



# REMOTE CONTROLLED MULTIPLE RF ACTIVE SPLITTERS

Ultra Wide Band = 350-3.000 • 10 MHz Pass • 5 Year Warranty

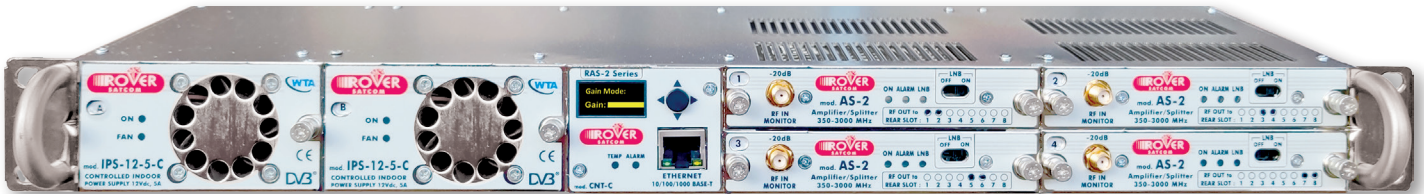
Rover RF  
ACTIVE  
SPLITTER  
Series

mod. **RAS2-X-X-F75**



Rover RF  
ACTIVE  
COMBINER  
Series

mod. **RAC2-X-X-F75**



- 5 YEARS WARRANTY • RF & OPTICAL INPUT
- MEETS OIP-3, RL and FLATNESS STRICT SPECIFICATIONS
- WITH ONLY 4 mod. PARTS OBTAIN MORE THAN 70 SYMMETRICAL & ASYMMETRICAL RF SPLITTER CONFIGURATIONS
- HOT SWAP REDUNDANCY PSU & SWAPPABLE INPUT AMPLIFIERS
- MONITORING AND CONTROL VIA LOCAL DISPLAY, WEB GUI & SNMP

**INNOVATIVE  
PERFORMANCE**

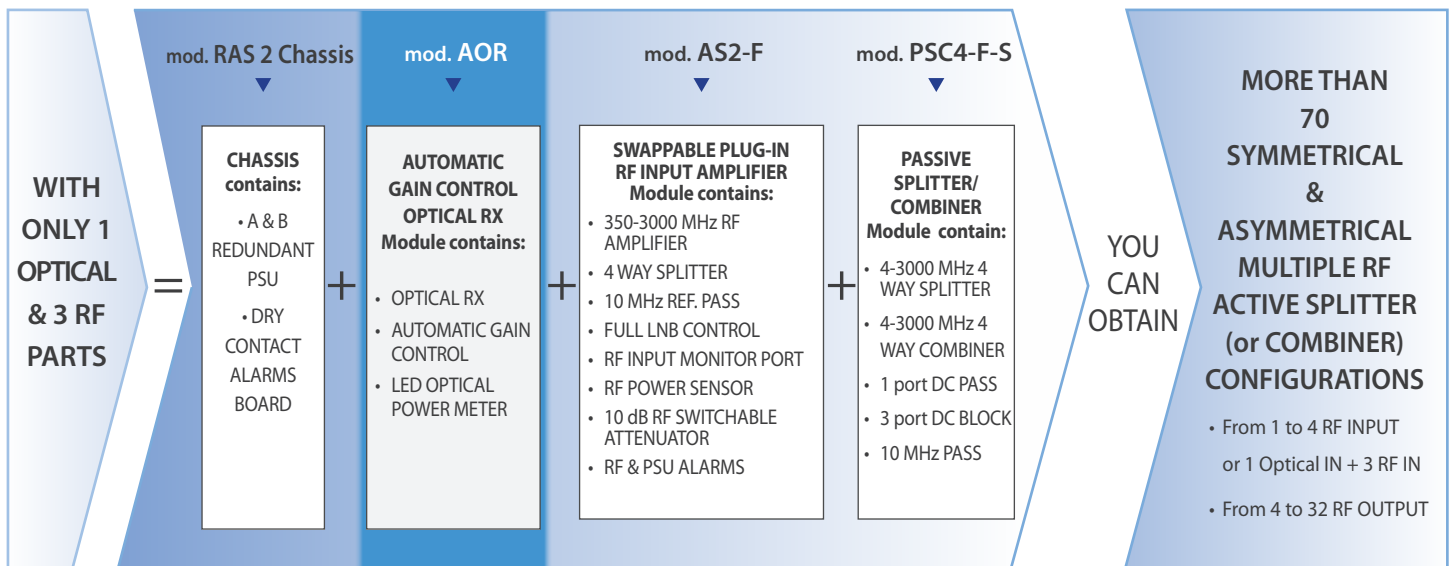
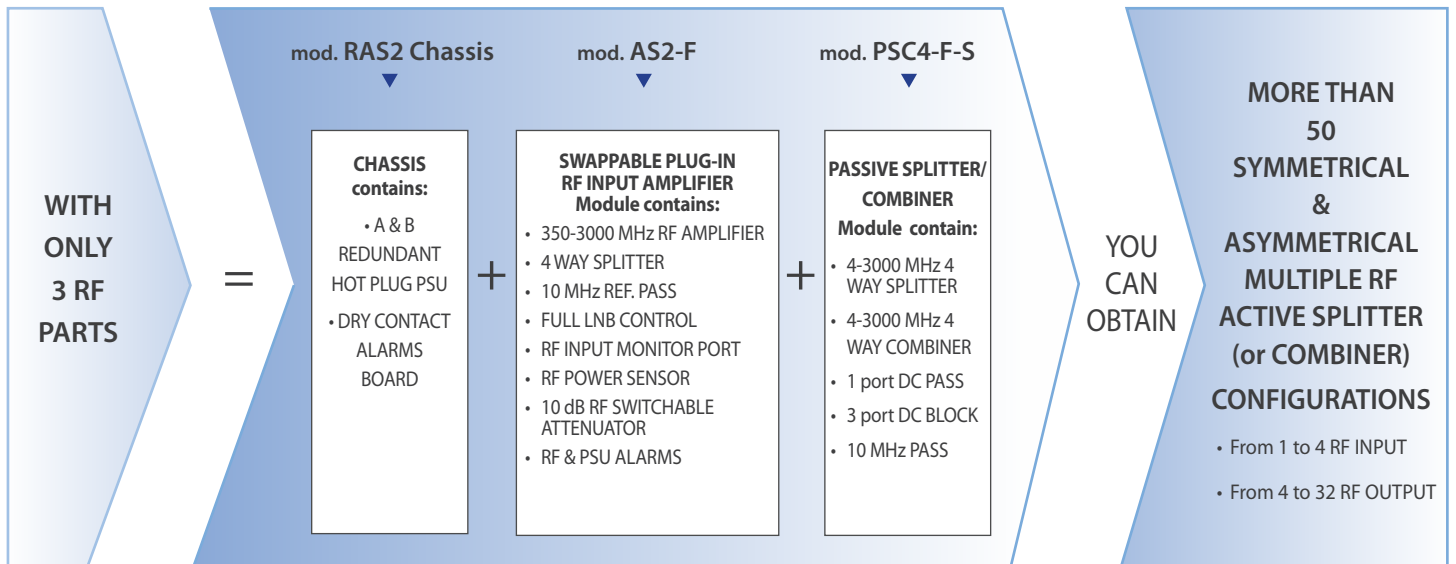
for: SYSTEM INTEGRATOR,  
TELEPORT BROADCASTER,  
CABLE NETWORK, GOVERNMENT  
& MILITARY COMMUNICATIONS



1972 > 2020 >>

48 YEARS OF INNOVATION

## SMALL STOCK = LARGE CONFIGURATION PRODUCT RANGE



### "RAS 2" BENEFIT

- Ultra WIDE BAND 350-3.000 MHz flat with 10 MHz PASS
- Hot swap redundancy PSU
- Local and remote control with alarms
- Multiple Active Splitter, all in 1 U 19" Rack
- Easy assembly and fully configurable, from 1 Input to 4 Outputs, up to 4 Inputs to 32 Outputs
- 10 MHz Reference PASS at all SLOTS
- Optical Input with AGC RX module (opt.)
- Each Plug-in RF Input Amplifier have on front panel:
  - RF Monitor Port, LNB Power Control, adjustable RF Attenuator and Slope compensation
  - LED for RF Sensor, LNBs and Power Supply Alarms
- Remote Control

### "RAS 2" MAIN FEATURES

- Full Custom expandable and rack space optimization
- Intuitive and self-explaining descriptions labels, for Connector, LEDs and Switches
- Especially designed for SATCOM SYSTEM INTEGRATOR
- Meets strict specifications like: OIP3, R.L. and Flatness
- Available optional RF connectors: F, SMA, BNC 75 & 50 ohm
- Available Optional Optical Connectors: SC-APC, LC-APC, E2000, FC-APC
- Dry contact Alarm for: RF Power Sensor, PSU and LNBs
- Fully compatible with all existing System

## "RAS2" TECHNICAL SPECIFICATIONS (COMPLETE RACK)

### RF PORT CAPACITY:

- Input Port Number: 1, 2, 3 or 4 (all Swappable Plug-In module)
- Output Port Number: 4, 8, 12, 16, 20, 24, 28, 31 or 32 (8 slots, 4 way each slot)
- Optical Input port Number: 1 (SC-APC, LC-APC, E2000, FC-APC opt.)
- 10 MHz Reference PASS (through dedicated port N. 1)

