Newsletter - JANUARY 2011

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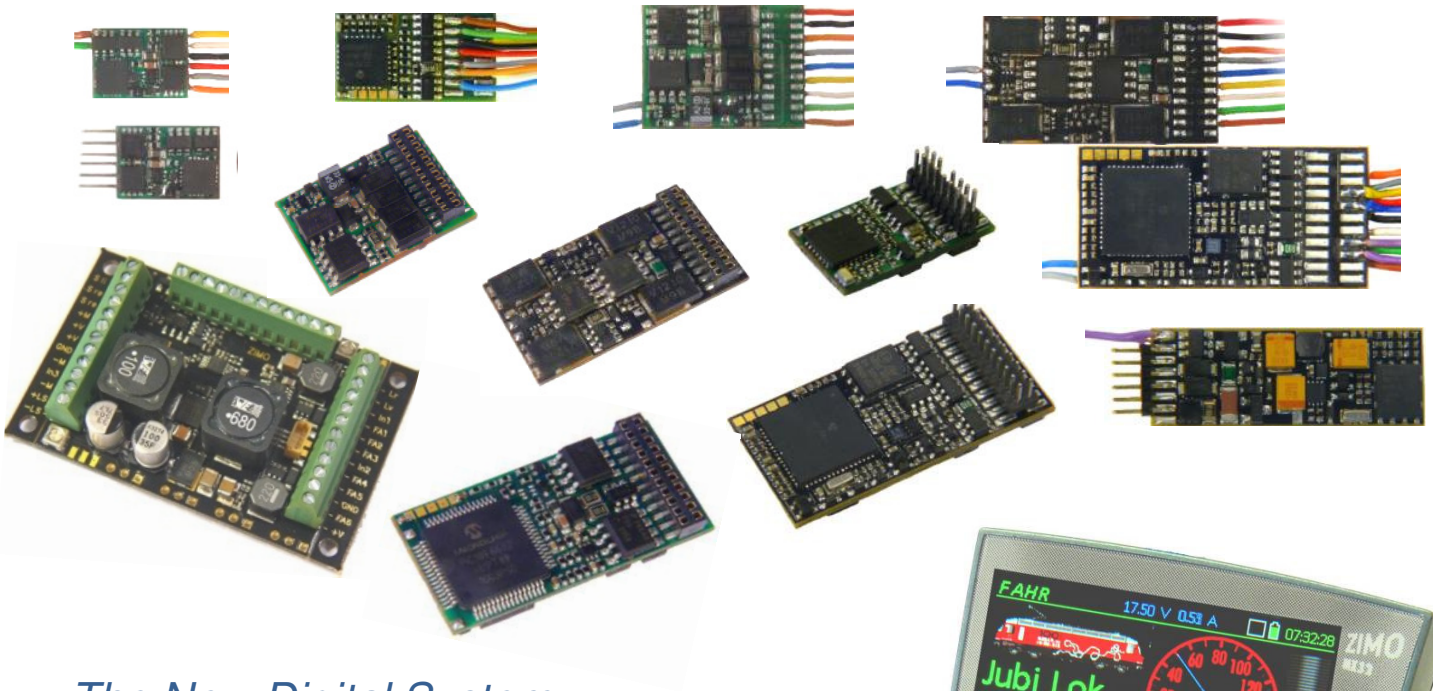
The current Decoder Palette

Within the last few months, there have been changes with new types in nearly all of the ZIMO decoder families, and more changes will take place during January and February 2011, to take into account a generation change in micro-controllers, which has resulted in some optimization. For these reasons, and with the entry of ZIMO into the “factory fitted” market, supplying some manufacturers on a large scale, we can say that :-

there is N O price increase for decoders at the beginning of 2011,

although there have been large increases in the costs of labour, electronic components, printed circuit boards, services and transportation in the global market place.

As we have no current catalogue (while we are still adding new types), here, in this newsletter, are the families and main variants :-



The New Digital System

The delivery of the new system has begun (at the end of 2010). The software is not fully functional, but it is constantly expanding and the update is provided via USB stick (without a computer).

Since a controller without a base station is not a complete digital system, and the MX10 still needs more development time, we have decided that the

"System CAB" MX32ZL

should be brought to market in a short time, so that the MX23 with a built-in base station can be used. This controller can be used later with the MX10 command station as a "normal" controller in a full system.

