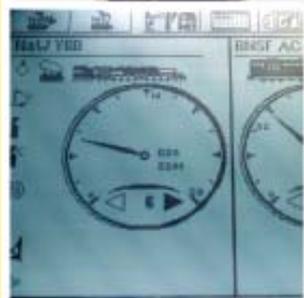
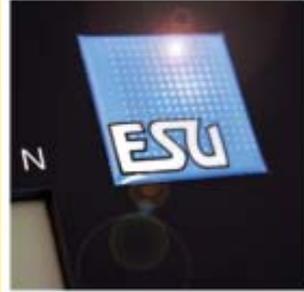
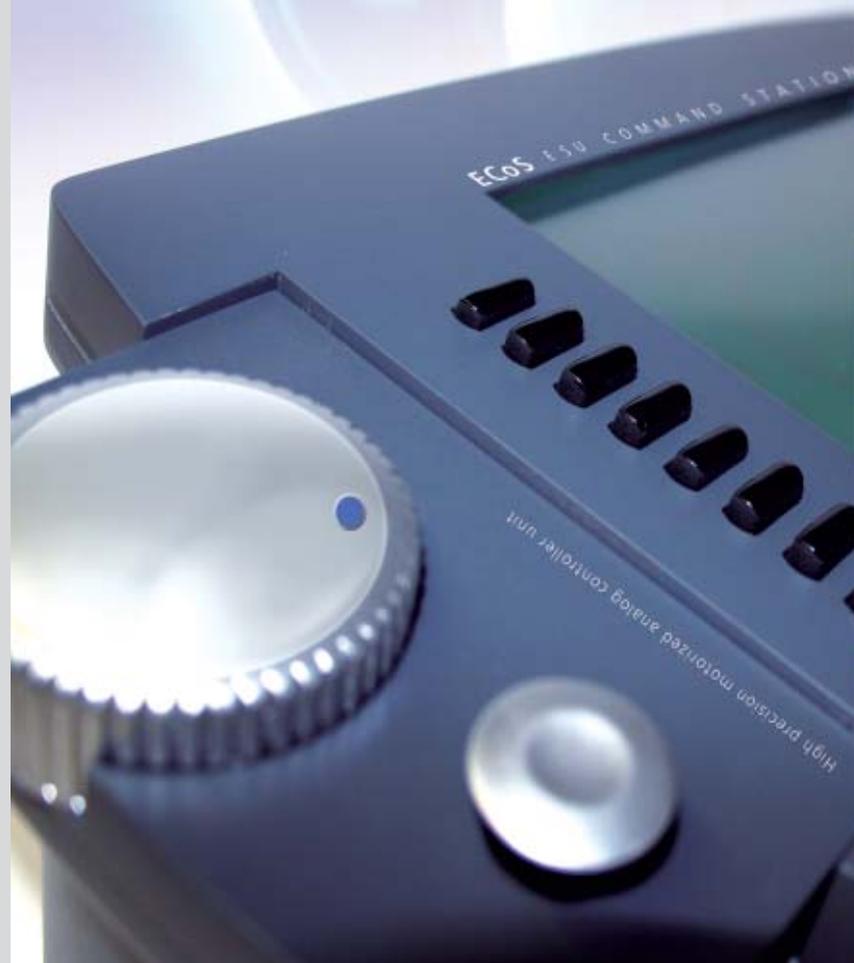


ECoS - Just play!



# ECoS



We are proud to present to you our ECoS Digital Central Unit. ECoS is not just another Digital Central Unit on the market: ECoS is the first stepping stone to a comprehensive Control-System, which, with new concepts, will address the subject of model railroad control systems, and revolutionize it. Never was it simpler to run a model railroad.

An important message for all the Pro's: In spite of the entire new innovations, we made ECoS compatible with all existing systems. You can continue to use your present equipment. Now. Promise.

Discover the fascinating possibilities of the ECoS Central-Station on the following pages. But take heed: ECoS performance is so good, that even we had to re-read a few passages, to believe it...

