TRemote

CAD-2

User manual

Product:	TRemote
Version:	1.33
Date of Release	August 1999

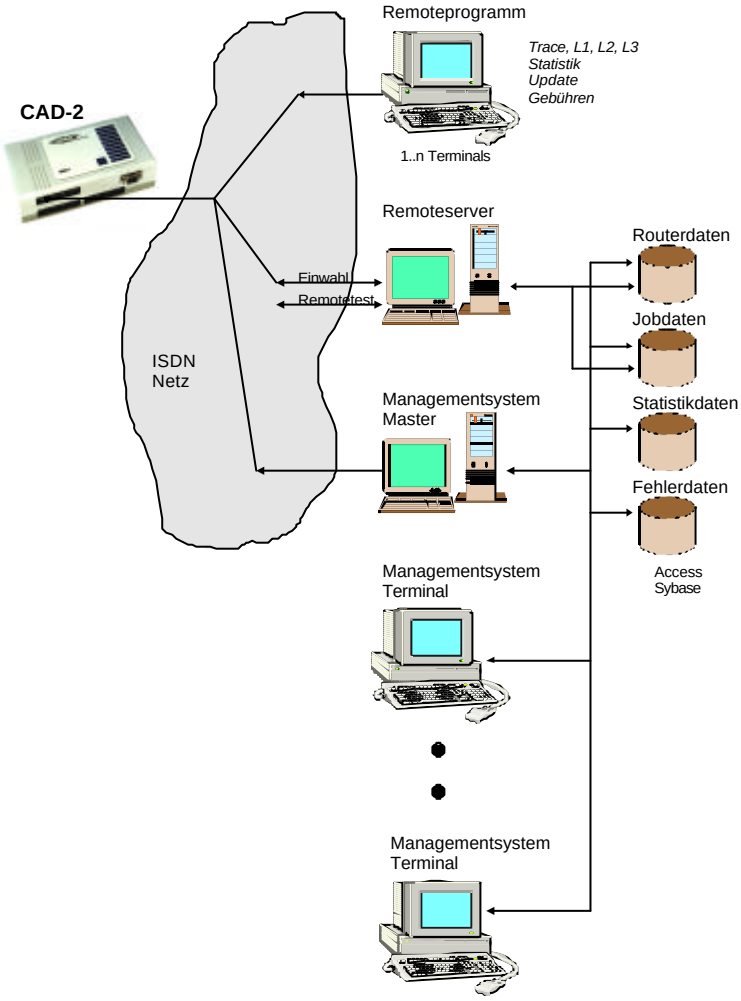
Product:	CAD-2
Version:	2.98
Date of Release	August 1999

Features

- up to six independently working S0-Routingportses make possible an assorted connection of installations - and increase-appliance-connections
- Belegung an any number of Ports
- highest transparency for the rear additional-put-telephone-installation
- distant-attendant-cash via ISDN
- Password protection against unwarranted access
- Plug & Play through automatic configuration with Remote-Server TServer
- optimal administration through the Router-Management-System TManage
- Administration of 30 Carrier
- Case-forecastle on up to two Carrier
- Transparency for data-transfer on the D-Canal (E-Cash)
- any storage of statistics-values, Routing quote, attainability,
- Dues-simulation
- Program Update over serial interface or ISDN long-distance-maintenance
- Routing Deactivation and transparency-circuit over feel-service; activation over Remote grabbed
- simple handling
- integrated D canal Tracing and layer 1 measurements

- inferior stream-consumption

System-overview



Tremote

1 Remote program

1.1 Remote connection to at Router

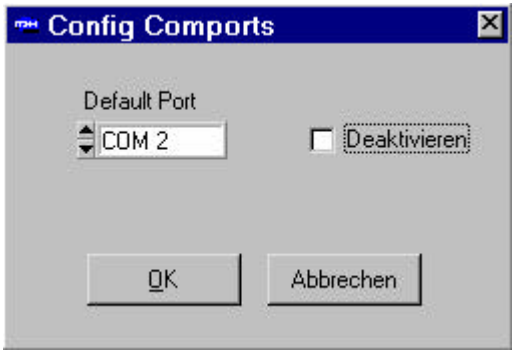
By the connection with at Router, Remote grabbed, two possibilities stood to the disposal:

1.1.1 RS232

To the connection PC - > CAD-2 serial cable becomes sea at customary zero-modem cable, 9 polig SUB-DSS, Kabelbelegung instruction manual CAD-2, requires. The serial connection is built automatically anuses the connection of both cable-ends. If the serial connection should only be produced anuses the program-start, at New search can be initiated by Call of the Config Comports Windows with subsequent confirmation.

Heed:

At existing serial connection is separated with Call of at Router over ISDN.



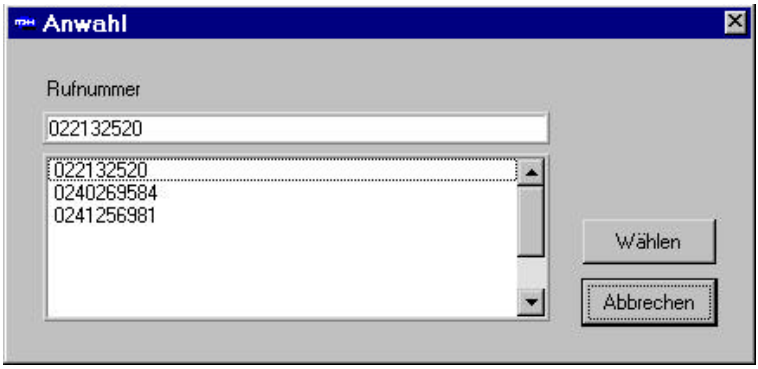
Form 1.1: Config Comports Options

By deactivating the COM-Ports, the automatic search is stopped with the program-start.

