

<b>Overview .....</b>	<b>2</b>
- AdvancedTCA .....	4
- MicroTCA .....	6
- AdvancedMC .....	8
- Applications .....	10
- Systems .....	12
- Chassis .....	13
- Backplanes .....	14
- Shelf manager ....	15
- Cooling designs....	16

<b>AdvancedTCA.....</b>	<b>18</b>
-------------------------	-----------

<b>AdvancedMC carriers .....</b>	<b>42</b>
--------------------------------------	-----------

<b>MicroTCA .....</b>	<b>52</b>
-----------------------	-----------

<b>AdvancedMC modules .....</b>	<b>68</b>
-------------------------------------	-----------

<b>VARISTAR LHX 20 with air/water- heat exchanger...</b>	<b>74</b>
--	-----------

<b>Internet www.a-tca.com ..</b>	<b>80</b>
--------------------------------------	-----------

<b>ServicePLUS .....</b>	<b>82</b>
--------------------------	-----------

<b>Standards</b>	
- AdvancedTCA .....	84
- MicroTCA .....	86



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## MicroTCA (Micro Telecommunications Computing Architecture)

MicroTCA.0 R1.0 is a modular standard for plugging AdvancedMC modules directly into a backplane. As well as standard systems and modifications, Schroff also offers all individual components for system building.

A so-called MicroTCA carrier hub (MCH) is needed to operate the AdvancedMC modules. In addition to the management function it also takes over the switch function.

The management includes temperature, voltage and fan monitoring. By remote diagnosis problems can be identified at an early stage and thus downtimes can be reduced.

## Applications

Lower development costs and shorter time-to-market are the advantages of the MicroTCA standard compared to proprietary system solutions, as they can be found increasingly often in today's telecommunications.

Among others the advantages over the previous bus systems (VME, CompactPCI busses) are higher speed, smaller designs and larger flexibility.

MicroTCA is used in environments where faster data transfer rates are required and large data volumes must be processed in the shortest time, e.g. in telecommunications, automation, image processing, medical technology, defence systems etc.

## Heat dissipation

MicroTCA systems can be cooled by push or pull cooling.

Push cooling: The fan is situated by the air inlet and pushes air through the system.

Pull cooling: The fan is situated by the air outlet and sucks air through the system.

The dimensions of the fans are such that the heat loss of up to 80 W per full-size AdvancedMC module (maximum 12 modules) can be safely dissipated.

## Modular MicroTCA high speed systems

- Large product range with regard to dimensions, number of slots, cooling designs, backplane topologies
- From simple subrack to integrated system
- Modifications to your requests



### Overview . . . .52



12806020

### MicroTCA development systems

- For single and double full-size AdvancedMC modules
- Active fan cooling
- Backplane with Dual Star topology
- Power supply units

### Development systems

6 U (9 single full-size) and  
8 U (9 double full-size) . . . . . 54  
Backplanes for development systems . . . . . 55



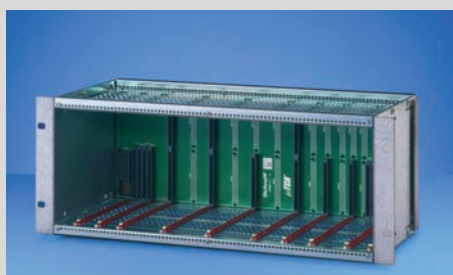
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### MicroTCA systems

- Different designs
- For single and double AdvancedMC modules
- Active fan cooling
- Backplanes with different topologies
- Power supply

### Systems

6 U, for 9 single full-size AdvancedMC modules . . . . . 56  
3 U, for 2 single and 4 double (8 single) full-size AdvancedMC modules . . . . . 57  
3 U industrial cube for 4 single full-size modules. . . . . 58



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### MicroTCA subracks

- For single and double AdvancedMC modules
- Backplane with star topology

### 19" subracks

3 and 4 U for single or double AdvancedMC modules . . . . . 59  
Backplanes . . . . . 60  
Mounting rail for 3 U backplane in 4 U subrack. . . . . 61

### Accessories

Mounting aid for guide rails . . . . . 61  
Guide rails . . . . . 61  
Power input module, single full-size module . . 63  
Filler modules. . . 64  
Field replaceable units (FRUs) . . . . 66



30407004

[www.schroff.biz/serviceplus/](http://www.schroff.biz/serviceplus/)

### ServicePLUS (more details see page 82)

- configuration: Simple. Fast. To the ideal product.
- assembly: Assembled by professionals. Double benefit!
- modification: Small changes. Large impact.
- solution: Simple. Everything. From one source.
- support: Support. Solution. Availability.
- academy: Knowledge. Sharing. Partnerships.
- lifecycle: Bespoke service. For the entire life of the product.

## Development systems, 6 U (9 single full-size) and 8 U (9 double full-size)



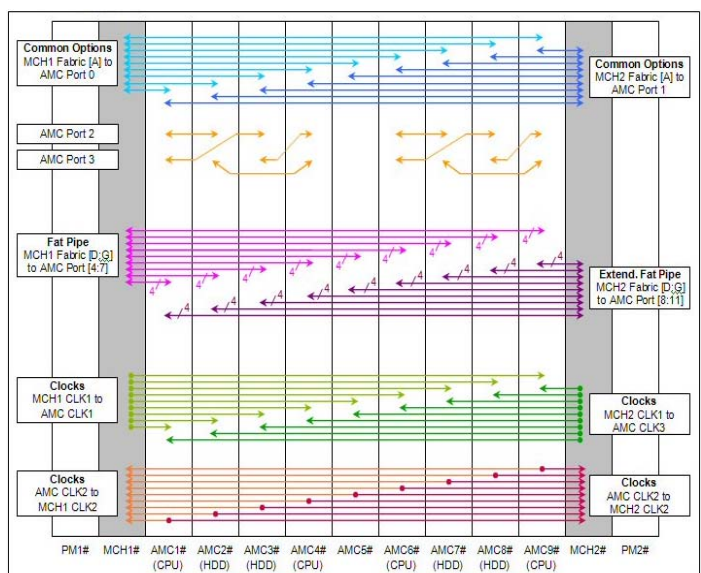
6 U system

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8 U system

12806020



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Backplane topology

- In accordance with PICMG MicroTCA.0 R1.0 Specification
- Case system with handle (19" bracket available on request), 316 mm deep, RAL 9006, completely assembled and wired, assembly space for 2 power modules (9 HP) and 2 MCHs and 9 AdvancedMC modules, **2 heights**
  - 6 U, for 9 **single** full-size AdvancedMC modules
  - 8 U, for 9 **double** full-size AdvancedMC modules
- Backplane, Dual Star connections for Gigabit Ethernet (GbE) and fat pipe/extended fat pipe, direct connections for the storage interface
- Power supply units
  - 2 slots for MicroTCA power modules with up to 9 HP width or Schaffner power input module
  - 2 power supply slots to accommodate Schaffner plug-in power supplies, AC wide range input and DC output (12 V<sub>DC</sub> or -48 V<sub>DC</sub>)
- Active cooling
  - Hot-swap fan tray with three 12 V<sub>DC</sub> fans, temperature dependent control available on request
  - Air circulation from front to rear
  - Air filter (exchangeable from front)
  - Optional fan control with NTC resistor (position selectable within system)

