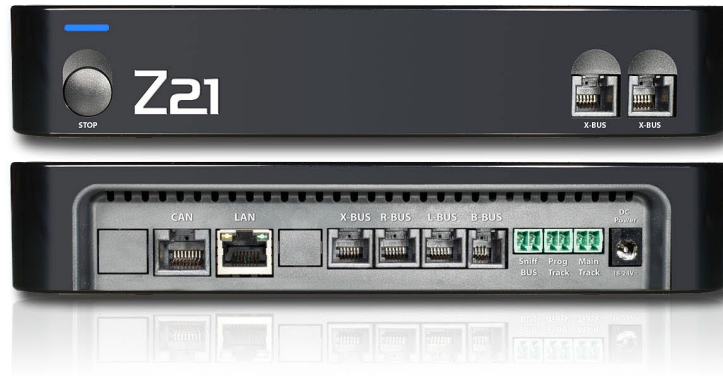


The black Z21

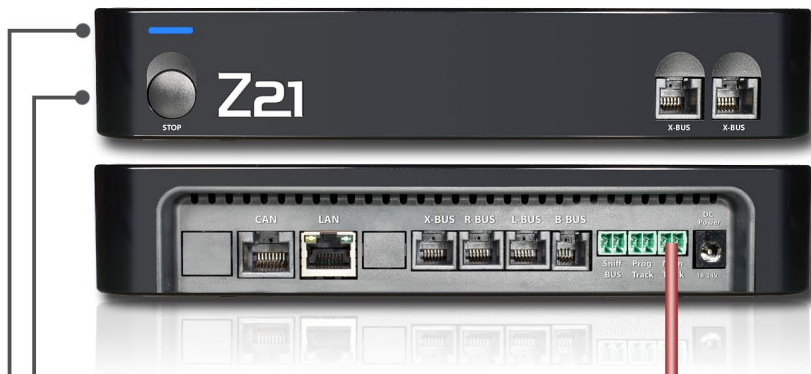


Interface description

Roco

FLEISCHMANN

Main Track



STOP Key:

short press: change normal operation / STOP
 hold until LED blinks red (ca. 3s): restart
 hold until LED blinks purple (ca. 5s): reset to factory default settings

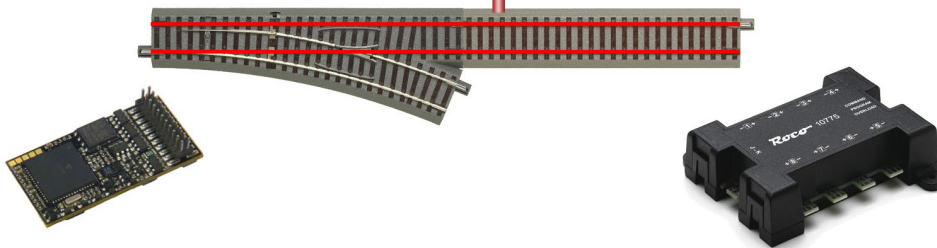
LED Status:

- constant blue normal operation
- - - blinking blue STOP
- constant green programming mode
- - - blinking red short circuit

Main Track:

3.2A, short circuit detection
 Track voltage configurable from 12 to 24V inside Z21-App and Z21_Maintenance.
 Maximum track voltage is 1V below supply voltage.