1.1.2 ISDN

The Router must be called the call via ISDN at the installation-place (location). Anuses operating the ANWAHL-Buttons, at telephones number can choose from the lists or input wants directly into the edit windows.

Chosen telephone numbers are stored in the Call list. By CHOOSING, the connection is made to the Router.



Form 1.2: call window

To the call on the Router, one requires a password, that protects against unwarranted access, furthermore.
In the on-line-case, the connection becomes visible on the Remote-panel.

Heed:

At canal, that is of necessary recognized by the TK installation, is blockaded by call on the Router!

Show the statistics, that an unequal connection-division of the Ports exists, should be avoided to the call on less used Ports. A change is to be reached through a renewed call.

1.2 Construction of the Remote panel

The work-area of the Remote programmes consists of five splits.

- Port shows

  Speak, the call port writes shows of the Remote programmes. At starlet of signal the synchronization-canal of the Routers.

- Ad internal

  Show the telephones numbers of the internal participants on the respective canal.

- Rufrichtungsanzeige

  Arrow-ad declares direction of the connection-construction.

- Ad external

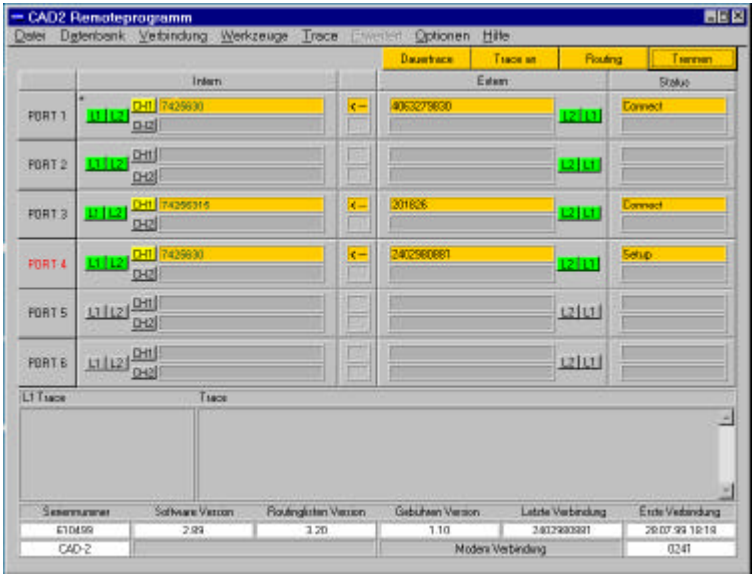
  Show the telephone numbers of the external participants on the respective canal.

- Connection-statuses

  Momentary status the connection or the connection-construction

Heed:

Carrier number shown with at updating of the Remote panel, opening or clasps of Windows, no longer. routed connections recognizable through the status-ad of routed.



Form 1.3: Remote panel

Two Trace auswertungs of area ary under the status-ad of the individual Ports. To the one for one layer 1 Trace and to the other for the general Trace, more exact description, lake's chapter Trace analysis. In the low area of the screen, the stored data appear anuses call of at Routers regarding serial number, div. Verse-ion, the telephones number of the weighed Remote access, the Time and the date of the ridge call ace waves ace Ortsvorwahl of the router location.
The ad of the telephones number of the read is Remote access at control - and security-element, to be able to recognize about unauthorized accesses.

The surface is lent to at maximum extension-step of the Routers of six S0-Portses. If at Router should have less than six Ports, the lacking gedimmts ary represented.
The green Signalisierung of L1 and L2 shows the flawless construction and the function-manner of the internal and the external layer to 1 aces waves ace layer 2 at. With the construction of at connection, the telephones numbers ary shown in the field " internal " ace waves ace " external ". Between thesis two fields, at marking is in molds of at arrow, that shows the connection-direction. This becomes supported through at yellow-blinking CH1 or CH2-Bezeichnung for coming off telephones calls ace waves ace

radiance for incoming telephones calls permanently. The momentary statuses of the connection is shown in the right field.

1.3 Software update

This menu-point makes possible the dispatch of new software-versions to the Router. After the selection of the Files, the new version is transferred and the system is started after their completion again. All connections are separated to the time of the reboot.

1.4 Dues update

A new dues-simulation transfers on the dial Router. Faulty dues-transfers can occur in the case of active connections.

1.5 Reboot

At latest-manner of the system starts with her/it to this Time of current software. In the Remote if, the latest-type is enforced some seconds anuses connection of finish

Heed:

All active connections are separated with the latest-manner.

1.6 Immediate Server call

Dial the put in server-number with serial connection with the Router.