**NEW**

### Order Information

Description	Backplane Slots	Qty/ PU	Order no.
Development system for 9 <b>single</b> full-size AdvancedMC modules	9 full-size, 2 x PM (9 HP), 2 x MCH	1	<b>11850-005</b>
Development system for 9 <b>double</b> full-size AdvancedMC modules	9 full-size, 2 x PM (9 HP), 2 x MCH	1	<b>11850-007</b>
<b>Power supply 300 W, AC-DC (12 V)</b> Input 85 ... 264 V <sub>AC</sub> , output 12 V <sub>DC</sub> /25A, 1 piece			<b>11098-287</b>
<b>Power supply 300 W, AC-DC (-48 V<sub>DC</sub>)</b> Input 85 ... 264 V <sub>AC</sub> , output -48 V <sub>DC</sub> /6.25 A, 1 piece			<b>11098-288</b>
<b>Connection cable</b> Power supply, 12 V <sub>DC</sub> output to power input module, length 260 mm, 1 piece			<b>23204-176</b>
<b>Connection cable</b> Power supply, 12 V <sub>DC</sub> output to power input module, length 550 mm, 1 piece			<b>23204-182</b>
<b>Connection cable</b> Power supply, -48 V <sub>DC</sub> output to power input module, length 260 mm, 1 piece			<b>23204-177</b>
<b>MicroTCA power input module, single full-size</b> MicroTCA power input module, single full-size 6 HP, 1 piece see page 63			<b>23098-561</b>
<b>Connection cable</b> from power supply module (-12 V <sub>DC</sub> ) to ring cable eye M5, length 2 m, 1 pce			<b>23204-802</b>
<b>Connection cable</b> from power supply module (-48 V <sub>DC</sub> ) to ring cable eye M4, length 2 m, 1 pce			<b>23204-803</b>

- Description MicroTCA backplane see page 55
- Replacement parts (FRUs) see from page 66
- User manual: Please enter order number under [www.schaffner.biz/oneclick/](http://www.schaffner.biz/oneclick/)



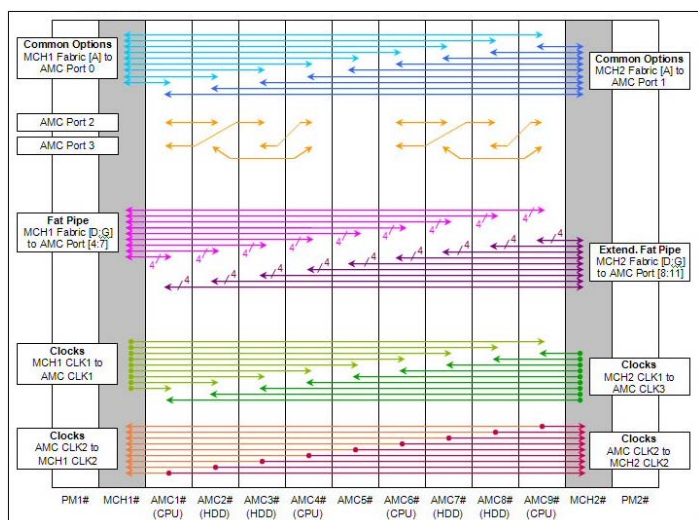
ServicePLUS see page 82



## MicroTCA backplanes for development systems



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ServicePLUS see page 82

- In accordance with PICMG MicroTCA.0 R1.0
- Dual Star topology on ports 0/1 and ports 4 ... 7/8 ... 11
- Direct connections on ports 2 and 3
- Carrier FRU SEEPROM and carrier number 2x on rear side of backplane, connected to the MCHs via I<sup>2</sup>C bus

# NEW

### Delivery comprises

Item	Qty	Description
1	1	Backplane

### Order Information

Slots	AMC	Width mm	Height mm	Description	Order no.
9		425.0	169.9	9 full-size AdvancedMC slots, 2 MCH slots, 2 PM slots (9 HP)	<b>23005-419</b>

### Dimensions

Slots	9 AdvancedMC single full-size slots, 2 redundant MicroTCA carrier hub (MCH) slots, 2 redundant power module (PM) slots 9 HP
IPMB	Radial IPMI from both MCH slots to all AdvancedMC slots; bused, redundant IPMB to the cooling unit (CU) and power module (PM) slots
Clock connections	CLK1: radial from MCH1 to all AdvancedMC slots CLK2: radial from each AdvancedMC slot to both MCH slots, incl. serial termination CLK3: radial from MCH2 to all AdvancedMC slots
Common options	AdvancedMC port 0 in star form to MCH1; AdvancedMC port 1 in star form to MCH2; AdvancedMC ports 2, 3 direct connection between the AMC slots
Data ports	Fat pipe ports 4 ... 7: radial connection from MCH1 to all AMC slots Extended fat pipe ports 8 ... 11: radial connections from MCH2 to all AdvancedMC slots

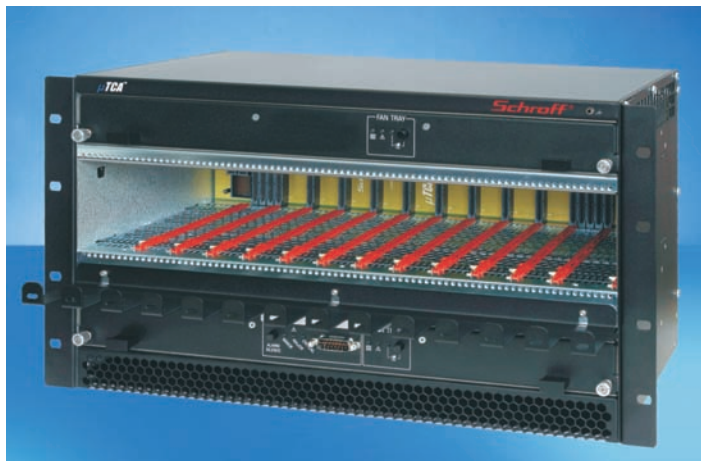
### Note

- User manual: Please enter order number under [www.schroff.biz/oneclick/](http://www.schroff.biz/oneclick/)

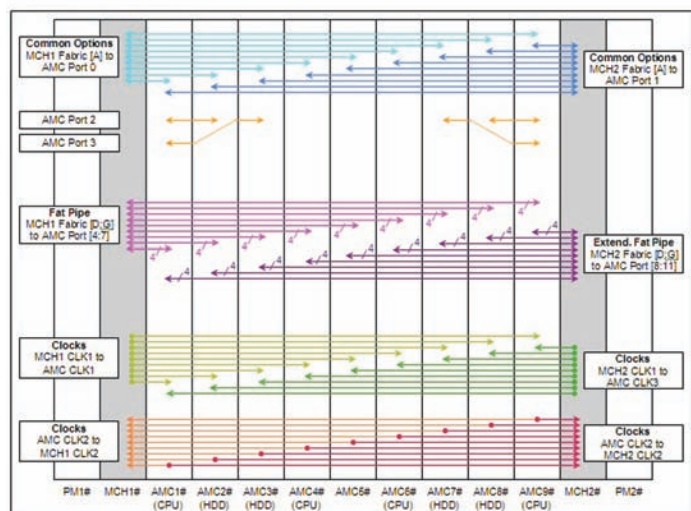


For further information [www.schroff.biz/oneclick](http://www.schroff.biz/oneclick)  
oneClick code = Order no.

