

sat-nms LSM product overview

The following pages show a complete overview of interconnections between RF-Distribution and RF-Switch modules.

L-Band Switch model number matrix: LSM MxN (Inputs*Outputs)

RF-Distribution:

M defined number of distribution modules
 N defined number of outputs

Mechanical 19" configurations

3 RU	6 RU	9 RU
8x8	16x16	32x32
8x16	16x32	
8x32	32x16	
16x8		
32x8		

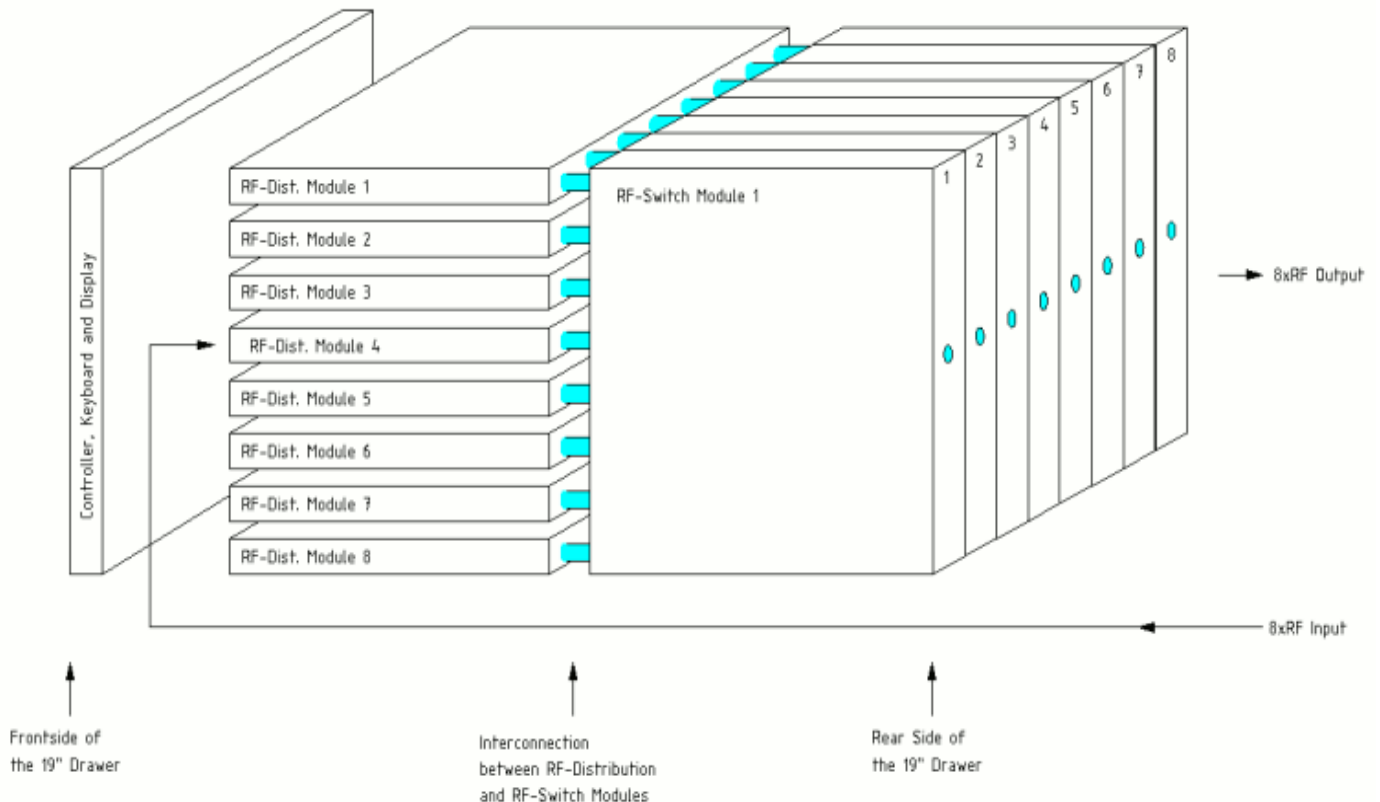
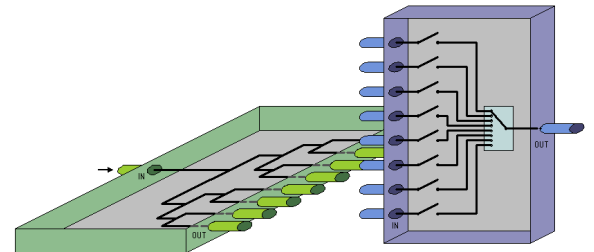
RF-Switch:

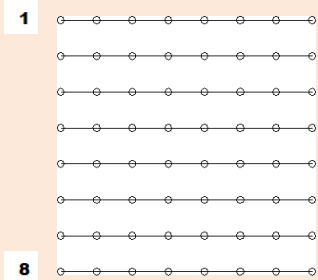
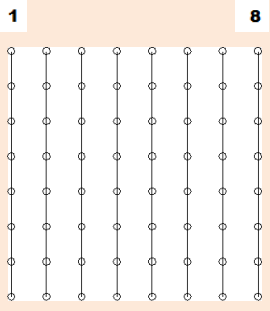
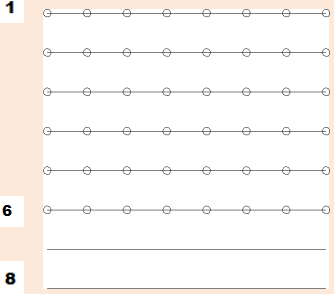
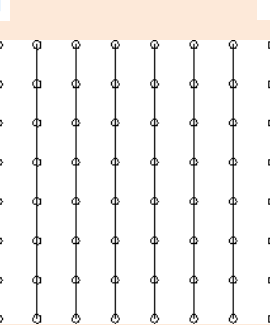
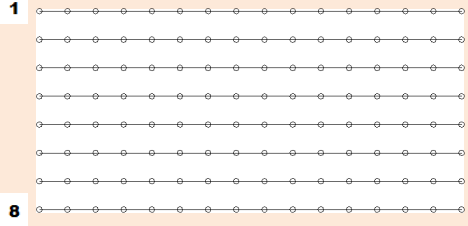
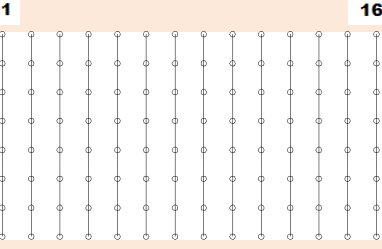
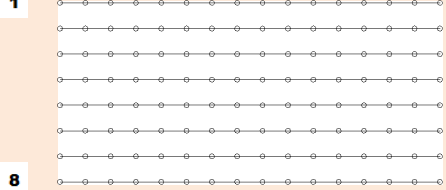
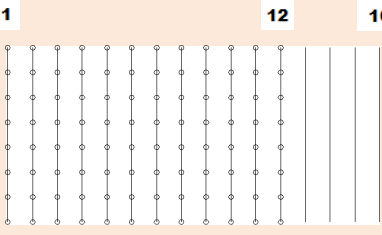
M defined number of inputs
 N defined number of switch modules