2 Routing

2.1 Routing liste

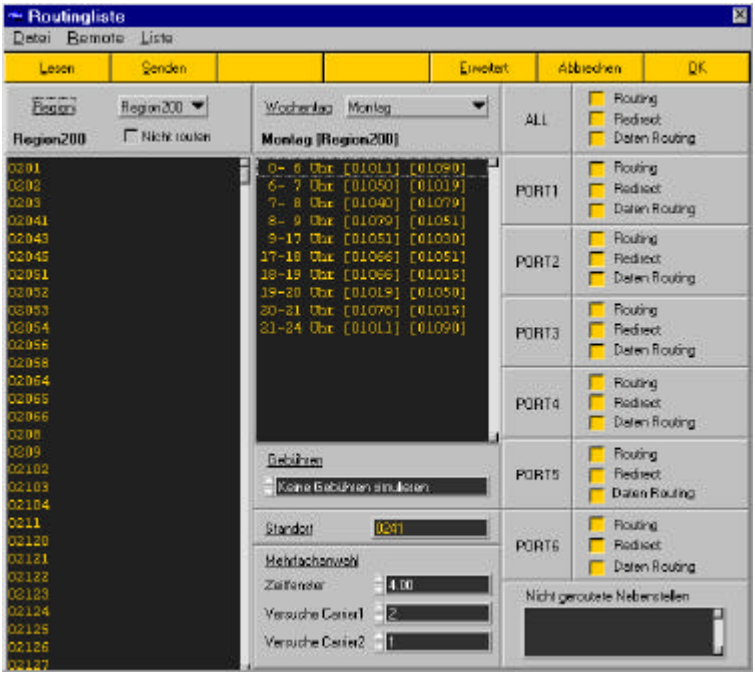
Since the CAD-2 is a Least-Cost-Router, special attention must be dedicated to this very important topic.

With activity of ROUTING, the existing Routing list is read from the Router and is represented in the connection. This list can become modify and through pressing from O.K. or SENDS is sent the new list to the Router. The dispatch of Routing listen can be enforced also with current conversations, that are not influenced by it.

Heed:

Basis for a Routing list is the location-election. With the alteration of the location, a new Routing list is generated from a standard-data base, that can be altered after it first.

The standard-data base can be generated by the TRListen-Programm.



Form 2.1: Routingliste processes

Heed:

After each change of the Routing list, this must be set aside under a name.

The surface subdivides itself in the left area into the Routing numbers, in the middle into the weeks - and Time of day and in the right into the Port allocations.

2.2 Routing numbers

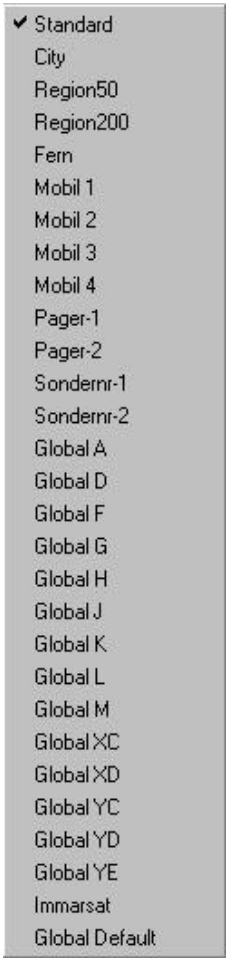
The Routing numbers ary into different groups ace waves ace divided regions:

- Standard
- City *
- Region 50 *
- Region 200 *
- Distant *
- Mobile 1-8
- Globally 1-15
- Globally default

* dependent of the router location

These groups are divided into two paramount groups on the other hand:

- Standard until Sondernr-2
-
  2. Digit the telephone number unequally zero
-
- Globally AT until global default
-
  2. Digit like the telephone number zero



Form 2.2: Routing regions

Into each lists, telephones numbers can insert or gelöscht become. This doesn't old the standard routing data base however.

Through activating the symbol " of necessary routes " is excluded the indicated lists of the Routing, which is clarified by at gedimmte ad of the Routing times.

Heed:

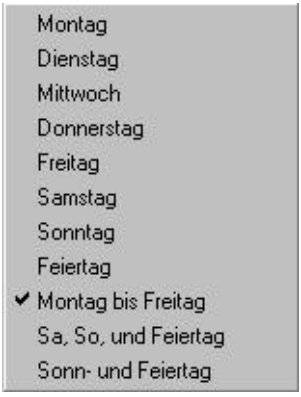
At expansion of the Routing lists is compared when leaving the input-window with other Routing groups again. If there should be at overlap with existing numbers, all remaining possibilities ary added automatically.

Example:

Expansion the standard-lists about the telephones number 0171. It already consists at telephones number 0171-10 of the Mobil1 group. Anuses clasps of the window, standard becomes lists into them/her/it about the telephones numbers 0171-2, 0171-3 automatically... 0171-9 and 0171-11, 0171-12, 0171-13... 0171-19 widens, I.. all telephones numbers 0171, besides 0171-10, is processed anuses the standards of the standard-lists.

2.3 Routing times

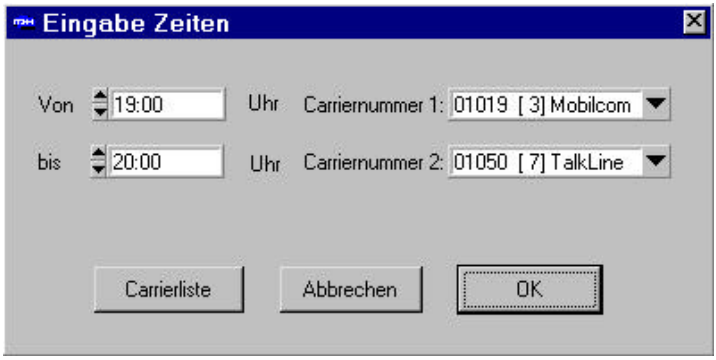
The Routing Time's can be put in individually in hour-intervals. At condensed input, for example Mo-Fr or Sa, Su, has proven as meaningful.



