OS/T BQ / EQ / IQ

Documentation version 1.0

Printed in the Netherlands

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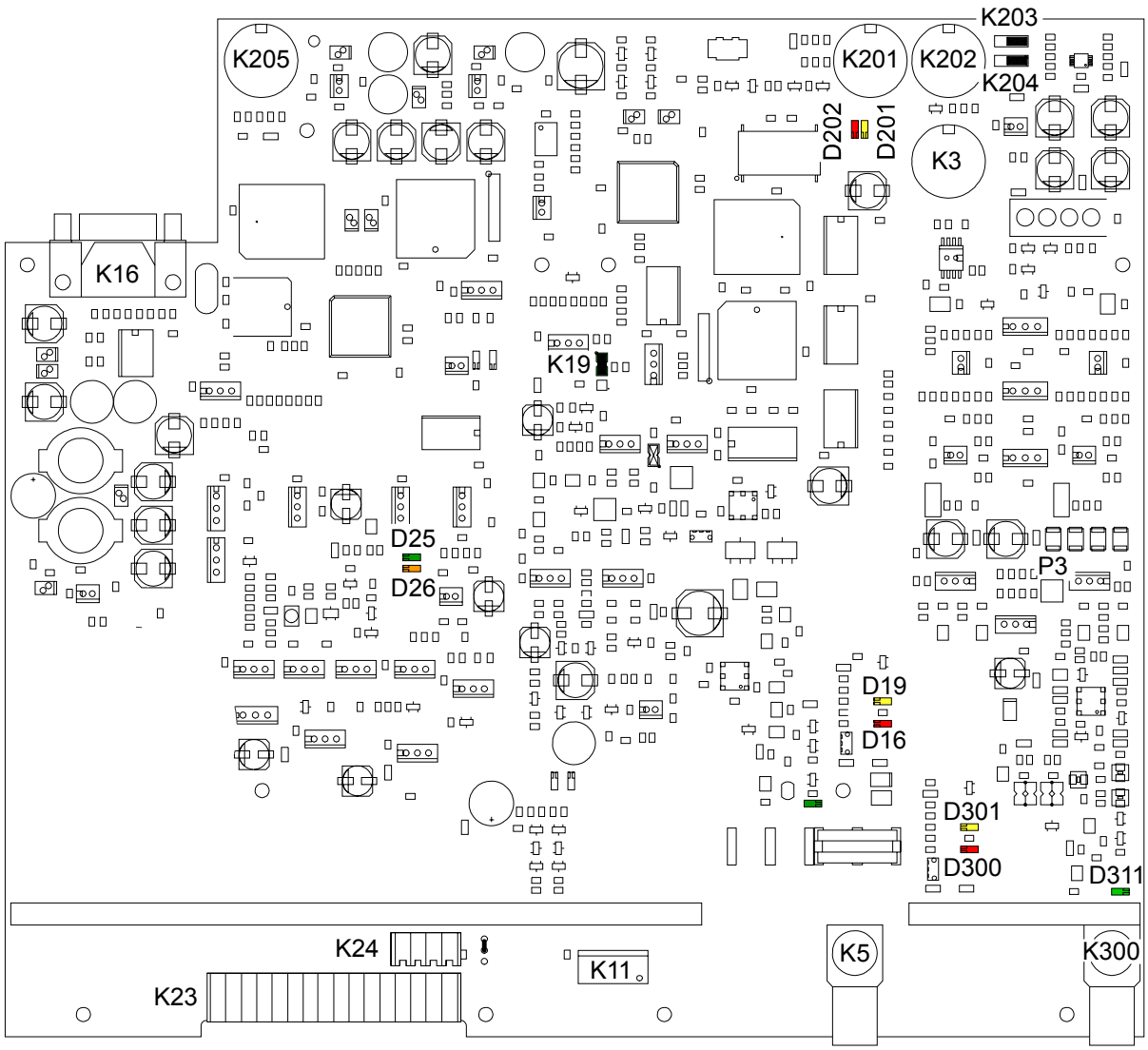
BQ PCB


K203
K205
K201
K202
K204
D202
D201
K3
K16
K19
D25
D26
P3
D19
D16
D301
D300
D311
K24
K11
K5
K300
K23

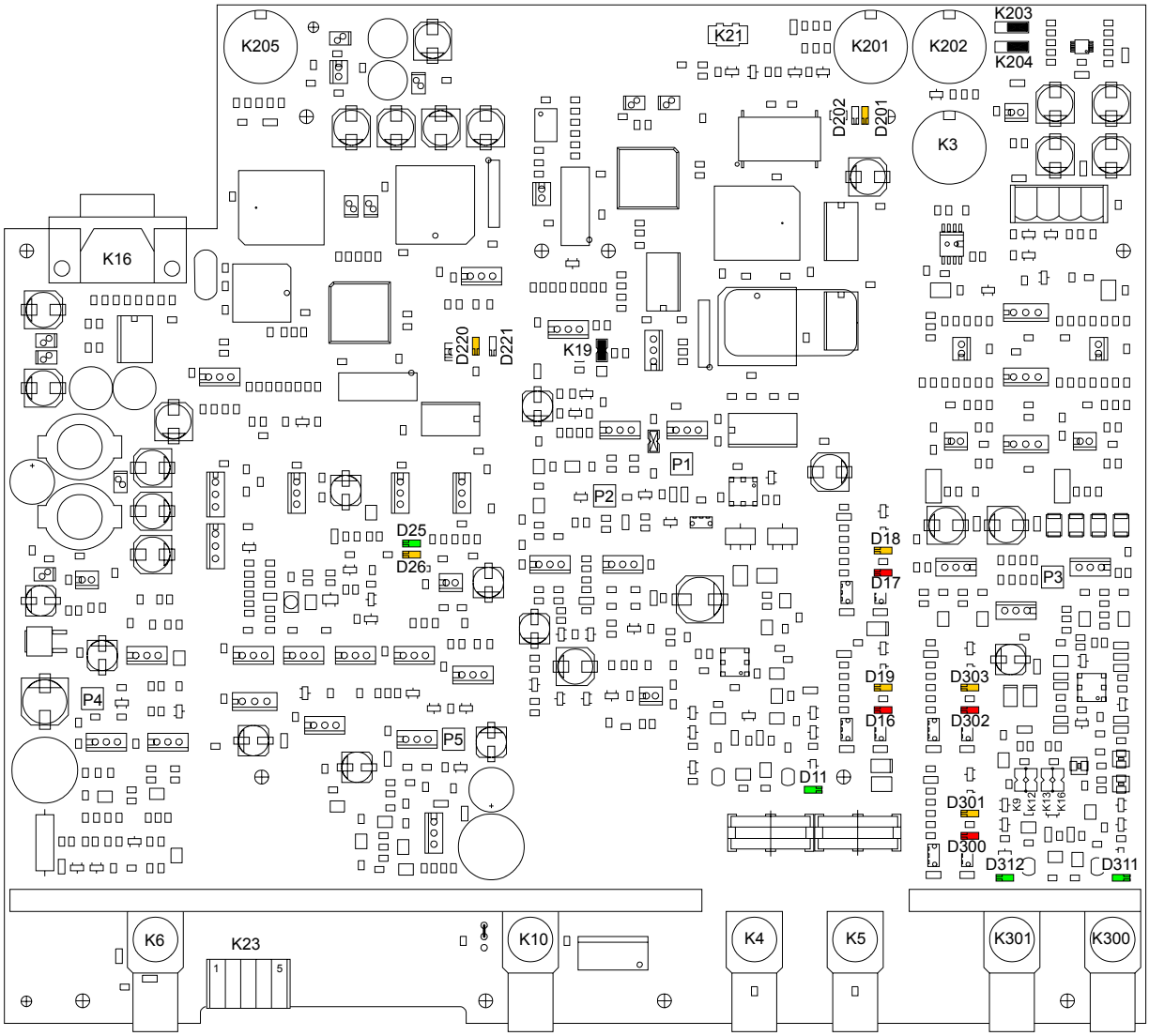
The following points can be used:

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


K205
K21
K201
K202
K203
K204
K3
D202
D201
K16
D220
D221
K19
P1
P2
D25
D26
D18
D17
P3
D19
D303
D16
D302
D11
D301
D300
D312
D311
P4
P5
K6
K23
K10
K4
K5
K301
K300

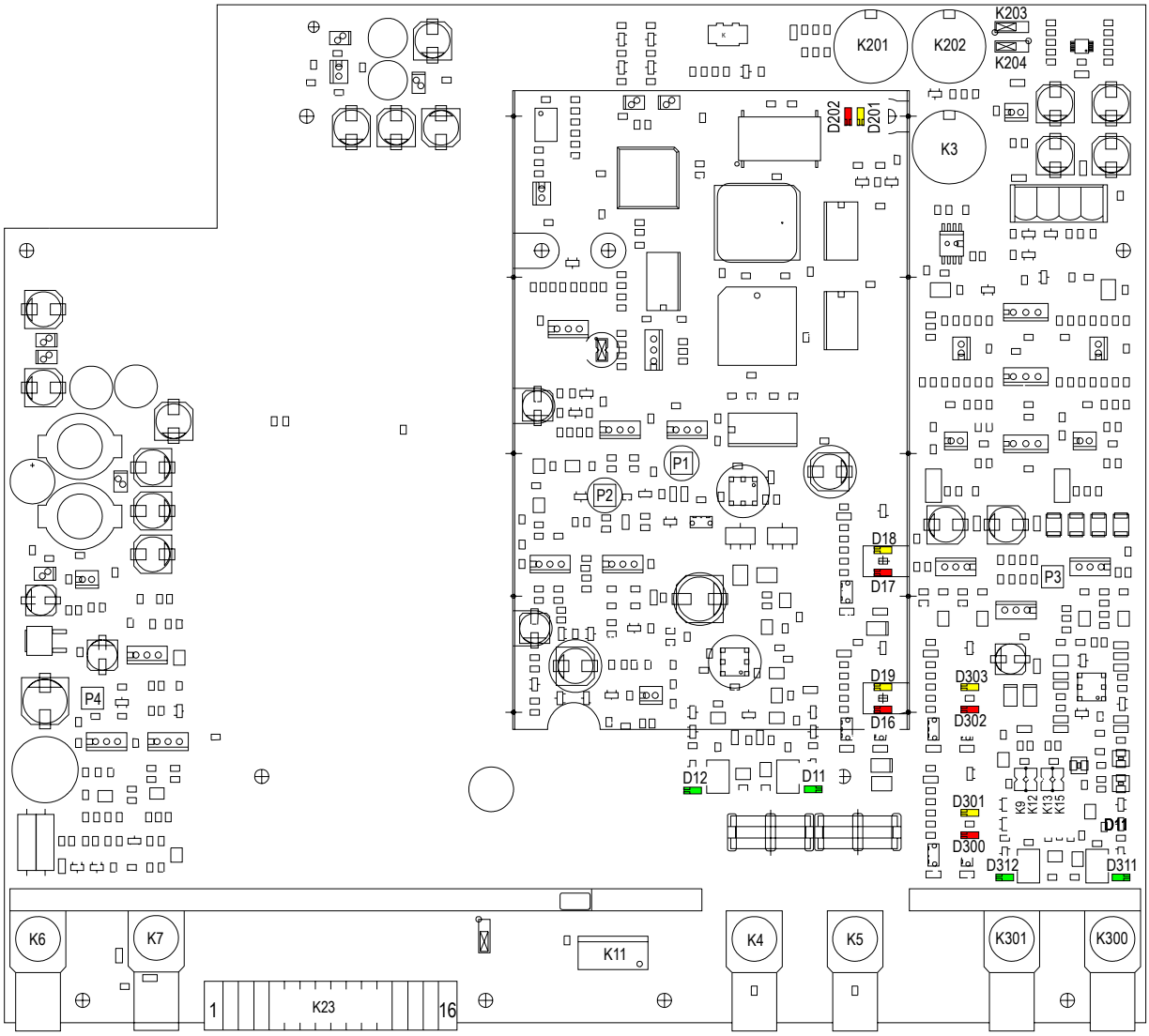
The following points can be used:

