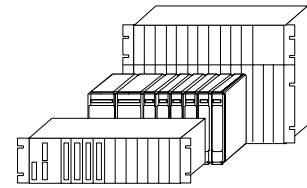


**Ax 1703**



## Firmware Description

# DIAM00

**Dial-up traffic MASTER**

**HW-Type: 2541 / FW-Type: 2508**

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**This document is applicable to the following product(s):**

Ax 1703

Rev. 01 and higher

Version	Revision	Date	Change
A, 1	05	22.11.01	first issue in English version
A, 1	06	14.07.03	Diagnostic and parameter documentation reworked

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## **1. System Overview**

### **1.1. Short Description**

The DIAM00 firmware is used for the serial coupling of two Ax 1703 components in accordance with IEC 870-5-101 via dial-up connections.

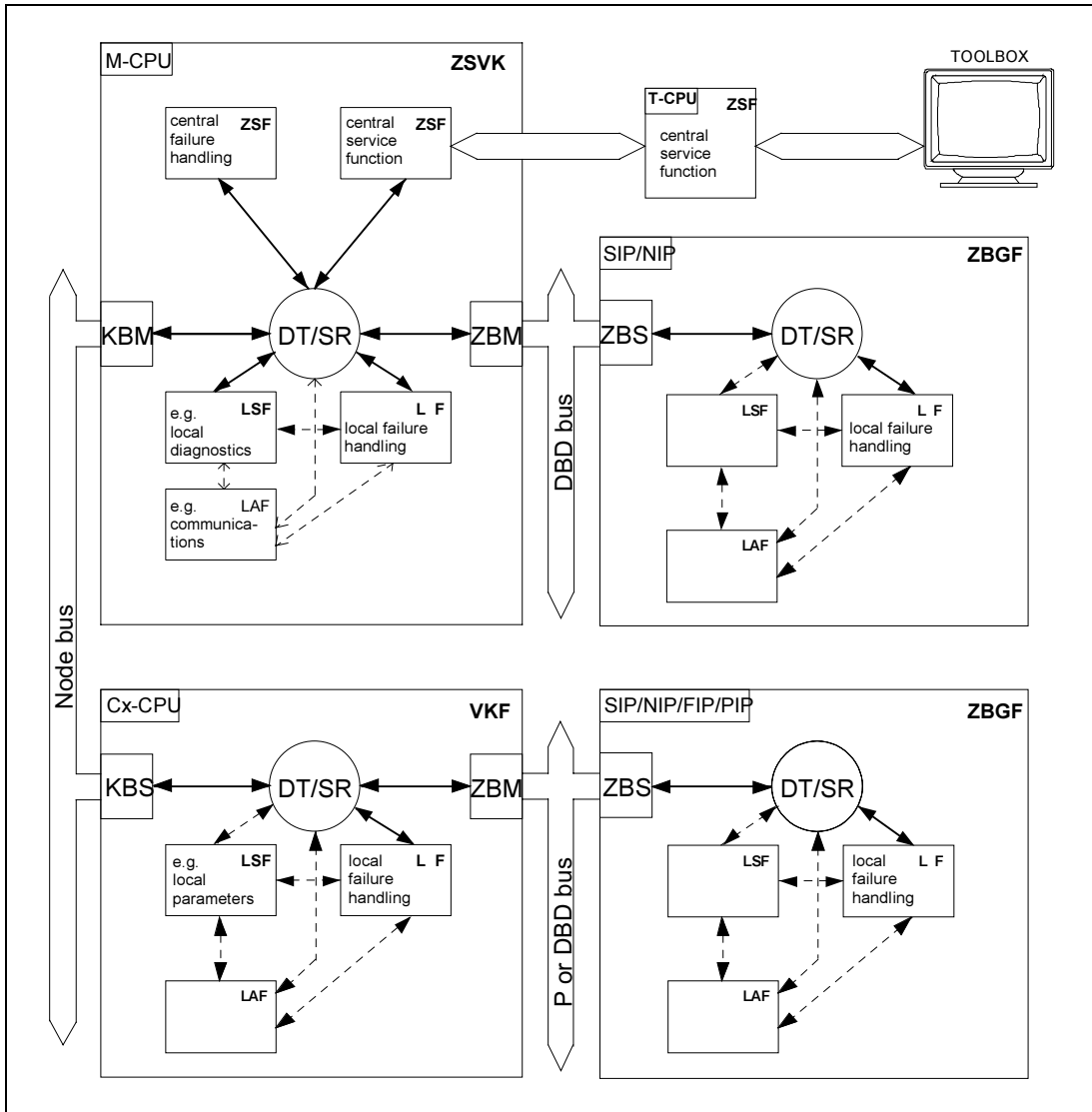
The message formats used correspond to the IEC 870-5-101 standard and the Ax 1703 Data Formats description.

The data communication control used for this firmware is an unbalanced primary multi-point traffic master.

### **1.2. Interfaces**

The data exchange to the KOM is done via messages in the AX 1703 format.

### 1.3. Embedding in the Environment



## 2. Protocol-specific Functions

See the description "Dial-up traffic in Ax 1703" (Item number: DA0-012-1.xx).





## **A. Appendix: Diagnostic**

## Overview:

legend category: I ... internal  
 E ... external  
 C ... communication  
 T ... test  
 W ... warning  
 B ... board/module failure  
 S ... startup

category	record (rel.)	record (abs.)	meaning	
I	0	0	Internal error in the operating system	
	1	1	Internal error in the base system	
	2	2	Parameter error - ZSE	
	3	3	Format conversion error - SIP	
	4	4	Error detected in parameter on the SIP (connection set-up)	
	10	10	Error for parameter on the SIP detected (USER parameter)	
C	0	40	Communications error on connection setup	
	2	42	Communications error to station nos. 0 - 15	
	3	43	Communications error to station nos. 16 - 31	
	4	44	Communications error to station nos. 32 - 47	
	5	45	Communications error to station nos. 48 - 63	
	6	46	Communications error to station nos. 64 - 79	
	7	47	Communications error to station nos. 80 - 95	
	8	48	Communications error to station nos. 96 - 99	
	10	50	Connection setup to station nos. 0 - 15	
	11	51	Connection setup to station nos.. 16 - 31	
	12	52	Connection setup to station nos.. 32 - 47	
	13	53	Connection setup to station nos. 48 - 63	
	14	54	Connection setup to station nos. 64 - 79	
	15	55	Connection setup to station nos. 80 - 95	
	16	56	Connection setup to station nos. 96 - 99	
	T	0	70	Test mode of the operating and base systems
20		60	Acknowledgement error to multimaster station no. 0 - 15	
21		61	Acknowledgement error to multimaster station no. 16 - 31	
22		62	Acknowledgement error to multimaster station no. 32 - 47	
23		63	Acknowledgement error to multimaster station no. 48 - 63	
24		64	Acknowledgement error to multimaster station no. 64 - 79	
25		65	Acknowledgement error to multimaster station no. 80 - 95	
26		66	Acknowledgement error to multimaster station no. 96 - 99	
W		0	75	Communications error on connection setup
		2	77	Communications error to station nos. 0 - 15
	3	78	Communications error to station nos. 16 - 31	
	4	79	Communications error to station nos. 32 - 47	
	5	80	Communications error to station nos. 48 - 63	
	6	81	Communications error to station nos. 64 - 79	
	7	82	Communications error to station nos. 80 - 95	
	8	83	Communications error to station nos. 96 - 99	
	10	85	Connection setup to station nos.. 0 - 15	
	11	86	Connection setup to station nos.. 16 - 31	
	12	87	Connection setup to station nos.. 32 - 47	
	13	88	Connection setup to station nos.. 48 - 63	
	14	89	Connection setup to station nos. 64 - 79	
	15	90	Connection setup to station nos. 80 - 95	
	16	91	Connection setup to station nos. 96 - 99	
	W	20	95	Modem blockage of station nos. 0 - 15
21		96	Modem blockage of station no. 16 - 31	
22		97	Modem blockage of station no. 32 - 47	
23		98	Modem blockage of station no. 48 - 63	
24		99	Modem blockage of station nos. 64 - 79	
25		100	Modem blockage of station nos. 80 - 95	
26		101	Modem blockage of station nos. 96 - 99	

```
category:    I
record:      0
meaning:     Internal error in the operating system

Bit 00 ... RAM error
Bit 01 ... STACK error
             The laid down stack range has been exceeded;
             Replace system element or notify SAT.
Bit 02 ... Firmware shut down
             Diagnosis:
             - Read out system diagnostics ring (command ID R) in
               ST emulation (maybe store to file)
Bit 03 ... Not enough free space
             There is not enough free RAM memory for the
             dynamic memory management;
             Diagnosis:
             - Change parameterization of size definitions
               (e.g. realtime rings, pool size)
             - Notify SAT.

Bit 04 ...
Bit 05 ...
Bit 06 ...
Bit 07 ...
Bit 08 ... CPU 80386 error
Bit 09 ...
Bit 10 ...
Bit 11 ...
Bit 12 ...
Bit 13 ...
Bit 14 ...
Bit 15 ...
```

```
category:    I
record:      1
meaning:     Internal error in the base system

  Bit 00 ... Check sum error in the parameter area
              The check sum for the parameters is not correct.
              --> Reload parameters.

  Bit 01 ...
  Bit 02 ...
  Bit 03 ...
  Bit 04 ...
  Bit 05 ...
  Bit 06 ...
  Bit 07 ...
  Bit 08 ...
  Bit 09 ...
  Bit 10 ...
  Bit 11 ...
  Bit 12 ...
  Bit 13 ...
  Bit 14 ...
  Bit 15 ...
```