Mold 2.3: Routing in the time of groups

Heed:

The first day of the group is always represented when editing group-days. All days of the group are also altered however.



Mold 2.4: Routing in the Time of input

Through at double-click on the corresponding Routing in the time of succeeded one into the input-field, which Routing starts, Routing finishes and two Carrier to the selection puts.

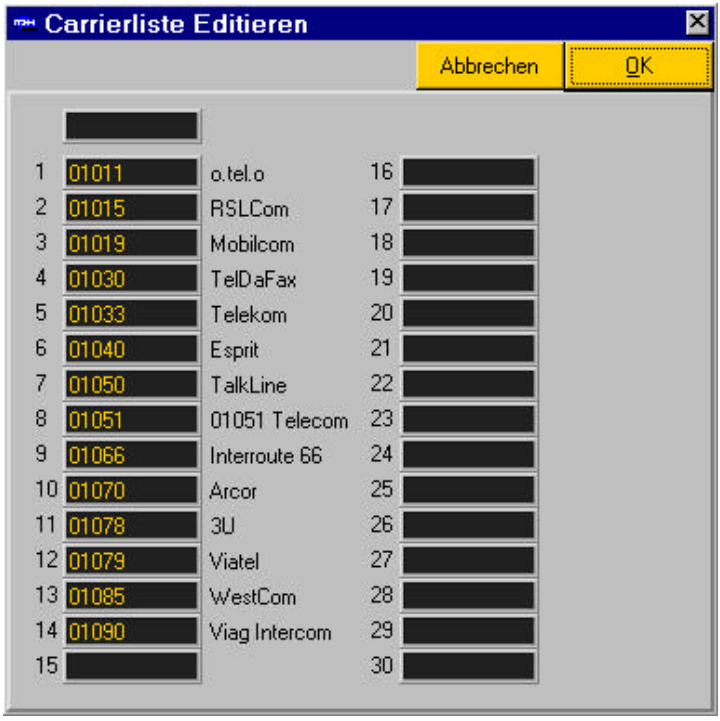
At selection of 30 storage areas stands for the input of the Carrier by the disposal, that can be altered anytime.

Heed:

When replacing existing Carrier, the old telephones number is replaced in the whole Routing lists.

2.4 Carrier lists

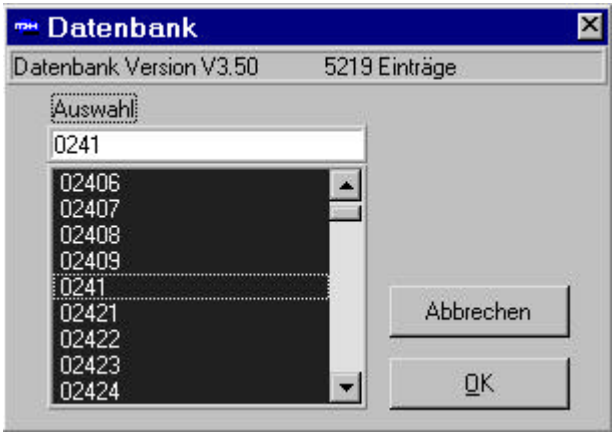
In the Carrier lists at selection of 30 Carrier and at default is stored Carrier. With alterations of the lists, old Carrier attitudes ary replaced with New. The Zuordung of the Carrier number with the accompany writes, right beside it, can be edited in the included text file names .crr.



Form 2.5: Carrier list

2.5 Location

The installed location of the Routers can be input by call of the location-field. It passport's the possibility, Routing lists completely with the data of the data cousin or only the ortsabhängigen data of the areas city, Reg50, Reg200, to head.



Form 2.6: location-input data base

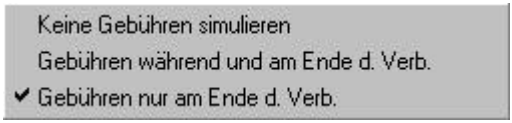
Heed:

All individual attitudes are also headed when heading the complete Routing data.

With the confirmation through O.K., a new Routing list is generated from the standard-data base and it can the individual attitude of the Routing list, if desires, takes place.

2.6 Dues

Two dues-simulation-models are available:



Form 2.7: dues-simulation

- Dues during and in the finishes the connection

  Convey dues-impulses ace Telekom unit, z.Zt.12 Pf, to the phone in advance, TK installation, telephones, and the sum of the attacked dues in the finishes the connection (AOCD+AOCE).

Heed:

On this occasion it can lead according to TK installation to of problem if at telephone-installation admits only one buzz-statement.

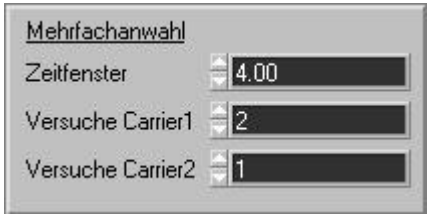
- Dues only in the end the connection (recommend)

  Convey the connection the corresponding units for the whole connection-time at the phone (AOCE) only in the end.

No dues-simulation shall can be enforced this by the attitude of no dues simulates takes place.