### RF SPECIFICATIONS:

- Frequency Range = 350-3.000 MHz (optimized 700-3.000 MHz)
- Connectors = F (or BNC or SMA opt.)
- Impedance = 75 Ohm (or 50 Ohm opt.)
- Max INPUT Level = 0 dBm typ. +10 max. (with 10 dB attenuator ON)
- Damage Input Level = 15 dBm
- OP1dB = +17 dBm direct (+3 dBm with 4 way splitter)
- Input R.L. = >16 dB, 14 dB min.
- Output R.L. = >16 dB, 14 dB min.
- Total Gain/Loss = 0 dB,  $\pm 1,5$  dB typ, 2 dB max
- Temperature gain variation = 1,5 dB from  $-30^{\circ}$  to  $+60^{\circ}$  C
- L Band Flatness =  $\pm 1$  dB, 1,5 dB max
- Full Band Flatness =  $\pm 1,5$  dB, 2 dB max
- Flatness in 36 Mhz interval =  $\pm 0,3$  dB, 0,5 dB max
- Isolation between adjacent out Port = > 24 dB, 20 min.
- IMD = > - 40 dB (2 Tones at -13 dBm)
- Noise Figure = 9 dB

### RF INPUT MONITOR PORT:

- Level = 20 dB down the Input Level
- Connector = SMA
- Impedance = 50  $\Omega$
- Flatness =  $\pm 2$  dB

### LNB POWER CONTROL (on each AS1 INPUT AMPLIF.):

- D.C. VOLTAGE = OFF, 13V, 18V (or 24 optional) max 600 mA for each Input
- TONE = 22 KHz ON/OFF
- LED = green = OK, red = dc short circuit Alarm
- ALARM INDICATION = Via LED and dry contact

### RF POWER SENSING:

- POWER THRESHOLD = adjust from -50 to -10 dBm
- ALARM INDICATION = Red LED, dry contact alarm and SNMP

### DRY CONTACT ALARM BOARD:

- CONNECTOR = SUB-D9 Male
- CONTACT LOAD = 65 V - 400 mA
- A & B MAINS PSU = one defective or both
- LNB = dc Short Circuit
- RF POWER SENSING = RF TOO LOW or NO RF Signal

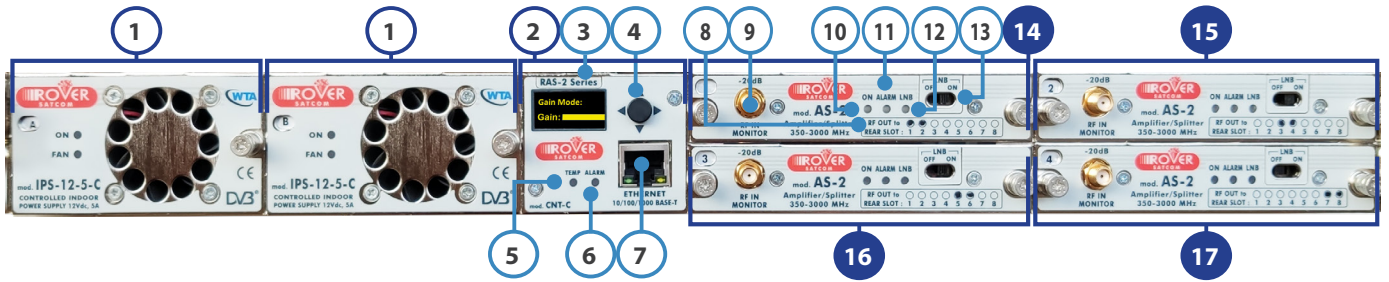
### HOT-SWAP REDUNDANT POWER SUPPLY:

- N. 2 AC MAINS PSU = 110-240 VAC (with 2 separate receptacle for 2 separate Power LINE)
- AC POWER CONSUMPTION = < 25 VA
- N. 1 EXT DC PSU = 48 V D.C. (optional)

### GENERAL SPECIFICATIONS:

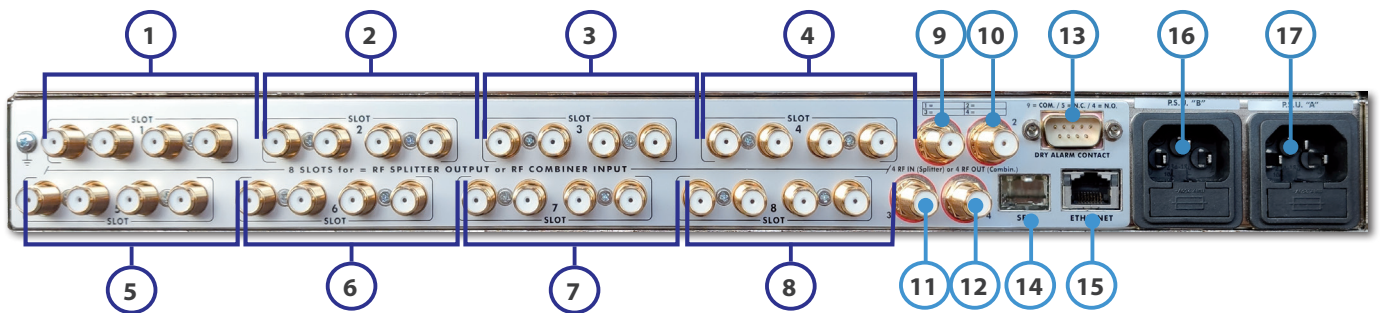
- SLIM CASE = 19" 1U Rack (43 cm deep)
- NET WEIGHT = from 3 to 5 Kg related to the IN/OUT modules
- SAFETY = EN 50 083-1 and EN 60 950.
- ENVIRONMENT:
  - Temperature range:  $-30^{\circ}$  /  $+55^{\circ}$  (max  $60^{\circ}$ )
  - Umidity 95%
- EMC = EN 50 083-2

## FRONT PANEL VIEW with 4 SWAPPABLE PLUG-IN RF INPUT AMPLIFIER MODULES



- |   |   |                                     |                                  |
|---|---|-------------------------------------|----------------------------------|
| 1. Hot swap Power supply module with ON & FAN LED | 5. Temperature LED  | 9. RF Input Monitor (SMA connector) | 13. LNB ON/OFF Switch (DC@RF IN) |
| 2. Controller Module                              | 6. Alarm LED  | 10. ON LED                          | 14. Input Amplifier N. 1         |
| 3. OLED Display                                   | 7. Ethernet connector                                     | 11. Alarm LED                       | 15. Input Amplifier N. 2         |
| 4. Joystick                                       | 8. Label Indicating OUT/IN RF slot position (from 1 to 8) | 12. LNB LED                         | 16. Input Amplifier N. 3         |
|   |   |                                     | 17. Input Amplifier N. 4         |

## REAR PANEL VIEW with 8 SLOTS for PASSIVE SPLITTER/COMBINER MODULES



- |  |  |
|--|--|
| 1/8. N. 8 Slot for: 4 way Splitter Out | 13. Dry contact remote alarms connector: "SUB-D9" Male |
| 9. RF IN N.1 (DC& 10 MHz PASS)         | 14. SFP slot for Ethernet over fiber                   |
| 10. RF IN N.2 (DC& 10 MHz PASS)        | 15. Ethernet connector                                 |
| 11. RF IN N.3 (DC& 10 MHz PASS)        | 16. AC Redundant Mains "B" (Supplied)                  |
| 12. RF IN N.4 (DC& 10 MHz PASS)        | 17. AC Mains "A"                                       |

## PLUG-IN MODULES INTERNAL VIEW



1. Up to N. 4 "AS-2" Plug-in Input Amplifier Modules

2. Up to N. 8 SLOTS for "PSC-4" Passive Splitters/Combiner Modules

### "AS-2" RF INPUT AMPLIFIER LABEL EXPLANATION EXAMPLE

**AS-2 Module Position:**  
Connect to RF-Input N.1

**1**

(Printed on the Front panel)

**AS-2 Splitter Labels example:**



According to your RF cable assembling fill in the related position N. indicating the related SLOT OUT on the rear.

**AC-2 Module Position:**  
Connect to RF-Output N.1

**1**

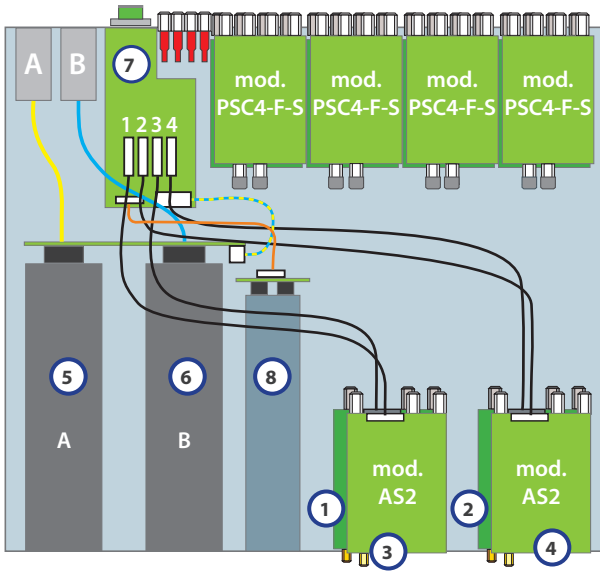
(Printed on the Front panel)

**AC-2 Combiner Labels example:**



According to your RF cable assembling fill in the related position N. indicating the related SLOT IN on the rear.

