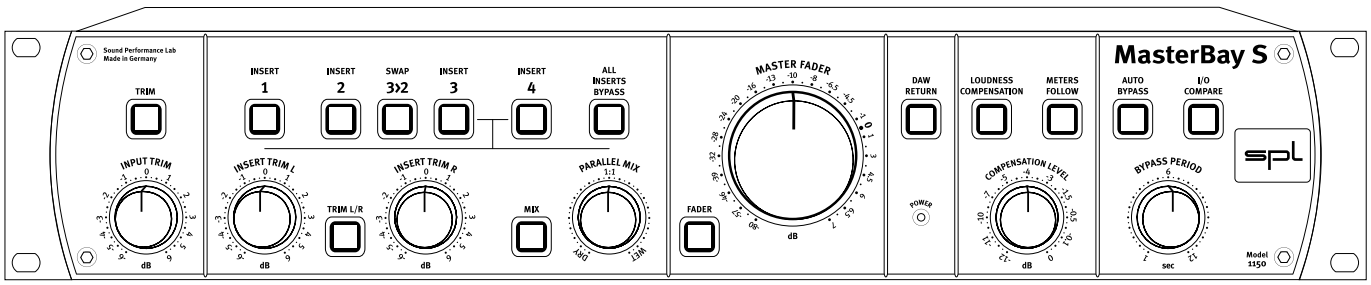
Manual



MasterBay S

Model 1150

Central analog interface to interconnect and manage hardware processors

Content

Version 1.2 – 1/2012

Developer: Wolfgang Neumann and Jens Gronwald

This manual contains a description of the product. It in no way represents a guarantee of particular characteristics or results of use. The information in this document has been carefully compiled and verified and, unless otherwise stated or agreed upon, correctly describes the product at the time of packaging with this document.

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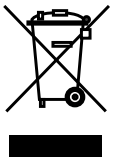
Declaration of CE Conformity

The construction of the MasterBay S, Model 1150, is in compliance with the standards and regulations of the European Community.

Notes on Environmental Protection



At the end of its operating life, this product must not be disposed of with regular household waste but must be returned to a collection point for the recycling of electrical and electronic equipment. The wheelie bin symbol on the product, user's manual and packaging indicates that. The materials can be re-used in accordance with their markings. Through re-use, recycling of raw materials, or other forms of recycling of old products, you are making an important contribution to the protection of our environment. Your local administrative office can advise you of the responsible waste disposal point. WEEE Registration: 973 349 88

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Symbols and Notes

N THIS MANUAL A LIGHTNING SYMBOL WITHIN A TRIANGLE WARNS YOU ABOUT THE POTENTIAL FOR DANGEROUS ELECTRICAL SHOCKS – WHICH CAN ALSO OCCUR EVEN AFTER THE MACHINE HAS BEEN DISCONNECTED FROM A POWER SOURCE.

AN EXCLAMATION MARK (!) WITHIN A TRIANGLE IS INTENDED TO MAKE YOU AWARE OF IMPORTANT OPERATIONAL ADVICE AND/OR WARNINGS THAT MUST BE FOLLOWED. BE ESPECIALLY ATTENTIVE TO THESE AND ALWAYS FOLLOW THE ADVICE THEY GIVE.

The symbol of a lamp directs your attention to explanations of important functions or applications.

Attention: Do not attempt any alterations to this machine without the approval or supervision of SPL electronics GmbH. Doing so could nullify completely any and all of your warranty/ guarantee rights and claims to user support.

Scope of Delivery and Packaging

The scope of delivery comprises the MasterBayS, the power cord, the guarantee card and this manual.

Please keep the original packaging. In case of a service procedure the original packaging ensures a safe transport. It also serves as a safe packaging for your own transports if you do not use special transportation cases.

MasterBay S

The classic patch bay allows you to easily route signals between different signal sources, processors and other audio gear. All connected devices can be tapped at any point in the signal path by simply making the adequate connections in the patch bay.

This can be very practical when working in projects, since you can set up the audio path according to a specific production without having to change anything until the production is finished. That is frequently the case during mixdown.

However, in the mastering stage the needs of an engineer often go well beyond this. Even a direct A/B comparison between two processors or two different signal paths can prove unfeasible with a patch bay. Not to mention loudness compensation after processing, comfortable fine adjustment of input and output levels or an adequate level control to dynamically fade the signal.

The MasterBayS fulfills all of these requirements and goes even a couple of decisive steps forward. Its comfortable yet flexible switching and control functions make it easier to achieve the best results with the available equipment. Innovative and pragmatic functions, conceived to simplify and improve the comparison process, give you a qualitative edge in mastering applications, while saving you time. Using the MasterBayS as central interface for all your hardware gear reduces to the minimum the actual conversions taking place, regardless of the number of processors used. Due to its high engineering quality, the MasterBayS not only pampers the signal but it also becomes a key element in the audio production stage where it is put to use.

Its cutting-edge and clever features on the one hand and state-of-the-art conception and manufacturing on the other, make the MasterBayS a typical SPL unit — innovative, handmade premium quality from Germany.

Concept

- Central interface to interconnect and manage hardware processors with unique comparison possibilities

Special Features

- Loudness compensation to judge solely on tonal differences
- Automatic A/B switching in freely selectable intervals
- Parallel Mix: freely adjustable mix of the dry input signal and the processed output signal
- Comfortable insert switch matrix for four stereo processors
- Swap 3›2: switchable order for inserts 3 and 2
- All trimmers and knobs can be unassigned from the signal path at the push of a button
- Hand made in Germany

Features

- Switching functions are performed via sealed relays. The connections of the front switches to the relays are simple control leads. This keeps the signal paths as short as possible since they do not have to be led to the front plate. Not to mention that the relays provide a very high reliability and contact quality.
- I/O Compare is conceived as a FET circuit to minimize switching noises when signals are present. Toggling is noiseless, in general, although material rich with transients can prove an exception to this. The FET circuit is designed such that THD values are not affected.
- RK 27 potentiometers by ALPS („Big Blue“) for all Trim, Master Fader and Compensation Level knobs. This potentiometer distinguishes itself due to its precision and headroom, as well as for having an outstanding controllability.
- All inputs and outputs use balanced XLR Neutrik connectors.
- Linear power supply with toroidal transformer.
- Wherever relevant, OPA 134/2134 Burr-Brown op-amps have been used.

Important Security Advices

Please note and retain this manual. Carefully read and follow all of the safety and operating instructions before you use the machine. Be doubly careful to follow all warnings and special safety instructions noted in this manual and on the unit.

Connections: Only use the connections as described. Other connections can lead to health risks and equipment damage.

Water and humidity: Do not use this machine anywhere near water (for example near a wash basin or bath, in a damp cellar, near swimming pools, or the like). In such cases there is an extremely high risk of fatal electrical shocks!

Insertion of foreign objects or fluids: Never allow a foreign object through any of the machine's chassis openings. You can easily come into contact with dangerous voltage or cause a damaging short circuit. Never allow any fluids to be spilled or sprayed on the machine. Such actions can lead to dangerous electrical shocks or fire!

