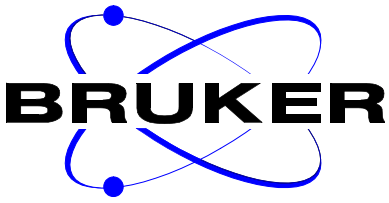

High Power Filters

RF Specifications
Technical Data

Version 005

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This manual describes the units as they are at the time of printing. On request, the manufacturer shall supply circuit diagrams, lists of components, descriptions, calibrating instructions and any other information for use by qualified personnel of the user, in charge of repairing the parts of the unit which have been stated by the manufacturer to be "repairable". Such supply shall in no event constitute permission to modify or repair the units or approval of the same.

This unit is not designed for any type of use which is not specifically described in this manual. Such use may be hazardous.

This manual was written by

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P/N: Z31481
DWG-Nr: 1184.005

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Cross reference tables 1.1

Table 1.1. Avance 300MHz

	^{1}H	^{19}F	X	^{31}P	^{13}C	^{2}H	^{15}N
^{1}H		W1346235	W1346239	W1346239	W1346239	W1346239	W1346239
^{19}F	W1346236		W1346249	W1346249	W1346249	W1346249	W1346249
X	W1346253	W1346369					
^{31}P	W1346269	W1346269			W1346372	W1346372	W1346372
^{13}C	W1346271	W1346271		W1346271		W1346459	W1346275
^{2}H	W1346452	W1346452		W1346452	W1346273		W1346273
^{15}N	W1346278	W1346278		W1346278	W1346278	W1346274	

Table 1.2. Avance 400MHz

	^{1}H	^{19}F	X	^{31}P	^{13}C	^{2}H	^{15}N
^{1}H		W1346204	W1346240	W1346240	W1346240	W1346240	W1346240
^{19}F	W1346205		W1346250	W1346250	W1346250	W1346250	W1346250
X	W1346254	W1346370					
^{31}P	W1346256	W1346256			W1346349	W1346349	W1346349
^{13}C	W1346488	W1346488		W1346488		W1346440	W1346226
^{2}H	W1346442	W1346442		W1346442	W1346260		W1346260
^{15}N	W1346227	W1346227		W1346227	W1346227	W1346261	

Table 1.3. Avance 500MHz

	^{1}H	^{19}F	X	^{31}P	^{13}C	^{2}H	^{15}N
^{1}H		W1346247	W1346223	W1346223	W1346223	W1346223	W1346223
^{19}F	W1346248		W1346251	W1346251	W1346251	W1346251	W1346251
X	W1346232	W1346358					
^{31}P	W1346262	W1346262			W1346351	W1346351	W1346351
^{13}C	W1346489	W1346489		W1346489		W1346460	W1346224
^{2}H	W1346453	W1346453		W1346453	W1346266		W1346266
^{15}N	W1346225	W1346225		W1346225	W1346225	W1346267	

Table 1.4. Avance 600MHz

	^{1}H	^{19}F	X	^{31}P	^{13}C	^{2}H	^{15}N
^{1}H		W1346228	W1346241	W1346241	W1346241	W1346241	W1346241
^{19}F	W1346229		W1346252	W1346252	W1346252	W1346252	W1346252
X	W1346255	W1346371					
^{31}P	W1346279	W1346279			W1346367	W1346367	W1346367
^{13}C	W1346490	W1346490		W1346490		W1346461	W1346230
^{2}H	W1346454	W1346454		W1346454	W1346282		W1346282
^{15}N	W1346231	W1346231		W1346231	W1346231	W1346277	

Table 1.5. Avance 700MHz

	^{1}H	^{19}F	X	^{31}P	^{13}C	^{2}H	^{15}N
^{1}H		W1346288	W1346296	W1346296	W1346296	W1346296	W1346296
^{19}F	W1346292		W1346300	W1346300	W1346300	W1346300	W1346300
X	W1346284	W1346387					
^{31}P	W1346304	W1346304			W1346474	W1346474	W1346474
^{13}C	W1346491	W1346491		W1346491		W1346462	W1346316
^{2}H	W1346455	W1346455		W1346455	W1346492		W1346492
^{15}N	W1346332	W1346332		W1346332	W1346332	W1346328	

Table 1.6. Avance 750MHz

	^{1}H	^{19}F	X	^{31}P	^{13}C	^{2}H	^{15}N
^{1}H		W1346289	W1346297	W1346297	W1346297	W1346297	W1346297
^{19}F	W1346293		W1346301	W1346301	W1346301	W1346301	W1346301
X	W1346285	W1346385					
^{31}P	W1346305	W1346305			W1346475	W1346475	W1346475
^{13}C	W1346313	W1346313		W1346313		W1346463	W1346317
^{2}H	W1346456	W1346456		W1346456	W1346493		W1346493
^{15}N	W1346333	W1346333		W1346333	W1346333	W1346329	

Table 1.7. Avance 800MHz

	^{1}H	^{19}F	X	^{31}P	^{13}C	^{2}H	^{15}N
^{1}H		W1346290	W1346298	W1346298	W1346298	W1346298	W1346298
^{19}F	W1346294		W1346302	W1346302	W1346302	W1346302	W1346302
X	W1346286	W1346386					
^{31}P	W1346306	W1346306			W1346476	W1346476	W1346476
^{13}C	W1346314	W1346314		W1346314		W1346464	W1346318
^{2}H	W1346457	W1346457		W1346457	W1346326		W1346326
^{15}N	W1346334	W1346334		W1346334	W1346334	W1346330	

Table 1.8. Avance 900MHz

	^{1}H	^{19}F	X	^{31}P	^{13}C	^{2}H	^{15}N
^{1}H		W1346291	W1346299	W1346299	W1346299	W1346299	W1346299
^{19}F	W1346295		W1346303	W1346303	W1346303	W1346303	W1346303
X	W1346287	W1346388					
^{31}P	W1346307	W1346307			W1346477	W1346477	W1346477
^{13}C	W1346315	W1346315		W1346315		W1346465	W1346319
^{2}H	W1346458	W1346458		W1346458	W1346327		W1346327
^{15}N	W1346335	W1346335		W1346335	W1346335	W1346331	

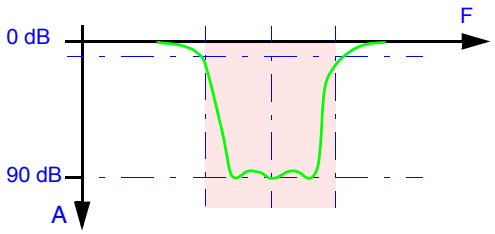
Quick search

Avance 300MHz

2

Bandstop Filter 2.1

Figure 2.1. Bandstop Filter HQ 300MHz Diagram



W1346253 - Filter HQ 300 ^{1}H S 2.1.1

Table 2.1. Filter HQ 300 ^{1}H S Specifications

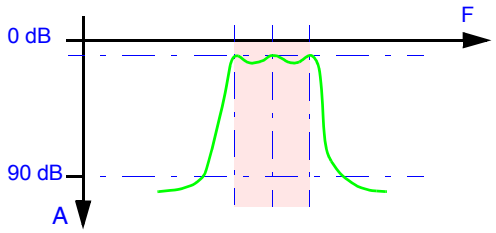
RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ...^{31}P, ^{19}F	< 121.5	282.4
Maximum Insertion Loss (dB)	0.4	0.8
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ^{1}H	300.1	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 3S063 (mm)	160 x 105 x 50	
Weight (kg)	1.1	

