Charging, CH

OPERATIONAL DIRECTIONS

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TRADEMARKS

1 GENERAL

The charging facility provides the possibility, from a terminal, to read charging information in respect of an individual.

Note: Charging can also be configured with MX-ONE Service Node Manager.

2 PREREQUISITES

The system"s voice extension and PBX operator number series must be initiated.

3 EXECUTION

3.1 CHARGING ROUTE

3.1.1 GENERAL

Charging information received from the public exchange can be available at outgoing calls both on digital and analog routes.

On digital routes, this information is transmitted over the signaling channel, i.e there is no need for external charging equipment.

On analog routes, the charging information is transmitted as pulses where the frequency is either 50 Hz, 12 kHz or 16 kHz. To be able to detect these pulses, an external charging equipment has to be connected. This is either one or several CDU-boards or if TLU75 is used, one or several daughter boards mounted on the TLU75-board.

3.1.2 CHARGING EQUIPMENT

The following charging boards are available:

CDU1-7 are not for new delivery.

CDU1	50 Hz board with filter unit and detector unit. Is connected in parallel with the external line. Each board has 16 individuals. and the board occupies only **one** timeslot.
CDU2	Charging equipment for charging pulses between 10 kHz and 20 kHz. This board lacks a filter unit and shall therefore be used together with CDU3, CDU4 or CDU5. Each board has 16 individuals and the board occupies only **one** timeslot.
CDU3	12 kHz filterboard to which the external line is connected. The filtered signal (12 Khz missing) is sent to the TLU-board. The filtered 12 kHz signal is sent to CDU2 or CDU7 for detection of charging pulses. Each board has 8 individuals but occupies no timeslot.
CDU4	16 kHz filterboard which is connected in parallel with the external line. The filtered 16 kHz-signal is sent to CDU2 or CDU7 for detection of charging pulses. Each board has 16 individuals but occupies no timeslot.
CDU5	12 kHz filterboard which is connected in parallel with the external line. The filtered 12 kHz-signal is sent to CDU2 or CDU7 for detection of charging pulses. Each board has 16 individuals but occupies no timeslot.
CDU7	Charging equipment for charging pulses between 10 kHz and 20 kHz. This board lacks a filter unit and shall therefore be used together with CDU3, CDU4 or CDU5. CDU7 differs form CDU2 in that it allows higher levels on the charging pulses than CDU2. Each board has 16 individuals and the board occupies only **one** timeslot.
CM50	50 Hz daughter board which is mounted on the TLU75-board. Up to 4 CM50-boards, each containing two individuals, can be mounted on one TLU75-board.
CM12/16	12 kHz or 16 kHz daughter board which is mounted on the TLU75-board. Up to 4 CM12/16-boards, each containing two individuals, can be mounted on one TLU75-board.

BE12 BE12 is a function box which can be used together with CM12/16. It attenuates the 12 kHz metering pulse.

BE16 BE16 is a function box which can be used together with CM12/16. It attenuates the 16 kHz metering pulse.

3.1.2.1 50 Hz charging - CDU1

At 50 Hz charging, the CDU1-board is connected as in figure 1 and 2. The affiliation between the CDU-individual and the TLU-individual is made with command *ROECI*, see operational directions for *ROUTE DATA, RO*.