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


K201
K202
K203
K204
K3
D202
D201
P1
P2
D18
D17
P3
D19
D16
D303
D302
D12
D11
D301
D300
D312
D311
P4
K6
K7
K11
K4
K5
K301
K300
K23
1
16

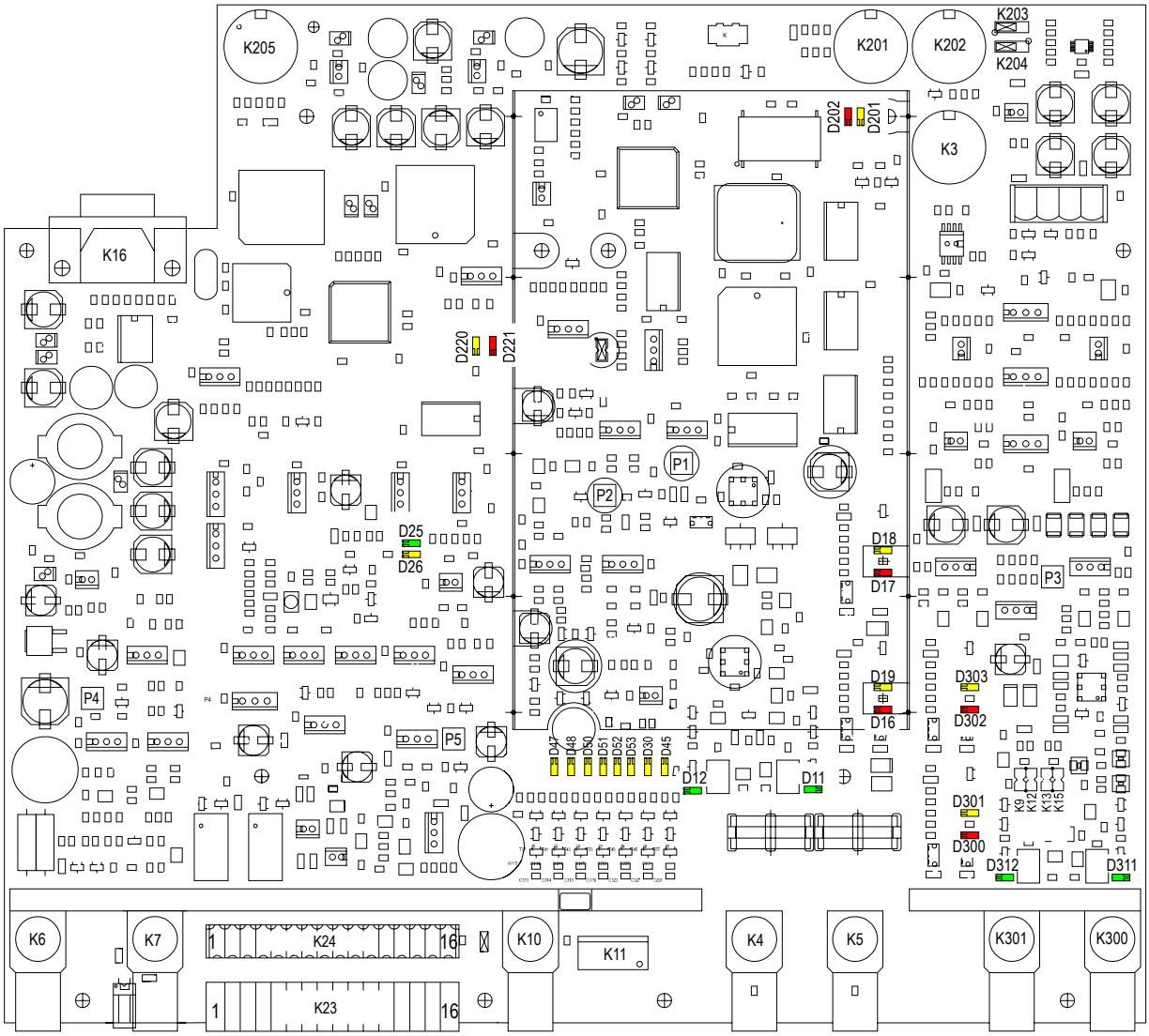
The following points can be used:

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


K205
K201
K202
K203
K204
K3
K16
D202
D201
D220
D221
P1
P2
D25
D26
D18
D17
P3
D19
D16
D303
D302
P4
P5
D47
D48
D50
D51
D52
D53
D30
D45
D12
D11
D301
D300
D312
D311
K6
K7
K24
K10
K11
K4
K5
K301
K300
K23

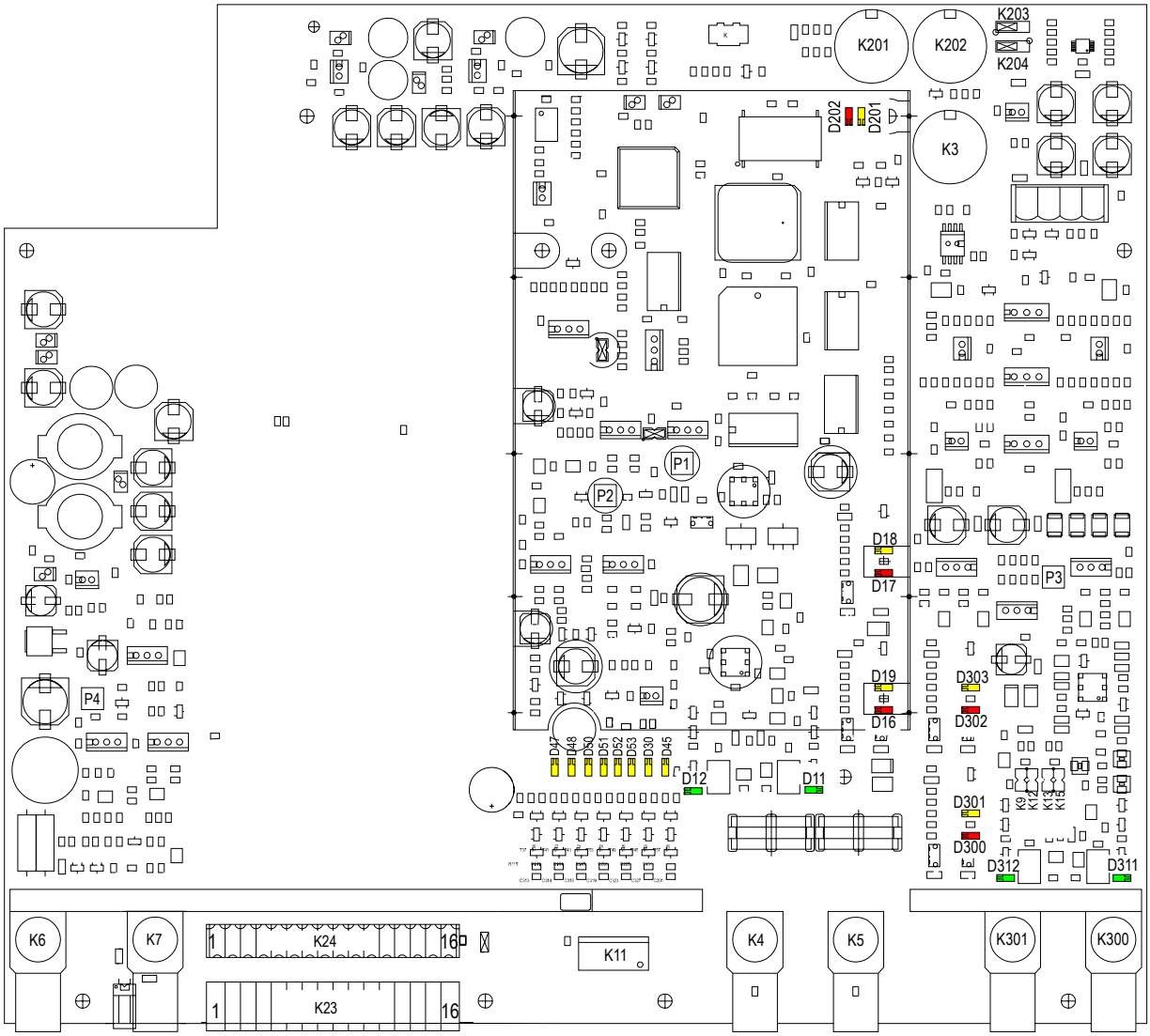
The following points can be used:

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


K201
K202
K203
K204
K3
D202
D201
P1
P2
P3
P4
D18
D17
D19
D16
D303
D302
D301
D300
D312
D311
D12
D11
K6
K7
K24
K23
K11
K4
K5
K301
K300

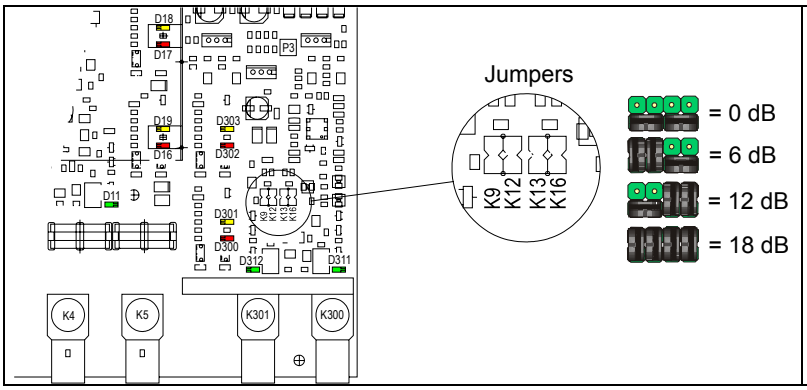
The following points can be used:

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

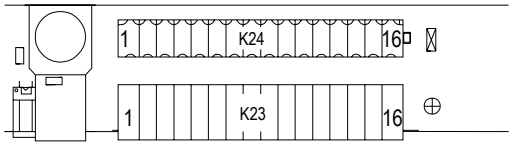
Attenuation



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.

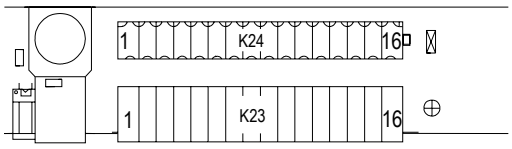
IO Connector K23

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

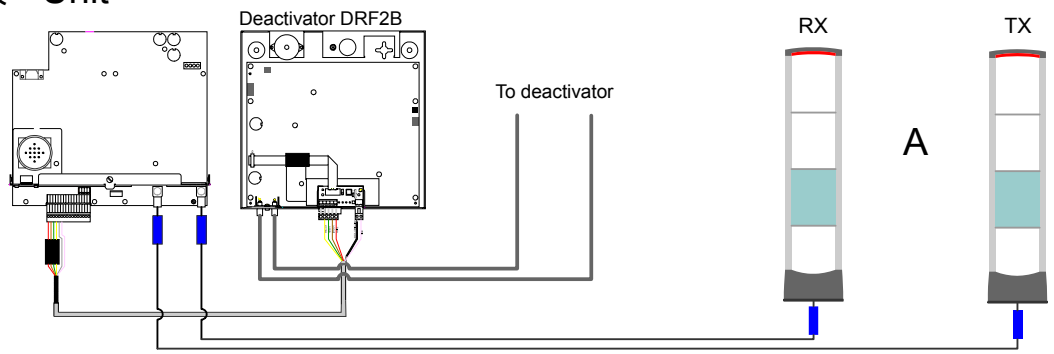


System configurations

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 System , 1 aisle, Deactivatorunit

BQ - 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    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

```
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)
```

