

neodap



OS/T BQ / EQ / IQ



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Netherlands
Parallelweg 2d, 7141 DC Groenlo

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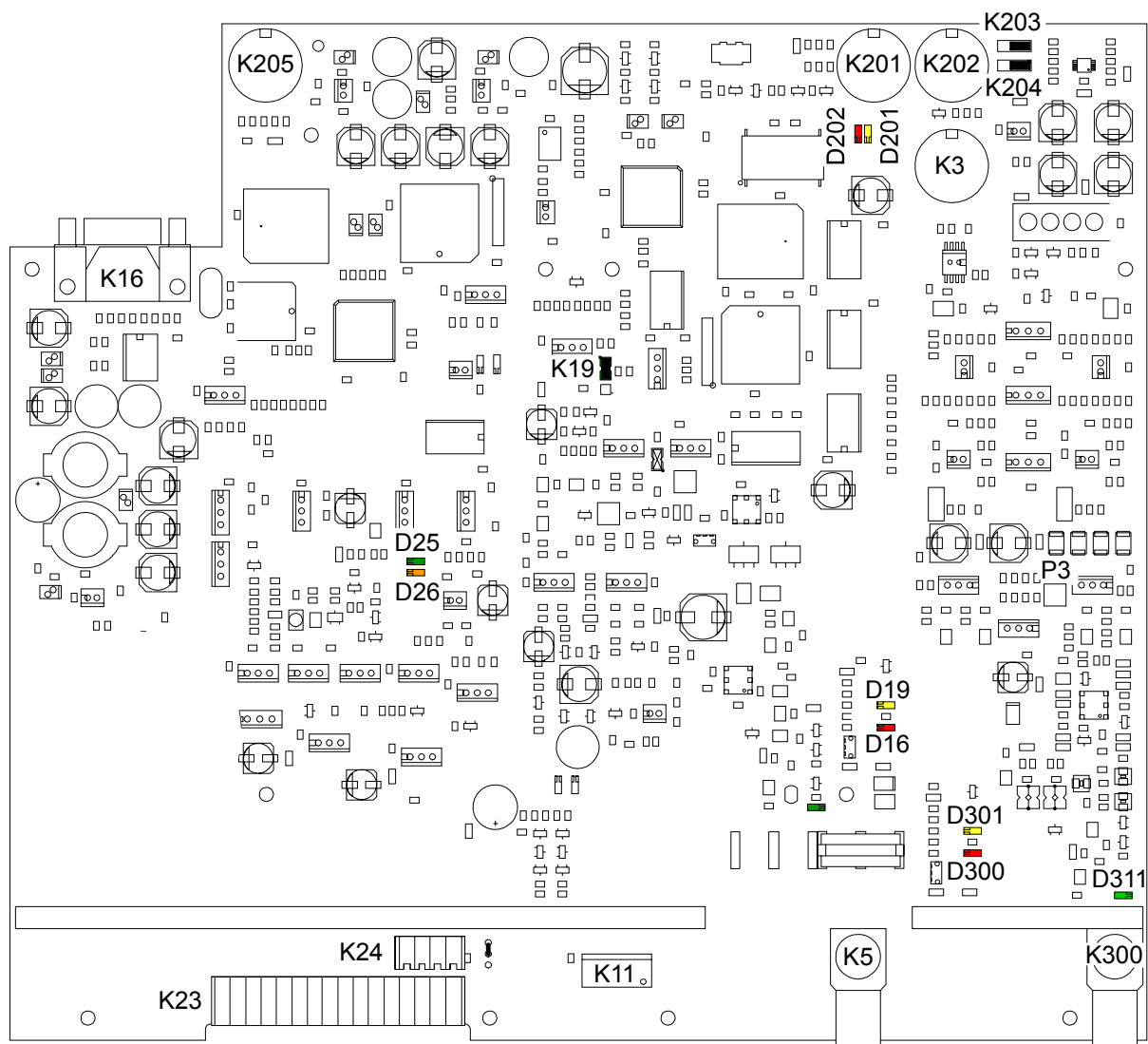
Nedap Retail Support
Postbus 102
7140 AC Groenlo
Netherlands



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BQ PCB





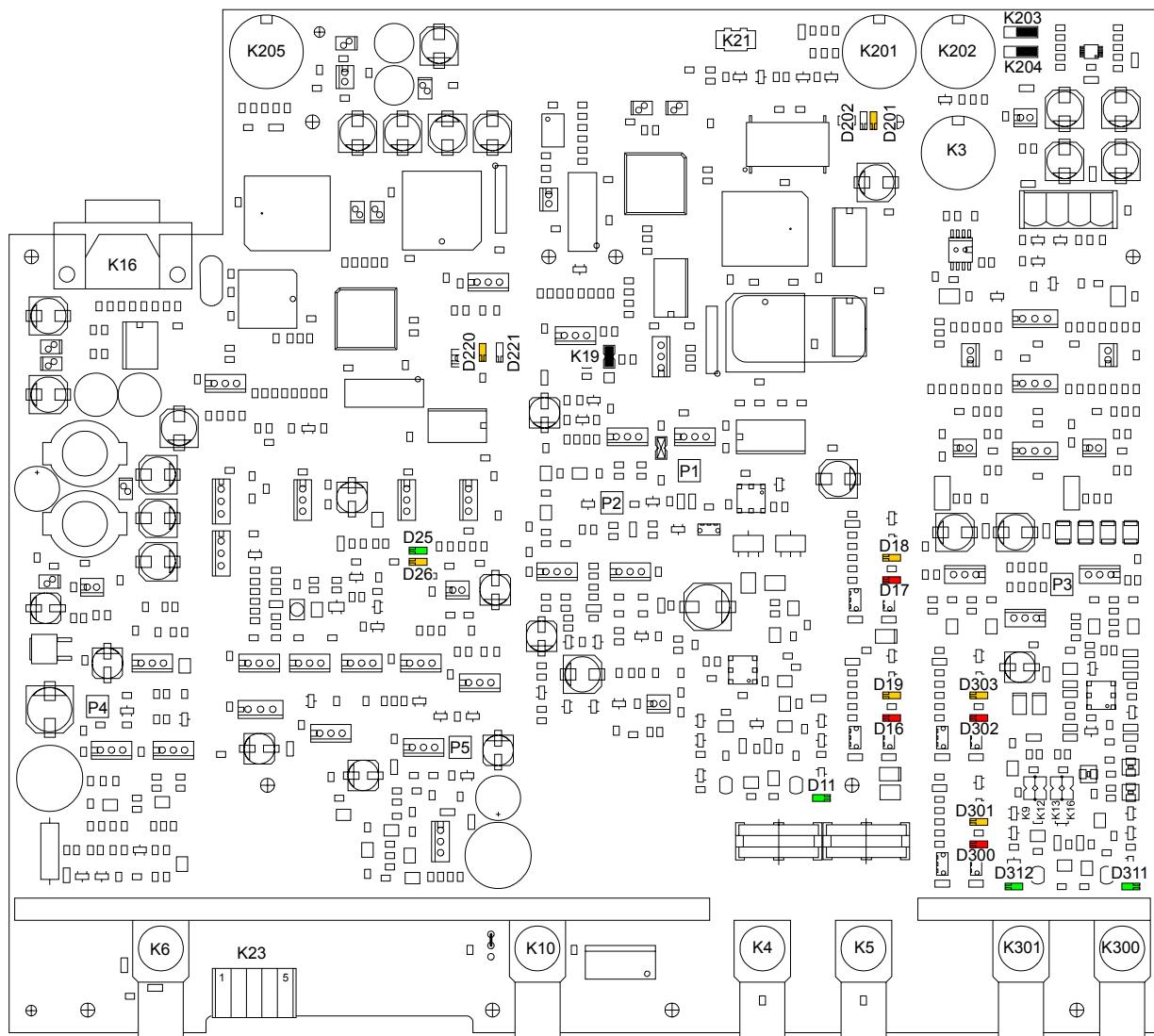
The following points can be used:

K3	Oscilloscope Tx	K201	Handheld terminal RxTx
K5	Output Tx (connector 3)	K202	Oscilloscope Rx
K9	Jumper Attenuation	K203	Jumper
K11	Power Input	K204	Jumper
K12	Jumper Attenuation	K205	Handheld terminal NCC
K13	Jumper Attenuation	K300	Output Rx (connector 1)
K15	Jumper Attenuation	P1	PA Drive Adjustment
K16	RS232 Interface Connector	P2	Phase Adjustment Tx
K21	Connector FCI	P3	Mixer Bias Adjustment
K23	IO Connector	P4	Slave Data communication Rx
K24	IO Connector	P5	Master Data communication Rx

Indicator leds:

D11	Mux Connector 1 TX	D48	Customer Counting: Led on = active
D12	Mux Connector 2 TX	D202	Communication Error RxTx
D16	Lamp On Connector 3	D220	Label Detection Alarm NCC on = detection
D19	Lamp Overload Connector 3	D221	Communication Error NCC
D25	Sweep Lock	D300	Lamp Overload Connector 1
D26	Center Lock	D301	Lamp On Connector 1
D201	Label Alarm RxTx	D311	Mux Connector 1 RX
D47	Customer Counting: Led on = active	D202	Communication Error RxTx

EQ PCB





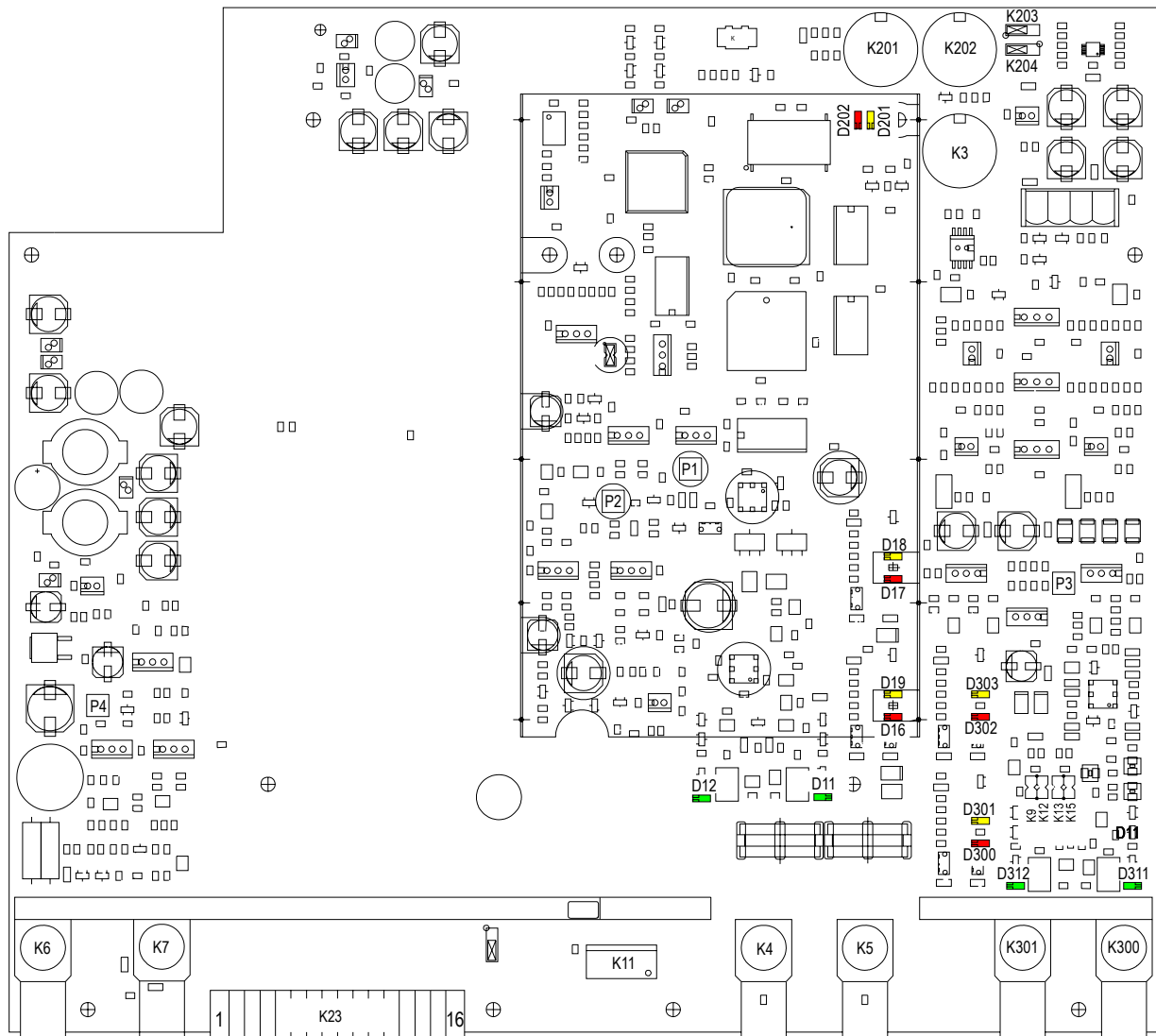
The following points can be used:

K3	Oscilloscope Tx	K201	Handheld terminal RxTx
K4	Output Tx (connector 4)	K202	Oscilloscope Rx
K5	Output Tx (connector 3)	K203	Jumper
K6	Synchronization In	K204	Jumper
K9	Jumper Attenuation	K205	Handheld terminal NCC
K10	Master connector	K300	Output Rx (connector 1)
K11	Power Input	K301	Output Rx (connector 2)
K12	Jumper Attenuation	P1	PA Drive Adjustment
K13	Jumper Attenuation	P2	Phase Adjustment Tx
K15	Jumper Attenuation	P3	Mixer Bias Adjustment
K16	RS232 Interface Connector	P4	Slave Data communication Rx
K21	Connector FCI	P5	Master Data communication Rx
K23	IO Connector		

Indicator leds:

