**FRIEND·CHIP**

STUDIO ELECTRONICS

# MQA in brief (v5.ab)

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the MQA module receives one ADAT 8-channel signal and feeds four stereo pairs into the matrix.
For best overview write these sources into the soure name list, for example

MQA_1,2(A)     MQA_3,4(B)     MQA_5,6(C)     MQA_7,8(D)

Four stereo destinations are merged into the MQA ADAT output. Write these destinations into the destinations name list:

MQA_1,2(A)     MQA_3,4(B)     MQA_5,6(C)     MQA_7,8(D)

Both directions can be used at the same time. You may playback tracks from your ADAT machine, while recording.

**Synchronistion**

After power-up, the BNC input is scanned. If there is a word-clock present within 10 seconds after power-up, the module locks to this clock. If no clock is present the module locks to the ADAT input signal.

**Please note:**      the LED flashes slow, when locked to WORD-CLOCK or fast when locked to
the ADAT input.
The LED is on continously, when no sync is detected.

when working with WORD-CLOCK, the ADAT source must sync to
the same WORD-CLOCK, or it must sync to the MQA's ADAT output.

when no WORD-CLOCK is connected an ADAT signal must be connected
to the MQAs ADAT input,

when no WORD-CLOCK is used, the ADAT receivers must not lock to the MQA's
ADAT output !! (this would cause a loop)
in this case the ADAT receivers must work on internal clock or sync to housesync.

The ADAT in/out of the MQA may be routed thru an additional MOP4 module. so that
the MQA ADAT in/out can be connected to various devices.

**Please note:**      when the MQA syncs to the ADAT INPUT synchronisation is lost, when changing
the ADAT source, but will lock automatically after a valid ADAT signal is detected,
when the MQA is locked to WCLK the ADAT output stays in sync even when the
ADAT source is changed.

**Format and SRC**

The MQA does not care about the format of the received stereo sigmals, which are merged into the ADAT outpu: AES Professional or Consumer, or S/P DIF are accepted.
The format of the returned signals, detangled from the ADAT signal can be selected as CONSUMER or PROFESIONAL.
The MQA has four sample rate converters in the lines from stereo to ADAT. If all sources are in sync with the ADAT signal these can be switched off (see next page).

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**IMPORTANT:**      when using with DMX 16 a power-supply of at least  6 V, 1,5 A is needed
when using with DMX 32 a power-supply of at least  6 V, 3 A is needed

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# How to select SRC status and data format

If all signals in the system are clocked from a common clock source (masterclock) the SRCs on MQA odul can be bypassed.
If the SRCs are bypassed in an asynchronous setup data errors will occour, such as lost samples and may cause heavy distortion, so please

**Turn down your speaker system and do not wear headphones !!**
**while trying to bypass SRCs.**

The DIP switches in DOWN position select  as follows

| | | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| 1) | down (up)<br>selects consumer (professional) format<br>for the output of src A and B (chn 1,2 - 3,4) | ☉ | | | |
| 2) | down (up)<br>selects consumer (professional) format<br>for the ouput of src C and D (chn 5,6 - 7,8) | | ☉ | | |
| 3) | down (up)<br>enables (disables) all SRCs, ABDC | | | ☉ | |
| 4) | down (up)<br>enables terminater  75 ohm (1k) | | | | ☉ |

**NOTE:**    all four sample rate converters in the AES - > ADAT path are enabled or disabled with switch 3 up.
the data format of stereo signals detangled from an ADAT signal is changed  to CONSUMER or PROFESSIONAL. alway for two SRCs: AandB and/or CandD.
there is no error display for lost samples whendata is not in sync  and SRCs are disabled.

# CHECK for lost samples

If you want to disable the sample rate converters you should check for lost samples when you first install the MQA module.

**Turn down your speaker system and do not wear headphones !!**

then feed a sinus signal about 12-15kHz and about -20dB through the AES ->ADAT path and monitor the signal returned from the ADAT device.

If everything is fine you just hear the frequency (very low of coarse).

If sender and ADAT receiver are not in sync but work at the same frequency (for example 48 kH) you will hear clicks and low noise.
If sender and ADAT receiver are not in sync and work with different frequencys (for example 44,1kHz and 48 kHz) you will hear heavy noise.

**FRiENd·CHiP**

STUDIO ELECTRONICS

# MQT  in brief  (v5.ab)

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the MQT module receives one TDIF  8-channel signal and feeds four stereo pairs into the matrix.
For best overview write these sources into the soure name list,  for example

MQT_1,2(A)     MQT_3,4(B)     MQT_5,6(C)     MQT_7,8(D)

Four stereo destinations are merged into the MQT  TDIF output. Write these destinations into the destinations name list:

MQT_1,2(A)     MQT_3,4(B)     MQT_5,6(C)     MQT_7,8(D)

Both directions can be used at the same time. You may playback tracks from your TDIFmachine, while recording.

**Synchronistion**

The MQT is always slave and synchronises to the word-clock which comes with the 25 pin TDIF cable.

**Please note:**          the LED flashes slow when locked,
                          the LED is on continously when no sync is detected.

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**Format and SRC**

The MQT does not care about the format of the stereo signals, which are merged into the TDIF signal:
AES Professional or Consumer, or S/P DIF are accepted.
The data format of the stereo signals detangled form the TDIF signal can be selected as CONSUMER or PROFESIONAL.
The MQT has four sample rate converters in the lines from stereo to TDIF. If all sources are in sync with the TDIF signal these can be switched off (see next page).

