

DESIGNS DEPARTMENT MANUFACTURING INFORMATION

NO. 5.347(77)

FL2/558 A-C

UHF Bandpass Filter

PRODUCTION TEST SCHEDULE

1. DESCRIPTION

The series of filters FL2/558 A-C have been designed for use with the EP16M/501 UHF transposer as receiving aerial filters to remove unwanted out of band signals. They may also have a general purpose application. Each of the three types A, B and C covers a different group of channels in the UHF bands 4 and 5.

2. INFORMATION

- (a) Design Section: RF Section 5
- (b) Designer: R.G. Seville
- (c) Engineer Responsible: R.G. Seville
- (d) Handbook: A Handbook will not be written
- (e) Technical Instruction: References appear in EP16M/501, 2 Technical Instruction.
- (f) Any other information: None
- (g) Pre-production batch: A pre-production batch of 4 of each filter type was manufactured in Designs Department.

3. MANUFACTURING PERFORMANCE SPECIFICATION

General

Nominal Input/Output Impedance	50Ω
Input/Output Return Loss	> 18dB (typically 22dB)
In-band Loss	< 1.2dB (typically 0.8dB)

Specific

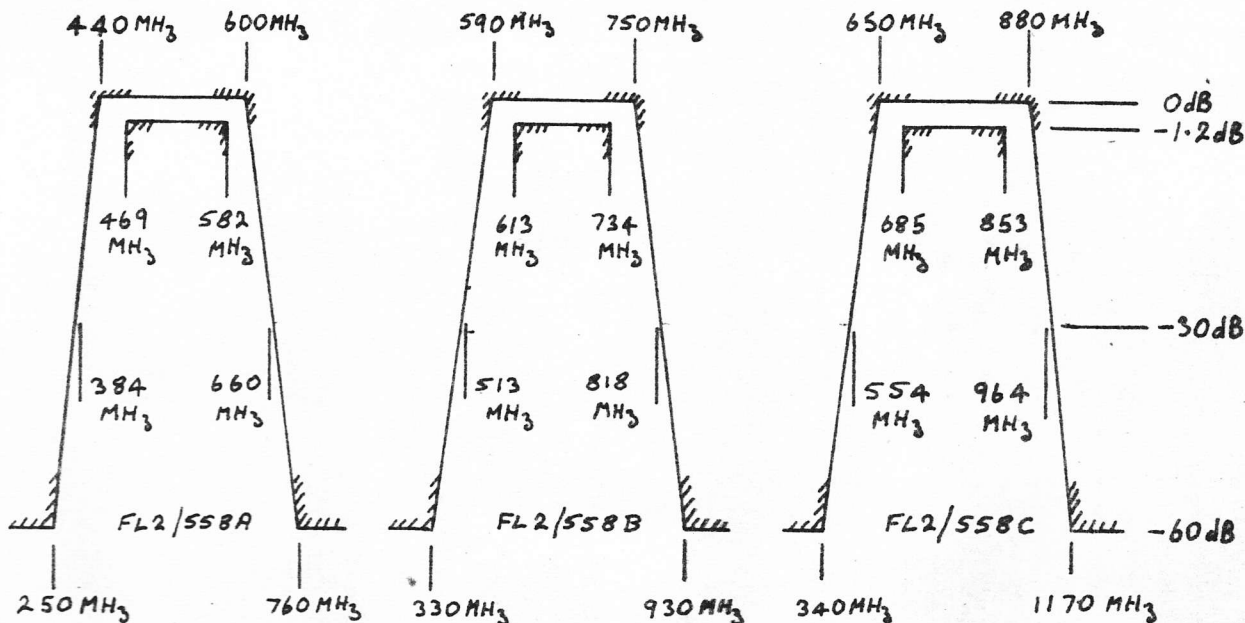
Pass-band frequencies measured at 20dB return loss points:

FL2/558 A	< 469.75MHz	to	> 581.25MHz
FL2/558 B	< 613.75MHz	to	> 733.25MHz
FL2/558 C	< 685.75MHz	to	> 853.25MHz

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BC

Through Response



4. WARNING

- (a) Safety: There are no known safety hazards associated with this equipment.
- (b) New devices, etc: The filters are made on 'Rexolite' printed board material which to the touch is soft and spongy, it is however very brittle and must be handled with care.