D11	Mux Connector 1 TX	D202	Communication Error RxTx
D12	Mux Connector 2 TX	D220	Label Detection Alarm NCC on = detection
D16	Lamp On Connector 3	D221	Communication Error NCC
D17	Lamp On Connector 4	D300	Lamp Overload Connector 1
D18	Lamp Overload Connector 4	D301	Lamp On Connector 1
D19	Lamp Overload Connector 3	D302	Lamp Overload Connector 2
D25	Sweep Lock	D303	Lamp On Connector 2
D26	Center Lock	D311	Mux Connector 1 RX
D201	Label Alarm RxTx	D312	Mux Connector 2 RX

EQ3E PCB





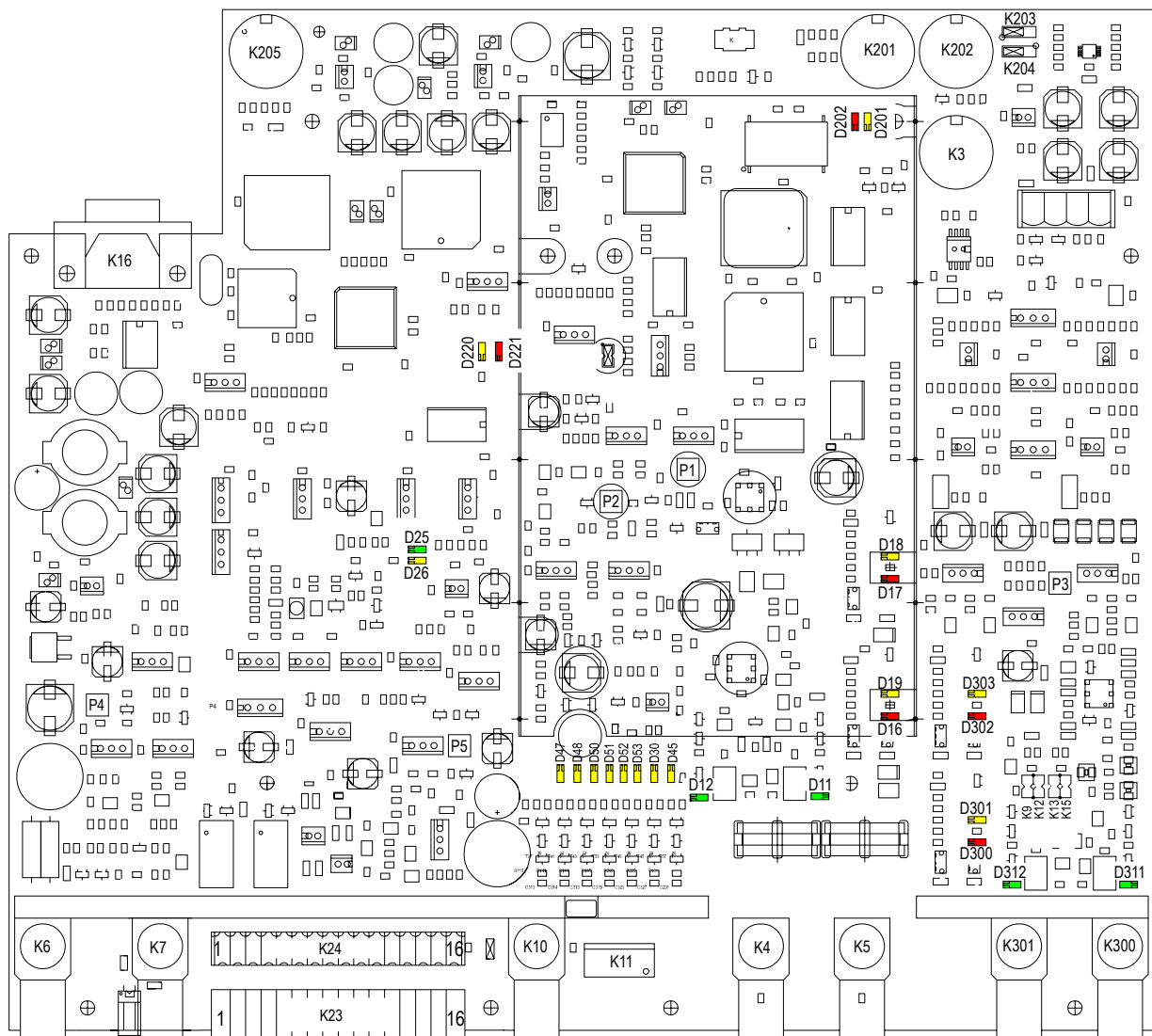
The following points can be used:

K3	Oscilloscope Tx	K24	IO Connector
K4	Output Tx (connector 4)	K201	Handheld terminal RxTx
K5	Output Tx (connector 3)	K202	Oscilloscope Rx
K6	Synchronization In	K203	Jumper
K7	Synchronization In	K204	Jumper
K9	Jumper Attenuation	K300	Output Rx (connector 1)
K11	Power Input	K301	Output Rx (connector 2)
K12	Jumper Attenuation	P1	PA Drive Adjustment
K13	Jumper Attenuation	P2	Phase Adjustment Tx
K15	Jumper Attenuation	P3	Mixer Bias Adjustment
K21	Connector FCI		

Indicator leds:

D11	Mux Connector 1 TX	D202	Communication Error RxTx
D12	Mux Connector 2 TX	D300	Lamp Overload Connector 1
D16	Lamp On Connector 3	D301	Lamp On Connector 1
D17	Lamp On Connector 4	D302	Lamp Overload Connector 2
D18	Lamp Overload Connector 4	D303	Lamp On Connector 2
D19	Lamp Overload Connector 3	D311	Mux Connector 1 RX
D201	Label Alarm RxTx	D312	Mux Connector 2 RX

IQ PCB





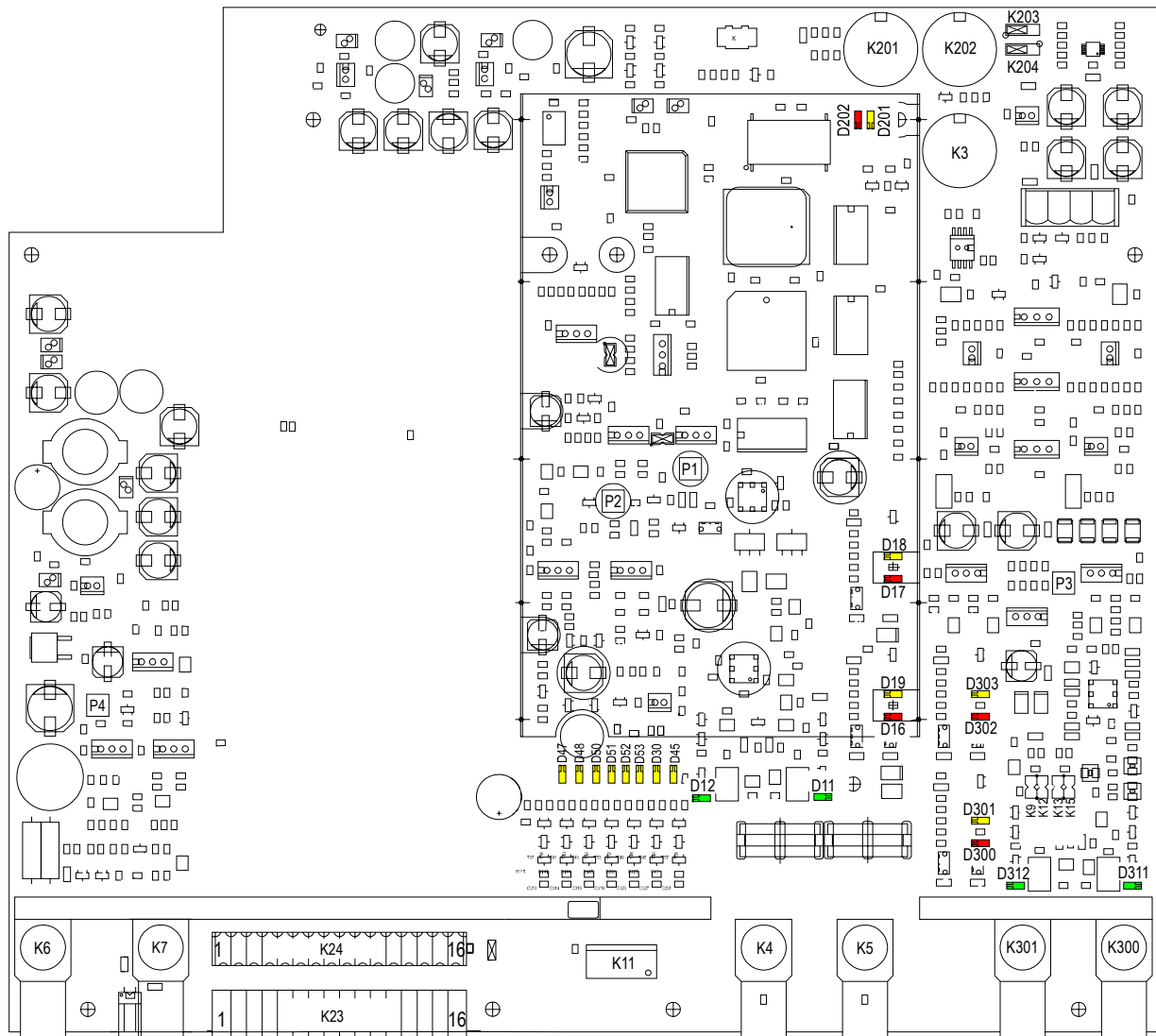
The following points can be used:

K3	Oscilloscope Tx	K23	IO Connector
K4	Output Tx (connector 4)	K24	IO Connector
K5	Output Tx (connector 3)	K201	Handheld terminal RxTx
K6	Synchronization In	K202	Oscilloscope Rx
K7	Synchronization In	K203	Jumper
K9	Jumper Attenuation	K204	Jumper
K10	Master connector	K205	Handheld terminal NCC
K11	Power Input	K300	Output Rx (connector 1)
K12	Jumper Attenuation	K301	Output Rx (connector 2)
K13	Jumper Attenuation	P1	PA Drive Adjustment
K15	Jumper Attenuation	P2	Phase Adjustment Tx
K16	RS232 Interface Connector	P3	Mixer Bias Adjustment
K19	Jumper	P4	Slave Data communication Rx
K21	Connector FCI	P5	Master Data communication Rx

Indicator leds:

D11	Mux Connector 1 TX	D51	Customer Counting: Led on = active
D12	Mux Connector 2 TX	D52	Customer Counting: Led on = active
D16	Lamp On Connector 3	D53	Customer Counting: Led on = active
D17	Lamp On Connector 4	D201	Label Alarm RxTx
D18	Lamp Overload Connector 4	D202	Communication Error RxTx
D19	Lamp Overload Connector 3	D220	Label Detection Alarm NCC on = detection
D25	Sweep Lock	D221	Communication Error NCC
D26	Center Lock	D300	Lamp Overload Connector 1
D30	Customer Counting: Led on = active	D301	Lamp On Connector 1
D45	Customer Counting: Led on = active	D302	Lamp Overload Connector 2
D47	Customer Counting: Led on = active	D303	Lamp On Connector 2
D48	Customer Counting: Led on = active	D311	Mux Connector 1 RX
D50	Customer Counting: Led on = active	D312	Mux Connector 2 RX

IQ3E PCB





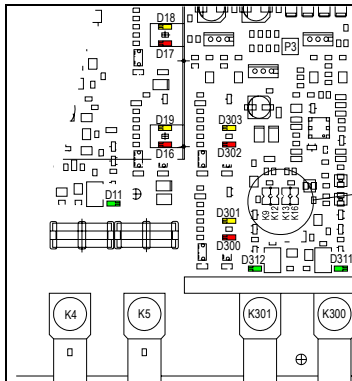
The following points can be used:

K3	Oscilloscope Tx	K23	IO Connector
K4	Output Tx (connector 4)	K24	IO Connector
K5	Output Tx (connector 3)	K201	Handheld terminal RxTx
K6	Synchronization In	K202	Oscilloscope Rx
K7	Synchronization In	K203	Jumper
K9	Jumper Attenuation	K204	Jumper
K11	Power Input	K300	Output Rx (connector 1)
K12	Jumper Attenuation	K301	Output Rx (connector 2)
K13	Jumper Attenuation	P1	PA Drive Adjustment
K15	Jumper Attenuation	P2	Phase Adjustment Tx
K19	Jumper	P3	Mixer Bias Adjustment
K21	Connector FCI		

Indicator leds:

D11	Mux Connector 1 TX	D51	Customer Counting: Led on = active
D12	Mux Connector 2 TX	D52	Customer Counting: Led on = active
D16	Lamp On Connector 3	D53	Customer Counting: Led on = active
D17	Lamp On Connector 4	D201	Label Alarm RxTx
D18	Lamp Overload Connector 4	D202	Communication Error RxTx
D19	Lamp Overload Connector 3	D300	Lamp Overload Connector 1
D30	Customer Counting: Led on = active	D301	Lamp On Connector 1
D45	Customer Counting: Led on = active	D302	Lamp Overload Connector 2
D47	Customer Counting: Led on = active	D303	Lamp On Connector 2
D48	Customer Counting: Led on = active	D311	Mux Connector 1 RX
D50	Customer Counting: Led on = active	D312	Mux Connector 2 RX

Attenuation



The diagram shows a circuit board with various components labeled. A circular callout labeled 'Jumpers' points to a specific area on the board. Below the callout, there are four rows of jumper settings, each corresponding to a different attenuation level: 0 dB, 6 dB, 12 dB, and 18 dB. Each row shows a different configuration of jumpers (green and black) on the board.

Jumpers

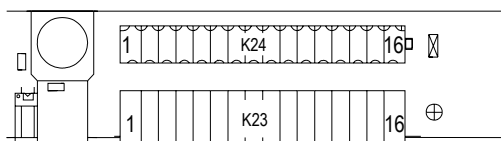
 = 0 dB
 = 6 dB
 = 12 dB
 = 18 dB

It is possible to attenuate the receiver input sensitivity with 6, 12 or 18dB. In this way the receiver is capable of accepting the high level of the coupled transmitter signal when the panels are too close to eachother. When the distance between the antenna's is below 1.5 metre the attenuator should be used to avoid overloading of the receiving input.