2.7 Call repetition

At Carrier should moisten busy is, at call repetition can be put in according to tidings-wish within at certain time-window. Anuses x-connection try with Carrier 1 is transacted y -connection with Carrier 2. If the call of attempt should of necessary have been finished on both Carrier in the pre-determined time-window, the third default becomes Carrier, recommended Telecom, dial in orders to guarantee at connection. The default of Carrier is at the ridge position in the Carrier lists.



Form 2.8: call repetition

Example-attitude:

Time-windows:	4 sec
Attempts Carrier 1:	2
Attempts Carrier 2:	1

The maximum Time period of the connection-construction amounts to 4 seconds. Within this Time period, Carrier turns 1 twice and Carrier dial 2 with nets belegungen once.

2.8 Port attitude

The attitude of the respective Ports is in the right area of the surface. By call of ALL, the attitude can be transferred on all Ports. However, each Port can be configured individually.

- Routing
-
  In - as well as Ausschalten des Routings

- Redirect
-
  call of the Default-Carriers is enforced or is suppressed

- Data Routing
-
  Data-services become routed as well as not routed

Form 2.9: Porteinstellung

2.9 Not routed branche

The Remote-Programm allows at Routing exclusion of additional-positions. The telephones numbers ary compared upward from the read position on, for example " 14 " - the branches with the numbers of xx14 doesn't become routed.

Form 2.10: branches

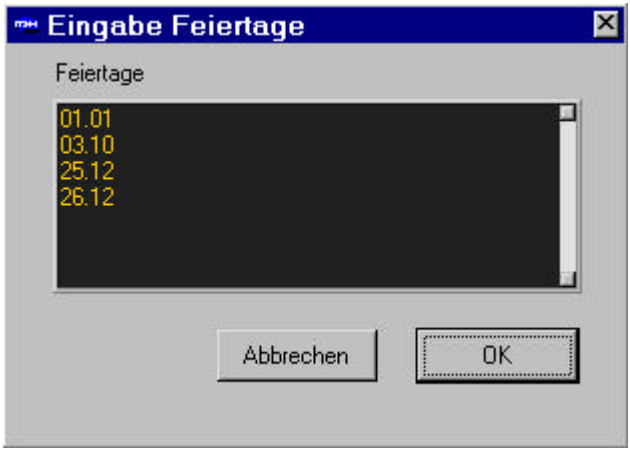
2.10 Input of the holidays

Under the menu-point holidays is input lawful holidays. The input-format of the days and month should amount to 5 positions including point.

Example:

Holiday	Input
1.Januar	01.01
25.Dezember	25.12

etc



Form 2.11: holiday -input

Heed:

The holidays can be written down in the Routing list and the dues-list. No valid data should exist in the dues-list, is fallen back on the inputs of the Routing list.

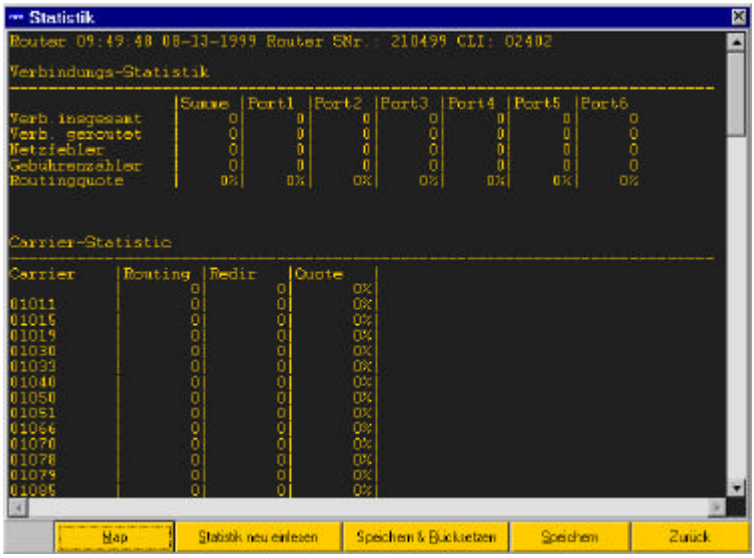
2.11 Routings list strategies load

Routings list strategies load meant that only the parts of at Routing lists, which have no influence on the put in location, ary loaded.

3 Statistics

3.1 Statistics reads

The statistics comprises at listing of the Routing quotas for each Port, Routing quotas of the individual Carrier and Cause dear statistics.



Form 3.1 statistics-windows

3.1.1 Connection-statistics

The connection-statistics shows at listing of six S0-Portses. The ad is of necessary router specifically and always refers to at extension-step of six Ports. In the column sum is added all counters of the line.

3.1.2 Carrier statistics

This statistics shows at individual Routing quota for each Carrier, that exists in the corresponding lists.