Table 2.2. Filter HQ 300 ^{19}F S Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ...^{31}P, ^{1}H	< 121.5	300.1
Maximum Insertion Loss (dB)	0.4	0.8
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ^{19}F	282.4	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 3S063 (mm)	160 x 105 x 50	
Weight (kg)	1.1	

Bandpass Filter 2.2

Figure 2.2. Bandpass Filter HQ 300MHz Diagram



W1346239 - Filter HQ 300 ^{1}H BP (-^{31}P, ^{19}F) 2.2.1

Table 2.3. Filter HQ 300 ^{1}H BP (-^{31}P, ^{19}F) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H	300.1	
Maximum Insertion Loss (dB)	0.7	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{19}F	< 121.5	282.4
Minimum Rejection (dB)	110	45
Mechanical Dimensions and Weight		
Case 5R100 (mm)	227 x 120 x 39	
Weight (kg)	1.2	

W1346235 - Filter HQ 300 ^{1}H BP (^{19}F) 2.2.2

Table 2.4. Filter HQ 300 ^{1}H BP (^{19}F) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H	300.1	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{19}F	< 121.5	282.4
Minimum Rejection (dB)	80	90
Mechanical Dimensions and Weight		
Case 8R105P (mm)	277 x 128 x 54	
Weight (kg)	2.6	

W1346249 - Filter HQ 300 ^{19}F BP (-^{31}P, ^{1}H) 2.2.3

Table 2.5. Filter HQ 300 ^{19}F BP (-^{31}P, ^{1}H) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{19}F	282.4	
Maximum Insertion Loss (dB)	0.7	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{1}H	< 121.5	300.1
Minimum Rejection (dB)	110	45
Mechanical Dimensions and Weight		
Case 5R100 (mm)	227 x 120 x 39	
Weight (kg)	1.2	

W1346236 - Filter HQ 300 ^{19}F BP (^{1}H) 2.2.4

Table 2.6. Filter HQ 300 ^{19}F BP (^{1}H) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{19}F	282.4	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{1}H	< 121.5	300.1
Minimum Rejection (dB)	80	90
Mechanical Dimensions and Weight		
Case 8R105P (mm)	277 x 128 x 54	
Weight (kg)	2.6	

W1346368 - Filter HQ 300 ^{19}F - ^{1}H BP (-^{31}P) 2.2.5

Table 2.7. Filter HQ 300 ^{19}F - ^{1}H BP (-^{31}P) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{19}F, ^{1}H	282.4	300.1
Maximum Insertion Loss (dB)	0.8	0.8
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ...^{31}P	< 121.5	
Minimum Rejection (dB)	110	
Mechanical Dimensions and Weight		
Case 5R100 (mm)	227 x 120 x 39	
Weight (kg)	1.2	

W1346269 - Filter HQ 300 ^{7}Li - ^{31}P BP (-^{87}Rb, ^{19}F-) 2.2.6

Table 2.8. Filter HQ 300 ^{7}Li - ^{31}P BP (-^{87}Rb, ^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{7}Li...^{31}P	116.6...121.5	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{87}Rb, ^{19}F...	< 98.2	> 282.4
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H073 (mm)	336 x 100 x 37	
Weight (kg)	2.0	

W1346372 - Filter HQ 300 ^{7}Li - ^{31}P BP (-^{13}C, ^{19}F-) 2.2.7

Table 2.9. Filter HQ 300 ^{7}Li - ^{31}P BP (-^{13}C, ^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{7}Li...^{31}P	116.6...121.5	
Maximum Insertion Loss (dB)	0.5	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{13}C, ^{19}F...	< 75.5	> 282.4
Minimum Rejection (dB)	90	80
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346270 - Filter HQ 300 ^{71}Ga - ^{87}Rb BP (-^{13}C, ^{31}P-) 2.2.8

Table 2.10. Filter HQ 300 ^{71}Ga - ^{87}Rb BP (-^{13}C, ^{31}P-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{71}Ga...^{87}Rb	91.5...98.2	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{13}C, ^{31}P...	< 75.5	> 121.5
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346271 - Filter HQ 300 ^{59}Co - ^{23}Na BP (-^{29}Si, ^{87}Rb-) 2.2.9

Table 2.11. Filter HQ 300 ^{59}Co - ^{23}Na BP (-^{29}Si, ^{87}Rb-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{59}Co...^{23}Na	71.2...79.4	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{29}Si, ^{87}Rb...	< 59.6	> 98.2
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H133 (mm)	336 x 160 x 37	
Weight (kg)	2.9	

W1346459 - Filter HQ 300 ^{59}Co - ^{23}Na BP (-^{2}H, ^{19}F-) 2.2.10

Table 2.12. Filter HQ 300 ^{59}Co - ^{23}Na BP (-^{2}H, ^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{59}Co...^{23}Na	71.2...79.4	
Maximum Insertion Loss (dB)	0.6	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{2}H, ^{19}F...	< 46.0	> 282.4
Minimum Rejection (dB)	90	80
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346275 - Filter HQ 300 ^{59}Co - ^{23}Na BP (-^{15}N) 2.2.11

Table 2.13. Filter HQ 300 ^{59}Co - ^{23}Na BP (-^{15}N) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{59}Co...^{23}Na	71.2...79.4	
Maximum Insertion Loss (dB)	0.5	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{15}N	< 30.4	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 4H073 (mm)	204 x 97 x 37	
Weight (kg)	1.1	

W1346272 - Filter HQ 300 ^{29}Si BP (-^{2}H, ^{13}C-) 2.2.12

Table 2.14. Filter HQ 300 ^{29}Si BP (-^{2}H, ^{13}C-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{29}Si	59.6	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{2}H, ^{13}C...	< 46.0	> 75.5
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H133 (mm)	336 x 160 x 37	
Weight (kg)	2.9	

W1346452 - Filter HQ 300 ^{17}O - ^{2}H BP (^{11}B-) 2.2.13

Table 2.15. Filter HQ 300 ^{17}O - ^{2}H BP (^{11}B-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{17}O...^{2}H	40.7...46.0	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ^{11}B, ^{31}P...	96.3	> 121.5
Minimum Rejection (dB)	75	85
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346273 - Filter HQ 300 ^{133}Cs - ^{2}H BP (-15N, 29Si-) *2.2.14*

Table 2.16. Filter HQ 300 ^{133}Cs - ^{2}H BP (-^{15}N, ^{29}Si-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{133}Cs...^{2}H	39.4...46.0	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{15}N, ^{29}Si...	< 30.4	> 59.6
Minimum Rejection (dB)	90	80
Mechanical Dimensions and Weight		
Case 8H169 (mm)	336 x 197 x 37	
Weight (kg)	3.9	

W1346274 - Filter HQ 300 ^{15}N BP (-^{14}N, ^{2}H-) *2.2.15*

Table 2.17. Filter HQ 300 ^{15}N BP (-^{14}N, ^{2}H-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{15}N	30.4	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{14}N, ^{2}H...	< 21.7	> 46.0
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H169 (mm)	336 x 197 x 37	
Weight (kg)	3.9	

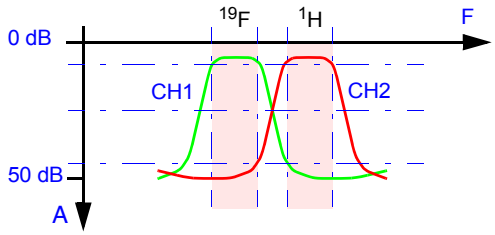
W1346278 - Filter HQ 300 ^{15}N BP (^{13}C-) *2.2.16*