2 Rails DCC



DCC Loco-Decoder

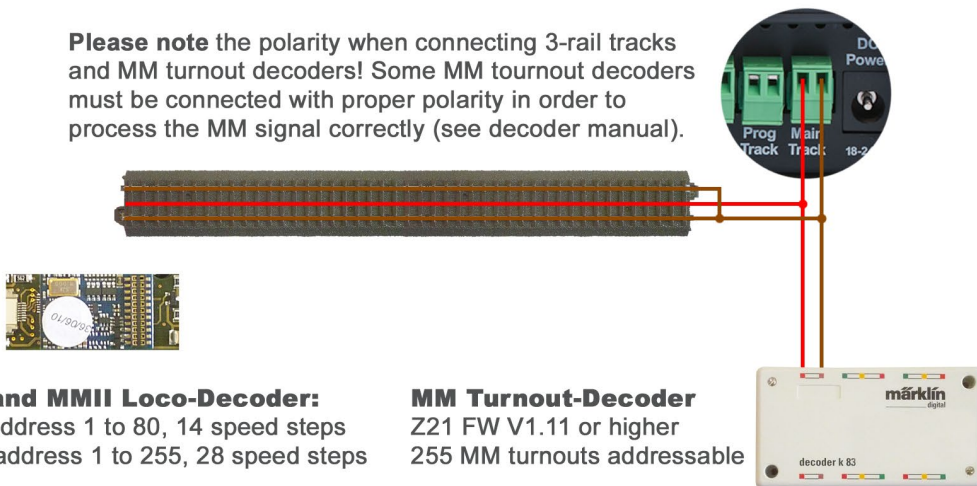
14/28/128 speed steps, F0 bis F28
 RailCom (can be switched off)
 POM write
 POM read (RailCom, Z21 FW V1.22 or higher)
 Short address range from 1 to 99
 Long address range from 100 to 9999

DCC Turnout- and Signal-Decoder

Configuration of sophisticated decoder by using accessory CV-programming with Z21 FW 1.22 (or higher) and Z21_Maintenance.exe.
 2044 DCC-turnouts addressable.

3 Rails MM

Please note the polarity when connecting 3-rail tracks and MM turnout decoders! Some MM turnout decoders must be connected with proper polarity in order to process the MM signal correctly (see decoder manual).



MMI and MMII Loco-Decoder:

MMI: address 1 to 80, 14 speed steps
 MMII: address 1 to 255, 28 speed steps

MM Turnout-Decoder

Z21 FW V1.11 or higher
 255 MM turnouts addressable

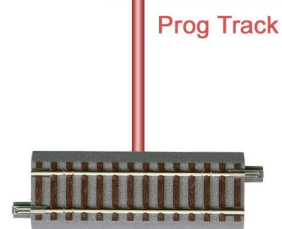
Prog Track



LED Status:

- constant blue normal operation
- constant green programming mode
- - - blinking green decoder update

Hint: CV-programming can be cancelled by shortly pressing the STOP key.



CV Programming

according NMRA S-9.2.3
Reading/writing CV bit- and byte-wise
in direct mode

MM Programming

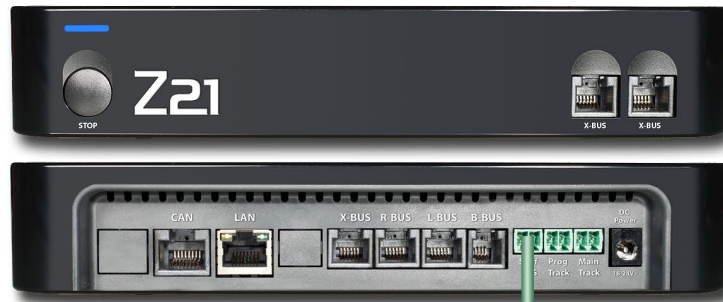
6021 programming mode
Z21 FW V1.23 or higher



Decoder Update

with Z21_Maintenance.exe for Roco
and Fleischmann-decoders (manufacturer Zimo)
Feature is in test-phase!

