If you want to transmit data from the unit to a data-collection server in order to process it into a vehicle logbook, ask the service provider who will then carry out the setting.

If you would like to use the unit for passive SMS location, no other settings are required.

3.5. Configuration entry mode timeout

Rapid flashing of the unit's LED indicator informs you that the unit has not been configured yet. If you therefore intend to transmit data to a data-collection server, the flashing ceases as soon as the operator carries out the configuration.

If you are planning to use the unit only for non-server configuration, the flashing will cease once you have entered a TEL1 telephone number (see 4.1).

4. Advanced unit configuration

Perform advanced configuration using the C-Link application remotely via the GSM. Download the C-Link software at www.jablotron.com.

The unit can also be programmed by SMS command or sending multiple commands in one SMS. Such a command must begin with a password followed by individual commands separated with a comma.

Command example:

1234 TEL1 +420777654321,TEL2 +420777654322,VERIF ON

4.1. Entering drivers' telephone numbers

If the unit is installed in a vehicle which is used by multiple drivers, it is possible to select the driver who is going to drive the vehicle easily by dialling into the unit from the driver's telephone. The device memory can hold telephone numbers of up to 99 drivers who can identify themselves by dialling into the unit. The telephone number can consist of 12 digits maximum and it must be entered in the international format. **It is recommended to enter the telephone number of the company vehicle fleet administrator at the TEL1 position as all unidentified SMS messages which the unit receives (see 6.1) are sent to this number.**

Command format: MCcode TELx +yyyyyyyyyyyy

where: **x** – the unit's reference (indexing) number of the telephone number (from 1 to 99);

yyyyyyyyyyyy – telephone number in international format (max.12 digits excluding the + sign)

Example of a command programming numbers 1 and 2:

1234 TEL1 +420777654321,TEL2 +420777654322

4.2. Entering PANIC telephone numbers

The unit can send an SMS and dial in up to two telephone numbers when the driver is in distress and activates the panic input e.g. with a button. The minimum activation time has to be 1 s.

Command format: MCcode TELPANICx +yyyyyyyyyyyy

where: **x** – the unit's reference (indexing) number of the telephone number (1 or 2);

yyyyyyyyyyyy – telephone number in international format (max.12 digits excluding the + sign)

Command example:

1234 TELPANIC1 +420777654321, TELPANIC2 +420 ...

4.3. Entering a telephone number for sending journey commencement notification

The unit can send notifications about the commencement of a journey or leaving a given area to a preset TELINFO telephone number. Area leaving parameters must be set according to the following paragraph. These functions can be switched on/off by individual users (see 5.3. and 5.4).

Command format: MCcode TELINFO +yyyyyyyyyyyy

where: **yyyyyyyyyyyy** – telephone number in international format (max. 12 digits excluding the + sign)

Command example:

1234 TELINFO +420777654321

4.4. GEOFENCE vehicle position guarding

It is possible to set the GEOFENCE function in the unit for monitoring abandonment of a delimited area.

Command format: MCcode GEOFENCE xx:yy:z

where: **xx** – geographical latitude coordinates in whole degrees with +/- sign (can be requested from the unit by the SMS command GPS)

yy – geographical longitude coordinates in whole degrees with +/- sign (can be requested from the unit by the SMS command GPS)

z – radius of the circular area detected in km – allowed values 1 - 99

Command example:

1234 GEOFENCE +50.7290:+15.1766:5

As the unit could leave the area several times per day or hour, it is also necessary to set the number of SMS messages which it could send in total. This parameter has to be set otherwise it will not work.

Command format: MCcode GEOFENCE SMS h:d

where: **h** – the total number of SMS messages sent per hour (the permitted value is 1-99, while 0 is the default)

d – the total number of SMS messages sent per day (the permitted value is 1-99, while 0 is the default)

Command example:

1234 GEOFENCE SMS 5:10 (the unit sends a maximum of 5 SMSes per hour but it is limited to 10 SMSes per day in total)

4.5. LED signalling during the journey

The unit signals the course of journey monitoring with a permanently lit LED. This function is optional, though.

