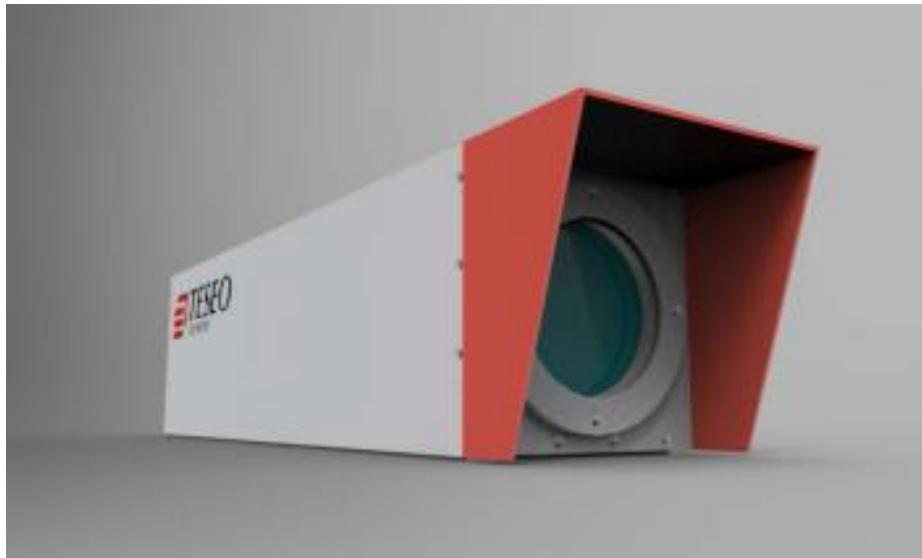


Fiber optic video communication system

IMAGINE



TESEO is now at the third generation of shielded camera systems for EMC applications.

Whether the camera is used to monitor a device under test or control the operations being carried on in an anechoic chamber, the presence of a high level of electromagnetic field requires a well shielded camera and a fiber optic connection to the control room. The higher the field the more stringent the immunity requirement imposed on the equipment.

A superior shielding effectiveness further helps in the radiated emission tests as a poorly shielded camera could contribute to the noise emitted by the device under test. Additionally the typical low illumination conditions encountered in a test chamber request the adoption of a high quality CCD.

TESEO has sold for many years state of the art camera systems based on the best CCD's available on the market coupled with the excellent TESEO video fiber optic link. Field levels in excess of 200 V/m over a broad frequency range can be easily tolerated.

APPLICATIONS

The most common applications are:

- **monitoring of the inside of the chamber by a camera fitted to a wall (or tripod mounted in a corner)**
- **reading of a LED, CRT or display as part of the immunity test of an electronic device**
- **pointing at a dashboard or airplane cockpit during radiated susceptibility tests**

SELECTION CRITERIA

The technical criteria most often used to select the camera are:

- **test field level**
- **focal distance**
- **size**
- **quality of the CCD**
- **manual or remote command**
- **battery or mains power**
- **integration in a complete video, audio, monitoring fiber optic system**

Of course also budget constraints are to be considered. TESEO offers a solution to any standard technical configuration requested at the most convenient price.

TESEO PRODUCTS

The following standard products are in current production:

- **IMAGE300MC**
- **IMAGE300MA**

Additionally a point to point video link using the same fiber technology is available to remotely connect via a fiber cable an unshielded camera with a monitor or TV.

IMAGE300MC

IMAGE300MC is the highest performance system, in use worldwide in many EMC laboratories.

The main features are the capability to remotely command pan, tilt, zoom, focus (iris is automatic), to be immune at high radiated electromagnetic interference from 10 kHz to 40 GHz up to 200 V/m, to live on the battery, with the exclusion of the pan/tilt functionality, in case of mains unavailability.

Tanks to the very high ratio between max and min focal lengths, the camera mounted on a wall can oversee the interior of the chamber for safety reason during the set-up operation and focus on a small display of a device for verification of EUT immunity in the course of radiated test.

The system is formed of:

- **MCAF** high performances color camera, PAL standard, shielded to 200 V/m from 10 kHz to 40 GHz
- **PTU03** pan/tilt unit, AC powered, with adapter for tripod mount
- **AL6** shielded mains power supply 12 VDC, 24 VAC with battery incorporated for CCU03 and PTU02
- **FB010** 10 meter long bifiber optical cable, 200/230 um
- **MOCS-MFR** chassis housing a max of three plug-in modules
- **OVCM302P** 2-slot plug-in module for insertion in MOCS MainFrames

The OVCM302P module is to be connected to a color monitor, not included in the standard system.