### ECoS Features:

Consequently with ECoS we want to continue in the same direction we started out more than seven years ago. The ECoS Central Unit is the first Digital Command Station with our name. You may rightly expect more from an ESU-Digital Command Station from the house of ESU.

From the beginning we wanted to be open to, and compatible with, present systems and norms. Just as the first LokSound decoder was a Multi protocol decoder, ECoS is also enormously flexible:

As a Multi protocol Central Unit, ECoS supports the formats DCC, Märklin®-Motorola® and Selectrix®, which means you can continue to use nearly all of your present loco decoders.

With ECoS you can run locos: Via two integrated Cabs with large, easy-grasp motor driven (!) throttle knobs and eight precise click-function keys you control your locos. In combination with the touch screen, you can control up to 20 functions per engine.

With ECoS you can switch turnouts and magnetic-driven accessories: Via a large, graphic switchboard you have access to up to 1420 turnouts (DCC or Motorola® format).

With ECoS you can lay out and control routes: Simply put turnouts and magnetic accessories graphically in groups and switch them together. Routes will be activated either by s88 occupancy detectors or by key.

With ECoS you can operate shuttle trains: Put a s88 rail contact at both ends of the track, and ECoS will do the rest.

The ECoS built-in booster has so much power that in most cases you don't need additional ones.

ECoS supports EcoSlink, a high speed system bus, based on CAN that transmits data instantaneously to the command station.

With ECoS, it has never been more simple to program your decoders: The large, background-illuminated LCD screen offers good contrast and displays a lot of information in unabbreviated text. A programming track establishes contact with your decoders.

With ECoS, the new NMRA DCC Duplex Communication is already built-in: As soon as the norm will be made official, you will, in connection with appropriate decoders, discover undreamt-of possibilities.

ECoS is compatible. Besides Selectrix® and Märklin®-Motorola®, ECoS speaks all variants of the DCC-Norm. With the integrated Analog Controllers (Joysticks) you can even control the whistle of LokSound decoder even more precisely than before.

ECoS is expandable. Each ECoS Central Unit sports a network port for connection with a computer. Thus you can update software, or use a computer for operation.

### Who needs ECoS:

ECoS is basically the central station for all. Beginners, who are looking for a simple-to-operate Cab, will be at home right away: The large, graphic touch screen display shows all information in plain text; in case of doubt use the integrated help function. Never was it easier to switch to digital control. And ECoS runs DC or AC driven trains.

Even model railroaders, who already own a digital command station, should step up to ECoS: Next to the extreme simple inputs, and the possibilities for route- and shuttle train programming, you will learn to appreciate the manifold programming features for decoders. You can connect your present equipment to the input of EcoSniffer, and continue to use it: You don't need to discard anything that you want to keep using!

Due to its enormous output-performance, the ECoS Central Station is recommended especially also for operators of Gauge 1 or LGB layouts: At last you can run multiple trains without an external booster. Total interplay with our LokSound XL decoders is matter-of-fact.

## Features:

ECoS leaves the factory with extensive features: Two Cabs with motorized throttle knobs and eight function keys each, plus a two-axis, center-click joystick each. With it, you can blow the whistle of the LokSound V3.5 decoder, analogously, almost as you would with the prototype, or, in the future, control digital cranes perfectly. The large, white background-illuminated liquid crystal display shows all information in plain words. There is a touch-sensitive screen that you can work either with your finger, or the provided peg.