## 6 U systems, for 9 single full-size AdvancedMC modules



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Backplane topology



ServicePLUS see page 82

- in accordance with PICMG MicroTCA.0 R1.0 Specification
- 19" subrack system, 6 U, 197 mm deep, black, fully assembled and wired; cable channel; assembly space for
  - 9 single full-size modules
  - 2 power modules (9 HP)
  - 2 MCH single full-size slots
- Backplane, dual star connection for GbE and fat pipe/extended fat pipe, direct connections for the storage interface
- Power supply, 2 possibilities
  - MicroTCA power modules (up to 9 HP width)
  - Schroff power supply module (single full-size, 6 HP)
- Active cooling
  - 2 frame-type fan plug-in units, insertable from front (push-pull cooling), each with cooling unit enhanced module management controller (CU EMMC); lower fan unit with interface and display for Telco alarms
  - Air circulation from the front upwards, to the sides and to the rear
  - Air filter (exchangeable from front)

**NEW**

### Order Information

Description	Qty/PU	Order no.
MicroTCA system for 9 single full-size AdvancedMC modules	1	<b>10849-005</b>
<b>MicroTCA power input module, single full-size</b> 6 HP, 1 piece		<b>23098-561</b>

### Note

- For description of the power supply module see page 63
- Replacement parts (FRUs) see from page 66
- User manual: Please enter order number under [www.schroff.biz/oneclick/](http://www.schroff.biz/oneclick/)

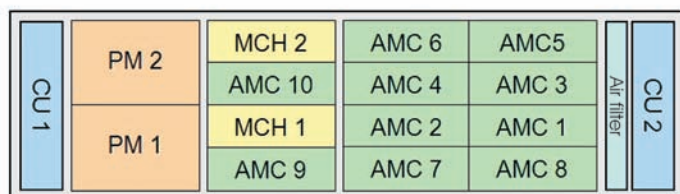


**For further information [www.schroff.biz/oneclick](http://www.schroff.biz/oneclick)**  
oneClick code = Order no.

## 3 U systems, for 2 single and 4 double (8 single) full-size AdvancedMC modules

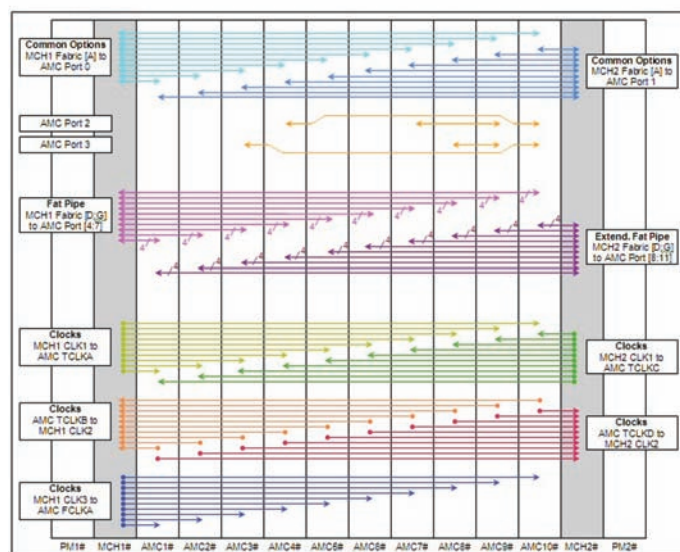


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Slot allocation



12907051

Backplane topology



ServicePLUS see page 82

- In accordance with PICMG MicroTCA.0 R1.0 Specification
- 19" subrack system, 3 U, 215 mm deep, with horizontal board mounting, black, fully assembled and wired; slots see drawing; 3 board assembly spaces
  - On the left for 2 power modules of up to 12 HP width
  - In the centre for 2 MCHs and 2 single full-size AdvancedMC modules
  - On the right for 4 double full-size-modules or, with splitting kits supplied, 8 single full-size-modules
- MicroTCA backplane
  - Dual star connection for GbE and fat pipe/extended fat pipe, direct connections for the storage interface
- Power supply, 2 possibilities
  - MicroTCA power modules (up to 12 HP width)
  - Schroff power supply module (single full-size, 6 HP)
- Active cooling
  - 2 frame-type fan plug-in units, insertable from front (push-pull cooling), each with cooling unit enhanced module management controller (CU EMMC)
  - Air circulation from right to left
  - Air filter (exchangeable from front)

**NEW**

### Order Information

Description	Qty/PU	Order no.
MicroTCA system for 2 single and 4 double full-size AdvancedMC modules	1	<b>11850-011</b>
<b>MicroTCA power input module, single full-size 6 HP, 1 piece</b>		<b>23098-561</b>

### Note

- For description of the power supply module see page 63
- Replacement parts (FRUs) see from page 66
- User manual: Please enter order number under [www.schroff.biz/oneclick/](http://www.schroff.biz/oneclick/)



**For further information [www.schroff.biz/oneclick/](http://www.schroff.biz/oneclick/)**  
oneClick code = Order no.



## Industrial cube for 4 single full-size AdvancedMC modules



12907011

- Conforms to PICMG MicroTCA.0 R1.0 Specification
- Cube system for 4 single full-size modules and 1 MCH module, single full-size; 2 designs:
  - Subrack system, width 156.76 mm, height 150 mm, depth 250 mm
  - Case system (ratiopacPRO), width 175.85 mm, height 132.45 mm, depth 315.5 mm
- Backplane, MicroTCA, star connection for GbE and fat pipe, direct connections for the storage interface
- Open frame power supply, 150 W, mains/line connection on the rear with IEC connector, switch-off logic device for individual slots on the backplane
- Active cooling
  - 2 fans
  - Air circulation for subrack upwards from below, for case system from below to rear

