TELERAD

Aeronautical and Maritime Radiocommunication Systems

# VHF TRANSMISSION COUPLING UNIT

**CPV9000**


## OVERVIEW

The CPV9000 has been designed to ensure the operation of two multi-channel transmitters in a coupled mode for a redundancy 1+1 and/or a summing of the transmitted signals.

The CPV9000 is 1U high and has the size of a standard 19" rack.

This coupling unit has the advantage of the series 9000 transmitters (multimode transmitters with phase and amplitude feedback) which it is linked for allowing an aperiodic coupling without any phase adjustment.

The unit consists of one control PCB and one output RF coupler associated with a 50-ohm power load.

The coupling unit ensures the following:

- control of the two RF signals originating from the internal master oscillators of the associated transmitters EM9000 and distribution of these RF signals to these same transmitters,
- simultaneous control and monitoring of two transmitters from a P.T.T. control (local, test, operation),
- simultaneous modulation of transmitters through distribution of the AF signals.

The RF coupler carries out the summing of the two transmitters signals allowing a RF output power from 25 up to 100 W.

The operating principle described here above, and a few precautions at the conception of the coupling unit ensure a static redundancy for guarantying excellent frequency availability.

In addition, the coupling unit has a function that is both for self-monitoring and monitoring other transmitters.

Connecting to the equipment is similar to connecting to a single transmitter.

The simultaneous operation of transmitters allows a permanent operation monitoring for indicating both the carrier default and modulation defaults.

The redundancy of the frequency synthesis signals is ensured by the use of internal master oscillators of EM9000 transmitters.

The use of fewer components in the coupling unit and absence of mechanical and power changeover help increase its reliability.

An optional PCB MICP19099 can be added for allowing the monitoring of the CPV9000 under the JBUS protocol.

This option uses the telemonitoring connector and proposes two RS485 accesses under the JBUS protocol.

## RADIOELECTRICAL CHARACTERISTICS

**Power supply:**
Through 21-31V transmitters
**Frequency range:**
118-144 MHz
**Modulation type:**
A3E multimode, mode2, etc.
**Output power:**
Summing Transmitters power up to 100 W
**Coupling loss:**
< 0.35 dB
**Impedance:**
50 ohms
**Alarms:**
VSWR, temperature, instability, µP fault, MICP PCB
**Mike input sensitivity:**
Selection using internal jumper up to 1 mV or 100 mV
**Wiring/Distortion:**
- Stability: Defined by the performances of the associated Tx
- AF bandwidth at 3 dB: > 300-3500 Hz
- Harmonic distortion: ≤ 2%

## MECHANICAL CHARACTERISTICS

**Height:**
44 mm
**Width:**
482 mm
**Depth:**
500 mm
**Weight:**
3.78 kg

## CLIMATIC CHARACTERISTICS

**Operating temperature:**
- -20°C to +55°C
- 95 % relative humidity at +40°C (non-condensing)

**Storage temperature:**
-40°C to +80°C

## OPTIONAL MICP19099 PCB

**Power supply:**
Through the PCB CTBF12149
**Interfaces:**
4 wires RS485
**Protocol:**
JBUS function Code 3-6-16
**Speed:**
Configurable 1200/4800/9600/19600 bauds
**Parity:**
Without
**Format data:**
8 bits


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