Opening the unit: Do not open the machine housing, as there is great risk you will damage the machine, or – even after being disconnected – you may receive a dangerous electrical shock!

Electrical power: Run this machine only from power sources which can provide proper power in the range from 100 to 250 volts. When in doubt about a source, contact your dealer or a professional electrician. To be sure you have isolated the machine, do so by disconnecting all power and signal connections. Be sure that the power supply plug is always accessible. When not using the machine for a longer period, make sure to unplug it from your wall power socket and from the guitar amp.

Cord protection: Make sure that your power and guitar amplifier signal cords are arranged to avoid being stepped on or any kind of crimping and damage related to such event. Do not allow any equipment or furniture to crimp the cords.

Power connection overloads: Avoid any kind of overload in connections to wall sockets, extension or splitter power cords, or to signal inputs. Always keep manufacturer warnings and instructions in mind. Overloads create fire hazards and risk of dangerous shocks!

Lightning: Before thunderstorms or other severe weather, disconnect the machine from wall power (but to avoid life threatening lightning strikes, not during a storm). Similarly, before any severe weather, disconnect all the power connections of other machines and antenna and phone/network cables which may be interconnected so that no lightning damage or overload results from such secondary connections.

Air circulation: Chassis openings offer ventilation and serve to protect the machine from overheating. Never cover or otherwise close off these openings. Never place the machine on a soft surface (carpet, sofa, etc.). Make sure to provide for a mounting space of 4-5 cm/2 inches to the sides and top of the unit when mounting the unit in racks or on cabinets.

Controls and switches: Operate the controls and switches only as described in the manual. Incorrect adjustments outside safe parameters can lead to damage and unnecessary repair costs. Never use the switches or level controls to effect excessive or extreme changes.

Repairs: Unplug the unit from all power and signal connections and immediately contact a qualified technician when you think repairs are needed – or when moisture or foreign objects may accidentally have gotten in to the housing, or in cases when the machine may have fallen and shows any sign of having been damaged. This also applies to any situation in which the unit has not been subjected to any of these unusual circumstances but still is not functioning normally or its performance is substantially altered. In cases of damage to the power supply and cord, first consider turning off the main circuit breaker before unplugging the power cord.

Replacement/substitute parts: Be sure that any service technician uses original replacement parts or those with identical specifications as the originals. Incorrectly substituted parts can lead to fire, electrical shock, or other dangers, including further equipment damage.

Safety inspection: Be sure always to ask a service technician to conduct a thorough safety check and ensure that the state of the repaired machine is in all respects up to factory standards.

Cleaning: In cleaning, do not use any solvents, as these can damage the chassis finish. Use a clean, dry cloth (if necessary, with an acid-free cleaning oil). Disconnect the machine from your power source before cleaning.

Placement

Place the unit on a level and stable surface or mount it into dedicated rack frames. The unit's enclosure is EMC-safe and effectively shielded against HF interference. Nonetheless, you should carefully consider where you place the unit to avoid electrical disturbances. It should be positioned so that you can easily reach it, but there are other considerations. Try not to place it near heat sources or in direct sunlight, and avoid exposure to vibrations, dust, heat, cold or moisture. It should also be kept away from transformers, motors, power amplifiers and digital processors.

Rack Mounting

Be sure that both above and below the machine you maintain a distance of 4-5 cm/2 inches in order to eliminate electromagnetic or high frequency interference from other equipment. Moreover, this will ensure adequate air circulation to prevent overheating. Do NOT locate other machines that produce excessive heat below the unit. The rear side of the machine should be properly supported – especially when transport is involved.

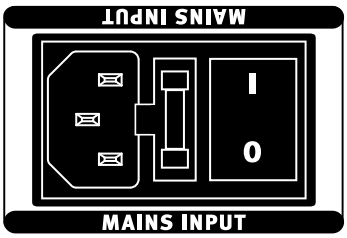
Air Circulation

Always ensure sufficient air circulation by keeping a distance of 4-5 cm/2 inches to the sides and top of the unit, especially where the housing has air slots. Never place the unit on a soft surface (carpet, sofa etc.).

Before You Connect Power

Be very careful to check that the rear voltage selection switch is set to the correct local line voltage position before using the unit (230 V position: 220-240 V/50 Hz, 115 V position: 110-120 V/60 Hz)! When in doubt about a source, contact your dealer or a professional electrician.

Power Connection and Fuse



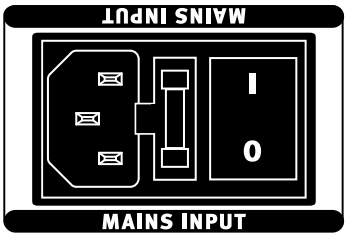
Connect the power cord to the rear MAINS INPUT socket. Transformer, power cord and case connection conform to VDE, UL and CSA requirements.

The fuse is accessible from outside and placed right behind the flap right from the socket. Fuse ratings are 1 A slow blow (230 volts) or 2 A slow blow (115 volts).

Signal Connections

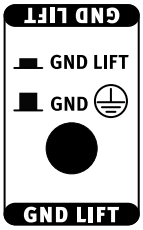
Before first connecting any other equipment – and in all other cases where you are connecting cables with or from other sources – you should be sure to shut the unit and all machines to be connected off. Otherwise you risk to damage the unit, connected gear or your ears.

Rear Panel – Switches and Connectors



On/Off Switch

With the rear POWER switch you activate and deactivate the unit, operational status is confirmed by the blue Power LED on the front panel. Rear position was chosen deliberately in order to avoid interferences from power wiring through the unit to the front panel. In switching on and off, you do not need to follow any particular sequence with connected devices in the periphery of the unit. There is, however, the general rule for a chain of devices in the audio processing to always turn on power amplifiers last and to turn them off first. If specified sufficiently you can also switch the unit on and off through a multiway connector or other main switches.



GND Lift

The rear panel GND LIFT switch eliminates hum by separating the internal ground from the unit's housing ground. Hum can, for example, result when this unit's housing has a common ground connection with other devices that might have a different ground potential. The switch is usually deactivated to retain the shielding of the housing.

TRS Sockets (1/4" stereo jacks)

The Jack sockets at the METERING output are balanced TRS. Use stereo jack connectors only to establish balanced connections. By using mono jacks you establish unbalanced connections.

