

Application note

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Subject	Mechanical Mounting Possibilities for ETX Modules
Related Products	All Kontron ETX products

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18.01.2002	M. Unverdorben	Initial release
10.04.2002	M. Unverdorben	Added tolerance for spacer
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2. INTRODUCTION

This application note will show some of the possibilities for mounting the ETX modules on the back-plane as well as the needed screws, spacers and thread liners for press-in mounting. Of course there are always more possibilities than are described here.

Attention: We don't provide any of the mechanical parts except for the ETX-mounting kit 18017-0000-00-0

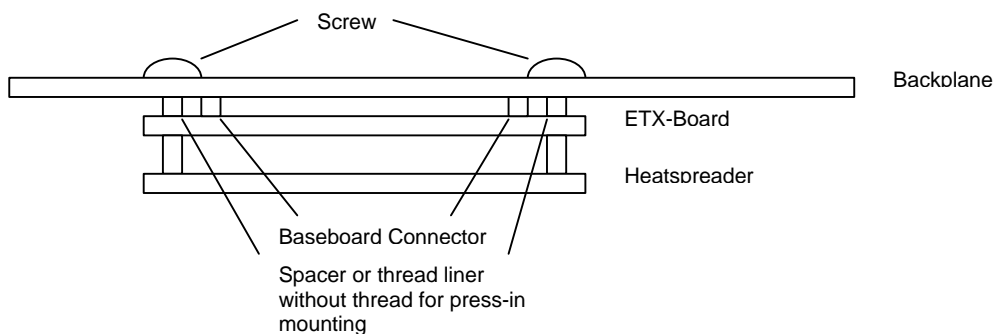
Please refer also to the ETX specification.

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3. POSSIBILITIES FOR MOUNTING ETX

3.1. Mounting from Bottom

This is the most used and preferred option to mount an ETX-Board. It is the method used on our ETX evaluation board.



There is an ETX Mounting Kit available for use for this mounting possibility:

ETX Mounting Kit (Article number 18017-0000-00-0)

Description	Pcs	Device name	Specification
Round head screws, metric thread M2,5x12	4	MSCRM2p5x12	X00234
Round nickel plated washer for metric screws, Ø2,6mm	4	MWASH	X00235
Round aluminum spacer, innerØ2,7mm; outerØ4,5mm; length 3mm (+0,0mm, -0,1mm)	4	MABR2p3x3	X00235

Instead of the spacer, a thread liner for press-in mounting, minus the threads, might be used. (See Appendix, e.g. KFE-2,6-3)

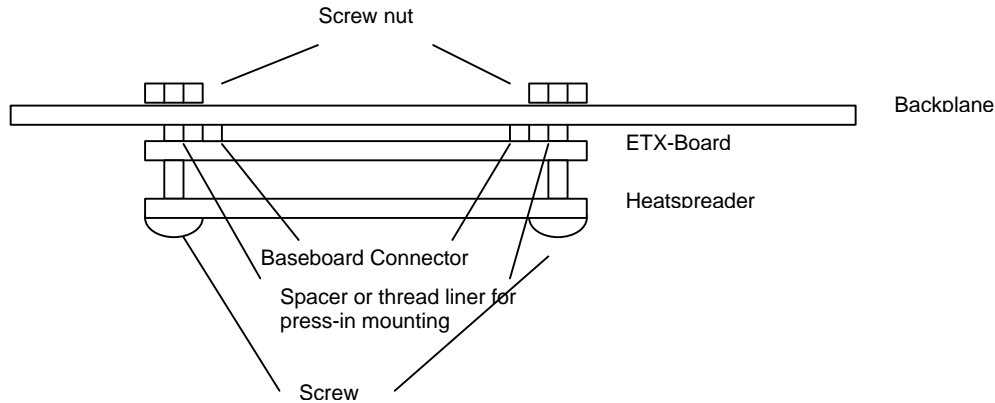
Our evaluation backplane, CE revision later then and not including 114, is already equipped with thread liners so no spacers are required.