12 x 6.5 x 2 mm *No Sound 0.7 A - 4 Function Outputs* ***WARNING**: only DCC and DC Analogue (**not** MOTOROLA)*

MX621 *Family*	**Miniature Decoder**, with all ZIMO features and functions, for N, H0e, H0m, TT, and H0 or 00 with limited space
MX621	7 wires, 120mm long (thin and highly flexible), for rail, motor and 2 function outputs. For the other 2 function outputs, solder pads are available.
MX621N	As MX621, but with 6-pin NEM651 plug (= "small interface" as defined in NMRA RP 9.1.1.), direct connection, i.e. 6 pins soldered for models with the 6 pin socket (female connector), no wires.
MX621R	As MX621, but with 8-pin connector as defined in NEM652 on 70 mm long wires.
MX621F	As MX621, but with 6-pin connector as defined in NEM651 on 70 mm long wires.

20 x 11 x 3.5 mm *No Sound 1.0 A - 6 Function Outputs - 2 Servos - SUSI DCC, MM, DC-Analogue, AC-Analogue*

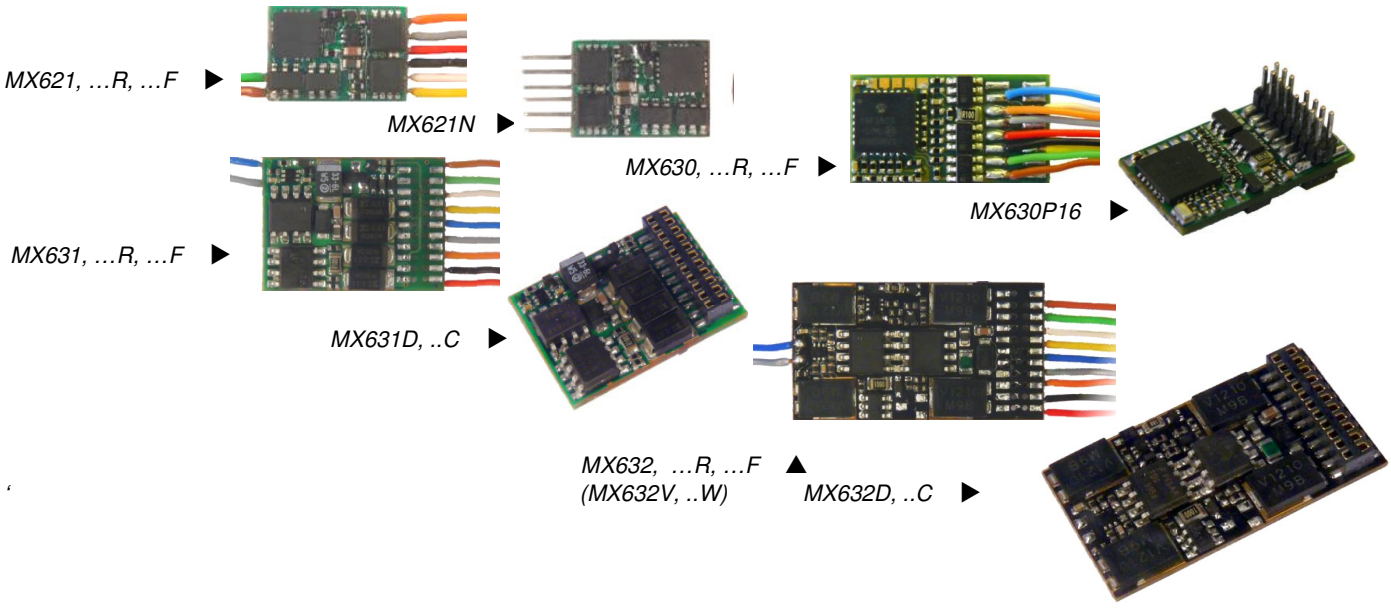
MX630 *Family*	**00/H0 Decoder**, compact , for universal use, most popular ZIMO non-sound decoder
MX630	9 wires, 120 mm long (thin and highly flexible)for rails, motor and 4 function outputs. Solder pads for 2 more function outputs, logic level outputs or servo control as well as SUSI.
MX630R	As MX630, but with 8-pin plug as defined in NEM652 on 70 mm long wires.
MX630F	As MX630, but with 6-pin plug as defined in NEM651 on 70 mm long wires.
MX630P16	As MX630, but with **16-pin PluX - interface** (on circuit board for direct connection).

