

## BC-PM6

### Stereo Program Master Module



The BC4 Broadcast Console System by adt-audio in Germany covers the range of medium to large format on-air and production consoles for any kind of applications. The rich feature set includes all special functions for broadcasting.

The BC4 console system combines high reliability, long lifespan, and professional technical qualities in combination with excellent sound performance,

In addition to a couple of standard input, group, and master modules, BC4 is a versatile base for custom build broadcast consoles at affordable prices. The system limits offer the choice to makes custom modules that use up to 36 bus rails, which can be used as main masters, group masters and sends in many different ways.

The Stereo Program Master Module BC-PM6 is the main master module of the BC4 console system. It contains a stereo master output with an additional mono output, a compressor/limiter dynamics module and the master sections for two mono aux masters and one stereo cue master. At least one of these modules must be installed in any console. Depending on the execution of the routing section of the input and group modules, up to three program master modules can be installed. Te standard modules BC-IM14 and BC-IS12 can be used with two master modules.

- Main stereo bus amp, insert and output section
- Additional mono output with separate level control
- compressor/limiter dynamics section
- Two aux master amplifiers
- One stereo cue master amplifier

#### Aux Master Amplifiers

The two **Aux Master Amplifiers** are used for the auxiliary busses 1 and 2 in the first BC-PM6 module and 3 and 4 in the second module. The units are identical to the master sections that are included with the control room module BC-CTR4. Each section contains a bus amp, a rotary type master fader with 6 dB of additional gain, a CUT and an AFL switch. If the switch TB is pressed, the Talkback to Aux signal is mixed into the particular aux output. The OSC switch mixes the oscillator output signal into the particular aux bus rail, if the ,Oscillator to Aux' function is enabled. AFL operates in non-latched mode always. It is not affected by any other PFL function and routs the aux master signal to the PFL bus as long the switch is pressed. It is default configured ,AFL'; however, internal jumpers can change the function to PFL. The master outputs are electronically balanced.

#### Stereo Cue Master Amplifier

The stereo **Cue Master Amplifier** is used for the stereo auxiliary buss Cue1 in the first BC-PM6 module and for Cue2 in the second module. The units are stereo versions of the aux master amplifiers. The section contains a stereo bus amp, a rotary type master fader with 6 dB of additional gain, a CUT and an AFL switch. If the switch TB is pressed, the Talkback to Aux signal is mixed into the particular cue bus rail, if the ,Oscillator to Aux' function is enabled. AFL operates in non-latched mode always. It is not affected by any other PFL functions and routs the stereo cue master signal to the PFL bus as long the switch is pressed. It is default configured ,AFL'; however, internal jumpers can change the function to PFL. The MONO switch inserts a mono matrix that makes possible to use the entire send as mono send without that the position of the channel cue pan pots must be considered. The master outputs are electronically balanced.

#### The Program Master Section

The master chain of the BC-PM6 module contains an ultra low stereo noise bus amp, a fully parametric stereo compressor limiter section, a balanced, switched insert section, VCA master fader, and an additional mono output section with level control.

#### The Stereo Insert Section

The insert section is electronically balanced. The insert output is always available on the connector panel while the insert return input is switched into the master chain with the insert switch. The insert outputs and inputs operate on nominal level. The default position of the entire insert section is pre fader, pre dynamics section. The switch POST FADER places the insert section post the fader, post dynamics section. This feature offers the choice to use the internal dynamics processor as compressor, while an external device is used as an additional brick-wall limiter.

#### The Stereo Compressor/Limiter Section

The integrated Stereo Dynamics Unit is a VCA controlled, forward regulated compressor/limiter with a full set of controls that allow the modification of all parameters. The ac-dc converter is a RMS converter that is adjusted to a very fast integration time constant. The stereo operated is precisely adjusted for best possible tracking of the two channels. This principle combines the advantage of RMS based control voltage generation with the speed of a standard peak rectifier circuit. The feed forward regulation makes possible to implement a very fast reaction time if the unit is set to minimum attack time. The Threshold control covers the range from -24 dB to +12 dB, referred to nominal level. The Attack control ranges from faster than 0.1 ms to 20 ms. This range covers any application of a compressor or limiter, from a fast brick-wall type peak limiter to a very soft leveling. The Release control from 0.1 seconds to 3 seconds includes also very fast release times. The range of the ratio control is from 1:1, which is actually ,compressor off' to ,Limit', which sets the unit into limiter mode. An additional gain control can compensate the drop in level with compressor settings using low threshold levels. A 10 LED bar graph displays the actual gain reduction with a range of 20 dB. The DYN switch inserts the circuit into the signal chain.

The default position of the dynamics unit is pre fader; however, the POST switch reroutes the entire section post master fader.

#### The Trim Control

The Trim control that is switched on by the related switch allows the control of the channel balance in a range of +/- 6 dB. This function makes possible to adjust the stereo output channels precisely to the same level without the need to change any fader or group fader settings.

#### The Master Fader

The master fader is a conductive plastic, VCA law fader with 100 mm stroke that offers a maximum gain of 10 dB. Faders with 126.5mm stroke and +15 dB gain are optionally available, please ask. The audio path of the fader section uses a stereo set of high quality VCA's, brand THAT. The scale accuracy is better than 1 dB from + 10 to - 20 dB. The zero point is internally calibrated to pinpoint accuracy. The tracking error between the two stereo channels is below 0.5 dB over the entire control range of the fader.

#### The Master Output

The master output is always post master fader. The output is electronically balanced and at nominal level. The source impedance is below 60 Ohms in the transmission band. Depending on the load resistor, the output can drive levels of up to + 30 dBu. Transformer balanced outputs are possible; please ask.

#### The Mono Output

The additional mono output is fed from the output of an internal mono matrix. An additional, rotary level control determines the output level of the mono output. It defaults to post master fader. The PRE switches reroutes this output to pre fader. In addition, a CUT switch mutes the mono output only. The attached AFL switch allows independent control of the mono output signal. In addition, it can be connected to one of the control room source selector inputs.

#### Talkback and Oscillator

The TB switch enables talkback from the TB to Groups bus for the master output. Separate Talkback lines can be used alternatively. See the description of the Talkback/Oscillator modules for details. The OSC switch enables the oscillator, if the OSC to GROUP/PGM switch is pressed and the oscillator is switched on.

#### The Metering

The standard consoles include an external PPM type, high resolution, meter that is installed in the meter bridge for each master module. adt-audio LED meters are used with all standard consoles setups. Plasma bar graph meters can be installed alternatively. It is also possible to install a phase correlation meter in parallel to the peak meter.

#### The Connectors

The connector panel of the master module uses single XLR connectors for the main outputs and the aux and cue outputs. The insert inputs and outputs are available on a 25-pin D-Sub connector.

