



## SFR04 – SFR08 – SFR18

**4, 8 and 18 slot Synapse frame**

**A Synapse® product**

*Synapse*



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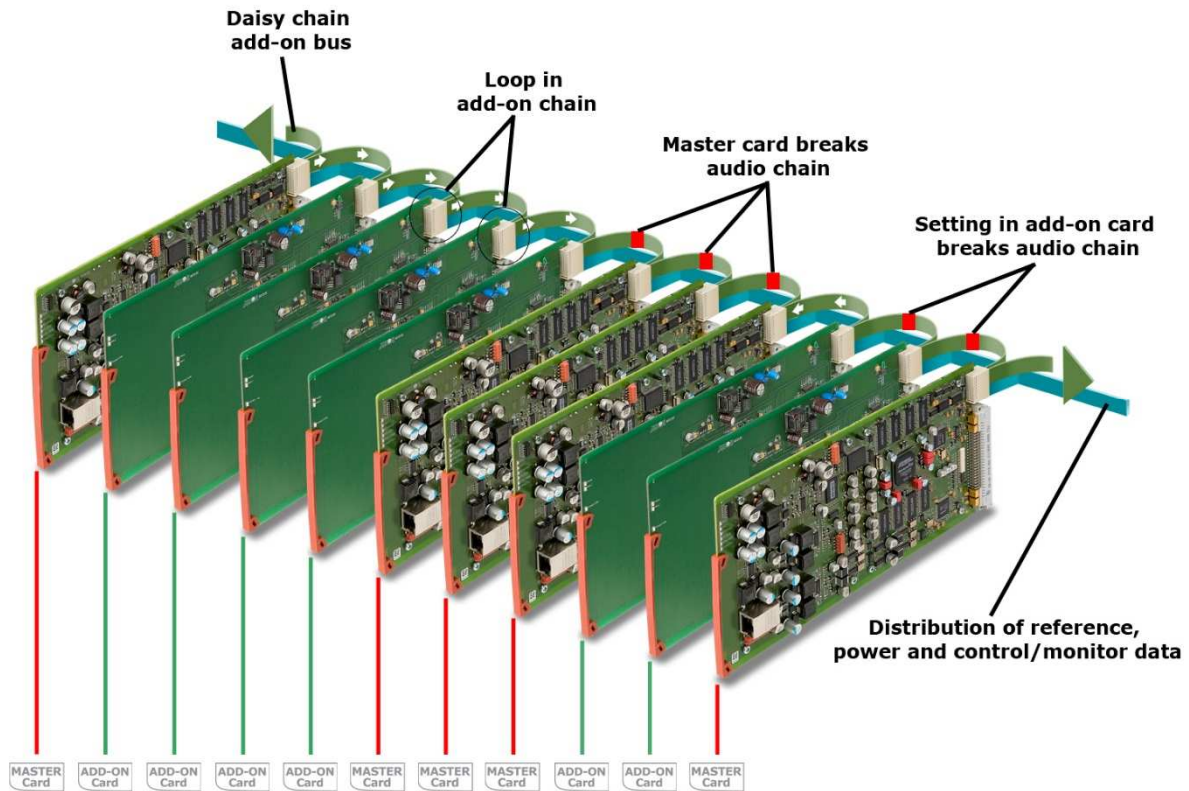
## Features

The SFR04, SFR08 and SFR18 are the generic module holders for the Synapse system. The SFR04 is a 1 RU frame with 4 card slots, the SFR08 is a 2 RU frame with 8 slots, and the SFR18 is our most dense frame with 18 slots in 4 RU. These frames incorporate several unique functions that stand out from the conventional frames found in most other card based infrastructure products.