### Order Information

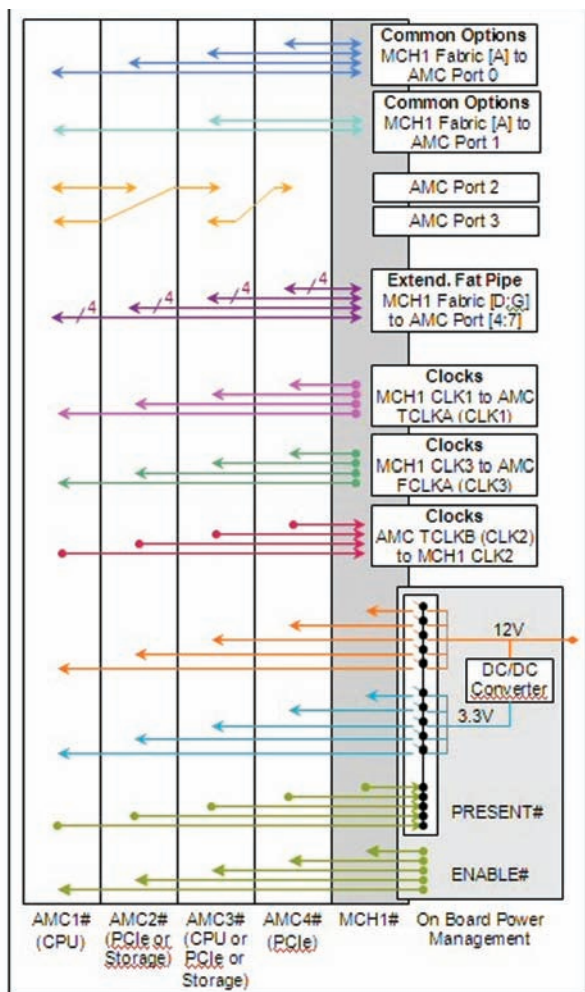
Description	Backplane Slots	Qty/PU	Order no.
MicroTCA case system for 4 single full-size AdvancedMC modules	4 full-size, 1 x MCH	1	<b>21850-045</b>
MicroTCA subrack system for 4 single full-size AdvancedMC modules	4 full-size, 1 x MCH	1	<b>21850-046</b>

### Note

- User manual: Please enter order number under [www.schroff.biz/oneclick/](http://www.schroff.biz/oneclick/)



**For further information [www.schroff.biz/oneclick](http://www.schroff.biz/oneclick)**  
oneClick code = Order no.



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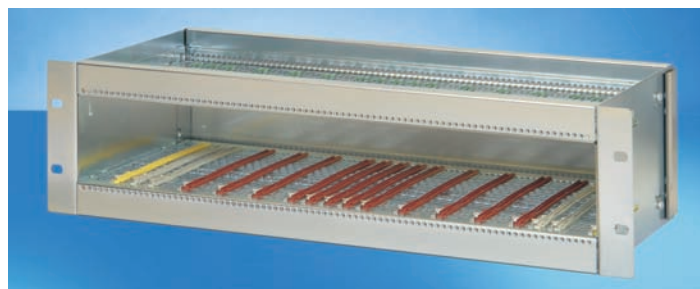
Backplane topology



ServicePLUS see page 82

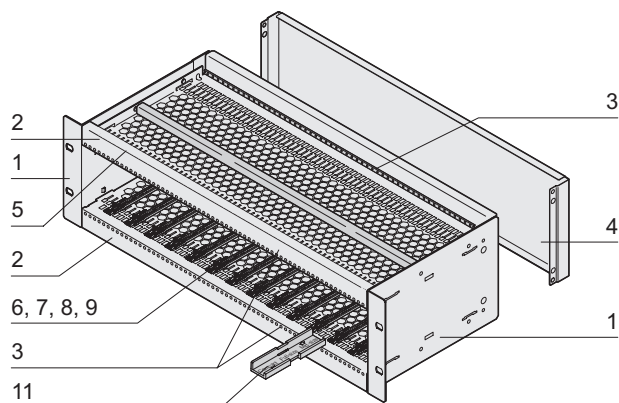
## 19" subrack, for single or double AdvancedMC modules

**NEW**

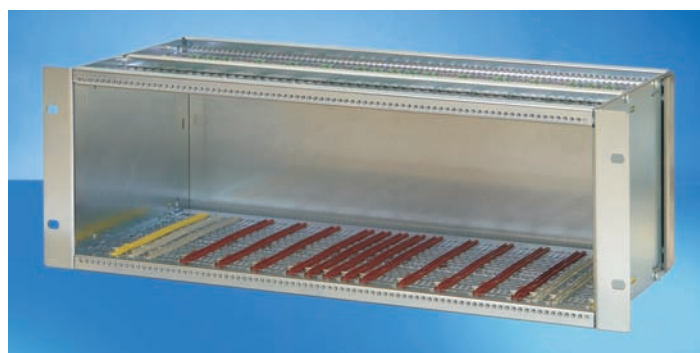


3 U

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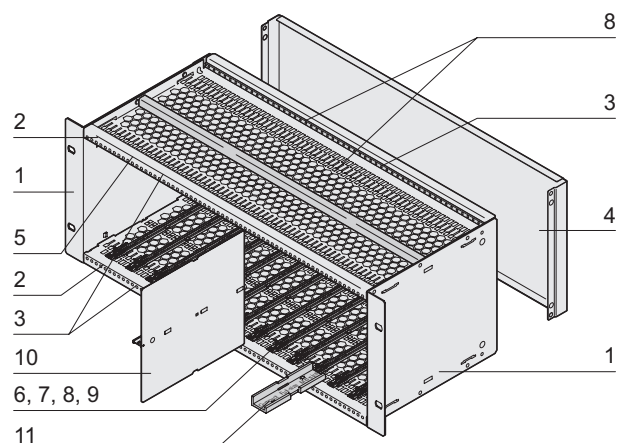


12807060



4 U

12806022



12807061

- In accordance with specifications
  - PICMG MicroTCA.0 R1.0 RC2
  - PICMG AMC.0 R2.0 RC1.2
  - PICMG AMC.0 RC1.1

- To accommodate compact, mid-size- and full-size AdvancedMC modules:
  - 3 U subrack for single modules
  - 4 U subrack for single and double modules with splitting kit

- Guide rails can be assembled in HP increments (5.08 mm) in top cover and base plate; ESD clips integrated in upper guide rails

- Top cover and base plate with reinforcement and front Al extrusion for threaded inserts

### Delivery comprises (kit)

Item	Qty	Description
1	2	Side panel with 19" bracket, St, 1.5 mm, zinc-plated, with EMC textile gasket on the right
2	2	Cover plate; for top and bottom, St, 1 mm, zinc-plated; with reinforcement and front Al extrusion to push in the threaded insert; with EMC textile gasket at top
3	4	Threaded insert M3, St, zinc-plated
4	1	EMC rear hood
5	20	Guide rail, green, top, PBT UL 94 V-0; with ESD clip, stainless steel, assembled in guide rail
6	20	Guide rail, red, bottom, PBT UL 94 V-0; for AdvancedMC function modules
7	2	Guide rail, yellow, bottom, PBT UL 94 V-0; for power supplies
8	2	Guide rail grey, bottom, PBT UL 94 V-0; for first slot position of a 6 HP wide MicroTCA carrier hub
9	2	Guide rail with back stop, grey, bottom, PBT UL 94 V-0, for third slot position of a 6 HP wide MicroTCA carrier hub
10	5	Splitting kit incl. guide rail, for assembly of single modules (only for 4 U subrack)
11	1	Mounting aid for guide rails