NOTE: The standard heat spreader must be used because of the internal thread.

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3.2. Mounting from top

If mounting from bottom is not possible, mounting from top can be done.



We strongly recommend you use a screw and nut assembly instead of threaded liners otherwise the screwing force might be too high and cause the threaded liners to pull out of the backplane. Also KOENIG doesn't provide these parts, but if the demand is high enough they will produce them.

The heat spreader must not be threaded. At the moment the standard heat spreader is only available in a threaded version. For low quantities the threads can be carefully drilled out with 2,7mm drill bit.

3.3. Different Height

Hirose also offers baseboard connectors with a height of 9.5 mm, which can be used for connecting ETX boards.

Of course longer mounting utilities (screws, spacers/thread liners) must be used if you choose this mounting option.

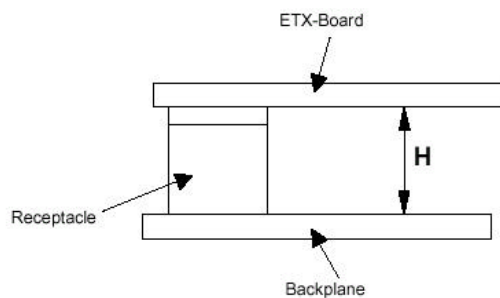
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4. APPENDIX

4.1. Specification of baseboard connector

To achieve various stacking heights, the receptacles for ETX baseboards are available in two heights.

Manufacturer	Order number	Resulting height H between backplane and ETX-Board
HIROSE	FX8-100S-SV	3 +0.3/-0.2mm
	FX8C-100S-SV5	9.5 +0.3/-0.2mm



Current capacity	0.4A per pin
Rated voltage	100V AC
Insulation resistance	100M or greater @ 250V DC
Withstand voltage	300V AC r.m.s.
Contact resistance	45 μ or less @ 100mA DC
Insulation	PPS resin (Light brown, UL94V-0)
Contacts	Phosphor bronze (Contacts and leads – gold plating)

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4.2. Specification of Screw

4.2.1. Description

MSCRM?x?? - Round head screw, metric thread

4.2.2. Manufacturer

Manufacturer	Description	Order number	Device
Various	Round head screw, metric thread, steel or Polyamid		MSCRM?x??

4.2.3. Specification

No mechanical or electrical specification

4.2.4. Preference Types

Manufacturer	Description	Order number	Device
Various	Round head screw, metric thread M 2x5		MSCRM2x5
Ettinger	Round head screw, metric thread M 2x5	1.21.053	MSCRM2x5
Various	Round head screw, metric thread M 2,5x5		MSCRM2p5x5
Various	Round head screw, metric thread M 2,5x6	1.72.063	MSCRM2p5x6
Various	Round head screw, metric thread M 2,5x8		MSCRM2p5x8
Bürklin	Round head screw, metric thread M 2,5x12	16 H 269	MSCRM2p5x12
Ettinger	Round head screw, metric thread M 2,5x12	1.17.253	MSCRM2p5x12
Ettinger	Round head screw, metric thread M 2,5x12	1.17.251	MSCRM2p5x12
Ettinger	Round head screw, metric thread M 2,5x16	01.17.263	MSCRM2p5x16
Various	Round head screw, metric thread M 3x5		MSCRM3x5
Various	Round head screw, metric thread M 3x8		MSCRM3x8
Various	Round head screw, metric thread M 3x10		MSCRM3x10
Various	Round head screw, metric thread M 4x10		MSCRM4x10
Various	Round head screw, metric thread M 4x12		MSCRM4x12
Various	Round head screw, metric thread M 4x16		MSCRM4x16
Ettinger	Round head screw, metric thread M 2,5x10, material Polyamide 6.6 UL94 V-2	01.47.246	MSCRM2p5x10_P

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4.3. Specification of washer and roller

4.3.1. Description

MWASHM? - Round nickel-plated washer for metric screws Ø?
 MABR??? – Various spacers

4.3.2. Manufacturer

Manufacturer	Description	Order number	Device
Various	Round nickel-plated washer for metric screws Ø?		MWASHM?