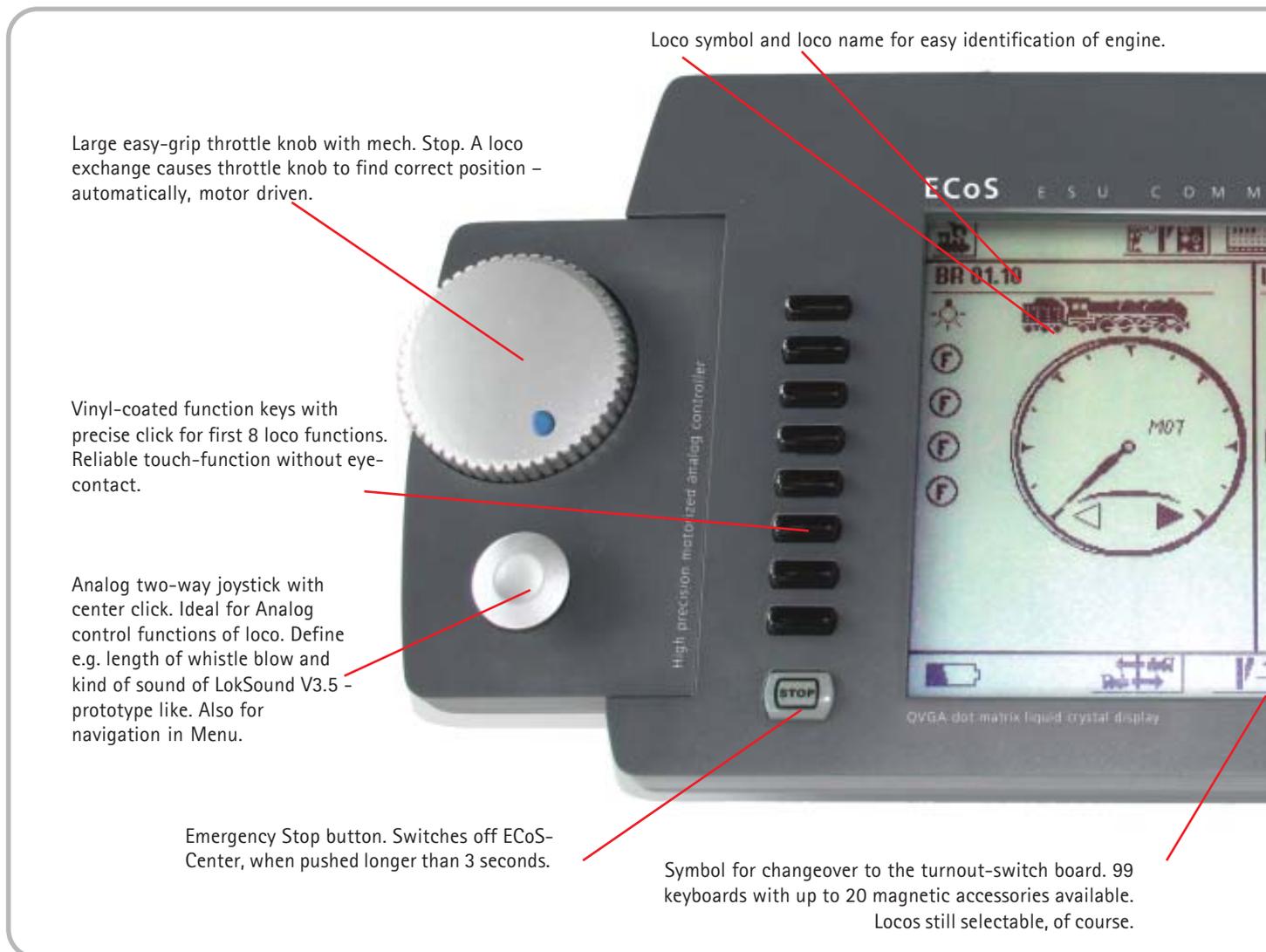
Each ECoS Command Station integrates a 4 Amp.-steady-output booster. Conventional model railroad transformers don't have enough power, which is why we supply you with a stabilized 90 VA (!) power supply. Power aplenty for your layout!

Decoder programming takes place via a dedicated programming track. This is independent of the main-

line and normal operation on the layout is not affected during programming. ESU takes this for granted.

The new ECoSlink high speed bus serves as communicator between systems. The bus can be connected to throttles, feedback devices, and other system components, that will be available in the future. ECoSlink is robust (up to 300 feet cable length is no problem) and extremely fast: Forget all others...