5. TEST APPARATUS REQUIRED

- Sweep generator and detector/display unit 450 - 860MHz, 50Ω
- 20dB coupler 450 - 860MHz, 50Ω
- 50Ω TNC Termination
- 2 x 10dB attenuator, 50Ω
- 4" G clamp
- Aluminium shim 0.05 thick as required

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The apparatus should be set up to measure return loss or through response see Fig. 1 or 2 respectively.

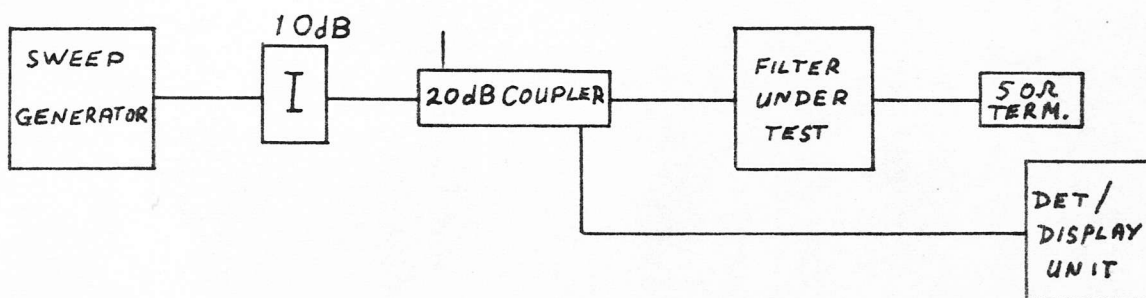


Fig. 1 Return Loss

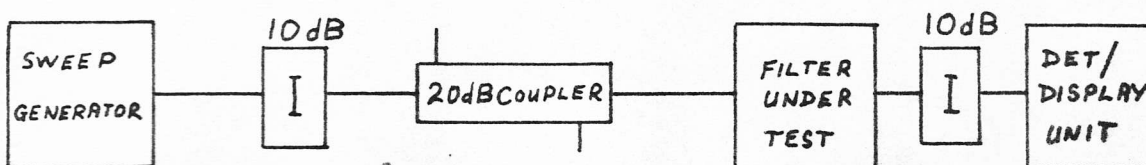


Fig. 2 Through Response

6. INSPECTION CHECKS

- (a) Ensure all screws are tight.

7. TEST PROCEDURE

7.1 Return loss measurement

- (a) Connect the apparatus as shown in Fig. 1. Note the filter type being tested A, B or C and observe its return loss over the appropriate frequency band. See specification.
- (b) The return loss shape may be irregular but should remain below the 18dB line between the frequency limits specified.
- (c) Should the return loss not conform with (b) apply pressure using the G clamp to various areas noting any area which improves the response. Cut a piece of 0.05 thick shim about 15 mm square and place it inside the filter box over the area which improved the response. Reassemble the filter and recheck the return loss.

In the preproduction batch one or two such operations was found sufficient to bring the filter within specification.

7.2 Through Response Check

- 7.2.1 Connect the apparatus as shown in Fig. 2 replacing the filter under test with a link to obtain a 0dB reference line.
- 7.2.2 Replace the link with the filter under test and check that the response conforms with that shown in Section 3.

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11.12.78

AMENDMENT TO DESIGNS DEPARTMENT MANUFACTURING INFORMATION

NO. 5.347(77)

FL2/558 A-C UHF Bandpass Filter

2. PERFORMANCE DATA

Specification

To read: Pass-band frequencies measured at 18dB return loss points.