The OVCM302P module performs two functions:

- video signal receiver and transducer from optical to electrical
- command generator for pan/tilt via joystick and zoom plus focus via pushbuttons

The options available are:

- 14" color monitor
- any length of the fiber cable up to 500 m
- color standards other than PAL
- AL6/US for 110 VAC, 60 Hz mains
- MOCS-MF/MFD chassis (capable of housing up to 6 2-slot modules)
- other lenses
- dielectric tripod

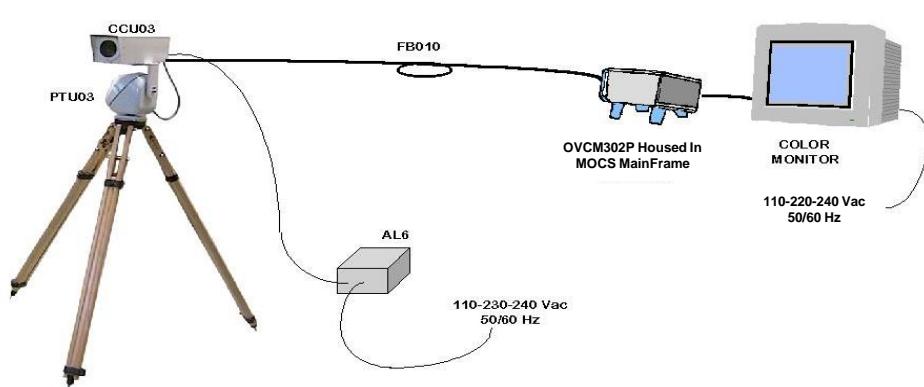


IMAGE300MA

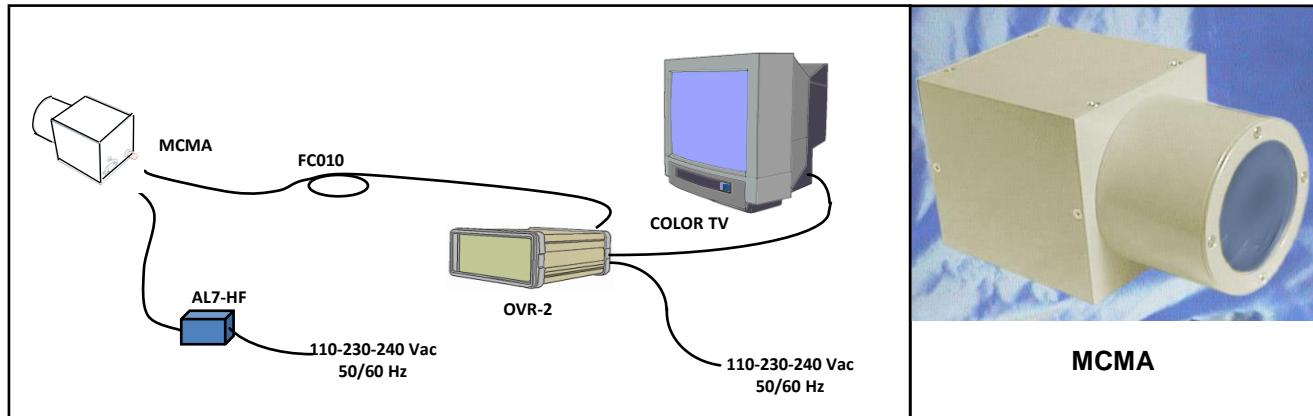
The camera belonging to the system is small and with short focal distance like MCAF, but not provided with remote commands. The manual command of the camera simplifies the configuration of the video link, that is formed of:

- **MCMA** manual color camera, PAL standard, shielded up to 200 V/m from 10 kHz to 40 GHz
- **AL7-HF** shielded mains power supply 12 VDC
- **FC010**, 10 meter long mono fiber cable, 200/230 um
- **OVR2** optical receiver

A TV color is to be added to make the above system operate.

The main options are:

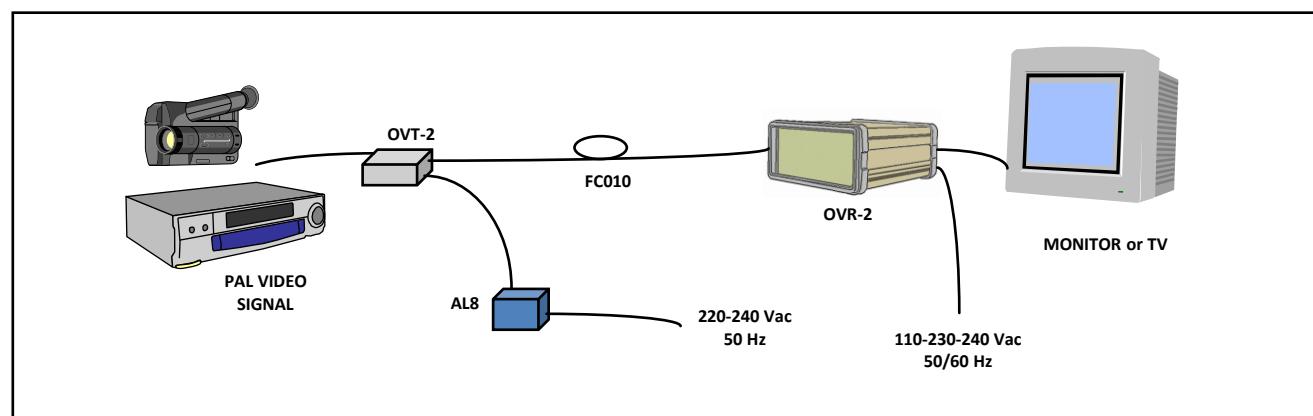
- 14" color TV
- Any length of the fiber cable up to 500 m
- Color standards other than PAL
- AL7-HF/US and OVR2/US for 110 VAC, 60 Hz mains
- Shielded battery pack and charged for total independence (10 hours) from the mains (BAT-2)
- Dielectric tripod