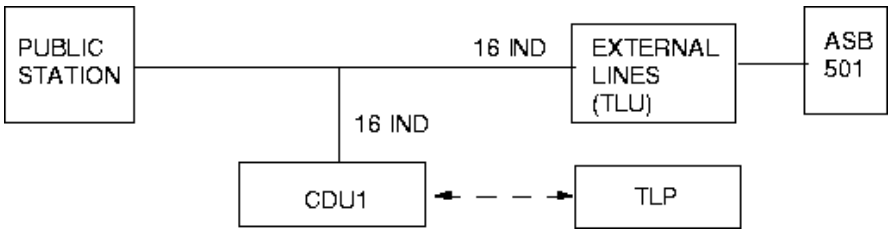

Figure 1: Connection of CDU1

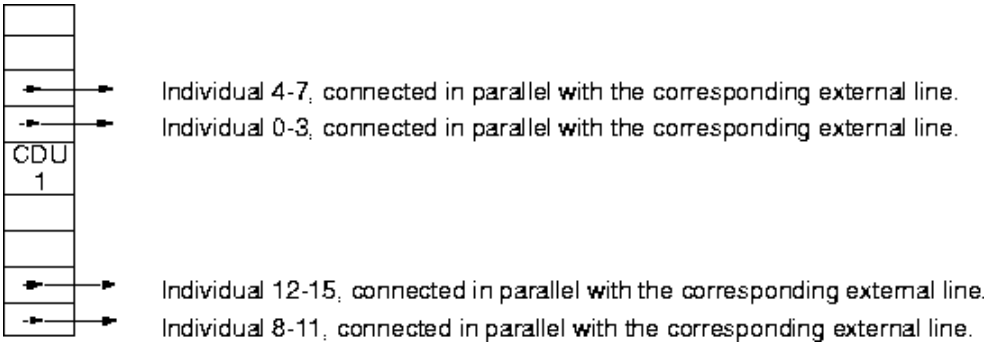

Figure 2: Front view of CDU1

3.1.2.2 12 kHz charging - CDU2/CDU7 together with CDU3.

At 12 kHz charging, the CDU2/CDU7-board is connected to CDU3 as in figure 3 and 4. The affiliation between the CDU-individual and the TLU-individual is made with command *ROECI*, see operational directions for *ROUTE DATA, RO*.

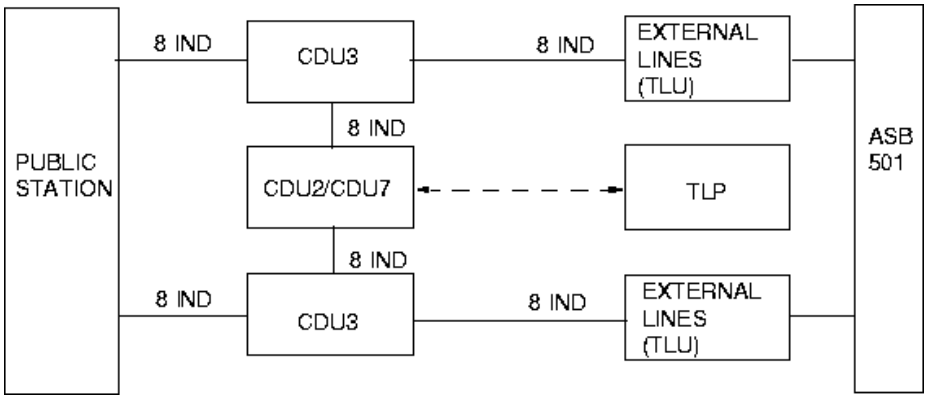

Figure 3: Connection of CDU2/CDU7 to CDU3

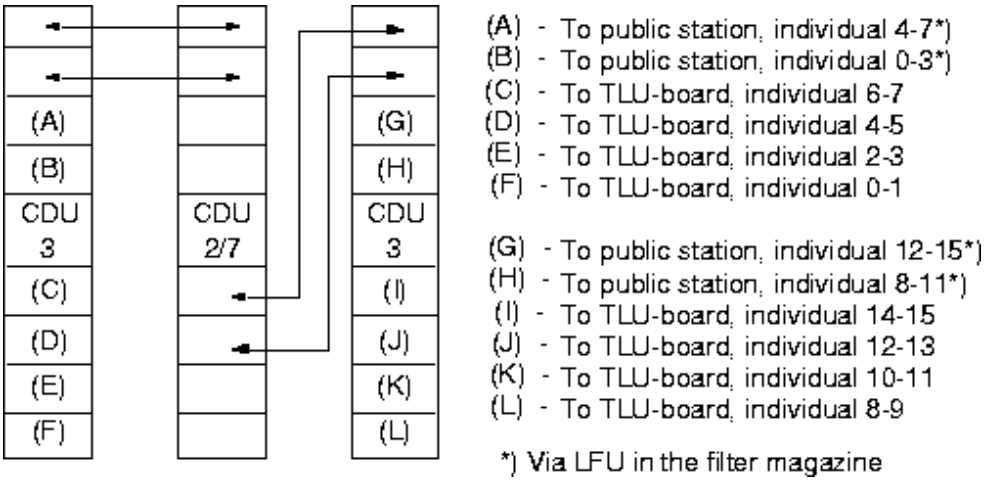

Figure 4: Cabling and front view of CDU2/7 and CDU3

3.1.2.3 *12 kHz charging - CDU2/CDU7 together with CDU5.*

At 12 kHz charging, the CDU2/CDU7-board is connected to CDU5 as in figure 5 and 6. The affiliation between the CDU-individual and the TLU-individual is made with command *ROECI*, see operational directions for *ROUTE DATA, RO*.