20.5 x 1.5 x 4 mm *No Sound 1.2 A - 6 Function Outputs - 2 Servos - SUSI DCC, MM, DC-Analogue, AC-Analogue*

MX631 *Family*	**00/H0 Decoder**, similar to MX630, more power, with **Energy storage interface,** for 00/H0 and small 0 scale.
MX631	11 wires(120 mm) for rail, motor and 4 function outputs, solder pads for 2 further function outputs, logic level outputs, servo control and SUSI.
MX631R	As MX631, but with 8-pin plug as defined in NEM652 on 70 mm long wires.
MX631F	As MX631, but with 6-pin plug as defined in NEM651 on 70 mm long wires.
MX631D	As MX631, but with **21-pin "MTC" - interface** direct on circuit board.
MX631C	As MX631D, for models, where FA3 and FA4 are used as logic level (i.e.. **Märklin**, **Trix, tw. Hag, LS, ..)**

28 x 15.5 x 4 mm *No Sound 1.6 A - 8 Function Outputs - 2 Servos - SUSI DCC, MM, DC-Analogue, AC-Analogue*

MX632 *Family*	**High Performance Decoder,** with **Energy storage interface,** for 00/H0 and 0-Scale.
MX632	11 wires (120 mm) for rail, motor and 4 function outputs, solder pads for 4 further function outputs, logic level outputs, servo control and SUSI.
MX632R	As MX632, but with 8-pin plug as defined in NEM652 on 70 mm long wires.
MX632D	As MX632, but with **21-pin "MTC" - connector** direct on decoder board.
MX632C	As MX632D, for models, where FA3 and FA4 are used as logic level (i.e. **Märklin**, **Trix, tw. Hag, LS)**
MX632V, VD MX632W, WD	Versions with **low voltage supply** for the **function outputs:** MX632V - 1,5 V or MX632W - 5 V MX632VD or. MX632WD - with 21-pin connection.



28 x 10.5 x 4 mm ***SOUND*** *1.0 A - 4 Function Outputs - 2 Servos - SUSI DCC, MM, DC-Analogue, AC-Analogue*

MX646 *Family*	**Miniature Sound Decoder, 1 Watt Audio on 8 Ohm speakers**, for N, TT, H0e, H0m; 00/ H0 with small space.
MX646	9 wires for rails, motor, 2 function outputs and loudspeaker, solder pads for 2 more function outputs, logic level outputs, servo control and SUSI.
MX646N	As MX646, but with 6-pin connection as defined in NEM651 (= "small interface" as in NMRA RP 9.1.1.), 6 pins soldered for direct connection to models with the 6 pin socket (female connector), no wires, 2 wires for loudspeaker.
MX646W	As MX646, but with 6-pin connection as defined in NEM651 (= "small interface" as in NMRA RP 9.1.1.),, **90 ° angle to pins** for direct connection, 2 wires for loudspeaker.
MX646R	As MX646, but with 8-pin plug as defined in NEM652 on 70 mm long wires.
MX646F	As MX646, but with 6-pin plug as defined in NEM651 on 70 mm long wires.

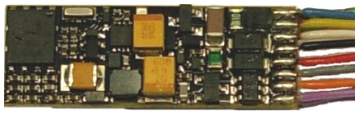
30 x 15 x 4 mm ***SOUND*** *1.2 A - 10 Function Outputs - 2 Servos - SUSI DCC, MM, DC-Analogue, AC-Analogue*

MX645 *Family*	**00/H0 Sound Decoder, 3 Watt Audio on 4 Ohm speakers (or 2 x 8 Ohm),** with **Energy storage interface**, for 00/H0 and small 0.
MX645	13 wires (120 mm) for rails, motor, 4 function outputs, loudspeaker, energy storage interface, solder pads for further function outputs, logic level outputs, servo control and SUSI.
MX645R	As MX645, but with 8-pin connection as defined in NEM652 on 70 mm long wires.
MX645F	As MX645, but with 8-pin connection as defined in NEM651 on 70 mm long wires.
MX645P16	As MX645, but with **16-pin PluX - connector** (direct on decoder board).
MX645P22	As MX645, but with **22-pin PluX - connector** (direct on decoder board).