Each ECoS Command Station incorporates a galvanically isolated jack for s88 feedback modules. Track-occupancy information can be used for route - as well as shuttle train operation. An ECoSniffer jack is provided for connecting "old", existing Digital COMmand stations. A galvanically isolated jack for connecting DCC-conform or Märklin® 6015 / 6017 compatible boosters tops off the list of ECoS features.



## Functions detailed

### Run a Loco

The ECoS Central Unit can manage up to 16384 Locos. Each Loco's characteristics are memorized, so in the future you can call each engine by name. Also you can assign a loco-symbol, and these symbols keep you abreast of the function of each loco, regardless of whether it's latching, or non-latching. An extensive navigational menu takes care of finding your Locos quickly; and running them.

### Operate turnouts and magnetic accessories

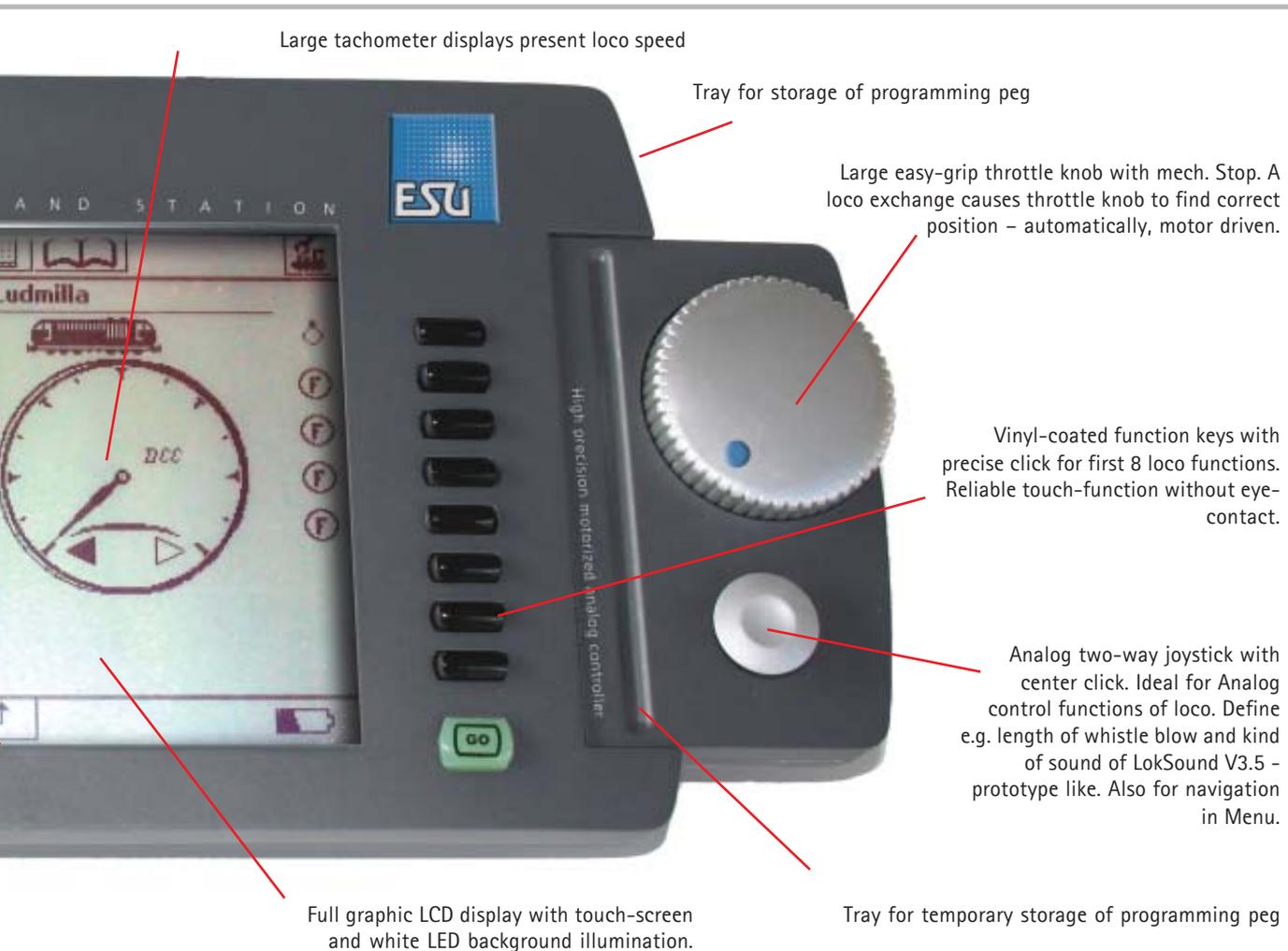
Just like with locos, you can name turnouts and magnetic accessories. The large switching-panel on the screen of your ECoS shows you all turnouts and their switch-position. You can put turnouts in the depot area, and to each magnetic accessory you can assign its exact function, so you can tell simple-, double or 3-way turnouts apart from de-coupler tracks or streetlights, etc.