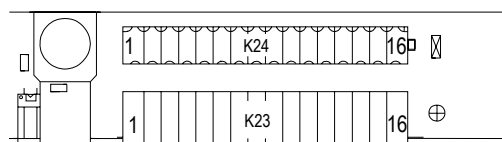
IO Connector K23

1	= DRF2b count in2
2	= DRF2b count in1
3	= DRF2b enable burst
4	= DRF2b sync 150 Hz
5	= Gnd general
6	= +33V
7	= Gnd Customer Counting
8	= sensor in 8
9	= sensor in 7
10	= sensor in 6
11	= sensor in 5
12	= sensor in 4
13	= sensor in 3
14	= sensor in 2
15	= sensor in 1
16	= +15V Customer Counting



IO Connector K24

1	= Ry1 C
2	= Ry1 NO
3	= Ry1 NC
4	= Ry2 C
5	= Ry2 NO
6	= Ry2 NC
7	= opto in 1
8	= opto in 2
9	= common opto inputs
10	= opto out 2
11	= opto out 1
12	= common opto outputs
13	= I2C Sda
14	= I2c Scl
15	= + 6Volt
16	= Gnd



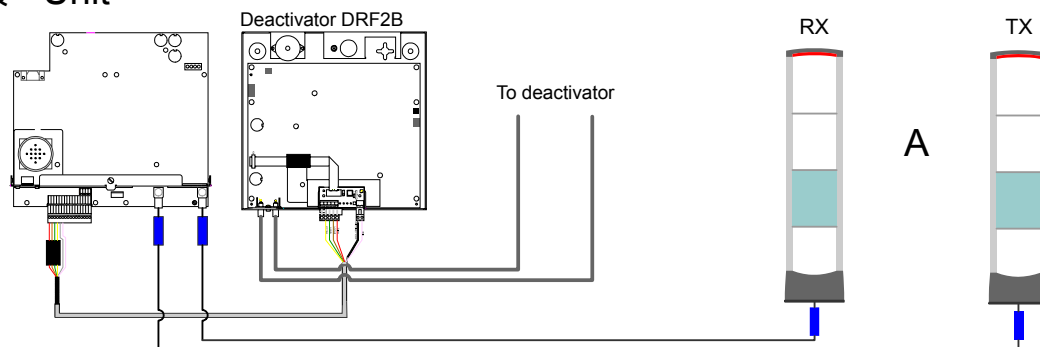


System configurations

1. Shown configurations are examples
2. Settings may differ from the store you are installing - programming
3. Shown firmware is version 1.406 X and 1.407 X, used for these examples, your version may be different!



BQ - Unit



```

graph TD
    subgraph MM [MM]
        MM1["7 Edit 2003-02-13  
4 Test 11:53:54  
1 Status MM 1.406/A  
C Reboot EQ 5E30"]
        MM2["7 Edit  
7 Sweep 9 Flash  
4 Alarm 6 Modem  
1 Network 3 InOut  
C Slaves"]
        MM3["1 Network  
Address 5E30  
C Detect slaves FFFF"]
        MM4["C Detect slaves  
Address 5E30  
C Detect slaves FFFF"]
        MM5["7 Sweep 9 Flash  
4 Alarm 6 Modem  
1 Network 3 InOut  
C Slaves"]
        MM6["C Slaves (check)  
4B5C<0000 0000 0000  
0000<0000 0000 0000  
0000<0000 0000 0000  
0000<0000 0000 0000"]
        MM7["7 Sweep 9 Flash  
4 Alarm 6 Modem  
1 Network 3 InOut  
C Slaves"]
        MM8["9 Flash  
7 Save settings  
4 Restore"]
        MM9["7 Save settings  
Done  
(Esc to continue)"]
    end

    subgraph MS_Transmitter [MS Transmitter]
        MT1["7 Edit 2003-02-13  
4 Test 11:53:54  
1 Status MS 1.406/A  
C Reboot IQ1 4B5C"]
        MT2["7 Edit  
7 RX 9 Flash  
4 TX 6 InOut"]
        MT3["4 TX  
7 Mux  
4 Alarm  
1 Power"]
        MT4["7 Mux  
Mux x 1< On 7 Led 1  
Phase A B C D  
Conn 1 1 1 1  
Group 1 1 1 1"]
        MT5["7 Mux  
4 Alarm  
1 Power"]
        MT6["4 Alarm  
Alarm neighbour  
A B C D  
5E30<5E30 0000 0000  
0000<0000 0000 0000"]
        MT7["7 Mux  
4 Alarm  
1 Power"]
        MT8["1 Power  
Phase A B C D  
Power 12< 1 1 1  
Actual 1 1 0 0  
Agc 1"]
        MT9["7 Mux  
4 Alarm  
1 Power"]
        MT10["7 RX 9 Flash  
4 TX 6 InOut"]
        MT11["9 Flash  
7 Save settings  
4 Restore"]
        MT12["7 Save settings  
Done  
(Esc to continue)"]
    end

    subgraph MS_Receiver [MS Receiver]
        MR1["7 Edit 2003-02-13  
4 Test 11:53:54  
1 Status MS 1.406/A  
C Reboot IQ1 4B5C"]
        MR2["7 Edit  
7 RX 9 Flash  
4 TX 6 InOut"]
        MR3["7 RX Edit  
7 Mux 8 MutS  
4 Alrm 5 Mcut  
1 Sens 2 Sigl 3 Admo  
C Freq 0 Scop"]
        MR4["7 Mux  
Mux 1< On 7 Led 1  
Phase A B C D  
Conn 1 1 1 1  
Group 1 1 1 1"]
        MR5["7 Mux 8 MutS  
4 Alrm 5 Mcut  
1 Sens 2 Sigl 3 Admo  
C Freq 0 Scop"]
        MR6["1 Sens  
GainA 45< GainB 54  
GainC 54< GainD 54  
Tresh 8 MaxPw 40  
0 Default"]
        MR7["7 Mux 8 MutS  
4 Alrm 5 Mcut  
1 Sens 2 Sigl 3 Admo  
C Freq 0 Scop"]
        MR8["3 Admo  
AdMode 1< Speed 10  
AdBuf x 0 0 0  
Max 23<20 20 20  
Current x 0 0 0"]
        MR9["7 Mux 8 MutS  
4 Alrm 5 Mcut  
1 Sens 2 Sigl 3 Admo  
C Freq 0 Scop"]
        MR10["7 RX 9 Flash  
4 TX 6 InOut"]
        MR11["9 Flash  
7 Save settings  
4 Restore"]
        MR12["7 Save settings  
Done  
(Esc to continue)"]
    end
  
```

The diagram illustrates the menu navigation for three devices: MM, MS Transmitter, and MS Receiver. Each device has a vertical sequence of menu screens, with arrows indicating the flow between them. The MM device has 11 screens, MS Transmitter has 12, and MS Receiver has 12. The flow starts at the top screen and ends at the 'Done' screen at the bottom.

MM Menu Flow:

- 7 Edit 2003-02-13
4 Test 11:53:54
1 Status MM 1.406/A
C Reboot EQ 5E30
- 7 Edit
7 Sweep 9 Flash
4 Alarm 6 Modem
1 Network 3 InOut
C Slaves
- 1 Network
Address 5E30
C Detect slaves FFFF
- C Detect slaves
Address 5E30
C Detect slaves FFFF
- 7 Sweep 9 Flash
4 Alarm 6 Modem
1 Network 3 InOut
C Slaves
- C Slaves (check)
4B5C<0000 0000 0000
0000<0000 0000 0000
0000<0000 0000 0000
0000<0000 0000 0000
- 7 Sweep 9 Flash
4 Alarm 6 Modem
1 Network 3 InOut
C Slaves
- 9 Flash
7 Save settings
4 Restore
- 7 Save settings
Done
(Esc to continue)

MS Transmitter Menu Flow:

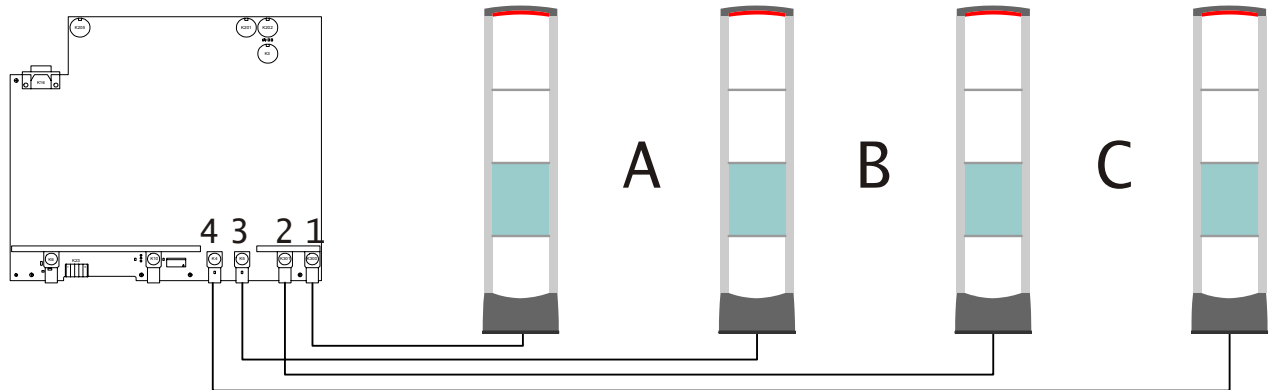
- 7 Edit 2003-02-13
4 Test 11:53:54
1 Status MS 1.406/A
C Reboot IQ1 4B5C
- 7 Edit
7 RX 9 Flash
4 TX 6 InOut
- 4 TX
7 Mux
4 Alarm
1 Power
- 7 Mux
Mux x 1< On 7 Led 1
Phase A B C D
Conn 1 1 1 1
Group 1 1 1 1
- 7 Mux
4 Alarm
1 Power
- 4 Alarm
Alarm neighbour
A B C D
5E30<5E30 0000 0000
0000<0000 0000 0000
- 7 Mux
4 Alarm
1 Power
- 1 Power
Phase A B C D
Power 12< 1 1 1
Actual 1 1 0 0
Agc 1
- 7 Mux
4 Alarm
1 Power
- 7 RX 9 Flash
4 TX 6 InOut
- 9 Flash
7 Save settings
4 Restore
- 7 Save settings
Done
(Esc to continue)

MS Receiver Menu Flow:

- 7 Edit 2003-02-13
4 Test 11:53:54
1 Status MS 1.406/A
C Reboot IQ1 4B5C
- 7 Edit
7 RX 9 Flash
4 TX 6 InOut
- 7 RX Edit
7 Mux 8 MutS
4 Alrm 5 Mcut
1 Sens 2 Sigl 3 Admo
C Freq 0 Scop
- 7 Mux
Mux 1< On 7 Led 1
Phase A B C D
Conn 1 1 1 1
Group 1 1 1 1
- 7 Mux 8 MutS
4 Alrm 5 Mcut
1 Sens 2 Sigl 3 Admo
C Freq 0 Scop
- 1 Sens
GainA 45< GainB 54
GainC 54< GainD 54
Tresh 8 MaxPw 40
0 Default
- 7 Mux 8 MutS
4 Alrm 5 Mcut
1 Sens 2 Sigl 3 Admo
C Freq 0 Scop
- 3 Admo
AdMode 1< Speed 10
AdBuf x 0 0 0
Max 23<20 20 20
Current x 0 0 0
- 7 Mux 8 MutS
4 Alrm 5 Mcut
1 Sens 2 Sigl 3 Admo
C Freq 0 Scop
- 7 RX 9 Flash
4 TX 6 InOut
- 9 Flash
7 Save settings
4 Restore
- 7 Save settings
Done
(Esc to continue)

EQ System, 3 aisles

EQ - Unit



MM

7 Edit 2003-02-13
4 Test 11:53:54
1 Status MM 1.406/A
C Reboot EQ 5E30

7 Edit

7 Sweep 9 Flash
4 Alarm 6 Modem
1 Network 3 InOut
C Slaves

1 Network

Address 5E30

C Detect slaves FFFF

C Detect slaves

Address 5E30

C Detect slaves FFFF

←

7 Sweep 9 Flash
4 Alarm 6 Modem
1 Network 3 InOut
C Slaves

C Slaves (check)

4B5C<0000 0000 0000
0000<0000 0000 0000
0000<0000 0000 0000
0000<0000 0000 0000

←

7 Sweep 9 Flash
4 Alarm 6 Modem
1 Network 3 InOut
C Slaves

9 Flash

7 Save settings
4 Restore

7 Save settings

Done
(Esc to continue)

MS Transmitter

7 Edit 2003-02-13
4 Test 11:53:54
1 Status MS 1.406/A
C Reboot EQ3 4B5C

7 Edit

7 RX 9 Flash
4 TX 6 InOut

4 TX

7 Mux
4 Alarm
1 Power

7 Mux

Mux x 4< On 7 Led 1
Phase A B C D
Conn 3 3 4 4
Group 1 1 1 1

←

7 Mux
4 Alarm
1 Power

4 Alarm

Alarm neighbour
A B C D
4B5C<4B5C 4B5C 0000
0000 0000 0000 0000

←

7 Mux
4 Alarm
1 Power

1 Power

Phase A B C D
Power 12< 12 12 12
Actual 12 12 12 12
Agc 1

←

7 Mux
4 Alarm
1 Power

←

7 RX 9 Flash
4 TX 6 InOut

9 Flash

7 Save settings
4 Restore

7 Save settings

Done
(Esc to continue)

