

Transmission Licence Application Information for the Blighter B400 Series Radar - High Power (HP) Version

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COMMERCIAL IN CONFIDENCE

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1 Introduction

In most countries it is necessary for the operator of the Blighter radar equipment to acquire a Transmission Licence from the national spectrum management authority. In the UK this is OFCOM and in the USA, the FCC.

Each licensing authority asks for specific characteristics of the transmitting equipment. This document provides the majority of information required by most authorities.

The Blighter B400 series of radars are:

- The Blighter B402 features a nominal 90° azimuth electronic scan (e-scan) angle
- The Blighter B422 features a nominal 180° azimuth e-scan angle
- The Blighter B432 features a nominal 270° azimuth e-scan angle
- The Blighter B442 features a nominal 360° azimuth e-scan angle

Please note that this information must not be freely distributed. It may only be supplied to the relevant licensing authority and wherever possible, the licensing authority should also be asked to restrict the distribution of the information.

2 Licence Application Information

Model Number		Blighter B400-HP Series (High Power)
Manufacturer		Plextek Ltd. London Road, Great Chesterford, Essex, CB10 1NY United Kingdom Tel. +44 1799 533200 Email: blighter@plextek.co.uk Web: www.plextek.com or www.blighter.com
Class of emission	UK/USA	30M3Q3N
Frequency of operation	UK	15.76GHz to 17.26GHz
	USA (Wide Band Version)	15.76GHz to 17.26GHz
	USA (Narrow Band Version)	16.26GHz to 17.26GHz
Instrumented range of operation		10 metres to 32000 metres
Antenna Gain	W20S Antennas	+19dBi min, +23dBi max.
	M10S Antennas	+23dBi min, +27dBi max.
Antenna Azimuth Beamwidth	B402	3.7° – 5.2° over approx. 90° electronic-scan segment
	B422	3.7° – 5.2° over approx. 180° electronic-scan segment
	B432	3.7° – 5.2° over approx. 270° electronic-scan segment
	B442	3.7° – 5.2° over approx. 360° electronic-scan segment
Antenna Elevation Beamwidth	W20S Antennas	±10° about boresight (0°)
	M10S Antennas	±5° about boresight (0°)
Polarization		Linear Horizontal
Peak Transmitter Power supplied to the Antenna		+7.48dBW (5.6 Watts)
Theoretical Peak Radiated Power (EIRP)	W20S Antennas	+30.5dBW (1117 Watts)
	M10S Antennas	+34.5dBW (2807 Watts)
Theoretical Mean Radiated Power (EIRP)	W20S Antennas	+29.7dBW (933 Watts)
	M10S Antennas	+33.7dBW (2344 Watts)

Peak Effective Radiated Power (ERP)	W20S Antennas	+28.3dBW (676 Watts)
(For FCC applications)	M10S Antennas	+32.3dBW (1698 Watts)
Mean Effective Radiated Power (ERP)	W20S Antennas	+27.6dBW (562 Watts)
(For FCC applications)	M10S Antennas	+31.6dBW (1413 Watts)

3 Derivations

3.1 Power

Theoretical Peak Radiated Power (EIRP) = Peak Power (+1dBW) + Maximum Antenna gain (+24dBi)

Theoretical Mean Radiated Power (EIRP) = (Peak Power (+1dBW) + Maximum Antenna gain (+24dBi)) + Duty Cycle ($10\log_{10}(84\%)$)

0dBW ERP = +2.14dBW EIRP (ERP radiated power relative to a dipole antenna)

Therefore ERP (dBW) = EIRP (dBW) - 2.14dB

Mean Effective Radiated Power (ERP) = Peak Power (+1dBW) + Maximum Antenna gain (+24dBi) + Duty Cycle ($10\log_{10}(84\%)$) - 2.14dB

3.2 Emission Designator

30M3Q3N where;

First four digits define the necessary bandwidth:

30.3MHz = 30M3 (2km mode)

Last three digits define emission class:

Q - In which the carrier is angle modulated (FM) during the period of the pulse

3 - A single channel containing analogue information

N - No information is transmitted

4 Support and Contact Information

For further information or technical support please contact:



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