## POWER SUPPLY & ALARMS CABLING EXAMPLES

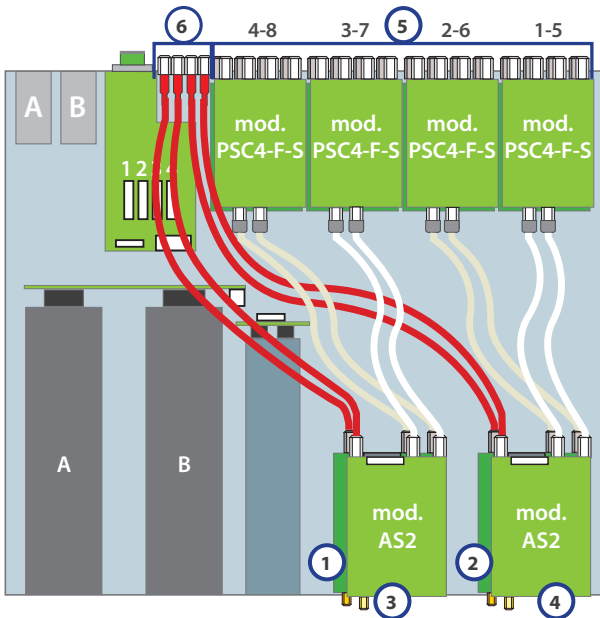


- 1/4. Swappable Plug-In RF INPUT AMPLIFIER
5. AC MAINS P.S.U. "A"
6. AC REDUNDANT P.S.U. "B" (supplied)
7. Dry Contact Alarm and PSU board
8. CNT-C Controller

### INTERNAL CABLING: Power Supply & Alarms only

- = PSU A
- = PSU B
- — = PSU A+B (1 WIRE)
- = ALARMS
- = Controller

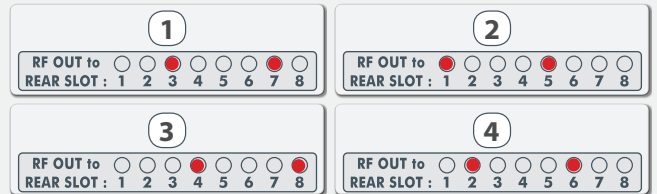
## RF SPLITTER CABLING EXAMPLES (4 INPUTS & 8+8+8+8 OUTPUTS)



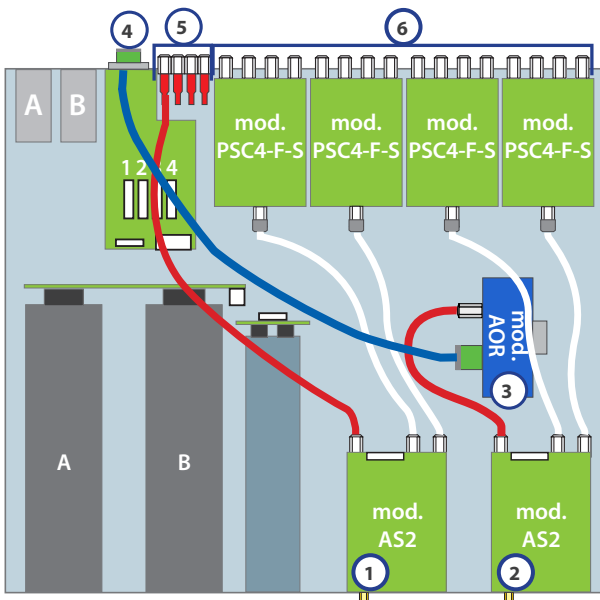
- 1/4. N. 4 Swappable Plug-In RF INPUT AMPLIFIER
5. N. 8 RF OUT Splitter/Combiner SLOTS (4 WAY each)
6. N. 4 RF INPUT, connected to related RF INPUT Amplifier

### INTERNAL CABLING: IN/OUT coax cables

- = RF Inputs cables
- = RF Output cables



## MIXED OPTICAL & RF SPLITTER CABLING EXAMPLES (1 OPTICAL INPUT 16 RF OUTPUTS & 1 RF INPUT 16 OUTPUTS)



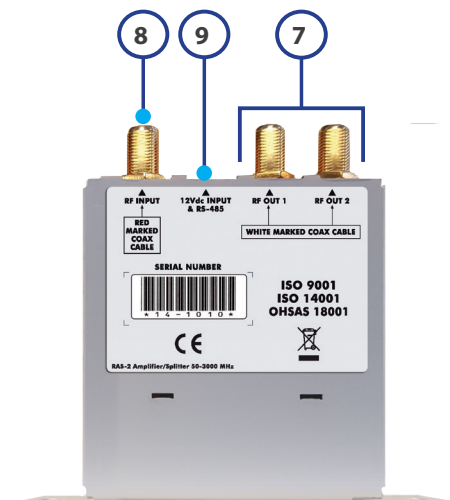
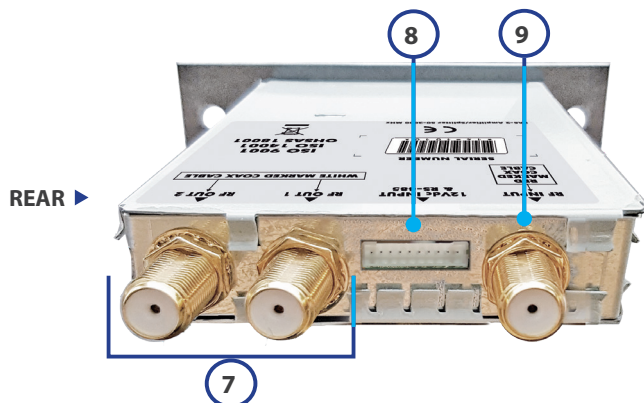
- 1/2. N. 2 Swappable Plug-in INPUT AMPLIFIER
3. N. 1 Optical receiver (mod. AOR-X-X-X) opz.
4. Optic Input (SC/APC)
5. N. 4 RF IN, connected to related RF INPUT Amplifier
6. N. 8 RF OUT Splitter/Combiner SLOTS (4 WAY each module)

### INTERNAL CABLING: IN/OUT, OPTIC & RF, Fiber & Coax

- = FIBER Input
- = RF Input cables
- = RF Outputs cables



# "AS-2" SWAPPABLE PLUG-IN RF INPUT AMPLIFIER/SPLITTER MODULE



1. RF Input Monitor (SMA connector)
2. ON LED
3. Alarm LED
4. LNB LED
5. LNB ON/OFF Switch (DC@RF IN)
6. Label Indicating OUT/IN RF slot position (from 1 to 8)
7. N. 2 RF OUT CONNECTORS
8. RF IN CONNECTOR
9. 12 Vdc INPUT & RS-485

## RF PORT CAPACITY:

- Input Port Number: 1
- Output Port Number: 2
- Optical Input port Number: 1 (SC-APC, LC-APC, E2000, FC-APC opt.)
- 10 MHz Reference PASS (through dedicated port N. 1)

## RF SPECIFICATIONS:

- Frequency Range = 350-3.000 MHz (optimized 700-3.000 MHz)
- Connectors = F (or BNC or SMA opt.)
- Impedance = 75 Ohm (or 50 Ohm opt.)
- Max INPUT Level = 0 dBm typ. +10 max. (with 10 dB attenuator ON)
- Damage Input Level = 15 dBm
- OP1dB = +17 dBm direct (+3 dBm with 4 way splitter)
- Input R.L. = >16 dB, 14 dB min.
- Output R.L. = >16 dB, 14 dB min.
- Total Gain/Loss = 0 dB,  $\pm 1,5$  dB typ, 2 dB max
- Temperature gain variation = 1,5 dB from  $-30^{\circ}$  to  $+60^{\circ}$  C
- L Band Flatness =  $\pm 1$  dB, 1,5 dB max
- Full Band Flatness =  $\pm 1,5$  dB, 2 dB max
- Flatness in 36 Mhz interval =  $\pm 0,3$  dB, 0,5 dB max
- Isolation between adjacent out Port = > 24 dB, 20 min.
- IMD = > - 40 dB (2 Tones at -13 dBm)
- Noise Figure = 9 dB

## RF INPUT MONITOR PORT:

- Level = 20 dB down the Input Level
- Connector = SMA
- Impedance = 50  $\Omega$
- Flatness =  $\pm 2$  dB

## LNB POWER CONTROL:

- D.C. VOLTAGE = OFF, 13V, 18V (or 24 optional) max 600 mA for each Input
- TONE = 22 KHz ON/OFF
- LED = green = OK, red = dc short circuit Alarm

## RF POWER SENSING:

- POWER THRESHOLD = adjust from -50 to -10 dBm

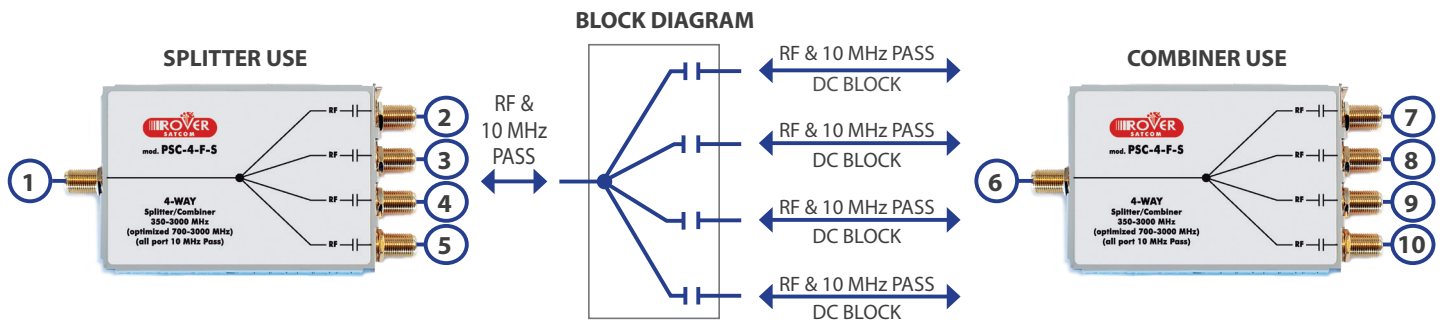
## POWER SUPPLY:

- 12 V d.c., 450 mA module
- 13/18 V d.c., 600 mA LNB

## GENERAL SPECIFICATIONS:

- MODULE SIZE = H 2,2, W 11, D 15 cm
- NET WEIGHT = 0,3 Kg
- SAFETY = EN 50 083-1 and EN 60 950.
- ENVIRONMENT:
  - Temperature range:  $-30^{\circ}$  /  $+55^{\circ}$  (max  $60^{\circ}$ )
  - Umidity 95%
- EMC = EN 50 083-2