Command format: MCcode LED ON/OFF

Command example:

1234 LED OFF (the LED will not be lit in the course of a journey)

4.6. Ascertaining the position via T-Mobile Locator

The LOCATOR command works only with an activated T-Mobile Locator service (Where is...). When activating the service you have to choose an LPIN locating code which must be entered as one of the parameters in command setting. The setting is carried out via the below-mentioned command. When it is submitted, the unit sends an inquiry to the operator who then sends back information about its position which the unit subsequently forwards

to the number from which the command came. This can take up to two minutes. It is not necessary to send the whole command to ascertain the position again. Sending a LOCATOR command is sufficient.

Command format:

MCcode LOCATOR 5727 5727 KDE LPIN xx...x

where: **5727** – is the number of service to which the inquiry is sent

5727 – is the number from which the unit expects to receive an answer (it is usually an identical number).

KDE – is a service name

LPIN – is a code used for T-Mobile Locator service activation

xx...x – is a unit SIM card telephone number

Command example:

1234 LOCATOR 5727 5727 KDE 12345678 737231897

4.7. Ascertaining a pre-paid card balance

The manufacturer recommends using SIM cards with a flat-rate tariff. **When using a pre-paid card there is a danger of a loss of functioning due to credit depletion or exceeding credit validity!!!**

By sending a CREDIT command it is possible to ascertain the credit balance on a prepaid card and concurrently activate periodical checking. The setting is carried out via the below-mentioned command. When it is submitted, the unit sends an inquiry to the operator who then sends back information about its credit balance which the unit subsequently forwards to the number from which the command came. This can take up to two minutes. It is not necessary to send the whole command to ascertain the credit balance again. Sending a CREDIT command is sufficient.

Command format: MCcode CREDIT uuu...u xx yy zz

where: **uuu...u** is a command to ascertain the credit
(for example *101# T-mobile Czech republic)

xx is the period for ascertaining credit in days

yy is the minimum amount of credit in CZK

zz is the position at which the number stating the amount of credit in an SMS from an operator starts

Command example:

1234 CREDIT *101# 7 200 1

This command will check whether the credit balance exceeds a money value of 200,- every 7 days (the information starts at the 1st character position in the SMS from an operator). If a lower amount of credit is ascertained, the message from the operator is forwarded to telephone number 1. The function can be disabled by sending a command with a zero value of credit set (xx=0).

4.8. GSM module reset

In order to set some network functions it is sometimes required to log the SIM off the network and then log it on again. In such a case the unit's GSM module can be restarted with the RESET GSM command.

Command format: MCcode RESET GSM

Command example:

1234 RESET GSM

4.9. Service command DINFO

DINFO can give you the basic service information about the unit and its status. Unit reply by SMS: "Your unit reports: CU-07A; CU-07A; SN: 1400800017; ID: 671003; SW: 7.3; HW KW10403; RK: ABH9P-HD89R-15GT; GSM: 57%; SAT: 9/10; Time: 15:36 26.3. " in this order it includes information about, serial number, unit ID (as it was set), SW and HW version, internet reg. key, GSM signal strength in %, number of used/visible satellites, time and date.

Command format: MCcode DINFO

Command example:

1234 DINFO

4.10. Command verification

The verification command sets a condition that user commands must contain the MC or UC code. This command can be used in cases when the vehicle fleet administrator does not want to let individual employees registered as drivers use user commands (i.e. employees not knowing the password will not be able to locate themselves or change the journey type or driver).

Command format: MCcode VERIF ON/OFF

Example of a command enabling verification:

1234 VERIF ON

5. User commands

User commands can be sent from registered telephones without the MC or UC code, unless the VERIF command is enabled.

5.1. Driver selection by an SMS command

A driver can also be selected with an SMS command (e.g. a function for a dispatcher). In order to change the current driver's number you have to enter the following command:

Command format: UCcode Dx

where: **x** – is a driver's number from 1 to 99

Command example:

1111 D2 (to set driver 2)

5.2. Journey type setting

Choose the journey mode by SMS.

Command format: UCcode Tx

where: **x** – journey type: **0** is a business trip (default)
1 is a private journey

Command example:

1111 T1 (sets a private journey)

5.3. Notification of the commencement of a journey

If the TELINFO telephone number has been set using the MC code, the function can be enabled or disabled permanently or it can be activated for a single journey.

