

TELINDUS

Data cables

Revision history

| Revision | Changes |
|----------|---|
| 1.7 | Incorrect use of term RJ12 replaced by RJ11 |
| 2.0 | RS530 DB25 – X21 DB15 adapter cable changed |

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1 Introduction

This document guides you to find the proper high quality cables for Telindus access devices. This document includes a number of standard and specific cables for data connectivity for ISDN, E1, G703, line and LAN. All these cables have a Telindus code to simplify ordering along with equipment.

Note that for high speed devices a low quality cable may dramatically reduce the overall performance of the high speed device. Telindus cannot be held responsible for not correctly working devices when other or low quality cables are used.

In the last chapter, pin layouts are given per cable type together with the sales codes. If a cable with a different length is desired, it can be ordered with the given sales code and the exact length in meter in the comment field. The price list shows only the price for the standard length. (extra length on request)

2 ISDN / G703 cables

Telindus access devices with G.703 or ISDN interfaces have RJ45 and BNC type connectors. In this section some cables are defined for RJ45 connectors.

2.1 ISDN BRI cables

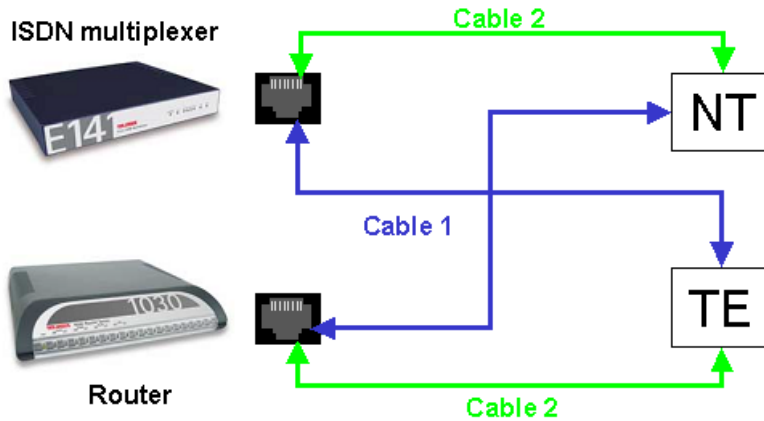


Figure 1: ISDN BRI connections

ISDN BRI interfaces have a RJ45 connector. The ISDN BRI interface on an ISDN multiplexer (e.g. ID Mux or E141) is a Network Termination (NT) interface. The ISDN BRI interface on a router (e.g. Telindus 1034 Router) is a Terminal Equipment (TE) interface. Depending on the device to connect with, a straight or cross cable is required.

| Cable | Cable layout |
|-------------------|----------------|
| ISDN BRI straight | Cable layout 1 |
| ISDN BRI cross | Cable layout 2 |

Note: The ISDN BRI interfaces on the ID-MUX have a different connector layout! These interfaces have the pin layout of an ISDN PRI interface and corresponding cables as described in the next section.

2.2 ISDN PRI/E1/G703 2M cables

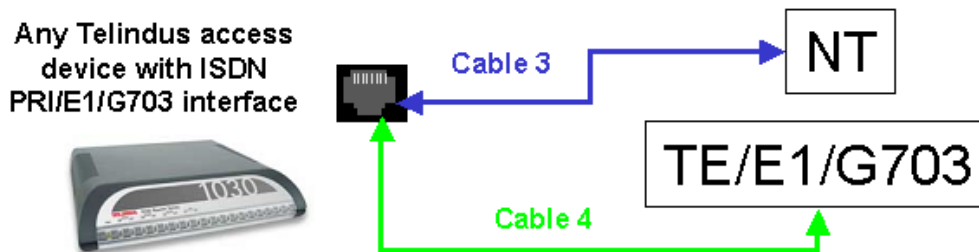


Figure 2: ISDN PRI/E1/G703 2M connections

ISDN PRI, E1 (G703 with G704 framing) and G703 interfaces all use the same physical layer. Only cables for the RJ45 connectors (120 Ohm interfaces) are given here. All Telindus access devices use the same layout. In general a cross cable is required. Only for connections to PRI NT interfaces, a straight cable is required.

| Cable | Cable layout |
|-----------------|----------------|
| PRI/E1 straight | Cable layout 3 |
| PRI/E1 cross | Cable layout 4 |

2.3 DB25 cables and patch panels

The Telindus 2300 Series has up to 4 female DB25 connectors for the G703 (E1) interfaces.

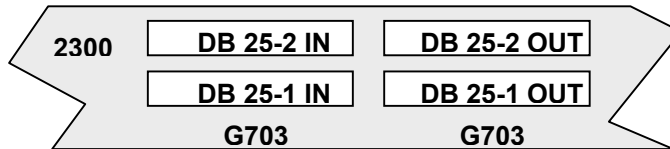


Figure 3: DB25 connectors on the Telindus 2300 Series

A cable is needed to connect to a G703 distribution frame. Such a cable has free wires on one side and a DB25 connector on the other side.

| Cable | Cable layout |
|-------------------|----------------|
| DB25 – free wires | Cable layout 5 |

Sometimes customers need a patch panel with RJ45 connectors for a flexible set-up (see figure below). There are dedicated codes for such a patch panels (code: 133017 with 24x RJ45 connectors) where the DB25 cables can be connected to. See chapter 7.

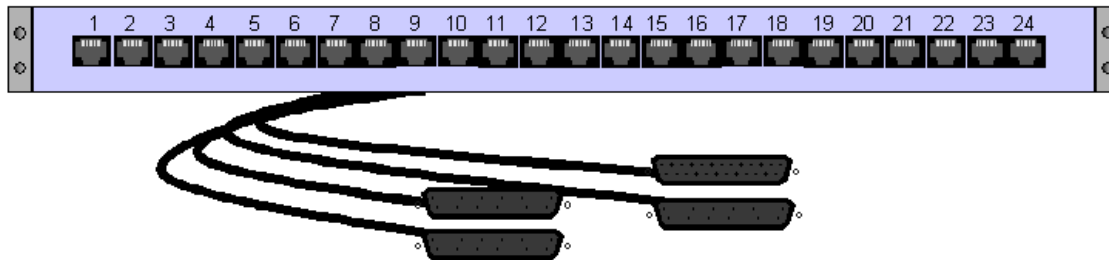


Figure 4: patch panel and DB25 connector assembly

The tables below show how to connect the cables to the patch panel or to separate RJ45 connectors.

G703 on lower DB25 connector IN or OUT

| DB25 pin | Wire colour | Line X | | Wire colour | DB25 pin |
|----------|-------------|--------|-----|-------------|----------|
| 1 | Shield | Shield | | | |
| 2 | Blue Nr1 | 1A | 1B | Red Nr1 | 14 |
| 3 | Blue Nr2 | 2A | 2B | Red Nr2 | 15 |
| 4 | Blue Nr3 | 3A | 3B | Red Nr3 | 16 |
| 5 | Blue Nr4 | 4A | 4B | Red Nr4 | 17 |
| 6 | Blue Nr5 | 5A | 5B | Red Nr5 | 18 |
| 7 | Blue Nr6 | 6A | 6B | Red Nr6 | 19 |
| 8 | Blue Nr7 | 7A | 7B | Red Nr7 | 20 |
| 9 | Blue Nr8 | 8A | 8B | Red Nr8 | 21 |
| 10 | Blue Nr9 | 17A | 17B | Red Nr9 | 22 |
| 11 | Blue Nr10 | 18A | 18B | Red Nr10 | 23 |
| 12 | Blue Nr11 | 19A | 19B | Red Nr11 | 24 |
| 13 | Blue Nr12 | 20A | 20B | Red Nr12 | 25 |

RJ45 Panel

| G703 RJ45 X | |
|-------------|-------|
| 1 | OUT A |
| 2 | OUT B |
| 3 | |
| 4 | IN A |
| 5 | IN B |
| 6 | |
| 7 | |
| 8 | |



G703 on higher DB25 connector IN or OUT

| DB25 pin | Wire colour | Line X | | Wire colour | DB25 pin |
|----------|-------------|--------|-----|-------------|----------|
| 1 | Shield | Shield | | | |
| 2 | Blue Nr1 | 9A | 9B | Red Nr1 | 14 |
| 3 | Blue Nr2 | 10A | 10B | Red Nr2 | 15 |
| 4 | Blue Nr3 | 11A | 11B | Red Nr3 | 16 |
| 5 | Blue Nr4 | 12A | 12B | Red Nr4 | 17 |
| 6 | Blue Nr5 | 13A | 13B | Red Nr5 | 18 |
| 7 | Blue Nr6 | 14A | 14B | Red Nr6 | 19 |
| 8 | Blue Nr7 | 15A | 15B | Red Nr7 | 20 |
| 9 | Blue Nr8 | 16A | 16B | Red Nr8 | 21 |
| 10 | Blue Nr9 | 21A | 21B | Red Nr9 | 22 |
| 11 | Blue Nr10 | 22A | 22B | Red Nr10 | 23 |
| 12 | Blue Nr11 | 23A | 23B | Red Nr11 | 24 |
| 13 | Blue Nr12 | 24A | 24B | Red Nr12 | 25 |

RJ45 Panel

| G703 X | RJ45 |
|--------|-------|
| 1 | OUT A |
| 2 | OUT B |
| 3 | |
| 4 | IN A |
| 5 | IN B |
| 6 | |
| 7 | |
| 8 | |



The following figure and table show all interconnection data required to connect all G703 interfaces from the Telindus 2300 Series to the RJ45 patch panel code 133017:

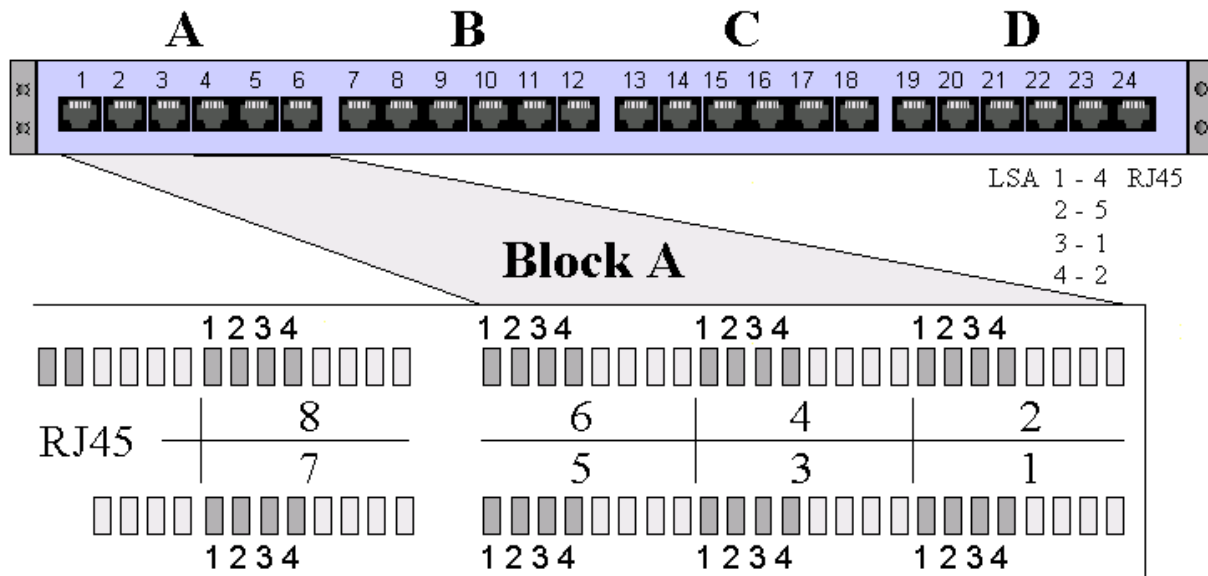


Figure 5: Patch panel code 133017 front and back view.