## "PSC-4" 4 WAY PASSIVE SPLITTER/COMBINER MODULE



- |                                       |                           |                                      |
|---------------------------------------|---------------------------|--------------------------------------|
| 1. RF INPUT                           | 3/5. RF OUTPUT (DC BLOCK) | 7. RF INPUT & 10 MHz PASS (DC BLOCK) |
| 2. RF OUTPUT & 10 MHz PASS (DC BLOCK) | 6. RF OUT                 | 8/10. RF INPUT (DC BLOCK)            |

### RF PORT CAPACITY

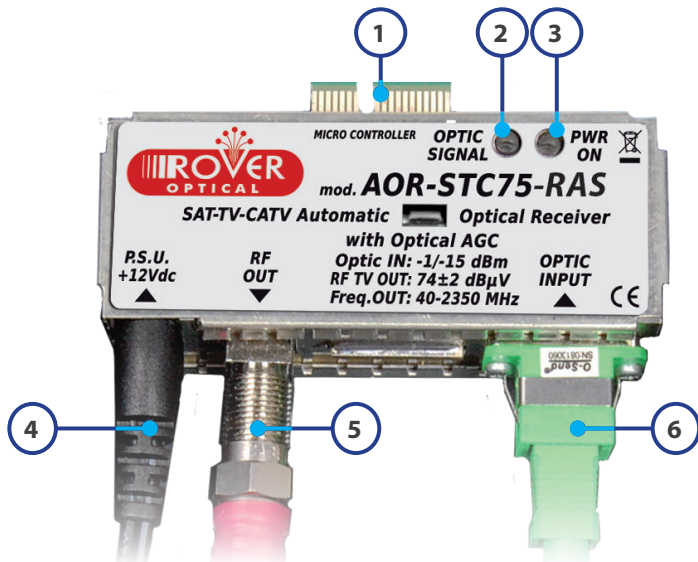
- 1 IN/OUT = RF & 10 MHz PASS, DC BLOCK
- 1 OUT/IN = RF & 10 MHz PASS, DC BLOCK
- 3 OUT/IN = RF & 10 MHz PASS, DC BLOCK

### RF SPECIFICATIONS

- Frequency Range = 4-3000 MHz
- Insertion Loss :
  - 4 dB at 4 MHz
  - 6 dB at 1500 MHz
  - 8 dB at 3000 MHz
  - Ref. to 6 dB theory (included PAD. ATT.)

- Ripple in all band = 1 dB typ., 1,5 max
- Band Slope = 4 dB typ. 5 max (see Insertion Loss)
- L Band Slope = 1 dB
- Input RL = > 14 dB, 16 dB typ.
- Output RL = > 14 dB, 16 dB typ.
- Isolation = > 24 dB, 26 dB typ.v
- Fase Balance = 2°
- Amplitude Balance = 0,5 dB

## "AOR" AUTOMATIC GAIN CONTROL OPTICAL RX MODULE



1. Connector for SW up-grade
2. Optical Power Meter LED
3. Power ON LED
4. P.S.U. + 12 Vdc (for both A&B PSU)
5. RF OUT (& 12 V on line dc)
6. OPTICAL INPUT (SC-APC, LC-APC, E2000 & FC-APC)

### OPTICAL SPECIFICATIONS

- Optical Wavelength = 128-1610 nm
- Optical Input Power = -1 to 15 dBm (0-18 dBm max)
- Optical Noise =  $5 \pm 1$  pA/Hz
- Optical R.L. = 45 dB
- Optical Connector = SC-APC (LC-APC, E2000, FC-APC opz.)

### RF SPECIFICATIONS

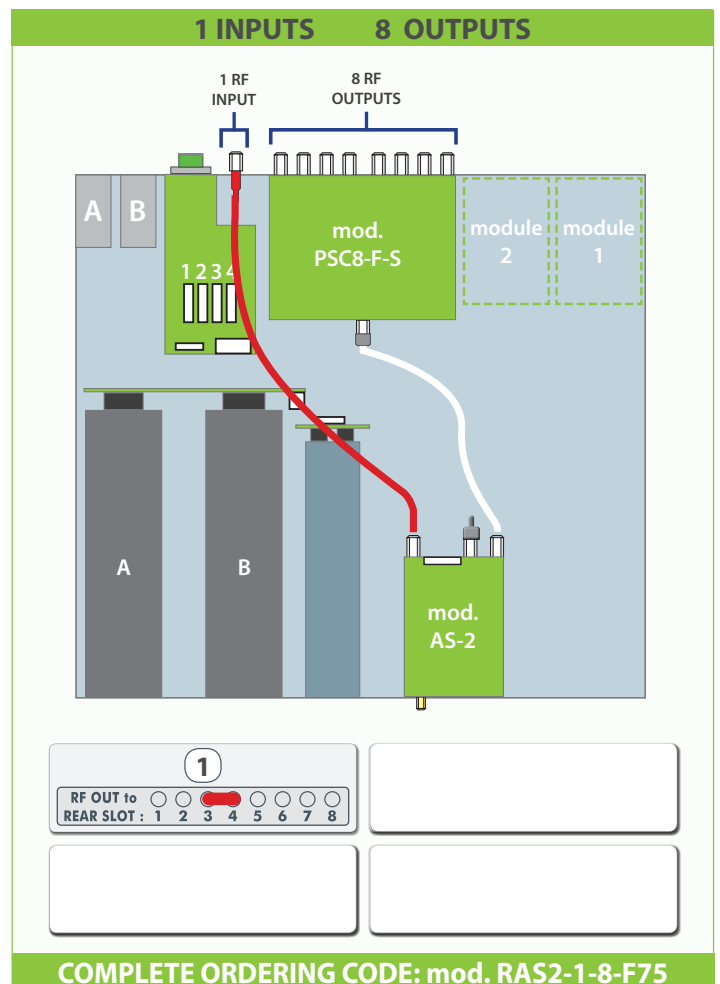
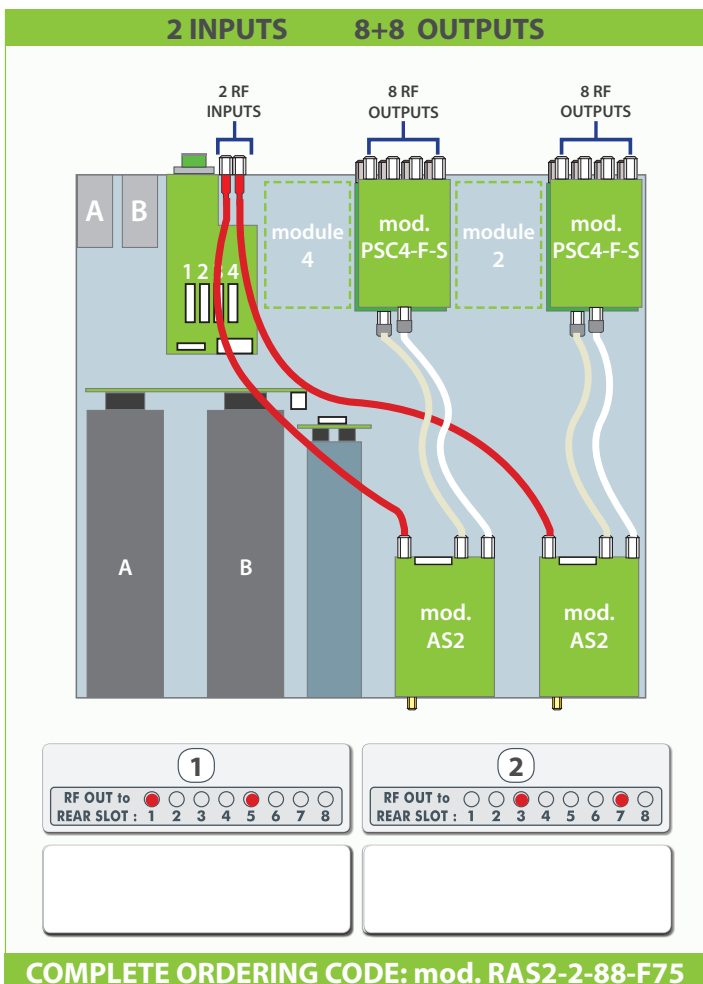
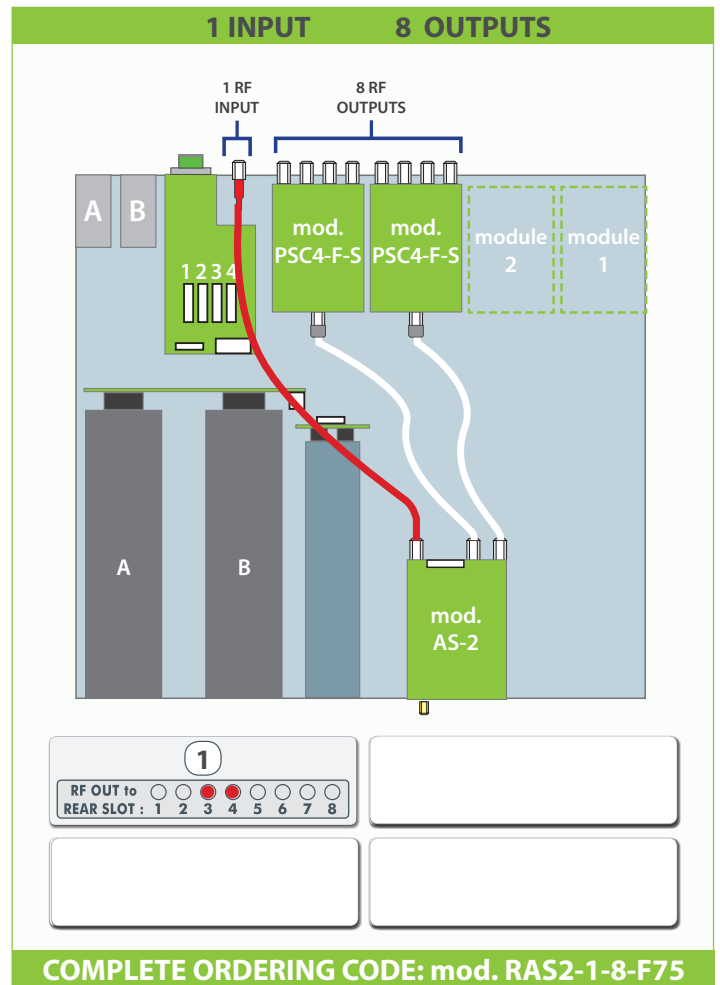
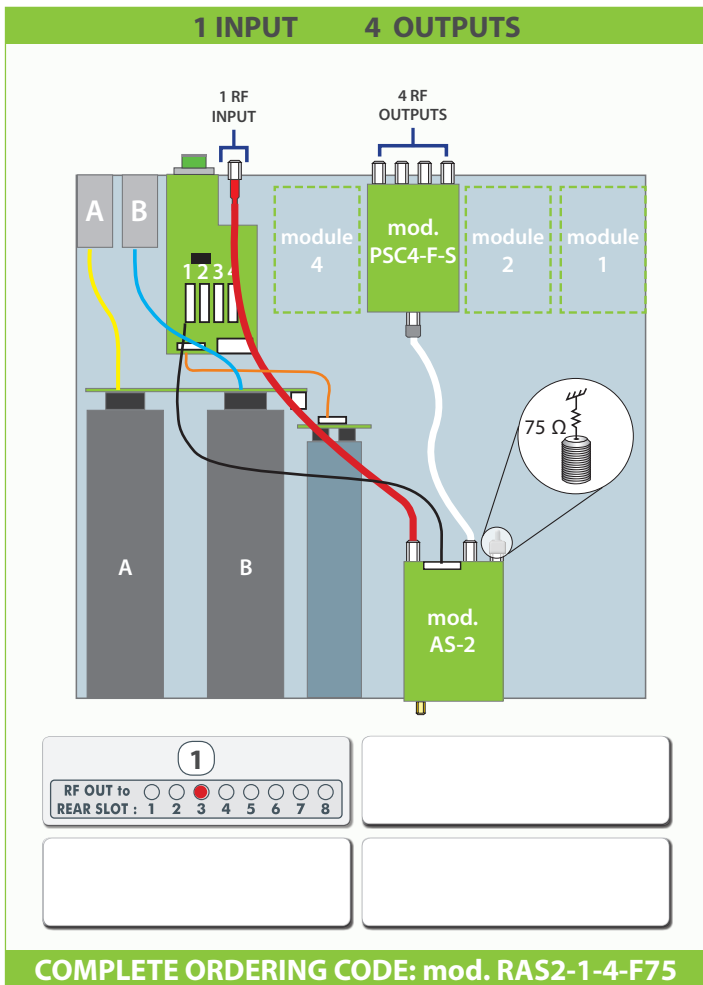
- Frequency Range = 40-2350 MHz (2500 MHz MAX)
- RF Output Level = -30 dBm RMS (stable, from -1 to -15 dBm)
- RF Flatness = 2 dB, 3 max