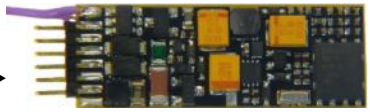
30 x 15 x 4 mm ***SOUND*** *1.2 A - 6 Function Outputs - 2 Servos - SUSI DCC, MM, DC-Analogue, AC-Analogue*

MX644 *Family*	**00/H0-Sound Decoder, 3 Watt Audio on 4 Ohm speakers (or 2 x 8 Ohm),** with **Energy storage interface,** for 00, H0 and small 0 scale.
MX644D	with **21-pin "MTC" – Connector** (socket direct in decoder board)
MX644C	as MX644D, for models, where FA3 and FA4 are used as logic level (i.e. **Märklin**, **Trix, tw. Hag, LS, ..)**

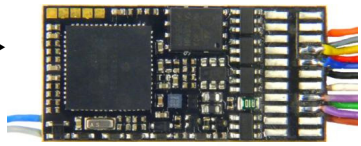
MX646, …R, …F ▶

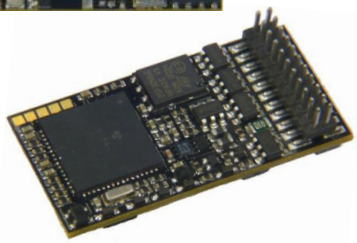


MX646N ▶

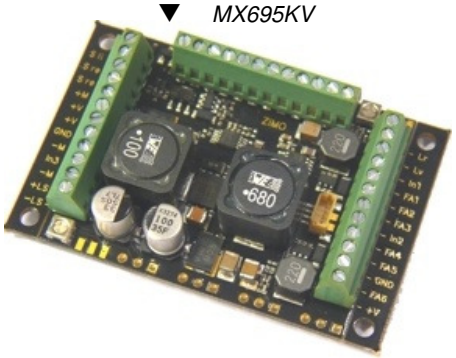


MX645, …R, …F ▶



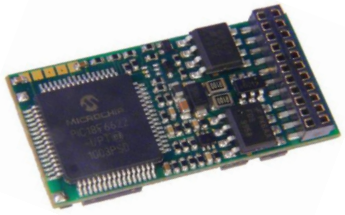


▼ *MX695KV*



MX645P22 ▶

MX644D, ..C ▶



40 x 30 x 12 mm ***SOUND*** *5 A - up to 15 function outputs - 4 Servos - SUSI DCC, MM, DC-Analogue, AC-Analogue*

MX695 *Family*	**Large scale Sound Decoder, 14 Watt Audio on 4 Ohm (or 2 x 8 Ohm),** with **Energy storage interface,** up to **three low voltage outputs**.
MX695KV	**Full version** with **36 screw connections**: 15 Function Outputs, 4 Servo connections (3-pin connector), 3 low voltage(5 V. 8 V. variable), 2 controllers (for loudspeaker and variable low voltage), SUSI connection.
MX695KS	**Reduced** Version with 28 screw connections, 8 Function Outputs, one low voltage (8 V).
MX695LV	**Full version** with **three 12-pin connectors** (as a reduced price version without screw connections).
MX695LS	**Reduced** Version with two 12-pin connectors, 8 Function Outputs, (direct plug-in for ES-style circuit boards)..
MX695KN	Large Scale Decoder ***without Sound;*** 20 screw connections: 8 Function Outputs, low voltage(8 V).

The following pages in this newsletter are not a manual!

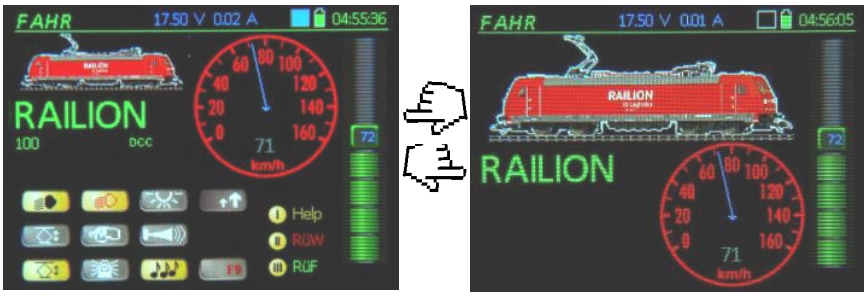
Some of the functions describe here are not yet implemented in the controller.All screens show the German version. They have been translated and English will be available soon.