MS InOut

```
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
```

6 InOut Edit

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

7 Free/deact

```
Deact Enable    1<
InOut       0   0
Pulse in  1 out  1 s
Lvl    50 Time   30
```

←

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

←

```
7 RX        9 Flash
4 TX        6 InOut
```

9 Flash

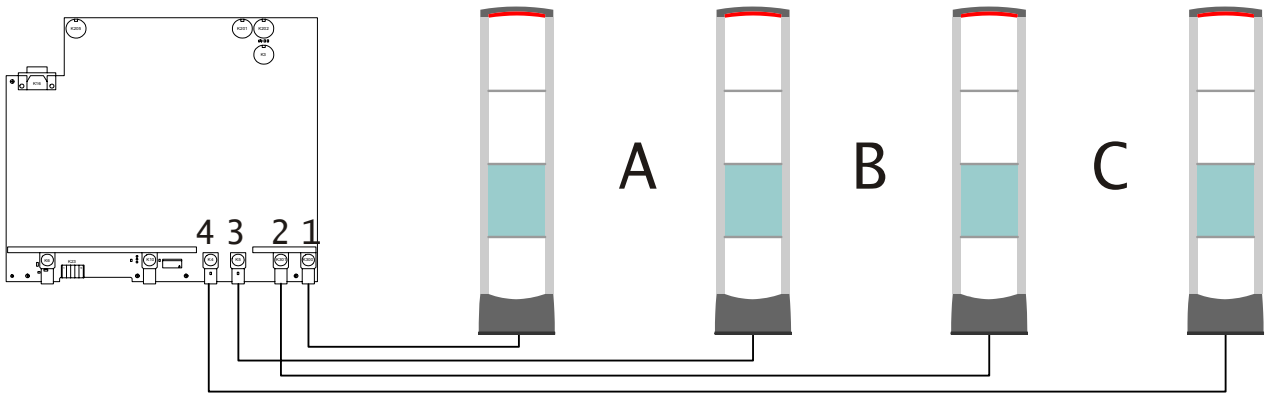
```
7 Save settings
4 Restore
```

7 Save settings

```
        Done
(Esc to continue)
```

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 Sigl 3 Admo
C Freq 0 Scop
```

7 Mux

```
Mux 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 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 Alrm 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 Alrm 5 Mcut
1 Sens 2 Sigl 3 Admo
C Freq 0 Scop
```

←

```
7 RX        9 Flash
4 TX        6 InOut
```

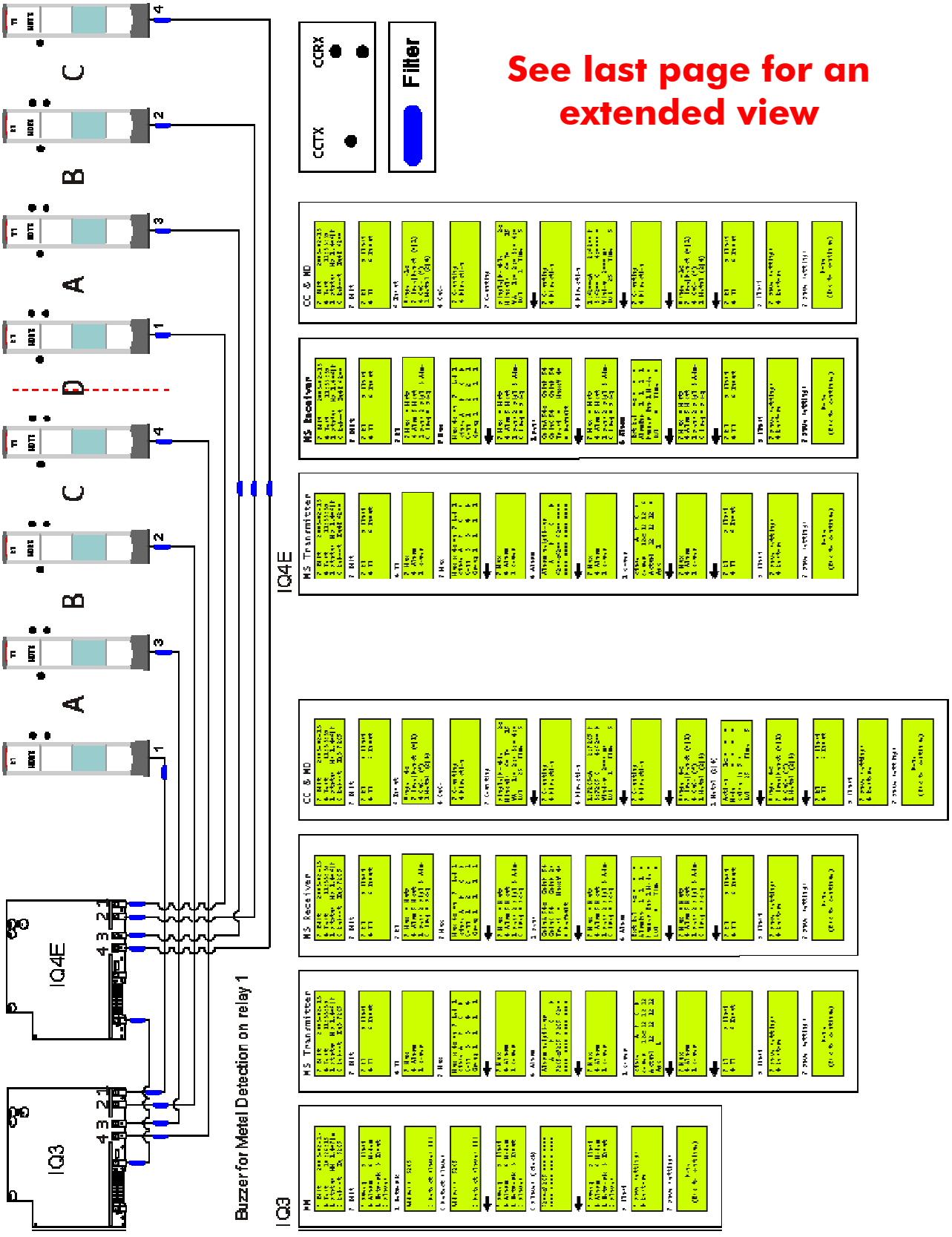
9 Flash

