

STL Receiver combination STAR 1500



Exists of STL receiver in 1U 19" rack and low noise bandfiltered preamplifier.

The preamplifier is directly placed at the antenna connector, in this way the download coax loss does not degrade the reception anymore. The indoor unit can not be connected directly to an arbitrary antenna without the bandfiltered preamp, because then there is too little gain and filtering.

Length of the coax between active antenna and receiver without any meaningful loss of sensitivity: Low cost 75 Ohm sat types: ME105: up to 70m, SAT66 & PRG11: up to 100m.

Special features:

- Bandfilter in front of first amplifier stage.
- 'Very large dynamic range' design, without AGC loops: perfect reception of a very small signal in the presence of a strong signal in the same band.
- MPX from 0,2Hz: no degradation of the peak limiting of an audioprocessor
- Automatic mono switchover during weak signal reception.
- Automatic backup switchover with marginal signal.
- Automatic backup switchover during silence on the link.
- Headphone output.

The unit has a LCD display and 4 push buttons.

The display indicates the state of the device in words, e.g.:

- 'everything normal'
- 'signal too weak, backup active'
- 'coax short circuit'

A measurement screen gives:

- accurate signal strength in dBuV
- all band signal level in dBuV (=option)
- DC current towards the active antenna
- FM deviation in KHz

Via a menu one can set:

- the frequency
- mono and squelch thresholds in dBuV
- testing and measuring deviation of the backup audio

PC monitoring:

A RS232 output (5V level) constantly gives the received signal strength and other important parameters. In this way its possible to log the signal strength over time (by using a PC).

Optional:

- extra 4 BNC outputs
- stereodecoder with cinch L R outputs

Typical specs:

Freq: 1480 – 1530 MHz (wider on request)

Selectivity and blocking:

* maximum signal input: -20dBm

The combination was specially designed to receive the smallest signals in the presence of:

- FM transmitter in same mast (antenna at ≥ 2 m of FM antennas)
- GSM-lowband base station at 50m in yagi direction
- GSM-lowband phone at 100m in yagi direction or at 2m backside yagi
- 1,5GHz transmitter at 0.35MHz distance at 2 to 3 m antenna distance in same mast

MPX output:

- extremely flat frequency characteristic $\pm 0,1$ dB (1Hz-53KHz)
- very low distortion: $< 0,100$ % at 75KHz dev, mono
- adjustable 0,8 to 8Vptp

Backup:

- cinch L+R
- adjustable 0,5 to 4,5Vptp
- audio is switched (backup signal which is constantly present is allowed)
- 230V switched output

Optional Stereo Decoder L&R outputs:

- cinch L+R
- 1Vrms (2,8Vptp)
- channel separation 40dB

Power consumption:

230Vac < 10 VA (typ 6W)

Sensitivity & S/N table:

combination of STAR 1500 STL receiver with coax ME105 & preamp module:

| DBuV | DBm | Mono S/N (dB) | | | Stereo S/N (dB) | | |
|------|--------|---------------|----------|----------|-----------------|----------|----------|
| | | 7m coax | 30m coax | 64m coax | 7m coax | 30m coax | 64m coax |
| 80 | -27 | 70 | 70 | 70 | 67.5 | 67.5 | 67.5 |
| 60 | -47 | 70 | 70 | 70 | 67.5 | 67.5 | 67.5 |
| 50 | -57 | 70 | 70 | 70 | 67.5 | 67.3 | 67.2 |
| 40 | -67 | 69.7 | 69.7 | 69.6 | 64.4 | 64.3 | 64.1 |
| 34 | -73 | 69.5 | 69.5 | 69.3 | 60 | 60 | 59.7 |
| 30 | -77 | 69 | 68.8 | 68.5 | 56.7 | 56.5 | 56.1 |
| 23 | -84 | 67.7 | 67.3 | 67.2 | 50 | 49.8 | 49.5 |
| 20 | -87 | 66.2 | 65.7 | 65.7 | 47.1 | 46.9 | 46.5 |
| 13 | -94 | 61.1 | 60.7 | 60.6 | 40 | 39.8 | 39.4 |
| 11.7 | -95.3 | 60 | 59.7 | 59.6 | - | - | - |
| 1.3 | -105.7 | 50 | 59.7 | 49.5 | | | |
| 0 | -107 | 48.8 | 48.6 | 48.3 | | | |
| -3.7 | -110.7 | 40 | 39.8 | 39 | | | |

Features STAR STL Receivers

- * extremely sensitive
- * low cost 7mm diameter coax perfectly useable
- * sensitivity hardly affected by coax length
- * up to 100m coax length with less than 1dB sensitivity loss
- * perfect operation at FM transmitter sites
- * installed quicker
- * crystal clear user interface
- * automatic mono or backup switching during fading
- * excellent audio quality & flatness MPX
- * full featured measurement display for technicians
- * 19 inch housing, only 1U high
- * low current consumption: only 6W typical
- * lot of interesting features