- Robust design
- Central genlock input(s) for all cards that require a reference
  - 2 inputs on the SFR08 and SFR18, one for the SFR04
- Ethernet connection for remote control, setup and maintenance
- Easy, hot swappable fans in the SFR08 and the SFR18
- Auto input range power supply (redundant for SFR08 and SFR18)
- Full control of all card and frame parameters through the intuitive interface on the inside of the front panel and via ACP (Axon Control Protocol) for remote monitoring and control software (like Cortex and Cerebrum)
- Internal Synapse ADD-ON daisy chain bus for audio, GPI and multiview applications
- Separate rack controller slot which doesn't take up a card slot
- Top fan status for SFR18

These frames, together with the rack controllers and power supplies, form the base of the Synapse system. All frames contain the unique ADD-ON daisy chain bus. It enables you to embed audio and even video from one card to the other from within the frame (instead of external physical wires). The bus is a central (passive) interface between the power supply, the front panel control and the cards. Beside the ADD-ON bus there is also an internal bus which distribute reference, power and control/monitoring data to all cards.

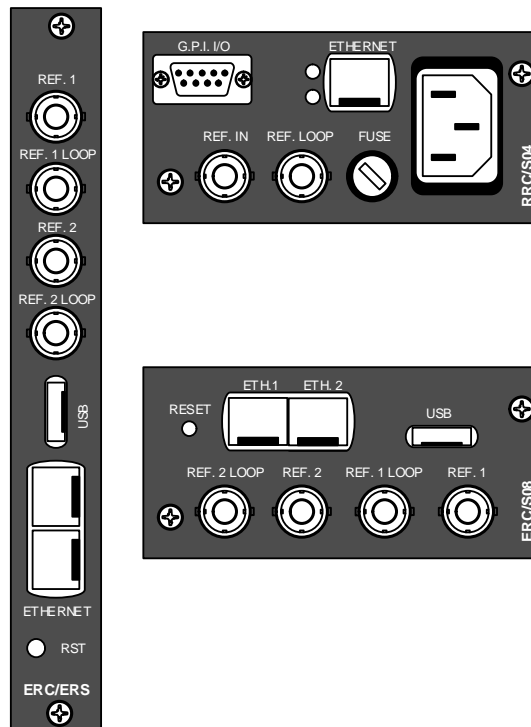
To visualize this, the following graphic is made which displays the functionality of the internal Synapse.



## Rack controllers

Frames must have one of the following Rack Controller Cards installed to work properly (they are included when ordering a frame):

- ERC118 (enhanced rack controller for SFR18)
- ERC108 (enhanced rack controller for SFR08)
- RRC04 (normal rack controller for SFR04)
- ERS118 (enhanced rack controller with SNMP functionality for SFR18)
- ERS108 (enhanced rack controller with SNMP functionality for SFR08)
- RRS04 (rack controller with SNMP functionality for SFR04)



## Ordering information

- **SFR04**: 19"-1RU housing with 4 slots, including rack controller (RRC04) and 1 power supply unit
- **SFR04S**: 19"-1RU housing with 4 slots, including rack controller (RRS04) and 1 power supply unit, SNMP compatible
- **SMP45**: power supply unit for SFR04 (service part)
- **SFR08**: 19"-2RU housing with 8 slots, including rack controller (ERC108) and 1 power supply unit
- **SFR08S**: 19"-2RU housing with 8 slots, including rack controller (ERS108) and 1 power supply unit, SNMP compatible
- **SFR08R**: 19"-2RU housing with 8 slots, including rack controller (ERC108) and 2 power supply units
- **SFR08RS**: 19"-2RU housing with 8 slots, including rack controller (ERS108) and 2 power supply unit, SNMP compatible
- **SMP75**: Extra power supply unit for SFR08
- **SFR18**: 19"-4RU housing with 18 slots, including rack controller (ERC18) and 1 power supply unit
- **SFR18S**: 19"-4RU housing with 18 slots, including rack controller (ERS18) and 1 power supply unit, SNMP compatible
- **SFR18R**: 19"-4RU housing with 18 slots, including rack controller (ERC18) and 2 power supply unit
- **SFR18RS**: 19"-4RU housing with 18 slots, including rack controller (ERC18) and 2 power supply unit
- **SMP175**: Extra power supply unit for SFR18