XLR Sockets

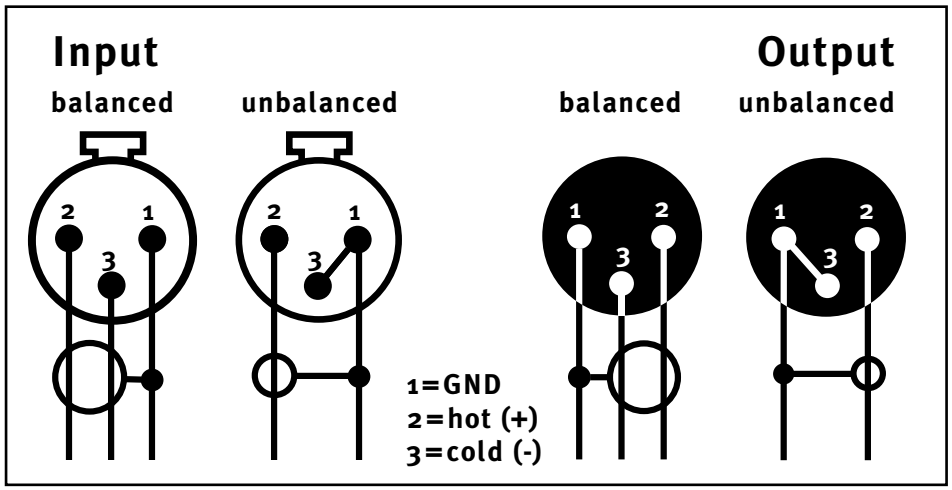
All signal connections are made via balanced or unbalanced XLR sockets. Pin wiring is shown in the diagram below. Inputs are always female and accept male connectors; outputs are always male. All in all, a comprehensible principle.

Balanced Connections

In balanced connections a reference signal with reversed polarity is transmitted additionally to the audio signal through a second wire. The ground signal is routed separately through a third wire. Input and output stages are drivers and receivers, and the receiving stage can suppress possible interferences by subtracting the difference between audio and reference signal.

Unbalanced connections (TS and RCA connectors)

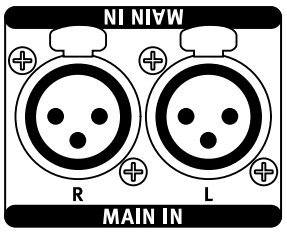
Unbalanced connections from and to RCA or 1/4“ TS sockets can be made without adaptors to the balanced XLR sockets. The correct wiring is important. The diagram shows the pin configuration of the XLR sockets and how to correctly connect them for unbalanced connections:



Connections to RCA sockets are always unbalanced, a wiring to jack connectors can be both balanced (1/4“ TRS/stereo jack) or unbalanced (1/4“ TS/mono jack). We recommend to use individually configured cables from XLR to RCA or jack sockets instead of adaptors. You can get cables in any needed configuration from audio dealers. With the diagram above, the dealer can ensure to provide the appropriate cable for your application.

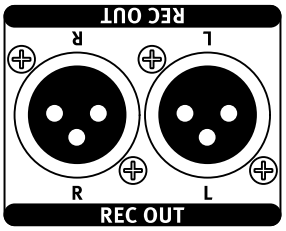
Main In

Use these balanced XLR inputs for the connection of signal sources. The maximum input level of MAIN IN is +23 dBu, for impedance values refer to “Specifications“ on page 20.



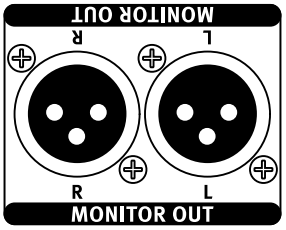
Rec Out

These balanced XLR outputs feed A/D converters with the processed recording signal. The maximum output level of REC OUT is +23 dBu, for impedance values refer to “Specifications“ on page 20.



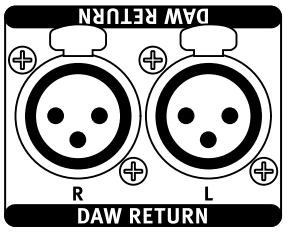
Monitor Out

These balanced XLR outputs feed the monitoring chain (e. g. monitor controller) with the processed recording signal. The maximum output level of MONITOR OUT is +23 dBu, for impedance values refer to “Specifications“ on page 20.



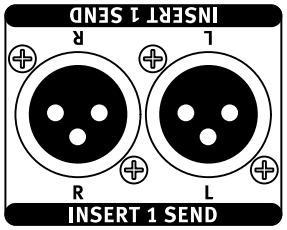
DAW Return

Use these balanced XLR inputs if you want to return the recorded signal into the monitoring chain via the MasterBayS. The maximum input level of DAW RETURN is +23 dBu, for impedance values refer to “Specifications“ on page 20.



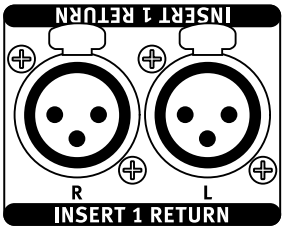
Insert Send 1-4

These balanced XLR outputs feed the inputs of signal processors. The maximum output level of INSERT SEND is +23 dBu, for impedance values refer to “Specifications“ on page 20.



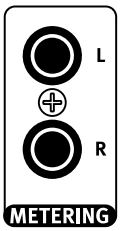
Insert Return 1-4

Use these balanced XLR inputs for the connection of the signal processors’ outputs. The maximum input level of MAIN IN is +23 dBu, for impedance values refer to “Specifications“ on page 20.

