

ON THE
MOON



SPACECRAFT

Exploring analog space.

OnTheMoon SPACECRAFT

analog spatial processor

User Manual

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Introduction

The OnTheMoon SPACECRAFT is a revolutionary analog spatial processor, based on Mathew Lane's spatialising technology. For the first time, this unique control of the stereo field is possible in the analog domain.

The OnTheMoon SPACECRAFT is an analog mastering grade mid/side processor with unique extra controls, creating new and different stereo manipulation possibilities in a 1U hardware unit. It offers a wide range of applications for recording, mixing, mastering and post production – going from simple MS (mid/side) encoding/decoding, over stereo field width and depth enhancement, to fixing mono compatibility issues and more.

Connections – Back Panel



The OnTheMoon SPACECRAFT uses a standard IEC inlet with an on/off switch on the back panel. Using the voltage switch next to the IEC inlet, the unit can be set for 230V or 115V.

- ❗ Make sure the voltage switch is in the right position and the correct fuses are used before powering up.

The OnTheMoon SPACECRAFT is pre-set correctly for the region it originally ships to.

IMPORTANT NOTE REGARDING THE FUSES:

For serial numbers up to *0030:

230V requires the use of 400mA slow blow fuses, while 115V requires the use of 800mA slow blow fuses.

For serial numbers from *0031 on:

230V requires the use of 160mA slow blow fuses, while 115V requires the use of 315mA slow blow fuses.

From *0031 on, different more power efficient relays are used, which use less current. There is no audio quality difference between both relay types.

Note that depending on parts availability at the moment of manufacturing, some units will use an inlet type that uses dual fuses, and some use an inlet with a single fuse. There is no quality difference.

The OnTheMoon SPACECRAFT has stereo analog inputs and outputs, plus insert sends and returns for the MID and SIDE sections.

- ❗ All inputs and outputs are balanced on Neutrik XLR sockets, operating at professional +4dBu line levels.

Overview & Use – Front Panel



The OnTheMoon SPACECRAFT has 4 sections: MID, SIDE, SPACE and MAIN.

MID

The MID section contains the sum of the Left and Right inputs.

This is the mono info of the stereo input signal, the center of the stereo image.

- The *CUT* button allows to mute the MID signal.

i This is useful for listening to SIDE and/or SPACE in solo, or simply to replace the existing MID signal with a new signal created with the SPACE section (see further).

- The *INSERT* button activates a send/return on XLR on the back panel to insert an outboard unit of choice (EQ, compressor, ...) for further processing of the MID signal.

SIDE

The SIDE section contains the difference of the Left and Right inputs.

This is the true stereo information of the stereo input signal.

- The *VARI WIDTH* button activates the *WIDTH* knob, to change the width of the stereo signal by boosting or attenuating the SIDE signal level.
- When the *WIDTH* knob is straight up (marked 100%), or when *VARI WIDTH* is not activated, the original stereo width is maintained.
- The *INSERT* button activates a send/return on XLR on the back panel to insert an outboard unit of choice (EQ, compressor, ...) for further processing of the SIDE signal.
- The *HIGHPASS* filter allows to remove low frequencies from the SIDE signal, to ensure mono low frequencies in the stereo output signal. When turned all left, it is inactive. Turned all right, it goes up to around 300Hz with a gentle 6dB/oct slope.

i SIDE can be muted by activating *VARI WIDTH* and turning *WIDTH* all down to 0%. This is useful for listening to MID and/or SPACE in solo.

SPACE

The SPACE section is what really sets the OnTheMoon SPACECRAFT apart.

- The *SPACECRAFT* button activates this whole section.

i When not active, the whole SPACE section is mute.
Muting the SPACE section can also be useful to listen to MID and/or SIDE in solo.

ZOOM allows to create new stereo information, based on existing mono information.

- Using *ZOOM* results in a unique way to widen and to zoom in on a certain part of a stereo signal. It improves the definition and spatial perception of a complex stereo mix.
- *FOCUS* is related to *ZOOM* and defines which frequencies are focused on for zooming. *FOCUS* changes the interaction of the *ZOOM* signal with the MID, SIDE and DEPTH signals.

DEPTH bases itself on existing stereo information, and creates new mono information.

- Using *DEPTH* results in more depth perception but can be also used to improve mono compatibility and add mix glue, or even to replace existing mono information (with MID *CUT* active) for remix and creative applications.
- *DISTANCE* is related to *DEPTH* and adds even more depth, and can be tweaked to change the interaction of the *DEPTH* signal with the MID, SIDE and *ZOOM* signals.

i *FOCUS* and *DISTANCE* each use a digitally controlled analog delay circuit. Turned all left, the analog delay is completely out of the circuit. Turning up to the ON position will relay-switch in the analog delay circuit. From then on short delay times (from 1ms up to 10ms) can be chosen in small digitally controlled steps.

FEEDBACK is a cross feed between *ZOOM* and *DEPTH*. It will only have effect when both *ZOOM* and *DEPTH* are in use.

- Using *FEEDBACK* results in more fullness but can also be used for creative effects and even reverb creation when combined with adequate *ZOOM* and *DEPTH* levels and respective use of *FOCUS* and *DISTANCE* analog delays.

i *ZOOM*, *DEPTH* and *FEEDBACK* are additive signals. Their neutral positions are at 0%.

Due to the nature of analog delays, higher delay times will add some noise. Shorter delay times however, as used in most situations, will hardly raise the noise floor.

When both *FOCUS* and *DISTANCE* analog delays are active, clock cross modulation (below the noise floor) between the delays is possible at certain combinations. Sometimes it might then be preferred to slightly tweak (or switch off) one of them.

MAIN

- The *IN* button activates the OnTheMoon SPACECRAFT. When off, the unit is in full bypass.
- *GAIN* allows for exact level matching between processed signal and bypassed (original) signal. When straight up, *GAIN* is at 0dB (calibrated position).

Support

Operational

For any operational questions, please contact us via the email form on our Support page:

<https://www.mathewlane.com/support>

Technical

If your SPACECRAFT needs service, please contact Joystick Audio:

info@joystick.be

Note

Your SPACECRAFT may have minor cosmetic imperfections – it has a unique yet complex to manufacture front panel. Units are finished by hand and manually tested with care.

Technical Specifications

THD < 0.0025%	ref +4dBu, unity gain, 22kHz BW
S/N > 92dB	ref +4dBu, unity gain, 22kHz BW
Dynamic Range > 110dB	ref +22dBu, 22kHz BW
Maximum Input Level = +22dBu	balanced, <1% THD
Power	AC, 115V/230V (+/- 10%), 50/60Hz, 25W

Declaration of CE Conformity: The construction of this unit is in compliance with the standards and regulations of the European Community.

Acknowledgements

Concept & system design:	Mathijs Indesteege aka Mathew Lane
Electronics design:	Wim De Roeck
Project support:	Raf Lenssens

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