MS Receiver

7 Edit 2003-02-13
4 Test 11:53:54
1 Status MS 1.406/A
C Reboot EQ3 4B5C

7 Edit

7 RX 9 Flash
4 TX 6 InOut

7 RX Edit

7 Mux 8 MutS
4 Alrm 5 Mcut
1 Sens 2 Sig1 3 Admo
C Freq 0 Scop

7 Mux

Mux x 4< On 7 Led 1
Phase A B C D
Conn 1 2 2 2
Group 1 1 1 1

←

7 Mux 8 MutS
4 Alrm 5 Mcut
1 Sens 2 Sig1 3 Admo
C Freq 0 Scop

1 Sens

GainA 54< GainB 54
GainC 54 GainD 54
Tresh 8 MaxPW 40
0 Default

←

7 Mux 8 MutS
4 Alrm 5 Mcut
1 Sens 2 Sig1 3 Admo
C Freq 0 Scop

4 Alarm

Ext Rel 0< 0 0 0
AlrmEna 1 1 1 0
Buzzer Ena 1 Mode 0
Lv1 0 Time 0

←

7 Mux 8 MutS
4 Alrm 5 Mcut
1 Sens 2 Sig1 3 Admo
C Freq 0 Scop

←

7 RX 9 Flash
4 TX 6 InOut

9 Flash

7 Save settings
4 Restore

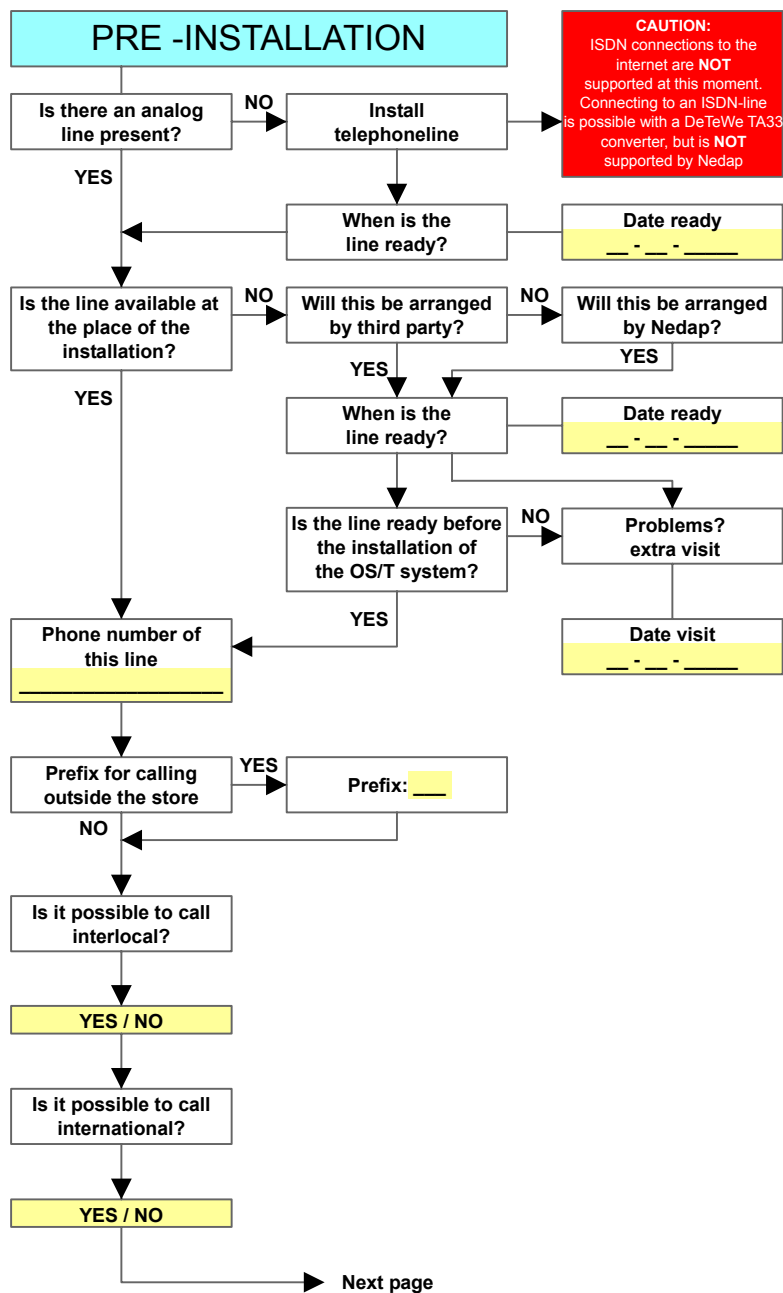
7 Save settings

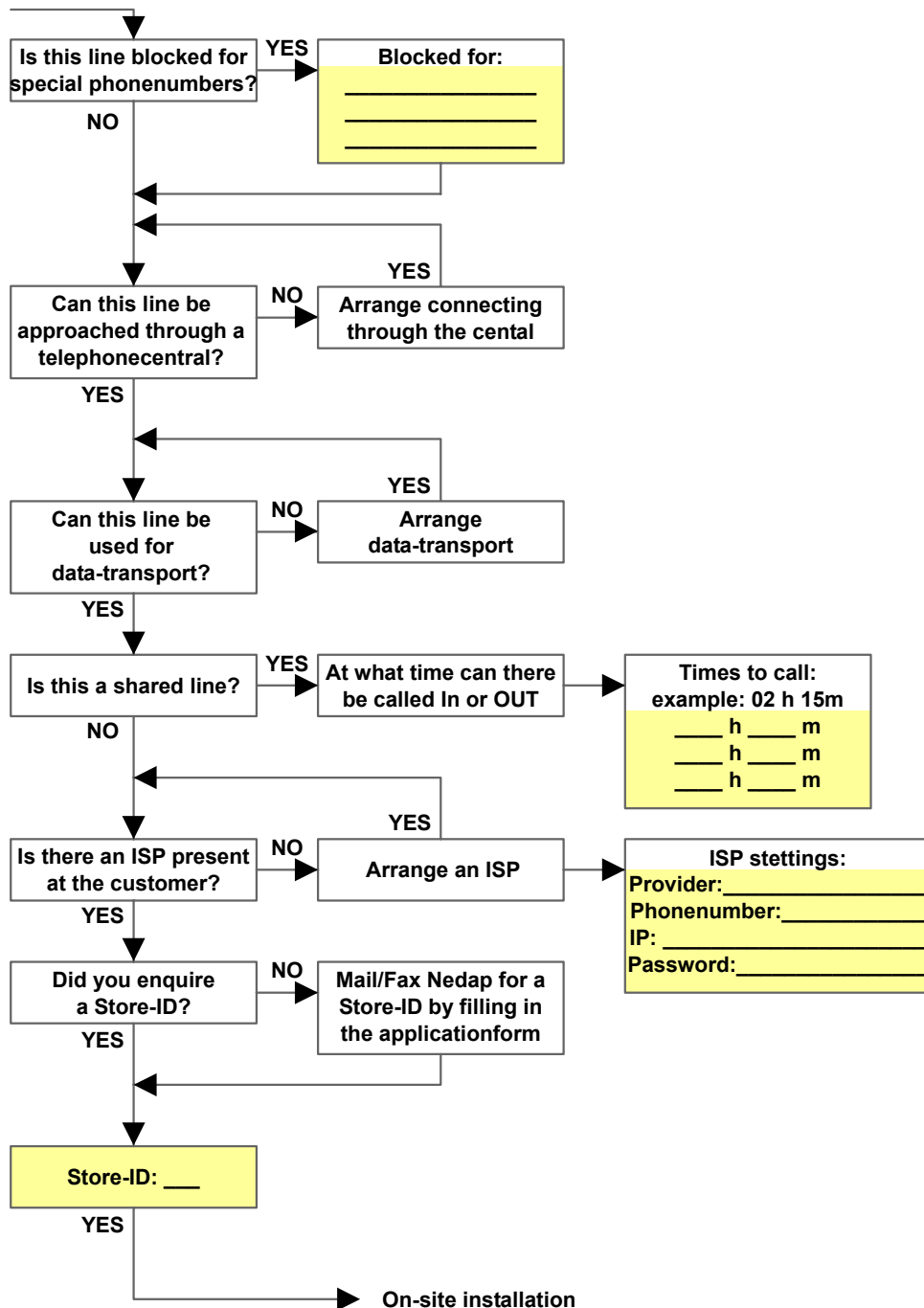
Done
(Esc to continue)

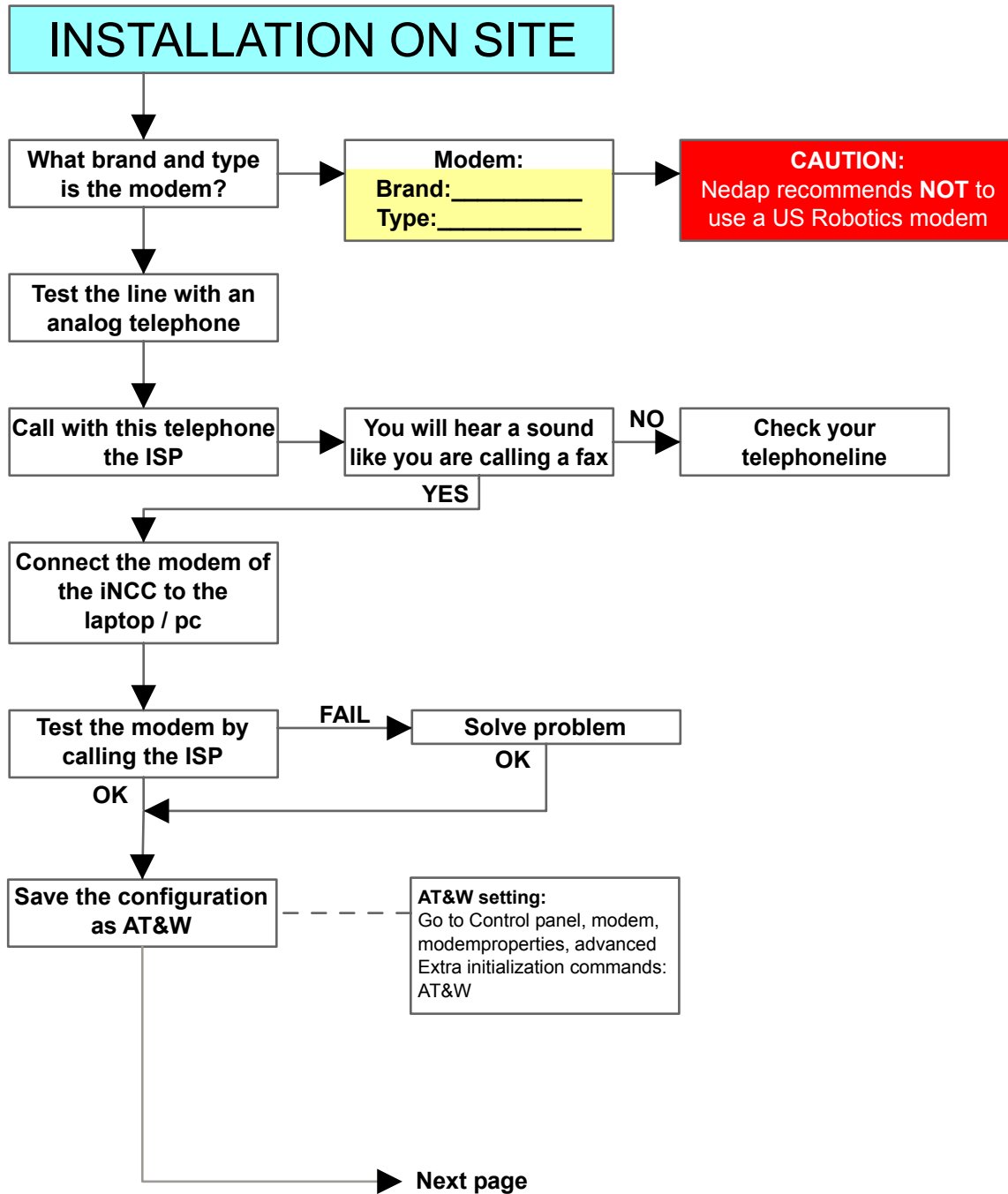
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extended view**

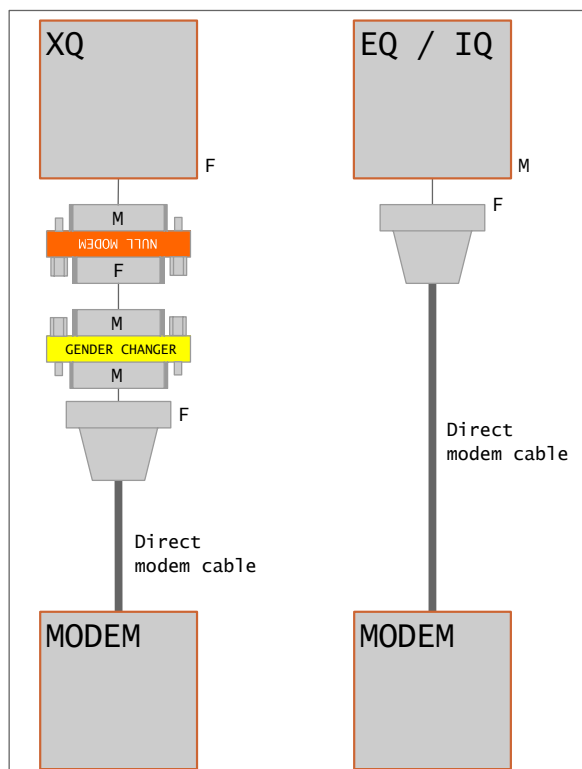
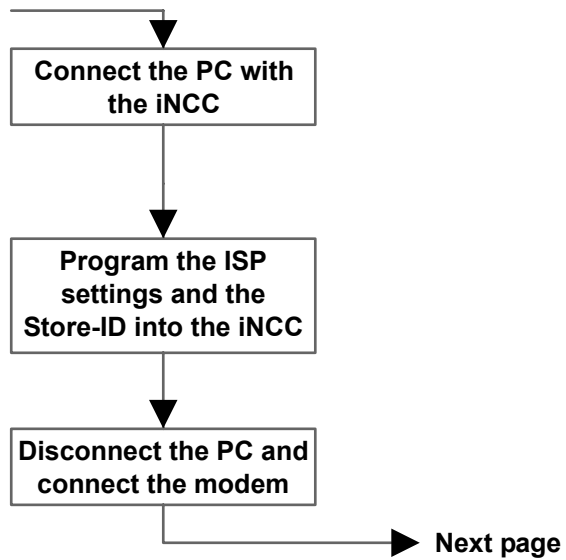


