## INITIAL INSPECTION

Please, check that the contents of the consignment are correct and verify that no element has been damaged during the transport. In case of mistaken or damaged material, please state an immediate claim to the transport carrier and notify it immediately to the manufacturer or distributor, either for a new remittance or for the repair or replacement of the damaged material.

## SAFETY CONSIDERATIONS

All the devices described in this manual have been designed to be properly performed by qualified technical personnel only. Personnel skilled enough to foresee the possible consequences of inadequate handling, must carry out the installation, setting, maintenance or repair of this equipment.

For a correct and safe use of the provided equipment and in order to achieve the best possible security conditions, it is essential to follow not only general security procedures but also the special ones described in this manual.

**Never switch on the systems in case there is the smallest suspicion of bad functioning.**

For instance, in case of detecting apparent damages which could be consequence of transport or storage, etc.

**Before any setting or maintenance operation, disconnect the equipment from any power supply or optical emitter. After electrical disconnection, inside capacitors could remain loaded for one second.**

Active power circuitry could appear when protecting lids or coverings are taken away. Likewise, unplugged optical connectors must be immediately covered with the corresponding protecting caps.

In case the equipment needs to be checked while it is functioning, remember that maintenance operations can only be carried out by qualified technical personnel who is aware of the risks of the operation, both from the electrical and optical point of view.

The security classification of this product is Class III.

**The modification of the electrical protection elements and the disconnection of the earth terminal may result in personal injury.**

Before the equipment is switched on, make sure that it has been properly grounded (through the protective conductor of the a.c. power cable) to a socket outlet provided with protective earth contact.

The earth circuit cover of the electrical external connectors must not be used as protective general earth contact for the equipment.

**The optical transmitters could cause safety problems to the personnel in charge of the installation, test, service or maintenance of the equipment. This is due to the high level of optical power in some fibre-optic installations and to the fact that light radiation is infrared type (not visible for the human eye).**

**In consequence, never look directly either at the optical output of an optical transmitter, or at the end of an optical fibre connected to an active optical transmitter. This situation will be especially dangerous when the inspection takes place with the assistance of light focusing elements, magnifying glasses, microscopes, etc.**

**In case these recommendations are not followed, eyes would be exposed to a level of light radiation that would be higher than the maximum admissible level. This could result in permanent and irreversible damages in eyes.**


**The use of controls, adjustments or procedures different from the ones specified here, could cause a dangerous exposure to radiation.**

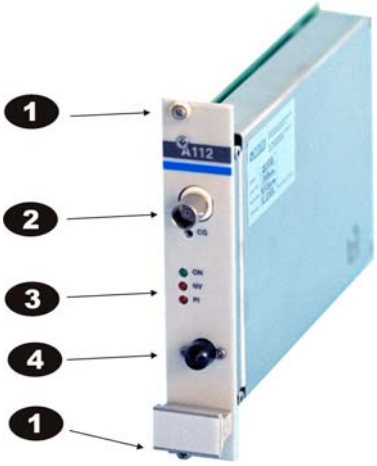
## DESCRIPTION

Baseband video links have been designed for the transmission of soundless television image through optical fibre. Optimum applications are those of CCTV security systems, remote monitoring in industrial processes, traffic control, etc.

The use of fibre-optic technology in this equipment allows its application to long distance transmission, thanks to the low attenuation of the fibre. It also allows transmission through hostile electromagnetic environment, thanks to its immunity to this kind of interference.

EQUITEL A112 is an optical receiver for an analogue video signal, employing as light detector a PIN photodiode. It has been designed to be used with one of EQUITEL's compatible optical emitters. The mechanical format of A112 is a 3U high and 5TE wide module, to be inserted into a 19" 3U high housing of EQUITEL series P400. The power supply is internal and it comes directly from the housing system.

The following photograph indicates the most important parts of this device.