Sniff BUS



DCC central control unit

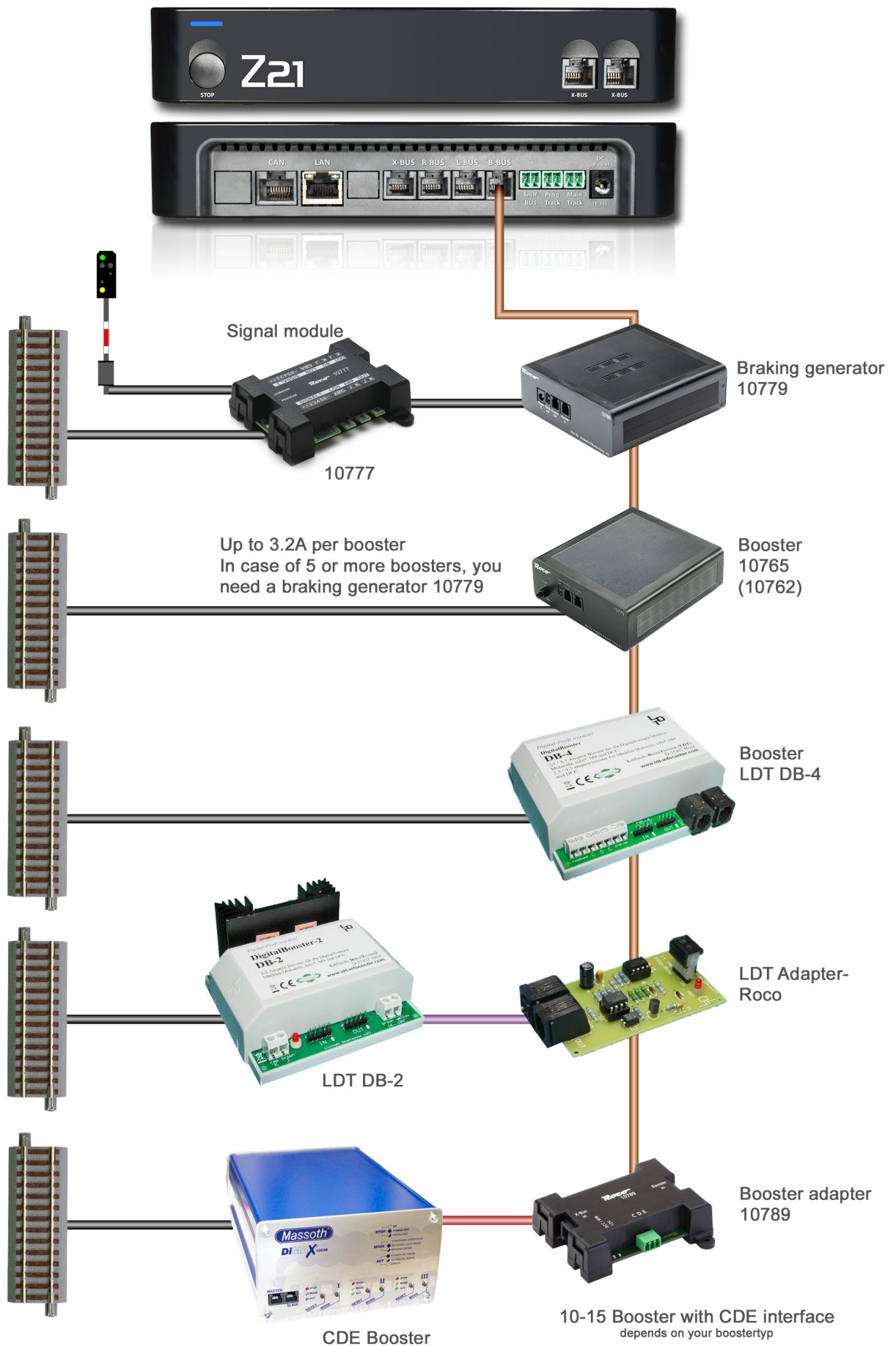
Driving and switching by using your existing legacy DCC digital command station (output voltage of 16V or higher required). Z21 FW V1.22 or higher required.

The direction of communication is always from the legacy command station into the Z21. At any time, you can take over the loco with another throttle (or App) connected to the Z21.