Table 2.18. Filter HQ 300 ^{15}N BP (^{13}C-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{15}N	30.4	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ^{59}Co, ^{13}C...	71.2	> 75.5
Minimum Rejection (dB)	85	90
Mechanical Dimensions and Weight		
Case 5H169 (mm)	241 x 192 x 37	
Weight (kg)	2.5	

Diplexer Filters 2.3

Figure 2.3. Diplexer Filter HQ 300MHz Diagram



W1346237 - Diplexer HQ 300 ^{1}H / ^{19}F 2.3.1

Table 2.19. Diplexer HQ 300 ^{1}H / ^{19}F Specifications

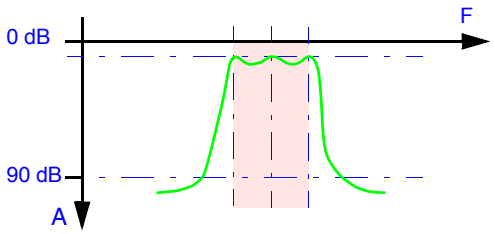
RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H, ^{19}F	300.1	282.4
Maximum Insertion Loss (dB)	0.6	0.6
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ^{19}F, ^{1}H	282.4	300.1
Minimum Rejection (dB)	50	50
Mechanical Dimensions and Weight		
Case 4S063D (mm)	188 x 103 x 65	
Weight (kg)	1.3	

Avance 360MHz

3

Bandpass Filter 3.1

Figure 3.1. Bandpass Filter HQ 360MHz Diagram



W1346407 - Filter HQ 360 ^{1}H BP (-^{31}P, ^{19}F) 3.1.1

Table 3.1. Filter HQ 360 ^{1}H BP (-^{31}P, ^{19}F) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H	360.1	
Maximum Insertion Loss (dB)	0.7	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{19}F	< 145.8	338.8
Minimum Rejection (dB)	110	45
Mechanical Dimensions and Weight		
Case 5R100 (mm)	227 x 120 x 39	
Weight (kg)	1.2	

W1346408 - Filter HQ 360 ^{1}H BP (^{19}F) 3.1.2

Table 3.2. Filter HQ 360 ^{1}H BP (^{19}F) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H	360.1	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{19}F	< 145.8	338.8
Minimum Rejection (dB)	80	90
Mechanical Dimensions and Weight		
Case 8R105P (mm)	277 x 128 x 54	
Weight (kg)	2.6	

W1346403 - Filter HQ 360 ^{19}F BP (-^{31}P, ^{1}H) 3.1.3

Table 3.3. Filter HQ 360 ^{19}F BP (-^{31}P, ^{1}H) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{19}F	338.8	
Maximum Insertion Loss (dB)	0.7	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{1}H	< 145.8	360.1
Minimum Rejection (dB)	110	45
Mechanical Dimensions and Weight		
Case 5R100 (mm)	227 x 120 x 39	
Weight (kg)	1.2	

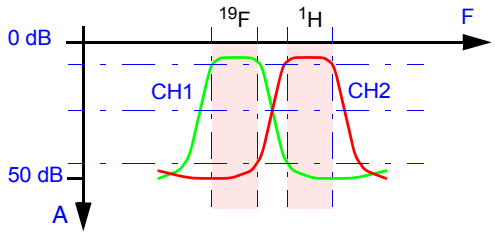
W1346404 - Filter HQ 360 ^{19}F BP (^{1}H) *3.1.4*

Table 3.4. Filter HQ 360 ^{19}F BP (^{1}H) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{19}F	338.8	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{1}H	< 145.8	360.1
Minimum Rejection (dB)	80	90
Mechanical Dimensions and Weight		
Case 8R105P (mm)	277 x 128 x 54	
Weight (kg)	2.6	

Diplexer Filters 3.2

Figure 3.2. Diplexer Filter HQ 360MHz Diagram



W1346416 - Diplexer HQ 360 ^{1}H / ^{19}F 3.2.1

Table 3.5. Diplexer HQ 360 ^{1}H / ^{19}F Specifications

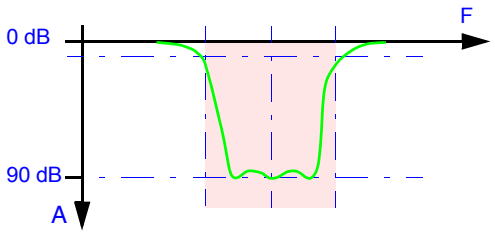
RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H, ^{19}F	360.1	338.8
Maximum Insertion Loss (dB)	0.6	0.6
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ^{19}F, ^{1}H	338.8	360.1
Minimum Rejection (dB)	50	50
Mechanical Dimensions and Weight		
Case 4S063D (mm)	188 x 103 x 65	
Weight (kg)	1.3	

Avance 400MHz

4

Bandstop Filter 4.1

Figure 4.1. Bandstop Filter HQ 400MHz Diagram



W1346254 - Filter HQ 400 ^{1}H S 4.1.1

Table 4.1. Filter HQ 400 ^{1}H S Specifications

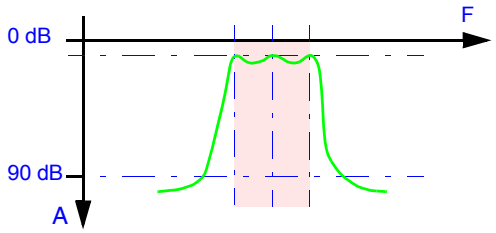
RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ...^{31}P, ^{19}F	< 162.0	376.5
Maximum Insertion Loss (dB)	0.4	0.8
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ^{1}H	400.1	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 3S063 (mm)	160 x 105 x 50	
Weight (kg)	1.1	

Table 4.2. Filter HQ 400 ^{19}F S Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ...^{31}P, ^{1}H	< 162.0	400.1
Maximum Insertion Loss (dB)	0.4	0.8
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ^{19}F	376.5	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 3S063 (mm)	160 x 105 x 50	
Weight (kg)	1.1	

Bandpass Filter 4.2

Figure 4.2. Bandpass Filter HQ 400MHz Diagram



W1346240 - Filter HQ 400 ^{1}H BP (-^{31}P, ^{19}F) 4.2.1

Table 4.3. Filter HQ 400 ^{1}H BP (-^{31}P, ^{19}F) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H	400.1	
Maximum Insertion Loss (dB)	0.7	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{19}F	< 162.0	376.5
Minimum Rejection (dB)	110	45
Mechanical Dimensions and Weight		
Case 5R100 (mm)	227 x 120 x 39	
Weight (kg)	1.2	

W1346204 - Filter HQ 400 ^{1}H BP (^{19}F) 4.2.2

Table 4.4. Filter HQ 400 ^{1}H BP (^{19}F) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H	400.1	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{19}F	< 162.0	376.5
Minimum Rejection (dB)	80	90
Mechanical Dimensions and Weight		
Case 8R105P (mm)	277 x 128 x 54	
Weight (kg)	2.6	

W1346250 - Filter HQ 400 ^{19}F BP (-^{31}P, ^{1}H) 4.2.3

Table 4.5. Filter HQ 400 ^{19}F BP (-^{31}P, ^{1}H) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{19}F	376.5	
Maximum Insertion Loss (dB)	0.7	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{1}H	< 162.0	400.1
Minimum Rejection (dB)	110	45
Mechanical Dimensions and Weight		
Case 5R100 (mm)	227 x 120 x 39	
Weight (kg)	1.2	

W1346205 - Filter HQ 400 ^{19}F BP (^{1}H) 4.2.4

Table 4.6. Filter HQ 400 ^{19}F BP (^{1}H) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{19}F	376.5	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{1}H	< 162.0	400.1
Minimum Rejection (dB)	80	90
Mechanical Dimensions and Weight		
Case 8R105P (mm)	277 x 128 x 54	
Weight (kg)	2.6	