### Routes

Several magnetic articles can easily be grouped as routes. Routes can then be switched like singular turnouts or they can be tied to an occupancy detector: Thus extensive block-control management is possible already. ECoS can manage up to 1024 routes with up to 256 magnetic accessories each.

### Shuttle train control

Shuttle train control is a whole new function. Here you only need a (s88) occupancy detector at each end of the track, which you assign via Software to a loco: length of layover, acceleration - and deceleration, or in-between stops can easily be programmed on the ECoS screen. This works with any decoder because the brain of the system sits in the central unit. Up to eight shuttle trains are possible.



Symbolic display only: Actual screen contents may vary

## Decoder programming

Thanks to the screen, programming decoders has never before been more simple. All parameters are shown in plain text. The search for - and of - CV's and bits and bytes is a thing of the past. Of course you can call up - and check - all features of your decoder (during operation on the layout) on the main. POM (programming on the main) makes it possible. The addresses of your old Motorola® decoders are ascertained automatically - never again do you have to take your engines apart and check the DIP switch...

## Keep using old systems

We make your transfer to ECoS as comfortable as possible: Simply keep using your "old" system. This is

made possible through the built-in EcoSniffer module: The rail output of your present Digital command station is simply connected to the input of the EcoSniffer module. The module listens to all DCC and Motorola packets and translates them for the ECoS command station. This again treats your old system like one,- (or more) additional throttles or turnout-panels. Even those with more than one digital system find a solution: He or she can connect additional EcoSniffer modules to the EcoSlink bus and use any number of different systems together with ECoS.

If that's not enough, go head and expand your layout.

## Possibilities of Expansion

### Mobile control

ECoS is well prepared for the application of our tetherless radio walk around control: A special receiver card fits into a module terminal, called EcoSlot.

The mobile control integrates perfectly into the ECoS-system and acts like a fully featured cable-bound throttle.