Items 5 ... 11 enclosed loose

### Order Information

Height U	Width HP	Depth mm	Qty/PU	Order no.
3	84	197	1	<b>20849-204</b>
4	84	197	1	<b>20849-205</b>
<b>Additional splitting kits PU 5 pieces</b>				<b>20849-115</b>
<b>MicroTCA backplane for subrack</b>			3 U, 2 + 2 + 12 slot, 1 piece	<b>23005-414</b>
<b>MicroTCA backplane for subrack</b>			4 U, 2 + 2 + 12 slot, 1 piece	<b>23005-415</b>

- Technical data of backplane see page 60
- Mounting rail for single backplane in double subrack see page 61
- Further guide rails see page 62
- CAD data: Please enter order number under [www.schroff.biz/oneclick/](http://www.schroff.biz/oneclick/)



ServicePLUS see page 82



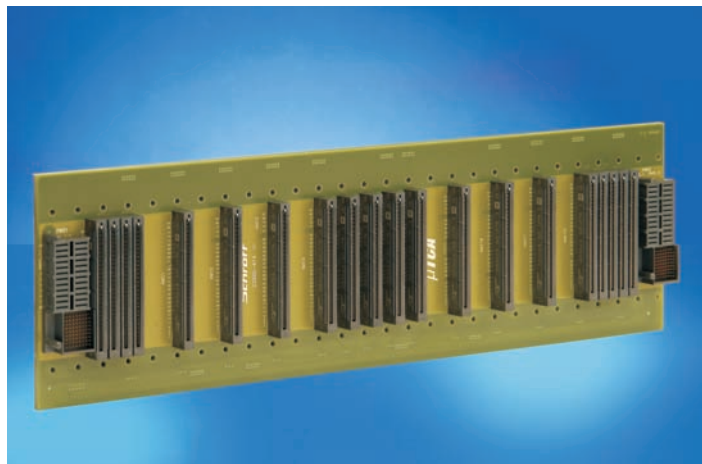
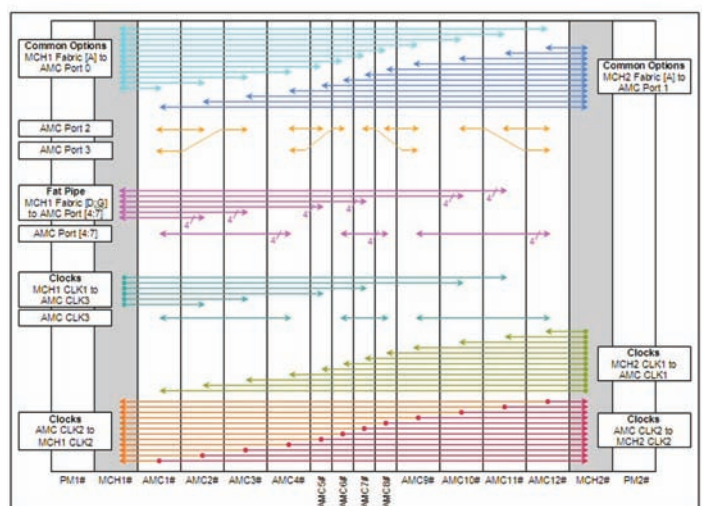


Illustration shows 3 U version

12606005



12907052

Topology



ServicePLUS see page 82

## MicroTCA backplane for sub racks

■ In accordance with PICMG MicroTCA.0 R1.0

**NEW**

### Delivery comprises

Item	Qty	Description
1	1	Backplane

### Order Information

Slots	AMC	Width mm	Height U	Description	Order no.
12		425.0	3	8 full-size slots, 4 single compact slots, 2 MCH slots, 2 PM slots	<b>23005-414</b>
12		425.0	4	8 full-size slots, 4 double compact slots, 2 MCH slots, 2 PM slots	<b>23005-415</b>

### Dimensions

Backplane 2 + 2 + 12	
Slots	12 AdvancedMC slots, 8 single full-size and 4 single compact, 2 redundant MicroTCA carrier hub (MCH) slots, 2 redundant power module (PM) slots 6 HP
IPMB	Radial IPMB connections from both MCH slots to all AdvancedMCs, bused redundant IPMB connections between both MCH and both PM slots
Clock	CLK1: radial from MCH 2 to all AdvancedMC slots
Connections	CLK2: radial from each AdvancedMC slot to both MCH slots, incl. serial termination CLK3: same topology as fat pipe connections (ports 4 ... 7)
Common options	AdvancedMC port 0 in star form to MCH1; AdvancedMC port 1 in star form to MCH2
Fat pipe	Ports 4 ... 7 radial connections from MCH1 to AdvancedMC slots 2, 3, 5, 7, 10, 11, point-to-point connections between slots 1 and 4, 6 and 8, 9 and 12

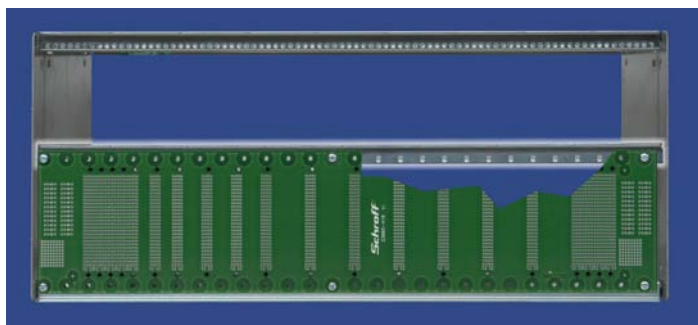
### Note

■ User manual: Please enter order number under  
[www.schroff.biz/oneclick/](http://www.schroff.biz/oneclick/)



**For further information [www.schroff.biz/oneclick](http://www.schroff.biz/oneclick)**  
oneClick code = Order no.

## Mounting rail for single backplane in double subrack



12807009

- Is required when single backplanes are assembled in double subracks
- Mounting rail with M3 thread in 3 U increments
- Assembly by simply pushing into designated slots in side panel

**NEW**

### Delivery comprises (Kit)

Item	Qty	Description
1	5	Mounting rail, St, 1.5 mm, zinc-plated, M3 thread in 3 HP increments

### Order Information

Description	Order no.
Mounting rail for single backplane in double subrack	<b>20849-206</b>