W1346373 - Filter HQ 400 ^{19}F - ^{1}H BP (-^{31}P) 4.2.5

Table 4.7. Filter HQ 400 ^{19}F - ^{1}H BP (-^{31}P) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{19}F, ^{1}H	376.5	400.1
Maximum Insertion Loss (dB)	0.8	0.8
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ...^{31}P	< 162.0	
Minimum Rejection (dB)	110	
Mechanical Dimensions and Weight		
Case 5R100 (mm)	227 x 120 x 39	
Weight (kg)	1.2	

W1346256 - Filter HQ 400 ^{7}Li - ^{31}P BP (-^{87}Rb, ^{19}F-) 4.2.6

Table 4.8. Filter HQ 400 ^{7}Li - ^{31}P BP (-^{87}Rb, ^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{7}Li...^{31}P	155.5...162.0	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{87}Rb, ^{19}F...	< 130.9	> 376.5
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H073 (mm)	336 x 100 x 37	
Weight (kg)	2.0	

W1346349 - Filter HQ 400 ^{7}Li - ^{31}P BP (-^{13}C, ^{19}F-) 4.2.7

Table 4.9. Filter HQ 400 ^{7}Li - ^{31}P BP (-^{13}C, ^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{7}Li...^{31}P	155.5...162.0	
Maximum Insertion Loss (dB)	0.5	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{13}C, ^{19}F...	< 100.6	> 376.5
Minimum Rejection (dB)	90	80
Mechanical Dimensions and Weight		
Case 6H073 (mm)	277 x 98 x 37	
Weight (kg)	1.6	

W1346257 - Filter HQ 400 ^{71}Ga - ^{87}Rb BP (-^{13}C, ^{31}P-) 4.2.8

Table 4.10. Filter HQ 400 ^{71}Ga - ^{87}Rb BP (-^{13}C, ^{31}P-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{71}Ga...^{87}Rb	122.0...130.9	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{13}C, ^{31}P...	< 100.6	> 162.0
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H073 (mm)	336 x 100 x 37	
Weight (kg)	2.0	

W1346488 - Filter HQ 400 ^{13}C - ^{23}Na BP (-^{29}Si, ^{71}Ga-) 4.2.9

Table 4.11. Filter HQ 400 ^{13}C - ^{23}Na BP (-^{29}Si, ^{71}Ga-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{13}C...^{23}Na	100.6...105.8	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{29}Si, ^{71}Ga...	< 79.5	> 122.0
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 7R155 (mm)	334 x 194 x 54	
Weight (kg)	3.4	

W1346258 - Filter HQ 400 ^{59}Co - ^{23}Na BP (-^{29}Si, ^{87}Rb-) 4.2.10

Table 4.12. Filter HQ 400 ^{59}Co - ^{23}Na BP (-^{29}Si, ^{87}Rb-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{59}Co...^{23}Na	94.9...105.8	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{29}Si, ^{87}Rb...	< 79.5	> 130.9
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H133 (mm)	336 x 160 x 37	
Weight (kg)	2.9	

W1346440 - Filter HQ 400 ^{59}Co - ^{23}Na BP (-^{2}H, ^{19}F-) 4.2.11

Table 4.13. Filter HQ 400 ^{59}Co - ^{23}Na BP (-^{2}H, ^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{59}Co...^{23}Na	94.9...105.8	
Maximum Insertion Loss (dB)	0.6	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{2}H, ^{19}F...	< 61.4	> 376.5
Minimum Rejection (dB)	90	80
Mechanical Dimensions and Weight		
Case 6H073 (mm)	277 x 98 x 37	
Weight (kg)	1.6	

W1346226 - Filter HQ 400 ^{59}Co - ^{23}Na BP (-^{15}N) 4.2.12

Table 4.14. Filter HQ 400 ^{59}Co - ^{23}Na BP (-^{15}N) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{59}Co...^{23}Na	94.9...105.8	
Maximum Insertion Loss (dB)	0.5	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{15}N	< 40.6	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 4H073 (mm)	204 x 97 x 37	
Weight (kg)	1.1	

W1346259 - Filter HQ 400 ^{29}Si BP (-^{2}H, ^{13}C-) 4.2.13

Table 4.15. Filter HQ 400 ^{29}Si BP (-^{2}H, ^{13}C-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{29}Si	79.5	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{2}H, ^{13}C...	< 61.4	> 100.6
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H133 (mm)	336 x 160 x 37	
Weight (kg)	2.9	

W1346442 - Filter HQ 400 ^{17}O - ^{2}H BP (^{11}B-) 4.2.14

Table 4.16. Filter HQ 400 ^{17}O - ^{2}H BP (^{11}B-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{17}O...^{2}H	54.2...61.4	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ^{11}B, ^{31}P...	128.3	> 162.0
Minimum Rejection (dB)	75	85
Mechanical Dimensions and Weight		
Case 5H169 (mm)	241 x 192 x 37	
Weight (kg)	2.5	

W1346260 - Filter HQ 400 ^{133}Cs - ^{2}H BP (-^{15}N, ^{29}Si-) 4.2.15

Table 4.17. Filter HQ 400 ^{133}Cs - ^{2}H BP (-^{15}N, ^{29}Si-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{133}Cs...^{2}H	52.5...61.4	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{15}N, ^{29}Si...	< 40.6	> 79.5
Minimum Rejection (dB)	90	80
Mechanical Dimensions and Weight		
Case 8H133 (mm)	336 x 160 x 37	
Weight (kg)	2.9	

W1346261 - Filter HQ 400 ^{15}N BP (-^{14}N, ^{2}H-) 4.2.16

Table 4.18. Filter HQ 400 ^{15}N BP (-^{14}N, ^{2}H-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{15}N	40.6	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{14}N, ^{2}H...	< 28.9	> 61.4
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H133 (mm)	336 x 160 x 37	
Weight (kg)	2.9	

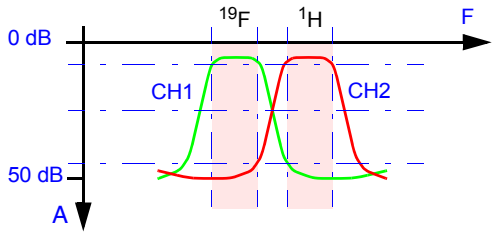
W1346227 - Filter HQ 400 ^{15}N BP (13C-) 4.2.17

Table 4.19. Filter HQ 400 ^{15}N BP (^{13}C-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{15}N	40.6	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ^{59}Co, ^{13}C...	94.9	> 100.6
Minimum Rejection (dB)	85	90
Mechanical Dimensions and Weight		
Case 5H133 (mm)	241 x 157 x 37	
Weight (kg)	1.9	

Diplexer Filters 4.3

Figure 4.3. Diplexer Filter HQ 400MHz Diagram



W1346345 - Diplexer HQ 400 ^{1}H / ^{19}F 4.3.1

Table 4.20. Diplexer HQ 400 ^{1}H / ^{19}F Specifications

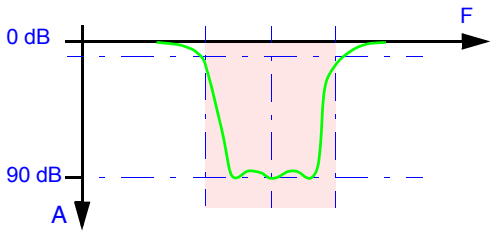
RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H, ^{19}F	400.1	376.5
Maximum Insertion Loss (dB)	0.6	0.6
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ^{19}F, ^{1}H	376.5	400.1
Minimum Rejection (dB)	50	50
Mechanical Dimensions and Weight		
Case 4S063D (mm)	188 x 103 x 65	
Weight (kg)	1.3	

