Safety - This product is intended for professional use only and it is assumed that the user is familiar with the 500 Series Modular Rack system. Always switch off the rack power before inserting or removing this (or any other) module or damage may occur. Do not expose this product to direct heat, moisture or mechanical shock.

Warranty - This product is warranted free from defects in material or workmanship, for a period of one year from date of purchase. During this period, PMI Audio Group will repair or replace this product by prior arrangement free of charge, providing the product is determined to be defective and has been returned, freight prepaid, in its original or similarly protective packaging, to a PMI Audio Group Service Center. PMI Audio Group is not obligated to provide the Purchaser with a substitute unit while repairs are carried out.

Environmental - This product complies with the RoHS directive and contains no lead or other banned hazardous materials. In accordance with the WEEE directive, this product must be disposed of responsibly at its end of life, by means of local authority approved recycling systems.

RoHS

For further information, or to register your purchase, visit:
www.joemeek.com

Designed in England and assembled in China to strict Joemeek specifications,
Joemeek is manufactured under the direction of and distributed exclusively by:

PMI AUDIO GROUP

USA: 1845 W. 169th Street, Gardena, CA 90247
toll free: 877-563-6335 **fax:** 310-323-0900

UK: Unit 4 Minerva Court, Woodland Industrial Estate, Torquay, TQ2 7BD
tel: +44 (0)1803-612700 **fax:** +44 (0)1803-612009

email: info@joemeek.com
www.joemeek.com

Written by Allan Bradford, MSc

About the Designer: since 2003 the JOEMEEK product range has been created by renowned audio electronics engineer Allan Bradford. With a background in physics and over 30 years experience designing instruments, signal processors, mixers and amplifiers, his expertise ensures that JOEMEEK remains at the forefront of music production.

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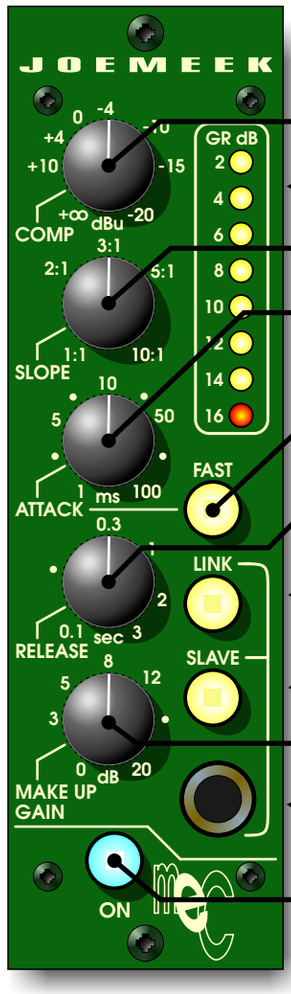
500 series



COMPress - sets the threshold level above which the signal starts to be compressed.

Gain Reduction Meter - real time display of the amount of Gain Reduction in dB.

SLOPE - sets the compression ratio: increase for more severe compression.

ATTACK - reduce for less obvious the compression, increase for more percussive sound.

FAST switch - changes the behaviour of the 'ATTACK' control to emphasise transients.

RELEASE - increase for less obvious compression, reduce to accentuate "pumping".

LINK switch - use to avoid image shifts when using a pair of ***meC* 500**'s to work in stereo.

SLAVE switch - use to make one ***meC* 500** "Slave" to another when working in stereo.

MAKE UP GAIN - restores the volume of the signal after compression.

LINK jack - connects a pair of ***meC* 500**'s for stereo operation, using a 1/4" stereo jack to jack cable wired pin-for-pin.

ON switch - turns the compressor on. With this switch out the ***meC* 500** is bypassed.

meC User Guide

Compressor

Introduction

The Joemeek ***meC* 500** recreates the punchy sound of the photoelectric Compressors used by legendary record producer Joe Meek in the 1960's. Robustly engineered for predictable, controllable performance, powerful yet simple to use, the ***meC* 500** will bring the gloss of a professional production to all your recordings and live performances!

Perhaps the hardest studio device to understand, yet one of the most useful, the Compressor's job is to make quiet sounds louder and loud sounds quieter, or in other words to control dynamic range of programme material. It's a bit like manually riding a volume control, except the compressor does it automatically, responding far quicker and more accurately than you ever could by hand. This can be used in several ways:

1. Make Sounds Stand Out - making quiet sounds louder without the loud bits getting even louder, means you can raise the average level of an instrument or vocal in the mix. This can actually improve vocals for example, by bringing them out in front of the mix, making them sound denser, more even, and more confident!

