

## CPM Portable Microwave Link



### GENERAL DESCRIPTION

The portable multi-channel microwave system CPM is Elber's designers latest product. The working frequency can be any 500 MHz band between 2 GHz and 15 GHz and the modulation can be either analogue (FM) or digital (COFDM).

An external IF input for different or back-up signals is also available.

These features makes the CPM the ideal equipment for fast and reliable mobile links, even in hard weather conditions.

The COFDM section includes a SD 4:2:0/4:2:2 encoder with a low delay mode of less than 95 ms. In addition, an FM modulator and demodulator realized with Software Radio Technique are provided.

The output power, depending on the frequency band, can be 1 W, 2 W or 4 W.

The system can be composed of indoor and outdoor units or outdoor units only.

The outdoor equipment is composed by a tripod complete with panoramic head, base plate, orthomode transducer, parabolic dish complete with feeder and one or two RF Heads.

The outdoor control units have the same dimensions of the RF heads and can be put under the equipment, connected through a RG-216 cable.

The indoor control units are 1U 19" standard rack and can be lodged in a van.

The weatherproof RF heads, capable of being installed on the base plate, can be (depending on the application) single Transmitting or Receiving Head (Simplex), two Transmitting or two Receiving Heads (Double Simplex) or a Transmitting and a Receiving Head (Duplex).



### FEATURES

CPM /T Rev.2K8

- Simplex, Double Simplex or Duplex Configuration
- Analogue and Digital
  - COFDM 2k/8k
  - FM
  - External IF
- Standard DVB-T COFDM Transmission (QPSK, 16QAM, 64QAM)
- Frequency Band 2 ÷ 15 GHz
- Up to 500 MHz frequency agile (step size to be established with the user)
- Very Low phase noise
- Power Output @ 1 dB Compression Point:
  - CPM/T/02 +36 dBm ± 1 dB
  - CPM/T/07 +33 dBm ± 1 dB
  - CPM/T/10 +30 dBm ± 1 dB
  - CPM/T/14 +30 dBm ± 1 dB
- SD-MPEG-II 4:2:0/4:2:2 integrated encoder
- Video inputs: composite or component video, SDI, DVB-ASI
- Audio Inputs: four analogue channels
- Weatherproof RF Heads
- Carrying case
- RS232, RS485 and SNMP remote control interfaces

# SPECIFICATIONS

## General:

**Centre Frequency:** 2 GHz  $\pm$  15 GHz  
**Frequency Span:** max 500 MHz  
**Channels Spacing:** To be specified at order  
**Number Of Channels:** Depending on channel spacing  
**Frequency Stability:**  $\pm$  20 ppm (standard stability)  
 $\pm$  2 ppm (high stability)  
**IF/DC Connector:** LEMO (ERA.3T.275.CTL)

## Transmitting Head CPM/T/xx:

**Saturated RF Output Power:** CPM/T/02 +36 dBm  $\pm$  1 dB  
 CPM/T/07 +33 dBm  $\pm$  1 dB  
 CPM/T/10 +30 dBm  $\pm$  1 dB  
 CPM/T/14 +30 dBm  $\pm$  1 dB

**RF Output Connector:** Female N-type  
**RF Output Return Loss:** > 20 dB  
**Spurious Output Content:** < -65 dB  
**IF Impedance:** 75 Ohm

## Receiving Head CPM/R/xx:

**Noise Figure:** < 5 dB  
**RF Input Connector:** Female N-type  
**RF Input Return Loss:** > 20 dB  
**Image Rejection:** > 75 dB  
**IF Impedance:** 75 Ohm

## Physical:

**Cabinet Waterproof**  
**RF Heads:** Width 158 mm  
 Height 168 mm  
 Depth 251 mm

## Electrical:

**Input Voltage:** DC: 22V to 65V  
**Maximum Power Consumption:** CPM/T 65 W  
 CPM/R 40 W

## Control Unit:

**IF Frequency:** 70 MHz  
**IF/DC Connector:** LEMO (ERA.3T.275.CTL)  
**Controls:** Front Panel (LCD Display 20x2, Keypad)  
 RS-232  
 RS-485  
 SNMP

## Electrical:

**Input Voltage:** AC: 230V/50Hz or 115V/60Hz  
 DC: 22V to 65V  
**Power consumption:** 10 W

## Environmental:

**Operating Temperature Range:** -10 to 60°C  
**Relative Humidity:** 0 to 95%, non condensing

## Compliance:

CE mark

# ORDERING INFO

## Parabola: Pxx/yy

Field	Option	Tag	Description
XX	Diameter	60	60 cm Dish
		90	90 cm Dish
		120	120 cm Dish
YY	Frequency	02	1.7 to 2.7 GHz
		07	5 to 8 GHz
		10	10 to 13.25 GHz
		14	13.25 to 15 GHz

## Orthomode: OMT2/xx

Field	Option	Tag	Description
XX	Frequency	07	5 to 8 GHz
		10	10 to 13.25 GHz
		14	13.25 to 15 GHz

## RF Head: CPM/xx/yy

Field	Option	Tag	Description
XX	Device	T	Transmitting Head
		R	Receiving Head
YY	Frequency	02	1.7 to 2.7 GHz
		07	5 to 8 GHz
		10	10 to 13.25 GHz
		14	13.25 to 15 GHz

## Transmitter Control Unit: TCU/xx/yy/zz

Field	Option	Tag	Description
XX	Type	R	Rack Mount Control Unit
		W	Outdoor Weatherproof
YY	Modulation	I	Input IF Only
		A	FM Analogue
		D	Digital COFDM
		DE	Digital COFDM + Encoder
		AD	FM and COFDM*
ZZ	Remote Control Type	ADE	FM and COFDM + Encoder*
		RS	RS232 & RS485
		SNMP	RS232 & RS485 & SNMP

## Receiver Control Unit: RCU/xx/yy/zz

Field	Option	Tag	Description
XX	Type	R	Rack Mount Control Unit
		W	Outdoor Weatherproof
YY	Modulation	I	Input IF Only
		A	FM Analogue
		D	Digital COFDM
		DE	Digital COFDM + Decoder
		AD	FM and COFDM*
ZZ	Remote Control Type	ADE	FM and COFDM + Decoder*
		RS	RS232 & RS485
		SNMP	RS232 & RS485 & SNMP

\*Not available in weatherproof control unit mode