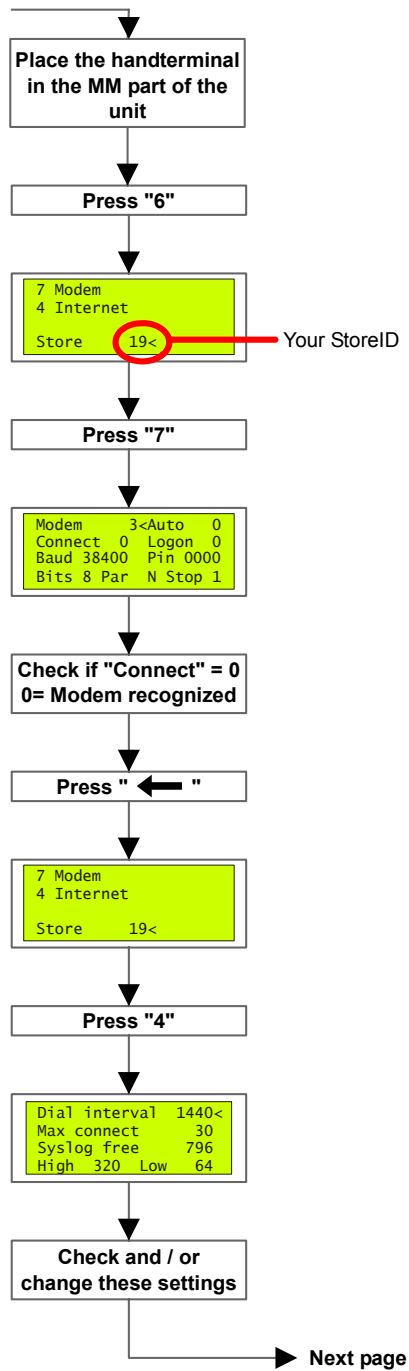
Checklist modem settings iNCC

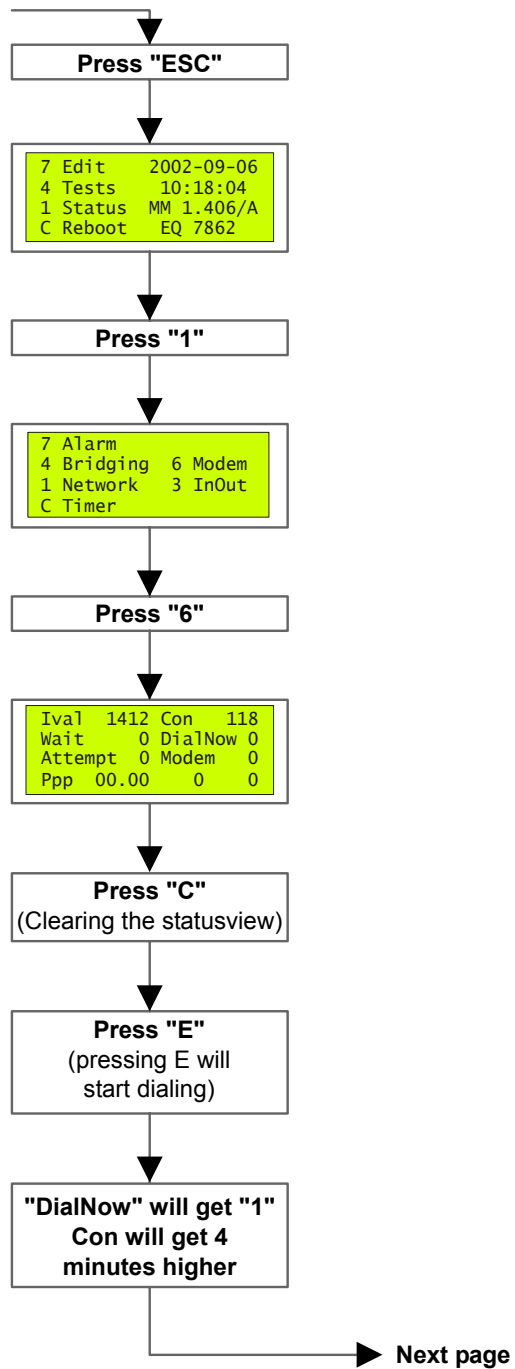


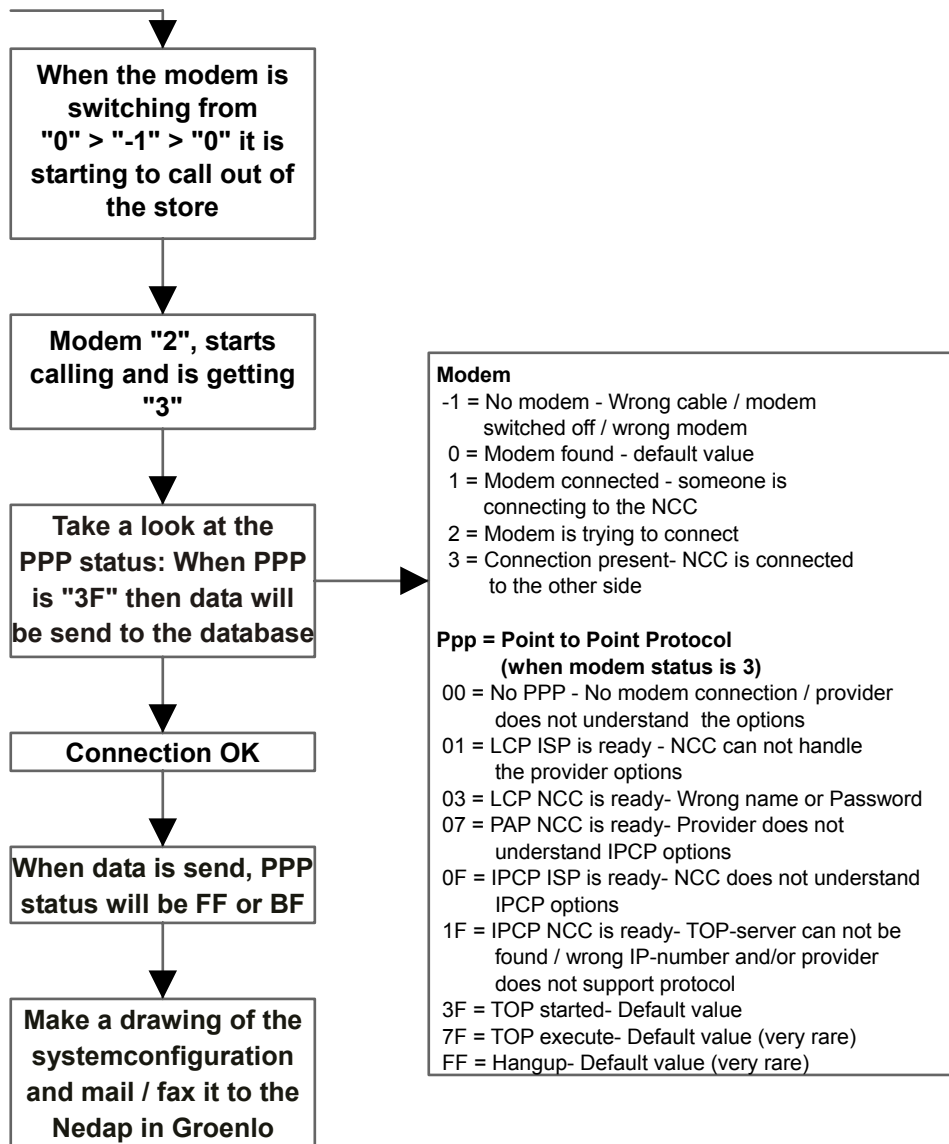






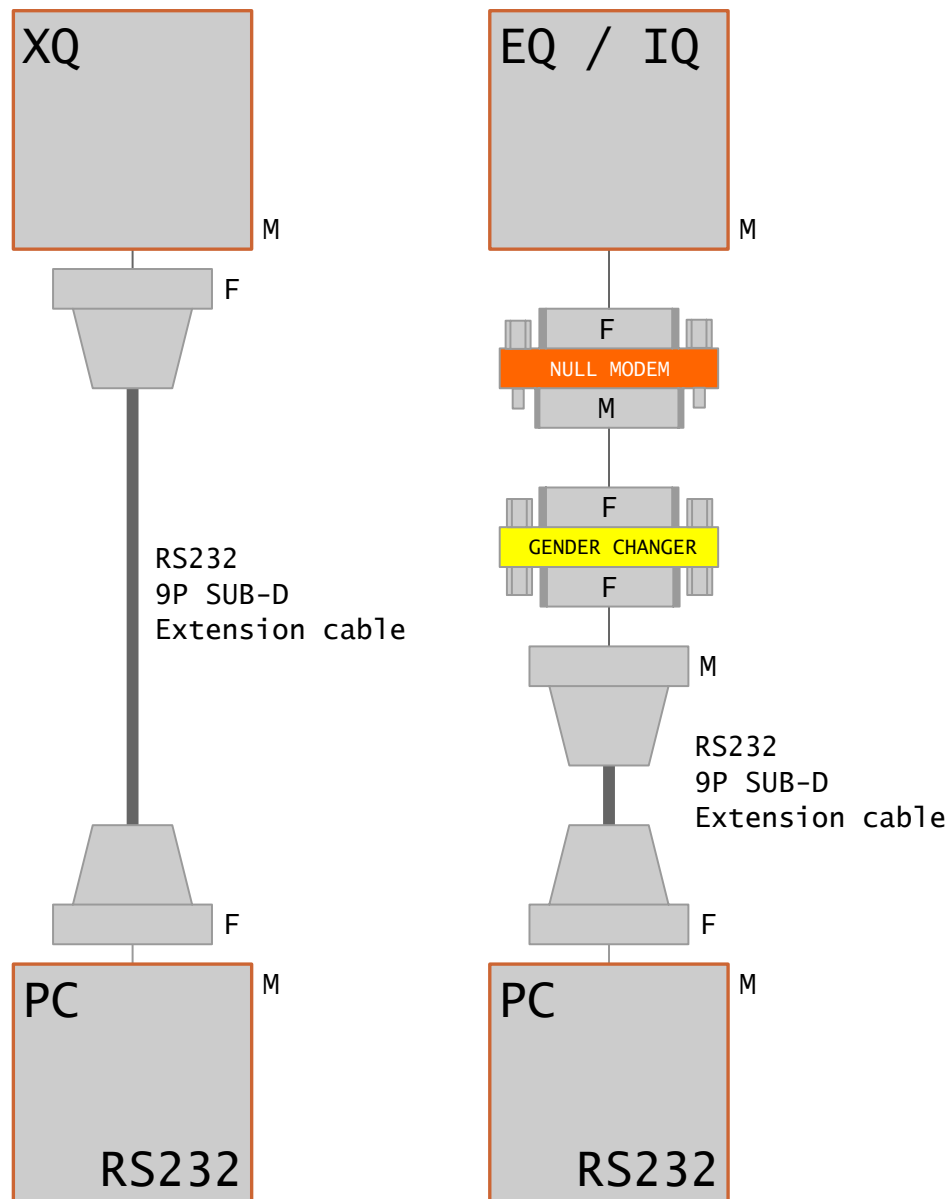






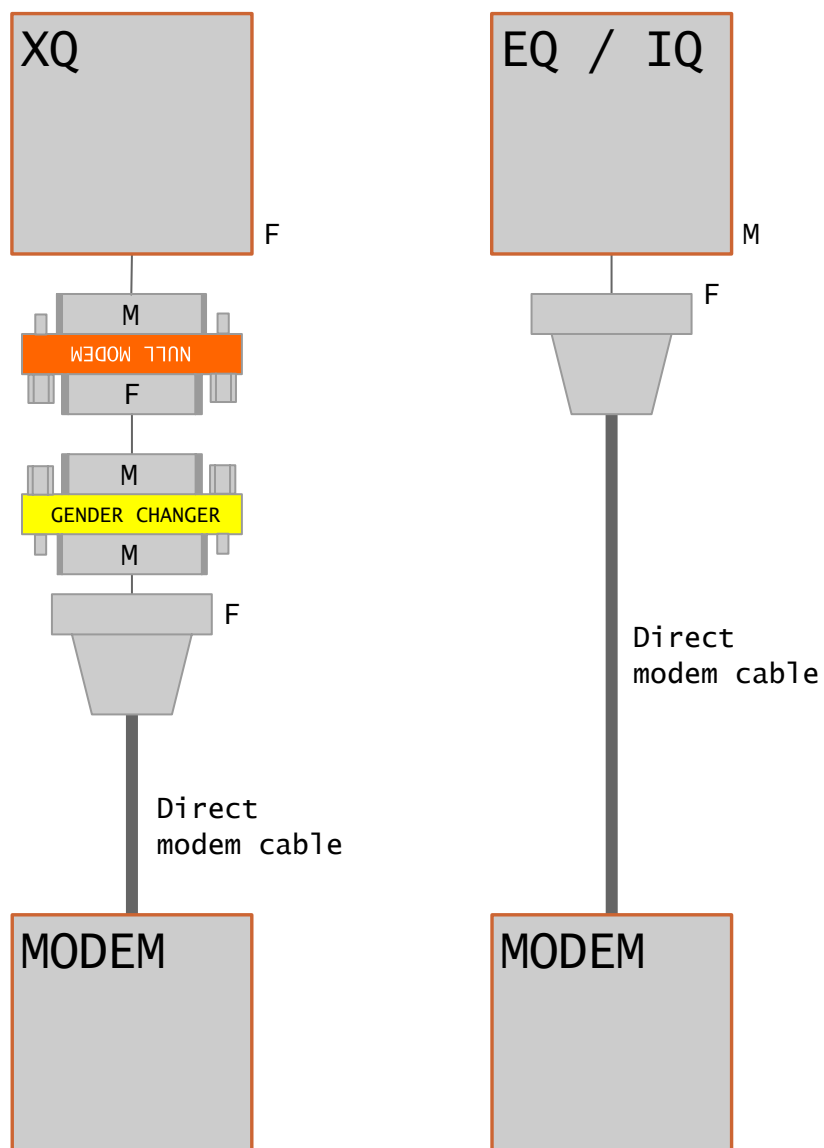


Connecting a PC to a XQ or EQ/IQ Unit



i F = Female, M = Male

Connecting a XQ or EQ/IQ unit to a modem

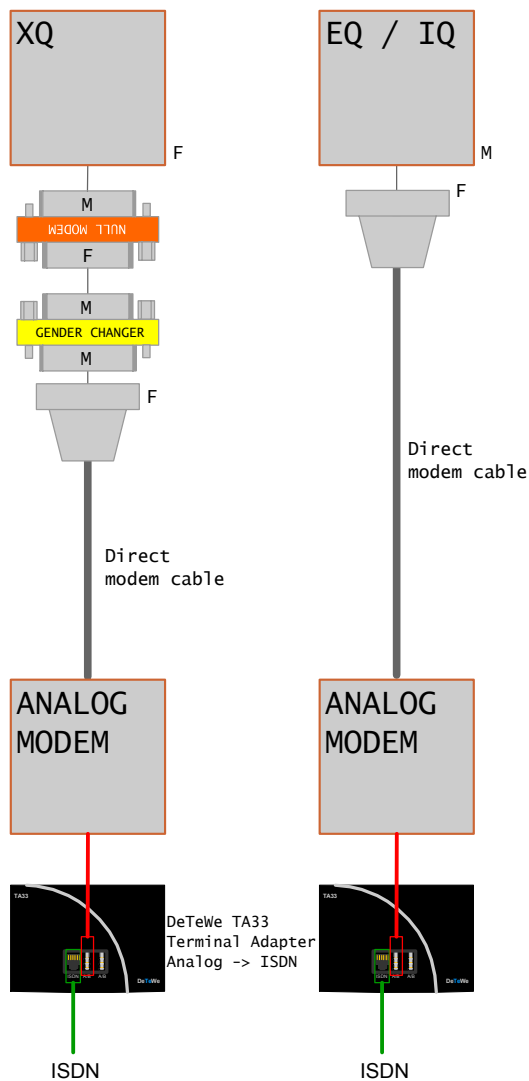


i F = Female, M = Male

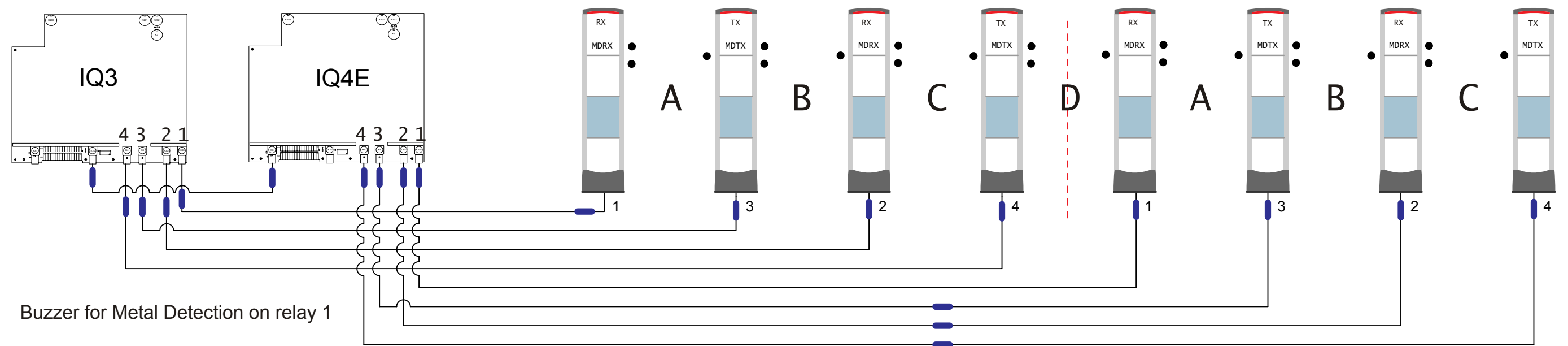


Connecting to an ISDN line using the DeTeWe TA33 terminal adapter

At the moment this manual is written, connecting a ISDN modem to a XQ or an EQ/IQ Unit is NOT supported. The connection shown below can be used in case of an ISDN telephone line.



i F = Female, M = Male



Buzzer for Metal Detection on relay 1

IQ3

MM

7 Edit 2003-02-13 10:26:15 1 Status MM 1.407/A C Reboot IQ 52C5

7 Edit

7 Sweep 9 Flash 4 Alarm 6 Modem 1 Network 3 InOut C Slaves

1 Network

Address 52C5

C Detect slaves FFFF

C Detect slaves

Address 52C5

C Detect slaves FFFF

7 Sweep 9 Flash 4 Alarm 6 Modem 1 Network 3 InOut C Slaves

C Slaves (check)

6288<72C5 0000 0000 0000 0000 0000 0000 0000

7 Sweep 9 Flash 4 Alarm 6 Modem 1 Network 3 InOut C Slaves

9 Flash

7 Save settings 4 Restore

7 Save settings

Done (Esc to continue)

MS Transmitter

7 Edit 2003-02-13 11:33:39 1 Status MS 1.406/B C Reboot IQ3 72C5

7 Edit

7 RX 9 Flash 4 TX 6 InOut

4 TX

7 Mux 8 MutS 4 Alarm 5 Mcut 1 Power

7 Mux

Mux x 4< On 7 Led 1 Phase A B C D Conn 3 3 4 4 Group 1 1 1 1

7 Mux 8 MutS 4 Alarm 5 Mcut 1 Power

4 Alarm

Alarm neighbour A B C D 72C5<72C5 72C5 6288 0000 0000 0000 0000

7 Mux 8 MutS 4 Alarm 5 Mcut 1 Power

1 Power

Phase A B C D Power 12< 12 12 12 Actual 12 12 12 12 Agc 1

7 Mux 8 MutS 4 Alarm 5 Mcut 1 Power

7 RX 9 Flash 4 TX 6 InOut

9 Flash

7 Save settings 4 Restore

7 Save settings

Done (Esc to continue)

MS Receiver

7 Edit 2003-02-13 11:33:39 1 Status MS 1.406/B C Reboot IQ3 72C5

7 Edit

7 RX 9 Flash 4 TX 6 InOut

7 RX

7 Mux 8 MutS 4 Alarm 5 Mcut 1 Sens 2 Sigl 3 Admo C Freq 0 Scop

7 Mux

Mux x 4< On 7 Led 1 Phase A B C D Conn 1 2 2 1 Group 1 1 1 1

7 Mux 8 MutS 4 Alarm 5 Mcut 1 Sens 2 Sigl 3 Admo C Freq 0 Scop

1 Sens

GainA 54< GainB 54 GainC 54 GainD 54 Tresh 8 MaxPW 40 0 Default

7 Mux 8 MutS 4 Alarm 5 Mcut 1 Sens 2 Sigl 3 Admo C Freq 0 Scop

4 Alarm

Ext Rel 0< 0 0 0 AlrmEna 1 1 1 0 Buzzer Ena 1 Mode 0 Lvl 0 Time 0

7 Mux 8 MutS 4 Alarm 5 Mcut 1 Sens 2 Sigl 3 Admo C Freq 0 Scop

7 RX 9 Flash 4 TX 6 InOut

9 Flash

7 Save settings 4 Restore

7 Save settings

Done (Esc to continue)

CC & MD

7 Edit 2003-02-13 11:33:39 1 Status MS 1.406/B C Reboot IQ3 72C5

7 Edit

7 RX 9 Flash 4 TX 6 InOut

6 InOut

Usage 4< 7 Free/Deact (0/1) 4 CuCo (*) 1 Metal (2/4)

4 CuCo

7 Counting 4 Direction

7 Counting

Single/Double 2< MinPuls 60 TO 15 WA 1:0 2:0 3:0 4:0 Lvl 25 Time 5

7 Counting 4 Direction

4 Direction

1:72C5<A 2:72C5 B 3:72C5 C 4:6288 D Window 2000 ms Lvl 1 Time 5

7 Counting 4 Direction

Usage 4< 7 Free/Deact (0/1) 4 CuCo (*) 1 Metal (2/4)

1 Metal (2/4)

Action 1< 0 0 0 Mode 0 0 0 0 Pulse in 5 s Lvl 25 Time 5

Usage 4< 7 Free/Deact (0/1) 4 CuCo (*) 1 Metal (2/4)

7 RX 9 Flash 4 TX 6 InOut

9 Flash

7 Save settings 4 Restore

7 Save settings

Done (Esc to continue)

IQ4E

MS Transmitter

7 Edit 2003-02-13 11:33:39 1 Status MS 1.406/B C Reboot IQ4E 6288

7 Edit

7 RX 9 Flash 4 TX 6 InOut