- RF Impedance = 75 Ohm
- RF Connector = F
- RF RL = > 14 dB 12 min.
- Operation Temperature = -30 + 60° C

### OPTICAL POWER METER LED:

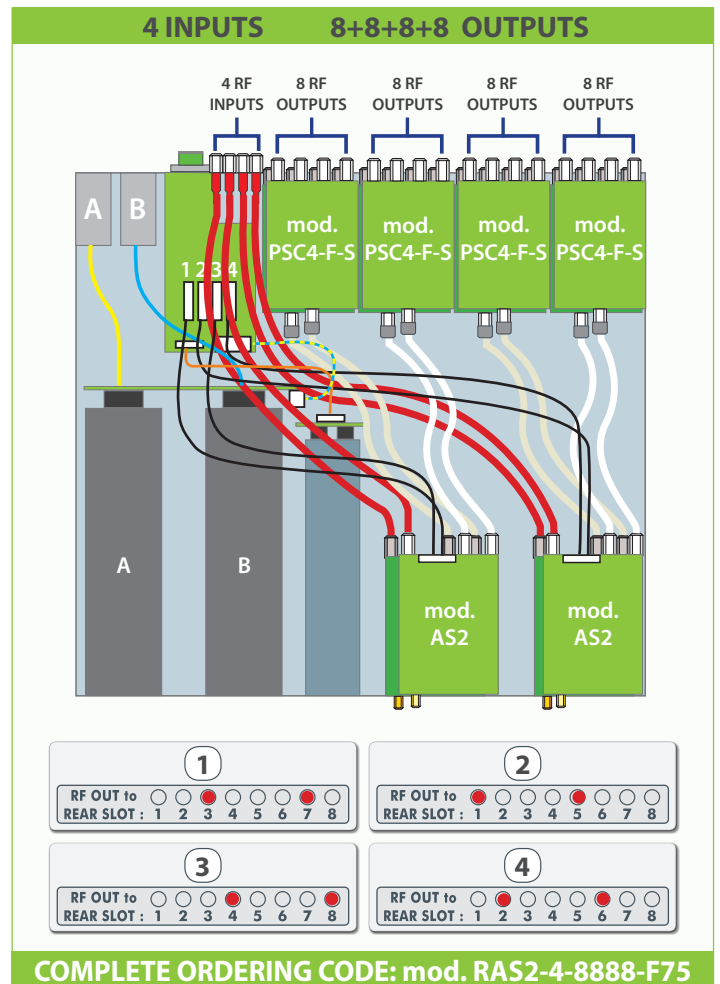
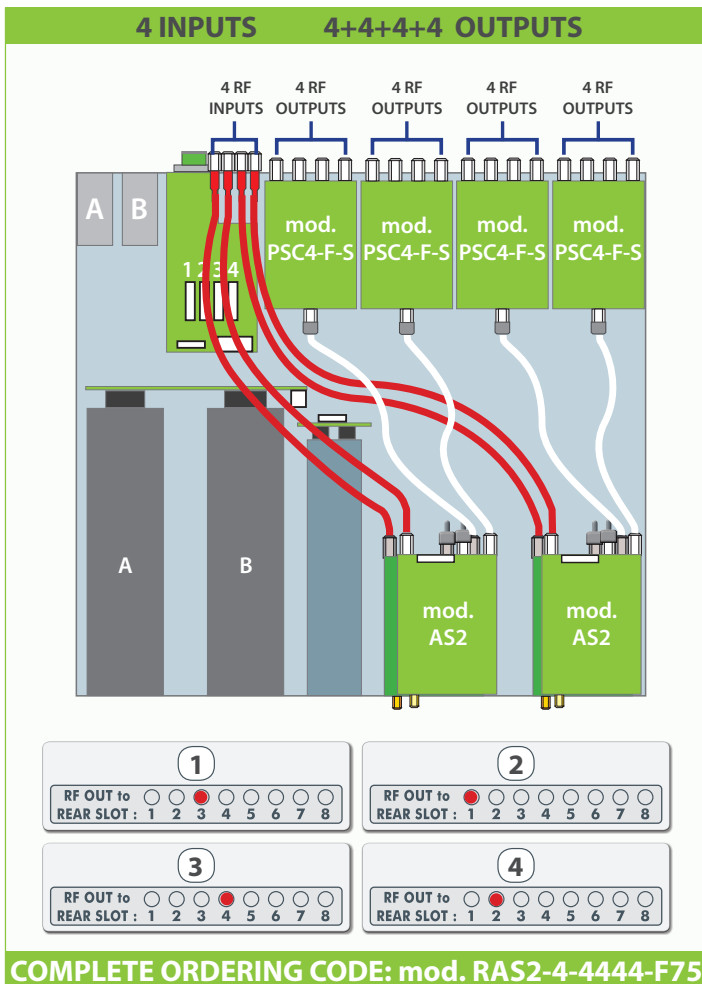
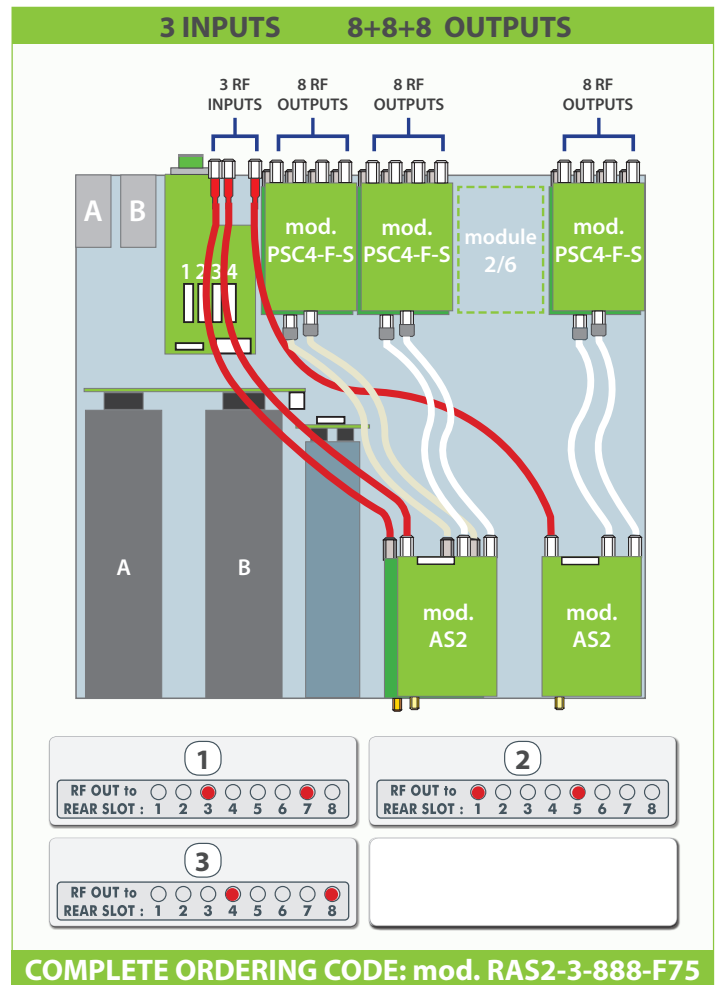
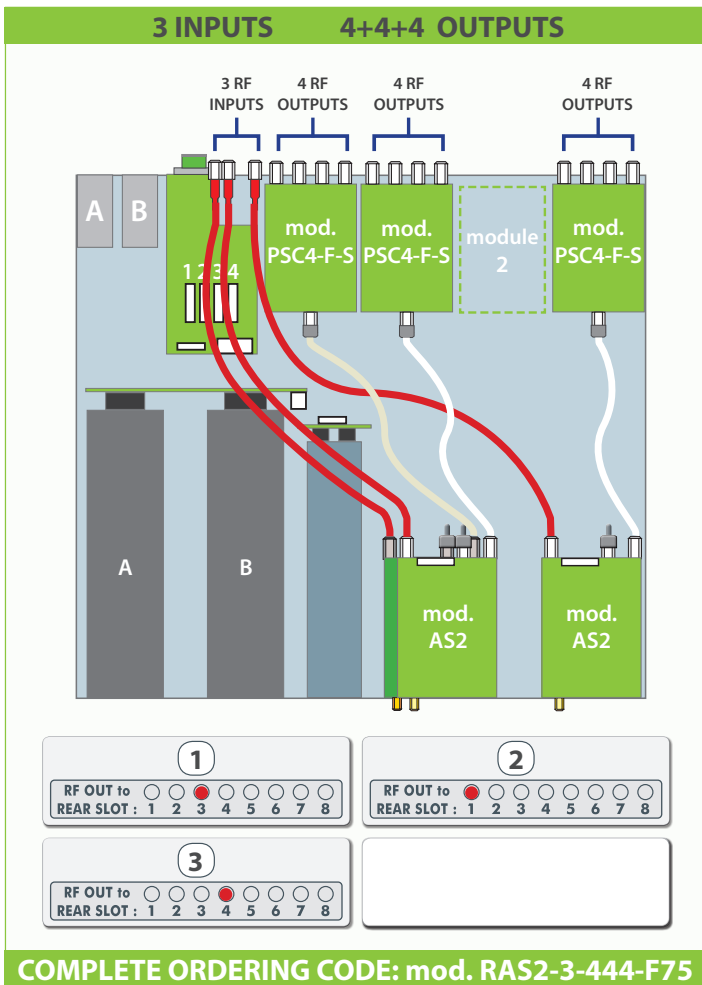
- Green LED = Optical PWR OK = from -1 to -15 dBm
- Orange LED = Optical PWR to Low = < 15 dBm
- Red LED = NO Optical PWR K= < 18 dBm
- Red flashing = Optical PWR to HIGH = > -1 dBm