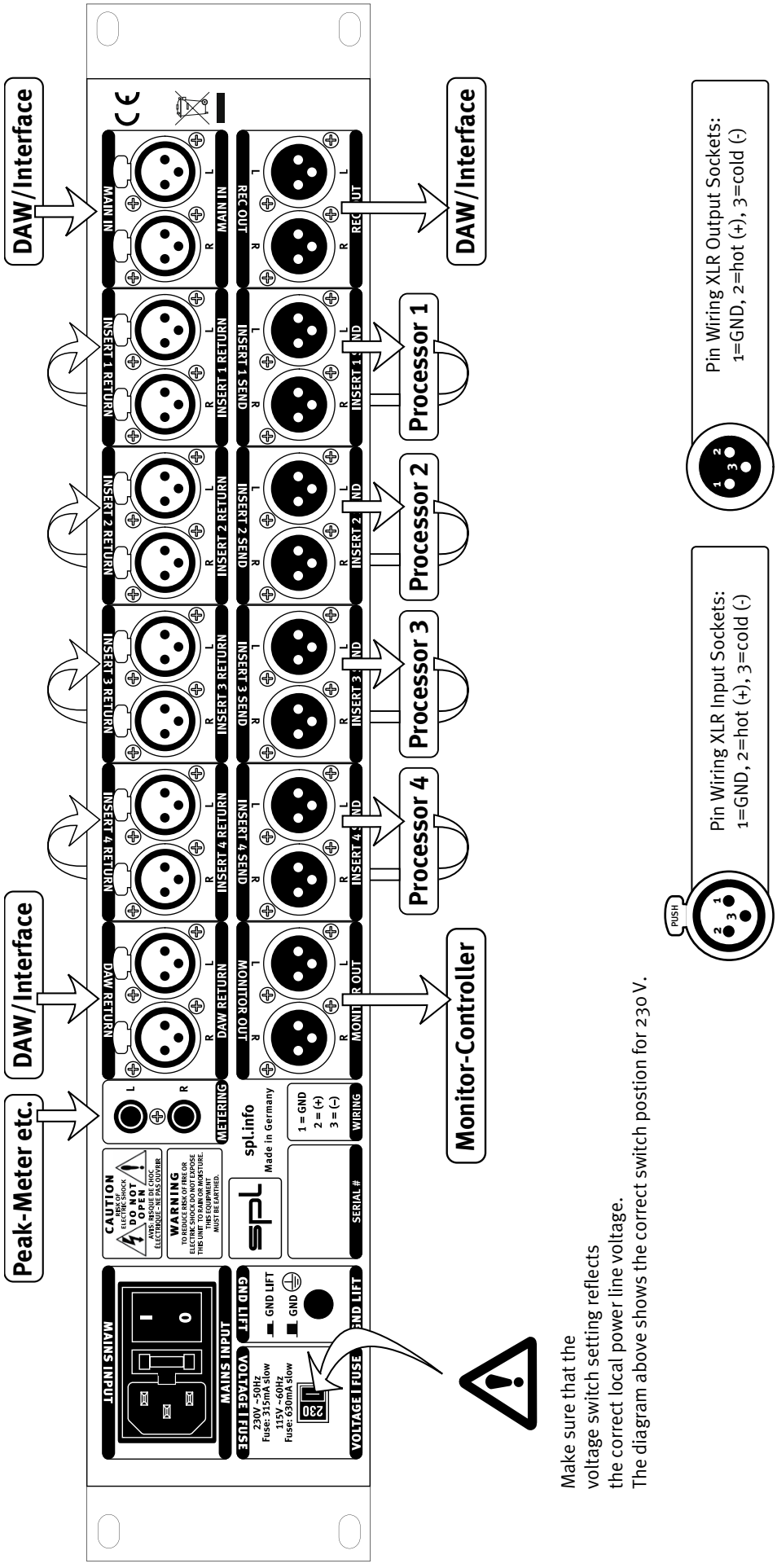


Metering

Connect VU or PPM metering devices to the balanced METERING output so that you can observe levels of the recording signal. The nominal level is calibrated to 0 dB. The maximum output level of the METERING outputs is +23 dBu, for impedance values refer to “Specifications“ on page 20.



Rear Panel – Wiring Diagram



Make sure that the
voltage switch setting reflects
the correct local power line voltage.
The diagram above shows the correct switch postion for 230 V.

M/S processing with the MasterBayS and M/S Master

The M/S Master is a very interesting complement to the MasterBayS. The connections diagram shows how to connect the two units to be able to toggle anytime from L/R to M/S processing with all connected gear, preserving all functionalities of both units. For the best results in M/S mode, the connected processors ought to be designed as two-channel units — pure stereo processors can only be used to process one single channel (meaning that the M and S channels would be processed equally).

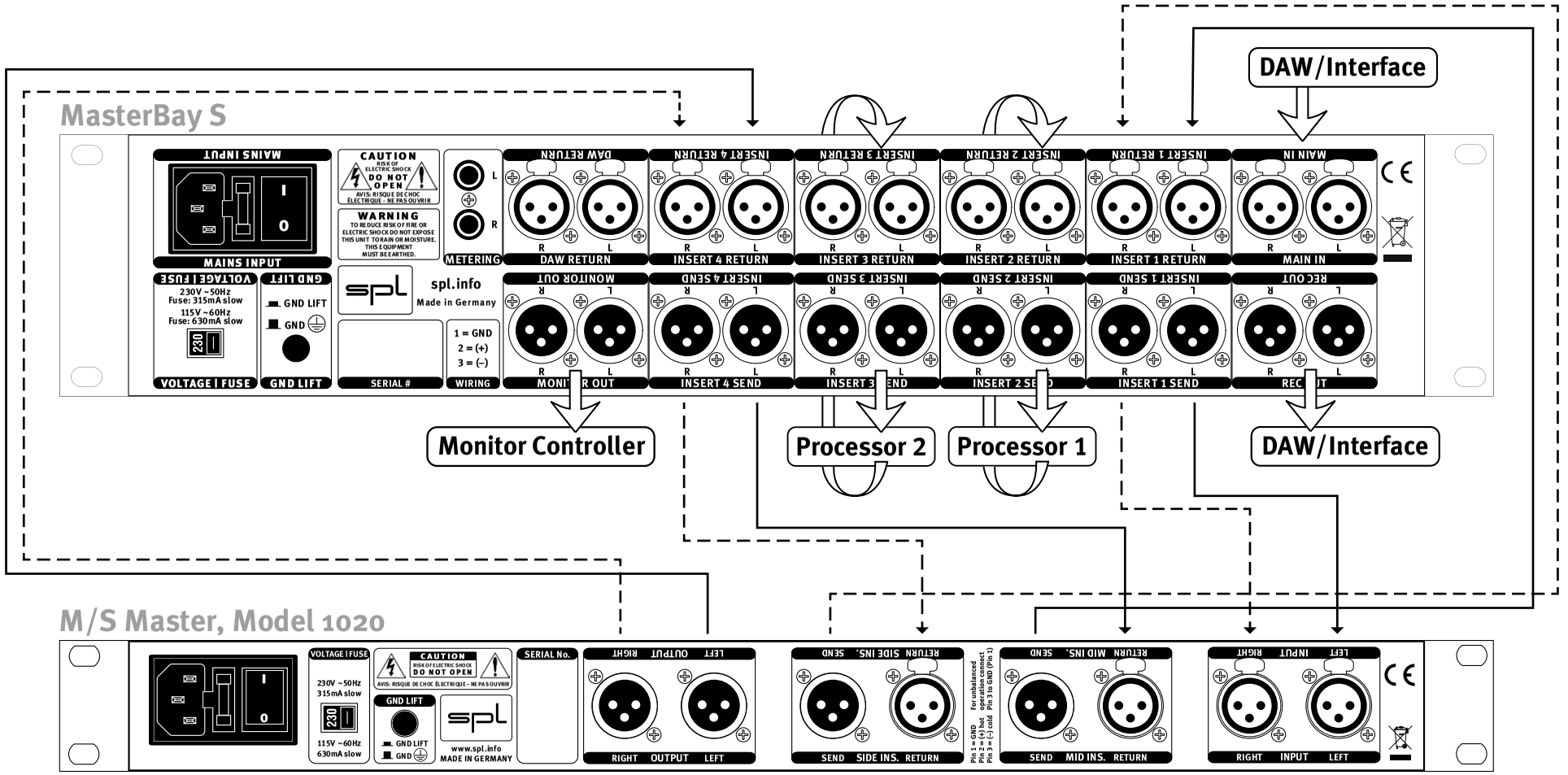
For more information on the M/S Master and M/S encoding in general, we suggest you to read the M/S Master user manual, which can be downloaded from the M/S Master product page on our website (spl.info).