**IMPORTANT:**          when using with DMX 16 a power-supply of at least  6 V, 1,5 A is needed
                        when using with DMX 32 a power-supply of at least  6 V, 3 A is needed

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# How to select SRC status and data format

If all signals in the system are clocked from a common clock source (masterclock) the SRCs on the MQT module can be bypassed.
If the SRCs are bypassed in an asynchronous setup data errors will occour, such as lost samples and may cause heavy distortion, so please

**Turn down your speaker system and do not wear headphones !!**
**while trying to bypass SRCs.**

The DIP switches in DOWN position select as follows

| | | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| 1) | down (up)<br>selects consumer (professional) format<br>for the outputs of src A and B  (chn 1,2 - 3,4) | ☾ | | | |
| 2) | down (up)<br>selects consumer (professional) format<br>for the outputs of src C and D  (chn 5,6 - 7,8) | | ☾ | | |
| 3) | down (up)<br>enables (disables) all srcs, ABDC | | | ☾ | |
| 4) | down (up)<br>selects DA88 16 bit mode | | | | ☾ |

**NOTE:**  all four sample rate converters in the AES - > TDIF  path are enabled or disabled with switch 3 up.
the data format of stereo signals detangled from anTDIF signal is changed to CONSUMER or PROFESSIONAL. always for two SRCs: AandB and/or CandD.
there is no error display for lost samples whendata is not in sync  and SRCs are disabled.

# Check for lost samples

If you want to disable the sample rate converters you should check for lost samples when you first install the MQT module.

**Turn down your speaker system and do not wear headphones !!**

then feed a sinus signal about 12-15kHz and about -20dB through the AES - >TDIF path and monitor the  signal returned from the TDIF device.

If everything is fine you just hear the frequency (very low of coarse).

If sender and  TDIF receiver are not in sync but work at the same frequency (for example 48 kH) you will hear clicks and low noise.
If sender and TDIF receiver are not in sync and work with different frequencys (for example 44,1kHz and 48 kHz) you will hear heavy noise.

## MQ4 in brief  (v96 .ab)

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the MQ4 module is directly connected to the matrix.
Four destinations feed signals to the module, so write these into the destinations name list:
      TO          MQ4_A       MQ4_B       MQ4_C       MQ4_D

Four stereo signals are returned as four sources, so write these into the source name list:
      FROM       MQ4_A       MQ4_B       MQ4_C       MQ4_D

**Synchronistion**

The MQ4 locks to the signal at the BNC input. A valid word-clock signal must be connected.
The frequency may vary between 44,1kHz and 96 khz ( +/- 10%).

**Please note:**       the LED flashes,  when locked.
                       The LED is on continously, when no sync is detected.
                       All signals from the MQ4 are muted in this case.

**Format and SRC**

The MQ4 receives any format of stereo signals:  AES Professional or Consumer, or S/P DIF are accepted.
The format of data which is returned to the matrix can be selected as CONSUMER or PROFESIONAL.
The MQ4 has 4 sample rate converters, one in each of the four lines A, B, C, D. If all sources and destinations
are in sync with the word-clock at the BNC input, these srcs may be disabled (see next page).
In this case the MQ4 works only as format converter.

**IMPORTANT:**      when using with DMX 16 a power-supply of at least  6 V, 1,5 A is needed
                    when using with DMX 32 a power-supply of at least  6 V, 3 A is needed
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# How to select SRC status and data format

If all signals in the system are clocked from a common clock source (masterclock) the SRCs on MQ4 module can be disabled. The MQ4 works as format converter in this case.
If the SRCs are bypassed in an asynchronous setup data errors will occour, such as lost samples and may cause heavy distortion, so please

**Turn down your speaker system and do not wear headphones !!**
**while trying to disable the SRCs.**

The DIP switches in DOWN position select  as follows

| | | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| 1) | down (up) | | | | |
| | selects consumer (professional) format | | | | |
| | for the output of src A and B | ↻ | | | |
| 2) | down (up) | | | | |
| | selects consumer (professional) format | | ↻ | | |
| | for the output of src C and D | | | | |
| 3) | down (up) | | | ↻ | |
| | enables (disables) all four srcs, ABDC | | | | |
| 4) | down (up) | | | | ↻ |
| | enables (disables) terminater  75 ohm (1k) | | | | |

**NOTE:** all four sample rate converters in the MQ4 are enabled or disabled with switch 3 up.
the data format of returned stereo signals is changed  to CONSUMER or PROFESSIONAL.
alway for two srcs: AandB or/and CandD.
there is no error display for lost samples when data is not in sync  and srcs
are disabled.

# Check for lost samples

If you want to disable the sample rate converters you should check for lost samples when you first install the MQ4 module.

**Turn down your speaker system and do not wear headphones !!**

then feed a sinus signal about 12-15kHz and about -20dB through the MQ4 and monitor the returned signal.

If everything is fine you just hear the frequency (very low of coarse).

If sender and MQ4 are not in sync but work at the same frequency (for example 48 kH) you will hear clicks and low noise.
If sender and MQ4 are not in sync and work with different frequencys (for example 44,1kHz and 48 kHz) you will hear heavy noise.