

VMOD400

COFDM



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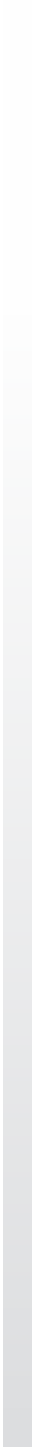
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Specifications are subject to change without notice. 03/13



1 INTRODUCTION

THE VMOD400 RANGE

Single » REF. VMOD400 SINGLE LAN, VMOD400 SINGLE CI LAN

4 SAT inputs with 4 active loop-through outputs

4 transponders over 4 tuner matrix

1 DVB-T multiplex: up to 8 services

1 CAM slot (VMOD 400 SINGLE CI LAN)

Twin » REF. VMOD400 TWIN LAN, VMOD 400 TWIN CI LAN

4 SAT inputs with 4 active loop-through outputs

4 transponders over 4 tuner matrix

2 DVB-T multiplexes: up to 16 services

1 CAM slot (VMOD400 TWIN CI LAN)

Quad » REF. VMOD400 QUAD LAN, VMOD400 QUAD CI LAN

4 SAT inputs with 4 active loop-through outputs

4 transponders over 4 tuner matrix

4 DVB-T multiplexes: up to 32 services

1 CAM slot (VMOD400 QUAD CI LAN)

A/V » REF. VMOD 400 A/V TWIN LAN

4 A/V stereo inputs

2 DVB-T multiplexes: up to 4 services

PACKAGE CONTENTS

Be sure all items listed below are included:

- 1** VMOD400 module

- 1** CAT6 ethernet cable

- 4** RF bridges (except for VMOD400 A/V TWIN LAN)

- 1** F/F cable

- 2** DC bridges

- 5** DC blocked 75 Ω loads (VMOD 400 SINGLE/TWIN/
QUAD LAN and VMOD400 SINGLE/TWIN/QUAD CI LAN)

- 1** DC blocked 75 Ω load (VMOD400 A/V TWIN LAN)

- 4** A/V cables (VMOD400 A/V TWIN LAN)

SAFETY INSTRUCTIONS



Read these instructions carefully before connecting the unit

The operating voltage is indicated on the nameplate of the housing of the power supply and fan unit.




To prevent fire, short circuit or shock hazard:

- Do not expose the unit to rain or moisture.
- Install the unit in a dry location without infiltration or condensation of water.
- Do not expose it to dripping or splashing.
- Do not place objects filled with liquids, such as vases, on the apparatus.
- If any liquid should accidentally fall into the cabinet, disconnect the power plug, refer to qualified technician before it's further operation.



To avoid any risk of overheating:


- Install the unit in a well aery location and keep a minimum distance of 15 cm around the apparatus for sufficient ventilation.
- Do not place any items such as newspapers, table-cloths, curtains,... on the unit that might cover the ventilation holes.
- The unit must not be exposed to any source of heat (sun, heater,...).
- Do not place any naked flame sources, such as lighted candles, on the apparatus.
- Do not install the product in a dusty place.
- Use the apparatus only in moderate climats (not in tropical climates).
- Respect the minimum and maximum temperature specifications.


 To avoid any risk of electrical shocks:

- Connect apparatus only to socket with protective earth connection.
- The mains plug shall remain readily operable.
- Pull out power plug to make the different connections of cables.
- To avoid electrical shock, do not open the housing of adapter.



Maintenance

 Only use a dry soft cloth to clean the cabinet.

 Do not use solvent.

 For repairing and servicing refer to qualified personnel.