category: I  
record: 2  
meaning: Parameter error - ZSE

Bit 00 ... Parameter error detected by SIP  
Bit 01 ... Parameter error of the LOCAL parameter block No. 06  
    Diagnosis:  
    - TI 38-40 and 136-143 requires parameter setting with time  
    - TI 160 requires parameter setting without time  
    - transmission of the objects on GI with/without time; value > 3  
    - Octett count cause of transmission (COT) <> 2  
    - Octett count common address of ASDU (CAASDU) <> 2  
    - Octett count information object address (IOA) <> 3  
    - Octett count time stamp <> 7  
Bit 02 ... Parameter error ZSE general  
Bit 03 ... Parameter setting with invalid stationnumber.  
    Diagnosis: Selected stationnumber is greater than 100 and  
    also not a broadcast-station number.  
Bit 04 ... Parameter setting with invalid station number.  
    Diagnosis: Same station number is used more than once.  
Bit 05 ... Parameter setting for IEC870 link layer invalid  
Bit 06 ... Parameter setting for IEC870 application layer invalid  
Bit 07 ... Parameter setting for redundancy invalid  
Bit 08 ...  
Bit 09 ...  
Bit 10 ...  
Bit 11 ...  
Bit 12 ...  
Bit 13 ...  
Bit 14 ...  
Bit 15 ...

```
category:    I
record:      3
meaning:     Format conversion error - SIP

  Bit 00 ... Format conversion error in the transmit direction
  Bit 01 ...
  Bit 02 ... Format conversion error in the receive direction
  Bit 03 ...
  Bit 04 ...
  Bit 05 ...
  Bit 06 ...
  Bit 07 ...
  Bit 08 ...
  Bit 09 ...
  Bit 10 ...
  Bit 11 ...
  Bit 12 ...
  Bit 13 ...
  Bit 14 ...
  Bit 15 ... Error detected when converting a PST control message
              Diagnosis:
                - Read out system diagnostics ring (command ID R)
                  in ST emulation (maybe save to file)
```

```
category:    I
record:      4
meaning:     Error detected in parameter on the SIP (connection set-up)

Bit 00 ... General error - Connection setup parameter
Bit 01 ... Faulty telephone number parameterization
Bit 02 ... Faulty modem parameterization (USER modem)
Bit 03 ... Faulty modem parameterization from the Preferred Modem Types list
Bit 04 ...
Bit 05 ...
Bit 06 ...
Bit 07 ...
Bit 08 ...
Bit 09 ...
Bit 10 ...
Bit 11 ...
Bit 12 ...
Bit 13 ...
Bit 14 ...
Bit 15 ...
```

```
category:    I
record:      10
meaning:     Error for parameter on the SIP detected (USER parameter)
```

```
Bit 00 ... General parameter error
Bit 01 ...
Bit 02 ...
Bit 03 ...
Bit 04 ...
Bit 05 ...
Bit 06 ...
Bit 07 ...
Bit 08 ...
Bit 09 ...
Bit 10 ...
Bit 11 ...
Bit 12 ...
Bit 13 ...
Bit 14 ...
Bit 15 ...
```



```
category:      C
record:        0
meaning:       Communications error on connection setup

Bit 00 ... Passive connection initiation (line flaw)
Bit 01 ...
Bit 02 ... Connection was setup. However, no central station call
           was received by [?? from ??] the central station
           within a parameterizable time

Bit 03 ...
Bit 04 ...
Bit 05 ...
Bit 06 ...
Bit 07 ...
Bit 08 ...
Bit 09 ...
Bit 10 ...
Bit 11 ...
Bit 12 ...
Bit 13 ...
Bit 14 ...
Bit 15 ... Active connection setup to all stations is not possible
```

```
category:    C
record:      2
meaning:     Communications error to station nos. 0 - 15
```

```
Bit 00 ... Communications error to station no. 0
Bit 01 ... Communications error to station no. 1
Bit 02 ... Communications error to station no. 2
Bit 03 ... Communications error to station no. 3
Bit 04 ... Communications error to station no. 4
Bit 05 ... Communications error to station no. 5
Bit 06 ... Communications error to station no. 6
Bit 07 ... Communications error to station no. 7
Bit 08 ... Communications error to station no. 8
Bit 09 ... Communications error to station no. 9
Bit 10 ... Communications error to station no. 10
Bit 11 ... Communications error to station no. 11
Bit 12 ... Communications error to station no. 12
Bit 13 ... Communications error to station no. 13
Bit 14 ... Communications error to station no. 14
Bit 15 ... Communications error to station no. 15
```

```
category:    C
record:      3
meaning:     Communications error to station nos. 16 - 31
```

```
Bit 00 ... Communications error to station no. 16
Bit 01 ... Communications error to station no. 17
Bit 02 ... Communications error to station no. 18
Bit 03 ... Communications error to station no. 19
Bit 04 ... Communications error to station no. 20
Bit 05 ... Communications error to station no. 21
Bit 06 ... Communications error to station no. 22
Bit 07 ... Communications error to station no. 23
Bit 08 ... Communications error to station no. 24
Bit 09 ... Communications error to station no. 25
Bit 10 ... Communications error to station no. 26
Bit 11 ... Communications error to station no. 27
Bit 12 ... Communications error to station no. 28
Bit 13 ... Communications error to station no. 29
Bit 14 ... Communications error to station no. 30
Bit 15 ... Communications error to station no. 31
```

```
category:    C
record:      4
meaning:     Communications error to station nos. 32 - 47
```

```
Bit 00 ... Communications error to station no. 32
Bit 01 ... Communications error to station no. 33
Bit 02 ... Communications error to station no. 34
Bit 03 ... Communications error to station no. 35
Bit 04 ... Communications error to station no. 36
Bit 05 ... Communications error to station no. 37
Bit 06 ... Communications error to station no. 38
Bit 07 ... Communications error to station no. 39
Bit 08 ... Communications error to station no. 40
Bit 09 ... Communications error to station no. 41
Bit 10 ... Communications error to station no. 42
Bit 11 ... Communications error to station no. 43
Bit 12 ... Communications error to station no. 44
Bit 13 ... Communications error to station no. 45
Bit 14 ... Communications error to station no. 46
Bit 15 ... Communications error to station no. 47
```

category: C  
record: 5  
meaning: Communications error to station nos. 48 -63

Bit 00 ... Communications error to station no. 48  
Bit 01 ... Communications error to station no. 49  
Bit 02 ... Communications error to station no. 50  
Bit 03 ... Communications error to station no. 51  
Bit 04 ... Communications error to station no. 52  
Bit 05 ... Communications error to station no. 53  
Bit 06 ... Communications error to station no. 54  
Bit 07 ... Communications error to station no. 55  
Bit 08 ... Communications error to station no. 56  
Bit 09 ... Communications error to station no. 57  
Bit 10 ... Communications error to station no. 58  
Bit 11 ... Communications error to station no. 59  
Bit 12 ... Communications error to station no. 60  
Bit 13 ... Communications error to station no. 61  
Bit 14 ... Communications error to station no. 62  
Bit 15 ... Communications error to station no. 63

category: C  
record: 6  
meaning: Communications error to station nos. 64 -79

Bit 00 ... Communications error to station no. 64  
Bit 01 ... Communications error to station no. 65  
Bit 02 ... Communications error to station no. 66  
Bit 03 ... Communications error to station no. 67  
Bit 04 ... Communications error to station no. 68  
Bit 05 ... Communications error to station no. 69  
Bit 06 ... Communications error to station no. 70  
Bit 07 ... Communications error to station no. 71  
Bit 08 ... Communications error to station no. 72  
Bit 09 ... Communications error to station no. 73  
Bit 10 ... Communications error to station no. 74  
Bit 11 ... Communications error to station no. 75  
Bit 12 ... Communications error to station no. 76  
Bit 13 ... Communications error to station no. 77  
Bit 14 ... Communications error to station no. 78  
Bit 15 ... Communications error to station no. 79

```
category:    C
record:      7
meaning:     Communications error to station nos. 80 -95
```

```
Bit 00 ... Communications error to station no. 80
Bit 01 ... Communications error to station no. 81
Bit 02 ... Communications error to station no. 82
Bit 03 ... Communications error to station no. 83
Bit 04 ... Communications error to station no. 84
Bit 05 ... Communications error to station no. 85
Bit 06 ... Communications error to station no. 86
Bit 07 ... Communications error to station no. 87
Bit 08 ... Communications error to station no. 88
Bit 09 ... Communications error to station no. 89
Bit 10 ... Communications error to station no. 90
Bit 11 ... Communications error to station no. 91
Bit 12 ... Communications error to station no. 92
Bit 13 ... Communications error to station no. 93
Bit 14 ... Communications error to station no. 94
Bit 15 ... Communications error to station no. 95
```

```
category:    C
record:      8
meaning:     Communications error to station nos. 96 -99
```

```
Bit 00 ... Communications error to station no. 96
Bit 01 ... Communications error to station no. 97
Bit 02 ... Communications error to station no. 98
Bit 03 ... Communications error to station no. 99
Bit 04 ...
Bit 05 ...
Bit 06 ...
Bit 07 ...
Bit 08 ...
Bit 09 ...
Bit 10 ...
Bit 11 ...
Bit 12 ...
Bit 13 ...
Bit 14 ...
Bit 15 ...
```



category: C  
record: 10  
meaning: Connection setup to station nos. 0 - 15

Bit 00 ... Connection setup to station no. 0 not possible  
Bit 01 ... Connection setup to station no. 1 not possible  
Bit 02 ... Connection setup to station no. 2 not possible  
Bit 03 ... Connection setup to station no. 3 not possible  
Bit 04 ... Connection setup to station no. 4 not possible  
Bit 05 ... Connection setup to station no. 5 not possible  
Bit 06 ... Connection setup to station no. 6 not possible  
Bit 07 ... Connection setup to station no. 7 not possible  
Bit 08 ... Connection setup to station no. 8 not possible  
Bit 09 ... Connection setup to station no. 9 not possible  
Bit 10 ... Connection setup to station no. 10 not possible  
Bit 11 ... Connection setup to station no. 11 not possible  
Bit 12 ... Connection setup to station no. 12 not possible  
Bit 13 ... Connection setup to station no. 13 not possible  
Bit 14 ... Connection setup to station no. 14 not possible  
Bit 15 ... Connection setup to station no. 15 not possible

```
category:    C
record:     11
meaning:    Connection setup to station nos.. 16 - 31

Bit 00 ... Connection setup to station no. 16 not possible
Bit 01 ... Connection setup to station no. 17 not possible
Bit 02 ... Connection setup to station no. 18 not possible
Bit 03 ... Connection setup to station no. 19 not possible
Bit 04 ... Connection setup to station no. 20 not possible
Bit 05 ... Connection setup to station no. 21 not possible
Bit 06 ... Connection setup to station no. 22 not possible
Bit 07 ... Connection setup to station no. 23 not possible
Bit 08 ... Connection setup to station no. 24 not possible
Bit 09 ... Connection setup to station no. 25 not possible
Bit 10 ... Connection setup to station no. 26 not possible
Bit 11 ... Connection setup to station no. 27 not possible
Bit 12 ... Connection setup to station no. 28 not possible
Bit 13 ... Connection setup to station no. 29 not possible
Bit 14 ... Connection setup to station no. 30 not possible
Bit 15 ... Connection setup to station no. 31 not possible
```

```
category:      C
record:        12
meaning:       Connection setup to station nos.. 32 - 47

Bit 00 ... Connection setup to station no. 32 not possible
Bit 01 ... Connection setup to station no. 33 not possible
Bit 02 ... Connection setup to station no. 34 not possible
Bit 03 ... Connection setup to station no. 35 not possible
Bit 04 ... Connection setup to station no. 36 not possible
Bit 05 ... Connection setup to station no. 37 not possible
Bit 06 ... Connection setup to station no. 38 not possible
Bit 07 ... Connection setup to station no. 39 not possible
Bit 08 ... Connection setup to station no. 40 not possible
Bit 09 ... Connection setup to station no. 41 not possible
Bit 10 ... Connection setup to station no. 42 not possible
Bit 11 ... Connection setup to station no. 43 not possible
Bit 12 ... Connection setup to station no. 44 not possible
Bit 13 ... Connection setup to station no. 45 not possible
Bit 14 ... Connection setup to station no. 46 not possible
Bit 15 ... Connection setup to station no. 47 not possible
```

```
category:    C
record:     13
meaning:    Connection setup to station nos. 48 - 63

Bit 00 ... Connection setup to station no. 48 not possible
Bit 01 ... Connection setup to station no. 49 not possible
Bit 02 ... Connection setup to station no. 50 not possible
Bit 03 ... Connection setup to station no. 51 not possible
Bit 04 ... Connection setup to station no. 52 not possible
Bit 05 ... Connection setup to station no. 53 not possible
Bit 06 ... Connection setup to station no. 54 not possible
Bit 07 ... Connection setup to station no. 55 not possible
Bit 08 ... Connection setup to station no. 56 not possible
Bit 09 ... Connection setup to station no. 57 not possible
Bit 10 ... Connection setup to station no. 58 not possible
Bit 11 ... Connection setup to station no. 59 not possible
Bit 12 ... Connection setup to station no. 60 not possible
Bit 13 ... Connection setup to station no. 61 not possible
Bit 14 ... Connection setup to station no. 62 not possible
Bit 15 ... Connection setup to station no. 63 not possible
```