Avance 500MHz

5

Bandstop Filter 5.1

Figure 5.1. Bandstop Filter HQ 500MHz Diagram



W1346232 - Filter HQ 500 ^{1}H S 5.1.1

Table 5.1. Filter HQ 500 ^{1}H S Specifications

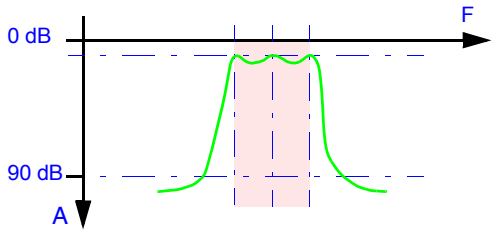
RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ...^{31}P, ^{19}F	< 202.5	470.6
Maximum Insertion Loss (dB)	0.4	0.8
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ^{1}H	500.1	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 3S063 (mm)	160 x 105 x 50	
Weight (kg)	1.1	

Table 5.2. Filter HQ 500 ^{19}F S Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ...^{31}P, ^{1}H	< 202.5	500.1
Maximum Insertion Loss (dB)	0.4	0.8
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ^{19}F	470.6	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 3S063 (mm)	160 x 105 x 50	
Weight (kg)	1.1	

Bandpass Filter 5.2

Figure 5.2. Band Pass Filter HQ 500MHz Diagram



W1346223 - Filter HQ 500 ^{1}H BP (-^{31}P, ^{19}F) 5.2.1

Table 5.3. Filter HQ 500 ^{1}H BP(-^{31}P, ^{19}F) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H	500.1	
Maximum Insertion Loss (dB)	0.7	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{19}F	< 202.5	470.6
Minimum Rejection (dB)	110	45
Mechanical Dimensions and Weight		
Case 5R069 (mm)	227 x 89 x 39	
Weight (kg)	0.9	

W1346247 - Filter HQ 500 ^{1}H BP (^{19}F) 5.2.2

Table 5.4. Filter HQ 500 ^{1}H BP (^{19}F) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H	500.1	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{19}F	< 202.5	470.6
Minimum Rejection (dB)	80	90
Mechanical Dimensions and Weight		
Case 8R055P (mm)	282 x 79 x 54	
Weight (kg)	1.6	

W1346251 - Filter HQ 500 ^{19}F BP (-^{31}P, ^{1}H) 5.2.3

Table 5.5. Filter HQ 500 ^{19}F BP (-^{31}P, ^{1}H) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{19}F	470.6	
Maximum Insertion Loss (dB)	0.7	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{1}H	< 202.5	500.1
Minimum Rejection (dB)	110	45
Mechanical Dimensions and Weight		
Case 5R069 (mm)	227 x 89 x 39	
Weight (kg)	0.9	

W1346248 - Filter HQ 500 ^{19}F BP (^{1}H) 5.2.4

Table 5.6. Filter HQ 500 ^{19}F BP (^{1}H) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{19}F	470.6	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{1}H	< 202.5	500.1
Minimum Rejection (dB)	80	90
Mechanical Dimensions and Weight		
Case 8R055P (mm)	282 x 79 x 54	
Weight (kg)	1.6	

W1346374 - Filter HQ 500 ^{19}F - ^{1}H BP (-^{31}P) 5.2.5

Table 5.7. Filter HQ 500 ^{19}F - ^{1}H BP (^{31}P) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{19}F, ^{1}H	470.6	500.1
Maximum Insertion Loss (dB)	0.8	0.8
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ...^{31}P	< 202.5	
Minimum Rejection (dB)	110	
Mechanical Dimensions and Weight		
Case 5R069 (mm)	227 x 89 x 39	
Weight (kg)	0.9	

W1346262 - Filter HQ 500 ^{7}Li - ^{31}P BP (-^{87}Rb, ^{19}F-) 5.2.6

Table 5.8. Filter HQ 500 ^{7}Li - ^{31}P BP (-^{87}Rb, ^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{7}Li...^{31}P	194.4...202.5	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{87}Rb, ^{19}F...	< 163.6	> 470.6
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H073 (mm)	336 x 100 x 37	
Weight (kg)	2.0	

W1346351 - Filter HQ 500 ^{7}Li - ^{31}P BP (-^{13}C, ^{19}F-) 5.2.7

Table 5.9. Filter HQ 500 ^{7}Li - ^{31}P BP (-^{13}C, ^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{7}Li...^{31}P	194.4...202.5	
Maximum Insertion Loss (dB)	0.5	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{13}C, ^{19}F...	< 125.8	> 470.6
Minimum Rejection (dB)	90	80
Mechanical Dimensions and Weight		
Case 6H073 (mm)	277 x 98 x 37	
Weight (kg)	1.6	

W1346263 - Filter HQ 500 ^{71}Ga - ^{87}Rb BP (-^{13}C, ^{31}P-) 5.2.8

Table 5.10. Filter HQ 500 ^{71}Ga - ^{87}Rb BP (-^{13}C, ^{31}P-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{71}Ga...^{87}Rb	152.5...163.6	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{13}C, ^{31}P...	< 125.8	> 202.5
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H097 (mm)	336 x 125 x 37	
Weight (kg)	2.5	

W1346489 - Filter HQ 500 ^{13}C - ^{23}Na BP (-^{29}Si, ^{71}Ga-) 5.2.9

Table 5.11. Filter HQ 500 ^{13}C - ^{23}Na BP (-^{29}Si, ^{71}Ga-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{13}C...^{23}Na	125.8...132.3	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{29}Si, ^{71}Ga...	< 99.4	> 152.5
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 7R155 (mm)	334 x 194 x 54	
Weight (kg)	3.4	

W1346264 - Filter HQ 500 ^{59}Co - ^{23}Na BP (-^{29}Si, ^{87}Rb-) 5.2.10

Table 5.12. Filter HQ 500 ^{59}Co - ^{23}Na BP (-^{29}Si, ^{87}Rb-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{59}Co...^{23}Na	118.7...132.3	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{29}Si, ^{87}Rb...	< 99.4	> 163.6
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H097 (mm)	336 x 125 x 37	
Weight (kg)	2.5	

W1346460 - Filter HQ 500 ^{59}Co - ^{23}Na BP (-^{2}H, ^{19}F-) 5.2.11

Table 5.13. Filter HQ 500 ^{59}Co - ^{23}Na BP (-^{2}H, ^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{59}Co...^{23}Na	118.7...132.3	
Maximum Insertion Loss (dB)	0.6	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{2}H, ^{19}F...	< 76.8	> 470.6
Minimum Rejection (dB)	90	80
Mechanical Dimensions and Weight		
Case 6H073 (mm)	277 x 98 x 37	
Weight (kg)	1.6	

W1346224 - Filter HQ 500 ^{59}Co - ^{23}Na BP (-^{15}N) 5.2.12

Table 5.14. Filter HQ 500 ^{59}Co - ^{23}Na BP (-^{15}N) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{59}Co...^{23}Na	118.7...132.3	
Maximum Insertion Loss (dB)	0.5	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{15}N	< 50.7	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 4H073 (mm)	204 x 97 x 37	
Weight (kg)	1.1	

W1346265 - Filter HQ 500 ^{29}Si BP (-^{2}H, ^{13}C-) 5.2.13

Table 5.15. Filter HQ 500 ^{29}Si BP (-^{2}H, ^{13}C-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{29}Si	99.4	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{2}H, ^{13}C...	< 76.8	> 125.8
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H169 (mm)	336 x 197 x 37	
Weight (kg)	3.9	