Dispose according your local authority's recycling processes

ACCESSORIES

Power Supply » REF. VIP400 PSU

operating voltage: 15 V

max. output current: 10 A

can power up to 5 modules

19" sub-rack » REF. VIP400 BOX

can contain up to 9 modules*
+ power supply

mounting in 19" rack or wall-mountable
(bindings delivered)

delivered with 8 blank plates mounted

* depending on the configuration

Fan Unit » REF. VENTILATEUR PRO

voltage: 230 VAC

essential for proper functioning
of the system

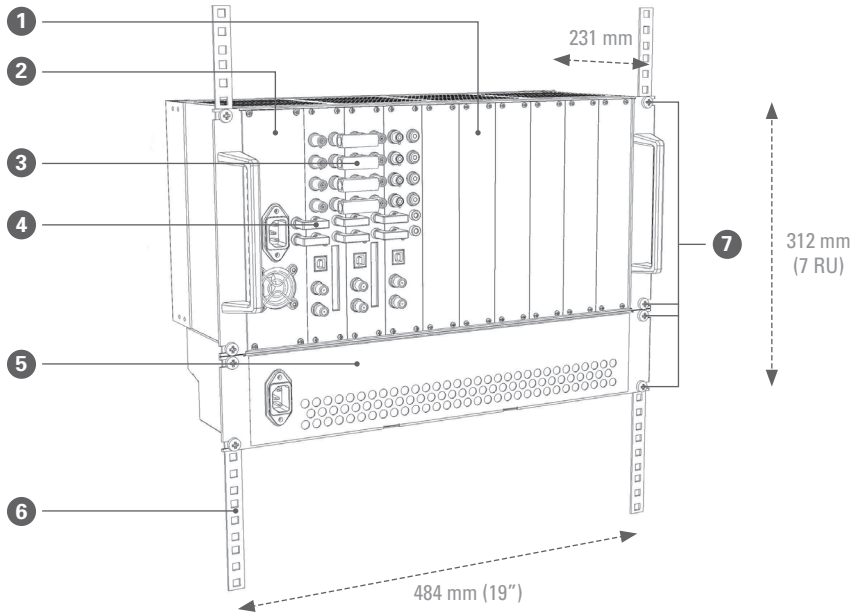
2 INSTALLATION OF THE HARDWARE

Before mounting, install all modules in the sub-rack.

Place the power supply (ref. VIP400 PSU) in the uppermost left slot of the rack (ref.VIP400 BOX).

19" RACK MOUNTING

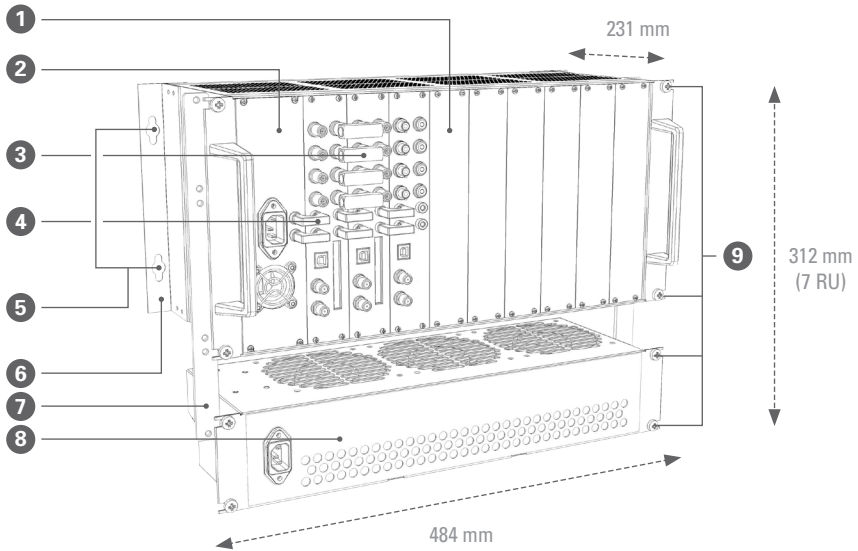
For rack mounting, attach the 19" sub-rack and the optional fan-unit in the rack as indicated by the picture.