# SYMMETRICAL RF MULTIPLE SPLITTER ASSEMBLY EXAMPLES

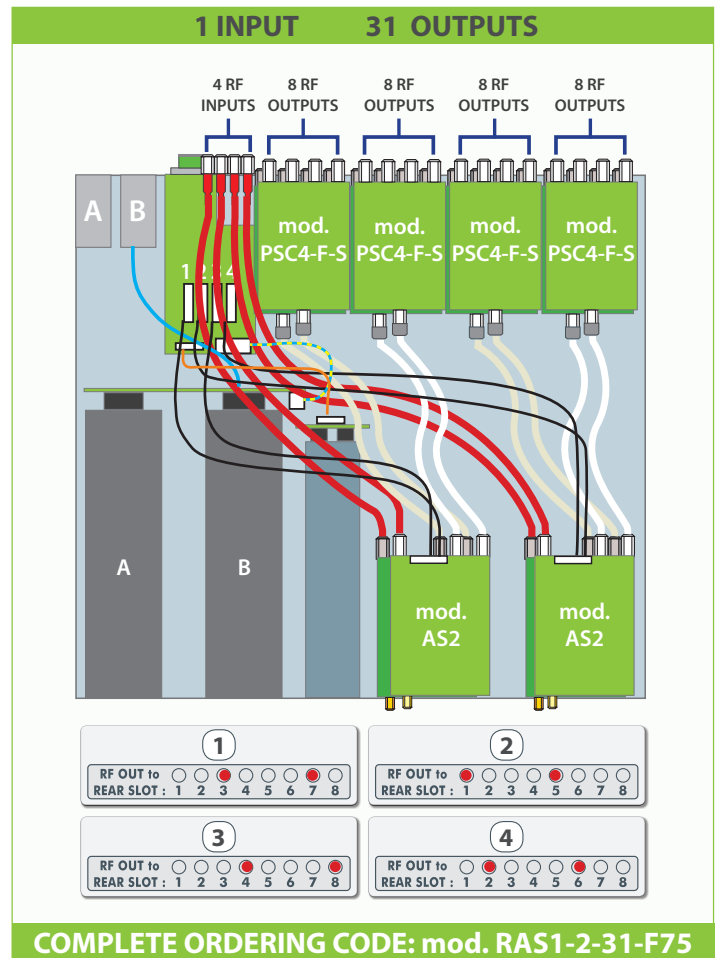
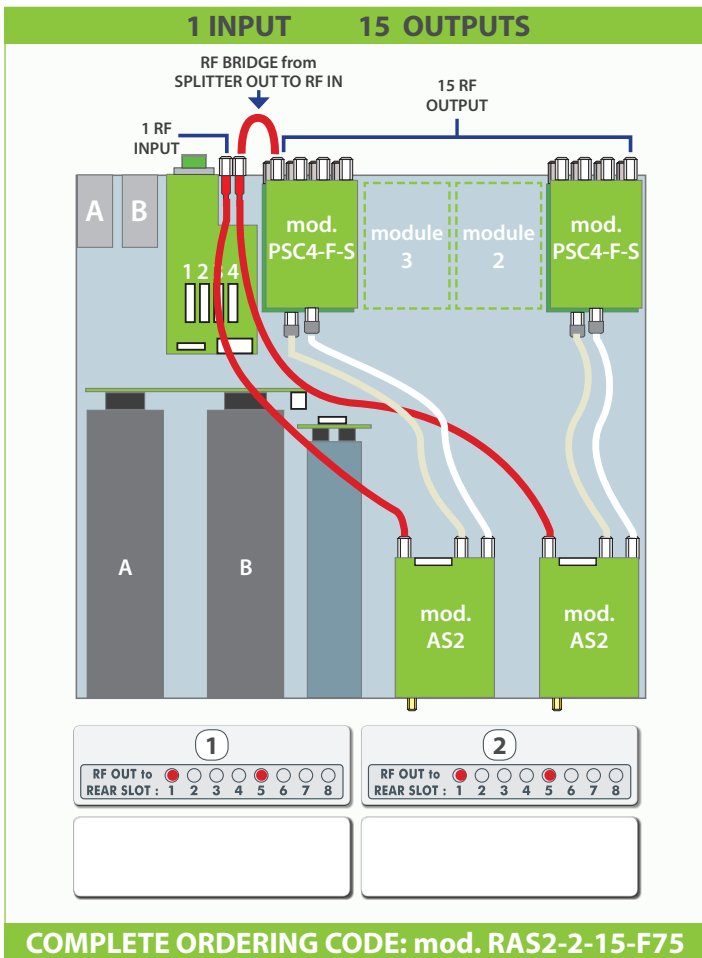