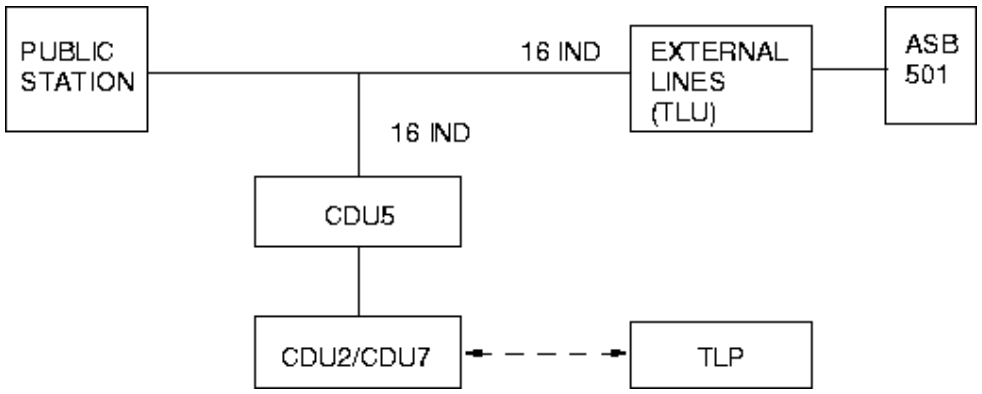

Figure 5: Connection of CDU2/CDU7 to CDU5

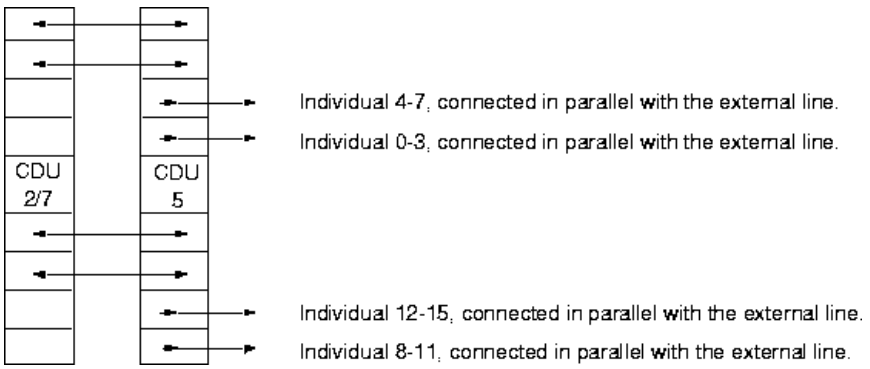

Figure 6: Cabling and front view of CDU2/7 and CDU5

3.1.2.4 16 kHz charging - CDU2/CDU7 together with CDU4.

At 16 kHz charging, the CDU2/CDU7-board is connected to CDU4 as in figure 7 and 8. The affiliation between the CDU-individual and the TLU-individual is made with command *ROECI*, see operational directions for *ROUTE DATA, RO*.