category: C  
record: 14  
meaning: Connection setup to station nos. 64 -79

Bit 00 ... Connection setup to station no. 64 not possible  
Bit 01 ... Connection setup to station no. 65 not possible  
Bit 02 ... Connection setup to station no. 66 not possible  
Bit 03 ... Connection setup to station no. 67 not possible  
Bit 04 ... Connection setup to station no. 68 not possible  
Bit 05 ... Connection setup to station no. 69 not possible  
Bit 06 ... Connection setup to station no. 70 not possible  
Bit 07 ... Connection setup to station no. 71 not possible  
Bit 08 ... Connection setup to station no. 72 not possible  
Bit 09 ... Connection setup to station no. 73 not possible  
Bit 10 ... Connection setup to station no. 74 not possible  
Bit 11 ... Connection setup to station no. 75 not possible  
Bit 12 ... Connection setup to station no. 76 not possible  
Bit 13 ... Connection setup to station no. 77 not possible  
Bit 14 ... Connection setup to station no. 78 not possible  
Bit 15 ... Connection setup to station no. 79 not possible

```
category:    C
record:     15
meaning:    Connection setup to station nos. 80 -95
```

```
Bit 00 ... Connection setup to station no. 80 not possible
Bit 01 ... Connection setup to station no. 81 not possible
Bit 02 ... Connection setup to station no. 82 not possible
Bit 03 ... Connection setup to station no. 83 not possible
Bit 04 ... Connection setup to station no. 84 not possible
Bit 05 ... Connection setup to station no. 85 not possible
Bit 06 ... Connection setup to station no. 86 not possible
Bit 07 ... Connection setup to station no. 87 not possible
Bit 08 ... Connection setup to station no. 88 not possible
Bit 09 ... Connection setup to station no. 89 not possible
Bit 10 ... Connection setup to station no. 90 not possible
Bit 11 ... Connection setup to station no. 91 not possible
Bit 12 ... Connection setup to station no. 92 not possible
Bit 13 ... Connection setup to station no. 93 not possible
Bit 14 ... Connection setup to station no. 94 not possible
Bit 15 ... Connection setup to station no. 95 not possible
```

```
category:    C
record:      16
meaning:     Connection setup to station nos. 96 -99

Bit 00 ... Connection setup to station no. 96 not possible
Bit 01 ... Connection setup to station no. 97 not possible
Bit 02 ... Connection setup to station no. 98 not possible
Bit 03 ... Connection setup to station no. 99 not possible
Bit 04 ...
Bit 05 ...
Bit 06 ...
Bit 07 ...
Bit 08 ...
Bit 09 ...
Bit 10 ...
Bit 11 ...
Bit 12 ...
Bit 13 ...
Bit 14 ...
Bit 15 ...
```

```
category:    C
record:      20
meaning:     Acknowledgement error to multimaster station no. 0 - 15
```

```
Bit 00 ... Acknowledgement error to multimaster station no. 0
Bit 01 ... Acknowledgement error to multimaster station no. 1
Bit 02 ... Acknowledgement error to multimaster station no. 2
Bit 03 ... Acknowledgement error to multimaster station no. 3
Bit 04 ... Acknowledgement error to multimaster station no. 4
Bit 05 ... Acknowledgement error to multimaster station no. 5
Bit 06 ... Acknowledgement error to multimaster station no. 6
Bit 07 ... Acknowledgement error to multimaster station no. 7
Bit 08 ... Acknowledgement error to multimaster station no. 8
Bit 09 ... Acknowledgement error to multimaster station no. 9
Bit 10 ... Acknowledgement error to multimaster station no. 10
Bit 11 ... Acknowledgement error to multimaster station no. 11
Bit 12 ... Acknowledgement error to multimaster station no. 12
Bit 13 ... Acknowledgement error to multimaster station no. 13
Bit 14 ... Acknowledgement error to multimaster station no. 14
Bit 15 ... Acknowledgement error to multimaster station no. 15
```



```
category:    C
record:      21
meaning:     Acknowledgement error to multimaster station no. 16 - 31
```

```
Bit 00 ... Acknowledgement error to multimaster station no. 16
Bit 01 ... Acknowledgement error to multimaster station no. 17
Bit 02 ... Acknowledgement error to multimaster station no. 18
Bit 03 ... Acknowledgement error to multimaster station no. 19
Bit 04 ... Acknowledgement error to multimaster station no. 20
Bit 05 ... Acknowledgement error to multimaster station no. 21
Bit 06 ... Acknowledgement error to multimaster station no. 22
Bit 07 ... Acknowledgement error to multimaster station no. 23
Bit 08 ... Acknowledgement error to multimaster station no. 24
Bit 09 ... Acknowledgement error to multimaster station no. 25
Bit 10 ... Acknowledgement error to multimaster station no. 26
Bit 11 ... Acknowledgement error to multimaster station no. 27
Bit 12 ... Acknowledgement error to multimaster station no. 28
Bit 13 ... Acknowledgement error to multimaster station no. 29
Bit 14 ... Acknowledgement error to multimaster station no. 30
Bit 15 ... Acknowledgement error to multimaster station no. 31
```

```
category:    C
record:      22
meaning:     Acknowledgement error to multimaster station no. 32 - 47
```

```
Bit 00 ... Acknowledgement error to multimaster station no. 32
Bit 01 ... Acknowledgement error to multimaster station no. 33
Bit 02 ... Acknowledgement error to multimaster station no. 34
Bit 03 ... Acknowledgement error to multimaster station no. 35
Bit 04 ... Acknowledgement error to multimaster station no. 36
Bit 05 ... Acknowledgement error to multimaster station no. 37
Bit 06 ... Acknowledgement error to multimaster station no. 38
Bit 07 ... Acknowledgement error to multimaster station no. 39
Bit 08 ... Acknowledgement error to multimaster station no. 40
Bit 09 ... Acknowledgement error to multimaster station no. 41
Bit 10 ... Acknowledgement error to multimaster station no. 42
Bit 11 ... Acknowledgement error to multimaster station no. 43
Bit 12 ... Acknowledgement error to multimaster station no. 44
Bit 13 ... Acknowledgement error to multimaster station no. 45
Bit 14 ... Acknowledgement error to multimaster station no. 46
Bit 15 ... Acknowledgement error to multimaster station no. 47
```

```
category:    C
record:      23
meaning:     Acknowledgement error to multimaster station no. 48 - 63
```

```
Bit 00 ... Acknowledgement error to multimaster station no. 48
Bit 01 ... Acknowledgement error to multimaster station no. 49
Bit 02 ... Acknowledgement error to multimaster station no. 50
Bit 03 ... Acknowledgement error to multimaster station no. 51
Bit 04 ... Acknowledgement error to multimaster station no. 52
Bit 05 ... Acknowledgement error to multimaster station no. 53
Bit 06 ... Acknowledgement error to multimaster station no. 54
Bit 07 ... Acknowledgement error to multimaster station no. 55
Bit 08 ... Acknowledgement error to multimaster station no. 56
Bit 09 ... Acknowledgement error to multimaster station no. 57
Bit 10 ... Acknowledgement error to multimaster station no. 58
Bit 11 ... Acknowledgement error to multimaster station no. 59
Bit 12 ... Acknowledgement error to multimaster station no. 60
Bit 13 ... Acknowledgement error to multimaster station no. 61
Bit 14 ... Acknowledgement error to multimaster station no. 62
Bit 15 ... Acknowledgement error to multimaster station no. 63
```

```
category:    C
record:      24
meaning:     Acknowledgement error to multimaster station no. 64 -79
```

```
Bit 00 ... Acknowledgement error to multimaster station no. 64
Bit 01 ... Acknowledgement error to multimaster station no. 65
Bit 02 ... Acknowledgement error to multimaster station no. 66
Bit 03 ... Acknowledgement error to multimaster station no. 67
Bit 04 ... Acknowledgement error to multimaster station no. 68
Bit 05 ... Acknowledgement error to multimaster station no. 69
Bit 06 ... Acknowledgement error to multimaster station no. 70
Bit 07 ... Acknowledgement error to multimaster station no. 71
Bit 08 ... Acknowledgement error to multimaster station no. 72
Bit 09 ... Acknowledgement error to multimaster station no. 73
Bit 10 ... Acknowledgement error to multimaster station no. 74
Bit 11 ... Acknowledgement error to multimaster station no. 75
Bit 12 ... Acknowledgement error to multimaster station no. 76
Bit 13 ... Acknowledgement error to multimaster station no. 77
Bit 14 ... Acknowledgement error to multimaster station no. 78
Bit 15 ... Acknowledgement error to multimaster station no. 79
```

category: C  
record: 25  
meaning: Acknowledgement error to multimaster station no. 80 -95