4 TX

7 Mux 8 MutS 4 Alarm 5 Mcut 1 Power

7 Mux

Mux x 4< On 7 Led 1 Phase A B C D Conn 3 3 4 4 Group 1 1 1 1

7 Mux 8 MutS 4 Alarm 5 Mcut 1 Power

4 Alarm

Alarm neighbour A B C D 6288<6288 6288 0000 0000 0000 0000 0000

7 Mux 8 MutS 4 Alarm 5 Mcut 1 Power

1 Power

Phase A B C D Power 12< 12 12 12 6 Actual 12 12 12 0 Agc 1

7 Mux 8 MutS 4 Alarm 5 Mcut 1 Power

7 RX 9 Flash 4 TX 6 InOut

9 Flash

7 Save settings 4 Restore

7 Save settings

Done (Esc to continue)

MS Receiver

7 Edit 2003-02-13 11:33:39 1 Status MS 1.406/B C Reboot IQ4E 6288

7 Edit

7 RX 9 Flash 4 TX 6 InOut

7 RX

7 Mux 8 MutS 4 Alarm 5 Mcut 1 Sens 2 Sigl 3 Admo C Freq 0 Scop

7 Mux

Mux x 4< On 7 Led 1 Phase A B C D Conn 1 2 2 1 Group 1 1 1 1

7 Mux 8 MutS 4 Alarm 5 Mcut 1 Sens 2 Sigl 3 Admo C Freq 0 Scop

1 Sens

GainA 54< GainB 54 GainC 54 GainD 54 Tresh 8 MaxPW 40 0 Default

7 Mux 8 MutS 4 Alarm 5 Mcut 1 Sens 2 Sigl 3 Admo C Freq 0 Scop

4 Alarm

Ext Rel 0< 0 0 0 AlrmEna 1 1 1 1 Buzzer Ena 1 Mode 0 Lvl 0 Time 0

7 Mux 8 MutS 4 Alarm 5 Mcut 1 Sens 2 Sigl 3 Admo C Freq 0 Scop

7 RX 9 Flash 4 TX 6 InOut

9 Flash

7 Save settings 4 Restore

7 Save settings

Done (Esc to continue)

CC & MD

7 Edit 2003-02-13 11:33:39 1 Status MS 1.406/B C Reboot IQ4E 6288

7 Edit

7 RX 9 Flash 4 TX 6 InOut

6 InOut

Usage -1< 7 Free/Deact (0/1) 4 CuCo (*) 1 Metal (2/4)

4 CuCo

7 Counting 4 Direction

7 Counting

Single/Double 2< MinPuls 60 TO 15 WA 1:0 2:0 3:0 4:0 Lvl 1 Time 5

7 Counting 4 Direction

4 Direction

1:6288<A 2:6288 B 3:6288 C 4:0000 0 Window 2000 ms Lvl 25 Time 5

7 Counting 4 Direction

Usage -1< 7 Free/Deact (0/1) 4 CuCo (*) 1 Metal (2/4)

7 RX 9 Flash 4 TX 6 InOut

9 Flash

7 Save settings 4 Restore

7 Save settings

Done (Esc to continue)

CCTX

CCRX

Filter

medap



Metal Detection MD4

NEDAP RETAIL SUPPORT

Metal Detection

Manual MD4 including 62,75 MHz



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Modification of the OS/T Metal Detection operating frequency from 66 kHz to 62.75 kHz.

In DSP3 systems the Metal Detection (MD) had an operating frequency of 48 kHz, independent of the 8.2 MHz sweep generation system. It could run as a stand-alone system.

In the OS/T system, it is possible to set up a system including MD with internal electronics in the panels and a single coax connection between the panels.

To realize that, the operating frequency of the OS/T MD had to be derived from the OS/T sweep frequency. The required modification also gave the opportunity to choose a higher operating frequency. That was desired because of an enhanced detectability of metal-lined bags with a very thin aluminum layer, like used in certain types of "Cool Bags".

The new operating frequency was chosen at 66 kHz, 8 kHz above the Acousto-Magnetic (AM) operating frequency of Sensormatic, instead of 10 kHz below it, but still within a frequency band where the same level of fieldstrength (72 dB μ A/m) is allowed, and not on the frequency's of several positioning systems, time standards and submarine communications.

Unfortunately this carefully chosen frequency appeared to be exactly the listen frequency of Security Tag or Xpondr frequency divider EAS systems. The transmitter frequency of Xpondr is 132 kHz, so the Nedap MD does not suffer from any interference of a Xpondr system.

When installed in neighbor shops, an Xpondr system appeared to be completely deaf.