PRODUCTION TEST SCHEDULE

3. MANUFACTURING PERFORMANCE SPECIFICATION

Specification

To read: Pass-band frequencies measured at 18dB return loss points.

7.1 Return Loss Measurements

- add (d) The termination lines that extend beyond the connectors act as shunt capacitors, they can be trimmed in length if necessary to achieve a better return loss response. They also affect the cut off frequencies. If (c) does not achieve the desired result then proceed as follows:-

Remove the filter from its box. Reverse the box bottom and clamp it to the filter boards leaving the connector clearance holes exposed. Place a finger gradually over each hole and note the effect on the return loss response. If the return loss shape worsens, less capacity is required. Both stubs should be trimmed until the best shape is achieved. Conversely if the return loss shows an improvement more capacitance is required.

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AMENDMENT SHEET 1 of 1 SHEET

D414

NO. APPROVED BY: [Signature]
DATE APPROVED: 7.2.58
L.F.F. 18.9.79
SPEC. ADDED: J.H. 10-10-78

FL2/558A-C
FILTER, BAND PASS, F

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ITEM No.	No. OFF			DESCRIPTION	CCT REF.	BBC REF. OR DRG. No.
	A	B	C			
				DRAWING NUMBERS		
				PARTS LIST	D41498A4	
				ASSEMBLY	D41498A3	
				DETAILS 1&2	D41500A2	
				DETAILS 3-5	D41501A1	
				P.B. WIRING No1 (FL2/558A)	D41502A2	
				P.B. DRILLING No1 (")	D41503A4	
				P.B. WIRING No2 (")	D41504A2	
				P.B. DRILLING No2 (")	D41505A4	
				P.B. WIRING No1 (FL2/558B)	D41506A2	
				P.B. DRILLING No1 (")	D41507A4	
				P.B. WIRING No.2 (")	D41508A2	
				P.B. DRILLING No2 (")	D41509A4	
				P.B. WIRING No1 (FL2/558C)	D41510A2	
				P.B. DRILLING No1 (")	D41511A4	
				P.B. WIRING No2 (")	D41512A2	
				P.B. DRILLING No2 (")	D41513A4	
				FURTHER INFORMATION REQUIRED FOR MANUFACTURE		
				UNIT ASSEMBLY INFORMATION	EA10484	
				SPECIFICATION	ED/FL2/558A-C	
1	1	1	1	BOX		D41500A2 DET 1
2	1	1	1	LID		" " 2
3	1			* LABEL		D41501A1 " 3
				* " "		" " 4
				* " "		" " 5
4						
5						
6						
7	1			* PRINTED BOARD WIRING No1 ED/PB/FL2/558A/1/PTH		D41502A2, D41503A4
		1		* " " " " ED/PB/FL2/558B/1/PTH		D41506A2, D41507A4
			1	* " " " " ED/PB/FL2/558C/1/PTH		D41510A2, D41511A4
8	1			* " " " " No2 ED/PB/FL2/558A/2/PTH		D41504A2, D41505A4
		1		* " " " " ED/PB/FL2/558B/2/PTH		D41508A2, D41509A4
			1	* " " " " ED/PB/FL2/558C/2/PTH		D41512A2, D41513A4
9						
10						
11						
12	2	2		* SOCKET, FIXED, R.F. COAXIAL, 50Ω, TNC		1-27495-500
13						
14						
15						
				SCREWS, METRIC, SLOTTED	FOR FIXING ITEMS	
16	22	22	22	M3 x 10 PAN HD. MS. Cr.P. (Pol)	2,3,12	
17						
18						
19				0.9 DIA B.T.C. WIRE.		

FL2/558A-C.
FILTER, BAND PASS, U.H.F.
PARTS LIST

DRN.	L.H.L.	DESIGNS DEPARTMENT
TPD.		
CKD.		
APPD.	[Signature]	

D41498A4

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