Bit 00 ... Acknowledgement error to multimaster station no. 80  
Bit 01 ... Acknowledgement error to multimaster station no. 81  
Bit 02 ... Acknowledgement error to multimaster station no. 82  
Bit 03 ... Acknowledgement error to multimaster station no. 83  
Bit 04 ... Acknowledgement error to multimaster station no. 84  
Bit 05 ... Acknowledgement error to multimaster station no. 85  
Bit 06 ... Acknowledgement error to multimaster station no. 86  
Bit 07 ... Acknowledgement error to multimaster station no. 87  
Bit 08 ... Acknowledgement error to multimaster station no. 88  
Bit 09 ... Acknowledgement error to multimaster station no. 89  
Bit 10 ... Acknowledgement error to multimaster station no. 90  
Bit 11 ... Acknowledgement error to multimaster station no. 91  
Bit 12 ... Acknowledgement error to multimaster station no. 92  
Bit 13 ... Acknowledgement error to multimaster station no. 93  
Bit 14 ... Acknowledgement error to multimaster station no. 94  
Bit 15 ... Acknowledgement error to multimaster station no. 95

```
category:    C
record:      26
meaning:     Acknowledgement error to multimaster station no. 96 -99

Bit 00 ... Acknowledgement error to multimaster station no. 96
Bit 01 ... Acknowledgement error to multimaster station no. 97
Bit 02 ... Acknowledgement error to multimaster station no. 98
Bit 03 ... Acknowledgement error to multimaster station no. 99
Bit 04 ...
Bit 05 ...
Bit 06 ...
Bit 07 ...
Bit 08 ...
Bit 09 ...
Bit 10 ...
Bit 11 ...
Bit 12 ...
Bit 13 ...
Bit 14 ...
Bit 15 ...
```

```
category:    T
record:      0
meaning:     Test mode of the operating and base systems
```

```
Bit 00 ... Memory test disabled
Bit 01 ... Online debugger running (breakpoints may be set)
Bit 02 ...
Bit 03 ...
Bit 04 ...
Bit 05 ...
Bit 06 ...
Bit 07 ...
Bit 08 ...
Bit 09 ...
Bit 10 ...
Bit 11 ...
Bit 12 ...
Bit 13 ...
Bit 14 ...
Bit 15 ...
```

```
category:    W
record:     0
meaning:    Communications error on connection setup

  Bit 00 ... Passive connection activation (line flaw)
  Bit 01 ...
  Bit 02 ... Connection was setup. However, no central station call
              was received by the central station within a
              parameterizable time
  Bit 03 ...
  Bit 04 ...
  Bit 05 ...
  Bit 06 ...
  Bit 07 ...
  Bit 08 ...
  Bit 09 ...
  Bit 10 ...
  Bit 11 ...
  Bit 12 ...
  Bit 13 ...
  Bit 14 ...
  Bit 15 ... Active connection setup to all stations not possible
```



```
category:    W
record:      2
meaning:     Communications error to station nos. 0 - 15
```

```
Bit 00 ... Communications error to station no. 0
Bit 01 ... Communications error to station no. 1
Bit 02 ... Communications error to station no. 2
Bit 03 ... Communications error to station no. 3
Bit 04 ... Communications error to station no. 4
Bit 05 ... Communications error to station no. 5
Bit 06 ... Communications error to station no. 6
Bit 07 ... Communications error to station no. 7
Bit 08 ... Communications error to station no. 8
Bit 09 ... Communications error to station no. 9
Bit 10 ... Communications error to station no. 10
Bit 11 ... Communications error to station no. 11
Bit 12 ... Communications error to station no. 12
Bit 13 ... Communications error to station no. 13
Bit 14 ... Communications error to station no. 14
Bit 15 ... Communications error to station no. 15
```

```
category:    W
record:      3
meaning:     Communications error to station nos. 16 - 31
```

```
Bit 00 ... Communications error to station no. 16
Bit 01 ... Communications error to station no. 17
Bit 02 ... Communications error to station no. 18
Bit 03 ... Communications error to station no. 19
Bit 04 ... Communications error to station no. 20
Bit 05 ... Communications error to station no. 21
Bit 06 ... Communications error to station no. 22
Bit 07 ... Communications error to station no. 23
Bit 08 ... Communications error to station no. 24
Bit 09 ... Communications error to station no. 25
Bit 10 ... Communications error to station no. 26
Bit 11 ... Communications error to station no. 27
Bit 12 ... Communications error to station no. 28
Bit 13 ... Communications error to station no. 29
Bit 14 ... Communications error to station no. 30
Bit 15 ... Communications error to station no. 31
```

```
category:    W
record:      4
meaning:     Communications error to station nos. 32 - 47
```

```
Bit 00 ... Communications error to station no. 32
Bit 01 ... Communications error to station no. 33
Bit 02 ... Communications error to station no. 34
Bit 03 ... Communications error to station no. 35
Bit 04 ... Communications error to station no. 36
Bit 05 ... Communications error to station no. 37
Bit 06 ... Communications error to station no. 38
Bit 07 ... Communications error to station no. 39
Bit 08 ... Communications error to station no. 40
Bit 09 ... Communications error to station no. 41
Bit 10 ... Communications error to station no. 42
Bit 11 ... Communications error to station no. 43
Bit 12 ... Communications error to station no. 44
Bit 13 ... Communications error to station no. 45
Bit 14 ... Communications error to station no. 46
Bit 15 ... Communications error to station no. 47
```

```
category:    W
record:      5
meaning:     Communications error to station nos. 48 -63
```

```
Bit 00 ... Communications error to station no. 48
Bit 01 ... Communications error to station no. 49
Bit 02 ... Communications error to station no. 50
Bit 03 ... Communications error to station no. 51
Bit 04 ... Communications error to station no. 52
Bit 05 ... Communications error to station no. 53
Bit 06 ... Communications error to station no. 54
Bit 07 ... Communications error to station no. 55
Bit 08 ... Communications error to station no. 56
Bit 09 ... Communications error to station no. 57
Bit 10 ... Communications error to station no. 58
Bit 11 ... Communications error to station no. 59
Bit 12 ... Communications error to station no. 60
Bit 13 ... Communications error to station no. 61
Bit 14 ... Communications error to station no. 62
Bit 15 ... Communications error to station no. 63
```

```
category:    W
record:      6
meaning:     Communications error to station nos. 64 -79
```

```
Bit 00 ... Communications error to station no. 64
Bit 01 ... Communications error to station no. 65
Bit 02 ... Communications error to station no. 66
Bit 03 ... Communications error to station no. 67
Bit 04 ... Communications error to station no. 68
Bit 05 ... Communications error to station no. 69
Bit 06 ... Communications error to station no. 70
Bit 07 ... Communications error to station no. 71
Bit 08 ... Communications error to station no. 72
Bit 09 ... Communications error to station no. 73
Bit 10 ... Communications error to station no. 74
Bit 11 ... Communications error to station no. 75
Bit 12 ... Communications error to station no. 76
Bit 13 ... Communications error to station no. 77
Bit 14 ... Communications error to station no. 78
Bit 15 ... Communications error to station no. 79
```

```
category:    W
record:      7
meaning:     Communications error to station nos. 80 -95
```

```
Bit 00 ... Communications error to station no. 80
Bit 01 ... Communications error to station no. 81
Bit 02 ... Communications error to station no. 82
Bit 03 ... Communications error to station no. 83
Bit 04 ... Communications error to station no. 84
Bit 05 ... Communications error to station no. 85
Bit 06 ... Communications error to station no. 86
Bit 07 ... Communications error to station no. 87
Bit 08 ... Communications error to station no. 88
Bit 09 ... Communications error to station no. 89
Bit 10 ... Communications error to station no. 90
Bit 11 ... Communications error to station no. 91
Bit 12 ... Communications error to station no. 92
Bit 13 ... Communications error to station no. 93
Bit 14 ... Communications error to station no. 94
Bit 15 ... Communications error to station no. 95
```

```
category:    W
record:      8
meaning:     Communications error to station nos. 96 -99
```

```
Bit 00 ... Communications error to station no. 96
Bit 01 ... Communications error to station no. 97
Bit 02 ... Communications error to station no. 98
Bit 03 ... Communications error to station no. 99
Bit 04 ...
Bit 05 ...
Bit 06 ...
Bit 07 ...
Bit 08 ...
Bit 09 ...
Bit 10 ...
Bit 11 ...
Bit 12 ...
Bit 13 ...
Bit 14 ...
Bit 15 ...
```

```
category:    W
record:     10
meaning:    Connection setup to station nos.. 0 - 15
```

```
Bit 00 ... Connection setup to station no. 0 not possible
Bit 01 ... Connection setup to station no. 1 not possible
Bit 02 ... Connection setup to station no. 2 not possible
Bit 03 ... Connection setup to station no. 3 not possible
Bit 04 ... Connection setup to station no. 4 not possible
Bit 05 ... Connection setup to station no. 5 not possible
Bit 06 ... Connection setup to station no. 6 not possible
Bit 07 ... Connection setup to station no. 7 not possible
Bit 08 ... Connection setup to station no. 8 not possible
Bit 09 ... Connection setup to station no. 9 not possible
Bit 10 ... Connection setup to station no. 10 not possible
Bit 11 ... Connection setup to station no. 11 not possible
Bit 12 ... Connection setup to station no. 12 not possible
Bit 13 ... Connection setup to station no. 13 not possible
Bit 14 ... Connection setup to station no. 14 not possible
Bit 15 ... Connection setup to station no. 15 not possible
```



```
category:      W
record:        11
meaning:       Connection setup to station nos.. 16 - 31

  Bit 00 ... Connection setup to station no. 16 not possible
  Bit 01 ... Connection setup to station no. 17 not possible
  Bit 02 ... Connection setup to station no. 18 not possible
  Bit 03 ... Connection setup to station no. 19 not possible
  Bit 04 ... Connection setup to station no. 20 not possible
  Bit 05 ... Connection setup to station no. 21 not possible
  Bit 06 ... Connection setup to station no. 22 not possible
  Bit 07 ... Connection setup to station no. 23 not possible
  Bit 08 ... Connection setup to station no. 24 not possible
  Bit 09 ... Connection setup to station no. 25 not possible
  Bit 10 ... Connection setup to station no. 26 not possible
  Bit 11 ... Connection setup to station no. 27 not possible
  Bit 12 ... Connection setup to station no. 28 not possible
  Bit 13 ... Connection setup to station no. 29 not possible
  Bit 14 ... Connection setup to station no. 30 not possible
  Bit 15 ... Connection setup to station no. 31 not possible
```

```
category:      W
record:        12
meaning:       Connection setup to station nos.. 32 - 47

Bit 00 ... Connection setup to station no. 32 not possible
Bit 01 ... Connection setup to station no. 33 not possible
Bit 02 ... Connection setup to station no. 34 not possible
Bit 03 ... Connection setup to station no. 35 not possible
Bit 04 ... Connection setup to station no. 36 not possible
Bit 05 ... Connection setup to station no. 37 not possible
Bit 06 ... Connection setup to station no. 38 not possible
Bit 07 ... Connection setup to station no. 39 not possible
Bit 08 ... Connection setup to station no. 40 not possible
Bit 09 ... Connection setup to station no. 41 not possible
Bit 10 ... Connection setup to station no. 42 not possible
Bit 11 ... Connection setup to station no. 43 not possible
Bit 12 ... Connection setup to station no. 44 not possible
Bit 13 ... Connection setup to station no. 45 not possible
Bit 14 ... Connection setup to station no. 46 not possible
Bit 15 ... Connection setup to station no. 47 not possible
```

```
category:      W
record:        13
meaning:       Connection setup to station nos.. 48 - 63

Bit 00 ... Connection setup to station no. 48 not possible
Bit 01 ... Connection setup to station no. 49 not possible
Bit 02 ... Connection setup to station no. 50 not possible
Bit 03 ... Connection setup to station no. 51 not possible
Bit 04 ... Connection setup to station no. 52 not possible
Bit 05 ... Connection setup to station no. 53 not possible
Bit 06 ... Connection setup to station no. 54 not possible
Bit 07 ... Connection setup to station no. 55 not possible
Bit 08 ... Connection setup to station no. 56 not possible
Bit 09 ... Connection setup to station no. 57 not possible
Bit 10 ... Connection setup to station no. 58 not possible
Bit 11 ... Connection setup to station no. 59 not possible
Bit 12 ... Connection setup to station no. 60 not possible
Bit 13 ... Connection setup to station no. 61 not possible
Bit 14 ... Connection setup to station no. 62 not possible
Bit 15 ... Connection setup to station no. 63 not possible
```