```
7 Save settings
4 Restore
```

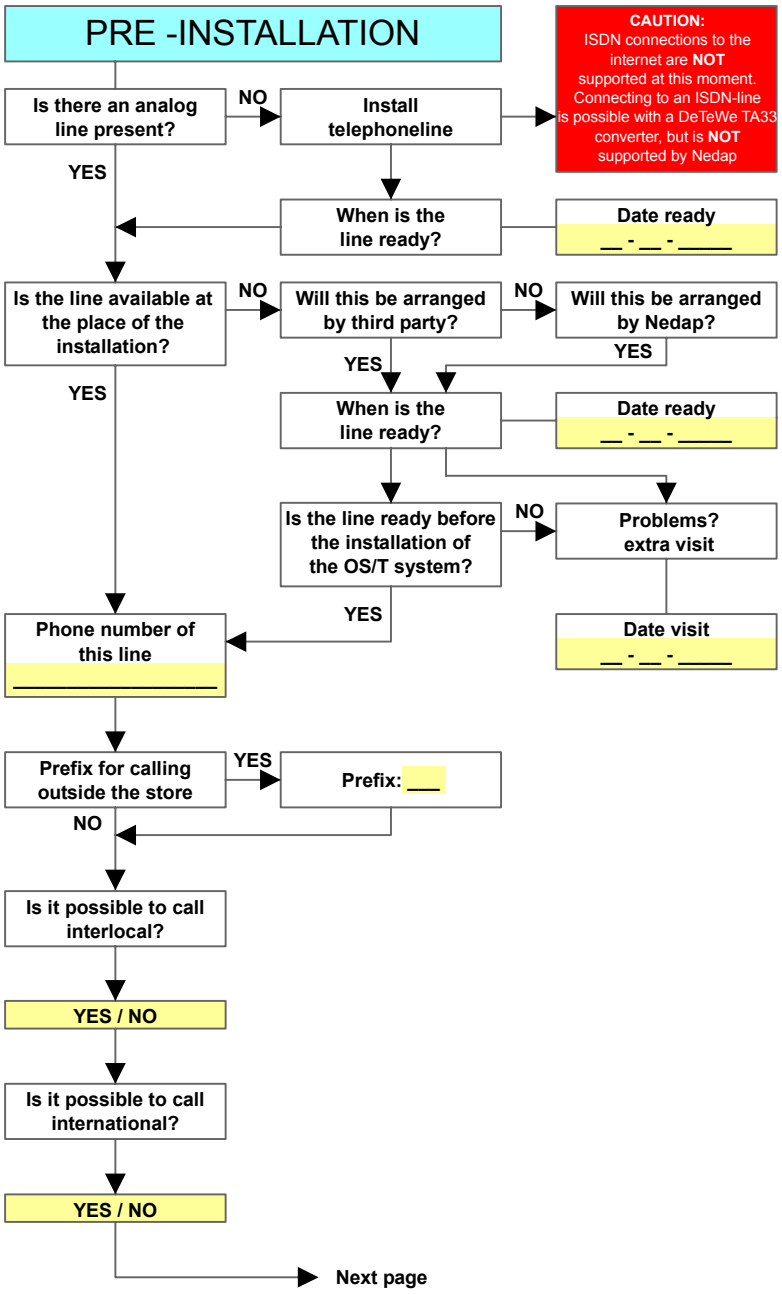
7 Save settings

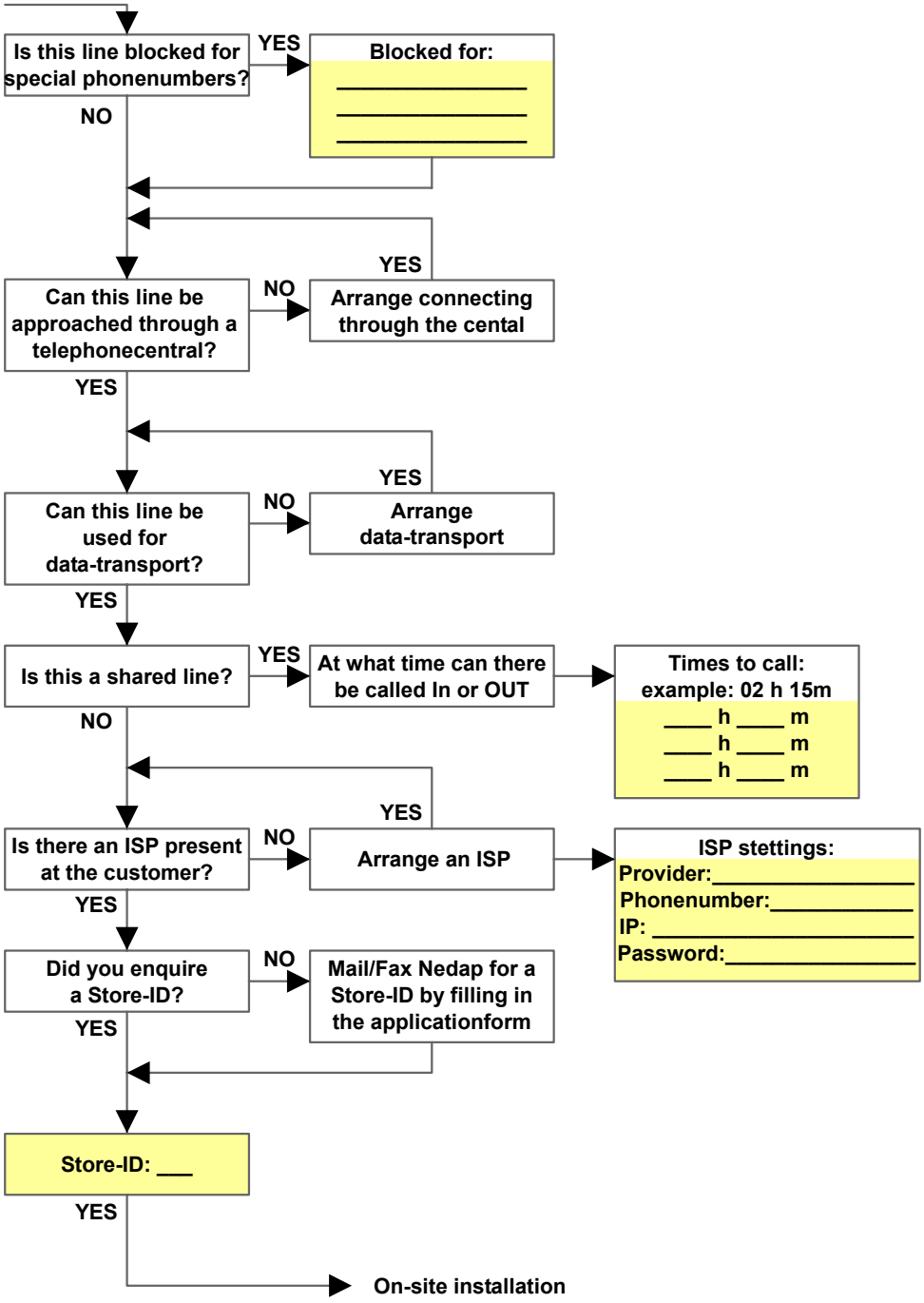
```
        Done
(Esc to continue)
```

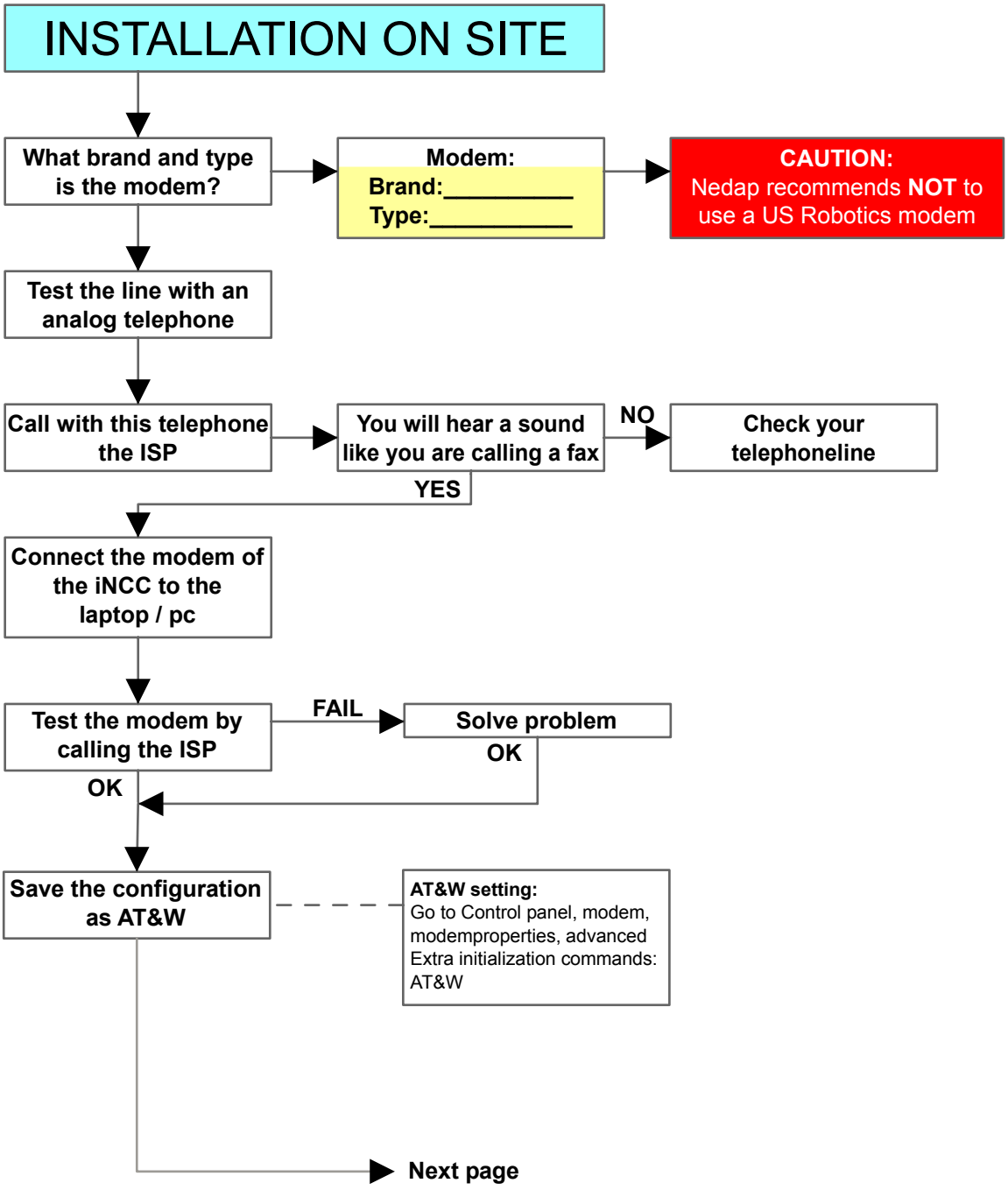
IQ System, 7 aisles, Customer Counting, Metal Detection

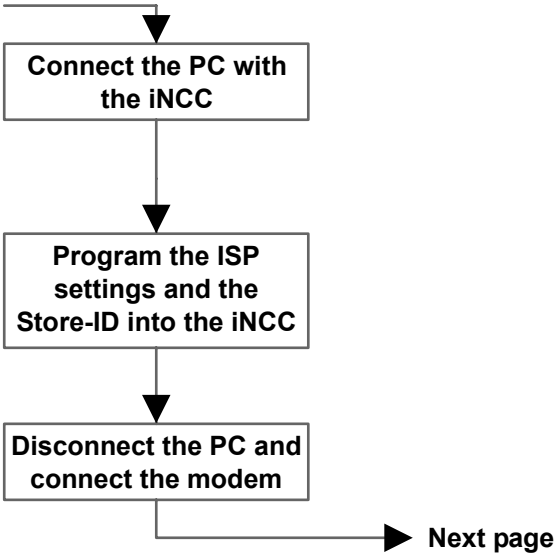


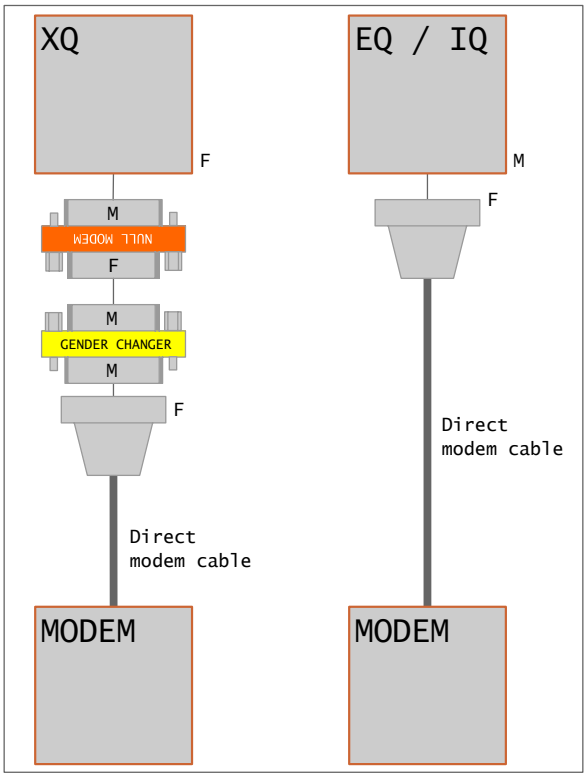
Checklist modem settings iNCC

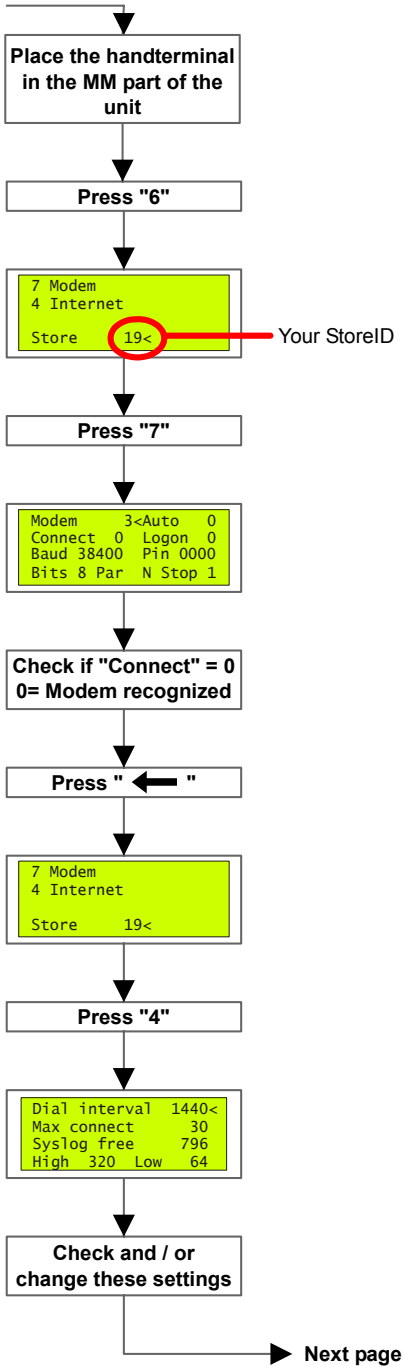


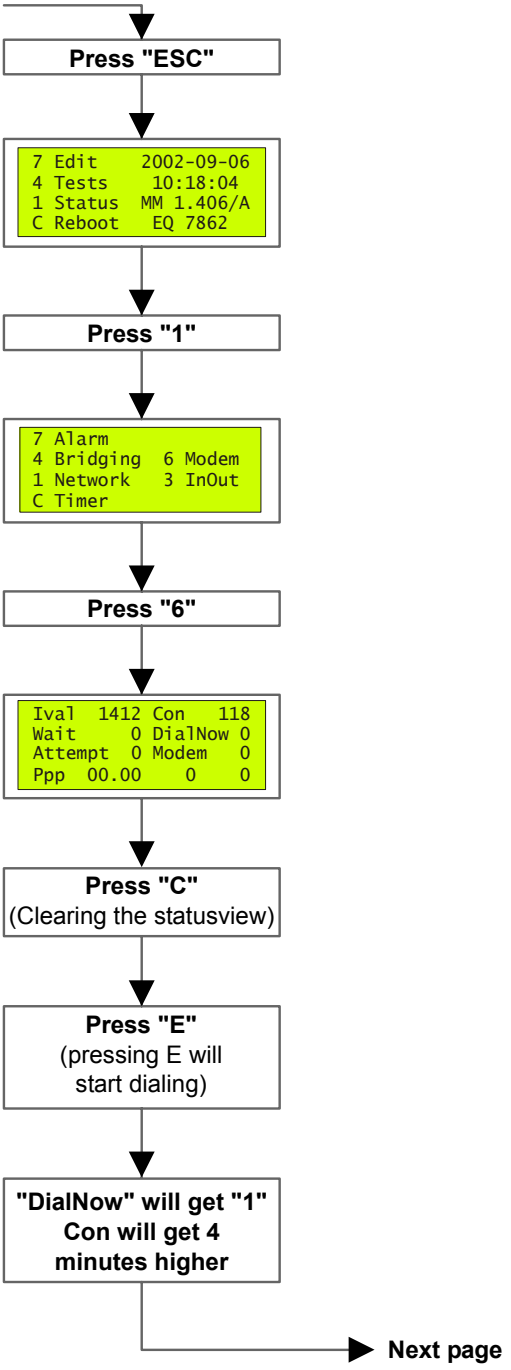

Is this line blocked for special phonenumbers?
YES
Blocked for:
_____
_____
_____
NO
Can this line be approached through a telephonecentral?
NO
Arrange connecting through the cental
YES
YES
Can this line be used for data-transport?
NO
Arrange data-transport
YES
YES
Is this a shared line?
YES
At what time can there be called In or OUT
Times to call:
example: 02 h 15m
____ h ____ m
____ h ____ m
____ h ____ m
NO
Is there an ISP present at the customer?
NO
Arrange an ISP
ISP stettings:
Provider:_____
Phonenumber:_____
IP: _____
Password:_____
YES
Did you enquire a Store-ID?
NO
Mail/Fax Nedap for a Store-ID by filling in the applicationform
YES
Store-ID: ___
YES
On-site installation

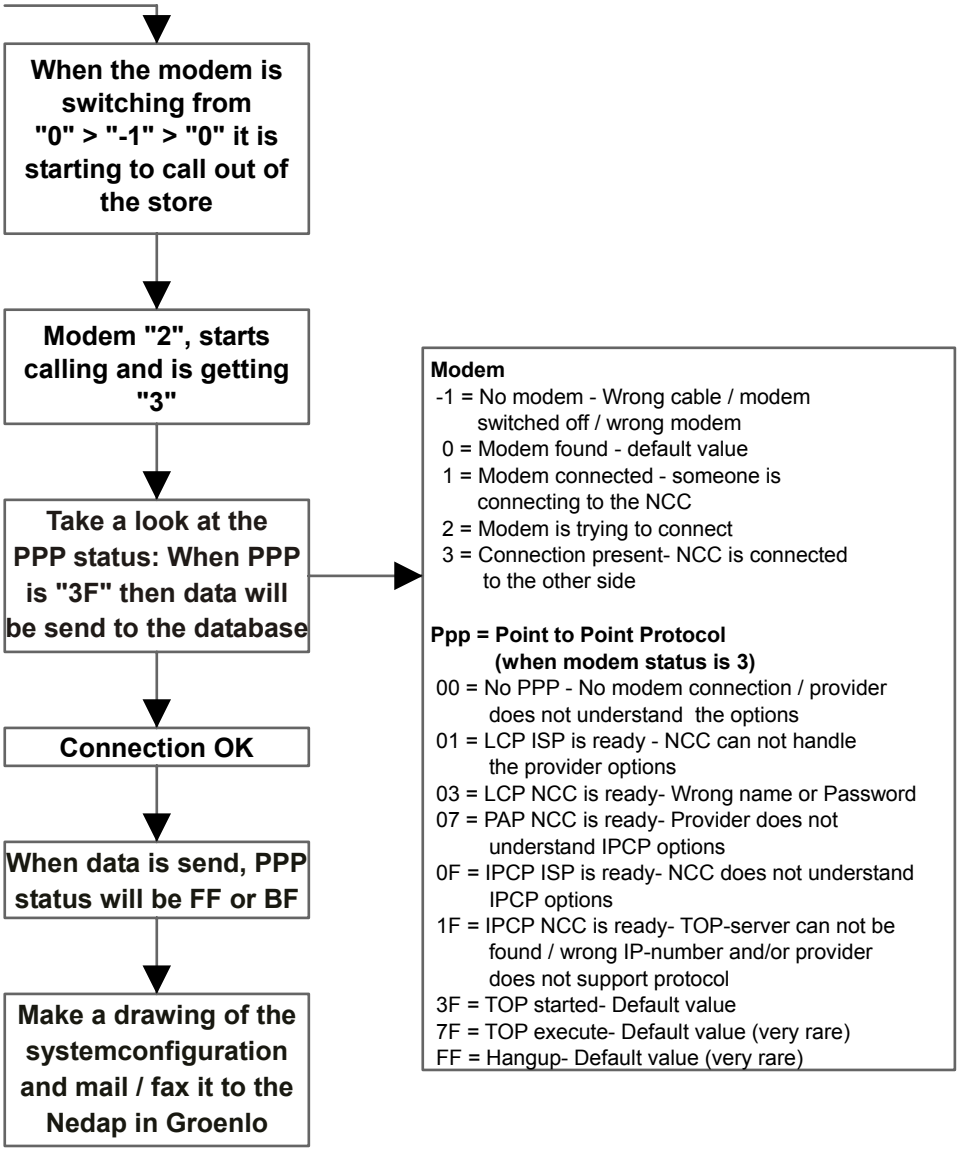

INSTALLATION ON SITE
What brand and type is the modem?
Modem:
Brand:_____
Type:_____
CAUTION:
Nedap recommends NOT to use a US Robotics modem
Test the line with an analog telephone
Call with this telephone the ISP
You will hear a sound like you are calling a fax
NO
Check your telephoneline
YES
Connect the modem of the iNCC to the laptop / pc
Test the modem by calling the ISP
FAIL
Solve problem
OK
OK
Save the configuration as AT&W
AT&W setting:
Go to Control panel, modem, modemproperties, advanced
Extra initialization commands:
AT&W
Next page


Connect the PC with the iNCC
Program the ISP settings and the Store-ID into the iNCC
Disconnect the PC and connect the modem
Next page

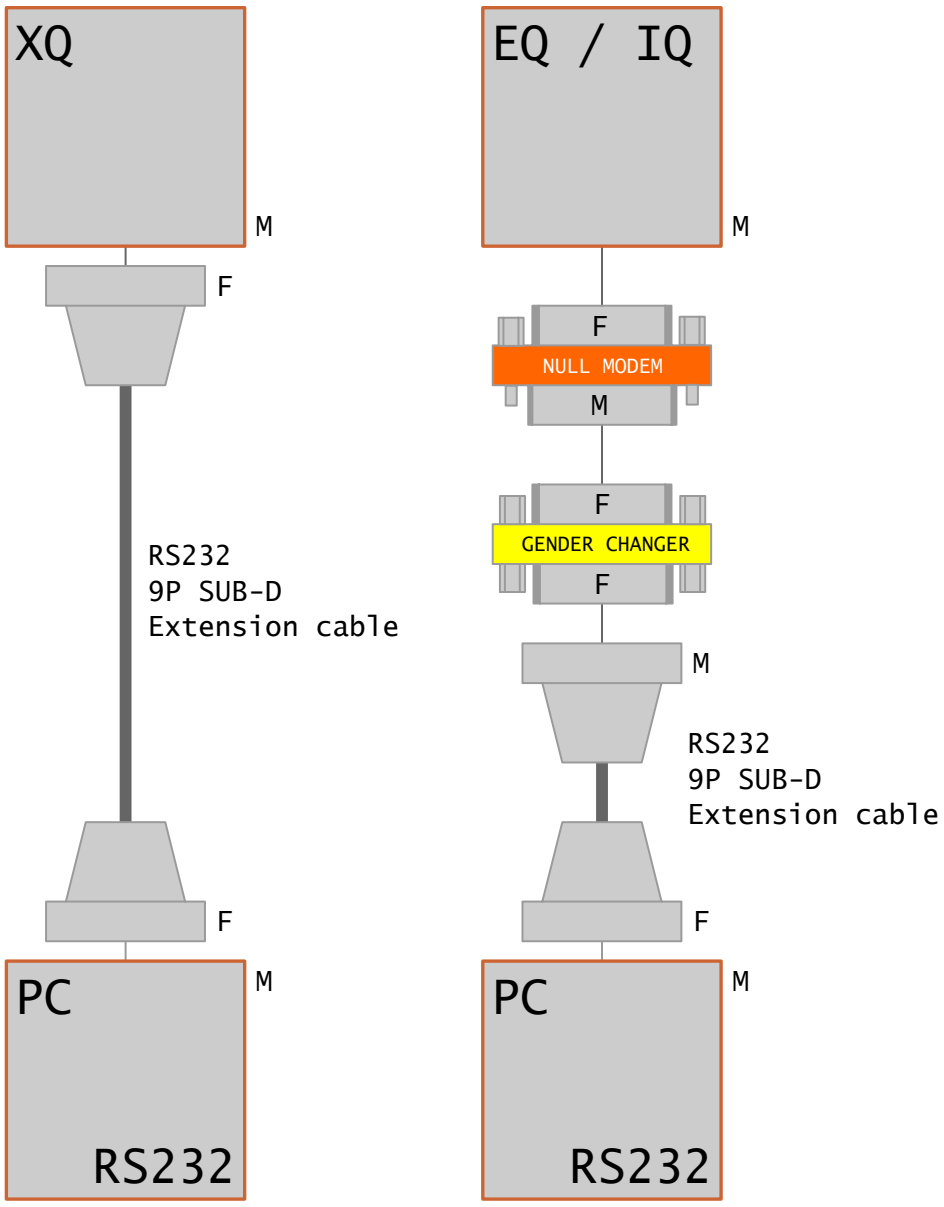

XQ
F
M
NULL MODEM
F
M
GENDER CHANGER
M
F
Direct modem cable
MODEM
EQ / IQ
M
F
Direct modem cable
MODEM


Place the handterminal in the MM part of the unit
Press "6"
7 Modem
4 Internet
Store 19<
Your StoreID
Press "7"
Modem 3<Auto 0
Connect 0 Logon 0