W1346453 - Filter HQ 500 ^{17}O - ^{2}H BP (^{11}B-) 5.2.14

Table 5.16. Filter HQ 500 ^{17}O - ^{2}H BP (^{11}B-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{17}O...^{2}H	67.8...76.7	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ^{11}B, ^{31}P...	160.4	> 202.5
Minimum Rejection (dB)	75	85
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346266 - Filter HQ 500 ^{133}Cs - ^{2}H BP (-^{15}N, ^{29}Si-) 5.2.15

Table 5.17. Filter HQ 500 ^{133}Cs - ^{2}H BP (-^{15}N, ^{29}Si-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{133}Cs...^{2}H	65.6...76.8	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{15}N, ^{29}Si...	< 50.7	> 99.4
Minimum Rejection (dB)	90	80
Mechanical Dimensions and Weight		
Case 8H133 (mm)	336 x 160 x 37	
Weight (kg)	2.9	

W1346267 - Filter HQ 500 ^{15}N BP (-^{14}N, ^{2}H-) *5.2.16*

Table 5.18. Filter HQ 500 ^{15}N BP (-^{14}N, ^{2}H-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{15}N	50.7	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{14}N, ^{2}H...	< 36.1	> 76.8
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H133 (mm)	336 x 160 x 37	
Weight (kg)	2.9	

W1346225 - Filter HQ 500 ^{15}N BP (^{13}C-) *5.2.17*

Table 5.19. Filter HQ 500 ^{15}N BP (^{13}C-) Specifications

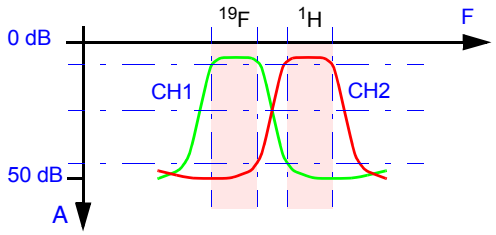
RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{15}N	50.7	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ^{59}Co, ^{13}C...	118.7	> 125.8
Minimum Rejection (dB)	85	90
Mechanical Dimensions and Weight		
Case 5H133 (mm)	241 x 157 x 37	
Weight (kg)	1.9	

Table 5.20. Filter HQ 500 ^{14}N BP (^{15}N-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{14}N	36.1	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ^{15}N...	> 50.7	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

Diplexer Filters 5.3

Figure 5.3. Diplexer Filter HQ 500MHz Diagram



W1346346 - Diplexer HQ 500 ^{1}H / ^{19}F 5.3.1

Table 5.21. Diplexer HQ 500 ^{1}H / ^{19}F Specifications

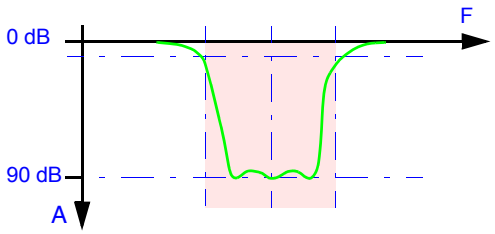
RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H, ^{19}F	500.1	470.6
Maximum Insertion Loss (dB)	0.6	0.6
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ^{19}F, ^{1}H	470.6	500.1
Minimum Rejection (dB)	50	50
Mechanical Dimensions and Weight		
Case 4S063D (mm)	188 x 103 x 65	
Weight (kg)	1.3	

Avance 600MHz

6

Bandstop Filter 6.1

Figure 6.1. Bandstop Filter HQ 600MHz Diagram



W1346255 - Filter HQ 600 ^{1}H S 6.1.1

Table 6.1. Filter HQ 600 ^{1}H S Specifications

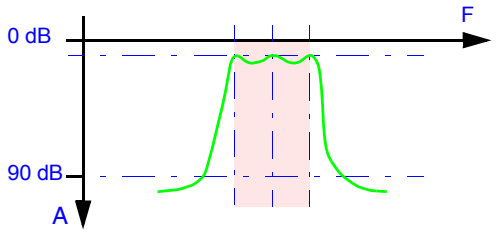
RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ...^{31}P, ^{19}F	< 242.9	564.7
Maximum Insertion Loss (dB)	0.4	0.8
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ^{1}H	600.1	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 3S063 (mm)	160 x 105 x 50	
Weight (kg)	1.1	

Table 6.2. Filter HQ 600 ^{19}F S Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ...^{31}P, ^{1}H	< 242.9	600.1
Maximum Insertion Loss (dB)	0.4	0.8
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ^{19}F	564.7	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 3S063 (mm)	160 x 105 x 50	
Weight (kg)	1.1	

Bandpass Filter 6.2

Figure 6.2. Bandpass Filter HQ 600MHz Diagram



W1346241 - Filter HQ 600 ^{1}H BP (-^{31}P, ^{19}F) 6.2.1

Table 6.3. Filter HQ 600 ^{1}H BP (-^{31}P, ^{19}F) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H	600.1	
Maximum Insertion Loss (dB)	0.7	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{19}F	< 242.9	564.7
Minimum Rejection (dB)	110	45
Mechanical Dimensions and Weight		
Case 5R069 (mm)	227 x 89 x 39	
Weight (kg)	0.9	

W1346228 - Filter HQ 600 ^{1}H BP (^{19}F) 6.2.2

Table 6.4. Filter HQ 600 ^{1}H BP (^{19}F) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H	600.1	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{19}F	< 242.9	564.7
Minimum Rejection (dB)	80	90
Mechanical Dimensions and Weight		
Case 8R055P (mm)	282 x 79 x 54	
Weight (kg)	1.6	

W1346252 - Filter HQ 600 ^{19}F BP (-^{31}P, ^{1}H) 6.2.3

Table 6.5. Filter HQ 600 ^{19}F BP (-^{31}P, ^{1}H) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{19}F	564.7	
Maximum Insertion Loss (dB)	0.7	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{1}H	< 242.9	600.1
Minimum Rejection (dB)	110	45
Mechanical Dimensions and Weight		
Case 5R069 (mm)	227 x 89 x 39	
Weight (kg)	0.9	

W1346229 - Filter HQ 600 ^{19}F BP (^{1}H) 6.2.4

Table 6.6. Filter HQ 600 ^{19}F BP (^{1}H) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{19}F	564.7	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{1}H	< 242.9	600.1
Minimum Rejection (dB)	80	90
Mechanical Dimensions and Weight		
Case 8R055P (mm)	282 x 79 x 54	
Weight (kg)	1.6	

W1346375 - Filter HQ 600 ^{19}F - ^{1}H BP (-^{31}P) 6.2.5

Table 6.7. Filter HQ 600 ^{19}F - ^{1}H BP (^{31}P) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{19}F, ^{1}H	564.7	600.1
Maximum Insertion Loss (dB)	0.8	0.8
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ...^{31}P	< 242.9	
Minimum Rejection (dB)	110	
Mechanical Dimensions and Weight		
Case 5R069 (mm)	227 x 89 x 39	
Weight (kg)	0.9	

W1346279 - Filter HQ 600 ^{7}Li - ^{31}P BP (-^{87}Rb,^{19}F-) 6.2.6

Table 6.8. Filter HQ 600 ^{7}Li - ^{31}P (-^{87}Rb,^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{7}Li...^{31}P	233.2...242.9	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{87}Rb, ^{19}F...	< 196.4	> 564.7
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H073 (mm)	336 x 100 x 37	
Weight (kg)	2.0	

