

Author: **Paul Gill**
Company: **JFMG Limited**
Date: **27 January 2003**
Title: **Profile of Proposed ENG/OB Links in
2025-2110 MHz and 2200 – 2290 MHz**
Document: **PIN74_1**

Introduction

This document provides technical and operational information to facilitate compatibility studies between the Primary users and ENG/OB video links.

1. Equipment Technical Parameters

Currently available digital links are generally based on technology derived from DVB-T developments. For some applications, this technology is not ideal and it is expected that other solutions will emerge in the future

Basic System Parameters

Modulation:	COFDM, QPSK, 16 or 64QAM, 2k carriers, (EN 300 744)
Reference Specification:	EN 302 064 (Draft – not yet adopted)
Channel Bandwidth:	8 MHz
Channel Spacing	10 MHz

2. Operational Deployment of Video Links in 2 GHz band

The proposed deployment of links in the 2 GHz band includes:-

- Cordless Cameras
- Portable Links
- Mobile Links
- Temporary point-to-point ENG Links

These are all illustrated in ERC Report 038 (Figures 13 – 21) with typical technical characteristics for each type of (analogue) link shown in Report 038.

Table 1 below is based on ERC Report 038 but tailored to suit expected UK operations and digital equipment in the 2 GHz bands.

Table 1: Profile of Proposed 2 GHz ENG/OB Operations

Type of Link	Tx Pwr	Tx Ant Gain (Max)	EIRP	Tx Ant Type (for example)	Tx Ant Ht. (agl)	Rx ant. Gain (Max)	Rx Ant Type	Rx Ant Ht (agl)	Notes
Cordless Camera	250 mW	6 dBi	0 dBW	Patch, Colinear or dipole array	2 m	20 dBi	0.6 m paraboloid (See Notes)	10 m	Handheld camera with integrated transmitter, power pack and antenna. Rx Antenna often lower gain and with lower directivity. e.g colinear, axial helix, horn etc.
Portable Link	500 mW	13 dBi	10dBW	Axial Helix	3 m	20 dBi 0.6 m paraboloid	0.6 m paraboloid (See Notes)	30 m	Handheld camera but with separate bodyworn transmitter, power pack and antenna. Rx Antenna often lower gain and with lower directivity. e.g colinear, axial helix, horn etc.
Mobile Link (Ground Rx)	1 W	13 dBi (See Notes)	13 dBW	Axial Helix, Patch	2 m	20 dBi 0.6 m paraboloid	0.6 m paraboloid	30 m	Mounted in motorcycles, pedal cycles, cars, racing cars and boats. Tx Antenna often lower gain where manual steering is not feasible
Mobile link (Ground to air)	1 W	6 dBi	6 dBW	Patch	2 m	6 dBi	Colinear	2500'	For airborne relay to fixed terminal
Mobile Link (Air to ground)	2 W	6 dBi	10 dBW	Colinear	2500'	20 dBi 0.6 m paraboloid	0.6 m paraboloid	30 m	For airborne camera or airborne relay of mobile tx on motorcycle or car etc
Temporary Point-to point ENG Link	4 W	20 dBi	26 dBW	Axial Helix or paraboloid	20 m	20 dBi 0.6 m paraboloid	0.6 m paraboloid	150 m	Tx terminal on vehicle mounted pneumatic mast. Rx terminal is a masthead mounted steerable antenna.