Note that the numbering on the picture is, except for the front numbering 1 to 24, not present on the unit itself. However you can clearly distinguish the 4 different "Blocks" that we call A, B, C & D in the following Connection table. Each block is divided into 6 distinguish sub-parts, that we call A (1), A (2)...A(6), B (7), B (8)etc in the Connection table. Each sub-part has 8 LSA connection terminals. For this application, only 4 LSA connection terminals (1 to 4) are used.

| DB25 | pin | colour | Block | LSA pin | RJ45 Nr | RJ45 funct | RJ45 pin |
|------------|-----|----------|-------|---------|---------|------------|----------|
| DB25-1 IN | 2 | Blue Nr1 | A (1) | 1 | 1 | IN A | 4 |
| DB25-1 IN | 14 | Red Nr1 | A (1) | 2 | 1 | IN B | 5 |
| DB25-1 OUT | 2 | Blue Nr1 | A (1) | 3 | 1 | OUT A | 1 |
| DB25-1 OUT | 14 | Red Nr1 | A (1) | 4 | 1 | OUT B | 2 |

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| | | | | | | | |
|------------|----|----------|--------|---|----|-------|---|
| | | | | | | | |
| DB25-1 IN | 3 | Blue Nr2 | A (2) | 1 | 2 | IN A | 4 |
| DB25-1 IN | 15 | Red Nr2 | A (2) | 2 | 2 | IN B | 5 |
| DB25-1 OUT | 3 | Blue Nr2 | A (2) | 3 | 2 | OUT A | 1 |
| DB25-1 OUT | 15 | Red Nr2 | A (2) | 4 | 2 | OUT B | 2 |
| | | | | | | | |
| DB25-1 IN | 4 | Blue Nr3 | A (3) | 1 | 3 | IN A | 4 |
| DB25-1 IN | 16 | Red Nr3 | A (3) | 2 | 3 | IN B | 5 |
| DB25-1 OUT | 4 | Blue Nr3 | A (3) | 3 | 3 | OUT A | 1 |
| DB25-1 OUT | 16 | Red Nr3 | A (3) | 4 | 3 | OUT B | 2 |
| | | | | | | | |
| DB25-1 IN | 5 | Blue Nr4 | A (4) | 1 | 4 | IN A | 4 |
| DB25-1 IN | 17 | Red Nr4 | A (4) | 2 | 4 | IN B | 5 |
| DB25-1 OUT | 5 | Blue Nr4 | A (4) | 3 | 4 | OUT A | 1 |
| DB25-1 OUT | 17 | Red Nr4 | A (4) | 4 | 4 | OUT B | 2 |
| | | | | | | | |
| DB25-1 IN | 6 | Blue Nr5 | A (5) | 1 | 5 | IN A | 4 |
| DB25-1 IN | 18 | Red Nr5 | A (5) | 2 | 5 | IN B | 5 |
| DB25-1 OUT | 6 | Blue Nr5 | A (5) | 3 | 5 | OUT A | 1 |
| DB25-1 OUT | 18 | Red Nr5 | A (5) | 4 | 5 | OUT B | 2 |
| | | | | | | | |
| DB25-1 IN | 7 | Blue Nr6 | A (6) | 1 | 6 | IN A | 4 |
| DB25-1 IN | 19 | Red Nr6 | A (6) | 2 | 6 | IN B | 5 |
| DB25-1 OUT | 7 | Blue Nr6 | A (6) | 3 | 6 | OUT A | 1 |
| DB25-1 OUT | 19 | Red Nr6 | A (6) | 4 | 6 | OUT B | 2 |
| | | | | | | | |
| DB25-1 IN | 8 | Blue Nr7 | B (7) | 1 | 7 | IN A | 4 |
| DB25-1 IN | 20 | Red Nr7 | B (7) | 2 | 7 | IN B | 5 |
| DB25-1 OUT | 8 | Blue Nr7 | B (7) | 3 | 7 | OUT A | 1 |
| DB25-1 OUT | 20 | Red Nr7 | B (7) | 4 | 7 | OUT B | 2 |
| | | | | | | | |
| DB25-1 IN | 9 | Blue Nr8 | B (8) | 1 | 8 | IN A | 4 |
| DB25-1 IN | 21 | Red Nr8 | B (8) | 2 | 8 | IN B | 5 |
| DB25-1 OUT | 9 | Blue Nr8 | B (8) | 3 | 8 | OUT A | 1 |
| DB25-1 OUT | 21 | Red Nr8 | B (8) | 4 | 8 | OUT B | 2 |
| | | | | | | | |
| DB25-2 IN | 2 | Blue Nr1 | B (9) | 1 | 9 | IN A | 4 |
| DB25-2 IN | 14 | Red Nr1 | B (9) | 2 | 9 | IN B | 5 |
| DB25-2 OUT | 2 | Blue Nr1 | B (9) | 3 | 9 | OUT A | 1 |
| DB25-2 OUT | 14 | Red Nr1 | B (9) | 4 | 9 | OUT B | 2 |
| | | | | | | | |
| DB25-2 IN | 3 | Blue Nr2 | B (10) | 1 | 10 | IN A | 4 |
| DB25-2 IN | 15 | Red Nr2 | B (10) | 2 | 10 | IN B | 5 |
| DB25-2 OUT | 3 | Blue Nr2 | B (10) | 3 | 10 | OUT A | 1 |
| DB25-2 OUT | 15 | Red Nr2 | B (10) | 4 | 10 | OUT B | 2 |
| | | | | | | | |
| DB25-2 IN | 4 | Blue Nr3 | B (11) | 1 | 11 | IN A | 4 |
| DB25-2 IN | 16 | Red Nr3 | B (11) | 2 | 11 | IN B | 5 |
| DB25-2 OUT | 4 | Blue Nr3 | B (11) | 3 | 11 | OUT A | 1 |

Data cables

| | | | | | | | |
|------------|----|-----------|--------|---|----|-------|---|
| DB25-2 OUT | 16 | Red Nr3 | B (11) | 4 | 11 | OUT B | 2 |
| | | | | | | | |
| DB25-2 IN | 5 | Blue Nr4 | B (12) | 1 | 12 | IN A | 4 |
| DB25-2 IN | 17 | Red Nr4 | B (12) | 2 | 12 | IN B | 5 |
| DB25-2 OUT | 5 | Blue Nr4 | B (12) | 3 | 12 | OUT A | 1 |
| DB25-2 OUT | 17 | Red Nr4 | B (12) | 4 | 12 | OUT B | 2 |
| | | | | | | | |
| DB25-2 IN | 6 | Blue Nr5 | C (13) | 1 | 13 | IN A | 4 |
| DB25-2 IN | 18 | Red Nr5 | C (13) | 2 | 13 | IN B | 5 |
| DB25-2 OUT | 6 | Blue Nr5 | C (13) | 3 | 13 | OUT A | 1 |
| DB25-2 OUT | 18 | Red Nr5 | C (13) | 4 | 13 | OUT B | 2 |
| | | | | | | | |
| DB25-2 IN | 7 | Blue Nr6 | C (14) | 1 | 14 | IN A | 4 |
| DB25-2 IN | 19 | Red Nr6 | C (14) | 2 | 14 | IN B | 5 |
| DB25-2 OUT | 7 | Blue Nr6 | C (14) | 3 | 14 | OUT A | 1 |
| DB25-2 OUT | 19 | Red Nr6 | C (14) | 4 | 14 | OUT B | 2 |
| | | | | | | | |
| DB25-2 IN | 8 | Blue Nr7 | C (15) | 1 | 15 | IN A | 4 |
| DB25-2 IN | 20 | Red Nr7 | C (15) | 2 | 15 | IN B | 5 |
| DB25-2 OUT | 8 | Blue Nr7 | C (15) | 3 | 15 | OUT A | 1 |
| DB25-2 OUT | 20 | Red Nr7 | C (15) | 4 | 15 | OUT B | 2 |
| | | | | | | | |
| DB25-2 IN | 9 | Blue Nr8 | C (16) | 1 | 16 | IN A | 4 |
| DB25-2 IN | 21 | Red Nr8 | C (16) | 2 | 16 | IN B | 5 |
| DB25-2 OUT | 9 | Blue Nr8 | C (16) | 3 | 16 | OUT A | 1 |
| DB25-2 OUT | 21 | Red Nr8 | C (16) | 4 | 16 | OUT B | 2 |
| | | | | | | | |
| DB25-1 IN | 10 | Blue Nr9 | C (17) | 1 | 17 | IN A | 4 |
| DB25-1 IN | 22 | Red Nr9 | C (17) | 2 | 17 | IN B | 5 |
| DB25-1 OUT | 10 | Blue Nr9 | C (17) | 3 | 17 | OUT A | 1 |
| DB25-1 OUT | 22 | Red Nr9 | C (17) | 4 | 17 | OUT B | 2 |
| | | | | | | | |
| DB25-1 IN | 11 | Blue Nr10 | C (18) | 1 | 18 | IN A | 4 |
| DB25-1 IN | 23 | Red Nr10 | C (18) | 2 | 18 | IN B | 5 |
| DB25-1 OUT | 11 | Blue Nr10 | C (18) | 3 | 18 | OUT A | 1 |
| DB25-1 OUT | 23 | Red Nr10 | C (18) | 4 | 18 | OUT B | 2 |
| | | | | | | | |
| DB25-1 IN | 12 | Blue Nr11 | D (19) | 1 | 19 | IN A | 4 |
| DB25-1 IN | 24 | Red Nr11 | D (19) | 2 | 19 | IN B | 5 |
| DB25-1 OUT | 12 | Blue Nr11 | D (19) | 3 | 19 | OUT A | 1 |
| DB25-1 OUT | 24 | Red Nr11 | D (19) | 4 | 19 | OUT B | 2 |
| | | | | | | | |
| DB25-1 IN | 13 | Blue Nr12 | D (20) | 1 | 20 | IN A | 4 |
| DB25-1 IN | 25 | Red Nr12 | D (20) | 2 | 20 | IN B | 5 |
| DB25-1 OUT | 13 | Blue Nr12 | D (20) | 3 | 20 | OUT A | 1 |
| DB25-1 OUT | 25 | Red Nr12 | D (20) | 4 | 20 | OUT B | 2 |
| | | | | | | | |
| DB25-2 IN | 10 | Blue Nr9 | D (21) | 1 | 21 | IN A | 4 |
| DB25-2 IN | 22 | Red Nr9 | D (21) | 2 | 21 | IN B | 5 |

| | | | | | | | |
|------------|----|-----------|--------|---|----|-------|---|
| DB25-2 OUT | 10 | Blue Nr9 | D (21) | 3 | 21 | OUT A | 1 |
| DB25-2 OUT | 22 | Red Nr9 | D (21) | 4 | 21 | OUT B | 2 |
| | | | | | | | |
| DB25-2 IN | 11 | Blue Nr10 | D (22) | 1 | 22 | IN A | 4 |
| DB25-2 IN | 23 | Red Nr10 | D (22) | 2 | 22 | IN B | 5 |
| DB25-2 OUT | 11 | Blue Nr10 | D (22) | 3 | 22 | OUT A | 1 |
| DB25-2 OUT | 23 | Red Nr10 | D (22) | 4 | 22 | OUT B | 2 |
| | | | | | | | |
| DB25-2 IN | 12 | Blue Nr11 | D (23) | 1 | 23 | IN A | 4 |
| DB25-2 IN | 24 | Red Nr11 | D (23) | 2 | 23 | IN B | 5 |
| DB25-2 OUT | 12 | Blue Nr11 | D (23) | 3 | 23 | OUT A | 1 |
| DB25-2 OUT | 24 | Red Nr11 | D (23) | 4 | 23 | OUT B | 2 |
| | | | | | | | |
| DB25-2 IN | 13 | Blue Nr12 | D (24) | 1 | 24 | IN A | 4 |
| DB25-2 IN | 25 | Red Nr12 | D (24) | 2 | 24 | IN B | 5 |
| DB25-2 OUT | 13 | Blue Nr12 | D (24) | 3 | 24 | OUT A | 1 |
| DB25-2 OUT | 25 | Red Nr12 | D (24) | 4 | 24 | OUT B | 2 |

2.4 Split cable for TIM 6E1 interface

The TIM 6E1 interface has 6 RJ45 connectors. On two of them (5 and 6), two G703 interfaces are present instead of one by using the remaining pins on the connector for a second G703. If the 6E1 interface is used for PPP/MLPPP or Frame Relay/MLFR operation, up to 8 E1s can be used. Cables are defined to split the 2 G703 interfaces on one connector into 2 G703 interfaces on 2 RJ45 connectors. These cables split at approximately 20 cm of the split ends, i.e. the split side connectors are at approximately 40cm of each other.

| Cable | Cable layout |
|--------------------|-----------------|
| RJ45 – 2*RJ45 G703 | Cable layout 31 |

3 Line cables

3.1 Standard cables

In this section RJ11 and RJ45 line cables are described. Some devices have a RJ11 connector, other devices have a RJ45 connector. Please consult the manual of each device for the correct selection. All line cables are straight cables and can be used both for a single pair and a 2 pair line connection.

| Cable | Cable layout |
|-------------|----------------|
| RJ11 – RJ11 | Cable layout 6 |
| RJ11 – RJ45 | Cable layout 7 |
| RJ45 – RJ45 | Cable layout 8 |

3.2 Connecting cables with diameter too large for RJ45

The standard for line connection is now RJ45. However when a cable has to be connected with a larger diameter than possible with a standard RJ45, a kind of adapter is required. Such an adapter can be ordered at Telindus as ADAPTER CABLE RJ45 TO SCREW CONNECTION code: 185322

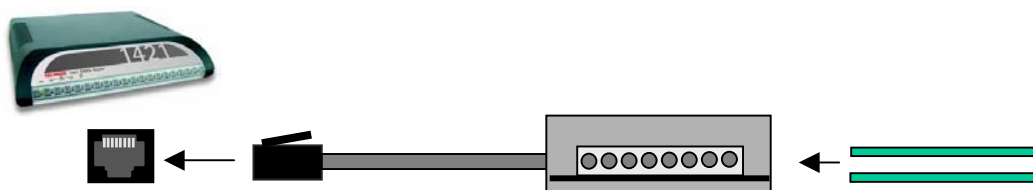


Figure 6: Adapter RJ45 to screw connection.