W1346367 - Filter HQ 600 ^{7}Li - ^{31}P BP (-^{13}C,^{19}F-) 6.2.7

Table 6.9. Filter HQ 600 ^{7}Li - ^{31}P (-^{13}C,^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{7}Li...^{31}P	233.2...242.9	
Maximum Insertion Loss (dB)	0.5	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{13}C, ^{19}F...	< 150.9	> 564.7
Minimum Rejection (dB)	90	80
Mechanical Dimensions and Weight		
Case 6H073 (mm)	277 x 98 x 37	
Weight (kg)	1.6	

W1346280 - Filter HQ 600 ^{71}Ga - ^{87}Rb BP (-^{13}C,^{31}P-) 6.2.8

Table 6.10. Filter HQ 600 ^{71}Ga - ^{87}Rb BP (-^{13}C,^{31}P-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{71}Ga...^{87}Rb	183.0...196.4	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{13}C, ^{31}P...	< 150.9	> 242.9
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H097 (mm)	336 x 125 x 37	
Weight (kg)	2.5	

W1346490 - Filter HQ 600 ^{13}C - ^{23}Na BP (-^{29}Si, ^{71}Ga-) 6.2.9

Table 6.11. Filter HQ 600 ^{13}C - ^{23}Na BP (-^{29}Si, ^{71}Ga-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{13}C...^{23}Na	150.9...158.7	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{29}Si, ^{71}Ga...	< 119.2	> 183.0
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H133 (mm)	351 x 157 x 38	
Weight (kg)	2.8	

W1346276 - Filter HQ 600 ^{59}Co - ^{23}Na BP (-^{29}Si, ^{87}Rb-) 6.2.10

Table 6.12. Filter HQ 600 ^{59}Co - ^{23}Na BP (-^{29}Si, ^{87}Rb-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{59}Co...^{23}Na	142.4...158.7	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{29}Si, ^{87}Rb...	< 119.2	> 196.4
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H097 (mm)	336 x 125 x 37	
Weight (kg)	2.5	

W1346461 - Filter HQ 600 ^{59}Co - ^{23}Na BP (-^{2}H, ^{19}F-) 6.2.11

Table 6.13. Filter HQ 600 ^{59}Co - ^{23}Na BP (-^{2}H, ^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{59}Co...^{23}Na	142.4...158.7	
Maximum Insertion Loss (dB)	0.6	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{2}H, ^{19}F...	< 92.1	> 564.7
Minimum Rejection (dB)	90	80
Mechanical Dimensions and Weight		
Case 6H073 (mm)	277 x 98 x 37	
Weight (kg)	1.6	

W1346230 - Filter HQ 600 ^{59}Co - ^{23}Na BP (-15N) 6.2.12

Table 6.14. Filter HQ 600 ^{59}Co - ^{23}Na BP (-15N) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{59}Co...^{23}Na	142.4...158.7	
Maximum Insertion Loss (dB)	0.5	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{15}N	< 60.8	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 4H073 (mm)	204 x 97 x 37	
Weight (kg)	1.1	

W1346281 - Filter HQ 600 ^{29}Si BP (-^{2}H, ^{13}C-) 6.2.13

Table 6.15. Filter HQ 600 ^{29}Si BP (-^{2}H, ^{13}C-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{29}Si	119.2	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{2}H, ^{13}C...	< 92.1	> 150.9
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H097 (mm)	336 x 125 x 37	
Weight (kg)	2.5	

W1346454 - Filter HQ 600 ^{17}O - ^{2}H BP (^{11}B-) 6.2.14

Table 6.16. Filter HQ 600 ^{17}O - ^{2}H BP (^{11}B-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{17}O...^{2}H	81.3...92.1	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ^{11}B, ^{31}P...	192.5	> 242.9
Minimum Rejection (dB)	75	85
Mechanical Dimensions and Weight		
Case 6H073 (mm)	277 x 98 x 37	
Weight (kg)	1.6	

W1346282 - Filter HQ 600 ^{133}Cs - ^{2}H BP (-^{15}N, ^{29}Si-) 6.2.15

Table 6.17. Filter HQ 600 ^{133}Cs - ^{2}H BP (-^{15}N, ^{29}Si-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{133}Cs...^{2}H	78.7...92.1	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{15}N, ^{29}Si...	< 60.8	> 119.2
Minimum Rejection (dB)	90	80
Mechanical Dimensions and Weight		
Case 8H139 (mm)	336 x 166 x 37	
Weight (kg)	3.4	

W1346277 - Filter HQ 600 ^{15}N BP (-^{14}N, ^{2}H-) *6.2.16*

Table 6.18. Filter HQ 600 ^{15}N BP (-^{14}N, ^{2}H-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{15}N	60.8	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{14}N, ^{2}H...	< 43.4	> 92.1
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H139 (mm)	336 x 166 x 37	
Weight (kg)	3.4	

W1346231 - Filter HQ 600 ^{15}N BP (^{13}C-) *6.2.17*

Table 6.19. Filter HQ 600 ^{15}N BP (^{13}C-) Specifications

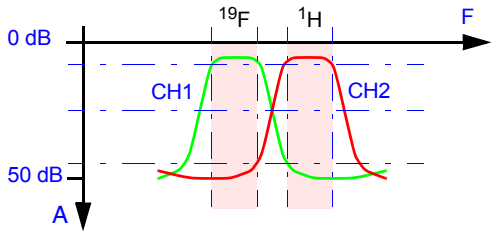
RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{15}N	60.8	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ^{59}Co, ^{13}C...	142.4	> 150.9
Minimum Rejection (dB)	85	90
Mechanical Dimensions and Weight		
Case 5H133 (mm)	241 x 157 x 37	
Weight (kg)	1.9	

Table 6.20. Filter HQ 600 ^{14}N BP (^{15}N-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{14}N	43.4	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ^{15}N...	> 60.8	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

Diplexer Filters 6.3

Figure 6.3. Diplexer Filter HQ 600MHz Diagram



W1346347 - Diplexer HQ 600 ^{1}H / ^{19}F 6.3.1

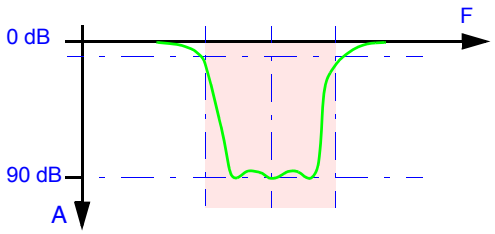
Table 6.21. Diplexer HQ 600 ^{1}H / ^{19}F Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H, ^{19}F	600.1	564.7
Maximum Insertion Loss (dB)	0.6	0.6
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ^{19}F, ^{1}H	564.7	600.1
Minimum Rejection (dB)	50	50
Mechanical Dimensions and Weight		
Case 4S063D (mm)	188 x 103 x 65	
Weight (kg)	1.3	

Avance 700MHz 7

Bandstop Filter 7.1

Figure 7.1. Bandstop Filter HQ 700MHz Diagram



W1346284 - Filter HQ 700 ^{1}H S 7.1.1

Table 7.1. Filter HQ 700 ^{1}H S Specifications

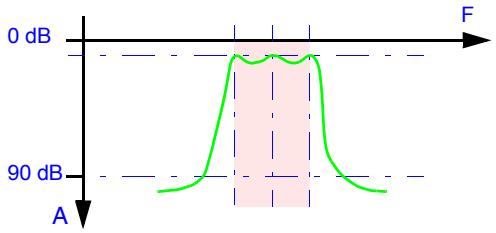
RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ...^{31}P, ^{19}F	< 283.4	658.8
Maximum Insertion Loss (dB)	0.4	0.8
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ^{1}H	700.1	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 3S063 (mm)	160 x 105 x 50	
Weight (kg)	1.1	