- 1 19" sub-rack (ref. VIP400 BOX)
- 2 power supply (ref. VIP400 PSU)
- 3 RF bridge for signal loop-through
- 4 power bridge for DC power loop-through
- 5 fan unit (ref. VENTILATEUR PRO)
- 6 19" Rack
- 7 mounting screws

WALL MOUNTING

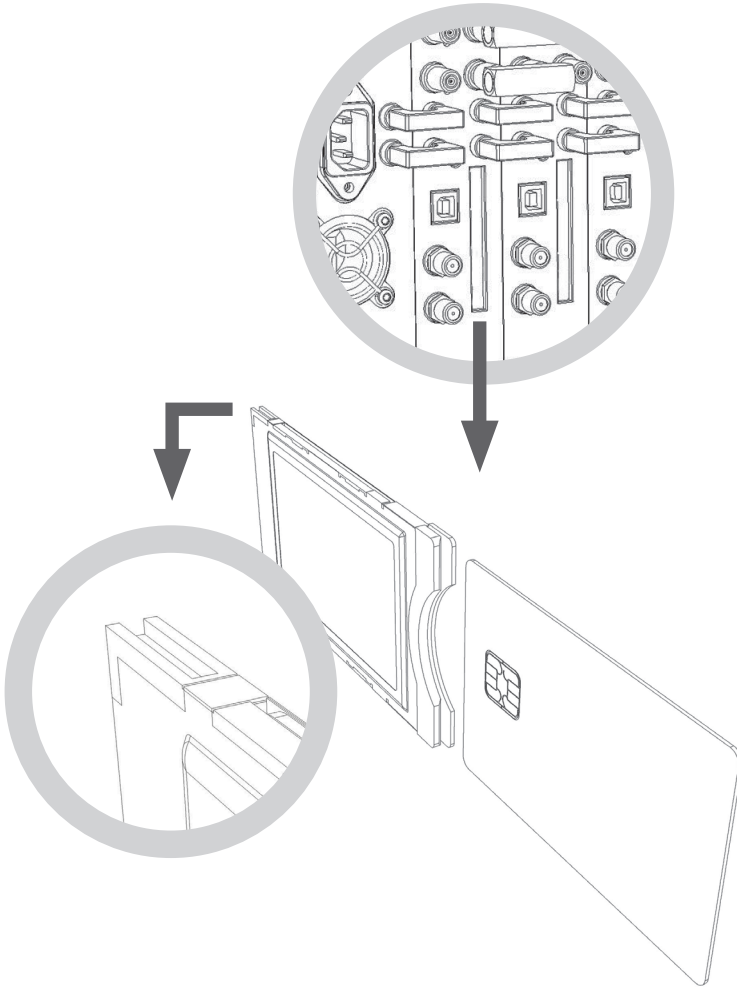
When mounting the headend to a wall, attach the fan-unit to the sub-rack with the delivered bindings. Attach the mounting brackets on the back of the sub-rack for the mural mounting.



- 1 19" sub-rack (ref. VIP400 BOX)
- 2 power supply (ref. VIP400 PSU)
- 3 RF bridge for signal loop-through
- 4 power bridge for DC power loop-through
- 5 wall mounting holes
- 6 mounting brackets
- 7 bindings for attaching fan unit to the sub-rack
- 8 fan unit (ref. VENTILATEUR PRO)
- 9 mounting screws

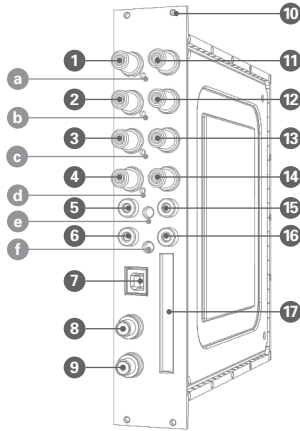
INSERTING CAM MODULE

Connect the RF and power bridges on consecutive modules to bridge the signal and power to the following modules. The CAM slot is inserted with the pit on the top as is indicated below. Insert the CAM card with the **chip pointing to the left side of the CAM module**.