3.3 Split cable for SHDSL 2P modems

The SHDSL 2P modems have a single RJ11 or RJ45 connector for both lines. Sometimes this should be connected to 2 different line plugs. Therefore split cables are available. These cables split at approximately 20 cm of the split ends, i.e. the split side connectors are at approximately 40cm of each other.

| Cable | Cable layout |
|-----------------|-----------------|
| RJ11 – 2 * RJ11 | Cable layout 9 |
| RJ11 – 2 * RJ45 | Cable layout 10 |
| RJ45 – 2 * RJ11 | Cable layout 11 |
| RJ45 – 2 * RJ45 | Cable layout 12 |

3.4 Telco cables and patch panels

Central office devices like the Telindus 2300 Series and Telindus 2400 Series have a 50 pins TELCO connector for the lines. Often customers need a cable to a distribution frame. Such a cable has free wires on one side and a male TELCO connector on the other side. Another common cable type has 2 male TELCO connectors.

Sometimes customers need a patch panel with RJ45 connectors for a flexible set-up (see figure below). There is a dedicated code for a patch panel with 24 RJ45 connectors (code: 133017 with 24x RJ45 connectors) where the TELCO cable can be connected to. See chapter 5.4.

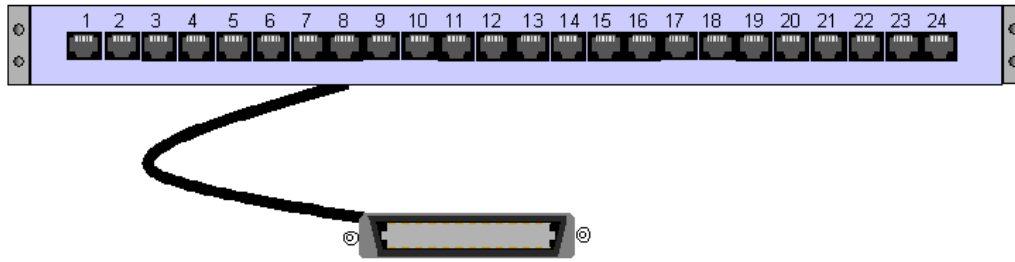


Figure 7: patch panel and TELCO connector assembly

| Cable | Cable layout |
|--------------------|-----------------|
| TELCO – free wires | Cable layout 13 |
| TELCO - TELCO | Cable layout 13 |

The following figure and table show all interconnection data required to connect the TELCO connector of the Telindus 2300 and 2400 Series to the RJ45 patch panel code 133017:

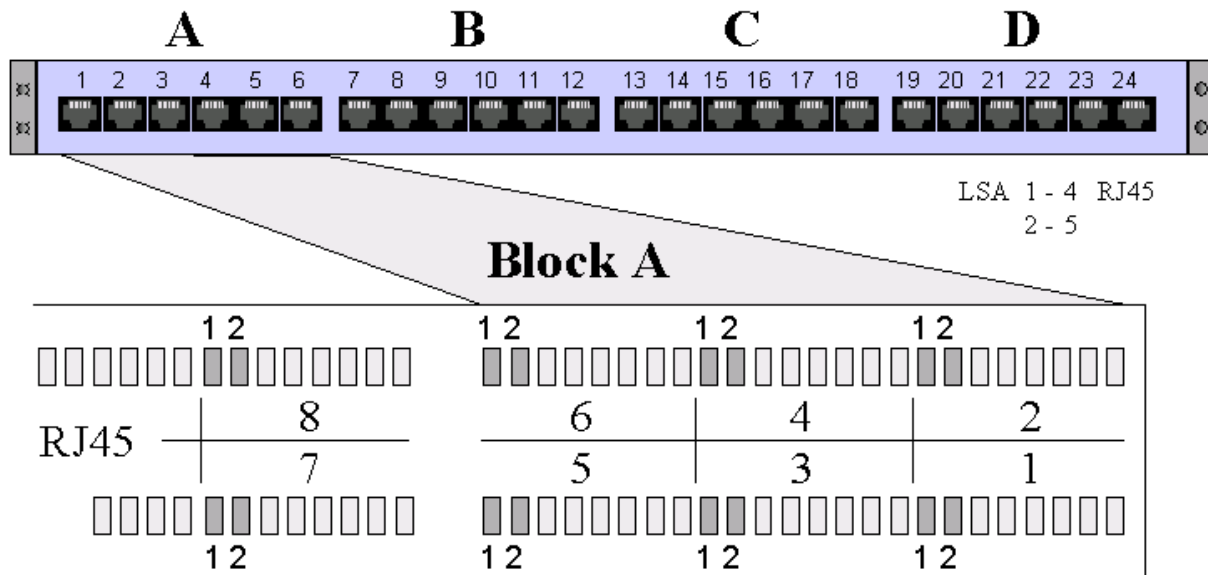


Figure 8: patch panel and TELCO connector assembly

Note that the numbering on the picture is, except for the front numbering 1 to 24, not present on the unit itself. However you can clearly distinguish the 4 different “Blocks” that we call A, B, C & D. in the following Connection table. Each block is divided into 6 distinguish sub-parts, that we call A (1), A (2)...A(6), B (7), B (8)etc in the Connection table. Each sub-part has 8 LSA connection terminals. For this application, only 2 LSA connection terminals (1&2) are used.

| Telco pin | Telco funct | colour | Block | LSA pin | RJ45 Nr | RJ45 pin |
|-----------|-------------|----------------|-------|---------|---------|----------|
| 1 | Line 1 Ring | white – blue | A (1) | 1 | 1 | 4 |
| 26 | Line 1 Tip | blue – white | A (1) | 2 | 1 | 5 |
| 2 | Line 2 Ring | white – orange | A (2) | 1 | 2 | 4 |
| 27 | Line 2 Tip | orange – white | A (2) | 2 | 2 | 5 |

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| | | | | | | |
|----|--------------|-----------------|--------|---|----|---|
| 3 | Line 3 Ring | white – green | A (3) | 1 | 3 | 4 |
| 28 | Line 3 Tip | green – white | A (3) | 2 | 3 | 5 |
| 4 | Line 4 Ring | white – brown | A (4) | 1 | 4 | 4 |
| 29 | Line 4 Tip | brown – white | A (4) | 2 | 4 | 5 |
| 5 | Line 5 Ring | white – grey | A (5) | 1 | 5 | 4 |
| 30 | Line 5 Tip | grey – white | A (5) | 2 | 5 | 5 |
| 6 | Line 6 Ring | red – blue | A (6) | 1 | 6 | 4 |
| 31 | Line 6 Tip | blue – red | A (6) | 2 | 6 | 5 |
| 7 | Line 7 Ring | red – orange | B (7) | 1 | 7 | 4 |
| 32 | Line 7 Tip | orange – red | B (7) | 2 | 7 | 5 |
| 8 | Line 8 Ring | red- green | B (8) | 1 | 8 | 4 |
| 33 | Line 8 Tip | green – red | B (8) | 2 | 8 | 5 |
| 9 | Line 9 Ring | red- brown | B (9) | 1 | 9 | 4 |
| 34 | Line 9 Tip | brown – red | B (9) | 2 | 9 | 5 |
| 10 | Line 10 Ring | red – grey | B (10) | 1 | 10 | 4 |
| 35 | Line 10 Tip | grey – red | B (10) | 2 | 10 | 5 |
| 11 | Line 11 Ring | black – blue | B (11) | 1 | 11 | 4 |
| 36 | Line 11 Tip | blue – black | B (11) | 2 | 11 | 5 |
| 12 | Line 12 Ring | black – orange | B (12) | 1 | 12 | 4 |
| 37 | Line 12 Tip | orange – black | B (12) | 2 | 12 | 5 |
| 13 | Line 13 Ring | black – green | B (13) | 1 | 13 | 4 |
| 38 | Line 13 Tip | green – black | B (13) | 2 | 13 | 5 |
| 14 | Line 14 Ring | black – brown | B (14) | 1 | 14 | 4 |
| 39 | Line 14 Tip | brown – black | B (14) | 2 | 14 | 5 |
| 15 | Line 15 Ring | black – grey | B (15) | 1 | 15 | 4 |
| 40 | Line 15 Tip | grey – black | B (15) | 2 | 15 | 5 |
| 16 | Line 16 Ring | yellow- blue | B (16) | 1 | 16 | 4 |
| 41 | Line 16 Tip | blue – yellow | B (16) | 2 | 16 | 5 |
| 17 | Line 17 Ring | yellow- orange | B (17) | 1 | 17 | 4 |
| 42 | Line 17 Tip | orange – yellow | B (17) | 2 | 17 | 5 |
| 18 | Line 18 Ring | yellow – green | B (18) | 1 | 18 | 4 |
| 43 | Line 18 Tip | green – yellow | B (18) | 2 | 18 | 5 |

Data cables

| | | | | | | |
|----|--------------|-----------------|--------|---|----|---|
| 19 | Line 19 Ring | yellow- brown | B (19) | 1 | 19 | 4 |
| 44 | Line 19 Tip | brown – yellow | B (19) | 2 | 19 | 5 |
| | | | | | | |
| 20 | Line 20 Ring | yellow- grey | B (20) | 1 | 20 | 4 |
| 45 | Line 20 Tip | grey – yellow | B (20) | 2 | 20 | 5 |
| | | | | | | |
| 21 | Line 21 Ring | purple – blue | B (21) | 1 | 21 | 4 |
| 46 | Line 21 Tip | blue – purple | B (21) | 2 | 21 | 5 |
| | | | | | | |
| 22 | Line 22 Ring | purple – orange | B (22) | 1 | 22 | 4 |
| 47 | Line 22 Tip | orange – purple | B (22) | 2 | 22 | 5 |
| | | | | | | |
| 23 | Line 23 Ring | purple – green | B (23) | 1 | 23 | 4 |
| 48 | Line 23 Tip | green – purple | B (23) | 2 | 23 | 5 |
| | | | | | | |
| 24 | Line 24 Ring | purple – brown | B (24) | 1 | 24 | 4 |
| 49 | Line 24 Tip | brown – purple | B (24) | 2 | 24 | 5 |
| | | | | | | |
| 25 | Shield | | | | | |
| 50 | Shield | | | | | |

4 LAN cables



Figure 9: LAN cables

Telindus access devices have Ethernet interfaces with RJ45 TPI (Twisted Pair Interface) connectors. There are straight cables for connection to an Ethernet hub or switch and cross cables for direct connection to another LAN device.

| Cable | Cable layout |
|----------------------|-----------------|
| RJ45 – RJ45 straight | Cable layout 14 |
| RJ45 – RJ45 cross | Cable layout 15 |

5 Serial cables

In this section a number of cables for serial connectors are described.

5.1 Straight serial cables

There are also sales items available for a number of straight serial cables for V.35, X.21 and RS530/V.24.

| Straight cables for ... | use ... |
|-------------------------|-----------------|
| V.35 interface | Cable Layout 25 |
| X.21 interface | Cable Layout 26 |
| RS530/V.24 interface | Cable Layout 27 |

5.2 RS530 conversion cables

A number of Telindus access devices have a fixed RS530 serial interface. Conversion cables are available for use with V.35, V.36 and X.21 interfaces. Different cables are used for DTE RS530 interfaces (e.g. on a router) and DCE RS530 interfaces (on modems (ASTER 5) and ISDN multiplexers). The straps on the device must be set to the correct V.10/V.11/V.24 selections.

| To connect the ... | with a ..., | use ... |
|---------------------|--------------------|-----------------|
| DTE RS530 interface | DCE V.35 interface | Cable Layout 16 |
| DTE RS530 interface | DCE V.36 interface | Cable Layout 17 |
| DTE RS530 interface | DCE X.21 interface | Cable Layout 18 |
| DCE RS530 interface | DTE V.35 interface | Cable Layout 16 |
| DCE RS530 interface | DTE V.36 interface | Cable Layout 19 |
| DCE RS530 interface | DTE X.21 interface | Cable Layout 20 |

5.3 Conversion cable for the Crocus Dual Port Interface

The Crocus G703 – Serial Dual Port Interface (code 177458) has a high density DB26 connector for the serial interface. Conversion cables are available for use with V.35, V.36, X.21 and RS530 DTE interfaces. The straps on the device must be set to the correct V.10/V.11 selections.

| To connect the DB26 connector with a..., | use ... |
|--|------------------|
| V.35 interface | Cable Layout 21a |
| V.36 interface | Cable Layout 22a |
| X.21 interface | Cable Layout 23a |
| RS530 interface | Cable Layout 24a |

5.4 Conversion cable for the Telindus 1035 CV RS530 interface

The Telindus 1035 CV has a high density DB26 connector for the RS530 serial interface. Conversion cables are available for use with V.35, V.36, X.21 and RS530 DTE interfaces. The straps on the device must be set to the correct V.10/V.11 selections.

| To connect the DB26 connector with a..., | use ... |
|--|------------------|
| V.35 interface | Cable Layout 21b |
| V.36 interface | Cable Layout 22b |
| X.21 interface | Cable Layout 23b |
| RS530 interface | Cable Layout 24b |

5.5 Conversion cables for Datax VXI extension board

The ID MUX and PRI MUX may have an extension board for additional serial interfaces. This board has high-density AMP connectors. Conversion cables are available for use with V.35, V.36 and X.21 DTE interfaces. The straps on the device must be set to the correct V.10/V.11 selections.

| To connect the VX connector with a..., | use ... |
|--|-----------------|
| V.35 interface | Cable Layout 28 |
| V.36 interface | Cable Layout 29 |
| X.21 interface | Cable Layout 30 |

6 Fibre cables

A number of patch cables exist for single fibre optic connections as listed in the table below.

| Sales Code | Description |
|------------|--------------------------------|
| 172741 | FO PATCHCBL SC/PC_FC/PC_2M |
| 172742 | FO PATCHCBL SC/PC_FC/PC_5M |
| 172743 | FO PATCHCBL SC/PC_FC/PC_10M |
| 172744 | FO PATCHCBL SC/PC_FC/APC_8_2M |
| 172745 | FO PATCHCBL SC/PC_FC/APC_8_5M |
| 172746 | FO PATCHCBL SC/PC_FC/APC_8_10M |
| 172735 | FO PATCHCBL SC/PC_SC/APC_8_2M |
| 172736 | FO PATCHCBL SC/PC_SC/APC_8_5M |
| 172737 | FO PATCHCBL SC/PC_SC/APC_8_10M |
| 172738 | FO PATCHCBL SC/PC_SC/APC_9_2M |
| 172739 | FO PATCHCBL SC/PC_SC/APC_9_5M |
| 172740 | FO PATCHCBL SC/PC_SC/APC_9_10M |
| 177623 | FO PATCHCBL SC/PC_ST_2M |
| 177625 | FO PATCHCBL SC/PC_ST_5M |
| 177622 | FO PATCHCBL SC/PC_ST_10M |

7 Patch panels

Sales codes are available for patch panels with RJ45 connectors. These patch panels may be suitable to split high-density connectors like TELCO cables into individual RJ45 connectors.