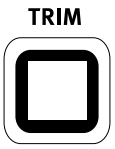
Important Requirements

- Full M/S integration is only possible when using inserts 1 and 4 of the MasterBayS
- For normal stereo processing simply put the M/S Master in bypass
- Both inserts (M & S) of the M/S Master must be engaged
- The M/S Master on insert 4 is excluded from the Parallel Mix

Diagram Legend

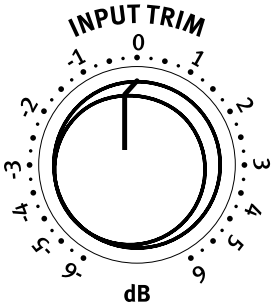
- Dashed lines: right channel or Side signal
- Continuous line: left channel or Mid signal





Trim

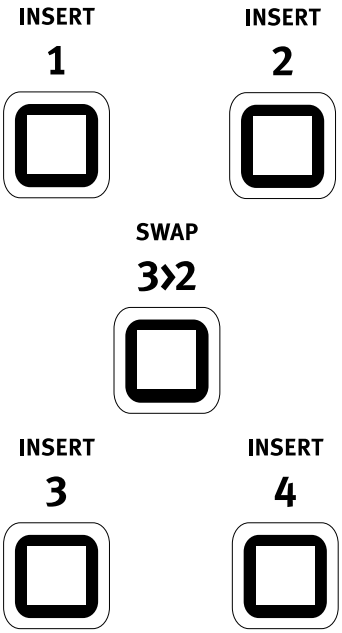
Use the TRIM button above the INPUT TRIM potentiometer to activate the potentiometer. If there is no need for trimming, deactivate the potentiometer to take it out of the signal path. This guarantees that the signal will always follow the shortest route.



Input Trim

Use the INPUT TRIM potentiometer to determine the level of the input signal. The action of the potentiometer goes from -6 to + 6 dB. The potentiometer used is an ALPS RK27 (“Big Blue”). This potentiometer distinguishes itself due to its precision and headroom, as well as for having an outstanding controllability.

This function is most adequate to create optimal level conditions for the analog processors connected to the MasterBayS. Common analog signal reference levels of converters for odBFS range from +14 to +24 dBu. While very high levels overload the processors, low levels tend to produce a very low signal-to-noise ratio. INPUT TRIM is precisely conceived with this in mind: maximum levels can be reduced by +6 dB, while minimum levels can be taken up by 6 dB. Thus, analog processors are always fed adequately.



Inserts 1-4, Swap 3›2

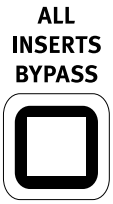
Use insert buttons 1-4 to insert or remove the connected processors from the signal path of the MasterBayS.

For insert 1, i.e. for the beginning of the signal chain, we recommend using processors to correct imperfections (De-Noiser, De-Clicker, De-Esser, etc.). That way these imperfections are excluded from the rest of the processing. Oftentimes, such problems are corrected within a DAW; however, hardware processors offer a lot of possibilities in terms of sound and ergonomics. A typical such example is the SPL De-Esser.

Insert 2 and 3 are ideal positions for equalizers and compressors. The order of these two inserts can be inverted with the SWAP 3›2 button. Connect the processors according to your preferences and needs, but do bear in mind that the PARALLEL MIX function only applies to all three inserts when SWAP 3›2 is not engaged — if SWAP 3›2 is engaged, only inserts 1 and 3 are used for the PARALLEL MIX (please refer to PARALLEL MIX on the next page).

Inverting positions of an EQ and a compressor might be necessary, for example, when specific frequencies need to be emphasized before being compressed or when an already compressed signal needs to be equalized to achieve a desired effect. There are certainly no rules regarding this, but it is important and practical to have the possibility to compare all options and invert positions and processes at the push of a button.

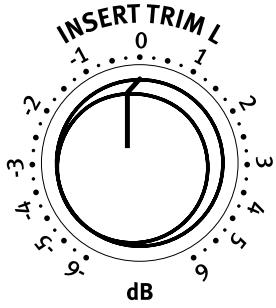
Limiters are often used at the end of the chain, since they allow the signal to be optimally set for the A/D converter in the next stage. Thus, their normal position is insert 4. In order for it to actually be the last stage, no other process, like TRIM or PARALLEL MIX, should be applied afterwards. These sort of processing should be applied after insert 3, as signaled by the lines on the front of the MasterBayS.

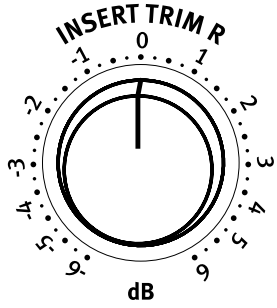


All Inserts Bypass

Use ALL INSERTS BYPASS to engage or disengage all inserts simultaneously. Even if the MasterBayS has the very interesting AUTO BYPASS and I/O COMPARE functions to compare the processing results, the ALL INSERTS BYPASS allows for a faster activation/deactivation of all inserts at once. Another difference with regards to AUTO BYPASS and I/O COMPARE is that only the inserts are disengaged, not the settings of the Trim and Level knobs. In contrast, I/O COMPARE toggles between the output signal and the input signal post Input Trim.

Insert Trim L and R

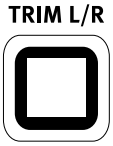




The Insert Trim knobs serve to adjust the output level of the Insert Return 3. Since inserts 1, 2 and 3 are connected in series, this setting affects all inserted processors. Insert 4 was intentionally left out of this chain (for more information on this, refer to the description of the inserts in the previous page).

The availability of one knob for each — right and left — channel allows to compensate for channel asymmetries that might exist. In general, all connected processors get an output level control, which is very practical considering that they sometimes do not actually have one.

Trim L/R

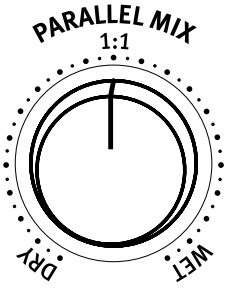


Use the TRIM L/R button to INSERT TRIM L and R in the signal path of the MasterBayS or to take them out.

If there is no need for trimming, deactivate the potentiometers to take them out of the signal path. This guarantees that the signal will always follow the shortest route.

The potentiometers used are ALPS RK27 (“Big Blue”). This potentiometer distinguishes itself due to its precision and headroom, as well as for having an outstanding controllability.

Parallel Mix



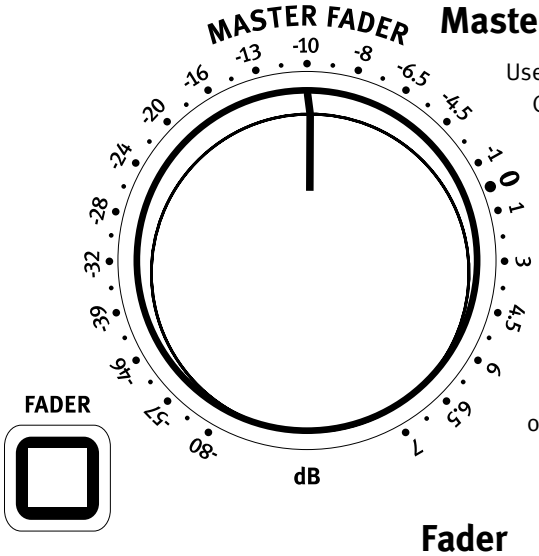
Use PARALLEL MIX to mix the input signal with the processed signal from inserts 1-3. To listen only to the input (dry) signal turn the knob hard left (which would be the same as engaging the ALL INSERTS BYPASS button). Turn it hard right (wet) to listen exclusively to the processed signal (which would be the same as disengaging the MIX button). If set to the center position (1:1), both input and output signals have the exact same proportion in the mix.