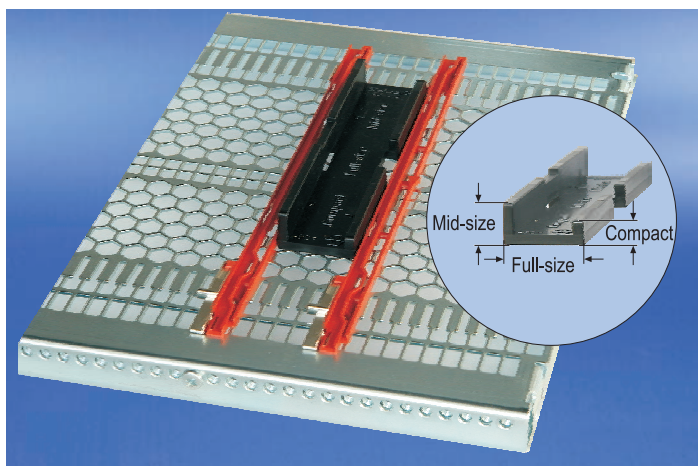
### Note

- CAD data: Please enter order number under [www.schroff.biz/oneclick/](http://www.schroff.biz/oneclick/)



**For further information [www.schroff.biz/oneclick](http://www.schroff.biz/oneclick)**  
oneClick code = Order no.

## Mounting aid for guide rails



12807018

- Mounting aid usable for all AdvancedMC module sizes
  - Compact
  - Mid-size
  - Full-size

### Delivery comprises

Item	Qty	Description
1	1	Assembly aid, plastic, black

### Order Information

Description	Order no.
Mounting aid for guide rails	<b>20849-124</b>

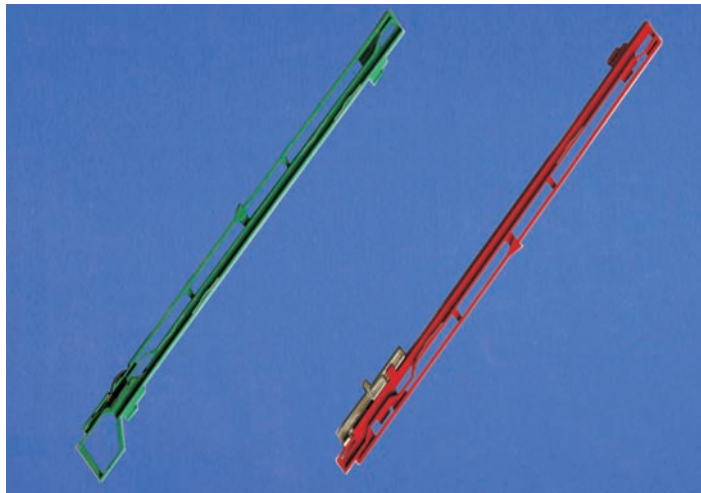
### Note

- CAD data: Please enter order number under [www.schroff.biz/oneclick/](http://www.schroff.biz/oneclick/)



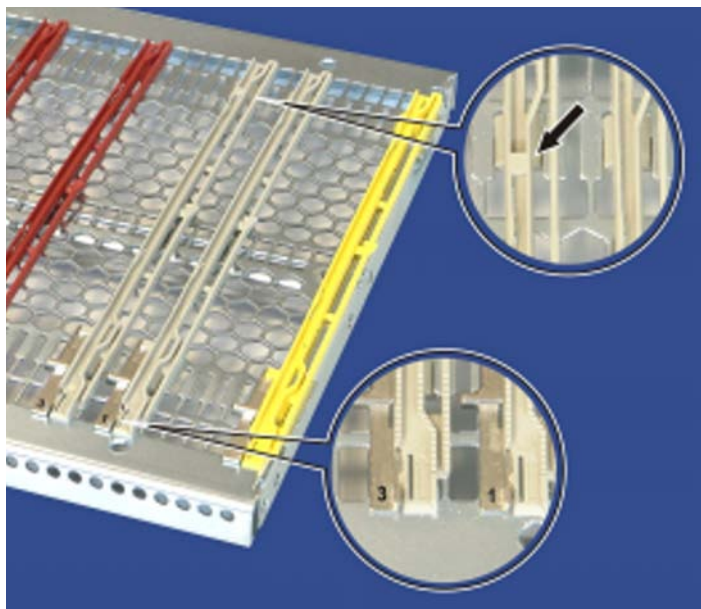
**For further information [www.schroff.biz/oneclick](http://www.schroff.biz/oneclick)**  
oneClick code = Order no.

## MicroTCA guide rails



Upper guide rails (green), bottom guide rails (red)

12806010



Bottom guide rails, grey, for guide rails of 6 HP wide MicroTCA carrier hubs

12807011

- Assembly in 1 U increments on cover or base plate (minimum distance between two guide rails is 3 HP)
- Green guide rail, top, with ESD clip, for all modules
- Red guide rail, bottom, for AdvancedMC function modules
- Yellow guide rail, bottom, for power supplies
- Grey guide rail, bottom, for MicroTCA carrier hubs (MCHs)
  - First guide rail of a 6 HP MCH module (identification on guide rail: **1**)
  - Third guide rail of a 6 HP MCH module with back stop, so that MCHs are not inserted incorrectly (identification on guide rail: **3**)

## Order Information

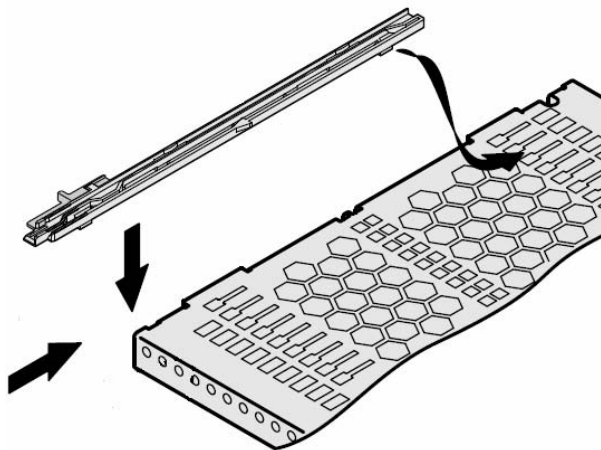
Description	Qty/PU	Order no.
Upper guide rail, green, with ESD clip	10	<b>20849-200</b>
Upper guide rail, green, with ESD clip	100	<b>20849-201</b>
Bottom guide rail, red, for AdvancedMC function modules	10	<b>20849-194</b>
Bottom guide rail, red, for AdvancedMC function modules	100	<b>20849-195</b>
Bottom guide rail, yellow, for power supplies	10	<b>20849-196</b>
Bottom guide rail, yellow, for power supplies	100	<b>20849-197</b>
Bottom guide rail, grey, for left guide rail of 6 HP wide MicroTCA carrier hubs (identification 3)	10	<b>20849-202</b>
Bottom guide rail, grey, for right hand guide rail of 6 HP wide MicroTCA carrier hubs (identification 1)	10	<b>20849-198</b>
Bottom guide rail, grey, for right hand guide rail of 6 HP wide MicroTCA carrier hubs (identification 1)	100	<b>20849-199</b>

## Note

- CAD data: Please enter order number under [www.schroff.biz/oneclick/](http://www.schroff.biz/oneclick/)



For further information [www.schroff.biz/oneclick](http://www.schroff.biz/oneclick)  
oneClick code = Order no.