The following sales codes are available:

| Sales Code | Description |
|-------------------|--|
| 133017 | PATCHPANEL 24 * RJ45 TO LSA PLUS CL5 AMP |
| 133018 | PATCHPANEL 48 * RJ45 TO LSA PLUS CL5 AMP |
| 133019 | PATCHPANEL 96 * RJ45 TO LSA PLUS CL5 AMP |

8 Cable specifications

8.1 Preliminary remarks

In the cable definitions input and output signals are mentioned between brackets where applicable. I = Input, O = output.

The cable types are mentioned in one of the following formats: $n * sf$, $n*2 * sf$, $n * CATi$ or $n*2 * CATi$ with

- n = number of wires in the cable. The wires are not twisted.
- $n*2$ = number of twisted pairs in the cable
- sf = the surface of the wire cross-section in mm^2 . A surface of $0,14mm^2$ matches a diameter of $0,4mm$ or 26AWG. A surface of $0,20mm^2$ matches a diameter of $0,5mm$ or 24 AWG. Cables mentioned with a surface use stranded wires.
- $CATi$ = category i cable (e.g. CAT5E); the CAT5E cable in use has solid $0,5mm$ wires. They are twisted per pair.

Cables are shielded or unshielded. The shielded cables in use are foiled cables (FTP).

Male connectors are indicated with M after the connector type. Female connectors are indicated with F after the connector type.

8.2 Cable layout 1

The cable type is 4*2*CAT5E shielded. This cable has the same layout as cable 3.

Straight cable layout RJ45 – RJ45 for BRI connection

| RJ45 male connector | RJ45 male connector | Cable Pair |
|-------------------------|-------------------------|------------|
| 1 Unused (+) | 1 Unused (+) | 1 |
| 2 Unused (-) | 2 Unused (-) | 1 |
| 3 Receive pair (+) (I) | 3 Receive pair (+) (O) | 2 |
| 4 Transmit Pair (+) (O) | 4 Transmit Pair (+) (I) | 3 |
| 5 Transmit Pair (-) (O) | 5 Transmit Pair (-) (I) | 3 |
| 6 Receive Pair (-) (I) | 6 Receive Pair (-) (O) | 2 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|--------------------------------------|
| 146567 | 2 M | DX_C2DMM_R45_R45 |
| 182925 | 1 M | CBL PRI/E1/BRI RJ45-RJ45 STRAIGHT 1M |
| 182926 | 3 M | CBL PRI/E1/BRI RJ45-RJ45 STRAIGHT 3M |
| 182927 | 5 M | CBL PRI/E1/BRI RJ45-RJ45 STRAIGHT 5M |

8.3 Cable layout 2

The cable type is 2*2*CAT5E shielded.

Cross cable layout RJ45 – RJ45

| RJ45 male connector | RJ45 male connector | Cable Pair |
|-------------------------|-------------------------|------------|
| 3 Receive pair (+) (I) | 4 Receive pair (+) (O) | 2 |
| 4 Transmit Pair (+) (O) | 3 Transmit Pair (+) (I) | 1 |
| 5 Transmit Pair (-) (O) | 6 Transmit Pair (-) (I) | 1 |
| 6 Receive Pair (-) (I) | 5 Receive Pair (-) (O) | 2 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|----------------------------|
| 162350 | 2 M | DX_C2XMM_R45_BRI |
| 182931 | 1 M | CBL BRI RJ45-RJ45 CROSS 1M |
| 182932 | 3 M | CBL BRI RJ45-RJ45 CROSS 3M |
| 182933 | 5 M | CBL BRI RJ45-RJ45 CROSS 5M |

8.4 Cable layout 3

The cable type is 4*2*CAT5E shielded. This cable has the same layout as cable 1.

Straight cable layout RJ45 – RJ45 for PRI

| RJ45 male connector | RJ45 male connector | Cable Pair |
|-------------------------|-------------------------|------------|
| 1 Transmit pair (+) (O) | 1 Transmit pair (+) (I) | 1 |
| 2 Transmit Pair (-) (O) | 2 Transmit Pair (-) (I) | 1 |
| 3 Unused (+) | 3 Unused (+) | 2 |
| 4 Receive Pair (+) (I) | 4 Receive Pair (+) (O) | 3 |
| 5 Receive Pair (-) (I) | 5 Receive Pair (-) (O) | 3 |
| 6 Unused (+) | 6 Unused (-) | 2 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|--------------------------------------|
| 146567 | 2 M | DX_C2DMM_R45_R45 |
| 182925 | 1 M | CBL PRI/E1/BRI RJ45-RJ45 STRAIGHT 1M |
| 182926 | 3 M | CBL PRI/E1/BRI RJ45-RJ45 STRAIGHT 3M |
| 182927 | 5 M | CBL PRI/E1/BRI RJ45-RJ45 STRAIGHT 5M |

8.5 Cable layout 4

The cable type is 2*2*CAT5E shielded.

Cross cable layout RJ45 – RJ45

| RJ45 | RJ45 | Cable Pair |
|-------------------------|-------------------------|------------|
| 1 Transmit pair (+) (O) | 4 Receive Pair (+) (I) | 1 |
| 2 Transmit Pair (-) (O) | 5 Receive Pair (-) (I) | 1 |
| 4 Receive Pair (+) (I) | 1 Transmit pair (+) (O) | 2 |
| 5 Receive Pair (-) (I) | 2 Transmit Pair (-) (O) | 2 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|-------------------------------|
| 153297 | 2 M | DX_C2_XMM-R45-R45 |
| 182928 | 1 M | CBL PRI/E1 RJ45-RJ45 CROSS 1M |
| 182929 | 3 M | CBL PRI/E1 RJ45-RJ45 CROSS 3M |
| 182930 | 5 M | CBL PRI/E1 RJ45-RJ45 CROSS 5M |

8.6 Cable layout 5

The cable type is TILOTEX 12/2 HF L 904 shielded. (=186236)

This cable has 12 “numbered” (from 1 to 12) twisted pairs colored Blue/Red

Cable layout DB25 – free wires and assembly layout

| DB25 pin | Wire colour | Cable Pair | DB25 pin | Wire colour | Cable Pair |
|----------|-------------|------------|----------|-------------|------------|
| 1 | Shield | | | | |
| 2 | Blue | Nr 1 | 14 | Red | Nr 1 |
| 3 | Blue | Nr 2 | 15 | Red | Nr 2 |
| 4 | Blue | Nr 3 | 16 | Red | Nr 3 |
| 5 | Blue | Nr 4 | 17 | Red | Nr 4 |
| 6 | Blue | Nr 5 | 18 | Red | Nr 5 |
| 7 | Blue | Nr 6 | 19 | Red | Nr 6 |
| 8 | Blue | Nr 7 | 20 | Red | Nr 7 |
| 9 | Blue | Nr 8 | 21 | Red | Nr 8 |
| 10 | Blue | Nr 9 | 22 | Red | Nr 9 |
| 11 | Blue | Nr 10 | 23 | Red | Nr 10 |
| 12 | Blue | Nr 11 | 24 | Red | Nr 11 |
| 13 | Blue | Nr 12 | 25 | Red | Nr 12 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|---|
| 182934 | 1 M | CBL DB25M – FREE WIRES TILOTEX 12/2 HF L 904 1M |
| 182935 | 3 M | CBL DB25M – FREE WIRES TILOTEX 12/2 HF L 904 3M |
| 182936 | 5 M | CBL DB25M – FREE WIRES TILOTEX 12/2 HF L 904 5M |

8.7 Cable layout 6

The cable type is 2*2*CAT5E unshielded.

Straight cable layout RJ11 – RJ11

| RJ11 male connector | RJ11 male connector | Cable Pair |
|---------------------|---------------------|------------|
| 2 Line 2 | 2 Line 2 | 2 |
| 3 Line 1 | 3 Line 1 | 1 |
| 4 Line 1 | 4 Line 1 | 1 |
| 5 Line 2 | 5 Line 2 | 2 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|-------------------------------|
| 182940 | 1 M | CBL LINE RJ11 - RJ11 CAT5E 1M |
| 182579 | 3 M | CBL LINE RJ11 - RJ11 CAT5E 3M |
| 182941 | 5 M | CBL LINE RJ11 - RJ11 CAT5E 5M |

8.8 Cable layout 7

The cable type is 2*2*CAT5E unshielded.

Straight cable layout RJ11 – RJ45

| RJ11 male connector | RJ45 male connector | Cable Pair |
|---------------------|---------------------|------------|
| 2 Line 2 | 3 Line 2 | 2 |
| 3 Line 1 | 4 Line 1 | 1 |
| 4 Line 1 | 5 Line 1 | 1 |
| 5 Line 2 | 6 Line 2 | 2 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|-------------------------------|
| 182942 | 1 M | CBL LINE RJ11 - RJ45 CAT5E 1M |
| 182581 | 3 M | CBL LINE RJ11 - RJ45 CAT5E 3M |
| 182943 | 5 M | CBL LINE RJ11 - RJ45 CAT5E 5M |

8.9 Cable layout 8

The cable type is 2*2*CAT5E unshielded.

Straight cable layout RJ45 – RJ45

| RJ45 male connector | RJ45 male connector | Cable Pair |
|---------------------|---------------------|------------|
| 3 Line 2 | 3 Line 2 | 2 |
| 4 Line 1 | 4 Line 1 | 1 |
| 5 Line 1 | 5 Line 1 | 1 |
| 6 Line 2 | 6 Line 2 | 2 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|-------------------------------|
| 182944 | 1 M | CBL LINE RJ45 - RJ45 CAT5E 1M |
| 182582 | 3 M | CBL LINE RJ45 - RJ45 CAT5E 3M |
| 182945 | 5 M | CBL LINE RJ45 - RJ45 CAT5E 5M |

8.10 Cable layout 9

The cable type is 2*2*CAT5E unshielded.

Split cable layout RJ11 – 2 * RJ11

| RJ11 male connector | Cable Pair | RJ11 male connector 1 | RJ11 male connector 2 |
|---------------------|------------|-----------------------|-----------------------|
| 2 Line 2 | 2 | | 3 Line 2 |
| 3 Line 1 | 1 | 3 Line 1 | |
| 4 Line 1 | 1 | 4 Line 1 | |
| 5 Line 2 | 2 | | 4 Line 2 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|---------------------------------|
| 182946 | 1 M | CBL LINE RJ11 - 2*RJ11 CAT5E 1M |
| 182583 | 3 M | CBL LINE RJ11 - 2*RJ11 CAT5E 3M |
| 182947 | 5 M | CBL LINE RJ11 - 2*RJ11 CAT5E 5M |

8.11 Cable layout 10

The cable type is 2*2*CAT5E unshielded.

Split cable layout RJ11 – 2 * RJ45

| RJ11 male connector | Cable Pair | RJ45 male connector 1 | RJ45 male connector 2 |
|---------------------|------------|-----------------------|-----------------------|
| 2 Line 2 | 2 | | 4 Line 2 |
| 3 Line 1 | 1 | 4 Line 1 | |
| 4 Line 1 | 1 | 5 Line 1 | |
| 5 Line 2 | 2 | | 5 Line 2 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|---------------------------------|
| 182948 | 1 M | CBL LINE RJ11 - 2*RJ45 CAT5E 1M |
| 182585 | 3 M | CBL LINE RJ11 - 2*RJ45 CAT5E 3M |
| 182949 | 5 M | CBL LINE RJ11 - 2*RJ45 CAT5E 5M |

8.12 Cable layout 11

The cable type is 2*2*CAT5E unshielded.