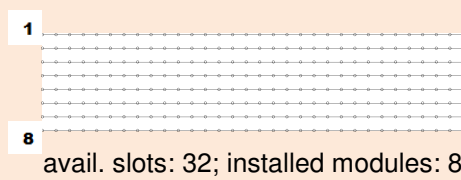
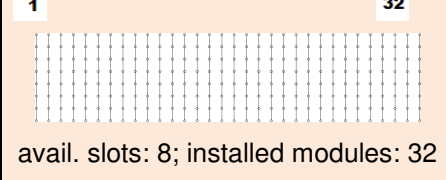
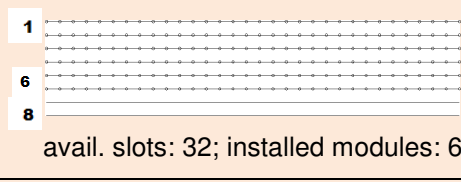
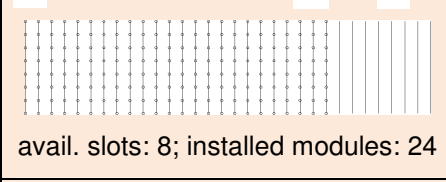
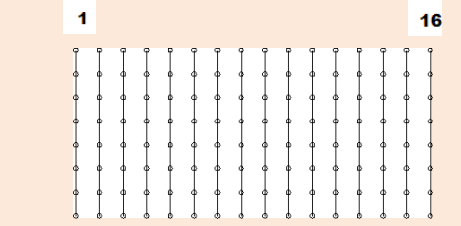
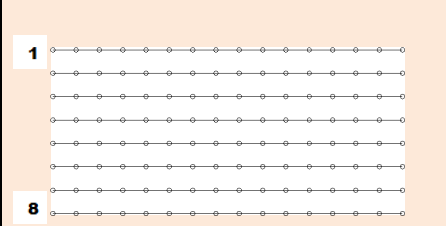
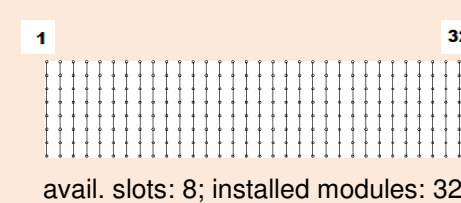
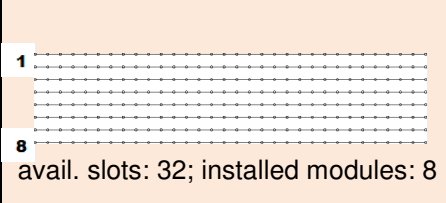
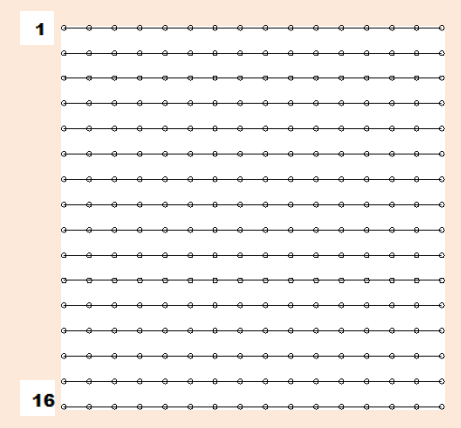
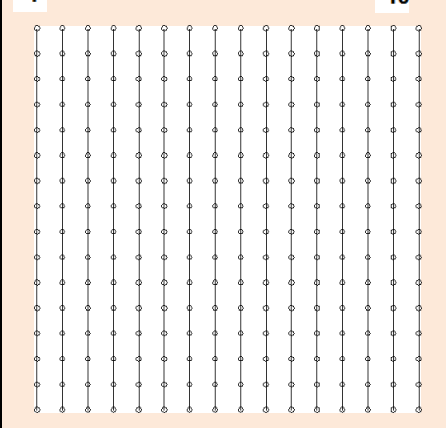
The following picture presents as an example of a 8x8 matrix:

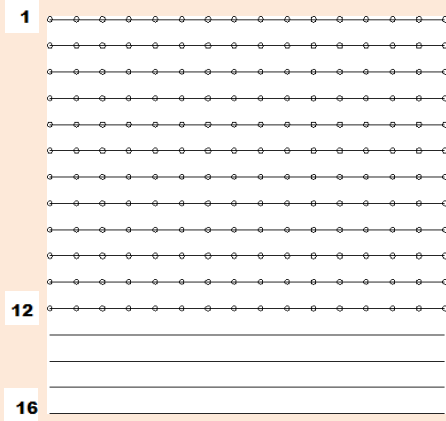
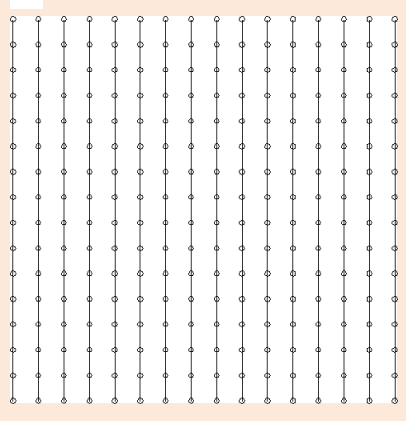
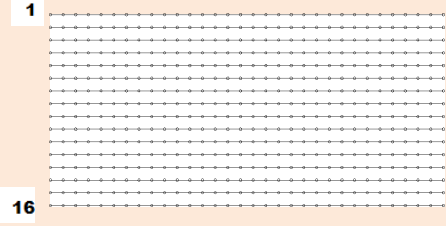
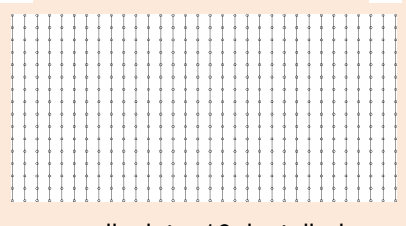
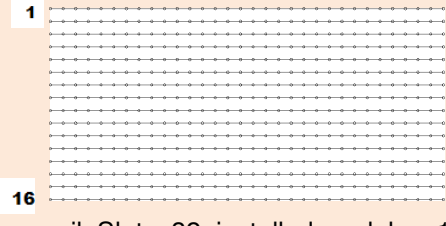
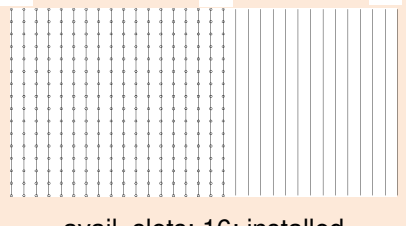
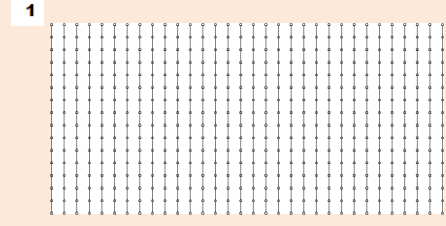

RF Distribution: M: 8 distribution modules (8x RF input)
 N: 8 outputs per module

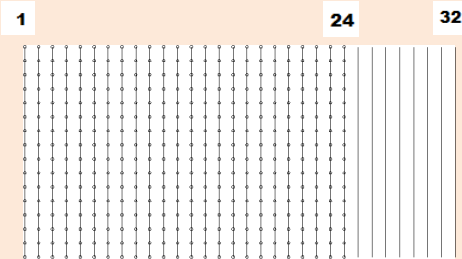
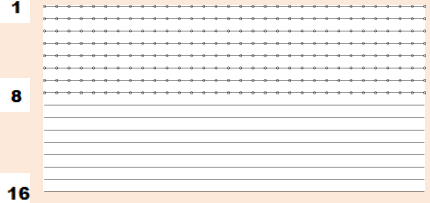
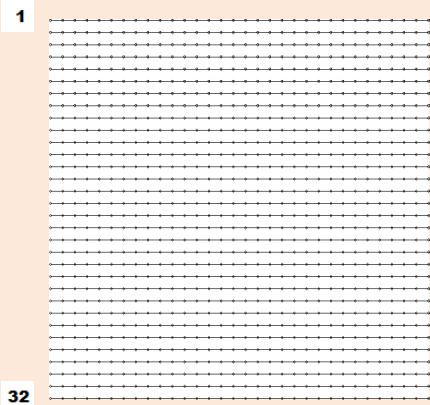
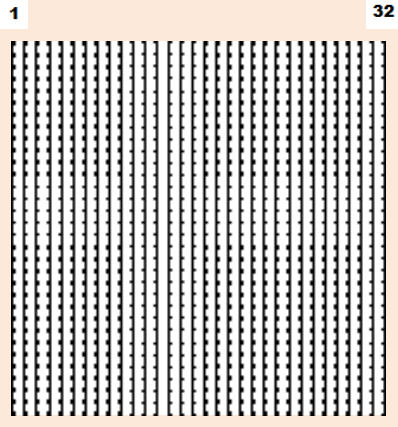
RF Switch: M: 8 inputs per module
 N: 8 switch modules (8x RF output)