POINT TO POINT OPTICAL VIDEO LINK

The link is formed of:

- **OVT2** optical transmitter
- **AL8** unshielded 12 VDC supply for OVT2
- **FCmmm** single fiber cable mmm meter long, 200/230 um
- **OVR2** optical video receiver



TECHNICAL SPECIFICATIONS

VIDEO LINK

- Optical length: 500 m max
- Bandwidth: 10 Hz ÷ 15 MHz
- S/N: more than 60 dB

MCAF

- Standard: PAL
- Image device: 1/4"CCD
- Pixels: 752(H) x 582(V)
- Horizontal resolution: 520 TV lines
- Minimum illumination: 0,8 lux @ F = 1.6
- Iris: auto
- Focus / Zoom: remote control
- Focal length: from 4 to 88 mm
- Minimum distance: 30 cm
- Connectors:
 - power supply D 9 poles/male
 - PTU03 commands D 9 poles/female
 - control and signal TV ST (optical fiber)
- Dimensions: 277(L) x 80(W) x 80(H) mm
- Weight: 1.2 Kg
- Shielding: 200 V/m - 10kHz ÷ 40GHz

MCMA

- Standard: PAL
- Image device: 1/3"CCD
- Pixels: 752(H) x 582(V)
- Horizontal resolution: 450 TV lines
- Minimum illumination: 1 lux @ F = 1.4
- Iris: auto
- focus / zoom: manual
- Focal length: from 2.8 to 6 mm
- Minimum distance: 30 cm
- Connectors:
 - power supply D 9 poles/male
 - signal TV ST (optical fiber)
- Dimensions: 88(L) x 80(W) x 80(H)
- Weight: 0.6 Kg
- Shielding: 200 V/m - 10kHz ÷ 18GHz

PTU03 PAN/TILT UNIT

- Pan: 0° ÷ 360° motorized
- Tilt: 20° up ÷ 70° down (0° initial position)(motorized)
- Pan rate: 6°/sec
- Tilt rate: 1.5°/sec
- Connectors: D 9 poles/male
- Maximum load: 10Kg (balanced)
- Dimensions (H x W x D): 180 x 161 x 144 mm
- Weight: 3.5 Kg
- Tripod mount: 1/4"- 20UNC screw 4.5 mm long max

MOCS-MFR

- 6-slot chassis, capable of housing up to 3 video control modules
- Supply voltage: 110/220/240 Vac - 50/60 Hz

OVM302P PLUG-IN VIDEO AND CONTROL MODULE

- Video input connector: ST
- Video output: 1Vpp 75 ohm BNC
- Control output connector: ST
- Pan/tilt control: joystick
- Focus and zoom controls: momentary pushbutton
- Dimensions: 2-slot MOCS plug-in

OVR-2

- Input connector: ST
- Video output: 1 Vpp 75Ω BNC
- Supply voltage: 110/230/240 Vac - 50/60 Hz
- Dimensions: (H x W x D) 70 x 156 x 204 mm

OVT-2

- Output connector: ST
- Power supply connectors: socket 2.5 mm
- Video input: 1 Vpp 75Ω BNC
- Supply voltage: 12 Vdc
- Dimensions: (H x W x D) 30 x 60 x 80 mm

AL6 POWER SUPPLY

- Supply voltage: 110/230/240 V - 50/60 Hz
- Battery: 12 V, 1.8 Ah, 4 h autonomy (no for motion)
- Output voltages: 24 Vac, 12 Vdc
- Connectors: power supply D 9 poles/female

AL7-HF POWER SUPPLY

- Supply voltage: 110/230/240 Vac - 50/60 Hz
- Output voltages: 12 Vdc
- Connectors: power supply D 9 poles/female

AL8 POWER SUPPLY

- Supply voltage: 230/240 Vac - 50 Hz
- Output voltages: 12 Vdc
- Connectors: plug 2.5 mm

FB010/FC010 FIBER CABLE

- FB010 10 m 200/230 µm bifiber cable, ST connectors
- FC010 10 m 200/230 µm fiber cable, ST connectors

COLOR MONITOR CRT/LCD

- Type: CRT 14" or LCD 15" PAL color monitor
- Supply voltage: 110/230/240 Vac – 50/60 Hz

BAT-2

- Battery: 12V, 5.7Ah
- Dimensions (W x H x D): 165 x 75 x 127 mm
- Weight: 3,2 Kg
- Recharge time: 8h

Data can be changed without notice