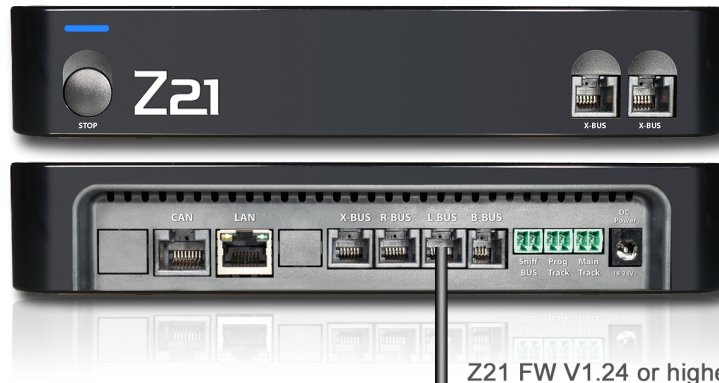


Please note the power on procedure: first Z21, second legacy command station

Booster- BUS



LocoNet- BUS Part1



L-BUS

Z21 FW V1.24 or higher
LocoNet T (Master) 12VDC, 500mA

LocoNet layout modules ←



Funky

Profi-BOSS
as LocoNet Slave

DT402

DT300

UT4

DAISY

DAISY II
Funkmaster update

IRIS + 63830
IR-Receiver

Profi-Control*

TWIN-CENTER, Intellibox,
TWIN-CONTROL, IB-Control
LocoNet Slave

IB-Switch

FRED*

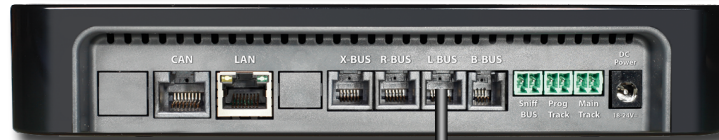
FREMO FRED*

TWIN-CENTER: slave-mode with FW V2.000 special option 844=1
Intellibox: slave-mode with FW V2.001 special option 844=2 (i.e. LocoNet power source=off)

Activating LocoNet slave-mode on **PROFI-BOSS:**
1. C + alt
2. change MASTER to SLAVE
3. confirm

* Take over a loco address by using the dispatch procedure in Z21_Maintenance.exe and App