19' Rack Units	Number of Inputs/Outputs NxM	RF Distribution Modules/Inputs	RF Switch Modules/Outputs
3 RU	8x8 Power Consumption: 58W	 <p>avail. slots: 8; installed modules: 8</p>	 <p>avail. slots: 8; installed modules: 8</p>
	8x8 Matrix fitted with 6x8	 <p>avail. slots: 8; installed modules: 6</p>	 <p>avail. slots: 8; installed modules: 8</p>
	8x16 Power Consumption: 66W	 <p>avail. slots: 16; installed modules: 8</p>	 <p>avail. slots: 8; installed modules: 16</p>
	8x16 Matrix fitted with 8x12	 <p>avail. slots: 12; installed modules: 8</p>	 <p>avail. slots: 8; installed modules: 12</p>

19'Rack Units	Number of Inputs/Outputs NxM	RF Distribution Modules/Inputs	RF Switch Modules/Outputs
3 RU	8x32 Power Consumption: 88W	 <p>avail. slots: 32; installed modules: 8</p>	 <p>avail. slots: 8; installed modules: 32</p>
	8x32 Matrix fitted with 6x24	 <p>avail. slots: 32; installed modules: 6</p>	 <p>avail. slots: 8; installed modules: 24</p>
	16x8 Power Consumption: 83W	 <p>avail. slots: 8; installed modules: 16</p>	 <p>avail. slots: 16; installed modules: 8</p>
	32x8 Power Consumption: 143W	 <p>avail. slots: 8; installed modules: 32</p>	 <p>avail. slots: 32; installed modules: 8</p>
6 RU	16x16 Power Consumption: 95W	 <p>avail. slots: 16; installed modules: 16</p>	 <p>avail. slots: 16; installed modules: 16</p>

19' Rack Units	Number of Inputs/Outputs NxM	RF Distribution Modules/Inputs	RF Switch Modules/Outputs
6 RU	16x16 Matrix fitted with 12x16	 <p>avail. slots: 16; installed modules: 12</p>	 <p>avail. slots: 16; installed modules: 16</p>
	16x32 Power Consumption: 118W	 <p>avail. Slots: 32; installed modules: 16</p>	 <p>avail. slots: 16; installed modules: 32</p>
	16x32 Matrix fitted with 16x18	 <p>avail. Slots: 32; installed modules: 16</p>	 <p>avail. slots: 16; installed modules: 18</p>
	32x16 Power Consumption: 156W	 <p>avail. slots: 16; installed modules 32</p>	 <p>avail. slots: 32; installed modules: 16</p>

19' Rack Units	Number of Inputs/Outputs NxM	RF Distribution Modules/Inputs	RF Switch Modules/Outputs
6 RU	32x16 Matrix fitted with 24x8	 <p>avail. slots: 16; installed modules: 24</p>	 <p>avail. slots: 32; installed modules: 8</p>
9 RU	32x32 Power Consumption: 179W	 <p>avail. slots: 32; installed modules: 32</p>	 <p>avail. slots: 32; installed modules: 32</p>

RF-Connectors:

In the standard configuration all RF-connectors are SMA 50Ohm female connectors. If you need 75Ohm connectors the IMCLL-5 Impedance Converter Low Loss is what you need.



