*PRO*ception

V1.1

proOBF1 Range

DTT Overlap Blocking Filters

A new range of UHF bandpass filters from Proception, intended for blocking unwanted reception of transmissions from an adjacent region.

The introduction of high-power digital transmissions has led to problems with some receivers selecting multiplexes from out-of-area transmitters, leaving confused viewers watching the wrong regional services, or even listening to the wrong language!

Although this problem should be solved in the longer term by receiver developments, the use of bandpass filters can provide a quick, simple and cost effective solution, saving installers frequent call-backs.

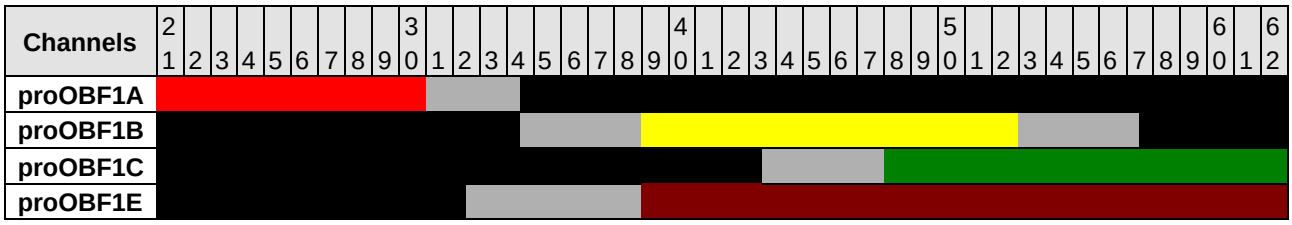
Key features

- Optimised passbands cover most UK requirements in just four versions.
- Good out-of band rejection helps block TETRA and GSM, also LTE (4G), depending on model.
- 'F' type connectors for good screening factor, helping prevent leakage around the filter.
- Good 75 Ω match throughout the passband.
- DC blocked – no damage if inadvertently line-powered (24 V DC max).
- Optional weatherproof outdoor housing available (order product code **proMHD/CASE/S**).
- Equipotential bonding terminal.

Other applications

The entire range offers excellent cut-off below 470 MHz and will help with problems from TETRA, telemetry and 70 cm amateur band transmissions. Above channel 62 all versions will help solve GSM mobile phone interference problems, while the 'A' and 'B' models will additionally help suppress the forthcoming LTE (4G) signals.

Pass- and stop-bands illustrated



Key: colour = passband; black = stopband; grey = transition region. (Out-of-TV-band regions not shown.)

Technical data

Product code	Passband channels	Passband frequencies	Stopband frequencies	
			Lower	Upper[1]
proOBF1A	21 – 30	470 – 550 MHz	DC – 438 MHz	578 – 1600 MHz
proOBF1B	39 – 52	614 – 726 MHz	DC – 578 MHz	762 – 1600 MHz
proOBF1C	48 – 62	686 – 806 MHz	DC – 650 MHz	920 – 1600 MHz
proOBF1E	39 – 62	614 – 806 MHz	DC – 562 MHz	920 – 1600 MHz
All models				
Insertion loss (passband)		< 3 dB[2]		
Stopband rejection (relative)		> 30 dB[3] (> 27 dB for upper stopbands of 'C' and 'E' versions)		
Power-pass?		No (DC-blocked)		
Connectors		Type-F (IEC 61169-24)		
EMC standard		EN 50083-2:2006 (Class B)		

Notes

1. Specified stopband rejection is typically maintained to above 2 GHz (but is not guaranteed above 1.6 GHz).
2. Insertion loss may increase slightly at the passband edges, but will not exceed 4 dB.
3. Typical stopband rejection is around 35–40 dB except close to the band edges.

The information on this data sheet is subject to change.

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Proposed DSO Overlap Filters