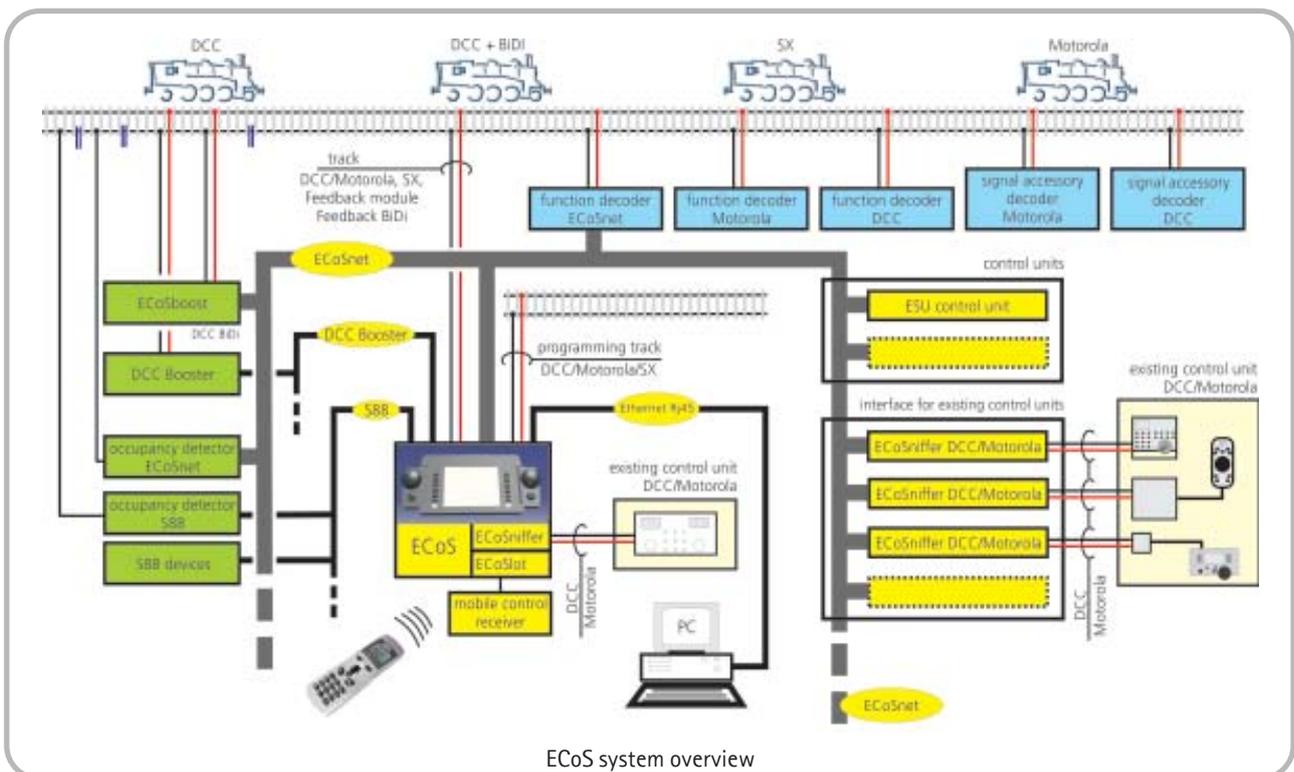
### Booster

Of course all DCC conform boosters can be connected to the ECoS Central Station: There is a corresponding socket. Also, the widely known Märklin® 6015 / 6017 boosters (or compatible products) can be used. Alternatively, you can decide on the separately available

ECoS booster, which connects directly to the EcoSlink: As a matter of fact, it incorporates a NMRA/DCC RailCom® detector, so you can use their great features.

### NMRA/DCC Bidirectional communication

Any DCC compatible Central station, which will hit the market in 2006, should, of course be able to support the latest DCC expansions. That's why ECoS is already prepared for the coming NMRA/DCC Bidirectional standard: Once this standard is passed, a free software update will activate the already build-in feedback receiver. Apart from our ESU decoders, nothing else is needed to reach an unprecedented level of value.



ECoS system overview

## FAQ

### Why ESU ECoS?

All present central stations are conceptionally at least seven years old. Their mathematical capability and operational interface is simply not suitable to fulfill your (rightful) expectations, in regard to extend of functions and easy workability in today's world.

*What's the PC-interface capable of? Will it be freely available?*

The PC-interface can be used for Software updates for ECoS, and serves as connection to PC-operational programs. The interface will be made available to all interested software vendors.

*Do I still need a LokProgrammer, if I own ECoS?*

The programming of decoders with ECoS is about the same, as with the LokProgrammer: The graphic surfaces are similar. In a first step, you can change the CV values of all ESU-decoders. Later on, with the help of the ECoS

Command Station, you will be able to perform sound updates for LokSound decoders.

*What equipment is in the making for ECoSLink?*

ESU will develop a comprehensive Digital system, of which ECoS is the center. Part of it will be tethered throttles, add-on boosters, turnout switch-boards, and much more. Let us surprise you...