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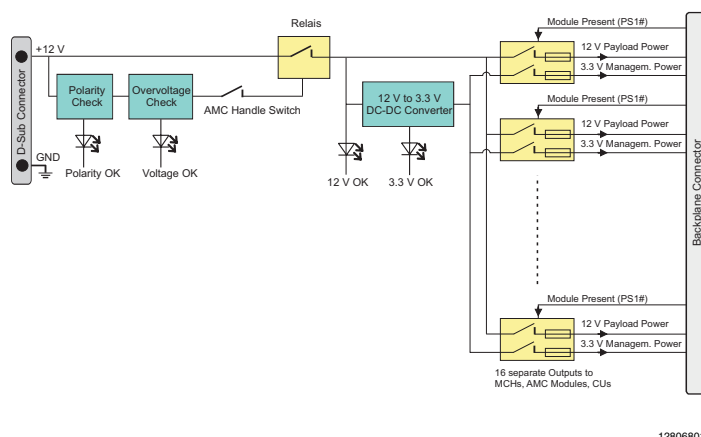
## MicroTCA power input module, single full-size



12807001

- Input of +12 V<sub>DC</sub> supply voltage from external source via D-Sub connector (front panel) to 16 x 12 V<sub>DC</sub> outputs of MicroTCA backplane
- Generation of +3.3 V<sub>DC</sub> management voltage, 5 A max. and distribution to 16 outputs
- Is inserted into the power module slot position instead of a MicroTCA power module (single full-size), connector and form factor compatible
- Hot-swap voltage cut-off of the individual outputs via "present" signal of AdvancedMC boards
- Protection against overvoltage and polarity reversal of input voltage

**NEW**



12806801

### Order Information

Description	Order no.
MicroTCA power input module, single full-size	<b>23098-561</b>
<b>Connection cable</b> Power supply, 12 V <sub>DC</sub> output to power input module, length 260 mm, 1 piece	<b>23204-176</b>
<b>Connection cable</b> Power supply 12 V <sub>DC</sub> output to power input module, length 550 mm, 1 piece	<b>23204-182</b>
<b>Connection cable</b> from power supply module (-12 V <sub>DC</sub> ) to ring cable eye M5, length 2 m, 1 pce	<b>23204-802</b>

### Note

- Both connecting cables are specifically for use in developing systems
- User manual: Please enter order number under [www.schroff.biz/oneclick/](http://www.schroff.biz/oneclick/)



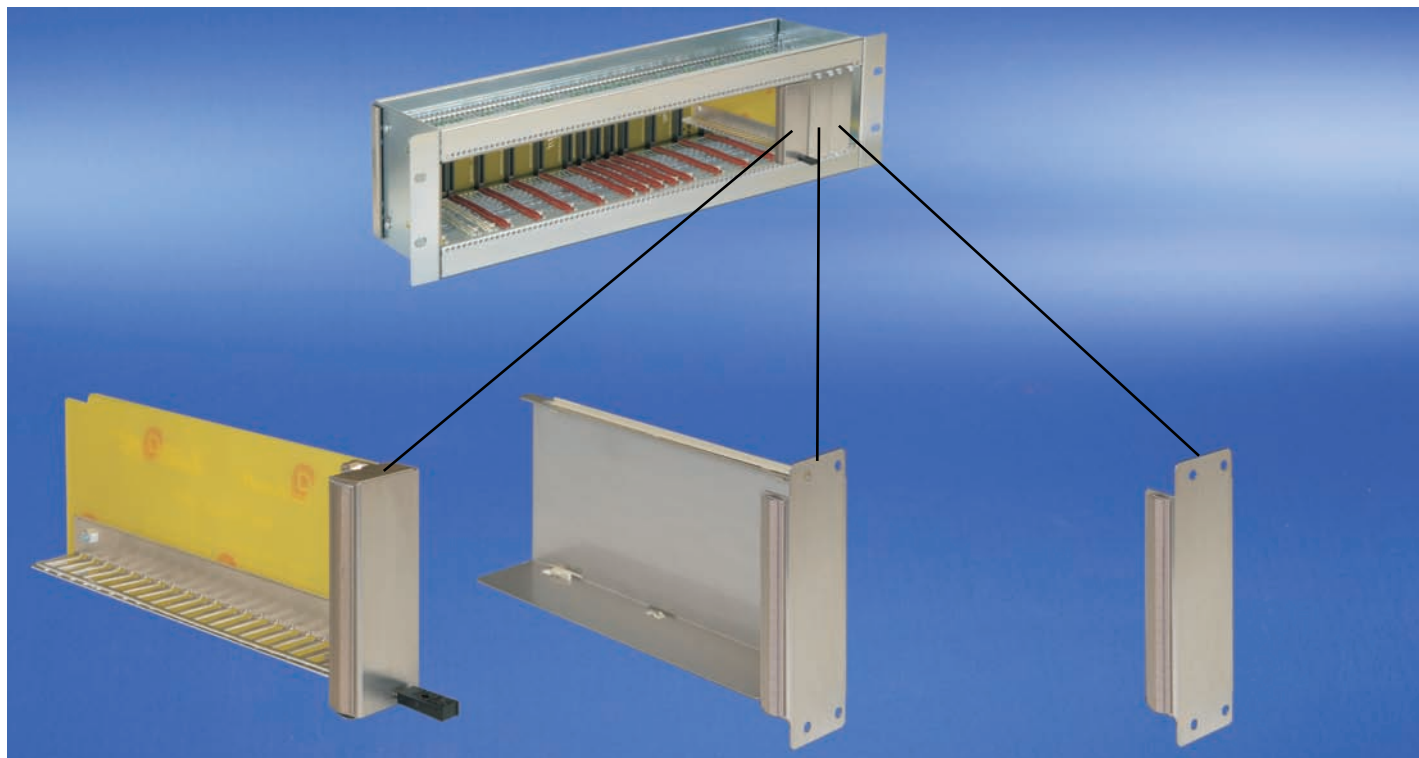
ServicePLUS see page 82



**For further information** [www.schroff.biz/oneclick](http://www.schroff.biz/oneclick)  
oneClick code = Order no.

## MicroTCA filler modules

MicroTCA subracks and systems must always be shielded in accordance with the standard. Therefore, all slots, even if unused, must be covered. Schroff offers three possibilities to cover the front EMC-compliantly.