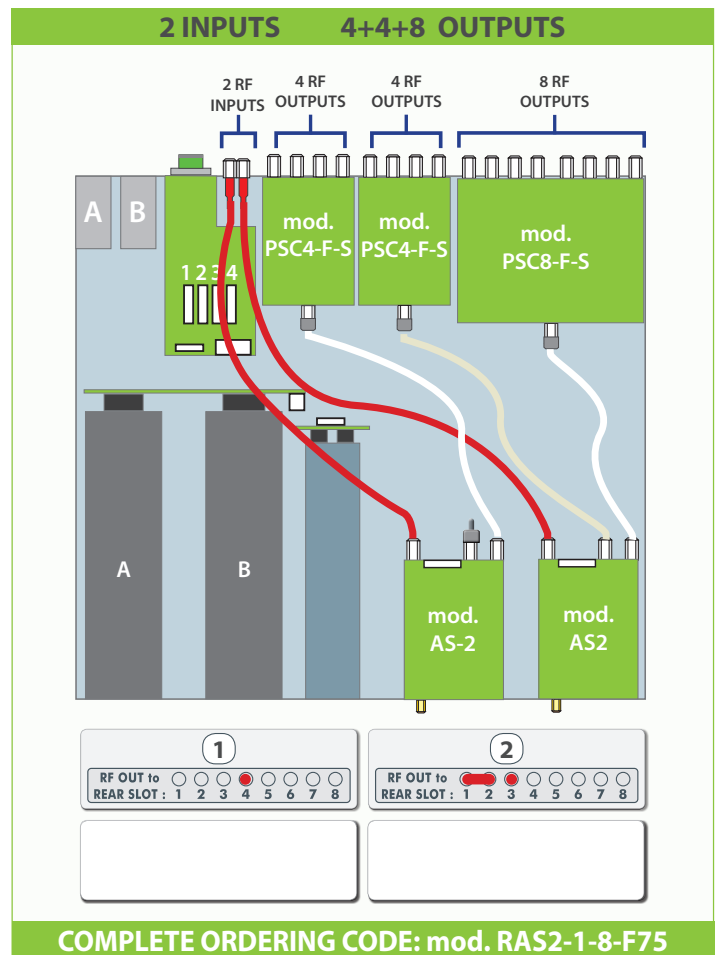
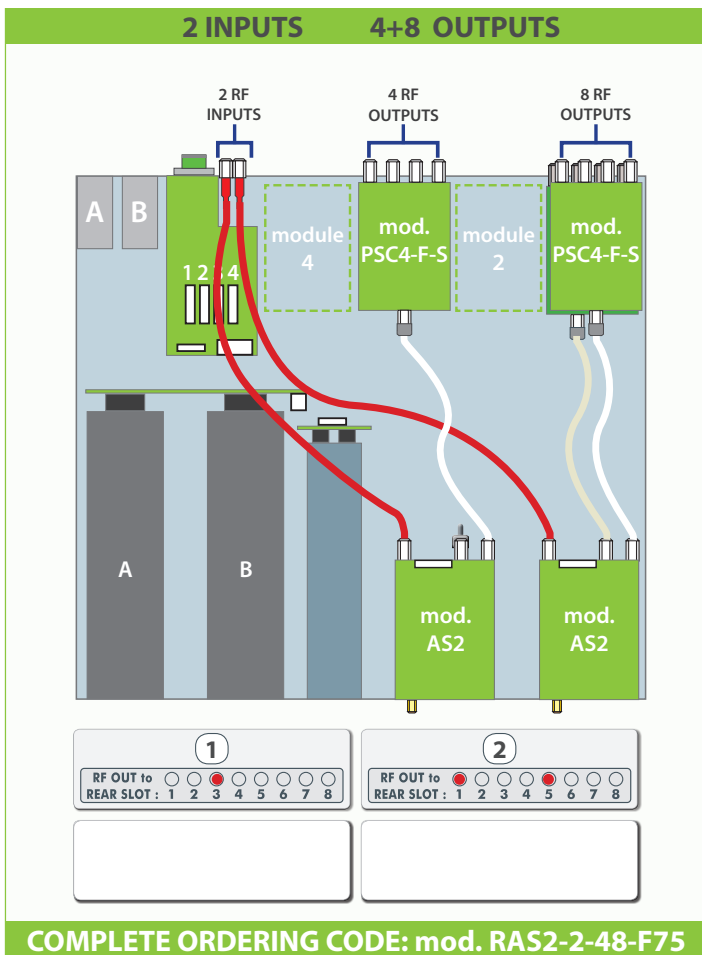
# SYMMETRICAL RF MULTIPLE SPLITTER ASSEMBLY EXAMPLES



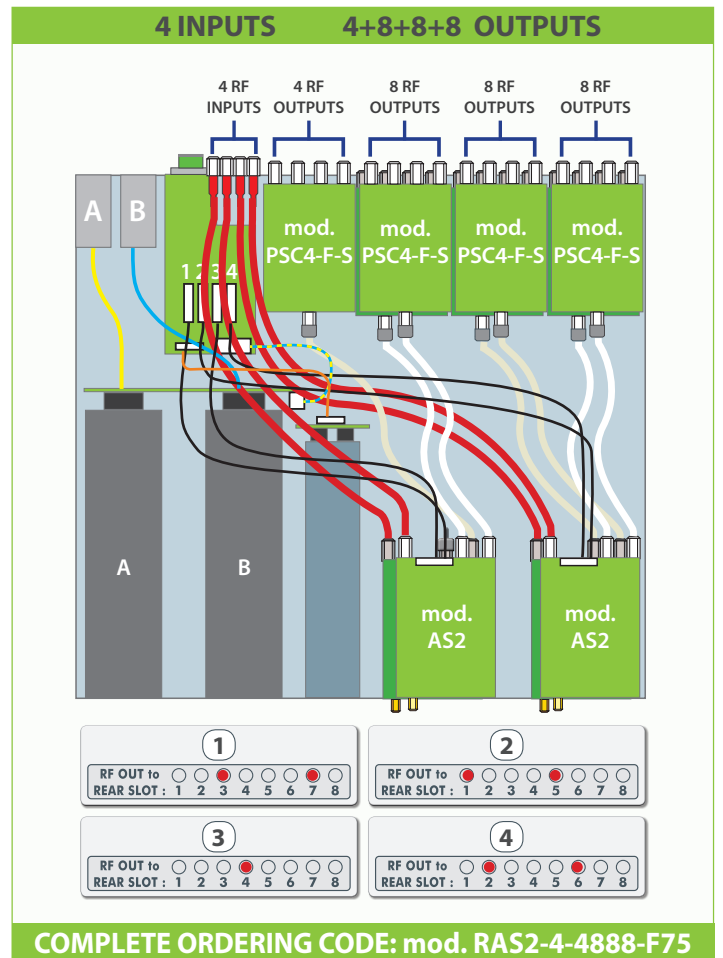
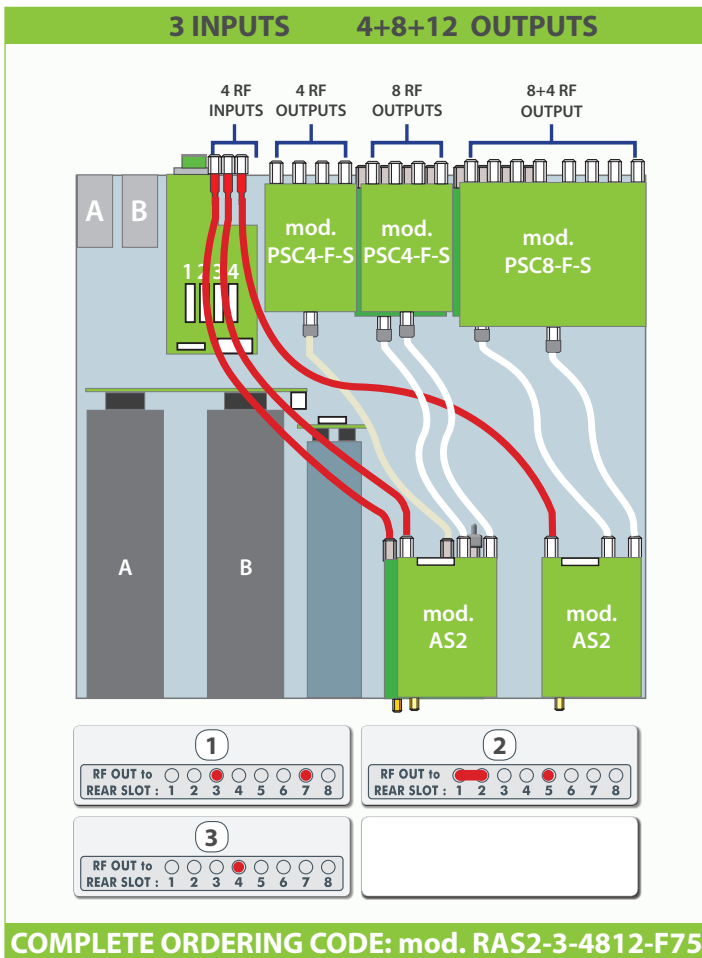
# SYMMETRICAL RF MULTIPLE SPLITTER ASSEMBLY EXAMPLES