Command format: UCcode SINFO ON/OFF

Command example:

1111 SINFO ON (the unit sends a notification about the commencement of a journey each time the ignition key is turned on)

Command format: UCcode SINFO

Command example:

1111 SINFO (the unit sends a one-time notification about the commencement of a journey)

5.4. GEOFENCE function

If the GEOFENCE function parameters have already been set using the MC code, if enabled then the unit sends an SMS to TELINFO when the pre-set area is left. The function can be enabled or disabled by a user.

Command format: UCcode GEOFENCE ON/OFF

Command example:

1111 GEOFENCE ON (the unit sends a notification each time it leaves the area)

Command format: UCcode GEOFENCE

Command example:

1111 GEOFENCE (the unit sends a one-time notification when it leaves the area)

5.5. SMS command reception confirmation

The device can confirm execution of the received SMS commands to the telephone number from which the command was received. This function is optional, though.

Command format: UCcode RE ON/OFF

Command example:

1111 RE OFF (disables confirmation of SMS commands)

5.6. Ascertaining the current position

The current position of the unit can be ascertained by sending a GPS command. The received SMS contains a link to Google maps which smart phones can then use to display the vehicle position on the map.

Command format: UCcode GPS

Example of a command to ascertain the current position:

1111 GPS

5.7. Current vehicle status

The current vehicle status can be ascertained with the STATUS command. The unit reacts to this command with an answer stating the current status of the unit.

Command format: UCcode STATUS

Command example:

1111 STATUS

5.8. HELP command

The HELP command can be used to obtain basic help about how to control the unit using SMS commands.

Command format: UCcode HELP

Command example:

1111 HELP

5.9. CREDIT and LOCATOR commands

If the CREDIT and LOCATOR functions have already been set, single commands can be used to ascertain the credit balance and position.

Command format: UCcode CREDIT

Example of a command for ascertaining the credit balance on a

prepaid card:

1111 CREDIT

Command format: UCcode LOCATOR

Example of a command for ascertaining the position in a mobile

operator's network:

1111 LOCATOR

6. Other functions

6.1. Forwarding of unidentified SMS messages

The unit forwards all SMS messages which it is unable to identify by password or by the caller's number to the TEL1 number. These could be messages from the operator concerning the credit balance, information about changes to flat-rate tariff terms and conditions, one-time passwords, etc.

This function also serves as protection against possible testing by an unauthorized person trying to break the unit's code.

The forwarded SMS always contains the telephone number from which the message was sent and the wording of the message with the exception of the first word which is replaced with asterisks. The maximum number of forwarded SMS messages is 10 per 24 hours.

6.2. Unit reset

The unit can be reset to default via an SMS command.

Note: In such a case all parameters will be reset to default.

Command format: MCcode RESET MASTER

Example of a command for unit reset:


1234 RESET MASTER

7. Technical specifications

Power supply voltage	8 - 30 V
Maximum current consumption	500 mA /12 V
Nominal current in on-line mode	50 mA /12 V
Standby current consumption	14 mA /12 V
GSM band	800/900/1800/1900 MHz
Dimensions without the terminals and mounts	
L x W x H	160 x 42x 19 mm
Unit weight	90 g
Operating temperature range	-20 to +80 °C

Intended for connection to a +12 V or +24 V DC vehicle power supply. The unit is intended for operation in road vehicles.

This product is identical to the type approved by the Ministry of Transportation of the Czech Republic under the number E8 10R-03 5144.

 10R – 03 5144



JABLOTRON ALARMS a.s. hereby declares that the CU-07A is in a compliance with the relevant Union harmonisation legislation: Directives No: 2014/53/EU, 2014/35/EU, 2014/30/EU, 2011/65/EU. The original of the conformity assessment can be found at www.jablotron.com - Section Downloads.



Note: Although this product does not contain any harmful materials we suggest you return the product to the dealer or directly to the producer after use.

JABLOTRON
CREATING ALARMS

JABLOTRON ALARMS a.s.
Pod Skalkou 4567/33
46601 Jablonec nad Nisou
Czech Republic
Tel.: +420 483 559 911
Fax: +420 483 559 993
Internet: www.jablotron.com