category: W  
record: 14  
meaning: Connection setup to station nos. 64 -79

Bit 00 ... Connection setup to station no. 64 not possible  
Bit 01 ... Connection setup to station no. 65 not possible  
Bit 02 ... Connection setup to station no. 66 not possible  
Bit 03 ... Connection setup to station no. 67 not possible  
Bit 04 ... Connection setup to station no. 68 not possible  
Bit 05 ... Connection setup to station no. 69 not possible  
Bit 06 ... Connection setup to station no. 70 not possible  
Bit 07 ... Connection setup to station no. 71 not possible  
Bit 08 ... Connection setup to station no. 72 not possible  
Bit 09 ... Connection setup to station no. 73 not possible  
Bit 10 ... Connection setup to station no. 74 not possible  
Bit 11 ... Connection setup to station no. 75 not possible  
Bit 12 ... Connection setup to station no. 76 not possible  
Bit 13 ... Connection setup to station no. 77 not possible  
Bit 14 ... Connection setup to station no. 78 not possible  
Bit 15 ... Connection setup to station no. 79 not possible

category: W  
record: 15  
meaning: Connection setup to station nos. 80 -95

Bit 00 ... Connection setup to station no. 80 not possible  
Bit 01 ... Connection setup to station no. 81 not possible  
Bit 02 ... Connection setup to station no. 82 not possible  
Bit 03 ... Connection setup to station no. 83 not possible  
Bit 04 ... Connection setup to station no. 84 not possible  
Bit 05 ... Connection setup to station no. 85 not possible  
Bit 06 ... Connection setup to station no. 86 not possible  
Bit 07 ... Connection setup to station no. 87 not possible  
Bit 08 ... Connection setup to station no. 88 not possible  
Bit 09 ... Connection setup to station no. 89 not possible  
Bit 10 ... Connection setup to station no. 90 not possible  
Bit 11 ... Connection setup to station no. 91 not possible  
Bit 12 ... Connection setup to station no. 92 not possible  
Bit 13 ... Connection setup to station no. 93 not possible  
Bit 14 ... Connection setup to station no. 94 not possible  
Bit 15 ... Connection setup to station no. 95 not possible

```
category:    W
record:      16
meaning:     Connection setup to station nos. 96 -99

Bit 00 ... Connection setup to station no. 96 not possible
Bit 01 ... Connection setup to station no. 97 not possible
Bit 02 ... Connection setup to station no. 98 not possible
Bit 03 ... Connection setup to station no. 99 not possible
Bit 04 ...
Bit 05 ...
Bit 06 ...
Bit 07 ...
Bit 08 ...
Bit 09 ...
Bit 10 ...
Bit 11 ...
Bit 12 ...
Bit 13 ...
Bit 14 ...
Bit 15 ...
```

category: W  
record: 20  
meaning: Modem blockage of station nos. 0 - 15

Bit 00 ... Modem blockage of station no. 0  
Bit 01 ... Modem blockage of station no. 1  
Bit 02 ... Modem blockage of station no. 2  
Bit 03 ... Modem blockage of station no. 3  
Bit 04 ... Modem blockage of station no. 4  
Bit 05 ... Modem blockage of station no. 5  
Bit 06 ... Modem blockage of station no. 6  
Bit 07 ... Modem blockage of station no. 7  
Bit 08 ... Modem blockage of station no. 8  
Bit 09 ... Modem blockage of station no. 9  
Bit 10 ... Modem blockage of station no. 10  
Bit 11 ... Modem blockage of station no. 11  
Bit 12 ... Modem blockage of station no. 12  
Bit 13 ... Modem blockage of station no. 13  
Bit 14 ... Modem blockage of station no. 14  
Bit 15 ... Modem blockage of station no. 15

category: W  
record: 21  
meaning: Modem blockage of station no. 16 - 31

Bit 00 ... Modem blockage of station no. 16  
Bit 01 ... Modem blockage of station no. 17  
Bit 02 ... Modem blockage of station no. 18  
Bit 03 ... Modem blockage of station no. 19  
Bit 04 ... Modem blockage of station no. 20  
Bit 05 ... Modem blockage of station no. 21  
Bit 06 ... Modem blockage of station no. 22  
Bit 07 ... Modem blockage of station no. 23  
Bit 08 ... Modem blockage of station no. 24  
Bit 09 ... Modem blockage of station no. 25  
Bit 10 ... Modem blockage of station no. 26  
Bit 11 ... Modem blockage of station no. 27  
Bit 12 ... Modem blockage of station no. 28  
Bit 13 ... Modem blockage of station no. 29  
Bit 14 ... Modem blockage of station no. 30  
Bit 15 ... Modem blockage of station no. 31



category: W  
record: 22  
meaning: Modem blockage of station no. 32 - 47

Bit 00 ... Modem blockage of station no. 32  
Bit 01 ... Modem blockage of station no. 33  
Bit 02 ... Modem blockage of station no. 34  
Bit 03 ... Modem blockage of station no. 35  
Bit 04 ... Modem blockage of station no. 36  
Bit 05 ... Modem blockage of station no. 37  
Bit 06 ... Modem blockage of station no. 38  
Bit 07 ... Modem blockage of station no. 39  
Bit 08 ... Modem blockage of station no. 40  
Bit 09 ... Modem blockage of station no. 41  
Bit 10 ... Modem blockage of station no. 42  
Bit 11 ... Modem blockage of station no. 43  
Bit 12 ... Modem blockage of station no. 44  
Bit 13 ... Modem blockage of station no. 45  
Bit 14 ... Modem blockage of station no. 46  
Bit 15 ... Modem blockage of station no. 47

category: W  
record: 23  
meaning: Modem blockage of station no. 48 - 63

Bit 00 ... Modem blockage of station no. 48  
Bit 01 ... Modem blockage of station no. 49  
Bit 02 ... Modem blockage of station no. 50  
Bit 03 ... Modem blockage of station no. 51  
Bit 04 ... Modem blockage of station no. 52  
Bit 05 ... Modem blockage of station no. 53  
Bit 06 ... Modem blockage of station no. 54  
Bit 07 ... Modem blockage of station no. 55  
Bit 08 ... Modem blockage of station no. 56  
Bit 09 ... Modem blockage of station no. 57  
Bit 10 ... Modem blockage of station no. 58  
Bit 11 ... Modem blockage of station no. 59  
Bit 12 ... Modem blockage of station no. 60  
Bit 13 ... Modem blockage of station no. 61  
Bit 14 ... Modem blockage of station no. 62  
Bit 15 ... Modem blockage of station no. 63

category: W  
record: 24  
meaning: Modem blockage of station nos. 64 - 79

Bit 00 ... Modem blockage of station no. 64  
Bit 01 ... Modem blockage of station no. 65  
Bit 02 ... Modem blockage of station no. 66  
Bit 03 ... Modem blockage of station no. 67  
Bit 04 ... Modem blockage of station no. 68  
Bit 05 ... Modem blockage of station no. 69  
Bit 06 ... Modem blockage of station no. 70  
Bit 07 ... Modem blockage of station no. 71  
Bit 08 ... Modem blockage of station no. 72  
Bit 09 ... Modem blockage of station no. 73  
Bit 10 ... Modem blockage of station no. 74  
Bit 11 ... Modem blockage of station no. 75  
Bit 12 ... Modem blockage of station no. 76  
Bit 13 ... Modem blockage of station no. 77  
Bit 14 ... Modem blockage of station no. 78  
Bit 15 ... Modem blockage of station no. 79

category: W  
record: 25  
meaning: Modem blockage of station nos. 80 - 95

Bit 00 ... Modem blockage of station no. 80  
Bit 01 ... Modem blockage of station no. 81  
Bit 02 ... Modem blockage of station no. 82  
Bit 03 ... Modem blockage of station no. 83  
Bit 04 ... Modem blockage of station no. 84  
Bit 05 ... Modem blockage of station no. 85  
Bit 06 ... Modem blockage of station no. 86  
Bit 07 ... Modem blockage of station no. 87  
Bit 08 ... Modem blockage of station no. 88  
Bit 09 ... Modem blockage of station no. 89  
Bit 10 ... Modem blockage of station no. 90  
Bit 11 ... Modem blockage of station no. 91  
Bit 12 ... Modem blockage of station no. 92  
Bit 13 ... Modem blockage of station no. 93  
Bit 14 ... Modem blockage of station no. 94  
Bit 15 ... Modem blockage of station no. 95

```
category:    W
record:      26
meaning:     Modem blockage of station nos. 96 - 99
```

```
Bit 00 ... Modem blockage of station no. 96
Bit 01 ... Modem blockage of station no. 97
Bit 02 ... Modem blockage of station no. 98
Bit 03 ... Modem blockage of station no. 99
Bit 04 ...
Bit 05 ...
Bit 06 ...
Bit 07 ...
Bit 08 ...
Bit 09 ...
Bit 10 ...
Bit 11 ...
Bit 12 ...
Bit 13 ...
Bit 14 ...
Bit 15 ...
```



## B. Appendix: Parameter Documentation

The firmware parameters are described in so-called **PD forms** (parameter documentation forms).

- The parameters described in the PD form are available for parameterization with the PSR Configuring and Service Computer of a SAT TOOLBOX
  - The PD Form describes
    - all parameters that are available for a given firmware and as of which firmware revision they are effective
    - parameter functions and their value ranges
- This appendix documents the parameters for the firmware set forth in the present document in the shape of a blank form filled with default values
- The current state of parameters of a firmware of a certain system element can be documented with the PSR Configuring and Service Computer of a SAT TOOLBOX

Parameterizing with PD forms is supported by both SAT TOOLBOX (PSR) and SAT TOOLBOX II (PSR II).

-----  
 REVISION PARAMETER DOCUMENTATION

created		last changed		released	
on	by	on	by	on	by
16-11-99	ENT-SW/HOK	20-02-01	ENT-SW/HOK	20-02-01	ENT-SW/HOK

MODEM (\*)

- Possible:0 = Kabelmetall LGM 64k (ISDN-TA) "Direct-Mode" (1) (for DIAM00/Rev.001 and later)
- 3 = WESTERMO TD-32 Modem (Analog-Modem) (for DIAM00/Rev.002 and later)
- 4 = EUROCOM-24 Modem (Analog-Modem) (for DIAM00/Rev.002 and later)
- 5 = Kabelmetall LGM 64k (ISDN-TA) "Normal-Mode" (2) (for DIAM00/Rev.004 and later)
- 6 = GSM-M20 databox (for DIAM00/Rev.005 and later)
- 7 = SIMOCO SRM1000 Mobil Tetra-Modem (for DIAM00/Rev.006 and later)
- 255 = USER-definable modem

Modem used: USER-definable modem CT command: SPL 230 (/D)

Note:  
 -----

- (1) Kabelmetall LGM 64k (ISDN-TA) "direct-mode" (fast mode)  
 Equal baudrate setting in the MASTER and all SLAVES will be required.  
 Note:  
 If the dial up traffic protocol will be used on the "AMC-1703 local interface" (CPC42; max. 4800Bd) in an existing dial up traffic configuration with "Direct-Mode", then the baudrate settings must be changed in the MASTER and all SLAVES to 4800Bd.
- (2) Kabelmetall LGM 64k (ISDN-TA) "normal-mode" (slow mode)  
 Different baudrates can be used in the MASTER and in the SLAVES.  
 Note:  
 New dial up traffic configurations with ISDN should use the "normal-mode".