Matrices bigger 32x32:

Matrix systems which are bigger than 32x32 will be done by a combination of n x 32x32 complete matrices.

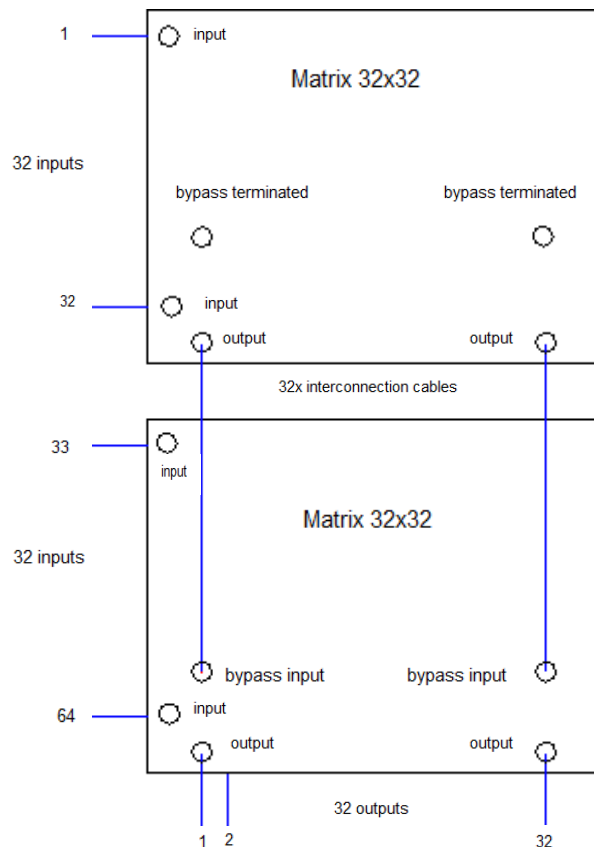
possible combinations		
32x64	32x96	32x128
64x32	64x96	64x128
64x64	128x32	
96x32	128x64	
96x64		

combinations logic:

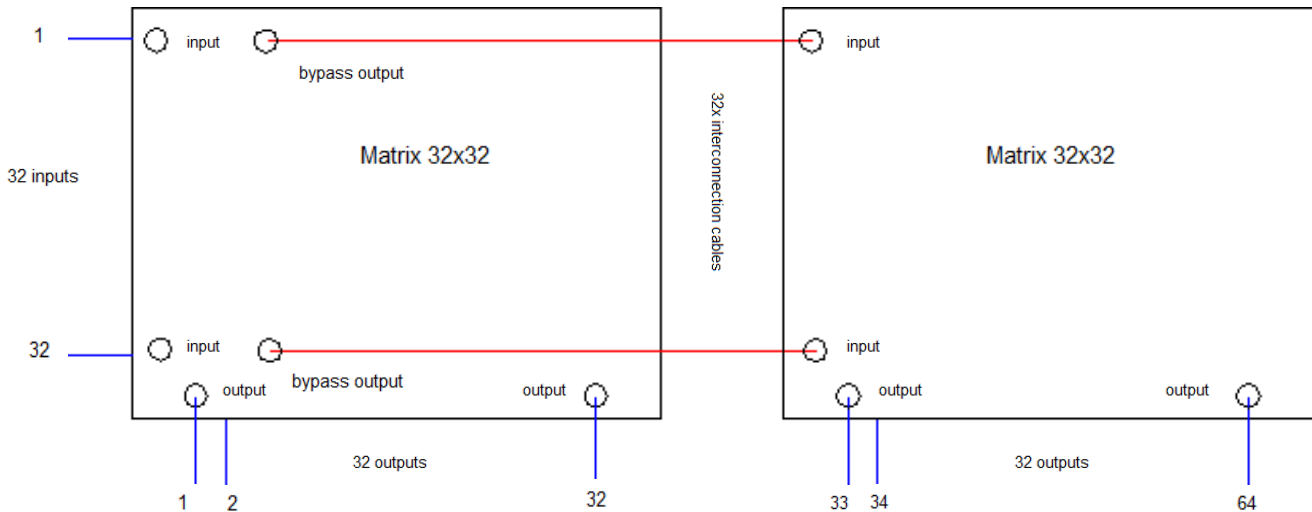
- double input = 2 unit 64 x 32 consist of: 2 x (32 x 32) matrix
- double output = 2 unit 32 x 64 consist of: 2 x (32 x 32) matrix
- double input x double output = 4 unit 64 x 64 consist of: 4 x (32 x 32) matrix