Baud 38400 Pin 0000
Bits 8 Par N Stop 1
Check if "Connect" = 0
0= Modem recognized
Press " ← "
7 Modem
4 Internet
Store 19<
Press "4"
Dial interval 1440<
Max connect 30
Syslog free 796
High 320 Low 64
Check and / or change these settings
Next page


Press "ESC"
7 Edit 2002-09-06
4 Tests 10:18:04
1 Status MM 1.406/A
C Reboot EQ 7862
Press "1"
7 Alarm
4 Bridging 6 Modem
1 Network 3 InOut
C Timer
Press "6"
Ival 1412 Con 118
Wait 0 DialNow 0
Attempt 0 Modem 0
Ppp 00.00 0 0
Press "C"
(Clearing the statusview)
Press "E"
(pressing E will
start dialing)
"DialNow" will get "1"
Con will get 4
minutes higher
Next page

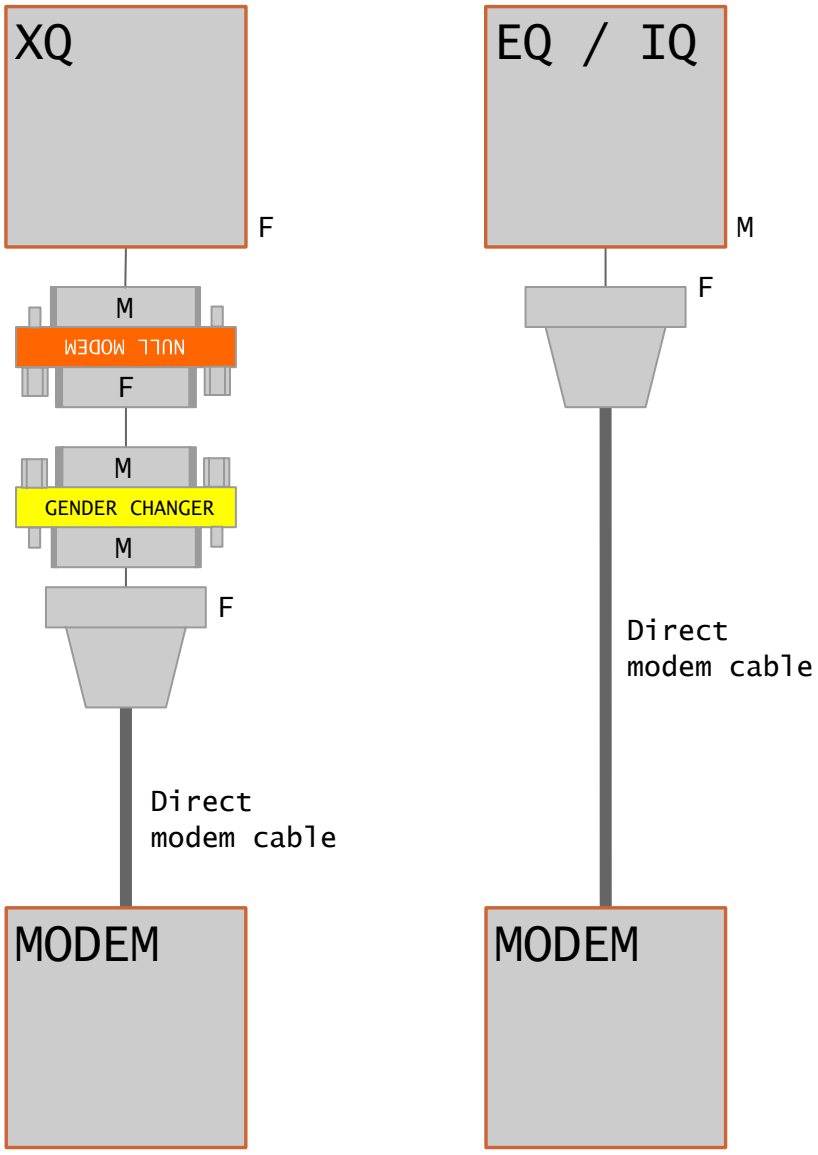

When the modem is switching from "0" > "-1" > "0" it is starting to call out of the store
Modem "2", starts calling and is getting "3"
Take a look at the PPP status: When PPP is "3F" then data will be send to the database
Connection OK
When data is send, PPP status will be FF or BF
Make a drawing of the systemconfiguration and mail / fax it to the Nedap in Groenlo
Modem
-1 = No modem - Wrong cable / modem switched off / wrong modem
0 = Modem found - default value
1 = Modem connected - someone is connecting to the NCC
2 = Modem is trying to connect
3 = Connection present- NCC is connected to the other side
Ppp = Point to Point Protocol
(when modem status is 3)
00 = No PPP - No modem connection / provider does not understand the options
01 = LCP ISP is ready - NCC can not handle the provider options
03 = LCP NCC is ready- Wrong name or Password
07 = PAP NCC is ready- Provider does not understand IPCP options
0F = IPCP ISP is ready- NCC does not understand IPCP options
1F = IPCP NCC is ready- TOP-server can not be found / wrong IP-number and/or provider does not support protocol
3F = TOP started- Default value
7F = TOP execute- Default value (very rare)
FF = Hangup- Default value (very rare)

Connecting a PC to a XQ or EQ/IQ Unit



F = Female, M = Male

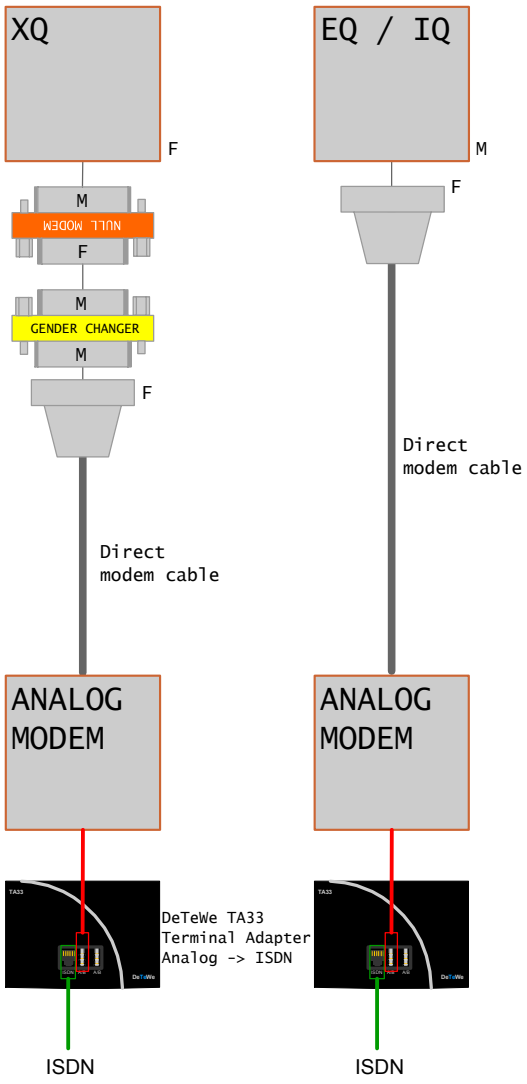
Connecting a XQ or EQ/IQ unit to a modem



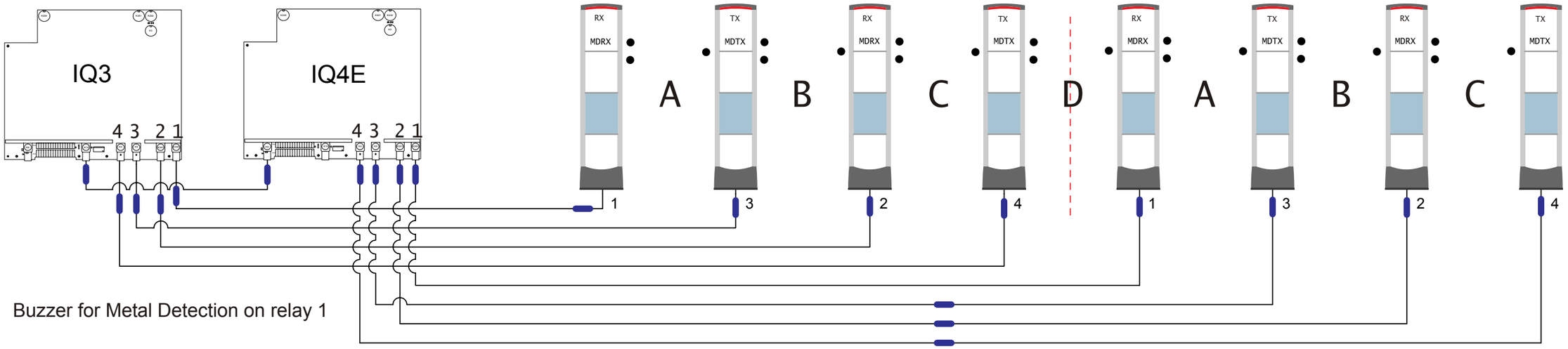
i F = Female, M = Male

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.



F = Female, M = Male



IQ3

MM