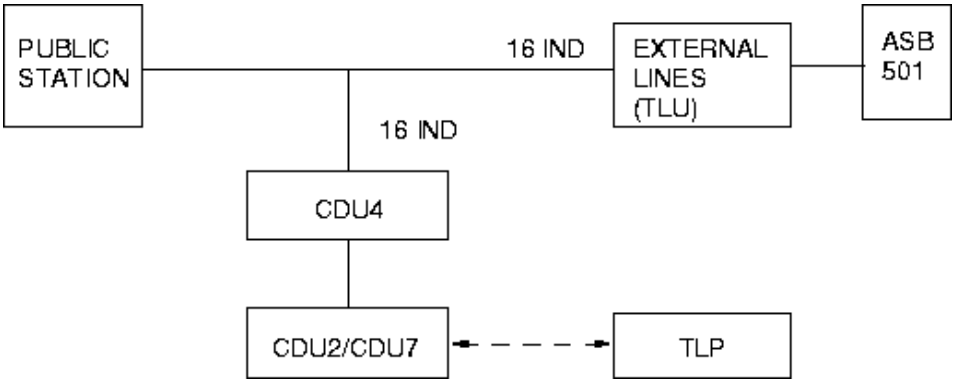

Figure 7: Connection of CDU2/CDU7 to CDU4

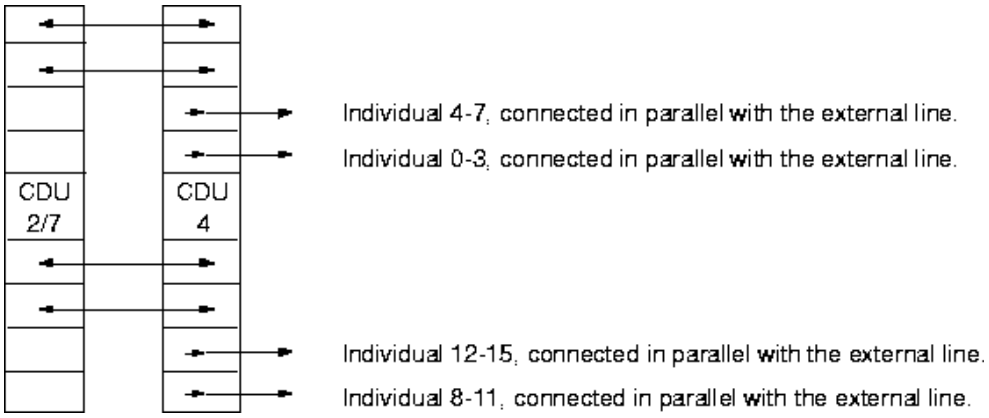

Figure 8: Cabling and front view of CDU2/7 and CDKU4

3.1.2.5 50 Hz charging - CM50

Up to 4 CM50-boards, each containing 2 individuals, can be mounted on one TLU75-board. Type of charging (50Hz) is defined in RODAI (see the parameter VARO for the TL-block concerned).

3.1.2.6 12 kHz charging - CM12/16

Up to 4 CM12/16-boards, each containing 2 individuals, can be mounted on one TLU75-board. Type of charging (12kHz) is defined in RODAI (see the parameter VARO for the TL-block concerned).

In order to fulfill all market requirements regarding the detection levels, a BE-board (Band Eliminator) might have to be connected in series with the external line. This board is mounted between the magazines under the TLU75-board.

3.1.2.7 16 kHz charging - CM12/16

Up to 4 CM12/16-boards, each containing 2 individuals, can be mounted on one TLU75-board. Type of charging (16kHz) is defined in RODAI (see the parameter VARO for the TL-block concerned).

In order to fulfill all market requirements regarding the detection levels, a BE-board (Band Eliminator) might have to be connected in series with the external line. This board is mounted between the magazines under the TLU75-board.

3.1.3 INITIATION OF CHARGING ROUTE

Initiation of route and line is to be done in accordance with the operational directions for *ROUTE DATA, RO*, where the following must be noticed:

- a route is defined as charging route with a particular charging tariff model in parameter SERV, command *ROCAI*.
- if TLU75 is used, type of charging is set as described above.
- affiliation of a CDU-individual to a TLU-individual in a charging route is handled as described above.

3.2 CHARGING TARIFF

3.2.1 INITIATION OF COST TO A CHARGING TARIFF MODEL

General

Each charging tariff model must be initiated to a cost per unit pulse individually, i.e. one at a time.

Prerequisites

-

Execution

Key the command *CHCMI*. Key command *CHCMP* to verify the initiation.

3.2.2 ENDING OF A CHARGING TARIFF MODEL

General

The cost per unit pulse associated with a charging tariff model can be removed. After removal the value of cost per unit pulse will be set to zero. Only one charging tariff model can be ended at a time.

Prerequisites

-

Execution

Key the command *CHCME*. Key command *CHCMP* to verify removal.

3.2.3 PRINTOUT OF DATA FOR A CHARGING TARIFF COST

General

The cost per unit pulse associated with the charging tariff models can be printed out. This can be done individually or for all charging models at a time.

Prerequisites

-

Execution

Key the command *CHCMP*.

4 TERMINATION

If the exchange data have been changed and no more commands are to be keyed, a dump is to be executed to back-up media.