PARALLEL MIX is a simple yet powerful function with a sort of undo character to it: you could adjust the effects to be clearly audible and then use only the appropriate dose with PARALLEL MIX.

IMPORTANT: PARALLEL MIX is set post insert 3. Thus, considering that inserts 1-3 are connected in series, all of them will be in the mix. However, there is one exception, when the SWAP-3›2 button is engaged: since PARALLEL MIX is connected to the output of insert 3, when swapped to insert position 3, insert 2 is left out of the PARALLEL MIX.

Mix

Use this button to insert the PARALLEL MIX stage in the signal path or to take it out. If there is no need for the PARALLEL MIX function, deactivate the potentiometer to take it out of the signal path. This guarantees that the signal will always follow the shortest route.



Master Fader

Use the MASTER FADER to adjust the output signal of the REC OUT(put). If I/O COMPARE on the front panel is engaged and DAW RETURN is not engaged, the signal controlled by the MASTER FADER can be listened to via the MONITOR OUT(put) (more about DAW RETURN in the following sections). The control range goes from -80 to +7 dB. The 0 dB point corresponds to an amplification factor of 1, i.e. the input level is the same as the output level (= unity gain).

The massive aluminum knob has a 1.8 inch (45 mm) diameter in order to allow for very fine adjustments.

The potentiometer used is an ALPS RK27 (“Big Blue”). This potentiometer distinguishes itself due to its precision and headroom, as well as for having an outstanding controllability.

Fader

Use the FADER button to activate or deactivate the MASTER FADER. If there is no need for the MASTER FADER, deactivate the potentiometer to take it out of the signal path. This guarantees that the signal will always follow the shortest route.

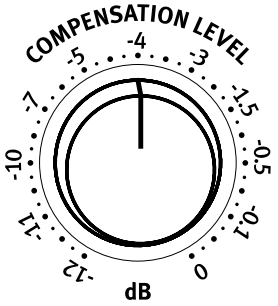
DAW Return

Use the DAW RETURN to place the signal in the monitoring path (Monitor Out); the signal ought to be connected to the DAW Return inputs on the back. DAW RETURN is primarily conceived to be able to listen to and compare the signal recorded in a DAW. Alternatively, you can connect a reference master to these inputs.

DAW Return allows you to make yourself an idea of how the conversions affect the signal. It is also very practical whenever there is a need to process the signal in the DAW afterwards and lo listen to how these changes affect the signal.

Loudness Compensation

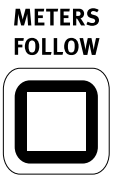
Use the LOUDNESS COMPENSATION function to compensate for loudness differences that might have resulted from the processing applied. This is of paramount importance to be able to judge the processing solely on tonal differences. LOUDNESS COMPENSATION guarantees that the loudness differences will not be a factor in the decision making. This function basically levels the perceived loudness by manually changing the level of the monitoring path exclusively.



Compensation Level

Use the COMPENSATION LEVEL knob to reduce the level according to the situation, in order to be able to judge the processing solely on tonal differences. The MasterBayS also includes two other onboard tools to help set the levels optimally: METERS FOLLOW and AUTO BYPASS. If there are any level meters connected to the MasterBayS and the METERS FOLLOW button is engaged, the meters will display the level after the COMPENSATION LEVEL setting (in fact, to be more accurate, the function ought to be called “Meters Follow Compensation Level,” but that did not look good on the front panel). Use AUTO BYPASS to toggle between the input and the (processed) output signals — ideal to match the level differences better step by step.

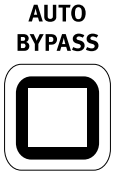
Meters Follow



Connect the level meters to the rear panel (see page 15, METERING). Use the METERS FOLLOW button to toggle between the default level display and the value due to the COMPENSATION LEVEL reduction (for more info on this, please refer to the previous paragraph). Actually, the function's full description would be "Meters Follow Compensation Level." In default mode, the METERING output displays the input or output level values of the MasterBayS, depending on whether I/O COMPARE is engaged or not. If I/O COMPARE is engaged the value displayed corresponds to the output post Master Fader. If I/O COMPARE is not engaged the value displayed corresponds to the input.

The METERS FOLLOW function can help determine the exact value of the COMPENSATION LEVEL reduction applied (given that the I/O COMPARE function is active): taking the value when METERS FOLLOW is active and subtracting it from the value when METERS FOLLOW is inactive, the difference corresponds to the reduction applied. In the same way, this difference also implies the increase in loudness that resulted from the processing.

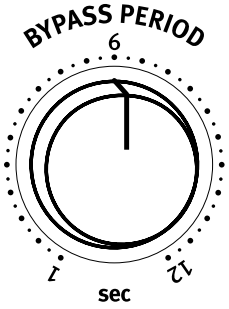
Auto Bypass



One of the most interesting functions of the MasterBayS is the AUTO BYPASS — an innovation that not only simplifies the comparison between input and output signals, but also improves it. When activated, this function automatically toggles between input and output signals. It is worth noting that the toggling interval is user defined (refer to BYPASS PERIOD in the next section).

AUTO BYPASS allows you to concentrate exclusively on tonal differences — there is no need for manual toggling anymore. This can only mean a clear improvement when assessing your work. Together with LOUDNESS COMPENSATION, these two functions simplify enormously the mastering tasks with the MasterBayS, while bringing quality control to a much more objective level, improving the whole experience.

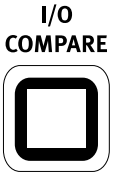
Bypass Period



Use the BYPASS PERIOD to determine the interval for the AUTO BYPASS function (refer to the previous paragraph). The interval can be set between 1 and 12 seconds.

The AUTO BYPASS button lights up as a visual aid to signalize the interval setting. When the signal played back is the output, the button is lit. As soon as the I/O COMPARE and the AUTO BYPASS functions are activated simultaneously, the I/O COMPARE button adopts the same lighting interval as the AUTO BYPASS button to signalize that you are currently listening in AUTO BYPASS mode; the AUTO BYPASS button remains continuously lit to indicate it is active.

I/O Compare



Use the I/O COMPARE button to assign the input or the output (REC OUT) signals to the monitoring path. This button allows for a direct comparison of the original and the processed signal (including all inserts and functions of the MasterBayS). When I/O COMPARE is engaged, the button will light up and you will hear the output signal — that is why I/O COMPARE is usually engaged during processing.

Always bear in mind the interaction of I/O COMPARE with the MASTER FADER, DAW RETURN, METERS FOLLOW and AUTO BYPASS/BYPASS PERIOD functions. You can find a description of such interactions in the corresponding paragraphs on this double page.