Therefore we had to modify the operating frequency to a nominal 62.75 kHz instead of 66 kHz.

This small frequency shift has the least impact in the modification of several filter components.

With the sweep-extend of the OS/T system on position 3, this frequency shifts down to 60.57 kHz.

This range is sufficiently below 66 kHz to prevent interference problems with both digital and older analog Xpondr systems.

The drawback unfortunately is that 62.75 kHz is closer to the AM frequency. A Nedap MD system can function on a distance of about 20 m away from an AM system. This minimum distance now should be at least 25 m.



1 General

The OST combination NCC4 and external RX4/TX4 can be fitted with up to 8 antenna's making it possible to guard up to 4 entrance separately.

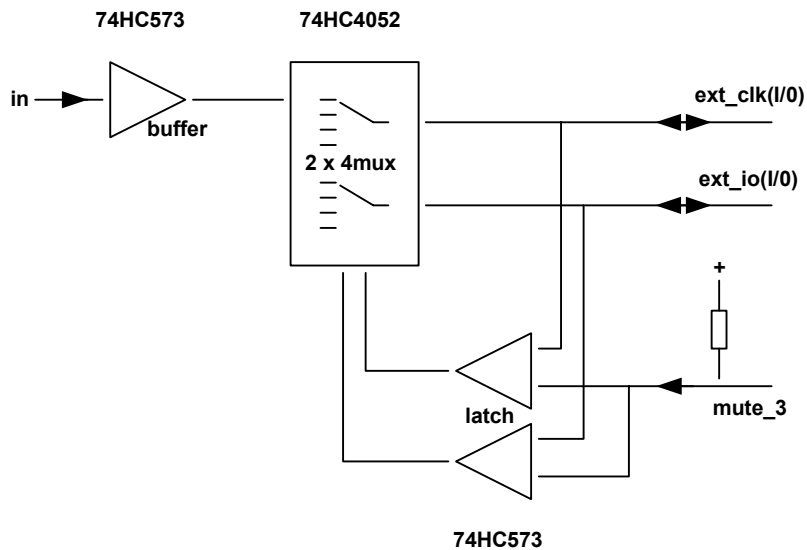
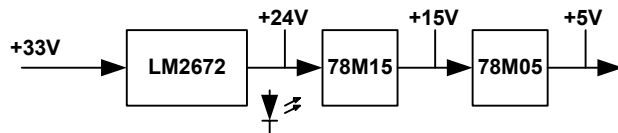
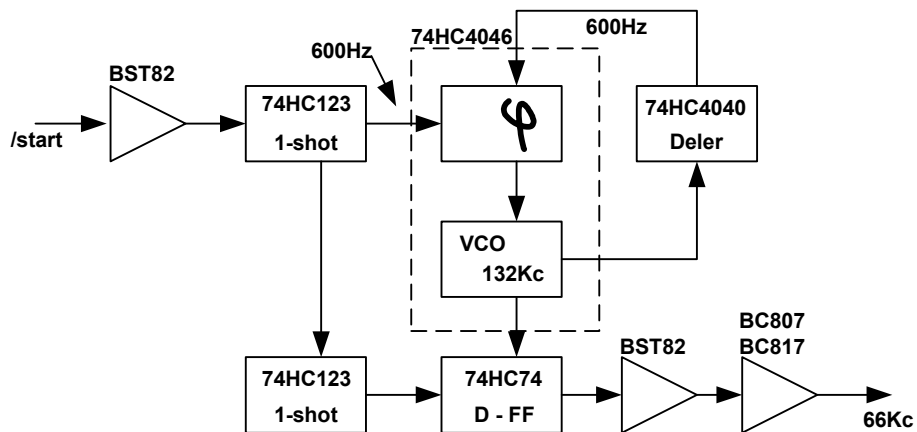
This MD4 pcb also makes it possible for the Metal Detection to connect and process up to 4 different entrances separately.

Like the FCI (Flat Cable Interface) pcb this MD4 pcb is also connected to the feature connector on the OST RX4 or TX4. The MD4 pcb does not need tuning and holds no jumpers.

In addition to the 4 Metal Detection in/outputs the pcb is fitted with 4 extra inputs. Floating contacts can be connected to these inputs, for instance to count tag decouplings or shop open/closed.



2 Block diagram



2.1 Explanation of the diagram

On the OST feature connector a 600Hz repeated signal is available from which the flat cable interface produces the 66 kHz which is used on the metal detection PCB's.

The /start pulse from the feature connector are infect two very narrow pulses about 120uSec apart and repeated in a more or less 600 Hz rhythm.

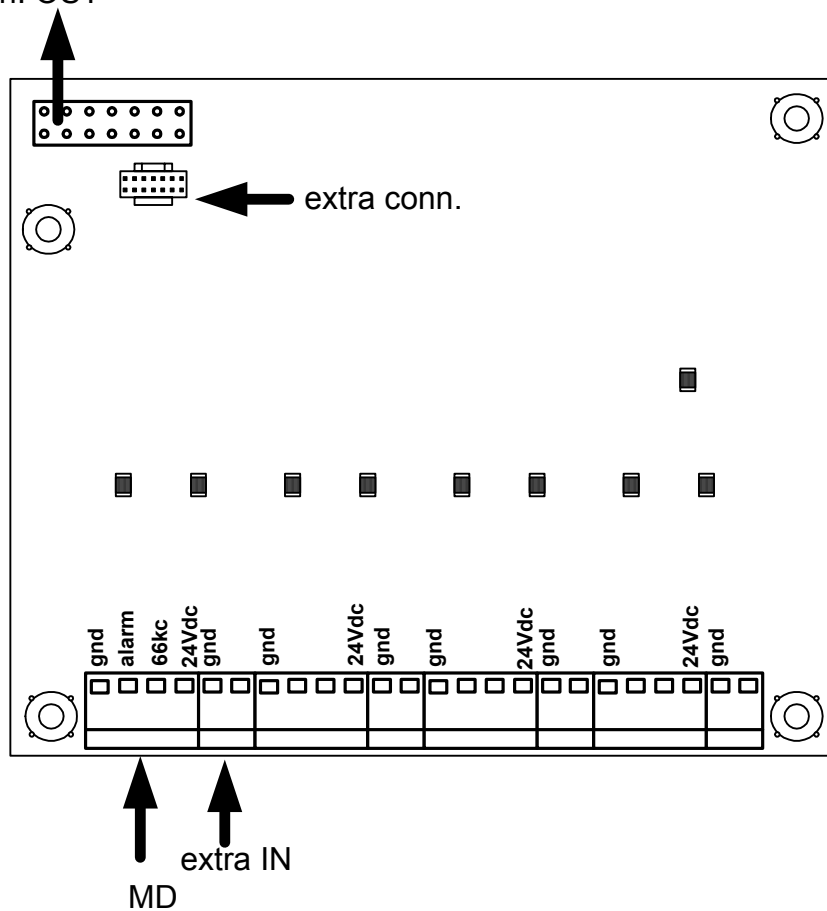
On every first pulse a 1 shot 74HC123) is triggered to produce a more or less 600 Hz block signal used a reference signal for a PLL (74HC4046). The VCO of the PLL block oscillates on 132 kHz which by means of a programmable divider divides this signal to around 600 Hz. This signal is then used on the Comp In. of the PLL and the 132 kHz is locked. Another 1 shot triggers a divider by 2 circuit to output the 66 kHz signal which is available on the 4 data cable outputs.

An alarm from the MD RX is shaped and buffered (74hc573) and presented on one of the inputs of a 2 x 4mux (74hc4052). Dependent on the mute_3 signal, ext_clk and ext_i/o are used to address the latch (74hc573) or read the output of the mux.



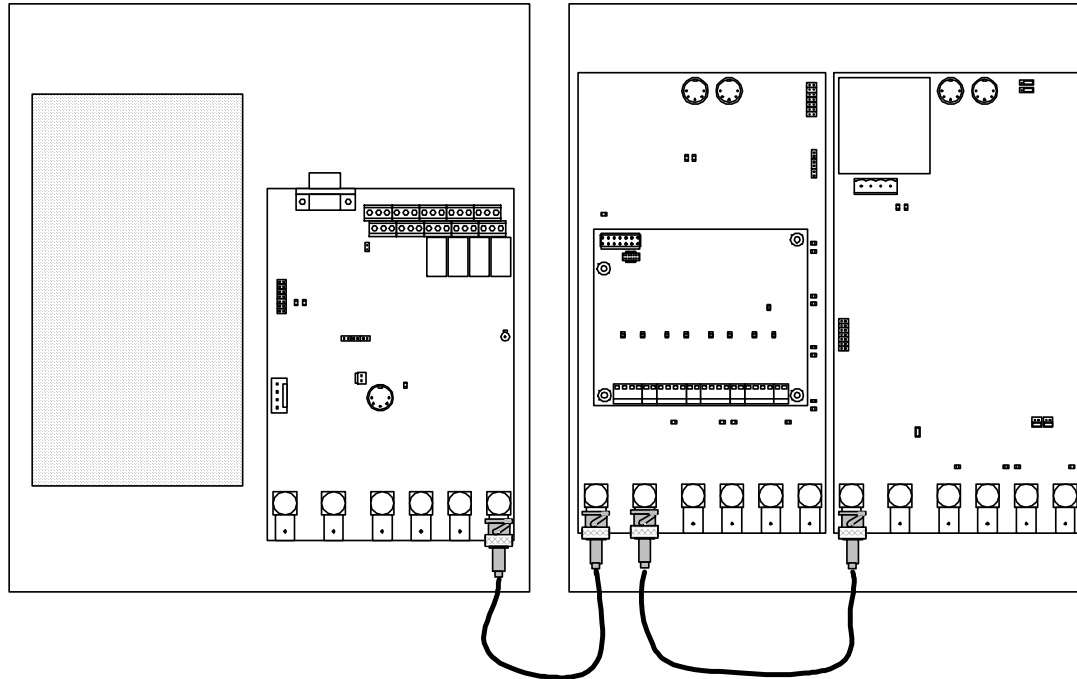
3 Printed Circuit Board

connection to feature
conn. OST

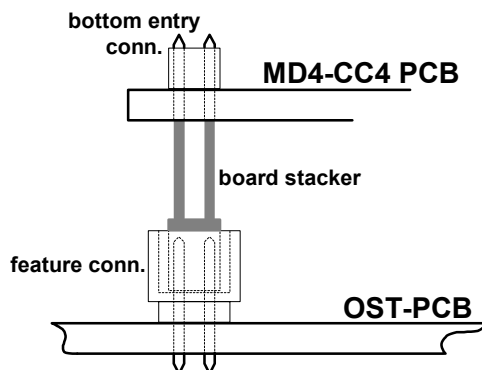


4 Metal Detection PCB in XQ unit

4.1 Circuit board in unit XQ



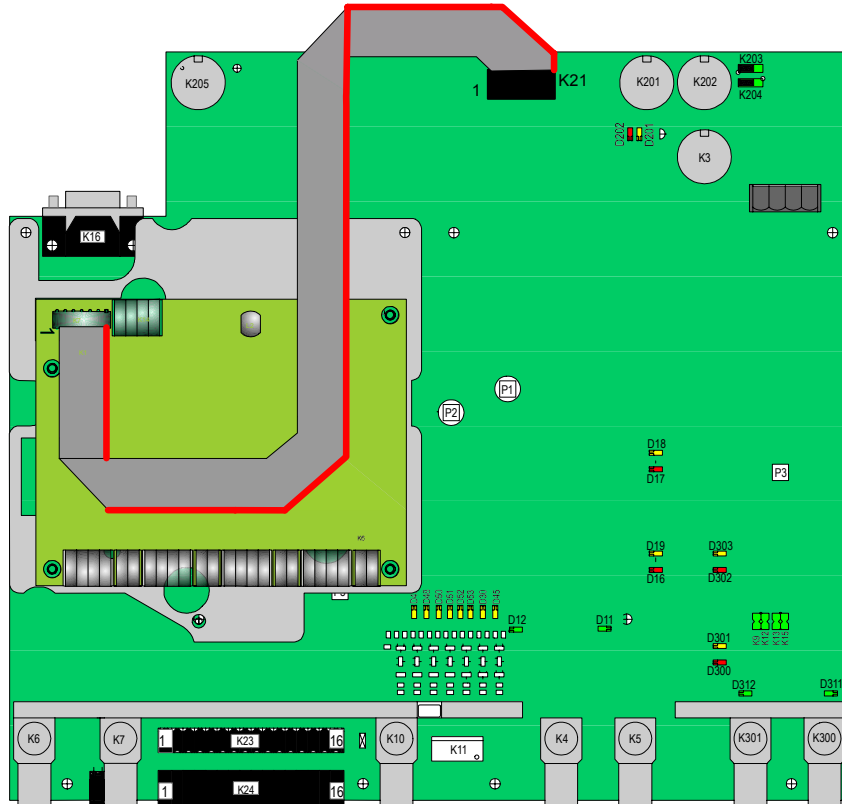
The **MD4 pcb** is intended to be **placed on top of the TX-PCB*** inside the external unit shown above. A CC4 pcb can be placed inside the unit as well.