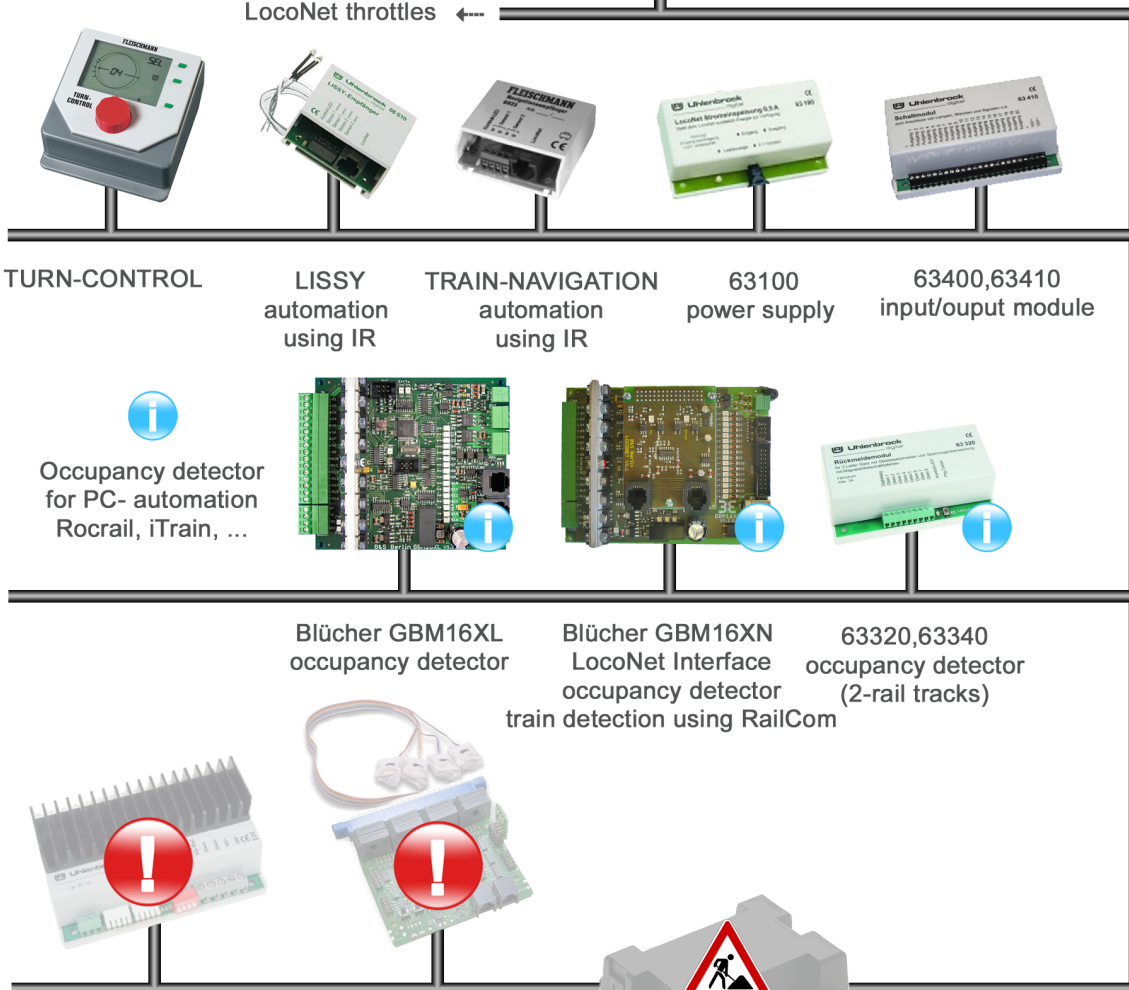
LocoNet- BUS Part2



Z21 FW V1.20 or higher
LocoNet T (Master) 12VDC, 500mA

L-BUS

LocoNet throttles ←



 These modules must be connected with LocoNet-B interface => adapter necessary



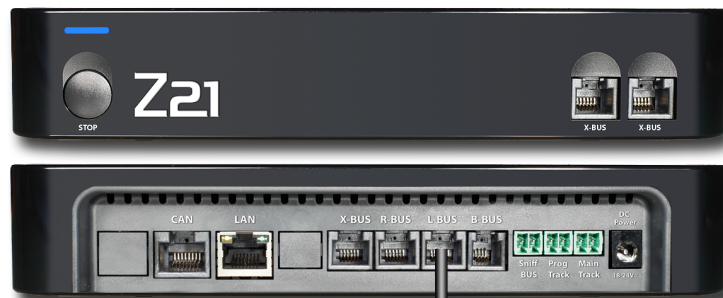
MARCo



63330, 63350
68720, 68730

These modules are not compatible with full bridge power circuits and must not be connected to Z21 or Digitrax command stations.

LocoNet- multiZENTRALEpro



L-BUS

Z21 FW V1.24 or higher
LocoNet master



+



connect to EXT.



FW V1.09
LocoNet slave



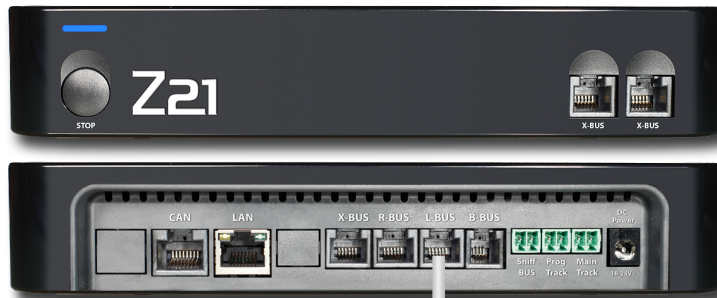
The multiZENTRALEpro is the LocoNet slave. It is powered by the Z21 (12VDC), so **do not use** any power supply for the multiZENTRALEpro. Connect the tracks with the LocoNet master.

multiZENTRALEpro with 3rd party LocoNet master



The multiZENTRALEpro is the LocoNet slave. It must be connected with the LocoNet master by using the **white cable** (136100) solely. In this case the multiZENTRALEpro must be powered by its own AC adapter.

LocoNet- BUS Slave

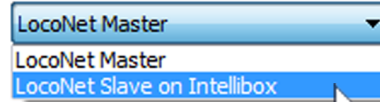


Control the locos of your TWIN/Center/Intellibox by using the Z21 App, multiMAUS, ...

L-BUS

With Z21 FW V1.22 or higher, the Z21 can be configured as LocoNet slave by using Z21_Maintenance.exe

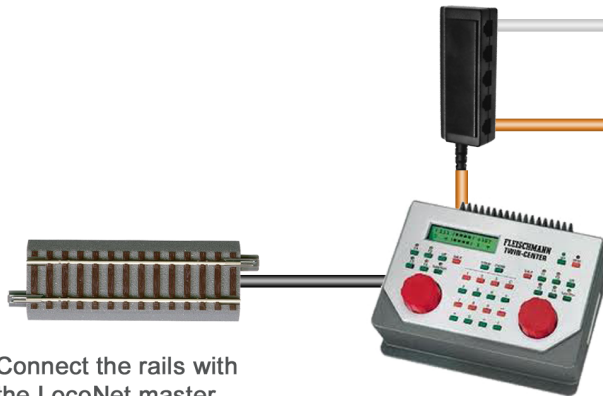
LocoNet mode



Z21 LocoNet Slave Cable
136100



This throttle is just one example for all the other devices connected to the LocoNet-T BUS.