```
7 Edit    2003-02-13
4 Test     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
```
←
```
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     11:33:39
1 Status  MS 1.406/B
C Reboot  IQ3 72C5
```
7 Edit
```
7 RX       9 Flash
4 TX       6 InOut
```
4 TX
```
7 Mux
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
72C5<72C5 72C5 6288
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     11:33:39
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 Alrm 5 Mcut
1 Sens 2 Sigl 3 Admo
C Freq 0 Scop
```
7 Mux
```
Mux 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 Alrm 5 Mcut
1 Sens 2 Sigl 3 Admo
C Freq 0 Scop
```
1 Sens
```
GainA 54<  GainB 54
GainC 54   GainD 20
Tresh  8   MaxPW 40
0 Default
```
←
```
7 Mux  8 MutS
4 Alrm 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 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)
```

CC & MD

```
7 Edit    2003-02-13
4 Test     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
4 Test     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
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
6288<6288 6288 0000
0000 0000 0000 0000
```
←
```
7 Mux
4 Alarm
1 Power
```
1 Power
```
Phase    A  B  C  D
Power   12< 12 12  6
Actual  12  12 12  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

```
7 Edit    2003-02-13
4 Test     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 Alrm 5 Mcut
1 Sens 2 Sigl 3 Admo
C Freq 0 Scop
```
7 Mux
```
Mux 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 Alrm 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 Alrm 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 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)
```