Split cable layout RJ45 – 2 * RJ11

| RJ45 male connector | Cable Pair | RJ11 male connector 1 | RJ11 male connector 2 |
|---------------------|------------|-----------------------|-----------------------|
| 3 Line 2 | 2 | | 3 Line 2 |
| 4 Line 1 | 1 | 3 Line 1 | |
| 5 Line 1 | 1 | 4 Line 1 | |
| 6 Line 2 | 2 | | 4 Line 2 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|---------------------------------|
| 182950 | 1 M | CBL LINE RJ45 - 2*RJ11 CAT5E 1M |
| 182586 | 3 M | CBL LINE RJ45 - 2*RJ11 CAT5E 3M |
| 182993 | 5 M | CBL LINE RJ45 - 2*RJ11 CAT5 5M |

8.13 Cable layout 12

The cable type is 2*2*CAT5E unshielded.

Split cable layout RJ45 – 2 * RJ45

| RJ45 male connector | Cable Pair | RJ45 male connector 1 | RJ45 male connector 2 |
|---------------------|------------|-----------------------|-----------------------|
| 3 Line 2 | 2 | | 4 Line 2 |
| 4 Line 1 | 1 | 4 Line 1 | |
| 5 Line 1 | 1 | 5 Line 1 | |
| 6 Line 2 | 2 | | 5 Line 2 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|---------------------------------|
| 182953 | 1 M | CBL LINE RJ45 - 2*RJ45 CAT5E 1M |
| 182588 | 3 M | CBL LINE RJ45 - 2*RJ45 CAT5E 3M |
| 182954 | 5 M | CBL LINE RJ45 - 2*RJ45 CAT5E 5M |

8.14 Cable layout 13

The cable type is 25 * 2 * CAT5 unshielded and the connectors are 50 pins TELCO type.

There are two types of TELCO connectors in use, a 120° version with B-Lock locking mechanism for the Telindus 23xx and 24xx units and a 90° version with Screw locking for the external splitter device!

To be sure you order the correct cable, the following figure shows for the different applications the TELCO cable you need. You will find the reference “a, b and c” back in the sales codes table below.

Note: MDF is Main Distribution Frame.

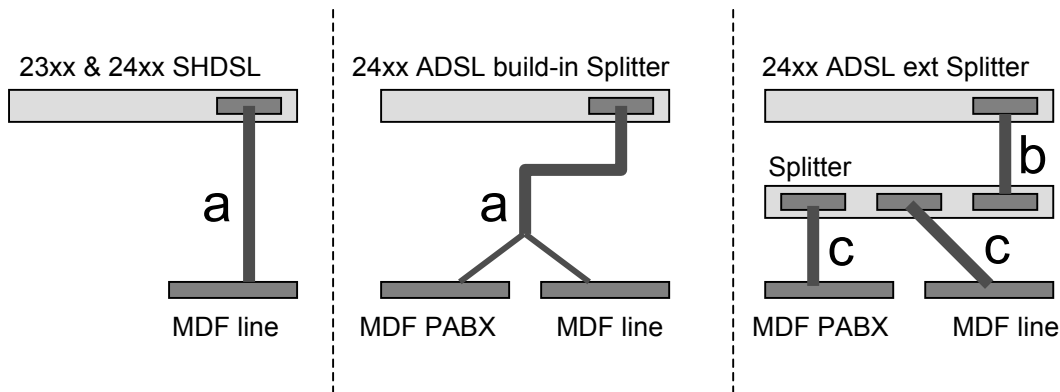


Figure 10: Type of TELCO cable to be used

Cable layout Telco

| Telco male connector | Wire colour | RJ45 conn. Nr / CBL pair | Telco male connector | Wire colour | RJ45 conn. Nr / CBL pair |
|----------------------|-----------------|--------------------------|----------------------|-----------------|--------------------------|
| 1 Line 1 Ring | white – blue | 1 | 26 Line 1 Tip | blue – white | 1 |
| 2 Line 2 Ring | white – orange | 2 | 27 Line 2 Tip | orange – white | 2 |
| 3 Line 3 Ring | white – green | 3 | 28 Line 3 Tip | green – white | 3 |
| 4 Line 4 Ring | white – brown | 4 | 29 Line 4 Tip | brown – white | 4 |
| 5 Line 5 Ring | white – grey | 5 | 30 Line 5 Tip | grey – white | 5 |
| 6 Line 6 Ring | red – blue | 6 | 31 Line 6 Tip | blue – red | 6 |
| 7 Line 7 Ring | red – orange | 7 | 32 Line 7 Tip | orange – red | 7 |
| 8 Line 8 Ring | red- green | 8 | 33 Line 8 Tip | green – red | 8 |
| 9 Line 9 Ring | red- brown | 9 | 34 Line 9 Tip | brown – red | 9 |
| 10 Line 10 Ring | red – grey | 10 | 35 Line 10 Tip | grey – red | 10 |
| 11 Line 11 Ring | black – blue | 11 | 36 Line 11 Tip | blue – black | 11 |
| 12 Line 12 Ring | black – orange | 12 | 37 Line 12 Tip | orange – black | 12 |
| 13 Line 13 Ring | black – green | 13 | 38 Line 13 Tip | green – black | 13 |
| 14 Line 14 Ring | black – brown | 14 | 39 Line 14 Tip | brown – black | 14 |
| 15 Line 15 Ring | black – grey | 15 | 40 Line 15 Tip | grey – black | 15 |
| 16 Line 16 Ring | yellow- blue | 16 | 41 Line 16 Tip | blue – yellow | 16 |
| 17 Line 17 Ring | yellow- orange | 17 | 42 Line 17 Tip | orange – yellow | 17 |
| 18 Line 18 Ring | yellow – green | 18 | 43 Line 18 Tip | green – yellow | 18 |
| 19 Line 19 Ring | yellow- brown | 19 | 44 Line 19 Tip | brown – yellow | 19 |
| 20 Line 20 Ring | yellow- grey | 20 | 45 Line 20 Tip | grey – yellow | 20 |
| 21 Line 21 Ring | purple – blue | 21 | 46 Line 21 Tip | blue – purple | 21 |
| 22 Line 22 Ring | purple – orange | 22 | 47 Line 22 Tip | orange – purple | 22 |
| 23 Line 23 Ring | purple – green | 23 | 48 Line 23 Tip | green – purple | 23 |
| 24 Line 24 Ring | purple – brown | 24 | 49 Line 24 Tip | brown – purple | 24 |
| 25 Shield | | | 50 Shield | | |

Sales codes

| Sales Code | Length | Description | Ref: (Fig) |
|------------|--------|---|------------|
| 182955 | 1 M | CBL TELCO M - FREE WIRES 24 LINES 24*2*CAT5 120DGR 1M | a |
| 182590 | 3 M | CBL TELCO M - FREE WIRES 24 LINES 24*2*CAT5 120DGR 3M | a |
| 182956 | 5 M | CBL TELCO M - FREE WIRES 24 LINES 24*2*CAT5 120DGR 5M | a |
| 190504 | 1 M | CBL TELCO M/M 24 LINES 24*2*CAT5 120/90DGR 1M | b |
| 190501 | 1 M | CBL TELCO M - FREE WIRES 24 LINES 24*2*CAT5 90DGR 1M | c |
| 190502 | 3 M | CBL TELCO M - FREE WIRES 24 LINES 24*2*CAT5 90DGR 3M | c |
| 190503 | 5 M | CBL TELCO M - FREE WIRES 24 LINES 24*2*CAT5 90DGR 5M | c |

8.15 Cable layout 14

The cables are 4*2*CAT5E unshielded.

Straight cable layout RJ45 – RJ45

| RJ45 male connector | RJ45 male connector | Cable Pair |
|-------------------------|-------------------------|------------|
| 1 Transmit Pair (+) (O) | 1 Transmit Pair (+) (I) | 1 |
| 2 Transmit Pair (-) (O) | 2 Transmit Pair (-) (I) | 1 |
| 3 Receive pair (+) (I) | 3 Receive pair (+) (O) | 2 |
| 4 Unused | 4 Unused | |
| 5 Unused | 5 Unused | |
| 6 Receive Pair (-) (I) | 6 Receive Pair (-) (O) | 2 |
| 7 Unused | 7 Unused | |
| 8 Unused | 8 Unused | |

Sales codes

| Sales Code | Length | Description |
|------------|--------|---------------------------------|
| 173786 | 1 M | CBL RJ45-RJ45 STRAIGHT CAT5E 1M |
| 173787 | 3 M | CBL RJ45-RJ45 STRAIGHT CAT5E 3M |
| 173788 | 5 M | CBL RJ45-RJ45 STRAIGHT CAT5E 5M |

8.16 Cable layout 15

The cables are 4*2*CAT5E unshielded.

Crossed cable layout RJ45 – RJ45

| RJ45 male connector | RJ45 male connector | Cable Pair |
|-------------------------|-------------------------|------------|
| 1 Transmit Pair (+) (O) | 3 Receive pair (+) (I) | 1 |
| 2 Transmit Pair (-) (O) | 6 Receive Pair (-) (I) | 1 |
| 3 Receive pair (+) (I) | 1 Transmit Pair (+) (O) | 2 |
| 6 Receive Pair (-) (I) | 2 Transmit Pair (-) (O) | 2 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|--------------------------------|
| 173789 | 1 M | CBL RJ45-RJ45 CROSSED CAT5E 1M |
| 173790 | 3 M | CBL RJ45-RJ45 CROSSED CAT5E 3M |
| 173791 | 5 M | CBL RJ45-RJ45 CROSSED CAT5E 5M |

8.17 Cable Layout 16

The cables are 10*2*0,14 shielded.

Cable layout RS530 DB25M – V.35 ISO2593 M (1,6mm pins)

| DB25 Male connector (DTE/DCE) | ISO M34 Male connector (DCE/DTE) | Cable Pair |
|--|----------------------------------|------------|
| 1 Shield | A Shield | |
| 2 Transmit Data A (O/I) | P Transmit Data A (I/O) | 1 |
| 3 Received Data A (I/O) | R Receive Data A (O/I) | 2 |
| 4 Request to Send A (O/I) | C Request To Send (I/O) | 3 |
| 5 Clear to Send A (I/O) | D Clear to Send (O/I) | 4 |
| 6 DCE Ready A (O) | E Data Set Ready (I) | 4 |
| 7 Signal Ground | B Common return | 5 |
| 8 Receive Line Signal Detector A (O) | F Data Carrier Detect (I) | 6 |
| 9 Receive Signal Element Timing B (I/O) | X Receive Clock B (O/I) | 7 |
| 11 External Signal Element Timing B (O/I) | W External Clock B (I/O) | 8 |
| 12 Transmit Signal Element Timing B (I/O) | AA Transmit Clock B (O/I) | 9 |
| 14 Transmit Data B (O/I) | S Transmit Data B (I/O) | 1 |
| 15 Transmitted Signal Element Timing A (I/O) | Y Transmit Clock A (O/I) | 9 |
| 16 Receive Data B (I/O) | T Receive Data B (O/I) | 2 |
| 17 Received Signal Element Timing A (I/O) | V Receive Clock A (O/I) | 7 |
| 18 Local Loopback (O/I) | L Analogue loop (L3)(I/O) | 10 |
| 20 Data Terminal Ready A (O/I) | H Data Terminal Ready (I/O) | 3 |
| 21 Remote Loopback (O/I) | N Remote Digital loop (RL2)(I/O) | 10 |
| 22 Ring Indicator (I/O) | J Ring Indicator (RI)(O/I) | 6 |
| 24 External Signal Element Timing A (O/I) | U External Clock A (I/O) | 8 |
| 25 Test Indicator (I/O) | NN Test Indicator (O/I) | 5 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|--------------------------------|
| 170458 | 2 M | CBL RS530 (DB25M) – V35M SH 2M |
| 180066 | 2 M | DX-C2-RS-V35 |
| 182965 | 5M | CBL RS530 (DB25M) - V35M SH 5M |

Codes 170458 and 180066 are the same, only the descriptions differ.

Current cable 170458 should be adapted according above layout in the future.

8.18 Cable Layout 17

The cables are 14*2*0,14 shielded.

Cable layout DTE RS530 DB25M – DCE V.36 DB37M

| DB25 Male connector | DB37 Male connector | Cable Pair |
|--|--|---------------|
| 1 Shield | 1 Shield | |
| 2 Transmit Data A (O) | 4 Transmit Data A (I) | 1 |
| 3 Received Data A input) | 6 Receive Data A (O) | 2 |
| 4 Request To Send A (O) | 7 Request To Send A (I) | 3 |
| 5 Clear To Send A (I) | 9 Clear To Send A (O) | 4 |
| 7 Signal Ground | 19 Signal Ground 20 Common Return DCE 37 Common Return DTE | 9 10 11 |
| 9 Receive Signal Element Timing B (I) | 26 Receive Clock B (O) | 5 |
| 11 External Signal Element Timing B (O) | 35 External Clock B (I) | 6 |
| 12 Transmit Signal Element Timing B (I) | 23 Transmit Clock B (O) | 7 |
| 13 Clear To Send B (I) | 27 Clear To Send B (O) | 4 |
| 14 Transmit Data B (O) | 22 Transmit Data B (I) | 1 |
| 15 Transmitted Signal Element Timing A (I) | 5 Transmit Clock A (O) | 7 |
| 16 Receive Data B (I) | 24 Receive Data B (O) | 2 |
| 17 Received Signal Element Timing A (I) | 8 Receive Clock A (O) | 5 |
| 18 Local Loopback (O) | 10 Analogue loop (I) | 11 |
| 19 Request To Send B (O) | 25 Request To Send B (I) | 3 |
| 20 Data Terminal Ready A (O) | 12 Data Terminal Ready A (I) | 8 |
| 21 Remote Loopback (O) | 14 Remote Digital loop (I) | 12 |
| 22 Ring Indicator (I) | 15 Incoming Call (I) | 9 |
| 23 Data Terminal Ready B (O) | 30 Data Terminal Ready B (I) | 8 |
| 24 External Signal Element Timing A (O) | 17 External Clock A (I) | 6 |
| 25 Test Indicator (I) | 18 Test Indicator (O) | 10 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|--|
| 170459 | 2 M | CBL DTE RS530 (DB25M) – DCE V36M SH 2M |
| 182966 | 5 M | CBL DTE RS530 (DB25M) - DCE V36M SH 5M |

Current cable 170459 should be adapted according above layout in the future.

