



# "ENG" MICROWAVE LINK PM2/P

PM2P\_1700-2400 (02-2003)



ENG MW Link



⇐ Helical Antenna

Omnidirectional  
Circularly Polarised  
Antenna



↑  
ENG Microwave  
Receiver  
(1U Rack Version)



↑  
ENG  
Microwave  
Transmitter

ABE 'ENG' Microwave Link "PM/2P" is the ideal portable system for connecting a TV camera rapidly to a network Production Centre, mobile Control Room or OB Vehicle.

It can also be used as a mobile link for OB purposes, or even to provide a temporary feed to a transmitter; it has single video + audio channels. In operation, the range of the PM/P Link depends on the output power chosen and the type of antenna used, and can extend to several kilometers.



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DIGITAL  
VERSIONS

✧ **Transmitter: Rugged - Lightweight - Small**

✧ **Low battery usage - Simple to operate**

The PM/2P Transmitter is frequency synthesised and operates in the 2GHz band; other bands are available on request.

The Transmitter is housed in a lightweight and extremely robust box, milled from solid aluminium, and is designed for mounting on TV cameras. Its compact size makes it ideal also for fitting to motor vehicles, motorcycles, skiers etc.

Its 12V power consumption is very low, making it very suitable for use with a battery belt.

On the control panel there is a channel selector switch, output power LED and power On/Off switch, together with the input connectors for Video, Audio and 12V DC supply.

The Receiver standard version, also synthesised, is housed in a portable case with carrying handle. It is equipped with a channel selector switch, video/audio output connectors and digital metering/control for operational parameter measurement. It also has a 70MHz IF output and an IF monitoring output.

✧ **High specification**

✧ **Stable, flutter-free pictures**

In operation, the professional performance specification of the **PM/P** Links is valued by experienced users of ENG equipment, enabling stable and high quality pictures to be obtained.

An important characteristic of the Receiver, making it very suitable for ENG radio-camera use, is the IF amplitude stabilising circuit. This employs a wide-range dynamic limiter having low phase distortion and an immediate response, much superior to long time-constant AGC.

✧ **Circular or linear polarisation antennas**

✧ **Omnidirectional & Unidirectional**

Suitable antennas for use with ENG links in a variety of applications are also made by ABE. In normal operation, it is suggested that circularly polarised antennas give better results for ENG links. For example, an omnidirectional antenna for the Transmitter and a unidirectional (e.g., a helix) type for the Receiver may be used. This technique reduces RF multipath problems due to multiple reflections, which may cause rapid signal strength variations or drop-out.

✧ **Available options include:**

- ◆ Add-on Power Amplifiers for the transmitter
- ◆ Automatic Chrominance Correction for the receiver
- ◆ Studio/Producer's Talk-back for the camera operator



## Technical Specification:

<b><u>General:</u></b>	
Frequency band:	1.6 to 1.8 GHz (optionally bands in the range 1.5 to 2.5 GHz)
Frequency selection:	Synthesised (N°3 adjacent channels)
Operating temperature range:	-10 to + 45° C
<b><u>Transmitter:</u></b>	
Output power:	+23 dBm (200mW) Typ. (+21 dBm min.) (option: higher power)
Output R.F. connector and impedance:	Type "N" (f) 50 Ω
Modulation:	F.M. ± 4 MHz
Video input level and connector:	1 Vpp "BNC" (f) 75 Ω
Pre-emphasis:	C.C.I.R. (625 Lines)
Audio input:	0 dBm (2.2Vpp) (adjustable) 600Ω balanced or unbalanced or -50 dBm (microphone with A.G.C.)
Audio pre-emphasis:	50μS (bypassable)
Audio subcarrier:	7.5 MHz (other frequencies on request)
Audio subcarrier modulation:	F.M. ± 100 KHz
Power supply:	+ 12 ± 10% 0.3A
Size:	100x36x155 mm. (connectors excluded)
Weight:	650 g.
<b><u>Receiver:</u></b>	
Receiver threshold:	-80 dBm
Input R.F. connector and impedance:	Type "N" (f) 50Ω
Noise figure:	≤9dB (typ. 6dB)
I.F.:	70 MHz
Video output level and impedance:	1Vpp 75Ω
Video connector:	Type "BNC" (f)
Audio output (OPTIONAL):	0 to + 12 dBm (30/600Ω) (balanced or unbalanced)
Power supply:	220V a.c. ± 10% 50Hz ± 5% (on request + 12 or 24V)
Housing:	portable unit with handle or 1U rack drawer
Size (for portable version):	cm 38 (w) x 12 (h) x 45 (d) handle excluded
Weight:	about 10Kg

**Link Specifications**  
**(-40dBm at receiver input)**

Amplitude/frequency response in the band (25 Hz to 5 MHz):	within 0.6 dB
Differential gain:	≤ 1.5% (Typ. 0.8%)
Differential phase:	≤ 1.5° (Typ. 0.5°)
Group delay in the video band:	within ± 15nS (Typ. ± 10 nS)
Amplitude/frequency response in the audio band (30 Hz to 15 KHz):	within ± 0.5 dB
Audio channel harmonic distortion (400 Hz tone at nominal level):	≤ 0.5%

**Omnidirectional Circularly Polarised Antenna:**

Frequency range:	1.6 to 1.8 GHz or 2.3 to 2.5 GHz
Horizontal pattern:	omnidirectional
Vertical beam-width:	45°
Nominal gain:	4 dBi
Input connector and nominal impedance:	"N" Male, 50Ω
Total length:	35/37 cm
Weight:	400g (1.6 to 1.8 GHz) 320g (2.3 to 2.5 GHz)

**Unidirectional Helical Antenna**  
**(Circular Polarisation)**

Frequency range:	1.6 to 1.8 GHz or 2.2 to 2.5 GHz
Beam-width:	20°
Nominal gain:	17 dBi
Input connector and nominal impedance:	"N" Female, 50Ω
Total length:	cm 103 (1.6 to 1.8 GHz) or cm 80 (2.2 to 2.5 GHz)
Weight:	About 2.5Kg

***Other types of antenna are available, please ask ABE's sales office.***



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