## Specifications

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### Dimensions

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<b>height</b>	SFR18: 176 mm (6.93") (4RU) SFR08: 87 mm (3.43") (2RU) SFR04: 44 mm (1.73") (1RU)
<b>Width</b>	SFR18: 483 mm (19") SFR08: 483 mm (19") SFR04: 483 mm (19")
<b>Depth (including front lid)</b>	SFR18: 516 mm (20.31") SFR08: 537 mm (21.14") SFR04: 532 mm (20.94")
<b>Depth (excluding front lid)</b>	SFR18: 493 mm (19.41") SFR08: 492 mm (19.37") SFR04: 494 mm (19.45")

### Power

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<b>SFR04</b>	<p>Input:</p> <p>Wide input range: 90 – 264 VAC at 47-63 Hz Inrush current: <math>\leq 17A</math> @ 230 VAC Hold up time: <math>&gt; 20ms</math></p> <p>Output:</p> <p>Max. output power: 160W Output voltage: +30 Volt (SELV) Tolerance (max): <math>\pm 5\%</math> (1.5V) Ripple/Noise: 2% (20MHz) Load Range: 0 ..160 Watt</p>
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Fuse: 1x 250V/4 AT  
Max. power per slot 35W

<b>SFR08</b>	<p>Input:</p> <p>Wide input range: 85–264VAC at 47-63 Hz Inrush current: <math>\leq 25A</math> Hold up time: 20ms</p> <p>Output:</p> <p>Max. output power: 275W Derating: Above 50°C @ 100V AC in Max. output power derated: 225W Output voltage: +30V (SELV) Tolerance (max): 3% (0.9V) Ripple/Noise: 0.2V (20MHz) Load Range: 0 .. 275W Min. output during swap: 24.5V</p>
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Fuse: 250V / 6.3 AT – 1x for each PSU  
Max. power per slot 31W

<b>SFR18</b>	<p>Input:</p> <p>Wide input range: 86-264VAC at 47-63Hz Inrush current: <math>\leq 15A</math> Hold up time: 20ms</p> <p>Output:</p> <p>Max. output power: 500W Output voltage: +30V (SELV) Tolerance (max): 5% (1.5V) Ripple/Noise: 0.6V (20MHz) Load Range: 0 .. 500W</p>
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Fuse: 250V / 10 AT – 1x for each PSU  
Max. power per slot 26W

## FRAMES

### Weight

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<b>SFR04</b>	8.5 kg (18.7 lbs)
<b>SFR08</b>	11.5 kg (25.3 lbs)
<b>SFR18</b>	15.5 kg (24.2 lbs)

### Fan noise

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All SPL measurements are performed at a weighted measurement up to 55 dB with filter "A". Distance to DUT is 1 meter. Frames are placed one meter from the ground in a 19" rack of 47 RU. All unused space is closed with blind panels.

<b>SFR18V2 (old model), fully loaded, front open (fans are off)</b>	1 PSU: 45,6 dB(A) 2 PSU: 46,8 dB(A)
<b>SFR18V2 (old model), fully loaded, front closed (fans are on)</b>	1 PSU: 48,0 dB(A) 2 PSU: 49,0 dB(A)
<b>SFR18G3 (new model), fully loaded, front open</b>	1 PSU: tbd 2 PSU: tbd
<b>SFR18G3 (new model), fully loaded, front closed</b>	1 PSU: tbd 2 PSU: tbd
<b>SFR08V2, fully loaded, front open</b>	1 PSU: 48,2 dB(A) 2 PSU: 47,5 dB(A) (indeed lower than 1 PSU)
<b>SFR08V2, fully loaded, front closed</b>	1 PSU: 45 dB(A) 2 PSU: 44,5 dB(A) (indeed lower than 1 PSU)

### Miscellaneous

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<b>Operating temperature</b>	0° to 40° C environmental temperature (32° to 104° F)
<b>Storage temperature</b>	-20° to 70° C environmental temperature (-4° to 158° F)
<b>Fan units</b>	SFR18: 5 in frame (hot swappable), 1 in each PSU. SFR08: 3 in frame (hot swappable). SFR04: 1 in the PSU