8.19 Cable Layout 18

The cables are 10*2*0,14 shielded.

Cable layout DTE RS530 DB25M – DCE X.21 DB15M

| DB25 Male connector | DB15 Male connector | Cable Pair |
|---|-------------------------|------------|
| 1 Shield | 1 Shield | |
| 2 Transmit Data A (O) | 2 Transmit Data A (I) | 1 |
| 3 Received Data A input) | 4 Receive Data A (O) | 2 |
| 4 Request to Send A (O) | 3 Control A (I) | 3 |
| 5 Clear to Send A (I) | 5 Indicator A (O) | 4 |
| 7 Signal Ground | 8 Signal Ground | 5 |
| 9 Receive Signal Element Timing B (I) | 13 Receive Clock B (O) | 6 |
| 11 External Signal Element Timing B (O) | 14 External Clock B (I) | 7 |
| 12 Transmit Signal Element Timing B (I) | 13 Receive Clock B (O) | 6 |
| 13 Clear To Send B (I) | 12 Indicator B (O) | 4 |
| 14 Transmit Data B (O) | 9 Transmit Data B (I) | 1 |
| 15 Transmit Signal Element Timing A (I) | 6 Receive Clock A (O) | 6 |
| 16 Receive Data B (I) | 11 Receive Data B (O) | 2 |
| 17 Received Signal Element Timing A (I) | 6 Receive Clock A (O) | 6 |
| 19 Request To Send B (O) | 10 Control B (I) | 3 |
| 24 External Signal Element Timing A (O) | 7 External Clock A (I) | 7 |
| 25 Test Indicator (I) | 8 Signal Ground | 5 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|--|
| 170457 | 2 M | CBL DTE RS530 (DB25M) – DCE X21M SH 2M |
| 182967 | 5 M | CBL DTE RS530 (DB25M) - DCE X21M SH 5M |

Current cable 170457 should be adapted according above layout in the future.

8.20 Cable Layout 19

The cables are 14*2*0,14 shielded.

Cable layout DCE RS530 DB25M – DTE V.36 DB37M

| DB25 Male connector | DB37 Male connector | Cable Pair |
|--|--|----------------|
| 1 Shield | 1 Shield | |
| 2 Transmit Data A (I) | 4 Transmit Data A (O) | 1 |
| 3 Received Data A output) | 6 Receive Data A (I) | 2 |
| 4 Request To Send A (I) | 7 Request To Send A (O) | 3 |
| 5 Clear To Send A (O) | 9 Clear To Send A (I) | 4 |
| 6 Data Set Ready A (O) | 11 Data Set Ready A (I) | 5 |
| 7 Signal Ground | 19 Signal Ground 20 Common Return DCE 37 Common Return DTE | 11 12 13 |
| 8 Data Carrier Detect A (O) | 13 Data Carrier Detect A (I) | 6 |
| 9 Receive Signal Element Timing B (O) | 26 Receive Clock B (I) | 7 |
| 10 Data Carrier Detect B (O) | 31 Data Carrier Detect B (I) | 6 |
| 11 External Signal Element Timing B (I) | 35 External Clock B (O) | 8 |
| 12 Transmit Signal Element Timing B (O) | 23 Transmit Clock B (I) | 9 |
| 13 Clear To Send B (O) | 27 Clear To Send B (I) | 4 |
| 14 Transmit Data B (I) | 22 Transmit Data B (O) | 1 |
| 15 Transmitted Signal Element Timing A (O) | 5 Transmit Clock A (I) | 9 |
| 16 Receive Data B (O) | 24 Receive Data B (I) | 2 |
| 17 Received Signal Element Timing A (O) | 8 Receive Clock A (I) | 7 |
| 18 Local Loopback (I) | 10 Local Loopback A (O) | 13 |
| 19 Request To Send B (I) | 25 Request To Send B (O) | 3 |
| 20 Data Terminal Ready A (I) | 12 Data Terminal Ready A (O) | 10 |
| 21 Remote Loopback (I) | 14 Remote Loopback A (O) | 11 |
| 22 Data Set Ready B (O) | 29 Data Set Ready B (I) | 5 |
| 23 Data Terminal Ready B (I) | 30 Data Terminal Ready B (O) | 10 |
| 24 External Signal Element Timing A (I) | 17 External Clock A (O) | 8 |
| 25 Test Indicator (O) | 18 Test Indicator (I) | 12 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|--|
| 182968 | 2 M | CBL DCE RS530 (DB25M) - DTE V36M SH 2M |
| 180065 | 2 M | DX_C2_RS_V36 |
| 182969 | 5 M | CBL DCE RS530 (DB25M) - DTE V36M SH 5M |

Codes 182968 and 180065 are the same, only the descriptions differ.

8.21 Cable Layout 20

The cables are 10*2*0,14 shielded.

Cable layout DCE RS530 DB25M – DTE X.21 DB15M

| DB25 Male connector | DB15 Male connector | Cable Pair |
|---|-------------------------|------------|
| 1 Shield | 1 Shield | |
| 2 Transmit Data A (I) | 2 Transmit Data A (O) | 1 |
| 3 Received Data A output) | 4 Receive Data A (I) | 2 |
| 7 Signal Ground | 8 Signal Ground | 7 |
| 8 Data Carrier Detect A (O) | 5 Indicator A (I) | 3 |
| 9 Receive Signal Element Timing B (O) | 13 Receive Clock B (I) | 4 |
| 10 Data Carrier Detect B (O) | 12 Indicator B (I) | 3 |
| 11 External Signal Element Timing B (I) | 14 External Clock B (O) | 5 |
| 14 Transmit Data B (I) | 9 Transmit Data B (O) | 1 |
| 16 Receive Data B (O) | 11 Receive Data B (I) | 2 |
| 17 Received Signal Element Timing A (O) | 6 Receive Clock A (I) | 4 |
| 20 Data Terminal Ready A (I) | 3 Control A (O) | 6 |
| 23 Data Terminal Ready B (I) | 10 Control B (O) | 6 |
| 24 External Signal Element Timing A (I) | 7 External Clock A (O) | 5 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|--|
| 182970 | 2 M | CBL DCE RS530 (DB25M) - DTE X21M SH 2M |
| 180064 | 2 M | DX_C2_RS_X21 |
| 182971 | 5 M | CBL DCE RS530 (DB25M) – DTE X21M SH 5M |

Codes 182970 and 180064 are the same, only the descriptions differ.

8.22 Cable Layout 21a

The cables are 10*2*0,14 shielded.

Cable layout DB26M – V.35 ISO2593 M/F (1,6mm pins)

| DB26 Male connector | ISO M34 Male connector | Cable Pair |
|--|--------------------------------|------------|
| Shield | A Shield | |
| 1 Received Data A (O) | R Receive Data A (I) | 2 |
| 2 Test Indicator (O) | NN Test Indicator (I) | 5 |
| 3 Local Loopback (I) | L Analogue loop (L3)(O) | 10 |
| 5 Clear to Send A (O) | D Clear to Send (I) | 4 |
| 6 Receive Line Signal Detector A (O) | F Data Carrier Detect (I) | 6 |
| 8 DCE Ready A (O) | E Data Set Ready (I) | 4 |
| 10 Receive Signal Element Timing B (O) | X Receive Clock B (I) | 7 |
| 11 Received Signal Element Timing A (O) | V Receive Clock A (I) | 7 |
| 16 Request to Send A (I) | C Request To Send (O) | 3 |
| 18 Remote Loopback (I) | N Remote Digital loop (RL2)(O) | 10 |
| 19 Receive Data B (O) | T Receive Data B (I) | 2 |
| 20 External Signal Element Timing B (I) | W External Clock B (O) | 8 |
| 21 Transmit Data A (I) | P Transmit Data A (O) | 1 |
| 22 Transmit Signal Element Timing B (O) | AA Transmit Clock B (I) | 9 |
| 23 Transmit Data B (I) | S Transmit Data B (O) | 1 |
| 24 Transmitted Signal Element Timing A (O) | Y Transmit Clock A (I) | 9 |
| 25 External Signal Element Timing A (I) | U External Clock A (O) | 8 |
| 26 Signal Ground | B Common return | 5 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|--|
| 180981 | 1 M | CBL DPINTF DB26M SERIAL - V35M SH 1M |
| 180982 | 3 M | CBL DPINTF DB26M SERIAL - V35M SH 3M |
| 180983 | 5 M | CBL DPINTF DB26M SERIAL - V35M SH 5M |
| 183630 | 0,5 M | CBL DPINTF DB26M SERIAL - V35F SH 0,5M |

8.23 Cable Layout 21b

The cables are 10*2*0,14 shielded.

Cable layout DB26M – V.35 ISO2593 M/F (1,6mm pins)

| DB26 Male connector | ISO M34 Male connector | Cable Pair |
|--|----------------------------------|------------|
| 1 Shield | A Shield | |
| 2 Transmit Data A (I/O) | P Transmit Data A (O/I) | 1 |
| 3 Received Data A (O/I) | R Receive Data A (I/O) | 2 |
| 4 Request to Send A (I/O) | C Request To Send (O/I) | 3 |
| 5 Clear to Send A (O/I) | D Clear to Send (I/O) | 4 |
| 6 DCE Ready A (O/I) | E Data Set Ready (I/O) | 4 |
| 7 Signal Ground | B Common return | 5 |
| 8 Receive Line Signal Detector A (O/I) | F Data Carrier Detect (I/O) | 6 |
| 9 Receive Signal Element Timing B (O/I) | X Receive Clock B (I/O) | 7 |
| 11 External Signal Element Timing B (I/O) | W External Clock B (O/I) | 8 |
| 12 Transmit Signal Element Timing B (O/I) | AA Transmit Clock B (I/O) | 9 |
| 14 Transmit Data B (I/O) | S Transmit Data B (O/I) | 1 |
| 15 Transmitted Signal Element Timing A (O/I) | Y Transmit Clock A (I/O) | 9 |
| 16 Receive Data B (O/I) | T Receive Data B (I/O) | 2 |
| 17 Received Signal Element Timing A (O/I) | V Receive Clock A (I/O) | 7 |
| 18 Local Loopback (I/O) | L Analogue loop (L3)(O/I) | 10 |
| 20 Data Terminal Ready A (I/O) | H Data Terminal Ready (O/I) | 3 |
| 21 Remote Loopback (I/O) | N Remote Digital loop (RL2)(O/I) | 10 |
| 24 External Signal Element Timing A (I/O) | U External Clock A (O/I) | 8 |
| 25 Test Indicator (O/I) | NN Test Indicator (I/O) | 5 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|---------------------------------|
| 183878 | 1 M | CBL DB26M SERIAL - V35M SH 1M |
| 183879 | 3 M | CBL DB26M SERIAL - V35M SH 3M |
| 183881 | 5 M | CBL DB26M SERIAL - V35M SH 5M |
| 183877 | 0,5 M | CBL DB26M SERIAL - V35F SH 0,5M |

8.24 Cable Layout 22a

The cables are 14*2*0,14 shielded.