The Bypass connector on the switch module is reserved for further extensions (e.g. a 64x64 Matrix). With software for example **sat-nms** M&C it is possible to switch the signal that is supplied to this.

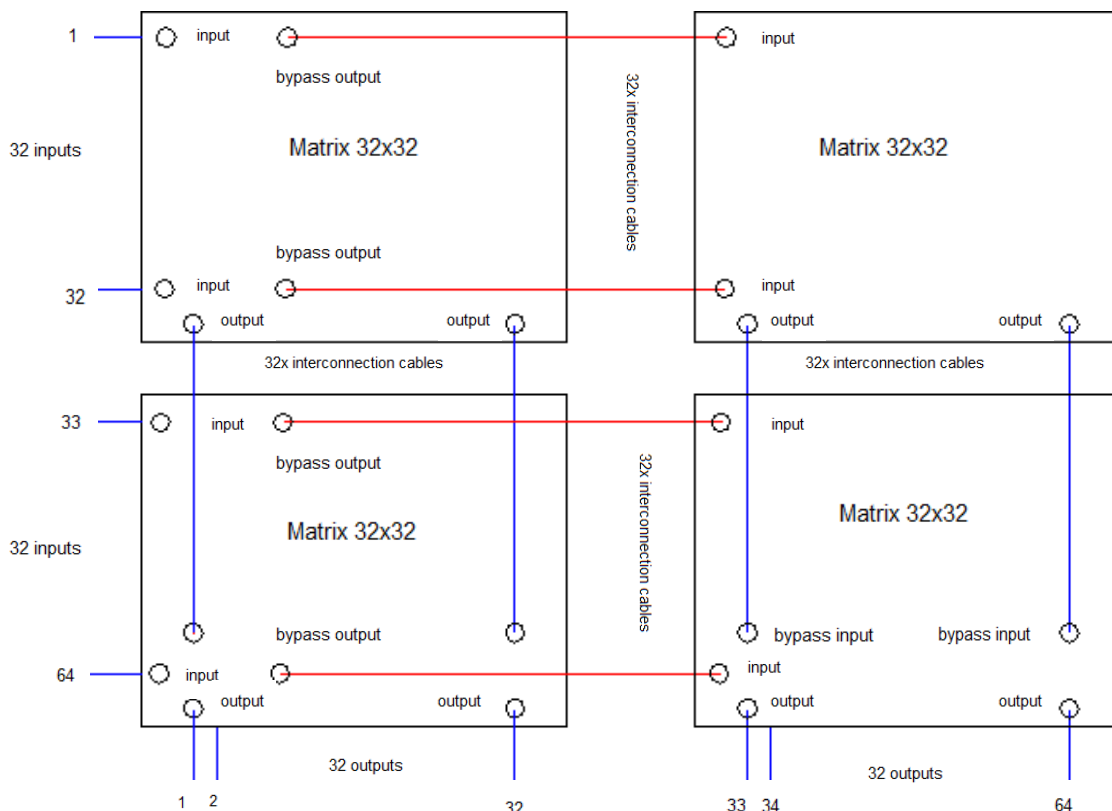
19'Rack Units	Number of Inputs/Outputs NxM	RF Distribution Modules/Input	RF Switch Modules/Outputs
2x 9 RU	64x32	avail. slots: 2x32; installed modules: 2x32; inputs: 64	avail. slots: 2x32; installed modules: 2x32; outputs: 32