12907008

### AdvancedMC filler panel for adjustable air throughput

- Insertion/extraction mechanism conforms to AdvancedMC Specification; inserted into guide rails
- Optional air-circulation baffle allows adjustment of air throughput from 60 ... 80 %
- Same design as AdvancedMC modules
- Description see page 72

### MicroTCA filler panel with fixed air baffle

- Can be screwed on; inserted into guide rails
- With air baffle
- Description see page 65

### Front panel

- Can be screwed on
- Without air baffle
- Description see page 65

## MicroTCA filler modules with air baffle



Single full-size

12807013



ServicePLUS see page 82

- Must be pushed into guide rails; can be screwed on
- With air baffle

### Delivery comprises (assembled)

Item	Qty	Description
1	1	Front panel with side panel and air baffle, stainless steel, 0.6 mm
2	1	Lateral EMC profile gasketing, core: foam, sleeve: textile cladding with CuNi coating
3	2	Guide rail, PBT, UL 94 V-0, grey
4	1	Assembly kit

### Order Information

Description	Order no.
MicroTCA filler module single compact	<b>20849-187</b>
MicroTCA filler module single mid-size	<b>20849-186</b>
MicroTCA filler module single full-size	<b>20849-185</b>
MicroTCA filler module double compact	<b>20849-184</b>
MicroTCA filler module double full-size	<b>20849-183</b>
MicroTCA filler module double full-size	<b>20849-182</b>

### Note

- Not suitable with splitting kit
- CAD data: Please enter order number under [www.schroff.biz/oneclick/](http://www.schroff.biz/oneclick/)

## MicroTCA front panel



Single mid-size

12807014



ServicePLUS see page 82

- Must be screwed on

### Delivery comprises (assembled)

Item	Qty	Description
1	1	Front panel, stainless steel, 0.6 mm
2	1	Lateral EMC profile gasketing, core: foam, sleeve: textile cladding with CuNi coating
3	1	Assembly kit

### Order Information

Description	Qty/PU	Order no.
MicroTCA filler module single, 2 HP	5	<b>20849-213</b>
MicroTCA filler module single, 3 HP	5	<b>20849-215</b>
MicroTCA filler module single, 4 HP	5	<b>20849-217</b>
MicroTCA filler module single, 6 HP	5	<b>20849-219</b>
MicroTCA filler module double, 2 HP	5	<b>20849-214</b>
MicroTCA filler module double, 3 HP	5	<b>20849-216</b>
MicroTCA filler module double, 4 HP	5	<b>20849-218</b>
MicroTCA filler module double, 6 HP	5	<b>20849-220</b>

### Note

- Not suitable with splitting kit
- CAD data: Please enter order number under [www.schroff.biz/oneclick/](http://www.schroff.biz/oneclick/)



## Field replaceable units (FRUs)

Field replaceable units (FRUs) designate system components that can be exchanged on-site, thus reducing the downtime of systems to a minimum.

Schroff offers various FRU components for MicroTCA systems:

- Air-cooling units
- Air filter

## Fan units for 6 and 8 U development systems



12907012

- Plug-in fan unit with 3 axial fans (170 m<sup>3</sup>/h each), 12 V<sub>DC</sub>, temperature controllable with NTC
- Air circulation upwards from the front

### Order Information

Description	Description	Qty/PU	Order no.
Air-cooling units	for development systems (11850-005, 11850-007)	1	<b>21850-035</b>

### Note

- User manual: Please enter order number under [www.schroff.biz/oneclick/](http://www.schroff.biz/oneclick/)



**For further information [www.schroff.biz/oneclick](http://www.schroff.biz/oneclick)**  
oneClick code = Order no.

## Frame-type fan plug-in units for 3 U systems, without Telco alarm panel



12907013

- Fan tray with 1 axial fan (225 m<sup>3</sup>/h), 12 V<sub>DC</sub>
- With cooling unit enhanced module management controller (CU EMMC)

### Order Information

Description	Description	Qty/PU	Order no.
Air-cooling units	for 3 U MicroTCA system (11850-003)	1	<b>21850-038</b>

### Note

- User manual: Please enter order number under [www.schroff.biz/oneclick/](http://www.schroff.biz/oneclick/)



**For further information [www.schroff.biz/oneclick](http://www.schroff.biz/oneclick)**  
oneClick code = Order no.

## Frame-type fan plug-in units for 6 U systems, without Telco alarm panel



12907006

- Fan tray with 2 axial fans (each 460 m<sup>3</sup>/h), 12 V<sub>DC</sub>
- With cooling unit enhanced module management controller (CU EMMC)

### Order Information

Description	Description	Qty/PU	Order no.
Air-cooling units	for 6 U MicroTCA system (10849-005)	1	<b>21850-036</b>

### Note

- User manual: Please enter order number under [www.schroff.biz/oneclick/](http://www.schroff.biz/oneclick/)

## Frame-type fan plug-in units for 6 U system with Telco alarm panel



12907007

- Fan tray with 2 axial fans (each 460 m<sup>3</sup>/h), 12 V<sub>DC</sub>
- With cooling unit enhanced module management controller (CU EMMC)
- With Telco alarm interface, includes 3 LEDs, a Telco alarm connector (DB15) and a Telco alarm silence push-button

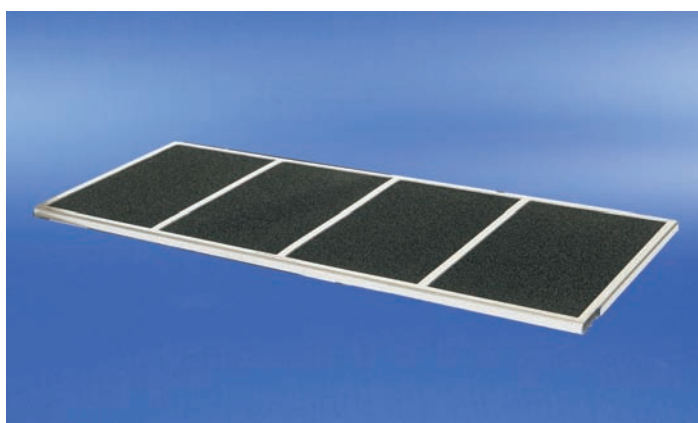
### Order Information

Description	Description	Qty/PU	Order no.
Air-cooling units	for 6 U MicroTCA system (10849-005)	1	<b>21850-037</b>

### Note

- User manual: Please enter order number under [www.schroff.biz/oneclick/](http://www.schroff.biz/oneclick/)

## Air filter



12907005

- Material: polyurethane UL 94 HF1
- 45 ppi, 80 % dust reduction under NEBS GR-78 core standard

### Order Information

Description	Description	Qty/PU	Order no.
Air filter	for 3 U MicroTCA system (11850-003)	1	<b>21850-034</b>
Air filter	for development systems and 6 U MicroTCA systems (10849-005, 11850-005, 11850-007)	1	<b>21850-033</b>

### Note

- CAD data: Please enter order number under [www.schroff.biz/oneclick/](http://www.schroff.biz/oneclick/)