Cable layout DB26M – V.36 DB37M/F

| DB26 Male connector | ISO DB37 Male connector | Cable Pair |
|--|-------------------------|------------|
| Shield | 1 Shield | |
| 1 Received Data B (O) | 24 RXD B (I) | 2 |
| 2 Test Indicator (O) | 18 TST (I) | 12 |
| 3 Local Loopback (I) | 10 AL (O) | 13 |
| 4 Request To Send B (I) | 25 RTS B | 3 |
| 5 Clear to Send B (O) | 27 CTS B (I) | 4 |
| 6 Receive Line Signal Detector B (O) | 31 DCD B (I) | 6 |
| 7 Clear To Send A (O) | 9 CTS A (I) | 4 |
| 8 DCE Ready B (O) | 29 DSR B (I) | 5 |
| 9 Receive Line Signal Detector A (O) | 13 DCD A (I) | 6 |
| 10 Receive Signal Element Timing A (O) | 8 RXCLK A (I) | 7 |
| 11 Received Signal Element Timing B (O) | 26 RXCLK B (I) | 7 |
| 16 Request to Send A (I) | 7 RTS A (O) | 3 |
| 17 DCE Ready A (O) | 11 DSR A (I) | 5 |
| 18 Remote Loopback (I) | 14 RDL (O) | 11 |
| 19 Receive Data A (O) | 6 RXD A (I) | 2 |
| 20 External Signal Element Timing B (I) | 35 EXTCCLK B (O) | 8 |
| 21 Transmit Data A (I) | 4 TXD A (O) | 1 |
| 22 Transmit Signal Element Timing A (O) | 5 TXCLK A (I) | 9 |
| 23 Transmit Data B (I) | 22 TXD B (O) | 1 |
| 24 Transmitted Signal Element Timing B (O) | 23 TXCLK B (I) | 9 |
| 25 External Signal Element Timing A (I) | 17 EXTCLK A (O) | 8 |
| 26 Signal Ground | 19 GND | 11 |
| | 20 Common Return DCE | 12 |
| | 37 Common Return DTE | 13 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|--|
| 180984 | 1 M | CBL DPINTF DB26M SERIAL - V36M SH 1M |
| 180985 | 3 M | CBL DPINTF DB26M SERIAL - V36M SH 3M |
| 180986 | 5 M | CBL DPINTF DB26M SERIAL - V36M SH 5M |
| 183631 | 0,5 M | CBL DPINTF DB26M SERIAL - V36F SH 0,5M |

8.25 Cable Layout 22b

The cables are 14*2*0,14 shielded.

Cable layout DB26M – V.36 DB37M/F

| DB26 Male connector | ISO DB37 Male connector | Cable Pair |
|--|-------------------------|------------|
| 1 Shield | 1 Shield | |
| 2 Transmit Data A (I/O) | 4 TXD A (O/I) | 1 |
| 3 Received Data A (O/I) | 6 RXD A (I/O) | 2 |
| 4 Request to Send A (I/O) | 7 RTS A (O/I) | 3 |
| 5 Clear to Send A (O/I) | 9 CTS A (I/O) | 4 |
| 6 DCE Ready A (O/I) | 11 DSR A (I/O) | 5 |
| 7 Signal Ground | 19 GND | 11 |
| | 20 Common Return DCE | 12 |
| | 37 Common Return DTE | 13 |
| 8 Receive Line Signal Detector A (O/I) | 13 DCDA (I/O) | 6 |
| 9 Receive Signal Element Timing B (O/I) | 26 RXCLK B (I/O) | 7 |
| 10 Receive Line Signal Detector B (O/I) | 31 DCD B (I/O) | 6 |
| 11 External Signal Element Timing B (I/O) | 35 EXTCCLK B (O/I) | 8 |
| 12 Transmit Signal Element Timing B (O/I) | 23 TXCLK B (I/O) | 9 |
| 13 Clear To Send B (O/I) | 27 CTS B (I/O) | 4 |
| 14 Transmit Data B (I/O) | 22 TXD B (O/I) | 1 |
| 15 Transmitted Signal Element Timing A (O/I) | 5 TXCLK A (I/O) | 9 |
| 16 Receive Data B (O/I) | 24 RXD B (I/O) | 2 |
| 17 Received Signal Element Timing A (O/I) | 8 RXCLK A (I/O) | 7 |
| 18 Local Loopback (I/O) | 10 AL (O/I) | 13 |
| 19 Request To Send B (I/O) | 25 RTS B (O/I) | 3 |
| 20 Data Terminal Ready A (I/O) | 12 DTR A (O/I) | 10 |
| 21 Remote Loopback (I/O) | 14 RDL (O/I) | 11 |
| 22 DCE Ready B (O/I) | 29 DSR B (I/O) | 5 |
| 23 Data Terminal Ready B (I/O) | 30 DTR B (O/I) | 10 |
| 24 External Signal Element Timing A (I/O) | 17 EXTCLK A (O/I) | 8 |
| 25 Test Indicator (O/I) | 18 TST (I/O) | 12 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|--------------------------------|
| 183883 | 1 M | CBL DB26M SERIAL - V36M SH 1M |
| 183884 | 3 M | CBL DB26M SERIAL - V36M SH 3M |
| 183885 | 5 M | CBL DB26M SERIAL - V36M SH 5M |
| 183882 | 0,5 M | CBL DB26M SERIAL –V36F SH 0,5M |

8.26 Cable Layout 23a

The cables are 10*2*0,14 shielded.

Cable layout RS530 DB26M – X.21 DB15M/F

| DB26 Male connector | DB15 Male connector | Cable Pair |
|---|-------------------------|------------|
| Shield | 1 Shield | |
| 1 Receive Data B (O) | 11 Receive Data B (I) | 2 |
| 4 Request To Send B (I) | 10 Control B (O) | 6 |
| 6 Data Carrier Detect B (O) | 12 Indicator B (I) | 3 |
| 9 Data Carrier Detect A (O) | 5 Indicator A (I) | 3 |
| 10 Received Signal Element Timing A (O) | 6 Receive Clock A (I) | 4 |
| 11 Receive Signal Element Timing B (O) | 13 Receive Clock B (I) | 4 |
| 16 Request To Send A (I) | 3 Control A (O) | 6 |
| 19 Received Data A (O) | 4 Receive Data A (I) | 2 |
| 20 External Signal Element Timing B (I) | 14 External Clock B (O) | 5 |
| 21 Transmit Data A (I) | 2 Transmit Data A (O) | 1 |
| 23 Transmit Data B (I) | 9 Transmit Data B (O) | 1 |
| 25 External Signal Element Timing A (I) | 7 External Clock A (O) | 5 |
| 26 Signal Ground | 8 Signal Ground | 7 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|--|
| 180987 | 1 M | CBL DPINTF DB26M SERIAL – X21M SH 1M |
| 180988 | 3 M | CBL DPINTF DB26M SERIAL – X21M SH 3M |
| 180989 | 5 M | CBL DPINTF DB26M SERIAL – X21M SH 5M |
| 183632 | 0,5 M | CBL DPINTF DB26M SERIAL - X21F SH 0,5M |

8.27 Cable Layout 23b

The cables are 10*2*0,14 shielded.

Cable layout DTE RS530 DB26M – DCE X.21 DB15M/F

| DB26 Male connector | DB15 Male connector | Cable Pair |
|---|-------------------------|------------|
| 1 Shield | 1 Shield | |
| 2 Transmit Data A (I) | 2 Transmit Data A (O) | 1 |
| 3 Received Data A (O) | 4 Receive Data A (I) | 2 |
| 7 Signal Ground | 8 Signal Ground | 7 |
| 8 Data Carrier Detect A (O) | 5 Indicator A (I) | 3 |
| 9 Receive Signal Element Timing B (O) | 13 Receive Clock B (I) | 4 |
| 10 Data Carrier Detect B (O) | 12 Indicator B (I) | 3 |
| 11 External Signal Element Timing B (I) | 14 External Clock B (O) | 5 |
| 14 Transmit Data B (I) | 9 Transmit Data B (O) | 1 |
| 16 Receive Data B (O) | 11 Receive Data B (I) | 2 |
| 17 Received Signal Element Timing A (O) | 6 Receive Clock A (I) | 4 |
| 20 Data Terminal Ready A (I) | 3 Control A (O) | 6 |
| 23 Data Terminal Ready B (I) | 10 Control B (O) | 6 |
| 24 External Signal Element Timing A (I) | 7 External Clock A (O) | 5 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|---------------------------------|
| 183887 | 1 M | CBL DB26M SERIAL – X21M SH 1M |
| 183888 | 3 M | CBL DB26M SERIAL – X21M SH 3M |
| 183889 | 5 M | CBL DB26M SERIAL – X21M SH 5M |
| 183886 | 0,5 M | CBL DB26M SERIAL – X21F SH 0,5M |

8.28 Cable Layout 24a

The cables are 12*2*0,14 shielded.

Cable layout DB26M – DB25M/F

| DB26 Male connector | DB25 Male connector | Cable Pair |
|--|--|------------|
| Shield | 1 Shield | |
| 1 Received Data B (O) | 16 Received Data B (I) | 2 |
| 2 Test Indicator (O) | 25 Test Indicator (I) | 12 |
| 3 Local Loopback (I) | 18 Local Loopback (O) | 11 |
| 4 Request To Send B (I) | 19 Request To Send B (O) | 3 |
| 5 Clear to Send B (O) | 13 Clear to Send B (I) | 4 |
| 6 Receive Line Signal Detector B (O) | 10 Receive Line Signal Detector B (I) | 6 |
| 7 Clear To Send A (O) | 5 Clear To Send A (I) | 4 |
| 8 DCE Ready B (O) | 22 DCE Ready B (I) | 5 |
| 9 Receive Line Signal Detector A (O) | 8 Receive Line Signal Detector A (I) | 6 |
| 10 Receive Signal Element Timing A (O) | 17 Receive Signal Element Timing A (I) | 7 |
| 11 Received Signal Element Timing B (O) | 9 Received Signal Element Timing B (I) | 7 |
| 16 Request to Send A (I) | 4 Request to Send A (O) | 3 |
| 17 DCE Ready A (O) | 6 DCE Ready A (I) | 5 |
| 18 Remote Loopback (I) | 21 Remote Loopback (O) | 11 |
| 19 Receive Data A (O) | 3 Receive Data A (I) | 2 |
| 20 External Signal Element Timing B (I) | 11 External Signal Element Timing B (O) | 8 |
| 21 Transmit Data A (I) | 2 Transmit Data A (O) | 1 |
| 22 Transmit Signal Element Timing A (O) | 15 Transmit Signal Element Timing A (I) | 9 |
| 23 Transmit Data B (I) | 14 Transmit Data B (O) | 1 |
| 24 Transmitted Signal Element Timing B (O) | 12 Transmitted Signal Element Timing B (I) | 9 |
| 25 External Signal Element Timing A (I) | 24 External Signal Element Timing A (O) | 8 |
| 26 Signal Ground | 7 Signal Ground | 12 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|--|
| 180978 | 1 M | CBL DPINTF DB26M SERIAL – RS530M SH 1M |
| 180979 | 3 M | CBL DPINTF DB26M SERIAL - RS530M SH 3M |
| 180980 | 5 M | CBL DPINTF DB26M SERIAL - RS530M SH 5M |
| 183633 | 0,5 M | CBL DPINTF DB26M SERIAL - RS530F SH 0,5M |

8.29 Cable Layout 24b

The cables are 12*2*0,14 shielded.

Cable layout DB26M – DB25M/F

| DB26 Male connector | DB25 Male connector | Cable Pair |
|--|--|------------|
| 1 Shield | 1 Shield | |
| 2 Transmit Data A (I) | 2 Transmit Data A (O) | 1 |
| 3 Received Data A (O) | 3 Received Data A (I) | 2 |
| 4 Request to Send A (I) | 4 Request to Send A (O) | 3 |
| 5 Clear to Send A (O) | 5 Clear to Send A (I) | 4 |
| 6 DCE Ready A (O) | 6 DCE Ready A (I) | 5 |
| 7 Signal Ground | 7 Signal Ground | 12 |
| 8 Receive Line Signal Detector A (O) | 8 Receive Line Signal Detector A (I) | 6 |
| 9 Receive Signal Element Timing B (O) | 9 Receive Signal Element Timing B (I) | 7 |
| 10 Receive Line Signal Detector B (O) | 10 Receive Line Signal Detector B (I) | 6 |
| 11 External Signal Element Timing B (I) | 11 External Signal Element Timing B (O) | 8 |
| 12 Transmit Signal Element Timing B (O) | 12 Transmit Signal Element Timing B (I) | 9 |
| 13 Clear To Send B (O) | 13 Clear To Send B (I) | 4 |
| 14 Transmit Data B (I) | 14 Transmit Data B (O) | 1 |
| 15 Transmitted Signal Element Timing A (O) | 15 Transmitted Signal Element Timing A (I) | 9 |
| 16 Receive Data B (O) | 16 Receive Data B (I) | 2 |
| 17 Received Signal Element Timing A (O) | 17 Received Signal Element Timing A (I) | 7 |
| 18 Local Loopback (I) | 18 Local Loopback (O) | 11 |
| 19 Request To Send B (I) | 19 Request To Send B (O) | 3 |
| 20 Data Terminal Ready A (I) | 20 Data Terminal Ready A (O) | 10 |
| 21 Remote Loopback (I) | 21 Remote Loopback (O) | 11 |
| 22 DCE Ready B (O) | 22 DCE Ready B (I) | 5 |
| 23 Data Terminal Ready B (I) | 23 Data Terminal Ready B (O) | 10 |
| 24 External Signal Element Timing A (I) | 24 External Signal Element Timing A (O) | 8 |
| 25 Test Indicator (O) | 25 Test Indicator (I) | 12 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|-----------------------------------|
| 183874 | 1 M | CBL DB26M SERIAL – RS530M SH 1M |
| 183875 | 3 M | CBL DB26M SERIAL - RS530M SH 3M |
| 183876 | 5 M | CBL DB26M SERIAL - RS530M SH 5M |
| 183873 | 0,5 M | CBL DB26M SERIAL - RS530F SH 0,5M |

8.30 Cable Layout 25

The cables are 12*2*0,14 shielded and straight.