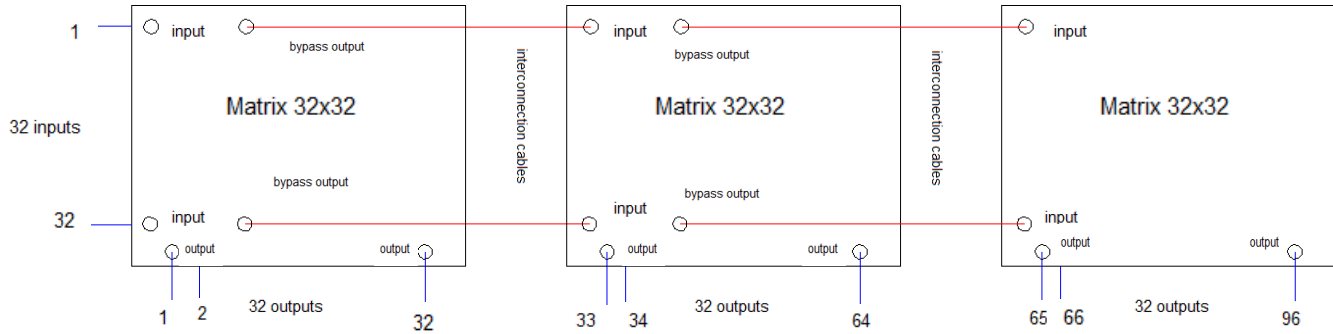
19'Rack Units	Number of Inputs/Outputs NxM	RF Distribution Modules/Inputs	RF Switch Modules/Outputs
2x 9 RU	32x64	avail. slots: 2x32; installed modules 2x32; inputs: 32	avail. slots: 2x32; installed modules: 2x32; outputs: 64



19'Rack Units	Number of Inputs/Outputs NxM	RF Distribution Modules/Inputs	RF Switch Modules/Outputs
4x 9 RU	64x64	avail. slots: 4x32; installed modules: 4x32; inputs: 64	avail. slots: 4x32; installed modules: 4x32; outputs: 64



19'Rack Units	Number of Inputs/Outputs NxM	RF Distribution Modules/Inputs	RF Switch Modules/Outputs
3x 9 RU	32x96	avail. slots: 3x32; installed modules: 3x32; inputs: 32	avail. slots: 3x32; installed modules: 3x32; outputs: 96



19'Rack Units	Number of Inputs/Outputs	RF Distribution Modules	RF Switch Modules
16x 9 RU	128x128	QTY 128; DIST 128	QTY 128; SW 128

- Matrix consists of 16 times 32 x 32 matrices
- Plus a set of 8 32:1 switch boards

In order to not overload the block diagram on the next page we have drawn a simplified interconnection scheme which shows only the cable number 1 and 32 of each switch matrix box. In the lower center of the block diagram at the output ports of the switch matrix you find the 8 output switches which combine the signals to the 128 output ports. In case of a 64x64 switch matrix this additional output switches are not necessary as they are already integrated in each 32x32 switch matrix itself. The configuration of a 64x64 switch matrix is marked in the upper left corner of the same block diagram.

Note:

Up to four 32x32 matrices can be installed in one rack. In this case you need 4 racks for a 128x128 matrix.