The MX32

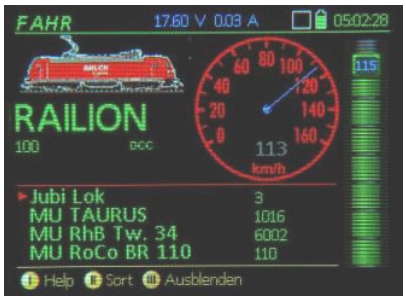
Operating Mode FAHR (Drive)

By touching various parts of the screen, e.g. name and address, different screens appear :-

- with/without function key display,
- with large or small loco image, or without image and large font,
- with/without display of speedometer.



A



F

The **switching of control** between different locos can be done in various ways:

- A-Key → Deactivate the current address and type in a **new address**; if desired, and then enter the name, assign a loco image, function symbols, speedometer, etc..
- Softkey III **Recall** → Shows the **Recall stack**, selection of a loco by name or address, activated by
- F-Key → Activate from the recall stack, or from the **Object-Database**, if it has been previously displayed
- F-Key and U-Key → Change between locos in the recall stack without displaying the image

Consisting means driving a set of locos, whose members are controlled simultaneously in terms of speed, direction, manual and shunting functions.

- T-Key → Add a loco to the consist from the recall stack or the object database, or remove a loco from the consist.

  In consist mode, it is possible to switch between members of the consist to operate separate functions using the T-Key.

Consists get their own name and thus form a separate object and can be shown with their own image.

At any time you can use the

- S-Key → a "Fast Stop" for the loco under active control, or complete system stops such as "Collective Stop" or "Power Off" can be activated.

ADR Settings Screen . . .

Here are input all the settings for operating a vehicle and how it will appear on the screen

This is done in a series of "Set-up" screens such as :-

ADR NAME, ADR BILD, ...

Give a name and choose an image from the loco image database.

ADR FUSY, ADR TACHO, ...

Allocate function symbols to the functions F0...F28; adjustment of the speedo display for the vehicle (select design, mapping between speed step and speed, display delay) etc.

Note: If feedback is present (RailCom, Radio, ..) then some of these settings are not required.

Addressing / Programming: SERV PROG and OPMODE PROG

On entry into the programming procedure

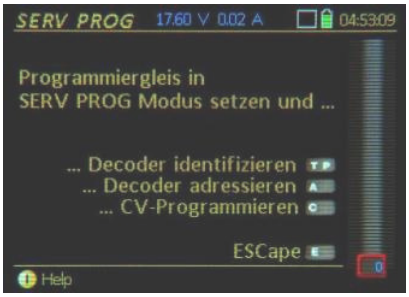
SERV PROG – on programming track
OPMODE PROG – programming on the main (also called "POM")

one arrives first into a selection screen which is intended to prevent accidental deletion of addresses or data in the decoders.

Identify ➞ important data of the decoder is read and displayed: address, manufacturer, software version, decoder ID, and (if appropriate) load code (used for loading encrypted sound projects).

Address ➞ here you can see the address read out, or the new address to be written. ACK confirmation on the programming track or RailCom on the main track

CV-Programming ➞ Reading and programming, the importance of the CV will automatically be displayed (if the decoder is ZIMO, there will be more than in others), various actions are available on the screen and can be started again with the scroll wheel, in order to work on them. A copy/paste function makes it possible to copy a set of CV values from one address to another. For any CVs which require individual bits to be set, a special window will open to make it easier to set these CVs.



In addition, there are several more ways to make the programming of decoders more efficient, especially if there are a large number

- Store CV Sets with their own name, so they can easily be located and added
- Such sets can be assigned to a "topic" (e.g. motor control, shunting functions, lighting, etc.) which facilitates their organization.