1 Fastening screws
2 Video signal output connector
3 ON, NV and PI indicator LEDs
4 Optical signal input connector

## INSTALLATION

First switch off the housing system (EQUITEL series P400) where it will be placed, which is provided with power supply. Always following the instructions given in P400 user's manuals, insert the module in any of the slots available in the housing and fix it with the fastening screws (1 in the figure).

The fibre jumper will be introduced in the optical connector (4 in the figure) after the protective cover of the connector is removed. The protector must be kept to be replaced in case the optical connection is temporary removed.

**Do not connect unless you have previously cleaned the single-fibre cable connector with a soft paper dampened with alcohol. Introduce the connector carefully in the optical sign input in order to avoid damages in the polished surface.**

Then switch on the P400 housing and check that the ON-indicator LED (3 in the figure) turns on.

There has to be a compatible optical emitter already installed and in operation at the opposite end of the link, and it has to transmit a signal which is appropriate for video signal measurements. In case no video signal is detected, the NV LED (3 in the figure) turns on. If the input optical power level is under the specified levels, the PI LED (3 in the figure) activates.

A coax cable ended with a BNC connector will be plugged to the video signal output connector (2 in the figure). The equipment does not require any electrical fitting for its correct operation, since it is provided with automatic gain control and delivers an output electrical level of 1Vpp.

## OPERATION

Once the equipment is installed, it does not require any additional attention for its correct operation.

## MAINTENANCE

This equipment has been designed to require no maintenance periodical operations.

In order to prolong the life of the equipment, the common caution measures in optical connection and disconnection must be observed.

**The introduction of strange mechanical elements in the optical connector may result in irreparable damage in the optical components.**

## TECHNICAL CHARACTERISTICS

| | | |
|---|---|---|
| OPTICAL PARAMETERS | | |
| Optical receiver | PIN | |
| Wavelength | 850 nm (CM version)<br>1,310 nm (D version)<br>1,310 & 1,550 nm (A version) | |
| Type of fibre | Singlemode (A version)<br>Multimode (CM, D versions) | |
| Sensitivity (note 1) | ≤ 30 dBm (A, D versions)<br>≤ 28 dBm (CM version) | |
| ELECTRICAL PARAMETERS | | |
| Video system | PAL, NTSC, SECAM | |
| Output voltage | 1 Vpp (75 Ω) | |
| Output video level | Automatically controlled | |
| Output impedance | 75 Ω (note 2) | |
| Bandwidth (-3 dB) | ≥ 5.5 MHz (note 1) | |
| Differential gain | < 3.5 % (notes 1, 2) | |
| Differential phase | < 3.5 ° (notes 1, 2) | |
| Signal to noise ratio | > 45 dB (notes 1, 2 and 3) | |
| POWER PARAMETERS | | |
| Power requirements | Internal of P40W | |
| Power consumption (note 2) | < 2 W | |
| MECHANICAL PARAMETERS | | |
| Format | Plug in module for 19" rack 3U high | |
| Dimensions | 5 TE wide, 160 mm deep (without connectors) | |
| Optical connector | FC/PC (A version)<br>ST (CM, D versions) | |
| Video connector | BNC | |
| ENVIRONMENTAL CONDITIONS | | |
| Operating temperature range | -10 ºC to +50 ºC | |
| Humidity range | 0to95% without condensation | |
| INDICATORS AND ALARMS (note 4) | | |
| Unit in operation | Green | ON |
| No video output signal | Red | NV |
| Low optical input power | Red | PI |

Note 1.- Typical values, as a production average
Note 2.- Actual values are given in the test sheet. These values are measured according to the test procedure for this device
Note 3.- Value to the receiver sensitivity in all the operating range
Note 4.- LEDs on the front side



Equipos de Telecomunicación Optoelectrónicos, S.A.
Polígono de Malpica, c/ F oeste, G. Quejido, nave 74
50057 Zaragoza SPAIN
Tel. +34 976 570 353 Fax +34 976 571 383
E-mail: mail@equitel.es www.equitel.es



Published by Equipos de Telecomunicación Optoelectrónicos, S.A. (Zaragoza, July 2006)