LOGIN PASSWORD

After a connection has been set up, the LOGIN command with the parameterized LOGIN PASSWORD is always sent first. If this message is not answered or negatively acknowledged, the connection is immediately cut off.  
 Possible:<ASCII> = LOGIN password  
 0,<BLANK> = End of the LOGIN password parameterization

Password : S A T T E S T CT command: SPT 105 /4

OWN TELEPHONE NUMBER:

CAUTION: Must always be parameterized. Own telephone number is used for some modems. (e.g. Kabelmetall LGM 64k for the AT%Z command)

Possible: <ASCII> = Telephone no.  
 0,<BLANK> = End of the telephone no. parameterization

```

+-----+-----+
|                               |           |
+-----+-----+-----+-----+
|                               | SPT 333 /16 |
+-----+-----+-----+-----+
    
```

PARAMETERS FOR CONNECTION TIME



## Parameter overview for connection time:

```

-----
Maximum connection time:                60 sec      CT command: SPS 102 (/D)
Minimum connection time:                 0  sec      CT command: SPH 103 (/D)
Central station connection initiation
if no data are present:                  5          CT command: SPL 103 (/D)

```

## Connection time per type identifier:

```

-----+-----+-----+-----+-----+-----+-----+
|                                     | Connection time [secs] |
-----+-----+-----+-----+-----+-----+
| No. | Current | CT command | Current | CT command |
-----+-----+-----+-----+-----+-----+
| 0 | 255 | SPL 110 (/D) | 0,0 | SPS 111 (/D) |
| 1 | 255 | SPL 112 (/D) | 0,0 | SPS 113 (/D) |
| 2 | 255 | SPL 114 (/D) | 0,0 | SPS 115 (/D) |
| 3 | 255 | SPL 116 (/D) | 0,0 | SPS 117 (/D) |
| 4 | 255 | SPL 118 (/D) | 0,0 | SPS 119 (/D) |
| 5 | 255 | SPL 11A (/D) | 0,0 | SPS 11B (/D) |
| 6 | 255 | SPL 11C (/D) | 0,0 | SPS 11D (/D) |
| 7 | 255 | SPL 11E (/D) | 0,0 | SPS 11F (/D) |
| 8 | 255 | SPL 120 (/D) | 0,0 | SPS 121 (/D) |
| 9 | 255 | SPL 122 (/D) | 0,0 | SPS 123 (/D) |
| 10 | 255 | SPL 124 (/D) | 0,0 | SPS 125 (/D) |
| 11 | 255 | SPL 126 (/D) | 0,0 | SPS 127 (/D) |
| 12 | 255 | SPL 128 (/D) | 0,0 | SPS 129 (/D) |
| 13 | 255 | SPL 12A (/D) | 0,0 | SPS 12B (/D) |
| 14 | 255 | SPL 12C (/D) | 0,0 | SPS 12D (/D) |
-----+-----+-----+-----+-----+-----+

```

## Connection time for type identifier 135 (System data container):

```

-----+-----+-----+-----+-----+-----+
|                                     | Connection time [secs] |
-----+-----+-----+-----+-----+-----+
| No. | Current | CT command | Current | CT command |
-----+-----+-----+-----+-----+-----+
| 0 | 128 | SPL 161 (/D) | 20,0 | SPS 162 (/D) |
| 1 | 129 | SPL 163 (/D) | 20,0 | SPS 164 (/D) |
| 2 | 130 | SPL 165 (/D) | 20,0 | SPS 166 (/D) |
| 3 | 255 | SPL 167 (/D) | 0,0 | SPS 168 (/D) |
| 4 | 255 | SPL 169 (/D) | 0,0 | SPS 16A (/D) |
| 5 | 255 | SPL 16B (/D) | 0,0 | SPS 16C (/D) |
| 6 | 255 | SPL 16D (/D) | 0,0 | SPS 16E (/D) |
| 7 | 255 | SPL 16F (/D) | 0,0 | SPS 170 (/D) |
| 8 | 255 | SPL 171 (/D) | 0,0 | SPS 172 (/D) |
| 9 | 255 | SPL 173 (/D) | 0,0 | SPS 174 (/D) |
| 10 | 255 | SPL 175 (/D) | 0,0 | SPS 176 (/D) |
| 11 | 255 | SPL 177 (/D) | 0,0 | SPS 178 (/D) |
| 12 | 255 | SPL 179 (/D) | 0,0 | SPS 17A (/D) |
| 13 | 255 | SPL 17B (/D) | 0,0 | SPS 17C (/D) |
| 14 | 255 | SPL 17D (/D) | 0,0 | SPS 17E (/D) |
-----+-----+-----+-----+-----+-----+

```

## Maximum connection time (tMV)

```

-----
Limiting of the data transmission time per set up connection.
Possible          : 1 - 65535 (n * 100ms)

```

## Minimum connection time (tMin)

```

-----
The minimum connection time is used so that the connection exists for
at least a parameterized time.
After expiry of this time, after the parameterized number of
short acknowledgements (Parameter : "Central station connection initiation
if no data are present"), a connection initiation

```

is carried out.

On reaching the maximum connection time, a connection initiation is carried out in any case.

Possible : 0 ... No minimum VA time  
1 - 255 (n \* 1 seconds)

Central station connection initiation if no data are present:

-----  
With some configurations, for cost reasons, it is required that the connection time to a RTU is as low as possible.

If the RTU has no more data, it sends a short acknowledgement ("E5"). On a parameterized number of received short acknowledgements an ACTIVE connection initiation is carried out.

If, however, very many user data messages are sent by a RTU then, in any case, an active connection initiation is carried out after expiry of the maximum connection time.

Possible : 0 .... No connection initiation  
1 - 255 (n \* "NO data (E5)" received)

Connection time per type identifier:

-----  
After a station-selective message transmission, the connection time can be automatically started (depending on type identifier) for a parameterized time. This function is used, e.g. for quickly collecting data after a command initiation (binary information, measured values). After expiry of this time and after the parameterized number of short acknowledgements (Parameter : "Central station connection initiation if no data are present") a connection initiation is carried out.

On reaching the maximum connection time, a connection initiation is carried out in any case, regardless of whether the connection time per type identifier has expired or not.

For type identifier 135 the parameterization must be set via the "Connection time for Type Identifier 135" parameter.

Connection time for Type Identifier 135 (system data container):

-----  
After a selective station message transmission, the connection time can be automatically started (depending on the function code) for a parameterized time. This function is used, for example, for diagnosing the RTU via the TOOLBOX.

After expiry of this time and after the parameterized number of short acknowledgements (Parameter : "Central station connection initiation if no data are present"), a connection initiation is carried out.

#### MONITORING CYCLE

With a "monitoring cycle" a connection setup and the transmission of an interface monitoring message is made to every configured RTU.

By means of the monitoring cycle, the central station can detect whether RTUs have failed. In addition, by means of the connection setup which was carried out, the "unimportant information" stored in the RTUs for which no spontaneous connection setup has taken place, is interrogated. In the monitoring cycle, every RTU is called once.

Enabling:

-----  
Possible : 0 = Carry out cycle monitoring  
1 = Carry out time-controlled monitoring  
FF = Do not carry out any monitoring  
none Carry out monitoring CT command: SPL 158 (/H)

=====

F u r t h e r P a r a m e t e r s

=====

## MONITORING TIMES

Times: 0-32767[ms]; 0-4095[Bit]

Time basis: 0=bits; 1=ms

CAUTION: Times parameterized in "bits" are dependent on the set baud rate!

Idle monitoring time: (Monitoring the idle state of the line)

-----  
After transmission faults or message interruption, the line is monitored for the idle state. After expiry of this monitoring time "Resynchronization of the receiver" is made.

Idle monitoring time: 33 [bit] CT command: SPS 00E/7FFF(/D)  
Time basis: bit CT command: SPS 00E/8000(/D)

Character monitoring time: (Message interruption monitoring)

-----  
Maximum pause between sequential bytes of a message.  
After a detected message interruption, the idle monitoring time is started.

Character monitoring time: 100 [ms] CT command: SPS 00F/7FFF(/D)  
Time basis: ms CT command: SPS 00F/8000(/D)

## CORRECTION FACTOR FOR ACKNOWLEDGEMENT EXPECTATION TIME

The acknowledgement expectation time is automatically determined.  
(Pause/setup/message/run-out times are taken into account).  
Signal runtimes and other delay times are to be taken into account in the "Correction factor for acknowledgement expectation time".  
Possible: 0-65535 (n \* 100[ms]) = 0.00[secs]-10.9[mins]

Correction factor: 0,10 secs CT command: SPS 003 (/D)

## MESSAGE REPETITIONS (NUMBER OF RETRIES)

The maximum number of message repetitions (retries) which are to be carried out can be set for some message types.  
Possible: 0-255

Retries for INIT messages (after RESET): 1 CT command: SPL 009 (/D)  
Retries for station-sel. data messages: 2 CT command: SPL 008 (/D)  
Retries for REQUEST after access request: 2 CT command: SPH 008 (/D)

## AX-1703 REDUNDANCY (\*)

CAUTION: The AX-1703 redundancy is only available as from Rev.002.

## PARAMETERS FOR CONNECTION SETUP (\*)

Parameter overview for connection setup:

-----  
Dialling attempts:

Number:	5	CT command: SPL 232 (/D)
1st dialling attempt with faulty station:	yes	CT command: SPH 232/01 (/D)
Pause switchover for "n" dialling repetitions:	2	CT command: SPH 233 (/D)
Pause-1 between dialling repetitions:	60,0 sec	CT command: SPS 234 (/D)
Pause-2 between dialling repetitions:	300,0 sec	CT command: SPS 235 (/D)

Substitute number switchover:

Switchover mode:	Mode 0	CT command: SPL 233 (/D)
------------------	--------	--------------------------

Number of dialling attempts:

-----

If a connection setup is not successful (e.g. engaged,...), further dialling attempts are carried out.

A parameterizable pause is made between the dialling attempts.

Possible: 0 = Infinite number of dialling attempts!  
1-255 = Number of dialling attempts

1st dialling attempt for a faulty station:  
-----

If the RTU has failed, it is possible to parameterize whether, only on the next connection setup initiation, only one dialling attempt to this station should be carried out.

Possible: 0=yes; 1=no

Pause switchover for "n" dialling attempts:  
-----

As from a certain number of dialling attempts, a different pause time is made before the next dialling attempt. (Pause-1, Pause-2)

Possible: 0 ..... No pause time switchover  
1-255

Pause-1, Pause-2 between dialling attempts:  
-----

Pause-1: Before dialling repetitions if the number of dialling attempts has not yet reached the parameterizable limit for pause switchover.

Pause-2: Before dialling repetitions if the number of dialling attempts has already exceeded the parameterizable limit for pause switchover.

Possible: 1-65535 \* 100ms

Substitute number switchover:  
-----

The use of the substitute number is defined by various modes which are parameterized on the protocol element.

Mode-0: Only main number

In this mode, the remote station is only dialled with the main number, there is no switchover to the substitute number.