CC & MD

```
7 Edit    2003-02-13
4 Test     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

Metal Detection MD4

NEDAP RETAIL SUPPORT

Metal Detection

Manual MD4 including 62,75 MHz

Caution!

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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”.

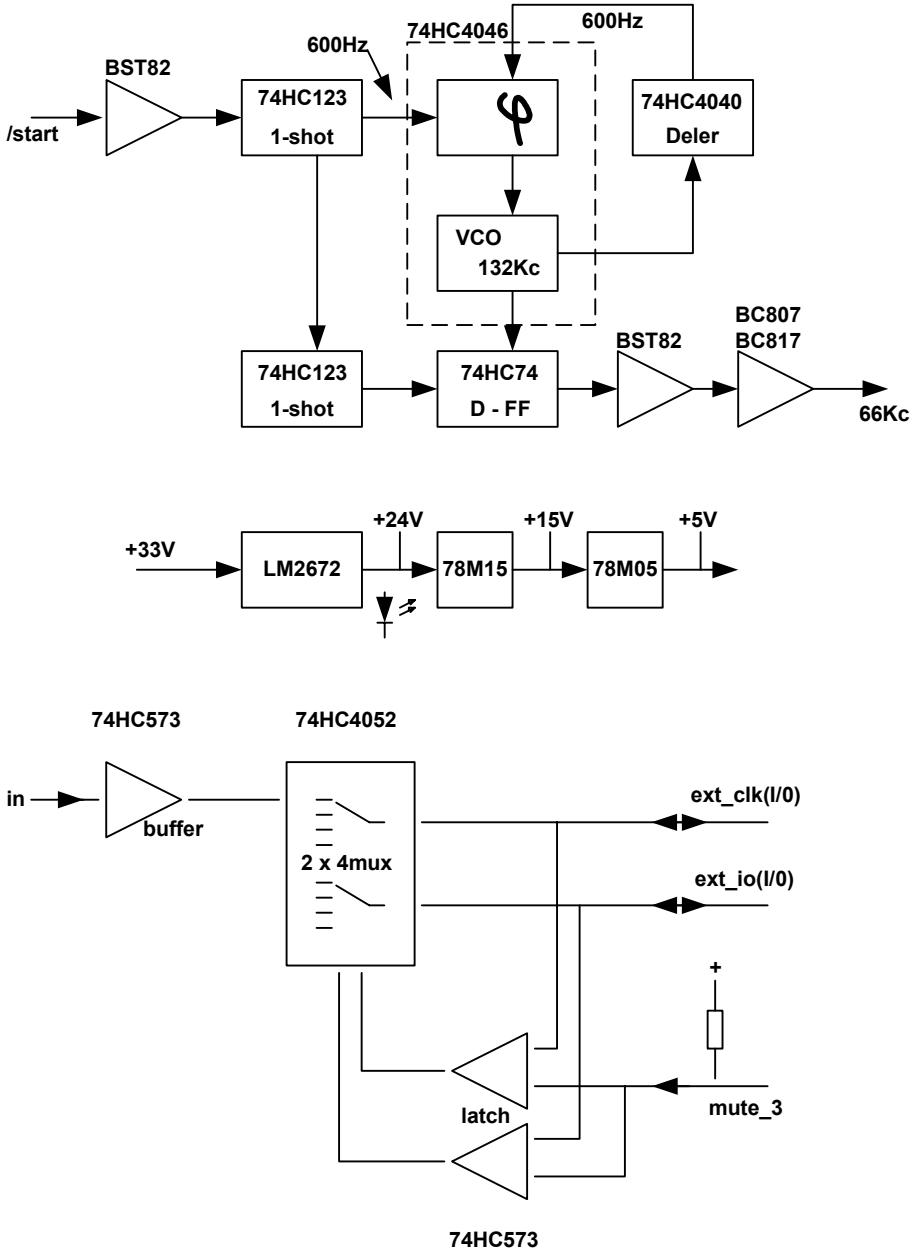
The new operating frequency was chosen at 66 kHz, 8 kHz above the Acousto-Magnetic (AM) operating frequency of Sensormatic, in stead of 10 kHz below it, but still within a frequency band where the same level of fieldstrength (72 dBμA/m) is allowed, and not on the frequency’s of several positioning systems, 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 in stead 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.

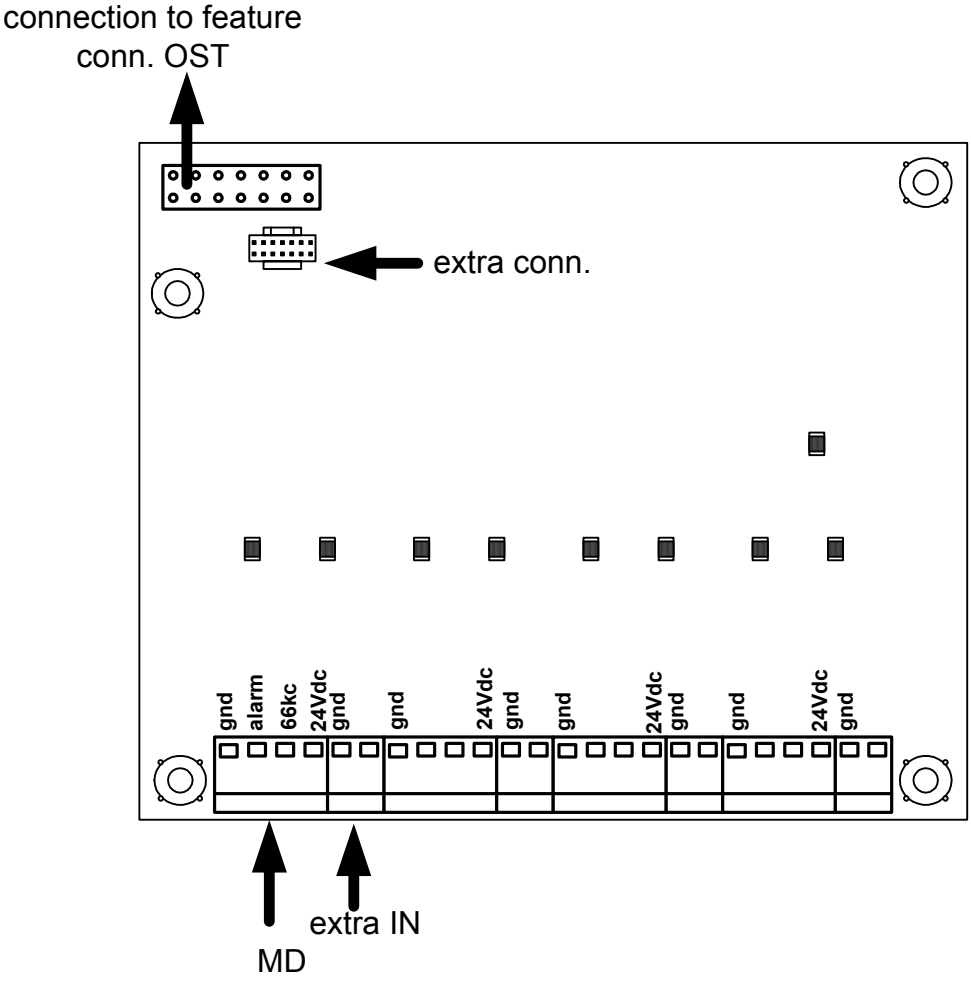
2 Block diagram



2.1 Explanation of the diagram

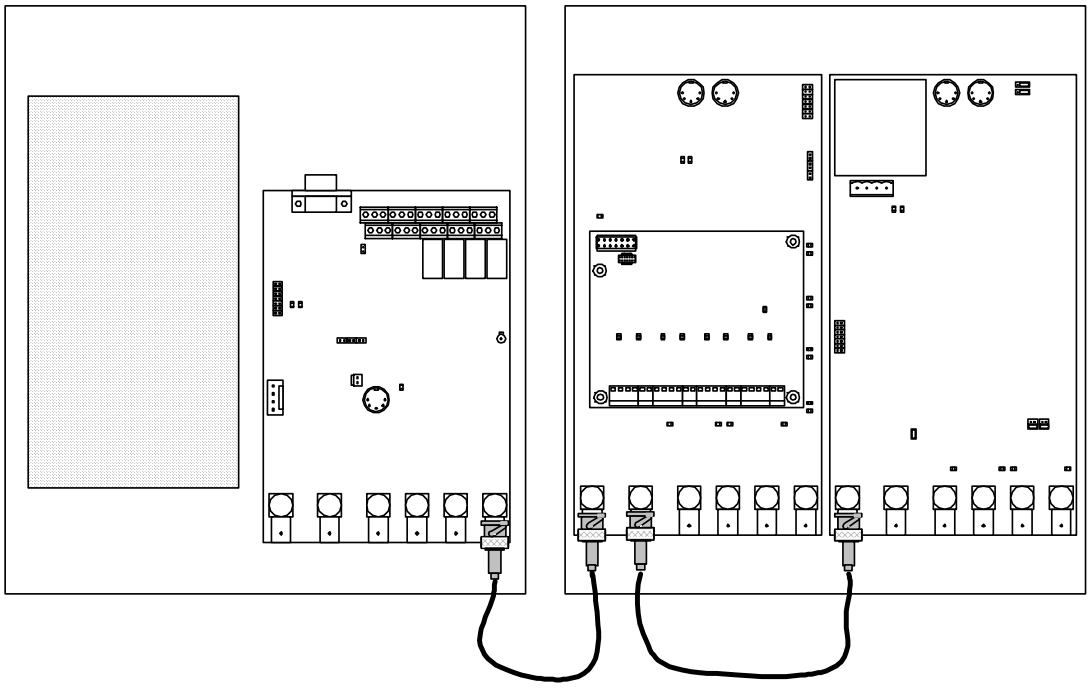
On the OST feature connector a 600Hz repeated signal is available from which the flat cable interface produces the 66 kHz which is used on the metal detection PCB's.
The /start pulse from the feature connector are infect two very narrow pulses about120uSec apart and repeated in a more or less 600 Hz 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

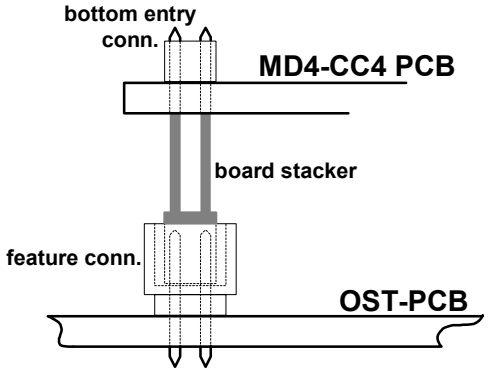


4 Metal Detection PCB in XQ unit

4.1 Circuit board in unit XQ

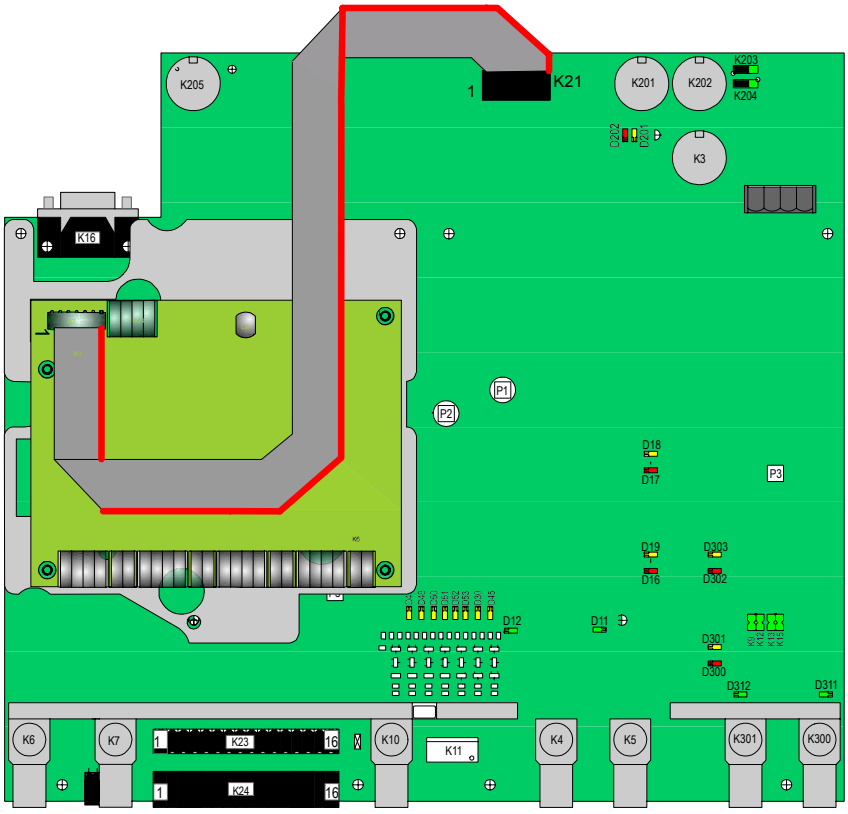


The **MD4 pcb is** intended to be **placed on top of the TX-PCB* inside the** external unit shown above. A CC4 pcb can be placed inside the unit as well.