Specifications

Inputs & Outputs

Differential amplifier, electronically balanced/transformerless
Sockets: XLR/balanced throughout, except Metering(TRS/balanced)
Nominal Input Level: +4dBu

Input Impedance

Main Input: ca. 20kOhm unbalanced, ca. 40kOhm balanced
Insert 1 Return: ca. 20kOhm unbalanced, ca. 40kOhm balanced
Data above applies if inserts 2 and 3 are not active. If inserts 2 and 3 are active, input impedance depends from the units connected to inserts 2 and/or 3.

Insert 2 Return: ca. 20kOhm unbalanced, ca. 40kOhm balanced
Data above applies if insert 3 is not active. If insert 3 is active, input impedance depends from the units connected to insert 3.

Insert 3 Return: ca. 20kOhm unbalanced, ca. 40kOhm balanced
Insert 4 Return: ca. 20kOhm unbalanced, ca. 40kOhm balanced
DAW Return: ca. 20kOhm unbalanced, ca. 40kOhm balanced

Output Impedance

Rec. Output: ca. 75 Ohm unbalanced, ca. 150 Ohm balanced
Insert 1 Send: ca. 75 Ohm unbalanced, ca. 150 Ohm balanced
Insert 2 Send: ca. 75 Ohm unbalanced, ca. 150 Ohm balanced
Data above applies if insert 1 is not active. If insert 1 is active, input impedance depends from the units connected to insert 1.

Insert 3 Send: ca. 75 Ohm unbalanced, ca. 150 Ohm balanced
Data above applies if inserts 1 and 2 are not active. If inserts 1 and 2 are active, input impedance depends from the units connected to inserts 1 and/or 2.

Insert 4 Send: ca. 75 Ohm unbalanced, ca. 150 Ohm balanced
Data above applies if insert 4 is active or all inserts are not active.

Monitor Output: ca. 75 Ohm unbalanced, ca. 150 Ohm balanced
Metering Output: ca. 10 Ohm unbalanced; ca. 20 Ohm balanced

Volume Control Ranges

Input Trim: -6dB to +6dB, Insert Trim: -6dB to +6dB
Master Fader: -80 dB to +7 dB, Compensation Level: -12 dB to 0dB

Measurements

Max. input level: 23,0 dBu; Max. output level: 23,0 dBu
Frequency range: 10 Hz-100kHz, -3dB: ‹10 Hz – 200 kHz
CMR - Main Input: ›70 dB; DAW Return: ›70 dB, *(@1 kHz, 0 dBu input level, unity gain)*
THD&N - Rec. Out: 0,0015%, Monitor Out: 0,0015%, *(1 kHz, +4dBu input level, unity gain)*
S/N ratio (A-weighted) - Rec. Out: ‹ -99,0 dB, Monitor Out ‹ -98,0 dB
Crosstalk L/R (@ 1 kHz) ‹98,0 dB
Dynamic range (not weighted) - Rec. Output: 118,5 dB, Monitor Output: 116,0 dB

Power Supply

Toroidal transformer; audio power supply: 2 x 18V/16VA, LEDs & Relays: 12V/6,3 VA
Fuses 230 V AC: 50Hz, 1A; 115 V AC: 60 Hz, 2A
Voltage Selector 115V/230V; Power Consumption 24W

Dimensions & Weight

Housing (W x H x D): 482 x 88 x 237 mm (depth incl. knobs and sockets: 265 mm)
Weight 5,5 kg

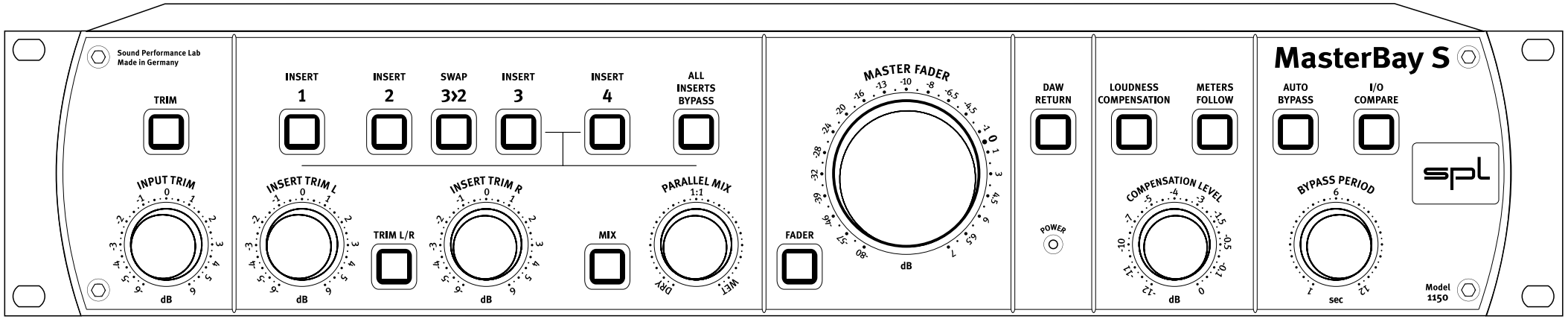
Note: odBu = 0,775 V. Technical specifications subject to change without notice.