Mode-1: 1st main number, 1st substitute number

In this mode, the remote station is always dialled with the main number. If the remote station is not reached after the parameterized number of dialling attempts, a switchover is made to the substitute number. Tel. no. switchover on "n" dialling repetitions:

Possible: 1-15

Mode-2: Rotating numbers.

In this mode, the remote station is always dialled with the main number. If the remote station is, on the next dialling attempt, a switchover is made to the substitute number.

Mode-3: Day/Night number

In this mode, the main number is dialled as from a parameterized time (day number) and, as from a parameterized time (night number), the substitute number is dialled.

Mode-4: 1st main number, 1st substitute number via PRE control message

Same function as in Mode-1 but the preferred state (with which telephone number the 1st dialling attempt is carried out) can be prescribed via the PRE control message.

Call acceptance delay:(only for V.25bis, AT-Hayes)  
-----

When call acceptance delay is active, the modem does not take over the incoming call immediately but only after the call acceptance delay time.

During this time, the incoming calls can be accepted manually.

Possible: 8-15 = 8-15 seconds

(0= 1 ring -"Immediate call acceptance"; 8= 2 rings; 15= 3 rings)

#### FAILURE CONCEPT

If, for an active connection setup attempt, no connection can be made then the connection setup is repeated after a pause (parameterizable).

After expiry of the parameterized number of dialling attempts, the message

is negatively acknowledged to the BSE and the warning "Connection setup not possible" is despatched. In addition, a failure counter is incremented. If the failure counter reaches a parameterized maximum, the station is marked as faulty. The failure counter is also incremented for a "passive connection initiation". In this case, a "Line flaw" warning is generated. After a successful connection, the failure counter is reset. Possible: 1-255

Failure on 1 unsuccessful dialling(s) CT command: SPS 104(/D)

#### PROTOCOL CONTROL MESSAGE WITH FUNCTION-CODE 1

With this release it can be differentiated then whether the active dial-up over a protocol control message or over a user data telegram! If the function were enabled, with receipt of a protocol control message with functioncode 1 is generated a return information with "dial-up not possible". - > the same meaning has as if the station at the SIP is not be parameterized!

Possible: 0=not enabled; 1=enabled

return information: not enabled CT command: SPH 15F(/D)

#### RED TELEPHON

If the function enabled, then receives this interface only calls from the remote terminal unit!

Possible: 0=not enabled; 1=enabled

red telephon: not enabled CT command: SPL 17F /01(/D)

#### AT COMMANDS (\*)

With the parameterizable AT commands it may be possible to use a modem which is not yet in the Preferred Modem Types list, or additional settings in the modem can be carried out.

AT commands for modem initialization: (After every connection release)

Possible: <ASCII> = AT command  
0,<BLANK> = End of an AT command

AT command	CT command
	SPT 250/10
	SPT 25A/10
	SPT 264/10
	SPT 26E/10
	SPT 278/10
	SPT 282/10
	SPT 28C/10
	SPT 296/10
	SPT 2A0/10

```

|-----| SPT 2AA/10 |-----+

```

AT commands before connection setup:

Possible: <ASCII> = AT command  
 0,<BLANK> = End of an AT command

```

+-----+-----+
|          AT command          |CT command |
+-----+-----+
|                               | SPT 2C0/10 |
+-----+-----+
|                               | SPT 2CA/10 |
+-----+-----+
|                               | SPT 2D4/10 |
+-----+-----+
|                               | SPT 2DE/10 |
+-----+-----+
|                               | SPT 2E8/10 |
+-----+-----+
|                               | SPT 2F2/10 |
+-----+-----+
|                               | SPT 2FC/10 |
+-----+-----+
|                               | SPT 306/10 |
+-----+-----+
|                               | SPT 310/10 |
+-----+-----+
|                               | SPT 31A/10 |
+-----+-----+

```

#### MODEM PARAMETERS (USER-definable modem)

With these parameters it may be possible to define a modem which is not yet included in the Preferred Modem Types list. For modems which have already been entered into the Preferred Modem Types list, some parameters can be set in addition.

#### Modem parameter overview:

##### Physical interface for command mode:

Baud rate:	0	CT command: SPS 200
Byte frame:		
Number of data bits:	8 bit	CT command: SPL 201 /03
Number of stop bits:	1 bit	CT command: SPL 201 /0C
Parity:	no parity	CT command: SPL 201 /30
End character:	<CR><LF>	CT command: SPL 208 /03
Message end:	100 bits	CT command: SPH 201

##### Physical interface for data mode:

Baud rate:	0	CT command: SPS 202
Byte frame:		
Number of data bits:	8 bit	CT command: SPL 203 /03
Number of stop bits:	1 bit	CT command: SPL 203 /0C
Parity:	no parity	CT command: SPL 203 /30
ASCII mode:	no	CT command: SPH 203 /10
ASCII mode end character:	<CR><LF>	CT command: SPH 203 /60
CRC generator polynomial:	no	CT command: SPH 203 /80

Connection setup (procedure):	AT-Hayes	CT command: SPL 205 /0F
Evaluate modem binary info.(data mode):	no	CT command: SPH 207 /01
Automatic call acceptance by modem:	no	CT command: SPH 204 /01
Call acceptance on call acceptance delay:ys		CT command: SPH 204 /02
Connection setup via command:	no	CT command: SPH 204 /04

##### AT-Hayes connection setup :

Connection release via escape sequence:	no	CT command: SPH 205 /01
Use DCD for AT-Hayes:	ys	CT command: SPH 205 /02

V25.bis connection setup:  
 Command for connection setup: CRI,<C> CT command: SPL 206 /01

Baud rates for command mode:  
 -----

In command mode, some modems need a different baud rate.  
 Possible: 0 in command mode = use baudrate of the data-mode  
           0 in data mode = use baudrate of the selected modem  
           50, 75, 100, 110, 134.5, 150, 200, 300, 600, 1050  
           1200, 1800, 2000, 2400, 4800, 9600, 19200, 38400

Byte frames for command/data modes:  
 -----

In command mode, some modems need a preset byte frame.  
 The byte frame can be set separately for command/data modes.  
 Number of data stop bits: 00=5 bits; 01=6 bits; 10=7 bits; 11=8 bits  
 Number of stop bits: 00=1 bits; 01=1.5 bits; 10=2 bits; 11=invalid  
 Parity: 00=no parity; 01=even parity; 10=odd parity; 11=invalid

End character in command mode:  
 -----

In command mode, every message to/from the modem is transmitted  
 with the parameterized end character.  
 Possible: 0=<CR>+<LF>; 1=<CR>; 2=<LF>; 3 = No end character

Message end for command mode:  
 -----

If no end character has been parameterized, when there is a message gap  
 the command is interpreted as received by the parameterized  
 number of bits.  
 Possible: 0-255 bits

ASCII transmission in data mode:  
 -----

When the function is enabled, for a set up connection, the data  
 are transmitted in ASCII. This function is needed for modems which,  
 in data mode, do not support an 8 bit FRAME.  
 Information: In ASCII mode the message length is doubled!  
 Possible: 0 = no; 1=yes

End character in ASCII data mode: (for data messages)  
 -----

Possible: 0=<CR>+<LF>; 1=<CR>; 2=<LF>; 3=no end character!

Additional user data security by CRC:  
 -----

Possible: 0=no; 1=yes

Connection setup (procedure):  
 -----

Possible: 0=AT-Hayes; 1=V.25bis/108.1; 2=V.25bis/108.2; 4=X.20; 5=X.28

Evaluate modem binary information on set up connection:  
 -----

If DCD cannot be used for the detection of "Connection set up" then modem binary  
 information must also be interpreted while the connection is setup  
 in order to keep the status of the connection.  
 (only possible in ASCII mode!)  
 Possible: 0=no; 1=yes

Automatic call acceptance by the modem:  
 -----

Possible: 0=yes; 1=no (message in command mode required for call acceptance)

Call acceptance with call acceptance delay:  
 -----

Possible: 0=no; 1=yes

Connection release via command (only for X.28)

-----  
Some devices, when switching into command mode with (CTRL+P), do not automatically carry out a connection initiation. Connection initiation must then be carried out with <CLR>.

Possible: 0=no; 1=yes

Connection release via escape sequence:

-----  
When the function is enabled, the escape sequence <+++> is transmitted to the modem. The function is for the connection release, if the RTS-signal not used.

Possible: 0=do not send; 1=send

Evaluate DCD for AT-Hayes: (to detect "Connection set up")

-----  
Possible: 0=no; 1=yes

DTR always HIGH: (for voltage-supply external modems)

-----  
Possible: 0=no; 1=yes

Command for connection setup: (only for V.25bis)

-----  
Possible (V.25bis): 0=CRI; 1=CRN

Connection time counter as ABSOLUTE or RELATIVE count

Selection of whether the specific connection time counter should be transmitted as absolute or relative counts.

Possible : 0 = RELATIVE counts, 1 = ABSOLUTE counts,

Connection time counter as RELATIVE count

CT command: SPL 109

PARAMETER FOR STAND-BY TRANSMISSION LINE CONCEPT

In redundancy configurations using a "stand-by transmission line concept" (configuration 2 of SAT+s stand-by transmission line concept), a delay time can be parameterized. This time delay can be helpful to suppress immediate switchover in case of an error. If the dial-up SLAVE try to get a connection to the dial-up MASTER during this delay time, the SLAVE will be informed that the stand-by transmission line is not active at this time.

Possible: 0 = no delay time , 1-255 \* 1 sec

Delay time: 0

CT Command: SPL 15F

Verzögerungszeit für Beendigung des Ersatzweges: (ab DIAM00 Rev. 009)

Im Fall das der Ersatzweg aktiviert ist kann durch diesen Parameter eine Zeit eingestellt werden damit nicht sofort die Verbindung getrennt wird wenn der Hauptweg wieder in Ordnung ist.

Möglich: 0 = keine Verzögerung ,1-65535 (n \* 100[ms]) = 0,01[sec]-10,9[min]

Verzögerungszeit 0,00

PT-Befehl: SPS 160 (/D)

STATION PARAMETERIZATION DISPLAY

Possible:

Station number (Stat. no.) ..... 0-99; 255=not used

Enabling (Station in the cycle) ..... 0=no; 1=yes

"Report" station failure..... 0=no; 1=yes

Telephone no.: <ASCII> = Telephone no.