***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

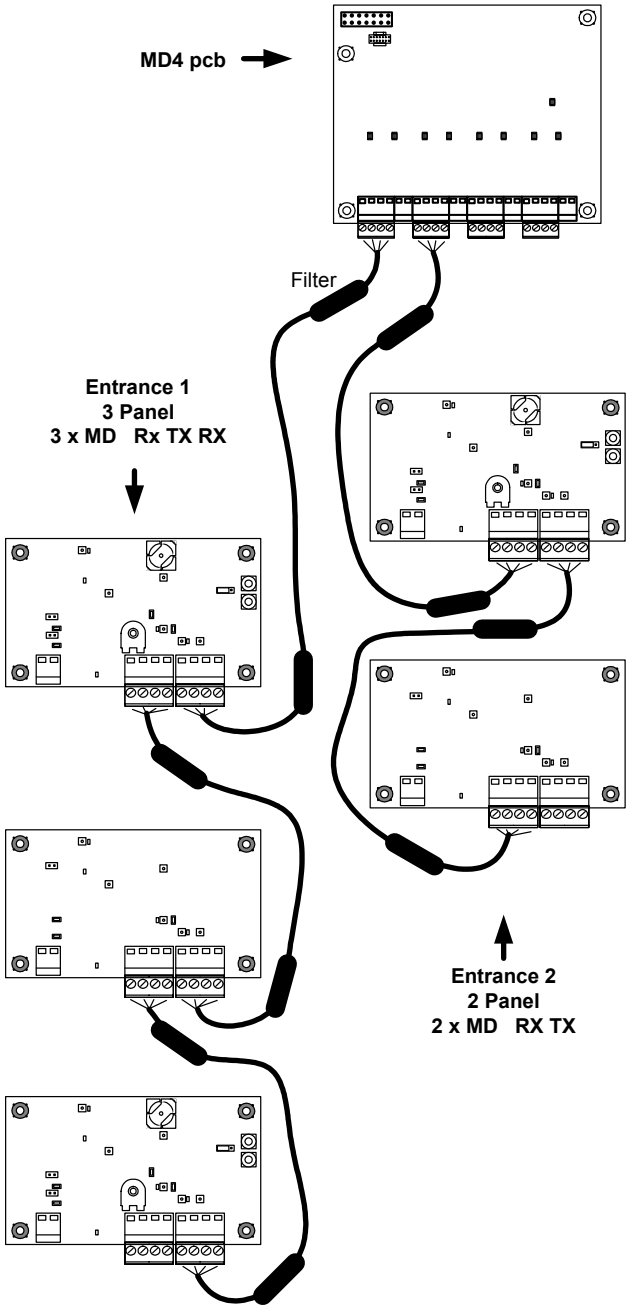


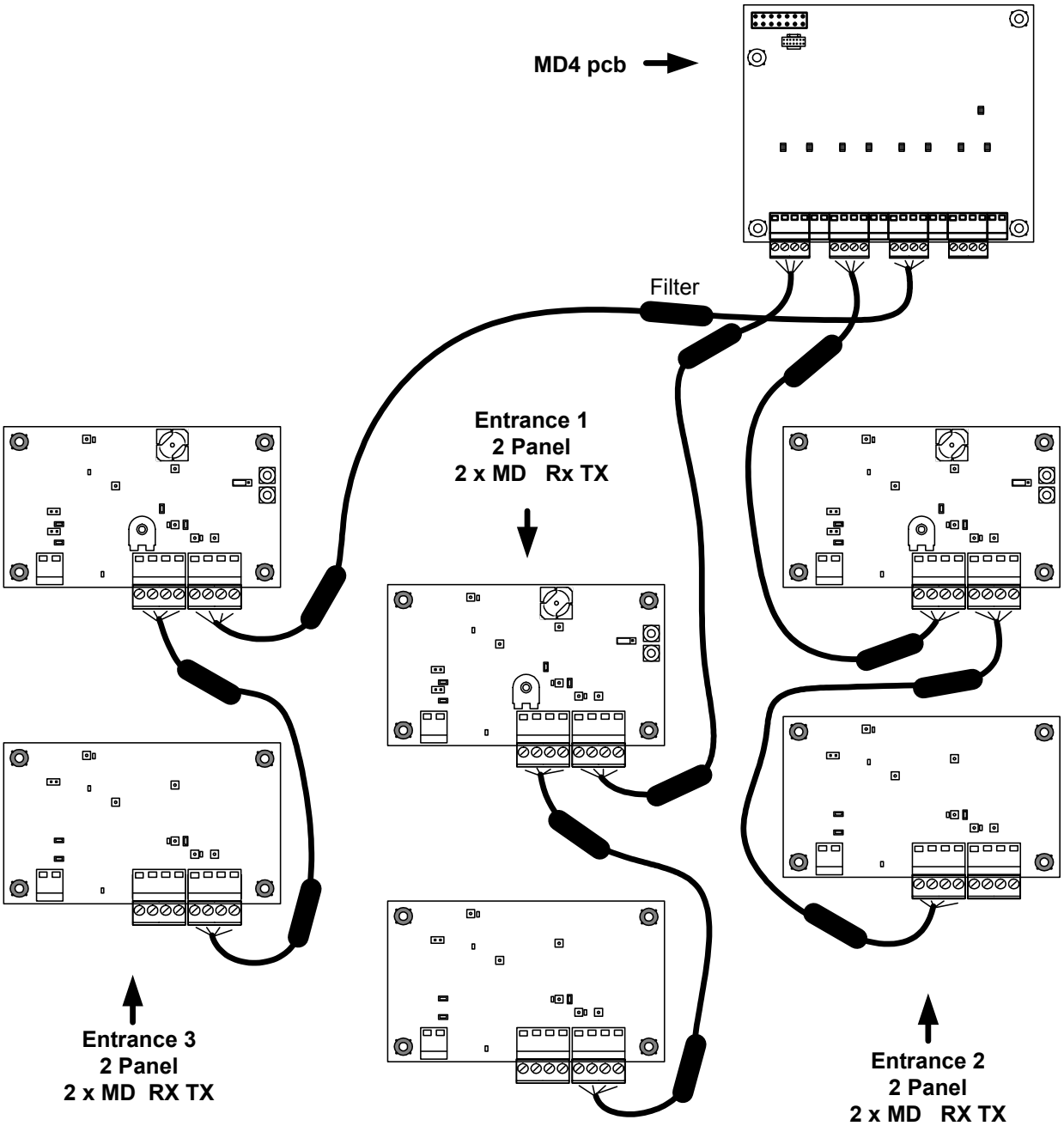
The MD4 PCB will be mounted on the metal plate on top of the IQ unit.
It will be connected with a flat-cable to connector K21 (FCI) of the IQ PCB.
See the drawing for the right polarity.

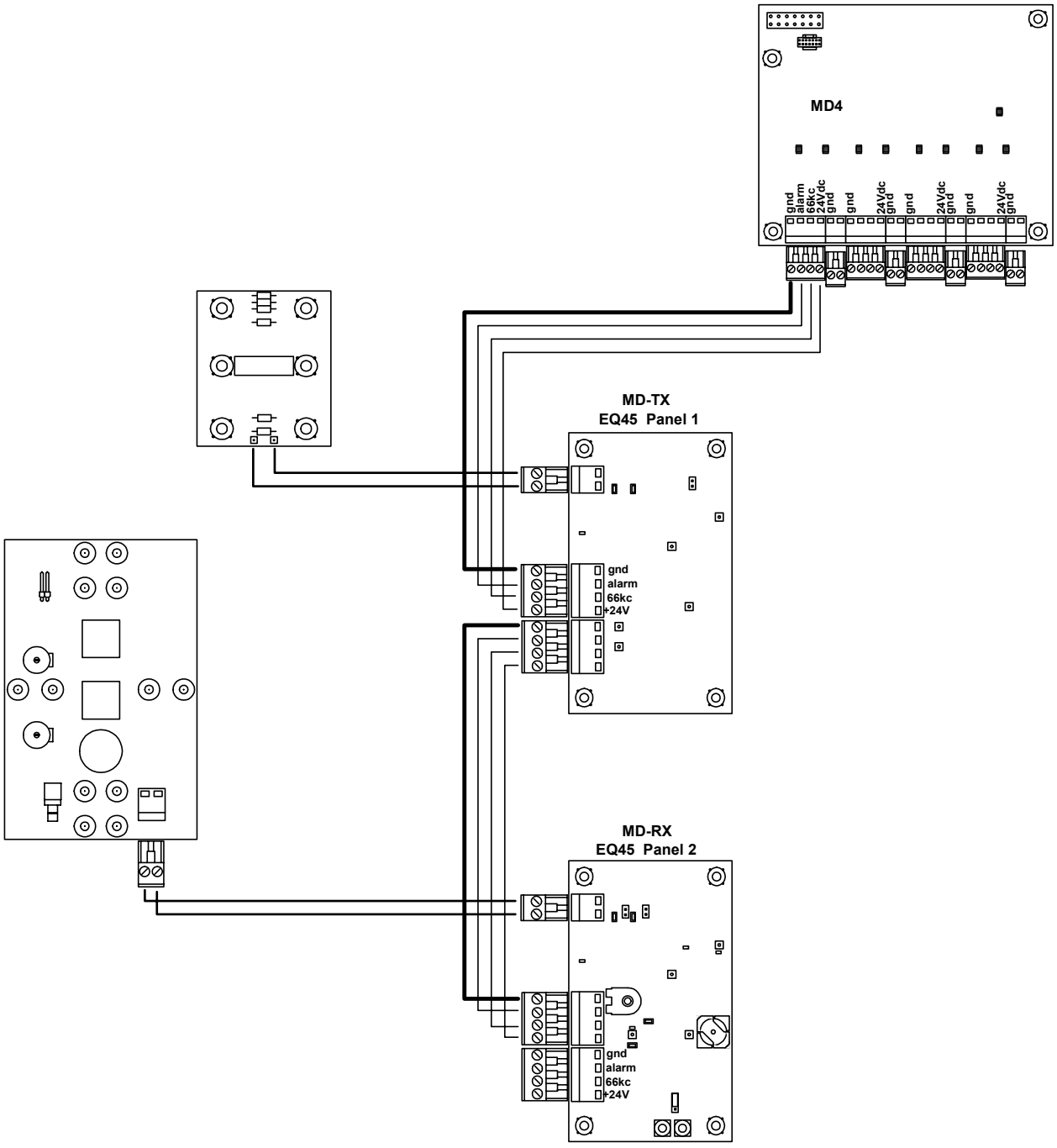
6 Handheld terminal settings

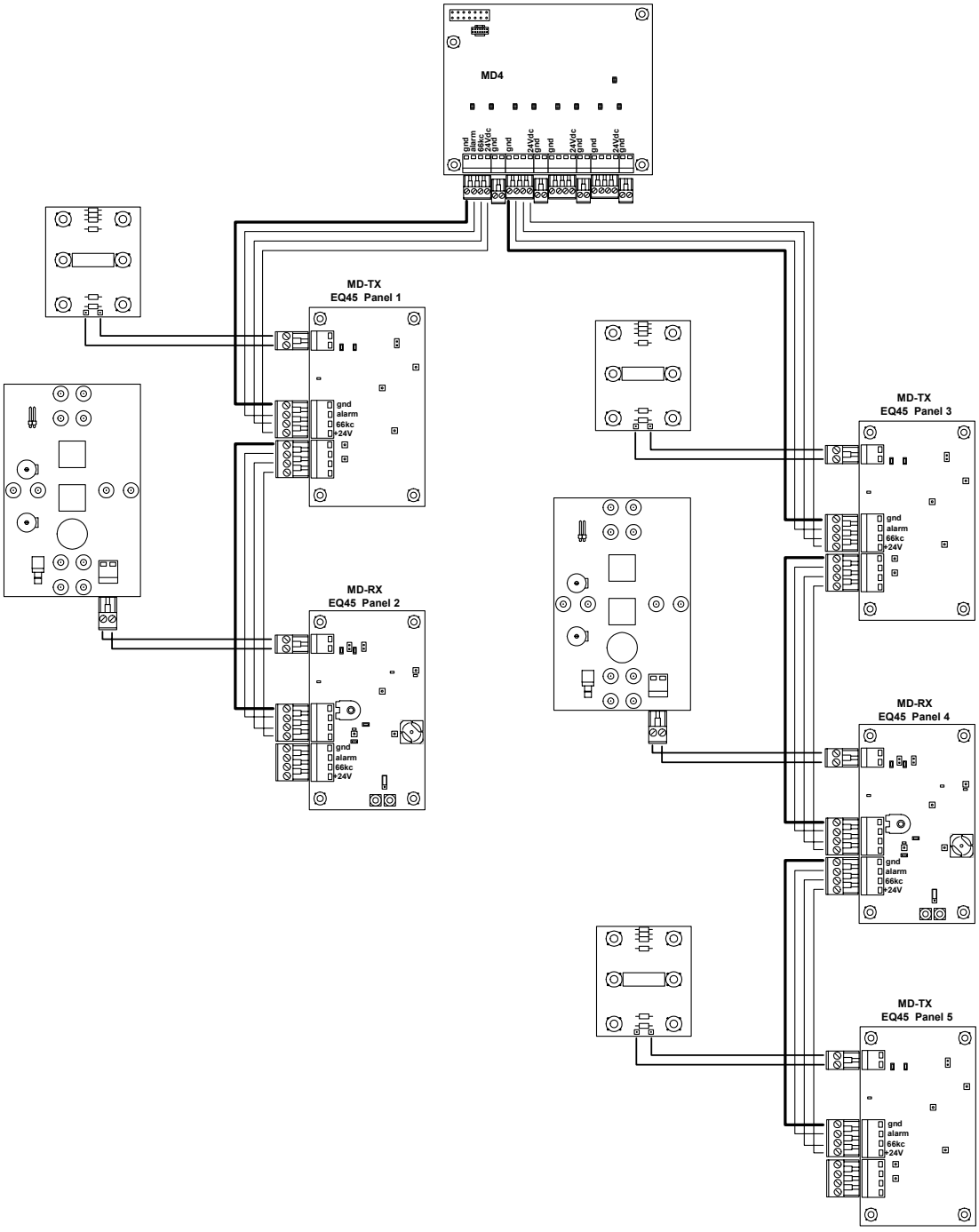
For the handheld-terminal settings see the manual of the handheld-terminal (version 1.300 or higher).

7 Wiring examples






MD4
gnd
alarm
66kc
24Vdc
gnd
gnd
24Vdc
gnd
gnd
24Vdc
gnd
gnd
24Vdc
gnd
MD-TX
EQ45 Panel 1
gnd
alarm
66kc
+24V
MD-RX
EQ45 Panel 2
gnd
alarm
66kc
+24V


MD4
gnd
alarm
66kc
24Vdc
gnd
gnd
24Vdc
gnd
gnd
24Vdc
gnd
gnd
24Vdc
gnd
MD-TX
EQ45 Panel 1
gnd
alarm
66kc
+24V
MD-RX
EQ45 Panel 2
gnd
alarm
66kc
+24V
MD-TX
EQ45 Panel 3
gnd
alarm
66kc
+24V
MD-RX
EQ45 Panel 4
gnd
alarm
66kc
+24V
MD-TX
EQ45 Panel 5
gnd
alarm
66kc
+24V

The MD4 is designed to be used in combination with the OST external TX unit.
Metal detection now can be used in the same entrance configuration as you connect your OST external RX/TX. As on the OST unit, 4 independent Metal Detection connectors are available with independent alarming. (alarming is per entrance not per aisle).
As you see there is no change in how to loop the Metal Detection pcb's together.
Only be sure to connect only one entrance per connector on the MD4 pcb.

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.