Copy Master: Recall Settings

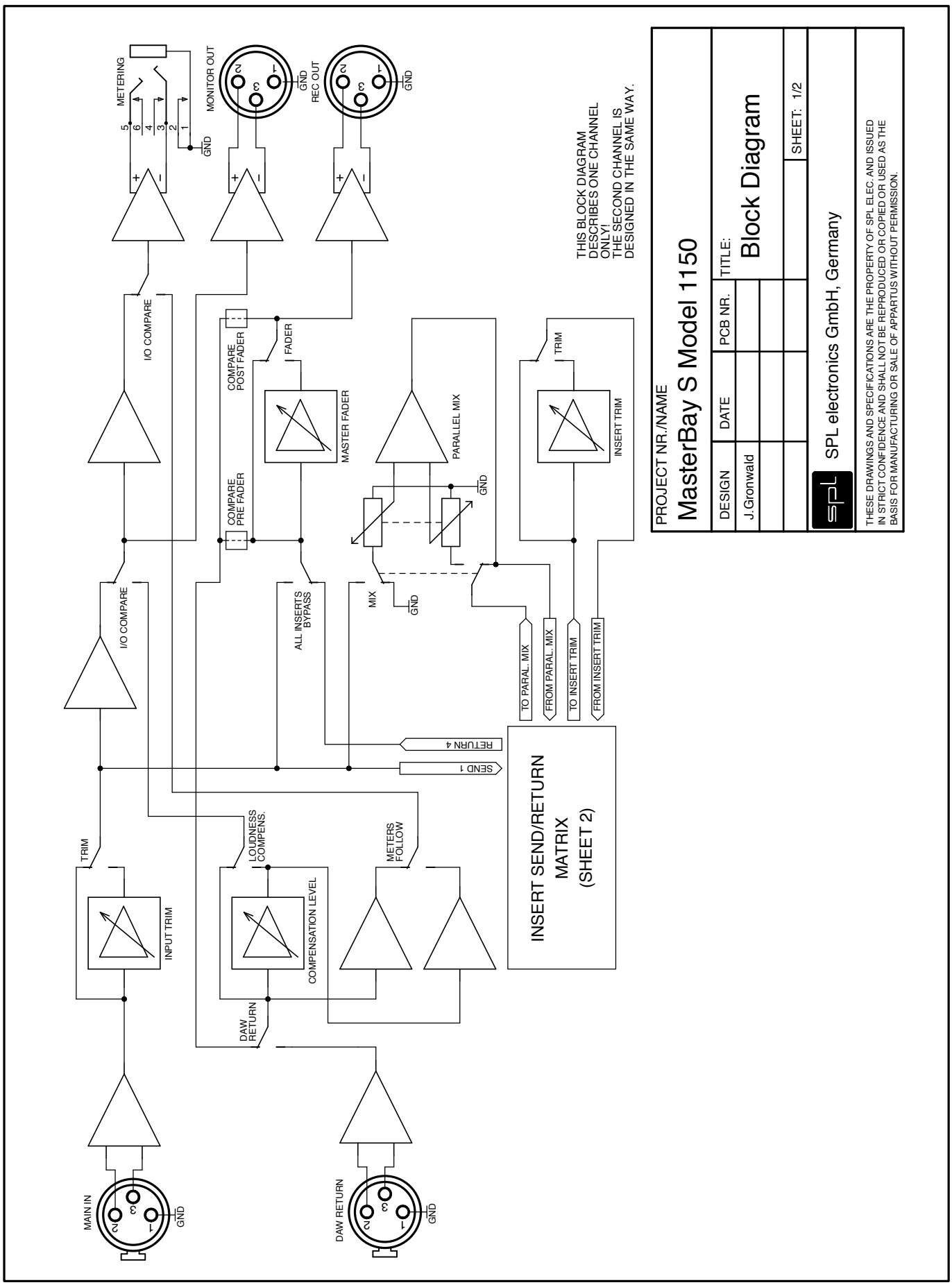
Artist: **Engineer:**

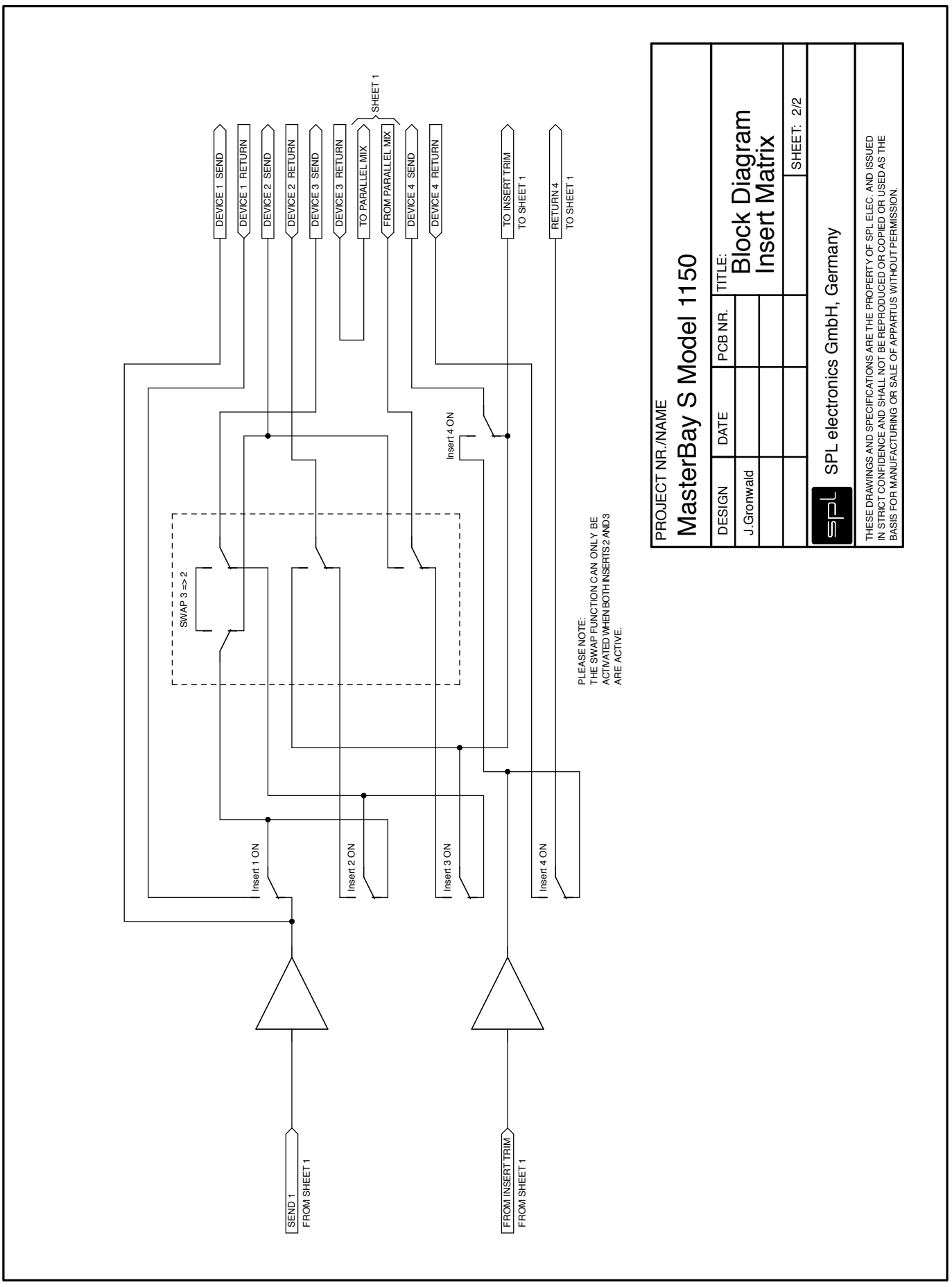
Album/Gig: **Track(s)/Group(s):**

Title: **Date**



Block Diagramm




SHEET 1
DEVICE 1 SEND
DEVICE 1 RETURN
DEVICE 2 SEND
DEVICE 2 RETURN
DEVICE 3 SEND
DEVICE 3 RETURN
TO PARALLEL MIX
FROM PARALLEL MIX
DEVICE 4 SEND
DEVICE 4 RETURN
TO INSERT TRIM
TO SHEET 1
RETURN 4
TO SHEET 1
Insert 4 ON
SWAP 3 => 2
PLEASE NOTE:
THE SWAP FUNCTION CAN ONLY BE
ACTIVATED WHEN BOTH INSERTS 2 AND 3
ARE ACTIVE.
Insert 1 ON
Insert 2 ON
Insert 3 ON
Insert 4 ON
SEND 1
FROM SHEET 1
FROM INSERT TRIM
FROM SHEET 1
PROJECT NR./NAME
MasterBay S Model 1150
DESIGN
J.Gronwald
DATE
PCB NR.
TITLE:
Block Diagram
Insert Matrix
SHEET: 2/2
SPL electronics GmbH, Germany
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Notes