2. Crank Up The Volume - raising the average volume of whole mixes is what makes rock music, radio stations and TV commercials all sound LOUD!

3. Protect - using fast Attack and Release times to control brief transients is known as "limiting" and is used to protect recorders and monitoring systems from overload.

4. Accommodate - mixes intended for AM and FM radio broadcasts are compressed to fit the restricted dynamic range, which also gives a certain "feel" to the production.

5. Modify - a compressor can be used to change the dynamics, or "envelope" of a track.

Compression Ratio

If the input gets 10dB louder but the compressor only allows the output to increase by 5dB, then the compression ratio is "2 to 1". If the input goes up 10dB but the output only goes up 1dB, then the compression ratio is "10 to 1". But there is more to it than that: in the Joemeek optical compressor the compression ratio varies with the amount of compression. Suppose the 'SLOPE' control is set to 5:1. For signals only just exceeding threshold, the ratio is little more than 1:1. As the signal gets bigger, the ratio rises to 5:1, but eventually reduces again. This helps to retain brightness and is why optical compressors can often sound more lively than their VCA counterparts.

Getting Started

Set 'COMPRESS', 'ATTACK' and 'MAKE UP GAIN' fully anti-clockwise, with 'SLOPE' and 'RELEASE' at mid-position. Press the Compressor 'ON' switch and turn up 'COMPRESS' until the GR meter starts to read. You should now hear the compressor working. Use the 'MAKE UP GAIN' control to restore the volume and use the 'ON' switch to compare compressed and uncompressed sound. Experiment with different control settings to discover what best suits the material.

'COMPRESS' sets the level of signal (the "threshold") above which the signal starts to be compressed. Turn clockwise to lower the threshold and drive the compressor harder.

'SLOPE' sets the compression ratio applied to signals above threshold. Turning clockwise increases the ratio and makes the effects of compression more dramatic. Slopes around 3:1 are gentle for vocals while higher slopes are hard for drums and guitars. At maximum (10:1) the Joemeek compressor effectively becomes a limiter.

'ATTACK' sets how quickly the compressor reacts to peaks above threshold. Set to around mid-position for natural sounding vocals where the compression needs to be less obvious. Longer times allow the fast leading edge of percussive sounds to pass uncompressed for a moment, exaggerating the percussive nature of drums and other instruments. Use the 'FAST' switch and lots of compression for more extreme effects.

'RELEASE' sets how long the compressor goes on squashing the sound for, after the signal drops below threshold. Short times can result in modulation or "pumping" of the sound for special effect, while longer Release times give less obvious compression.

Meter

An eight segment LED, reverse-reading, bargraph gives a true measurement of gain reduction, by comparing audio levels before and after the PhotoOptical gain cell.

Stereo Compression

Two ***meC* 500**'s can be used together for stereo. To avoid shifts in the stereo image, press the **LINK** switches on both, then choose one ***meC* 500** to be "Master" and press the 'SLAVE' switch on the other. The Master's 'COMPRESS', 'ATTACK' and 'RELEASE' now control both ***meC* 500**'s and the corresponding controls on the Slave are redundant. All other controls still function and must be set the same on both units for stereo balance.

Extended Functions

If you have a Radial® Workhorse™ or compatible rack, your can use the rear Omniport™ connectors to link a pair of ***meC* 500**'s for stereo and avoid cables hanging out of the front panels - use a 1/4" stereo jack to jack lead wired pin-for-pin.You can also send the output of the ***meC* 500** to the rack's internal mix buss. To do this, locate jumper J1 on the main circuit board near the edge connector. Move the jumper onto the innermost two pins.

Technical Specification *

Input impedance	15kohm
Common mode rejection	70dB
Equivalent input noise	-91dBu (unweighted, no make-up gain)
Distortion	0.001% (below Compressor threshold)
Frequency response	10Hz to 70kHz (-3dB)
Maximum input level	+22dBu
Max output before clip	+28dBu (10k load)
Nominal output level	+4dBu (electronically balanced)
Output impedance	100 ohm
Compressor threshold	-20dBu to +22dBu (variable)
Compressor ratio	1:1 to 10:1 (variable)
Compressor attack time	1 msec to 100 msec (variable, adaptive)
Compressor release time	0.1 sec to 3 sec (variable, adaptive)
GR Meter	8-segment LED bargraph
Output noise floor	-85dBu (typical, unweighted)
I/O connections	XLR: pin 2 +, pin 3 -, pin 1 ground
Current requirement	130mA (maximum) per rail
Size and weight	Standard 500 Series, 0.65 kilos
Compliance	VPI Alliance, WHOS-Doc

* In the interests of product development, PMI Audio Group may change technical specifications without notice.