- CV Sets will be preloaded in the controller (in a future software version)

  e.g. CV Sets for the control of special types of controller (Faulhaber, Coreless motor, Märklin High Power etc.)

- CV-Sets can be imported from, or exported to, the USB stick and can be processed externally (on a PC with ZIRC) and delivered with sound projects.

The Object Database

All vehicles (=decoder =addresses) that are activated are automatically stored as part of the object database and remain there forever, unless explicitly deleted.

Recall stack and Object Database:

Each vehicle that is driven (activated) remains in the recall stack and is preserved in the object database as an entry. The recall stack is limited to a maximum number of entries, while the object database is not.

In the Object Database, certain parameters can be easily changed, for example a consist can be formed by just marking some entries with a "T". The Object Database can be exported and imported, from and to other Controllers and to a PC where it can be edited in a more user friendly way.

Operating Mode WEI (Switch)

Behind the Wei (Switch) operating mode is the entire control of all accessories or stationary decoders, such as points (switches), signals, uncouplers, building lights etc.

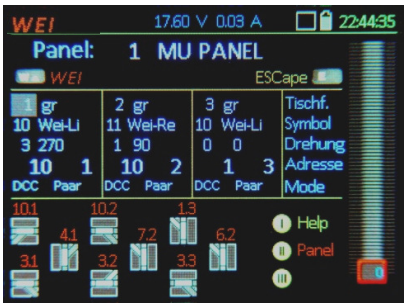
- W-Key → In the lower part of the screen, you can see the current WEI (Switch) panel. The numbered keys on the controller are then assigned to the objects (e.g. points) shown here.

Basically the operating mode ***WEI*** is **"object-oriented**; i.e. it is NOT a specific decoder (or address) that is shown, but the signal, or a switch (point), etc.. These objects are organized into **"Panels"**; for example the layout of a station entrance summarized on a panel. The panel may include more than 3 lines (9 objects); in which case, you can switch to full screen or scroll through the panel. In a similar way to finding active locos, you can find a panel list in the recall stack.

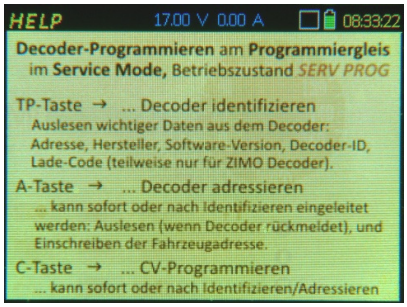
In set-up mode you can define which 3 objects will be in each line of the Panel: so

- the object symbol, and therefore the type of the object (point, signal, etc.),
- the object logic (for signal image, left or right or y point),
- direction of the icon in the panel display,
- address and sub-address of each connection to the accessory decoder.

The" Panel" is the forerunner of the full control panel on the controller display, which will be realized in a future software release. The object icons will be positioned together with additional symbols to show track occupancy.



Context Sensitive Help System



- Softkey I **Help** → In most operating conditions, you can display a help message. Contents of long message can be viewed using the scroll wheel.

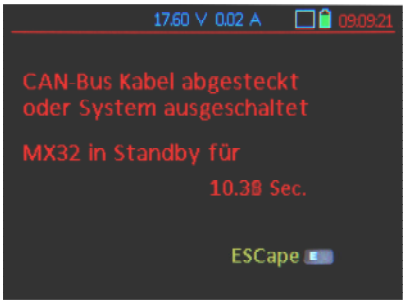
The actual operation of the controller is still possible while the Help is displayed, at least for Drive and Switch (***FAHR*** and ***WEI***), but not programming or system set-up, because this would not be meaningful without being able to see the screen.

Battery based Standby up to10 Minutes

If the controller is disconnected from the Can bus cable, the controller is not immediately switched off, but, using the built-in batteries (100 mAh in the non-radio version), the controller can (for some minutes) keep the controller in **Standby Status**, and a delay-free restart is possible, i.e. the normal start-up procedure (about ½ minute) can be avoided.

The Standby Time is a setting (default 4 minutes) adjustable within certain limits, after which (if no connection is made) the screen goes dark.

The internal batteries are used to operate the real-time clock while the system is turned off and to store temporarily the recall stack for about 6 months.