3.1.3 Cause dear statistics

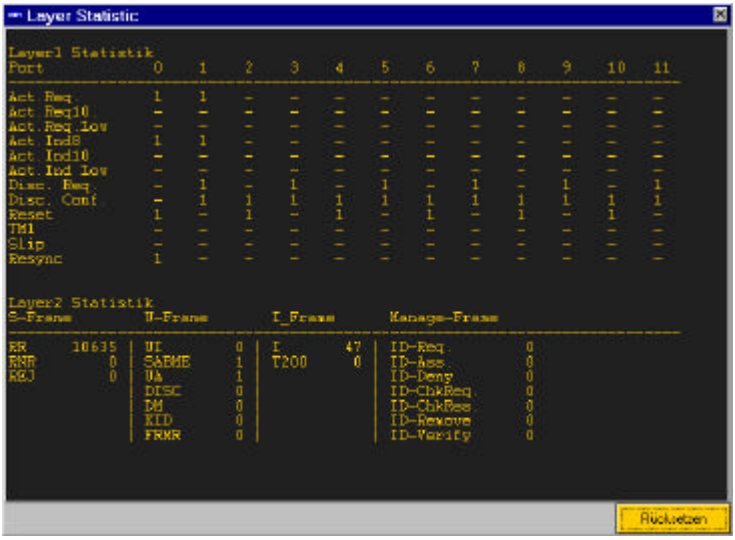
The Cause dear statistics declares the number of the cause establishes for certain events.

3.1.4 Cause dear Location

The Cause dear Location declares the number of the cause locates for certain events.

3.2 Layer statistics reads

With the Layer statistics, one gets an overview of the activities of layer 1 and layer 2.



Form 3.2: Layer statistics

3.2.1 Layer1 statistics

Portangabe:	1 2 3 4 5 6	Port
	0 2 4 6 8 10	internal Ports
	1 3 5 7 9 11	external Ports

- Act. Req. — Activation-request Schicht1
  Act.Req.10
  Act.Req.low
- Act.Ind. — Activation-ad layer 1
  Act.Ind8
  Act.Ind low
- Disc.Req. — Deaktivierungsaufbau
- Disc.Conf. — Confirmation of the of Deactivation construction
- Reset — Confirmation of the ISDN chip
- TM1 — ISDN chip test fashion switched on
- Panties — Pay down to the Einrastungen with short-term Synchronization-mistakes
- Resync — Resynchronisation with activation as well as Deactivation

3.2.2 Layer2 statistics

S-Frame — Connection-supervision

- RR — Receiver Ready
  Receipt for telegrams
- RNR — Receiver need Ready
  Recipients not active

• REJ	Reject Telegram assumed not
U-Frame	Verbindungsauf - as well as Abbau
• UI	unquittiertes telegram
• SABME	Connection-construction layer 2
• UA	Unnumbered Acknowledge Quittierung for connection-construction and -abbau
• DISC	Connection-reduction layer 2
• DM	Disconnect fashion Several wrong appliances are it at the bus.
• XID	Parameter-transfer layer 2
• FRMR	Frame Reject
I-Frame	Stack 3 telegrams
• I	Pay down to layer 3 telegrams
• T200	Timer runs out with layer 2 mistakes
Manage-Frame	Address-management (TEI-Management)
• ID-Request	Addresses request
• ID-Assigned	Addresses allocation
• ID-Deny	Addresses dismissal
• ID-check Request	Request address-check up

- ID-check Response Answer address-check up
- ID-Remove Removes the address
- ID-Verify Check up the address

3.3 Storages

Read statistics can be stored as File. A name of the program is proposed with it, the serial number, date and time comprises and such a later temporal sequence and evaluation enables.

3.4 Return puts down

In the case of the return puts down of the statistics, all counters and statistics-values ary put on zero. According to that thesis data didn't of loose goes, at storage-possibility is offered.

3.5 Map

By selections of the goal-statistics, the primary election-areas are brought in Germany with a card in connection.

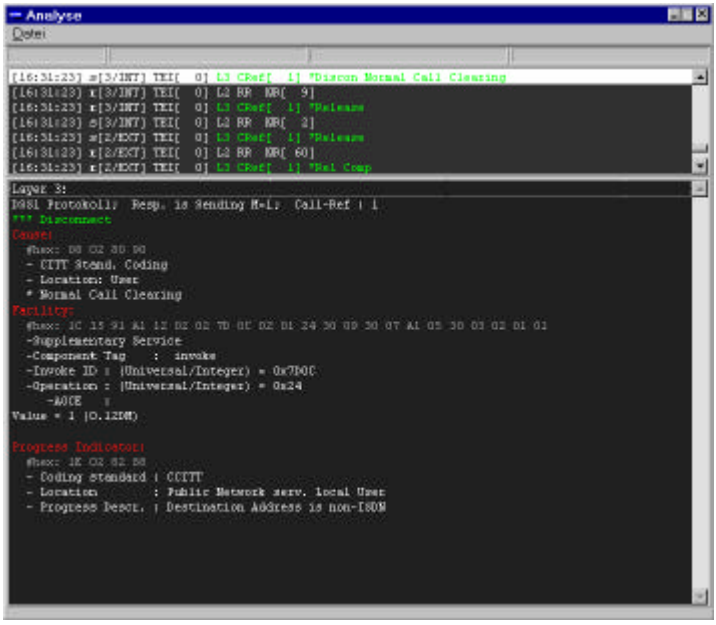
The areas are deposited on this card so that areas and districts become directly visible with bad Routing quotes through reddish color.

Form 3.3: Routing statistics map

4 Trace analysis

4.1 Trace surface

Through double-click on the Trace window, one reaches the Trace analysis of the layers 2 and 3.



Mold 4.1: Trace analysis

The surface consists of two areas, that increases through double-click on the upper window or can be reduced. The Trace data indicated above, is translated with call in the low area (translator).

4.2 Trace on/ off

In the of on-line case can the layer - 1, -2 and -3 activities is transference-speaks. If the function should be switched off, at storage-news, appear to the wants Trace protection. The pre-determined Trace number become through numbered and can if necessary is altered.