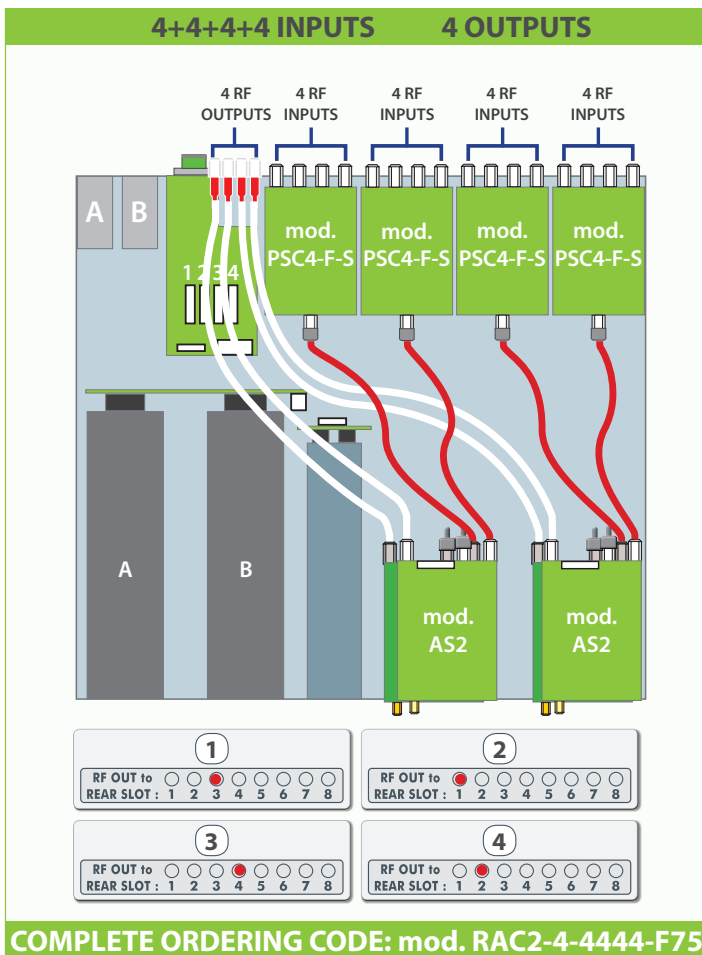
# ASYMMETRICAL RF MULTIPLE SPLITTER ASSEMBLY EXAMPLES



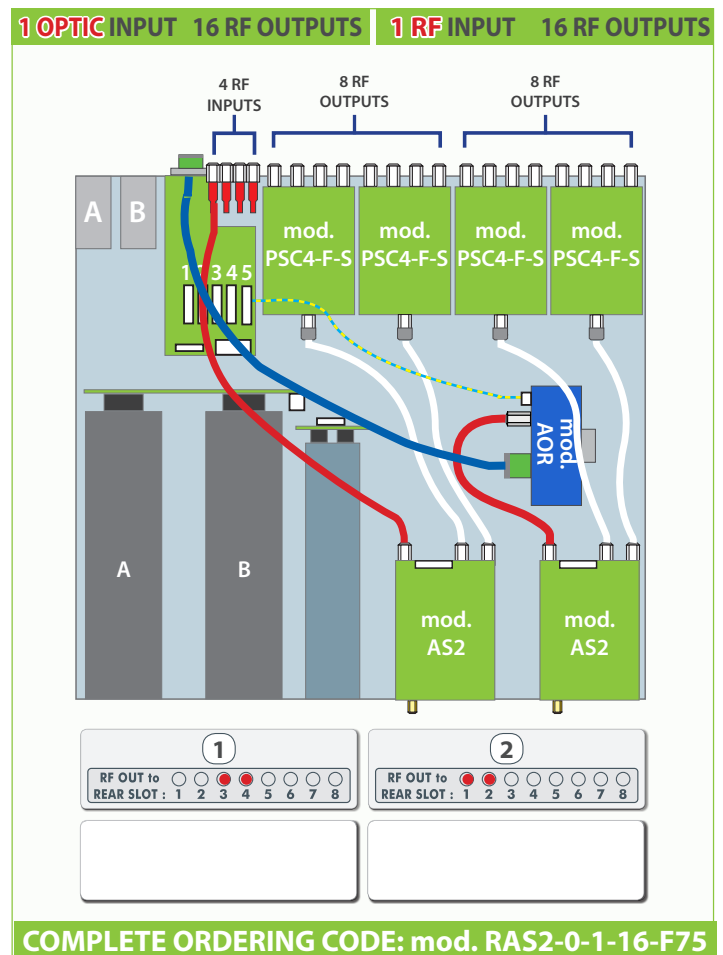
# ASYMMETRICAL RF MULTIPLE SPLITTER ASSEMBLY EXAMPLES



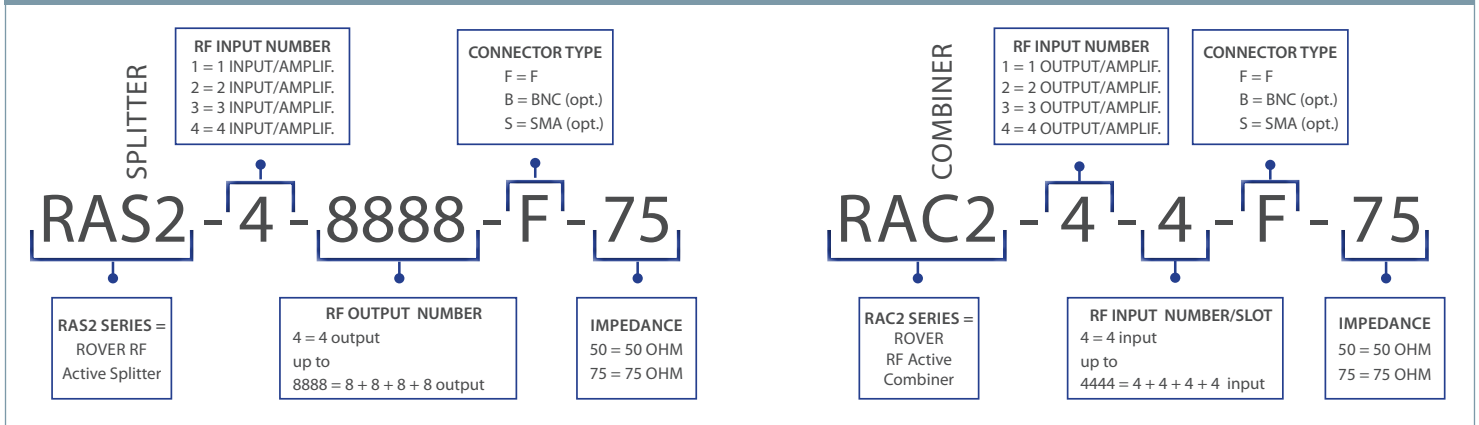
## RF COMBINER ASSEMBLY EXAMPLES



## MIXED: OPTICAL & RF (with OPTICAL RX)



## COMPLETE MULTIPLE SPLITTER/COMBINER ORDERING CODE DEFINITION



### COMPLETE SYMMETRICAL SPLITTERS

SYMMETRICAL ORDERING MOD.	RF INPUT /AMPLIF. N.	RF OUTPUT NUMBERS	CONNECT.	IMPED. Ω
RAS2-1-4-F75	1	4	F	75
RAS2-1-8-F75	1	8	F	75
RAS2-1-12-F75	1	12	F	75
RAS2-1-16-F75	1	16	F	75
RAS2-2-23-F75	1 (with 2 AMPLIFIERS)	23	F	75
RAS2-2-31-F75	1 (with 2 AMPLIFIERS)	31	F	75
RAS2-2-44-F75	2	4 + 4	F	75
RAS2-2-88-F75	2	8 + 8	F	75
RAS2-2-1212-F75	2	12 + 12	F	75
RAS2-2-1616-F75	2	16 + 16	F	75
RAS2-3-444-F75	3	4 + 4 + 4	F	75
RAS2-3-888-F75	3	8 + 8 + 8	F	75
RAS2-4-4444-F75	4	4 + 4 + 4 + 4	F	75
RAS2-4-8888-F75	4	8 + 8 + 8 + 8	F	75

### COMPLETE ASYMMETRICAL SPLITTERS

ASYMMETRICAL ORDERING MOD.	RF INPUT /AMPLIF. N.	RF OUTPUT NUMBERS	CONNECT.	IMPED. Ω
RAS2-2-48-F75	2	4 + 8	F	75
RAS2-2-412-F75	2	4 + 12	F	75
RAS2-2-416-F75	2	4 + 16	F	75
RAS2-2-812-F75	2	8 + 12	F	75
RAS2-2-816-F75	2	8 + 16	F	75
RAS2-2-1216-F75	2	12 + 16	F	75
RAS2-3-488-F75	3	4 + 8 + 8	F	75
RAS2-3-4812-F75	3	4 + 8 + 12	F	75
RAS2-3-4816-F75	3	4 + 8 + 16	F	75
RAS2-3-41212-F75	3	4 + 12 + 12	F	75
RAS2-3-41216-F75	3	4 + 12 + 16	F	75
RAS2-4-4448-F75	3	4 + 4 + 4 + 8	F	75
RAS2-4-44412-F75	4	4 + 4 + 4 + 12	F	75
RAS2-4-44416-F75	4	4 + 4 + 4 + 16	F	75
RAS2-4-44812-F75	4	4 + 4 + 8 + 12	F	75
RAS2-4-44816-F75	4	4 + 4 + 8 + 16	F	75
RAS2-4-4888-F75	4	4 + 8 + 8 + 8	F	75
RAS2-4-48812-F75	4	4 + 8 + 8 + 12	F	75

### COMPLETE COMBINER ORDERING CODE COMBINATIONS

COMBINER ORDERING MOD.	RF OUTPUT /AMPLIF. N.	RF INPUT NUMBERS	CONNECT.	IMPED. Ω
RAC2-1-4-F75	1	4	F	75
RAC2-2-44-F75	2	4 + 4	F	75
RAC2-3-444-F75	3	4 + 4 + 4	F	75
RAC2-4-4444-F75	4	4 + 4 + 4 + 4	F	75

### SINGLE PARTS ORDERING CODE DEFINITION

- **mod. RAS 2 chassis:** 19" 1 U Rack chassis contains: 2 PSU, controller with local Display, Web GUI & SNMP
- **mod. AS 2:** Swappable Plug-in RF input Amplifier contain: full LNB Control, RF Input Monitor Port, RF Power Sensor, RF Input Attenuator, 10 MHz PASS, RF & PSU Alarm, 4 way Active Splitter and LED indicator and Alarms
- **mod. AC 2:** Swappable Plug-in RF input Amplifier contain: full LNB Control, RF Input Monitor Port, RF Power Sensor, RF Input Attenuator, RF & PSU Alarm, 4 way Active Splitter and LED indicator and Alarms
- **mod. CLO-AS2:** Blank closure cap for front panel
- **mod. PSC4-F75:** 4 way Passive Splitter or Combiner, with "F" connector, from 4 to 3.000 MHz, 10 MHz PASS, DC BLOCK
- **mod. PSC8-F75:** 8 way Passive Splitter or Combiner, with "F" connector, from 4 to 3.000 MHz, 10 MHz PASS, DC BLOCK
- **mod. C2-F-MM-60:** 60 cm Interconnection Coax Cable with 2 F Male connectors (WithE marked)
- **mod. C2-F-MF-60:** 60 cm Interconnection Coax Cable with 1 F Male and 1 F Female connectors (RED marked)
- **mod. W-ACPSC-60:** 60 cm Interconnection wire for Alarms and Modules power supply
- **mod. AOR-STC-75-RAS:** High Dinamic Range Optical Receiver with Optical AGC and 70 dBμV (- 38 dBm) Output

V.3 3-3-20



Product  
made in Italy by  
Rover Broadcast.com

CERTIFICATES N°  
1263 ISO 9001  
1264 ISO 14001  
1265 BS OHSAS 18001



*Specifications and features are subject to change without notice.*

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