Software Update from USB Stick

The use of a USB stick for updates avoids the direct connection to a computer which is a common cause of problems which are hard to debug...

From the ZIMO website www.zimo.at under the Menu "**Update & Sound"** the latest updates for the MX32 can be downloaded as a zip file. This zip file needs to be unzipped and all the resulting files should be copied into the root of the USB stick. The USB stick is then connected to the MX32 and the stick is automatically detected and read.

- A-Key → the list of all possible files which can be loaded will be shown and the contents of the USB stick will be highlighted, with any files not on this USB stick shown greyed out.

  In the simplest case, only the MX32 Software and Language Files (Bedienungssprachen) will be shown; in addition all data can be loaded this way, including new images of locos (which can be user provided).

  Scroll Wheel and A-Key → Select and highlight the files which should be loaded and then start the loading procedure.

ZIMO Digital Sytems and Decoder … made in Austria, and not in China

News Releases - 1st Quarter 2011

The 3 variants of the MX32 controller constitute the first complete set for the ZIMO DCC digital systems of the "New Era", and the MX31ZL contains its own small base station. The much larger MX10 base station will be added some time later

The **MX32** Controller

This device can be used

- with the ZIMO base stations of the older era: MX1, MX1HS, MX1EC, also with the earlier System Cab MX31ZL, or
- or with the new base MX10 base station (still under development), or the new System Cab – MX32ZL.

The **MX32FU** Radio Controller

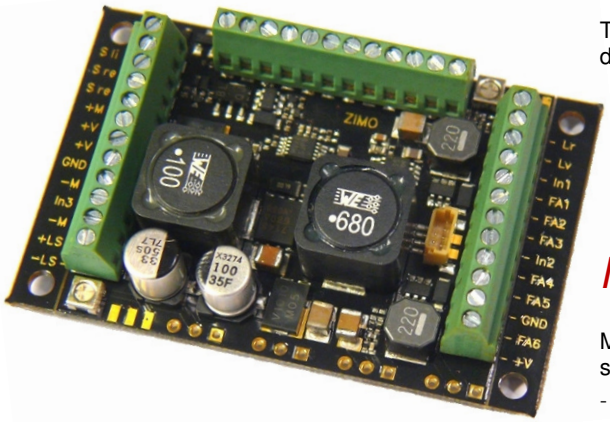
The radio version of the MX32 is in operation, appearance and functionality exactly the same as the MX32 (without radio). In addition, there is a radio module and a lithium polymer rechargeable battery (1800 mAh).

The radio version (MX32FU) can also be operated connected to the CAN bus.

The System in a Box **MX32ZL**

Following the example of the very popular MX31ZL, the MX32ZL is a controller with a small base station fully integrated. It thus represents a complete "digital" system, which can be used later as a normal controller with the much larger MX10 base station. The main features of the MX32ZL has (in addition to the MX32) :-

- DCC Command Station 4 A current at the rail, 12 to 20 V adjustable,
- full range of addresses (up to 10239) and 28 functions,
- active control of 32 vehicles, and any number of accessories,
- Radio module available to communicate with radio controller (MX32FU),
- RailCom detector (global functionality),
- Usable as decoder update device and for loading sound projects,
- USB Host Interface (as in MX32), and in addition the USB Client Interface.



The Decoder Update Device **MXULF**

The new Update Device is a big improvement over the venerable MXDECUP device and here is a short description:

- cost effective use of any external power source,
- USB Host Interface for "Decoder Update from USB Stick",
- USB Client Interface for update controlled by computer,
- 3 Buttons and 5 LEDs for operation and control,
- Button controlled test drive (so long as the current supply is enough),

New Large scale Sound Decoder **MX695**

Many innovations mark the replacement for the well-proven MX690 large scale decoder; the most important data and characteristics are:

- Higher motor current (5 A) with little loss of heat and no heat sink,
- up to 15 Function Outputs (depending on version), special ventilator fan output,
- in addition 4 Servo Outputs on standard connectors (incl. 5 V supply),
- 3 low voltage outputs (5 V fixed, 8 V fixed, 1,2 V to track variable),
- Audio Power up to 14 Watt (4 Ohm or 2 x 8 Ohm), 32 MBit, 4 Channels,
- Volume control, provision for external energy storage.