

# BC-STU4b

## Broadcast Studio/Playback 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.



Like the control room module, the Studio Playback Module is part of the standard master section of the BC4 consoles. However, in difference to the Control Room Module, the Playback Module can be left out in special console versions, if none of the included function is needed for the use of this particular console. The module combines an extension source select with eight inputs, three independent output sections for headphones, an additional output section for studio speakers and two VCA-Group Masters

- Control source selection extender with Eight stereo inputs
- 3 separate adding selectors, control sections and output drivers for headphones
- Separate adding selector and control section for studio speaker
- Talkback included with each output section
- Two VCA group masters

### Source Selector

The eight channel extension source selector is actually part of the control room source section, however, it can also be used as an independent, separate selector block. A switch block with eight, mutually released switches makes possible to select one of eight balanced stereo sources. The output of the selector is available on two XLR connectors. With the standard console configuration, the output is connected to the SEL2 switch of the main extension select unit.

### The Headphone Output Sections

There are three separate playback sections for headphones. Each of these identical sections has an adding selector, talkback facilities, level control and output driver.

The Selector Section has eight switches in total. All selected sources are mixed in a stereo matrix stage. The default configuration can be modified by internal jumpers. The switches AUX1 to AUX4 can be set to stereo mode. Since all auxiliary outputs and the program masters are available in the module, almost any desired combination can be realized.

The AUTO function is an additional feature that is important for the use of the console with telephone interviews. Actually, there are two matrix stages. One stage adds the 4 switches that are assigned to AUX1 to AUX4 with the default configuration. The second matrix stage adds matrix 1 and the other 4 switches to the total mixed signal. If AUTO is not enabled, all eight switches are active. With AUTO, it depends on the state of Telco input modules, if the AUX1 to AUX4 section or the other switches are enabled. In combination with the other functions of the Telco input modules, this feature makes it very easy to change the console setting during a telephone interview automatically, when the fader of the Telco module is opened. The necessary configuration for the preliminary conversation between the caller and the moderator is that the caller hears the moderators microphone while the moderators hears the caller. This special mix can be easily accomplished with one aux send. Aux 3 is used by default for this purpose. Of course, it is possible to change this setting, if for some reasons, Aux3 is used for another purpose. The pre fader signal of the moderator's microphone and the pre fader signal of telephone hybrid's output that is actually the input signal of the Telco module are mixed into Aux3 to form this mix. Aux3 is selected on the moderator's headphone send and it is used to feed the telephone hybrid input from the Telco module output in n-minus mode. Of course, any other source can be added to Aux3 if this is required.

This configuration must be changed between the end of the preliminary conversation and the real on-air interview. Now, the caller must hear the program master signal in n-minus mode. It is crucial that this is accomplished in n-minus mode to avoid any possible feedback thru the receiver of the caller. The playback of the moderator while on-air has to be switched to the program master. If there is no logic system, these entire changing have to be hand made. This means, that the hybrid feed has to be switched to program master and n-minus mode and the moderator's playback has to switch over to program master at the same time.

The Auto function let's you control all these setting coupled to the fader of the Telco module. With fader closed and AUTO enabled on the moderator's playback section, only the selected Aux bus feeds the moderators headphone. In the Telco module, the output that drives the telephone line is also switched to Aux in n-minus mode. With this configuration, it is possible to listen to the preliminary discussion using PFL either on Aux3 or on the channels. In addition, Talkback to Telco makes it possible to talk to the caller from the control room. When the fader is opened, the Telco module output switches over to program master in n-minus mode. At the same time, the moderators headphone is automatically switch to the program master. Actually, the pre selection of the Aux1 to Aux4 section is switched off while the pre selected mix of the other four switches in the right row is switched on. This principle offers many possible combinations for the playback signal.

Using a VCA Group for both, the callers Telco module and the moderators microphone channel, makes it possible to combine all functions, to this group fader.

The CTR switch disables the adding selector and also the Auto function but switches the particular playback section in parallel to the actually selected control room speakers source signal. Of course, neither the PFL signal nor the incoming talkback is included in the CTR signal that feeds the playback sections.

The Talkback sections of all output stages of the playback module are driven by the TB-STUDIO switch in the Talkback/Oscillator module. Each output section has it's own level control pot and a TB-OFF switch, which disables talkback for the particular output. While talkback, the playback signal is attenuated by 20 dB and mixed to the talkback signal. The attenuation is determined by the value of two resistors. It is also possible to disable the playback signal while talkback.

Normally the output section operates in STEREO mode. MONO inserts a stereo to mono matrix stage. The level control has a maximum gain of 6 dB. The headphone drivers are well suited to drive up to 3 headphones in parallel. If more than headphone at a time is connected to one driver, it is necessary to use headphones of the same impedance to avoid different levels on the headphone. CUT mutes the output of the driver.

### The Studio Speaker Section

The Studio Speaker Section is in a large extending not different from the headphone sections. It uses the same selector system. However, there are certain differences in the output section, that if not headphone power amplifier, of course. The output circuit includes a DIM circuit that can be activated by the local switch. It is also possible to assign this switch to the AutoDim control bus of the consoles. In addition to the CUT switch, an AUTOCUT switch enables the remote control of the studio speakers by the AUTOCUT bus. This bus is fed by default from all input modules with microphone input selected, when the fader is open. The description of the talkback/oscillator module contains detailed information about the possible configurations of the AutoDim and AutoCut function.

### Connectors

All outputs of the Studio/Playback module are available on a 25pin D-Sub connector. The inputs of the extension source selector are available on two 25pin D-Sub connectors. Each of these connectors contains four stereo inputs. Custom versions of the connector panel, using other multipin connectors than 25pin D-Sub are possible; however, the available space is limited. Please ask for details.

### The VCA Group Master Section

A dual VCA Group Master Section is included with the BC-STU4b. It is used for the VCA-Groups 3 and 4. The group 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 scale accuracy is better than 1 dB from + 10 to - 20 dB. The zero point is internally calibrated to pinpoint accuracy. The VCA-Group On switch controls the on state of the channels that are assigned to the particular group. If the VCA group is not switched on, all assigned channels or groups are also in channel off mode. The Group In function can be implemented as CUT on request. However, this version has to be installed with all VCA group modules of the particular console to maintain proper operation of the different master control functions.