Cable layout V.35 ISO2593M – V.35 ISO2593M/F (1,6mm pins)

| ISO M34 Male/Female connector (DCE/DTE) | Cable Pair |
|---|------------|
| A Shield | |
| B Common return | 5 |
| C Request to Send (I/O) | 3 |
| D Clear to Send (O/I) | 4 |
| E Data Set Ready (O/I) | 4 |
| F Data Carrier Detect (O/I) | 6 |
| H Data Terminal Ready (I/O) | 3 |
| J Connect Indication (O/I) | 6 |
| L Analogue loop (L3)(I/O) | 10 |
| N Remote Digital loop (RL2)(I/O) | 10 |
| P Transmit Data A (I/O) | 1 |
| R Received Data A (O/I) | 2 |
| S Transmit Data B (I/O) | 1 |
| T Receive Data B (O/I) | 2 |
| U External Clock A (I/O) | 8 |
| V Receive Clock A (O/I) | 7 |
| W External Clock B (I/O) | 8 |
| X Receive Clock B (O/I) | 7 |
| Y Transmit Clock A (O/I) | 9 |
| AA Transmit Clock B (O/I) | 9 |
| NN Test Indicator (O/I) | 5 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|------------------|
| 139176 | 1 M | CBL V35M/M SH 1M |
| 139177 | 3 M | CBL V35M/M SH 3M |
| 139178 | 5 M | CBL V35M/M SH 5M |
| 139181 | 1 M | CBL V35M/F SH 1M |
| 139182 | 3 M | CBL V35M/F SH 3M |
| 139183 | 5 M | CBL V35M/F SH 5M |

8.31 Cable Layout 26

The cables are 10*2*0,14 shielded and straight.

Cable layout X.21 DB15M – X.21 DB15M/F

| DB15 Male/Female connector (DCE/DTE) | Cable Pair |
|--------------------------------------|------------|
| 1 Shield | |
| 2 Transmit Data A (I/O) | 1 |
| 3 Control A (I/O) | 2 |
| 4 Receive Data A (O/I) | 3 |
| 5 Indicator A (O/I) | 4 |
| 6 Receive Clock A (O/I) | 5 |
| 7 External Clock A (I/O) | 6 |
| 8 Signal Ground | 7 |
| 9 Transmit Data B (I/O) | 1 |
| 10 Control B (I/O) | 2 |
| 11 Receive Data B (O/I) | 3 |
| 12 Indicator B (O/I) | 4 |
| 13 Receive Clock B (O/I) | 5 |
| 14 External Clock B (I/O) | 6 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|------------------|
| 126541 | 1 M | CBL X21M/M SH 1M |
| 182972 | 3 M | CBL X21M/M SH 3M |
| 149185 | 5 M | CBL X21M/M SH 5M |
| 126226 | 1 M | CBL X21M/F SH 1M |
| 142593 | 3 M | CBL X21M/F SH 3M |
| 138102 | 5 M | CBL X21M/F SH 5M |

8.32 Cable Layout 27

The cables are 12*2*0,14 shielded and straight.

Cable layout DB25M – DB25M/F

| Signals for RS530 (DCE/DTE) | Signals for V.24 (DCE/DTE) | V.24 circuit number | Cable Pair |
|--|--|---------------------|------------|
| 1 Shield | 1 Shield | | |
| 2 Transmit Data A (I/O) | 2 Transmitted data (I/O) | 103 | |
| 3 Received Data A (O/I) | 3 Received data (O/I) | 104 | |
| 4 Request to Send A (I/O) | 4 Request to send (I/O) | 105 | |
| 5 Clear to Send A (O/I) | 5 Ready for sending (O/I) | 106 | |
| 6 DCE Ready A (O/I) | 6 Data set ready (O/I) | 107 | |
| 7 Signal Ground | 7 Signal Ground | 102 | |
| 8 Receive Line Signal Detector A (O/I) | 8 Data channel received line signal detector (O/I) | 109 | |
| 9 Receive Signal Element Timing B (O/I) | 9 GPIN or unused | | |
| 10 Receive Line Signal Detector B (O/I) | 10 GPOUT or LLOK or unused | | |
| 11 External Signal Element Timing B (I/O) | 11 Select transmit frequency (I/O) | 126 | |
| 12 Transmit Signal Element Timing B (O/I) | 12 Data signal rate selector (DCE) (O/I) | 112 | |
| 13 Clear To Send B (O/I) | 13 unused | | |
| 14 Transmit Data B (I/O) | 14 Back-up switching (I/O) | 116 | |
| 15 Transmitted Signal Element Timing A (O/I) | 15 Transmitter signal element timing (DCE) (O/I) | 114 | |
| 16 Receive Data B (O/I) | 16 Standby indicator (O/I) | 117 | |
| 17 Received Signal Element Timing A (O/I) | 17 Receiver signal element timing (DCE) (O/I) | 115 | |
| 18 Local Loopback (I/O) | 18 Local loopback (I/O) | 141 | |
| 19 Request To Send B (I/O) | 19 unused | | |
| 20 Data Terminal Ready A (I/O) | 20 Data terminal ready (I/O) | 108 | |
| 21 Remote Loopback (I/O) | 21 Loopback/Maintenance test (I/O) | 140 | |
| 22 DCE Ready B (O/I) | 22 Calling indicator (O/I) | 125 | |
| 23 Data Terminal Ready B (I/O) | 23 Data signal rate selector (DTE) (I/O) | 111 | |
| 24 External Signal Element Timing A (I/O) | 24 Transmitter signal element timing (DTE) (I/O) | 113 | |
| 25 Test Indicator (O/I) | 25 Test Indicator (O/I) | 142 | |

Sales codes

| Sales Code | Length | Description |
|------------|--------|-------------------------|
| 182973 | 1 M | CBL V24/RS530 M/M SH 1M |
| 182974 | 3 M | CBL V24/RS530 M/M SH 3M |
| 182975 | 5 M | CBL V24/RS530 M/M SH 5M |

| | | |
|--------|-----|-------------------------|
| 182976 | 1 M | CBL V24/RS530 M/F SH 1M |
| 182977 | 3 M | CBL V24/RS530 M/F SH 3M |
| 182978 | 5 M | CBL V24/RS530 M/F SH 5M |

8.33 Cable Layout 28

The cables are 10*2*0,14 shielded.

Cable layout 50p AMP M – V.35 ISO2593 F (1,6mm pins)

| 50p AMP Male connector (DCE) | ISO M34 Female connector (DTE) | Cable pair |
|------------------------------|--------------------------------|------------|
| Shield | A Shield | |
| 1 TXDa /Ta (I) | P Transmit Data A (O) | 1 |
| 2 TXDb/Tb (I) | S Transmit Data B (O) | 1 |
| 3 TXCa (O) | Y Transmit Clock A (I) | 2 |
| 4 TXCb (O) | AA Transmit Clock B (I) | 2 |
| 5 RXDa /Ra (O) | R Receive Data A (I) | 3 |
| 6 RXDb /Rb (O) | T Receive Data B (I) | 3 |
| 7 RTSa (I) | C Request To Send (O) | 6 |
| 9 RXCa /Sa (O) | V Receive Clock A (I) | 4 |
| 10 RXCb /Sb (O) | X Receive Clock B (I) | 4 |
| 11 CTSa (O) | D Clear to Send (I) | 7 |
| 13 LL (I) | L Analogue loop (L3)(O) | 9 |
| 15 DSRa (O) | E Data Set Ready (I) | 7 |
| 17 DTRa /Ca (I) | H Data Terminal Ready (O) | 6 |
| 19 DCDa /Ia (O) | F Data Carrier Detect (I) | 8 |
| 20 TMI /Ib (O) | NN Test Indicator (I) | 10 |
| 21 RL (I) | N Remote Digital loop (RL2)(O) | 9 |
| 23 CI (O) | J Ring Indicator (RI)(I) | 8 |
| 24 TCDa /Xa (I) | U External Clock A (O) | 5 |
| 25 TCDb /Xb (I) | W External Clock B (O) | 5 |
| 33 GND | B Common return | 10 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|----------------|
| 180046 | 2 M | DX_C2_VX_V35_T |

8.34 Cable Layout 29

The cables are 14*2*0,14 shielded.

Cable layout 50p AMP M – V.36 DB37F

| 50p AMP Male connector (DCE) | ISO DB37 Female connector (DTE) | Cable pair |
|------------------------------|---------------------------------|------------|
| Shield | 1 Shield | |
| 1 TXDa /Ta (I) | 4 TXD A (O) | 1 |
| 2 TXDb/Tb (I) | 22 TXD B (O) | 1 |
| 3 TXCa (O) | 5 TXCLK A (I) | 2 |
| 4 TXCb (O) | 23 TXCLK B (I) | 2 |
| 5 RXDa /Ra (O) | 6 RXD A (I) | 3 |
| 6 RXDb /Rb (O) | 24 RXD B (I) | 3 |
| 7 RTSa (I) | 7 RTS A (O) | 4 |
| 8 RTSb (I) | 25 RTS B | 4 |
| 9 RXCa /Sa (O) | 8 RXCLK A (I) | 5 |
| 10 RXCb /Sb (O) | 26 RXCLK B (I) | 5 |
| 11 CTSa (O) | 9 CTS A (I) | 6 |
| 12 CTSb (O) | 27 CTS B (I) | 6 |
| 13 LL (I) | 10 AL A (O) | 11 |
| 14 CT102a | 37 Common Return DTE | 11 |
| 15 DSRa (O) | 11 DSR A (I) | 7 |
| 16 DSRb (O) | 29 DSR B (I) | 7 |
| 17 DTRa /Ca A (I) | 12 DTR A (O) | 8 |
| 18 DTRb /Cb (I) | 30 DTR B (O) | 8 |
| 19 DCDA /Ia (O) | 13 DCDA (I) | 9 |
| 20 TMI /Ib (O) | 18 TST (I) | 12 |
| 21 RL (I) | 14 RDL (O) | 14 |
| 23 CI (O) | 15 CI (I) | 13 |
| 24 TCDa /Xa (I) | 17 EXTCLK A (O) | 10 |
| 25 TCDb /Xb (I) | 35 EXTCCLK B (O) | 10 |
| 32 DCDB /Ib (O) | 31 DCD B (I) | 9 |
| 33 GND | 19 GND | 13 |
| | 20 Common Return DCE | 12 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|----------------|
| 180047 | 2 M | DX_C2_VX_V36_T |

8.35 Cable Layout 30

The cables are 10*2*0,14 shielded.

Cable layout 50p AMP M – X.21 DB15F

| 50p AMP Male connector (DCE) | DB15 Female connector (DTE) | Cable pair |
|------------------------------|-----------------------------|------------|
| Shield | 1 Shield | |
| 1 TXDa /Ta (I) | 2 Transmit Data A (O) | 1 |
| 2 TXDb /Tb (I) | 9 Transmit Data B (O) | 1 |
| 3 RXDa /Ra (O) | 4 Receive Data A (I) | 3 |
| 4 RXDb /Rb (O) | 11 Receive Data B (I) | 3 |
| 9 RXCa /Sa (O) | 6 Receive Clock A (I) | 5 |
| 10 RXCb /Sb (O) | 13 Receive Clock B (I) | 5 |
| 17 DTRa /Ca (I) | 3 Control A (O) | 2 |
| 18 DTRb /Cb (I) | 10 Control B (O) | 2 |
| 19 DCDa /Ia (O) | 5 Indicator A (I) | 4 |
| 20 TMI /Ib (O) | 12 Indicator B (I) | 4 |
| 24 TCDa /Xa (I) | 7 External Clock A (O) | 6 |
| 25 TCDb /Xb (I) | 14 External Clock B (O) | 6 |
| 33 GND | 8 Signal Ground | 7 |

Sales codes

| Sales Code | Length | Description |
|------------|--------|----------------|
| 180048 | 2 M | DX_C2_VX_X21_T |

8.36 Cable layout 31

The cable type is 2*2*CAT5E.

TIM 6E1 split cable layout RJ45 – 2 * RJ45

| RJ45 male connector (DTE) | Cable Pair | RJ45 male connector 5 or 6 (DCE) | RJ45 male connector 7 or 8 (DCE) |
|------------------------------|------------|----------------------------------|----------------------------------|
| 1 G703 5 or 6 Receive A (I) | 1 | 1 Transmit A (O) | |
| 2 G703 5 or 6 Receive B (I) | 1 | 2 Transmit B (O) | |
| 3 G703 7 or 8 Receive A (I) | 3 | | 1 Transmit A (O) |
| 4 G703 5 or 6 Transmit A (O) | 2 | 4 Receive A (I) | |
| 5 G703 5 or 6 Transmit B (O) | 2 | 5 Receive B (I) | |
| 6 G703 7 or 8 Receive B (I) | 3 | | 2 Transmit B (O) |
| 7 G703 7 or 8 Transmit A (O) | 4 | | 4 Receive A (I) |
| 8 G703 7 or 8 Transmit B (O) | 4 | | 5 Receive B (I) |

Sales codes

| Sales Code | Length | Description |
|------------|--------|---------------------------------|
| 194382 | 1 M | CBL G703 RJ45 - 2*RJ45 CAT5E 1M |
| 194383 | 3 M | CBL G703 RJ45 - 2*RJ45 CAT5E 3M |
| 194384 | 5 M | CBL G703 RJ45 - 2*RJ45 CAT5E 5M |