# ▶ ClassA HEADENDS

## «SRF» — Free-To-Air Digital Satellite TV Reception Equipment

### SRF HEADENDS

- Satellite TV reception, standard DVB-S / MPEG-2 (EN 300 421).
- Digital-to-Analogue Transmodulation Process (QPSK → AM) that presents the clear TV programmes transmitted in QPSK Sat-TV channels on conventional VHF/UHF channels (VSB vestigial side band or DSB double side band; any TV system and Colour system).
- An SRF headend includes:
  - As many SRF Receiving Modules as free-to-air TV programmes to be distributed.
  - One HPA Amplifier that amplifies the sum of the combined output TV channels from the receivers.
  - One or more CFP Power Supplies.
  - One or more Rack-Frames or wall-fixing Base-Plates. The base-plates can be joined horizontally.
  - Usually, housing units for the base-plates.
  - If the headend is large, one or more AMX-400 combiners.

The SRF headends provide a TV multichannel signal whose level is appropriate to feed the distribution network. With a SRF installed in the headend, the end user does not require a Set Top Box or any additional devices to view the clear digital TV programs being distributed. An extension input at the HPA amplifier allows easy coupling of the wideband 47-862 MHz signal provided by another existing headend.

### FUNCTIONAL DESCRIPTION OF THE SRF RECEIVERS

SRF-111

An SRF receiving module carries out the complete channel processing from the input to the output:

- tunes a QPSK Sat-IF digital channel in the 950-2150 MHz band,
- selects a TV programme from the multiplex received, and
- directs it to a conventional TV channel which is selectable throughout the 45-862 MHz band.

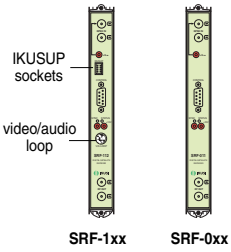
Range includes different models for VSB or DSB output channel spectrums; for B/G, D/K, I, L or M/N TV systems; and for mono or A2 stereo/dual sounds.

Programming of each module involves the following selections and settings:

- Central Input Frequency (1 MHz steps).
- Input Symbol Rate (0.001 MS/s steps).
- TV Programme and Audio Service. (Or a Radio Programme. Image will be black).
- Parameters of the output TV channel (video carrier frequency, TV system, colour system, video modulation depth, audio modulation index, carrier level ratio, output level).
- Image Format. Possible conversions are 16:9 to 4:3 Pan&Scan and 16:9 to 4:3 Letter-Box.

Models featuring VSB output are utilizable for adjacent channel operation. If this operation is not required, existing model featuring DSB output may be used without problems. The first ones present, on the other hand, a very low broadband noise floor (< -75 dBc) that permit to use multiple modules in the headend with very little deterioration of the CNR.

### Simple cabling of SRF headends

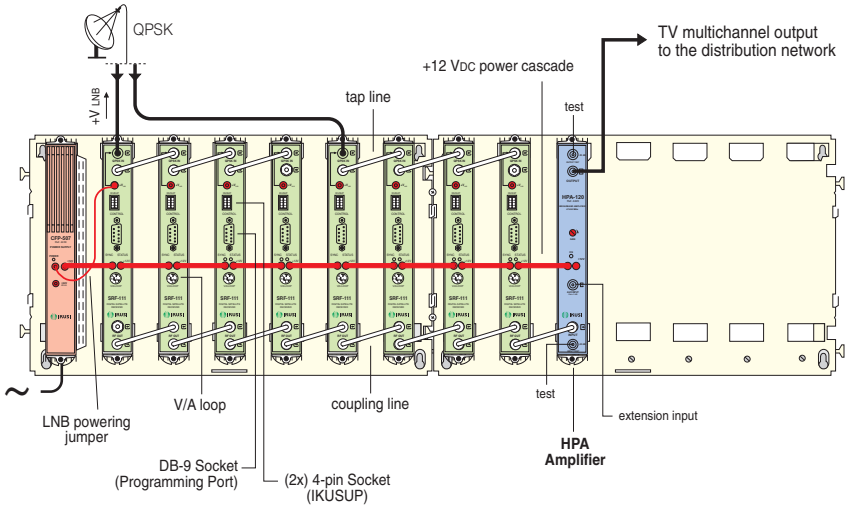



SRF-1xx SRF-0xx

The SRF receiving modules feature two directionally coupled input and output ports. Sat-IF signal can therefore be directly fed into the input port of the first module, which in turn passes it through the coupler to the next and so forth. On the output side, the same procedure is repeated which forms the channel coupling. The sum of the combined channels is turn connected in the same way to the drive amplifier —the HPA module or an external wideband amplifier— which then feeds the distribution network. For power connection, each module has two DC banana sockets that allow to build a +12 VDC cascade. A third banana socket is available to connect the power for the attached LNB.

An external video/audio loop, which is switched under control software, is available on models SRF-1xx. The loop is not available in the so called **economical models** (SRF-0xx).

Local programming is carried out with the SPI-300 unit, which is connected to each module individually. Remote programming is possible only if an HMS control unit is installed in the headend. The SRF-0xx economical models do not have IKUSUP sockets and cannot therefore be programmed remotely.




— **Example of «SRF» headend for eight clear digital satellite TV programmes; four programmes arrive via a down lead cable and other four ones via another. Contains 8 Receivers, 1 Amplifier and 1 Power Supply, all fixed on 2 horizontally joined baseplates.**