**How to address an accessory**

**Light signal or track switch**

Ex acc 131

A: ((Acc / 4) + 1) = 33

B: ((Acc % 4) – 1) = 2

if (B == -1)

{

 B = 3;

 A = A - 1;

}

Address = 33

Register = 2

How to assemble the bitcombination

**Byte 1**

**10**xxxxxx 6 LSB address bit for Basic Accessory

**10**100001 for adresse 33

**Byte 2**

**1**0000000 1xxxxxxx

**1**111x10x 1AAABCCD AAA inv MSB addressbit 000

 B 1=on 0=off

 CC = register 0-3

 D output 0-1

**A Programming example**

The main address example 101

Address = (mainaddress / 4 ) + 1 = 26

Register = (mainaddress % 4 ) – 1 = 0

if (Register == -1)

{

 Register = 3;

 Address = Address - 1;

}

Address = 26

Register = 0

Byte1 = Address & 63; = 00011010

Byte1 = Byte1 + 128; = 10011010 // this is the first Byte

Byte2 = 128;

X = 0; // look for the MSB bits of the Address

Y = Address & 64;

If (Y == 0)

 X = X + 64; = 01000000

Y = Address & 128;

If (Y == 0)

 X = X + 128; = 11000000

Y = Address & 256;

If (Y == 0)

 X = X + 256; = 111000000

X = X >> 2; = 001110000

// Add Byte2 with the inv MSB bits

Byte2 = Byte2 + X; = 10000000 + 01110000 = 11110000

// add register Byte2 = Byte2 + (Register << 1);

Byte2 = Byte2 + (0 << 1) = 11110000 + 0 = 11110000

**Output port on or off (How to do it)**

**Turn the light to RED**

Byte 2 = Byte 2 + 8; // output 0 on

Send Byte 1 + Byte 2

Wait 200 mS

Byte 2 = Byte 2 - 8; // output 0 off

Send Byte 1 + Byte 2

**Turn the light to Green**

Byte 2 = Byte 2 + 9; // output 1 on

Send Byte 1 + Byte 2

Wait 200 mS

Byte 2 = Byte 2 - 8; // output 1 off

Send Byte 1 + Byte 2

**For lightsignals send :**

**Turn to RED:**

Address reg output 0 on

Address reg output 0 off

**Turn to GREEN:**

Address reg output 1 on

Address reg output 1 off

**For track switch send:**

**For straight:**

Address reg output 1 on

Address reg output 1 off

wait 200 mS

**For turn:**

Address reg output 0 on

Address reg output 0 off

Evt pause 200 mS

**Cross switch:**

**Straight**

Address reg Output 1 on

Address reg Output 1 off

**Cross:**

Address reg Output 0 on

Address reg Output 0 off

**Tripple switch**

**Straight**

Address reg Output 1 on

Address reg Output 1 off

Address reg+1 Output 1 on

Address reg+1 Output 1 off

**Right**

Address reg Output 0 on

Address reg Output 0 off

Address reg+1 Output 1 on

Address reg+1 Output 1 off

**Left**

Address reg Output 1 on

Address reg Output 1 off

Address reg+1 Output 0 on

Address reg+1 Output 0 off

More addressing examples

Ex acc 5

A: ((Acc / 4) + 1) = 2

B: ((Acc % 4) – 1) = 0

Addressing

address 2

register 0

Address 223 = 56:2

Address 224 = 56:3

Address 231 = 58:2

Address 232 = 58:3

Address 233 = 59:0

Address 234 = 59:1