***i** Connecting the MD4 PCB to a NR4 on a external NRT4 Unit will decrease EAS performance



5 Metal Detection PCB in EQ/IQ unit

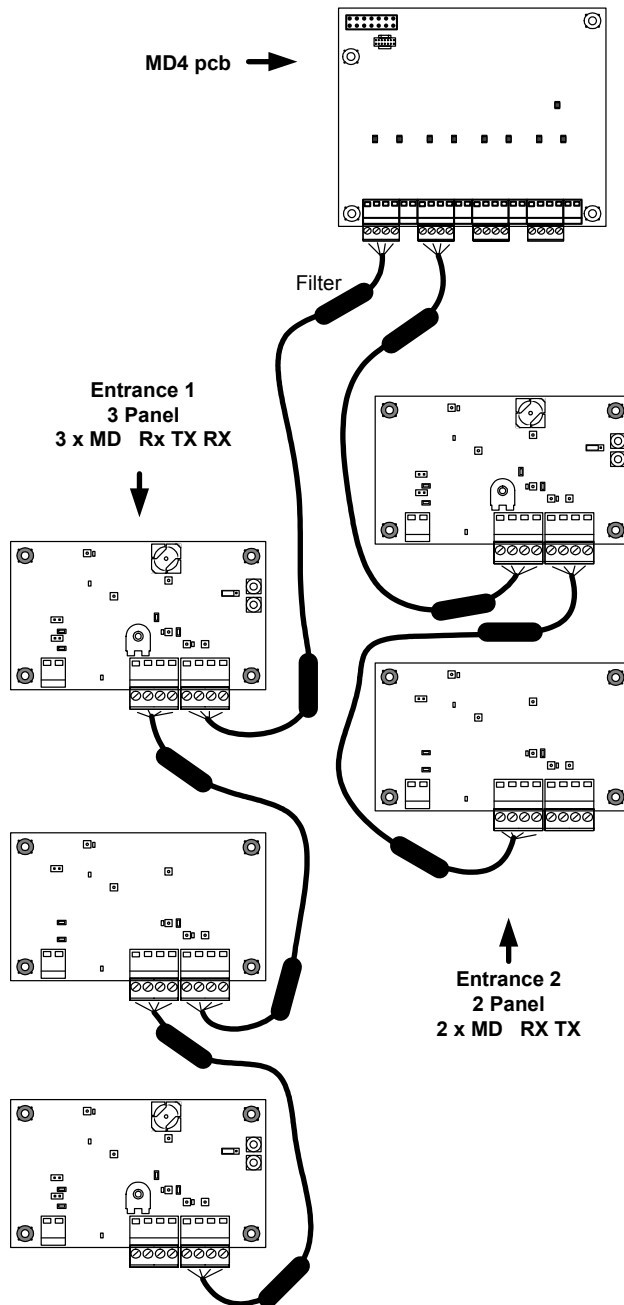


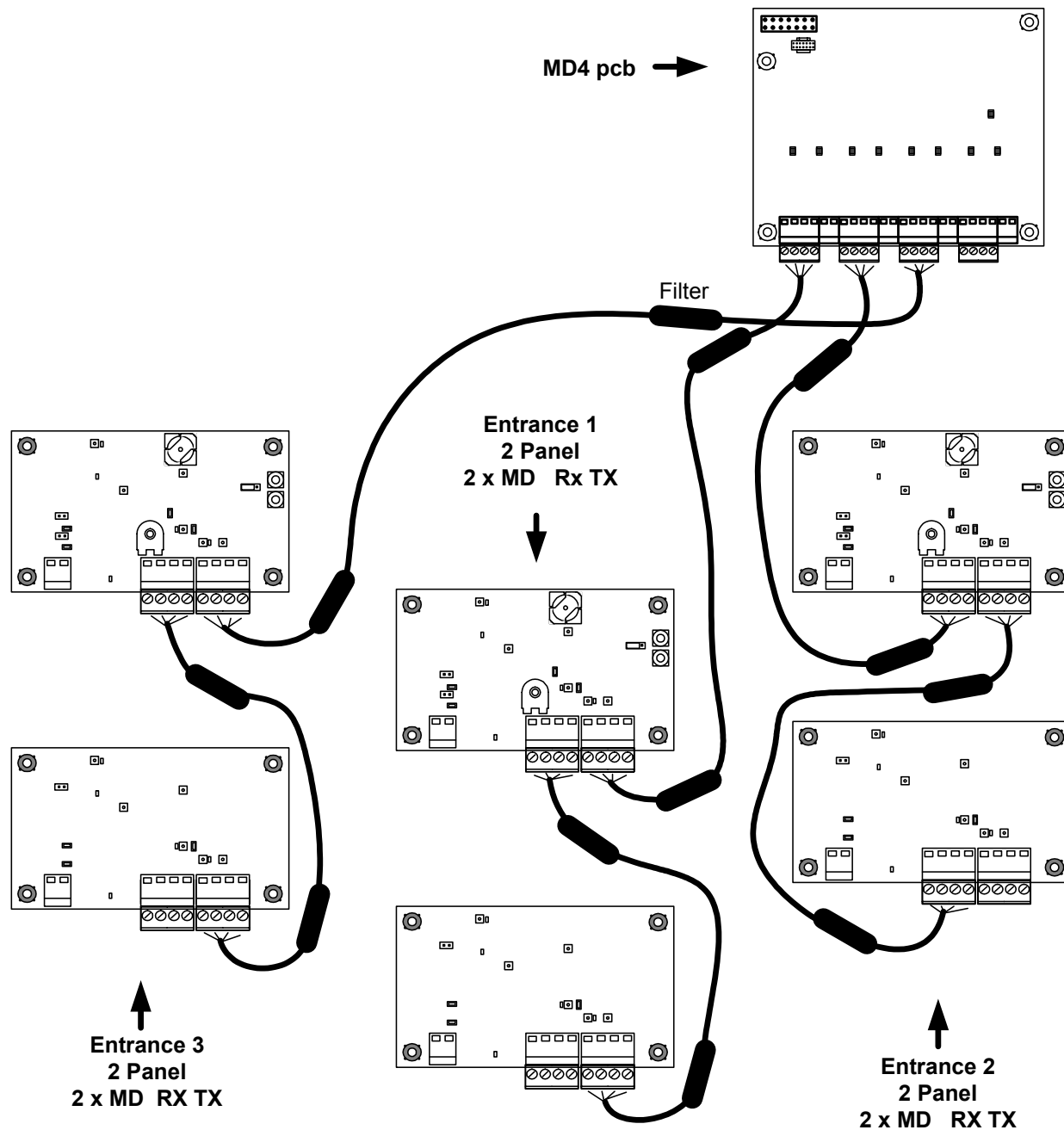
The MD4 PCB will be mounted on the metal plate on top of the IQ unit. It will be connected with a flat-cable to connector K21 (FCI) of the IQ PCB. See the drawing for the right polarity.

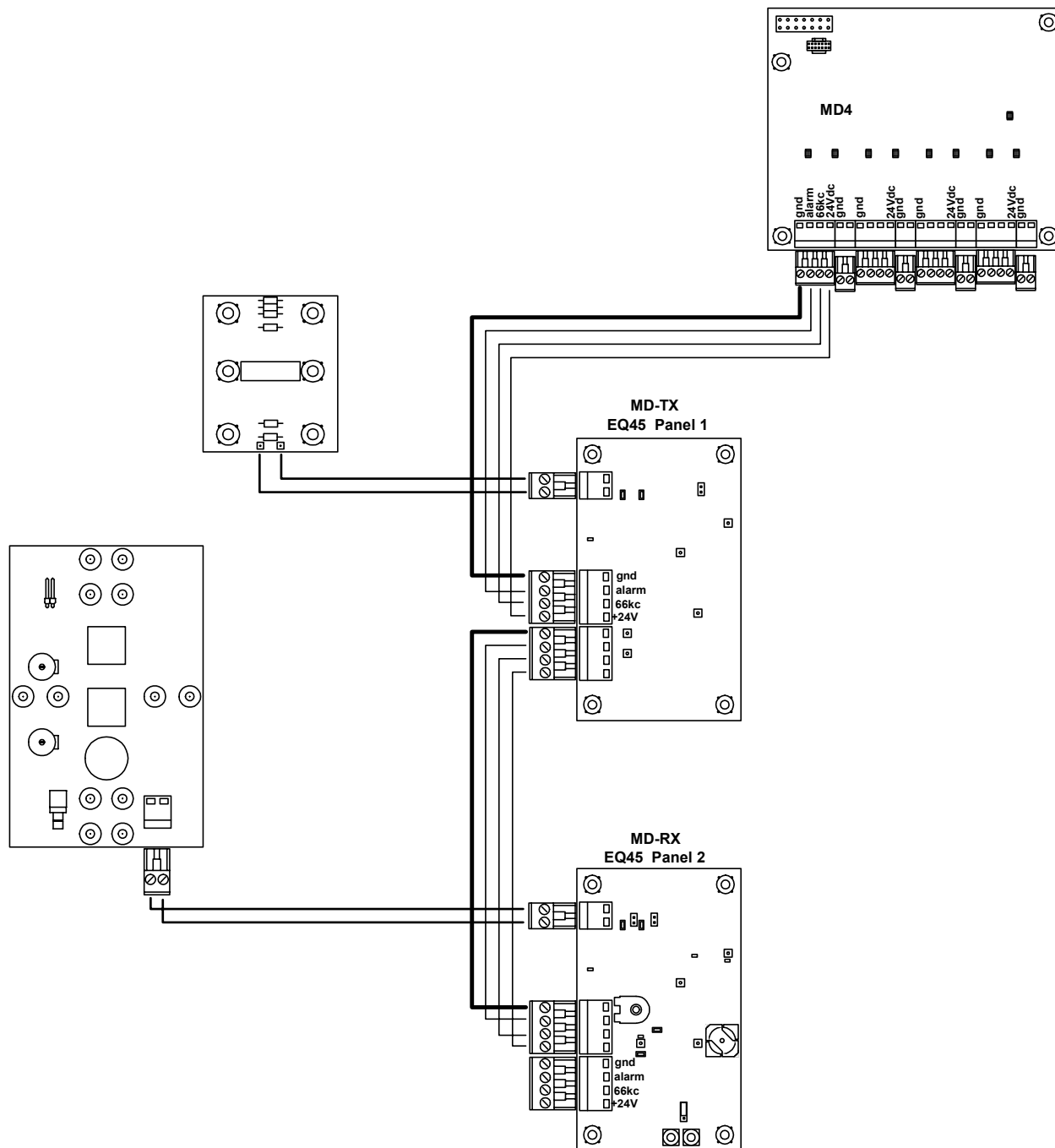
6 Handheld terminal settings

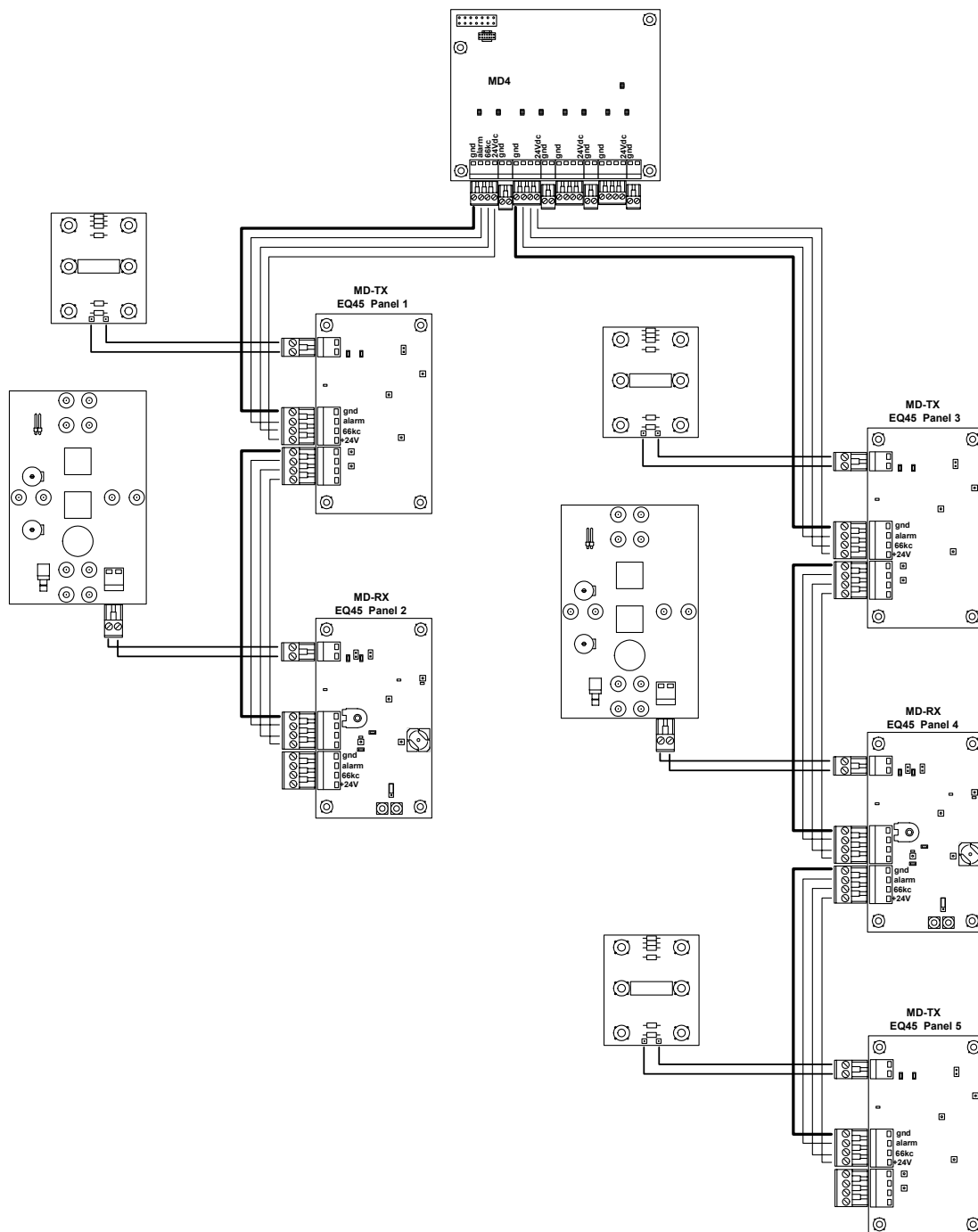
For the handheld-terminal settings see the manual of the handheld-terminal (version 1.300 or higher).

7 Wiring examples









This MD4 is also fitted with 4 additional “alarm-inputs” which can be used for a variety of options. Only a floating contact is needed. One can use the contacts for instance as detection “shop open/closed” – guard on watch – alarm cause – etc etc.