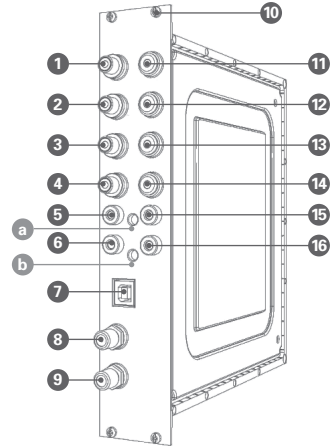
MODULE OVERVIEW

VMOD400 SINGLE/TWIN/QUAD LAN VMOD400 SINGLE/TWIN/QUAD CI LAN



- 1 SAT input 1 (DiSEqC)
- 2 SAT input 2 (DiSEqC)
- 3 SAT input 3 (DiSEqC)
- 4 SAT input 4 (DiSEqC)
- 5 +15 VDC input
- 6 GND input
- 7 RJ-45 control port
- 8 RF input
- 9 RF output
- 10 mounting screws
- 11 SAT output 1
for loop-through to next module
- 12 SAT output 2
for loop-through to next module
- 13 SAT output 3
for loop-through to next module
- 14 SAT output 4
for loop-through to next module
- 15 +15 VDC output for loop-through
- 16 GND output for loop-through
- 17 CI slot (VMOD400 SINGLE/TWIN/QUAD CI LAN)
- a tuner 1 lock LED
- b tuner 2 lock LED
- c tuner 3 lock LED
- d tuner 4 lock LED
- e power indication LED
- f alarm indication LED

VMOD400 A/V TWIN LAN



- 1 CVBS IN 1 (Video IN 1)
- 2 CVBS IN 2 (Video IN 2)
- 3 CVBS IN 3 (Video IN 3)
- 4 CVBS IN 4 (Video IN 4)
- 5 +15 VDC input
- 6 GND input
- 7 RJ-45 control port
- 8 RF input
- 9 RF output
- 10 mounting screws
- 11 stereo audio IN 1
- 12 stereo audio IN 2
- 13 stereo audio IN 3
- 14 stereo audio IN 4
- 15 +15 VDC output
for loop-through
- 16 GND output
for loop-through
- a power indication LED
- b alarm indication LED

3 WEBGUI

MINIMAL SYSTEM REQUIREMENTS

The WebGUI is supported by the following web browsers (and newer versions of these browsers):

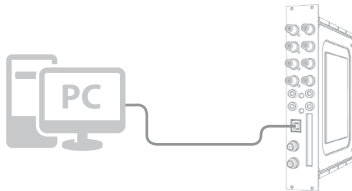
- Chrome 4
- Safari 3.1
- Firefox 3.6
- Explorer 8
- Opera 10.6

When using a different browser, we cannot guarantee a correct functioning of the interface. The webGUI will indicate this with a warning message. This message will be shown every time you browse to another menu item. Please install one of the above browsers to avoid this.

SETTING THE NAME OF THE DEVICE

When first connecting the modules, **be sure to follow this exact procedure!**

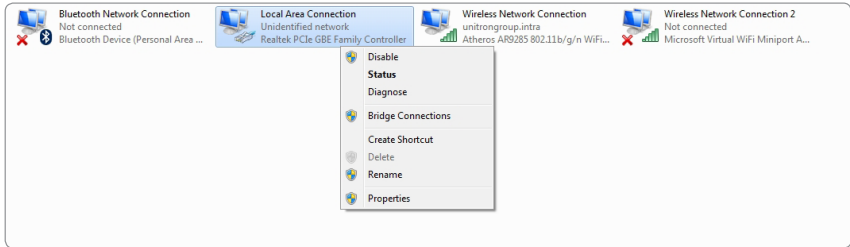
- Connect the first module in the rack with your PC, using an RJ-45 Ethernet cable (without using a switch!).



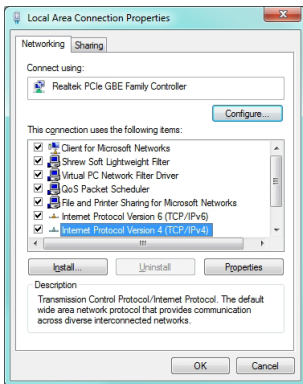
The module will obtain an IP address from your PC. For this operation to work, **it is important that the PC is NOT set with a manual IP address!**

Set the adapter to obtain an automatic IP address as explained in the following procedure (for Microsoft Windows 7®)

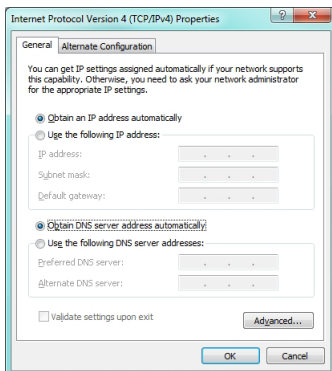
Navigate to the *Control Panel* (Start → Control Panel).
Enter the *Network and Sharing Center* and go to the *Adapter Settings*.