4.3.3. Specification

No mechanical or electrical specification

4.3.4. Preference Types

Manufacturer	Description	Order number	Device
Various	Round nickel plated washer for metric screws Ø2.6mm		MWASHM2p5
Various	Round nickel plated washer for metric screws Ø3.2mm		MWASHM3
Various	Round nickel plated washer for metric screws Ø 4.3mm		MWASHM4
Ettinger	Alu roller, outerØ 4.5mm, innerØ 2.7mm, L= 3mm (+0,0mm; -0,1mm)	05.72.038	MABR2p5x3

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4.4. Specification of threadliner

4.4.1. Description

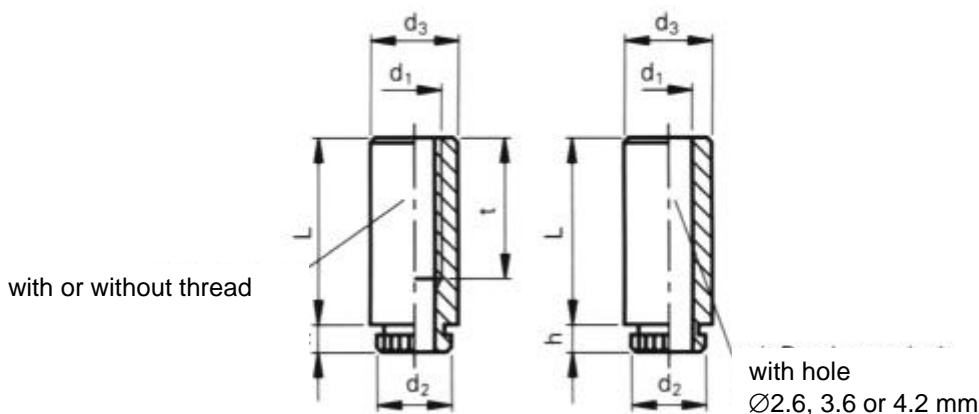
MTHREADLINER – thread liner for press-in mounting
 MKFE?? - thread liner for press-in mounting

4.4.2. Manufacturer

Manufacturer	Description	Order number	Device
KOENIG Verbindungstechnik AG	PEM Einpreß-„Gewinde“-buchsen für Kunststoffe, rostfrei ("screw" socket, mould in, for plastics, stainless, without threads)	KFSE-3,6-3	MTHREADLINER
KOENIG Verbindungstechnik AG	PEM Einpreß-Gewindebuchsen für Kunststoffe, Stahl verzinkt (screw socket, mould in, for plastics, steel, tin-plated)	KFE-M3-3	MKFE-M3-3
KOENIG Verbindungstechnik AG	Einpreß-„Gewinde“-buchsen für Kunststoffe, Stahl verzinkt ("screw" socket, mould in, for plastics, steel, tin-plated, without threads)	KFE-2,6-3 (Y13323)	MKFE-2,6-3
KOENIG Verbindungstechnik AG	Einpreß-„Gewinde“-buchsen für Kunststoffe, Stahl verzinkt ("screw" socket, mould in, for plastics, steel, tin-plated, without threads)	KFE-2,6-9,5	MKFE-2,6-9,5

4.4.3. Specification

Typen KFE, KFSE



Type	Thread d_1	Hole- \emptyset in PCB	d_2	d_3	L	h max.	Min. edge distance to middle of hole
KFE-M3-3	M3	4,2	4,68	5,56	3	1,5	4,4
KFE-2,6-3	\AA 2,6	4,2	4,60	5,50	3	1,5	4,0
KFE-2,6-9,5	\AA 2,6	4,2	4,60	5,50	9,5	1,5	4,0
KFSE-3,6-3	\AA 3,6	5,4	5,87	7,14	3	1,5	5,5