Connect the rails with the LocoNet master.

This digital command station is the LocoNet master. In this use case, the Z21 is used as gateway between the TWIN-CENTER/Intellibox and all the Z21-throttles or Z21-Apps. It is now possible to control your layout not only with the TWIN-CENTER/Intellibox and its LocoNet throttles, but also with the Z21-App on the smartphone/tablet and multiMAUS at the same time!

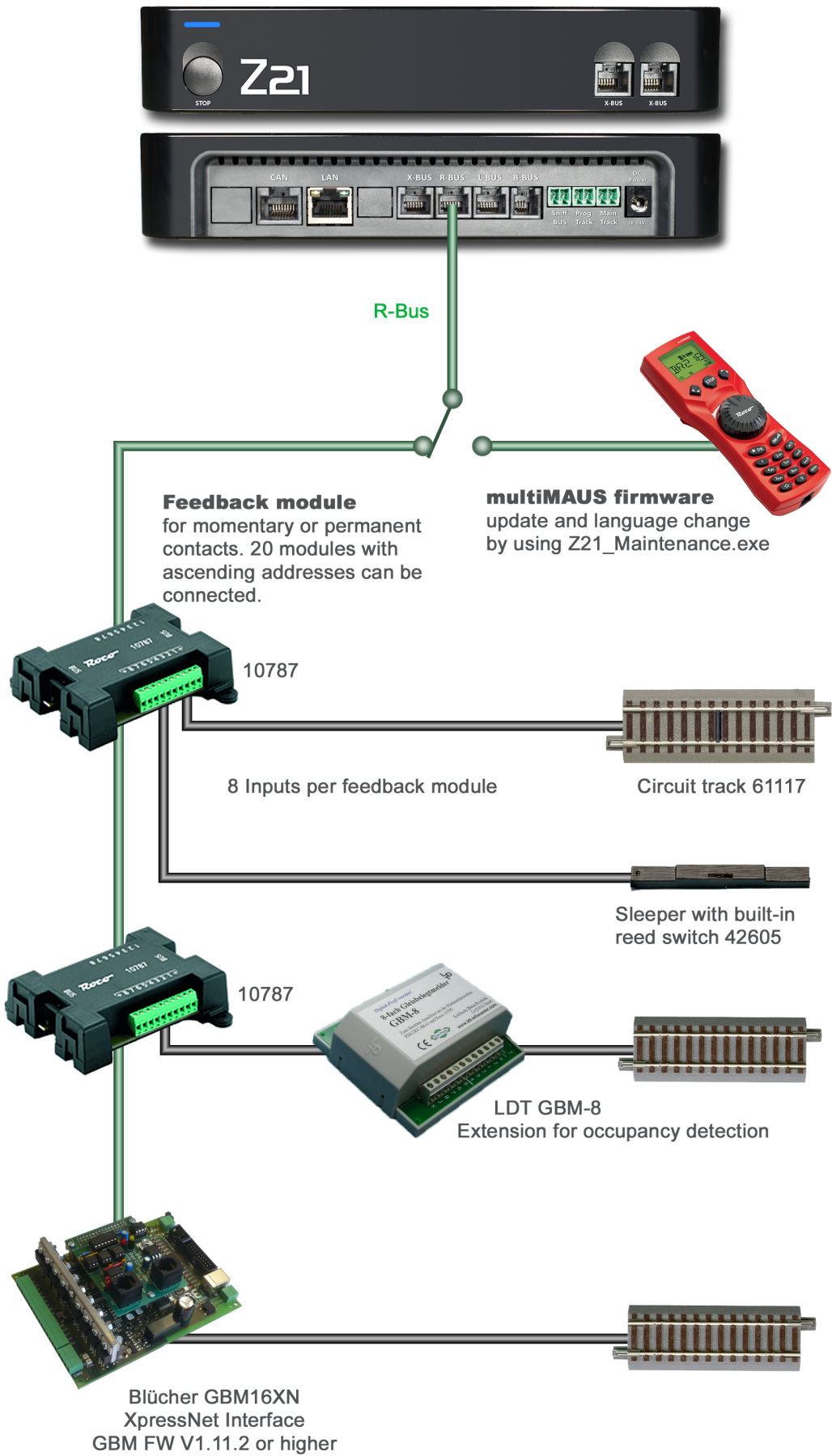


Because the Z21 was not originally planned to be used as LocoNet slave, please consider following information:

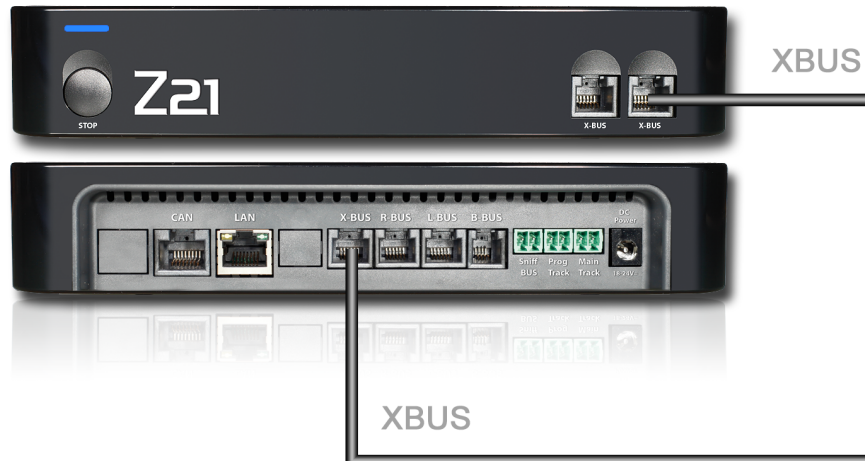
In order to avoid that the Z21 and the existing LocoNet master both provide the supply voltage at the same time, the supply voltage must be isolated on the L-BUS-connector (pin1 and pin6) at the Z21.

In order to do so, please use solely the white „Z21 LocoNet Slave Cable“ with the spare part number 136100. Please ask your local dealer or buy it online at roco.cc – Service – Spare parts. Using the wrong cable can damage the digital control unit!

R- BUS



X-BUS



POM Reading with multiMAUS
FW V1.04 and Z21 FW V1.22 or higher



RouteControl

Lokmaus2

Lokmaus3

multiMAUS



Funky
Z21 FW V1.24
or higher

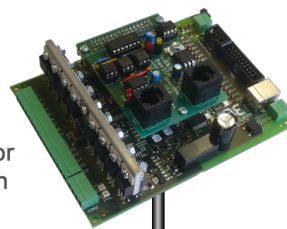
Lenz LH90
Z21 FW V1.24
or higher

Lenz LH30

Lenz LH100



Occupancy detector
for PC- automation
Rocrail, iTrain, ...



Blücher GBM16XN
XpressNet Interface
Z21 FW V1.24 or higher
GBM FW V1.11.2 or higher

LAN mobile



Roco Z21 App



Z21 Updater
firmware update



DigiTrains

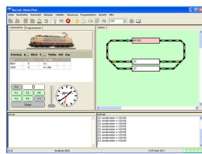


iRoc, padRoc,
andRoc
(in conjunction
with PC)

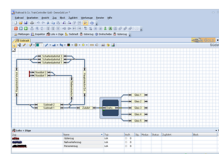
LAN PC



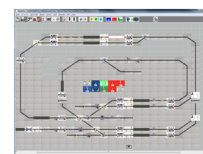
iTrain
V3.0 or higher



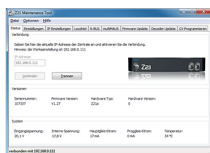
Rocrail
Rev. 4635 or higher



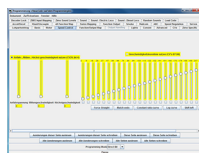
TrainController
V8.0 B4 or higher



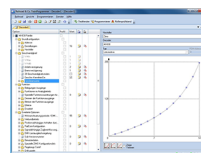
ModellStellwerk
V8.20 or higher



Z21 Maintenance
firmware update,
use WINE
for Linux and Mac



JMRI DecoderPro
V3.11 or higher



TrainProgrammer
V8.0 D1 or higher

CAN



Zimo MX32
Z21 FW V1.25 or higher and Zimo FW V01.15