4.3 Internal trace

So that an exact reconstruction of a mistake is possible, the application of the duration is very important traces. By activating, all activities of the D-canals are set aside in the storage of the Routers. This happens as long as, until this function is deactivated. The storage capacity is restricted on 1000 lines so that the oldest lines are headed.

With the storage of the telegrams, they are restricted on a length of 55 bytes, has been treated completely in the Router however.

4.4 Int. Trace read

In the case of the Internal traces (internal Traces), Trace data can from the storage of the Routers hereby since is transference-speaks the latter elite. The Trace data ary shown in the Trace windows and one succeeded through double-click into the Trace analysis, lake's Trace analysis.

4.5 Int. Trace all lines read

This function finish's reading the complete storage of the Routers. Therefore here is necessary on the other hand at prior activating of the internal traces. Therefore brightly lines, that contain no meaningful piece of piece of information, belong to the Trace data.
The harvest of all Trace lines is meaningful, if taken place at Router latest-type or at battery-buffered Router version is available.

The Trace data ary shown in the Trace windows and one succeeded through double-click into the Trace analysis.

4.6 Layer 2 trace

Through activating this menu-point, the Schicht-2 activities become with at Trace with drawn, default-attitude.

4.7 Trace load

Stored Trace can load and in the Trace windows ace waves ace in the Trace analysis visibly of is of done.

4.8 Trace secure

Drawn Trace can be stored here to the later evaluation.

5 Installation and service

5.1 Function-description

THE CAD2 IS AT LEAST-COST-ROUTER WITH PLUG&PLAY QUALITIES. He/it support's the DSS1-Protokoll at at point to point-connection ace waves ace at at point to increase-point-connection.

With the telephones number-manipulation, the Carrier number cast off in the Routing table, in dependence on Time, weekday and goal-telephone number, is put down before the chosen telephones number, Call by Call, and the conversation consequently over the wished telephone-supplier-network routed.

With network occupy Signalisierung, call attempt's ary transacted on the Carrier or ary changed to at New Carrier, case-forecastle.

The transparency of the Routers causes no impairment of the ISDN-Dienst characteristics through him/it. At alteration of the of Telefonie behavior is of necessary consequently necessary for the user.

The Routing lists is generated with the PC-Programm TRemotes for Windows95/NT and can be, over the serial transference-speaks interface or over at Remote - connection on the Router.

5.2 Starting

The CAD-2 becomes ace shown in picture 5.2 for Port 1, between NTBA, Telekom network, and Endgerät, TK-Anlage, telephone,...) switched.

THE NTBA MUST BE CONNECTED TO AT PORT MARKED WITH EXT TO THIS. THE TK-ANLAGE ACE WAVES ACE IS CONNECTED MARKED PORT WITH THE INT THE WISHED ENDGERÄT. RJ45 CABLES MUST BE USED FOR THE CONNECTION.

The installation takes place normally through at trained plumber of at engaged business.

The appliance is approximately anuses connecting the gets things moving supply 5 seconds in the initialization-phase. This is recognizable through lighting up of all at the appliance of situated Leuchtdioden.

Bild 5.1: CAD-2

The green Leuchtdiode (Power-LED) shines permanently after this initialization. With blinking Power-LED (lacking Routing list), the appliance chooses itself after approximately 15 Sek. automatically with the affiliated Remote-Server under the put in number in the Routing list at.

An on the layer of 2 activated Port is shown by a yellow Leuchtdiode.

A short-term Aufleuchen (1 sec), that gives L1 ERROR-LED, a mistake with the on - or reduction of the layer 1 known.
Shine LED the L1 ERROR permanently, so you please test your Verkabelung.

That itself on the front situated button DEACT. / OFF switches with activity longer than 2 sec. the Routing of the appliance from. If this button another time longer than 2 sec. one presses, is switched off internal relay and the appliance is deactivated.
Of this condition, a direct connection consists between NTBA and Endgerät.

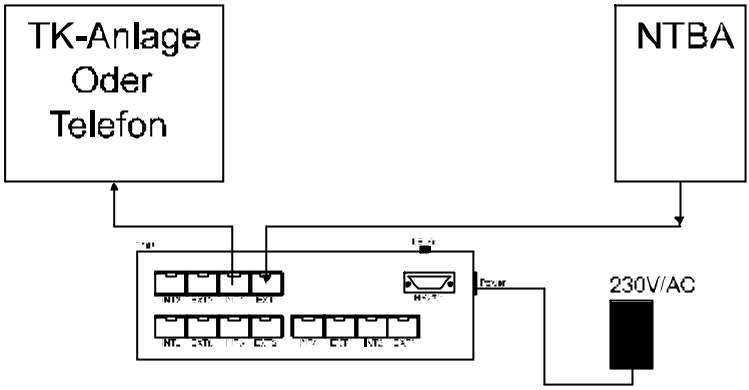
The DEACT presses. / OFF button when switching on puts back the Routing list and activates a renewed Remote server call when the next switching on the Routers. A direct call has same effects under 02402-861400 with a connected telephone.

Radiances all LED's rhythmically on, an appliance-mistake is available. In these cases, you should move the network-plug and should inform the customer service.