*Can Loco symbols be changed?*

Of course. As well as the loco symbol, the symbols for all function keys can be changed and mapped (which key for what function).

*May I continue to use my present mobile control?*

Yes. In fall 2006 there will be a software update for ECoS and your mobile control, so that the equipment continues to be compatible. All of this will be free of use and simple to realize. Your investment in a mobile control is protected.



ECoSlot-expansion port for mobile station receiver module

Power in-jack

Programming track connection

Main track connection

ECoSlink systems input socket

ECoSlink systems input socket

ECoSlink systems input socket

ECoSlink systems expansion socket

RJ45 LAN network connection

Booster Out

ECoSniffer In

S88 In

symbolic display

## ECoS

**NEW** 50000 ECoS Command Station, DCC, MOT, SX, Set with Power supply 240V euro, German Manual

## Technical Data ECoS

### Hardware:

H4 booster with 4.0 A continuous-load output  
 H4 programming track connection, 0.6 A rated  
 NMRA DCC Bidirectional Feedback detector with integrated cutout device  
 7 inch QVGA FSTN LCD display with touch screen and sextuple LED backlight (white)  
 32-bit ARM 720T controller, 64 MByte flash ROM, 32 MByte RAM, Linux operating system  
 16 bit real-time co-processor  
 2 motor driven potentiometer throttles with end stop  
 2 two way analog joysticks  
 2 8-function keys, plus stop – and go key  
 3 input sockets for ECoSlink systems  
 Connection for ECoSlink Bus Expansion  
 Galvanically isolated Booster input for External Boosters  
 Galvanically isolated ECoSniffer input for connection of old units  
 Galvanically isolated S88-Bus input for feedback devices  
 10/100 MBit Ethernet-connection (RJ 45)  
 1 ECoSlot module for radio-receiver input  
 Power supply 90 VA

### Software:

DCC with 14, 28, 128 speed steps, LGB® MTS® compatible function key handling  
 Märklin® Motorola® old, new, with 14, 27 or 28 speed steps  
 Selectrix® track format  
 Up to 9999 addresses for DCC protocol. Up to 20 function keys per loco. Up to 255 addresses for Märklin® Motorola® protocol.  
 Märklin® Motorola® and DCC track protocol for control of electromagn. accessories.  
 Up to 16384 locos, 2048 turnouts and 1024 route objectives  
 32 MU's (multiple consists) with up to 16 locos each  
 Up to 8 shuttle trains (back'n forth) at the same time  
 All DCC service modes programming on programming track, POM (programming on the main)  
 Programming of Motorola® – and Selectrix® decoders on programming track

### Included in delivery:

ECoS Central Unit  
 Peg for touch screen  
 Power supply 18V / 5.0 A (90 VA)  
 Terminals for main track – and programming track connection, ECoSniffer  
 Extensive instruction manual

## Service – we're here for you

We have designed our products for easy installation and operation. Easy to read user manuals, available with the product or as a download, contain full information about our products and their application. We are aware that electronic products may need support on our part - prior to their purchase and also afterwards. If you have questions we are here for you. We want you to be satisfied with our products and enjoy model railroading.

## Manuals



All manuals are available for download on our web site. Make use of this additional source of information to obtain detailed knowledge of our products prior to purchasing.

## Internet



On occasion an unusual problem will occur and you might have questions. We recommend first checking out our web site where we publish answers to frequently asked questions and provide the latest editions of all our manuals.

## FAQ



Frequently asked questions and - more importantly - the answers are also listed on our website. Here you will find a list of questions and answers that is updated continuously.

## Updates for all LokSound decoders and LokSound Programmer



We offer far more sound samples than we can possibly list as separate article numbers. We are constantly working on providing new sound recordings and adding to our existing selection. Therefore it always pays to check the audio library on our web site. There you will also find the latest version of the LokSound Programmer software.

On our homepage you will find the complete list of the excellent sounds available for LokSound V3.5 decoders.

Here we also provide the complete list of amazing sounds for LokSoundXL, LokSound micro and LokSound mfx decoders.



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