DSO final

Site Name	PSB ERP	PSB Channels P1	P2	P3	COM Channels C1	C2	C3	Ch Range Low	High	Pol'n
Overlap Filter 'A' (Channels 21-30 - 25 sites)										
Aberdare	0.1	24	21	27	25	22	28	21	28	V
Blaenplwyf	40	27	24	21	25	22	28	21	28	H
Bressay	2	28	25	22	27	24	21	21	28	V
Brougher Mountain	20	28	22	25	21	24	27	21	28	H
Caldbeck	100	25	28	30	23	26	29	23	30	H
Caradon Hill	100	28	25	22	21	24	27	21	28	H
Crystal Palace	200	23	26	30	25	22	28	22	30	H
Darvel	20	22	25	28	23	26	29	22	29	H
Divis	100	27	21	24	23	26	29	21	29	H
Durris	100	28	25	22	23	26	29	22	29	H
Eitshal	20	26	23	29	25	22	28	22	29	H
Fenham	0.4	27	24	21	25	22	28	21	28	V
Fenton	2	24	27	21	25	22	28	21	28	V
Hastings	1	25	28	22	23	26	30	22	30	V
Kilvey Hill	2	23	26	29	25	22	28	22	29	V
Lancaster	2	27	24	21	25	28	22	21	28	V
Pendle Forest	0.1	28	25	22	27	21	24	21	28	V
Pontypool	0.05	23	26	29	25	22	28	22	29	V
Ridge Hill	20	28	25	22	21	24	27	21	28	H
Rowridge	200	24	27	21	25	22	28	21	28	H&V
Skriaig	0.32	27	24	21	####	####	####	21	27	V
Stockland Hill	50	26	23	29	25	22	28	22	29	H
Storeton	0.56	28	25	22	23	26	29	22	29	V
Torosay	4	28	25	22	23	26	29	22	29	V
Overlap Filter 'B' (Channels 39-52 - 17 sites)										
Black Hill	100	46	43	40	41	44	47	40	47	H
Bristol Ilchester Crescent	0.2	41	44	47	42	45	49	41	49	V
Chatton	20	45	42	39	41	44	47	39	47	H
Emley Moor	174	47	44	41	51	52	48	41	52	H
Fremont Point	3.2	44	41	47	####	####	####	41	47	H
Guildford	2	43	46	40	48	52	49	40	52	V
Hannington	50	45	42	39	41	44	47	39	47	H
Heathfield	20	52	49	47	42	44	41	41	52	H
Keelylang Hill	20	46	43	50	42	45	49	42	50	H
Moel y Parc	20	45	49	42	51	52	48	42	52	H
Preseli	20	43	46	50	42	45	49	42	50	H
Redruth	20	44	41	47	48	52	51	41	52	H
Rosemarkie	20	45	49	42	43	46	50	42	50	H
Saddleworth	0.4	45	49	42	51	52	48	42	52	V
Sutton Coldfield	200	43	46	40	42	45	39	39	46	H
Tunbridge Wells	4	52	49	47	42	44	41	41	52	V
Wenvoe	100	41	44	47	42	45	49	41	49	H
Overlap Filter 'C' (Channels 48-62 - 20 sites)										
Angus	20	60	53	57	54	58	61	53	61	H
Brierley Hill	2	60	57	53	50	59	55	50	60	V
Carmel	20	60	53	57	54	58	61	53	61	H
Douglas	1	53	60	57	####	####	####	53	60	V
Dover	80	50	53	51	55	59	62	50	62	H
Huntshaw Cross	20	62	59	55	48	52	56	48	62	H
Keighley	2	61	58	54	57	53	60	53	61	V
Limavady	20	50	59	55	54	58	49	49	59	H

Long Mountain	0.4	60	53	57	####	####	####	53	60	V
Malvern	0.4	53	57	60	50	59	55	50	60	V
Mendip	100	61	54	58	48	52	56	48	61	H
Midhurst	20	55	61	58	62	59	50	50	62	H
Oliver's Mount	2	57	60	53	54	58	61	53	61	V
Oxford	100	53	60	57	62	59	55	53	62	H
Pontop Pike	100	58	54	49	50	59	55	49	59	H
Rosneath HP	0.008	61	58	54	53	57	60	53	61	H
Salisbury	2	57	60	53	62	59	55	53	62	V
Selkirk	10	62	59	55	57	53	60	53	62	H
Whitehawk Hill	4	60	53	51	57	56	48	48	60	V
Winter Hill	100	62	59	54	58	61	55	54	62	H
Overlap Filter 'E' (Channels 39-62 - 7 sites)										
Beacon Hill	20	60	53	57	42	45	51	42	60	H
Bluebell Hill	20	46	43	40	45	39	54	39	54	H
Bristol Kings Weston	0.2	43	50	46	53	57	60	43	60	V
Hemel Hempstead	2	44	41	47	50	59	55	41	59	V
Llanddona	20	57	60	53	43	46	50	43	60	H
Sudbury	100	44	41	47	58	60	56	41	60	H
Tacolneston	100	55	59	62	42	45	50	42	62	H
Aerial Group K sites where an overlap filter is of marginal benefit										
Bilsdale	100	26	29	23	43	46	40	23	46	H
Bromsgrove	0.4	26	23	30	41	44	47	23	47	V
Chesterfield	0.8	26	23	29	43	46	40	23	46	V
Craigkelly	20	27	24	21	42	45	39	21	45	H
Lark Stoke	1.26	26	23	30	41	44	47	23	47	V
Sheffield (Crosspool)	1	27	24	21	42	45	39	21	45	V
The Wrekin	20	26	23	30	41	44	47	23	47	H
Aerial Group W sites with no simple overlap filter solution										
Belmont	150	22	25	28	30	53	60	22	60	H
Idle	0.05	24	21	27	42	45	49	21	49	V
Knockmore	20	26	23	29	53	57	60	23	60	H
Nottingham	0.4	27	24	21	51	52	48	21	52	V
Reigate	2	60	57	53	21	24	27	21	60	V
Rumster Forest	20	27	24	21	30	59	62	21	62	H
Sandy Heath	180	27	24	21	51	52	48	21	52	H
Waltham	50	61	54	58	29	56	57	29	61	H