0,<BLANK> = End of the telephone parameterization	
Baud rate: Only necessary when using the Multitech MTZ-DX 19.2 modem	
No.	Station parameterization
0	Station no.: 255
	Station enabling: yes
	Report station failure: yes
	Main telephone number
	Baud rate for main telephone no.: 0
	Substitute telephone number
1	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
	Main telephone number
	Baud rate for main telephone no.: 0
2	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
	Main telephone number
3	Baud rate for main telephone no.: 0
	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
4	Main telephone number
	Baud rate for main telephone no.: 0
	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
Report station failure: yes	

5	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
6	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
	Station no.:	255
7	Station enabling:	yes
	Report station failure:	yes
	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
8	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
	Station no.:	255
9	Station enabling:	yes
	Report station failure:	yes
	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
10	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
	Station no.:	255

	Station enabling:	yes	
	Report station failure:	yes	
	-----		
11	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		
	Baud rate for substitute telephone no.:	0	
	-----		
	Station no.:	255	
	Station enabling:	yes	
	Report station failure:	yes	
	-----		
12	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		
	Baud rate for substitute telephone no.:	0	
	-----		
	Station no.:	255	
	Station enabling:	yes	
	Report station failure:	yes	
	-----		
13	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		
	Baud rate for substitute telephone no.:	0	
	-----		
	Station no.:	255	
	Station enabling:	yes	
	Report station failure:	yes	
	-----		
14	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		
	Baud rate for substitute telephone no.:	0	
	-----		
	Station no.:	255	
	Station enabling:	yes	
	Report station failure:	yes	
	-----		
15	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		
	Baud rate for substitute telephone no.:	0	
	-----		
	Station no.:	255	
	Station enabling:	yes	
	Report station failure:	yes	
	-----		
16	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		

	Baud rate for substitute telephone no.:	0
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
17	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
18	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
19	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
20	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
21	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
22	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
	Main telephone number	
	Baud rate for main telephone no.:	0

	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
23	Main telephone number
	Baud rate for main telephone no.: 0
	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
24	Main telephone number
	Baud rate for main telephone no.: 0
	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
25	Main telephone number
	Baud rate for main telephone no.: 0
	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
26	Main telephone number
	Baud rate for main telephone no.: 0
	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
27	Main telephone number
	Baud rate for main telephone no.: 0
	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes

28	Main telephone number	
	Baud rate for main telephone no.:	0
-----		
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
-----		
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
29	Main telephone number	
	Baud rate for main telephone no.:	0
-----		
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
-----		
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
30	Main telephone number	
	Baud rate for main telephone no.:	0
-----		
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
-----		
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
31	Main telephone number	
	Baud rate for main telephone no.:	0
-----		
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
-----		
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
32	Main telephone number	
	Baud rate for main telephone no.:	0
-----		
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
-----		
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
33	Main telephone number	
	Baud rate for main telephone no.:	0
-----		
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
-----		
	Station no.:	255

	Station enabling:	yes	
	Report station failure:	yes	
	-----		
34	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		
	Baud rate for substitute telephone no.:	0	
	-----		
	Station no.:	255	
	Station enabling:	yes	
	Report station failure:	yes	
	-----		
35	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		
	Baud rate for substitute telephone no.:	0	
	-----		
	Station no.:	255	
	Station enabling:	yes	
	Report station failure:	yes	
	-----		
36	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		
	Baud rate for substitute telephone no.:	0	
	-----		
	Station no.:	255	
	Station enabling:	yes	
	Report station failure:	yes	
	-----		
37	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		
	Baud rate for substitute telephone no.:	0	
	-----		
	Station no.:	255	
	Station enabling:	yes	
	Report station failure:	yes	
	-----		
38	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		
	Baud rate for substitute telephone no.:	0	
	-----		
	Station no.:	255	
	Station enabling:	yes	
	Report station failure:	yes	
	-----		
39	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		

	Baud rate for substitute telephone no.:	0
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
40	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
41	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
42	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
43	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
44	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
45	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
	Main telephone number	
	Baud rate for main telephone no.:	0



	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
46	Main telephone number
	Baud rate for main telephone no.: 0
	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
47	Main telephone number
	Baud rate for main telephone no.: 0
	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
48	Main telephone number
	Baud rate for main telephone no.: 0
	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
49	Main telephone number
	Baud rate for main telephone no.: 0
	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
50	Main telephone number
	Baud rate for main telephone no.: 0
	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes

51	Main telephone number	
	Baud rate for main telephone no.:	0
-----		
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
-----		
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
52	Main telephone number	
	Baud rate for main telephone no.:	0
-----		
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
-----		
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
53	Main telephone number	
	Baud rate for main telephone no.:	0
-----		
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
-----		
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
54	Main telephone number	
	Baud rate for main telephone no.:	0
-----		
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
-----		
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
55	Main telephone number	
	Baud rate for main telephone no.:	0
-----		
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
-----		
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
56	Main telephone number	
	Baud rate for main telephone no.:	0
-----		
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
-----		
	Station no.:	255

	Station enabling:	yes	
	Report station failure:	yes	
	-----		
57	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		
	Baud rate for substitute telephone no.:	0	
	-----		
	Station no.:	255	
	Station enabling:	yes	
	Report station failure:	yes	
	-----		
58	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		
	Baud rate for substitute telephone no.:	0	
	-----		
	Station no.:	255	
	Station enabling:	yes	
	Report station failure:	yes	
	-----		
59	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		
	Baud rate for substitute telephone no.:	0	
	-----		
	Station no.:	255	
	Station enabling:	yes	
	Report station failure:	yes	
	-----		
60	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		
	Baud rate for substitute telephone no.:	0	
	-----		
	Station no.:	255	
	Station enabling:	yes	
	Report station failure:	yes	
	-----		
61	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		
	Baud rate for substitute telephone no.:	0	
	-----		
	Station no.:	255	
	Station enabling:	yes	
	Report station failure:	yes	
	-----		
62	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		

	Baud rate for substitute telephone no.:	0
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
63	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
64	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
65	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
66	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
67	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
68	Main telephone number	
	Baud rate for main telephone no.:	0

	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
69	Main telephone number
	Baud rate for main telephone no.: 0
	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
70	Main telephone number
	Baud rate for main telephone no.: 0
	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
71	Main telephone number
	Baud rate for main telephone no.: 0
	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
72	Main telephone number
	Baud rate for main telephone no.: 0
	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
73	Main telephone number
	Baud rate for main telephone no.: 0
	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes

74	Main telephone number	
	Baud rate for main telephone no.:	0
-----		
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
-----		
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
75	Main telephone number	
	Baud rate for main telephone no.:	0
-----		
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
-----		
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
76	Main telephone number	
	Baud rate for main telephone no.:	0
-----		
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
-----		
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
77	Main telephone number	
	Baud rate for main telephone no.:	0
-----		
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
-----		
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
78	Main telephone number	
	Baud rate for main telephone no.:	0
-----		
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
-----		
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
79	Main telephone number	
	Baud rate for main telephone no.:	0
-----		
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
-----		
	Station no.:	255

	Station enabling:	yes	
	Report station failure:	yes	
	-----		
80	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		
	Baud rate for substitute telephone no.:	0	
	-----		
	Station no.:	255	
	Station enabling:	yes	
	Report station failure:	yes	
	-----		
81	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		
	Baud rate for substitute telephone no.:	0	
	-----		
	Station no.:	255	
	Station enabling:	yes	
	Report station failure:	yes	
	-----		
82	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		
	Baud rate for substitute telephone no.:	0	
	-----		
	Station no.:	255	
	Station enabling:	yes	
	Report station failure:	yes	
	-----		
83	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		
	Baud rate for substitute telephone no.:	0	
	-----		
	Station no.:	255	
	Station enabling:	yes	
	Report station failure:	yes	
	-----		
84	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		
	Baud rate for substitute telephone no.:	0	
	-----		
	Station no.:	255	
	Station enabling:	yes	
	Report station failure:	yes	
	-----		
85	Main telephone number		
	Baud rate for main telephone no.:	0	
	-----		
	Substitute telephone number		

	Baud rate for substitute telephone no.:	0
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
86	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
87	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
88	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
89	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
90	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
91	Main telephone number	
	Baud rate for main telephone no.:	0



	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
92	Main telephone number
	Baud rate for main telephone no.: 0
	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
93	Main telephone number
	Baud rate for main telephone no.: 0
	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
94	Main telephone number
	Baud rate for main telephone no.: 0
	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
95	Main telephone number
	Baud rate for main telephone no.: 0
	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes
96	Main telephone number
	Baud rate for main telephone no.: 0
	Substitute telephone number
	Baud rate for substitute telephone no.: 0
	Station no.: 255
	Station enabling: yes
	Report station failure: yes

97	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
98	Station no.:	255
	Station enabling:	yes
	Report station failure:	yes
	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0
	Station no.:	255
99	Station enabling:	yes
	Report station failure:	yes
	Main telephone number	
	Baud rate for main telephone no.:	0
	Substitute telephone number	
	Baud rate for substitute telephone no.:	0

## SOFTWARE TEST POINTS AND SETTINGS

CAUTION: These parameters must only be altered after consultation with the software developer.

## Debugger settings:

```

-----
Data and acknowledgement between BSE: no           CT command: SPL 01C/01
Handshake RTS,GPB (ASCII mode)      : no         CT command: SPL 01C/02
Mask for LOCK data collection        : no         CT command: SPL 01C/04
Levels lock station lock             : no         CT command: SPL 01C/08
Handshake RTS,GPB (HEX mode)        : no         CT command: SPL 01C/10
Master-Standby switchover           : no         CT command: SPL 01C/40
PRE-control messages                 : no         CT command: SPH 01C/01
STOP of the serial test recording
after communication error             : no         CT command: SPH 01C/80

Modem control                         : ys         CT command: SPL 239/01
  Triggercondition
  Step-old                            : 1F         CT command: SPL 23A/H
  Input-Nr                             : FF         CT command: SPH 23A/H
  Number to trigger                     : 1          CT command: SPL 23B/D
  Numbers of entrys after trigger       : 5          CT command: SPH 23B/D
Modem information channel             : no         CT command: SPL 239/02
Incentive-treatment                  : no         CT command: SPL 239/04

Signal delay correction RTRS          : no         CT command: SPL 01D/01
(RTRS ... real time remote synchronization)

```

## Timeout times for USER modem:

```

-----
Timeout 2                             : 100        CT command: SPS 210/D

```

Timeout 3	:	5	CT command: SPS 211/D
Timeout 4	:	600	CT command: SPS 212/D
Timeout 5	:	300	CT command: SPS 213/D
Timeout 6	:	50	CT command: SPS 214/D
Timeout 7 Active	:	10	CT command: SPS 215/D
Timeout 7 Passive	:	10	CT command: SPS 216/D
Timeout 9	:	5	CT command: SPS 217/D
Timeout A	:	300	CT command: SPS 218/D
Timeout B	:	300	CT command: SPS 219/D
Timeout D	:	5	CT command: SPS 21A/D
Timeout E	:	50	CT command: SPS 21B/D
Timeout F	:	2	CT command: SPS 21C/D
Timeout 10	:	2	CT command: SPS 21D/D
Timeout 12	:	30	CT command: SPS 21E/D
Timeout 13	:	100	CT command: SPS 21F/D
Timeout 17	:	30	CT command: SPS 220/D
Timeout 18	:	0	CT command: SPS 221/D
Timeout 19	:	30	CT command: SPS 222/D
Timeout 1C	:	200	CT command: SPS 223/D
Timeout 1D	:	10	CT command: SPS 224/D
Timeout 1E	:	10	CT command: SPS 225/D
Timeout 1F	:	10	CT command: SPS 226/D
Timeout 22	:	0	CT command: SPS 227/D
Timeout 24	:	50	CT command: SPS 228/D
Timeout 26	:	200	CT command: SPS 229/D
Timeout 27	:	200	CT command: SPS 22A/D
Timeout 28	:	2	CT command: SPS 22B/D
Timeout 2B	:	20	CT command: SPS 22C/D
Timeout 2C	:	30	CT command: SPS 22D/D