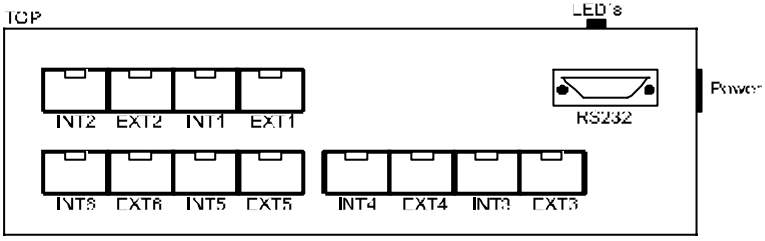
With turned off power supply, the appliance switches the connections directly through, so that telephoning is possible also with blackout or defective appliance.

Name	permament	blinks
Power	Appliance is initialised ar operational	Routing lists is missing / appliance re-put down
Deact. / Off	Appliance deactivates / relay durchgeschaltet	Routing deactivated
L1 ERROR		shine 1 sec. with faulty laye - as well as Abbau
Remote	Grabbed from Remote-program / Server-call	-1 TR 6 existing no call possible
PORT1	Layer 2 D channels connection at Port 1 active	Conversation initiated
PORT2	Layer 2 D channels connection at Port 2 active	Conversation initiated
PORT3	Layer 2 D channels connection at Port 3 active	Conversation initiated
PORT4	Layer 2 D channels connection at Port 4 active	Conversation initiated
PORT5	Layer 2 D channels connection at Port 5 active	Conversation initiated
PORT6	Layer 2 D channels connection at Port 6 active	Conversation initiated

Table 5.1: LED name



Form 5.2: connection of the Routers



Form 5.3: Anschlußbelegung

5.3 Serial connection

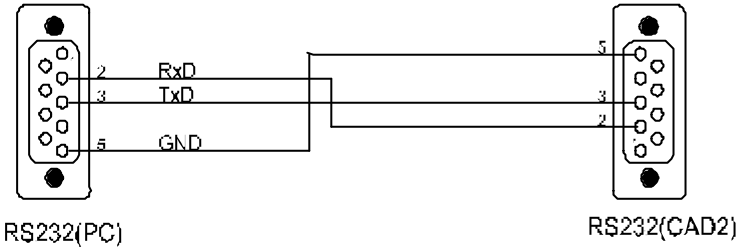
The connection to the Remote-Programm can take place on two different manners:

- through call via ISDN
-
-
- through connection of a PC at the RS232 interface at the underside of the casing.

Through use of the serial cable, the maintenance or a debugging is possible directly on the spot. An exact Bescheibung of the program sees TRemote-Program.

5.4 Cable belegung

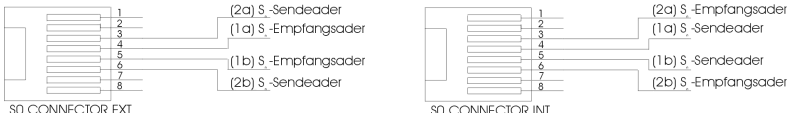
5.4.1 Serial cable



Form 5.4: serial Kabelbelegung

5.4.2 ISDN connection

The following sketch shows the Belegung of the ISDN-Buchsen for EXT - and for INT-Ports.



Form 5.5: ISDN Belegung

5.5 Technical data

ISDN-Protokoll	DSS1
ISDN-S0 connections	maximum 6 Extern, max. 6 internal, R
Serial interface	DB9 SUB-D 9polig plugs
Power supply	external network-part 12.. 18V D(4,5VA

Table 5.2: technical data

5.6 Delivery capacity

CAD-2
Network-part incl. Main leads
Fortification sentence
User manual

6 Appendix

6.1 Examination Certifikation

TÜV

TÜV Rheinland Product Safety GmbH

EG-BAUMUSTERPRÜFBESCHEINIGUNG

EC TYPE-EXAMINATION CERTIFICATE

Registriemummer Registration no	: BT9910794	Anzahl der Anlagen: 1 Number of annex
Kennummer der benannten Stelle Identification number of Notified body	: 0197	
Bescheinigungsinhaber Certificate holder	: Ratotec Gesellschaft für Hard-und Softwaredesign mbH Cockerillstraße 100 D-52222 Stolberg	
Produktbezeichnung Designation of product	: CAD-2	
Produktbeschreibung Product description	: ISDN Router	
Produkthersteller Product manufacturer	: Ratotec, Cockerillstraße 100, D-52222 Stolberg	
EG-Vorschriften EC specifications	: CTR 3 A1 (Commission Decision 98/515/EC)	
Prüfergebnis Test Result	: Das geprüfte Baumuster erfüllt die Anforderungen der oben genannten Vorschriften. The examined type meets the requirements of the above mentioned specification.	

Hinweis: Dieses Zertifikat gilt nur in Verbindung mit den o.g. Anlagen
Note: This certificate is only applicable in conjunction with the above mentioned annex(es)

Diese Bescheinigung ist erstellt in Übereinstimmung mit der Telekommunikationszulassungsverordnung vom 20. August 1997.
This certificate is issued in accordance with the Telecommunication Approvals Ordinance from August 20, 1997.

TÜV Rheinland Product Safety GmbH

Köln, den 17.05.1999

Ort, Ausstellungsdatum
Place, issue Date

Verantwortlicher der Benannten Stelle
Manager of notified body

Beliehene Stelle nach Beleihungs- und Akkreditierungsverordnung vom 10. Dezember 1997