Right-click on the *Local Area Connection* and choose *Properties*.



Double click on *Internet Protocol Version 4 (TCP/IPv4)* to enter the IP settings of your adapter.



Make sure the *'Obtain an IP address automatically'* checkbox is selected. Click *OK* to save the settings.

- Open a browser and surf to *START*



- You will now enter the webGui. Go to the Configuration → Global menu:
- Change the name *START* to another name. Be sure to choose a logical name and **don't forget this name!** This name is the only way to connect to the module later on! It's advisable to print this name, and label the devices.
- After you press *APPLY*, the module will restart. This will take about 25 seconds. Afterwards, you can surf to the new name you just entered, to connect to the module.
- Repeat this procedure with the next modules (1 at a time).
- When all modules have a new name, you can connect all modules to the same network. The modules will now get a new IP address, but you can connect by surfing to the right name (the unique name you gave the module in the previous steps).

4 TECHNICAL SPECIFICATIONS

		VMOD400										
SAT INPUT	SINGLE LAN		SINGLE CI LAN		TWIN LAN		TWIN CI LAN		QUAD LAN		QUAD CI LAN	
	DVB-S(2)											
NB OF INPUT	4 with 4 active loop-through (0 dB loss)											
TUNER	4 tuners (4 transponders)											
FREQUENCY RANGE	950-2150 MHz											
LEVEL	-55 to -25 dBm											
BANDWIDTH	36 MHz											
MODULATION	DVB-S2: QPSK, 8PSK / DVB-S: QPSK											
DC REMOTE POWER AT RF INPUT	13V/18V/22kHz											

		VMOD400										
TV OUTPUT	SINGLE LAN		SINGLE CI LAN		TWIN LAN		TWIN CI LAN		QUAD LAN		QUAD CI LAN	
	DVB-T											
NB OF OUTPUT	1 with 1 loop-through (-1,5 dB loss)											
FREQUENCY RANGE	47-862 MHz											
MULTIPLEXES	1			2 adjacent			4 adjacent					
CHANNEL BANDWIDTH	7 MHz (VHF) / 8 MHz (UHF)											
MODULATION	QPSK, 16-QAM, 64-QAM											
OFDM MODE	2K											
SPECTRAL INVERSION	on/off											
OUTPUT LEVEL	68 to 83 dBµV adjustable											
COMMON INTERFACE C.I	no		yes		no		yes		no		yes	
CAPACITY	up to 8 programs				up to 16 programs				up to 32 programs			
CONNECTORS	RF: 10 x 'F' female Management: RJ-45 DC: 'banana sockets'											
POWER SUPPLY	15 VDC											
CONSUMPTION	1,5 A											
OPERATING TEMPERATURE	0 to +40°C											
DIMENSIONS	5 RU x 8 TE x 195 mm											

INPUT	VMOD400 A/V LAN
	A/V
NB OF INPUT	4 x A/V (CVBS)
TV OUTPUT	VMOD400 A/V LAN
	DVB-T
NB OF OUTPUT	1 with 1 loop-through (-1,5 dB loss)
FREQUENCY RANGE	47-862 MHz
MULTIPLEXES	2 adjacent
CHANNEL BANDWIDTH	7 MHz (VHF) / 8 MHz (UHF)
MODULATION	QPSK, 16-QAM, 64-QAM
OFDM MODE	2K
SPECTRAL INVERSION	on/off
OUTPUT LEVEL	68 to 83 dB μ V adjustable
CAPACITY	4 programs
CONNECTORS	video input: 4 x CINCH audio input: 4 x jack \varnothing 3,5mm Stereo RF: 2 x 'F' female management: RJ-45 DC: 4 x 'banana socket'
POWER SUPPLY	15 VDC
CONSUMPTION	0,8 A
OPERATING TEMPERATURE	0 to +40°C
DIMENSIONS	5 RU x 8 TE x 195 mm

5 FREQUENCY TABLE

TV band	Channel	Frequency MHz	Center Frequency MHz	
III	5	174-181	177,5	
	6	181-188	184,5	
	7	188-195	191,5	
	8	195-202	198,5	
	9	202-209	205,5	
	10	209-216	212,5	
	11	216-223	219,5	
	12	223-230	226,5	
	IV	21	470-478	474
		22	478-486	482
		23	486-494	490
		24	494-502	498
25		502-510	506	
26		510-518	514	
27		518-526	522	
28		526-534	530	
29		534-542	538	
30		542-550	546	
31		550-558	554	
32		558-566	562	
33		566-574	570	
34		574-582	578	
35		582-590	586	
36		590-598	594	
37		598-606	602	
V		38	606-614	610
		39	614-622	618
		40	622-630	626
	41	630-638	634	
	42	638-646	642	
	43	646-654	650	
	44	654-662	658	
	45	662-670	666	
	46	670-678	674	
	47	678-686	682	
	48	686-694	690	
	49	694-702	698	
	50	702-710	706	
	51	710-718	714	
	52	718-726	722	
	53	726-734	730	
	54	734-742	738	
	55	742-750	746	
	56	750-758	754	
	57	758-766	762	
	58	766-774	770	
	59	774-782	778	
60	782-790	786		
61	790-798	794		
62	798-806	802		
63	806-814	810		
64	814-822	818		
65	822-830	826		
66	830-838	834		
67	838-846	842		
68	846-854	850		
69	854-862	858		

6 POWER CONVERSION TABLE

$\mu\text{V } 75 \Omega$	$\text{dB}\mu\text{V}$	dBm
1	0	-109
1.5	3.5	-105.5
2	6	-103
2.5	8.0	-101
3	9.5	-99.5
3.5	11	-98
4	12	-97
4.5	13	-96
5	14	-95
6	15.5	-93.5
7	17	-92
8	18	-91
9	19	-90
10	20	-89
15	23.5	-85.5
20	26	-83
25	28	-81
30	29.5	-79.5
35	31	-78
40	32	-77
45	33	-76
50	34	-75
60	35.5	-73.5
70	37	-72
80	38	-71
90	39	-70
100	40	-69
150	43.5	-66.5
200	46	-63
250	48	-61
300	49.5	-59.5
350	51	-58
400	52	-57
450	53	-56
500	54	-55
600	55.5	-53.5
700	57	-52
800	58	-51
900	59	-50

$\text{mV } 75 \Omega$	$\text{dB}\mu\text{V}$	dBm
1	60	-49
1.5	63.5	-45.5
2	66	-43
2.5	68	-41
3	69.5	-39.5
3.5	71	-38
4	72	-37
4.5	73	-36
5	74	-35
6	75.5	-33.5
7	77	-32
8	78	-31
9	79	-30
10	80	-29
15	83.5	-25.5
20	86	-23
25	88	-21
30	89.5	-19.5
35	91	-18
40	92	-17
45	93	-16
50	94	-15
60	95.5	-13.5
70	97	-12
80	98	-11
90	99	-10
100	100	-9
150	103.5	-5.5
200	106	-3
250	108	-1
300	109.5	+0.5
350	111	+2
400	112	+3
450	113	+4
500	114	+5
600	115.5	+6.5
700	117	+8
800	118	+9
900	119	+10
1000	120	+11

$\text{V } 75 \Omega$	$\text{dB}\mu\text{V}$	dBm
1	120	+11
1.5	123.5	+14.5
2	126	+17
2.5	128	+19
3	129.5	+20.5
3.5	131	+22
4	132	+23
4.5	133	+24
5	134	+25
6	135.5	+26.5
7	137	+28
8	138	+29
9	139	+30
10	140	+31