Table 7.2. Filter HQ 700 ^{19}F S Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ...^{31}P, ^{1}H	< 283.4	700.1
Maximum Insertion Loss (dB)	0.4	0.8
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ^{19}F	658.8	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 3S063 (mm)	160 x 105 x 50	
Weight (kg)	1.1	

Bandpass Filter 7.2

Figure 7.2. Bandpass Filter HQ 700MHz Diagram



W1346296 - Filter HQ 700 ^{1}H BP (-^{31}P, ^{19}F) 7.2.1

Table 7.3. Filter HQ 700 ^{1}H BP (-^{31}P, ^{19}F) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H	700.1	
Maximum Insertion Loss (dB)	0.7	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{19}F	< 283.4	658.8
Minimum Rejection (dB)	110	45
Mechanical Dimensions and Weight		
Case 5R045 (mm)	227 x 65 x 39	
Weight (kg)	0.7	

W1346288 - Filter HQ 700 ^{1}H BP (^{19}F) 7.2.2

Table 7.4. Filter HQ 700 ^{1}H BP (^{19}F) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H	700.1	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{19}F	< 283.4	658.8
Minimum Rejection (dB)	80	90
Mechanical Dimensions and Weight		
Case 8R055P (mm)	282 x 79 x 54	
Weight (kg)	1.6	

W1346300 - Filter HQ 700 ^{19}F Pass (-^{31}P, ^{1}H) 7.2.3

Table 7.5. Filter HQ 700 ^{19}F BP (-^{31}P, ^{1}H) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 2% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{19}F	658.8	
Maximum Insertion Loss (dB)	0.7	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{1}H	< 283.4	700.1
Minimum Rejection (dB)	110	45
Mechanical Dimensions and Weight		
Case 5R045 (mm)	227 x 65 x 39	
Weight (kg)	0.7	

W1346292 - Filter HQ 700 ^{19}F BP (^{1}H) 7.2.4

Table 7.6. Filter HQ 700 ^{19}F BP (^{1}H) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{19}F	658.8	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{1}H	< 283.4	700.1
Minimum Rejection (dB)	80	90
Mechanical Dimensions and Weight		
Case 8R055P (mm)	282 x 79 x 54	
Weight (kg)	1.6	

W1346304 - Filter HQ 700 ^{7}Li - ^{31}P BP (-^{87}Rb,^{19}F-) 7.2.5

Table 7.7. Filter HQ 700 ^{7}Li - ^{31}P BP (-^{87}Rb,^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{7}Li...^{31}P	272.1...283.4	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{87}Rb, ^{19}F...	< 229.1	> 658.8
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H073 (mm)	336 x 100 x 37	
Weight (kg)	2.0	

W1346474 - Filter HQ 700 ^{7}Li - ^{31}P BP (-^{13}C,^{19}F-) 7.2.6

Table 7.8. Filter HQ 700 ^{7}Li - ^{31}P BP (-^{13}C,^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{7}Li...^{31}P	272.1...283.4	
Maximum Insertion Loss (dB)	0.5	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{13}C, ^{19}F...	< 176.0	> 658.8
Minimum Rejection (dB)	90	80
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346308 - Filter HQ 700 ^{71}Ga - ^{87}Rb BP (-^{13}C, ^{7}Li-) 7.2.7

Table 7.9. Filter HQ 700 ^{71}Ga - ^{87}Rb BP (-^{13}C, ^{7}Li-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{71}Ga...^{87}Rb	213.5...229.1	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{13}C, ^{7}Li...	< 176.0	> 272.1
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 6R125 (mm)	249 x 153 x 39	
Weight (kg)	1.5	

W1346491 - Filter HQ 700 ^{13}C - ^{23}Na BP (-^{29}Si, ^{71}Ga-) 7.2.8

Table 7.10. Filter HQ 700 ^{13}C - ^{23}Na BP (-^{29}Si, ^{71}Ga-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{13}C...^{23}Na	176.0...185.2	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{29}Si, ^{71}Ga...	< 139.1	> 213.5
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 6R125 (mm)	249 x 153 x 39	
Weight (kg)	1.5	

W1346312 - Filter HQ 700 ^{59}Co - ^{23}Na BP (-^{29}Si, ^{87}Rb-) 7.2.9

Table 7.11. Filter HQ 700 ^{59}Co - ^{23}Na BP (-^{29}Si, ^{87}Rb-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{59}Co...^{23}Na	166.1...185.2	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{29}Si, ^{87}Rb...	< 139.1	> 229.1
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H073 (mm)	336 x 100 x 37	
Weight (kg)	2.0	

W1346462 - Filter HQ 700 ^{59}Co - ^{23}Na BP (-^{2}H, ^{19}F-) 7.2.10

Table 7.12. Filter HQ 700 ^{59}Co - ^{23}Na BP (-^{2}H, ^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{59}Co...^{23}Na	166.1...185.2	
Maximum Insertion Loss (dB)	0.6	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{2}H, ^{19}F...	< 107.5	> 658.8
Minimum Rejection (dB)	90	80
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346316 - Filter HQ 700 ^{59}Co - ^{23}Na BP (-^{15}N) 7.2.11

Table 7.13. Filter HQ 700 ^{59}Co - ^{23}Na BP (-^{15}N) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{59}Co...^{23}Na	166.1...185.2	
Maximum Insertion Loss (dB)	0.5	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{15}N	< 71.0	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 4H073 (mm)	204 x 97 x 37	
Weight (kg)	1.1	

W1346320 - Filter HQ 700 ^{29}Si BP (-^{2}H, ^{13}C-) 7.2.12

Table 7.14. Filter HQ 700 ^{29}Si BP (-^{2}H, ^{13}C-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{29}Si	139.1	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{2}H, ^{13}C...	< 107.5	> 176.0
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 7R155 (mm)	334 x 194 x 54	
Weight (kg)	3.4	

W1346455 - Filter HQ 700 ^{17}O - ^{2}H BP (^{11}B-) 7.2.13

Table 7.15. Filter HQ 700 ^{17}O - ^{2}H BP (^{11}B-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{17}O...^{2}H	94.9...107.5	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ^{11}B, ^{31}P...	224.5	> 283.4
Minimum Rejection (dB)	75	85
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346492 - Filter HQ 700 ^{17}O - ^{2}H BP (-^{15}N, ^{29}Si-) 7.2.14

Table 7.16. Filter HQ 700 ^{17}O - ^{2}H BP (-^{15}N, ^{29}Si-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{17}O...^{2}H	94.9...107.5	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{15}N, ^{29}Si...	< 71.0	> 139.1
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 7R155 (mm)	334 x 194 x 54	
Weight (kg)	3.4	

W1346324 - Filter HQ 700 ^{133}Cs - ^{2}H BP (-^{15}N, ^{29}Si-) 7.2.15

Table 7.17. Filter HQ 700 ^{133}Cs - ^{2}H BP (-^{15}N, ^{29}Si-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{133}Cs...^{2}H	91.8...107.5	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{15}N, ^{29}Si...	< 71.0	> 139.1
Minimum Rejection (dB)	90	80
Mechanical Dimensions and Weight		
Case 8H097 (mm)	336 x 125 x 37	
Weight (kg)	2.5	

W1346328 - Filter HQ 700 ^{15}N BP (-^{14}N, ^{2}H-) 7.2.16

Table 7.18. Filter HQ 700 ^{15}N BP (-^{14}N, ^{2}H) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{15}N	71.0	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{14}N, ^{2}H...	< 50.6	> 107.5
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H139 (mm)	336 x 166 x 37	
Weight (kg)	3.4	

W1346332 - FilterHQ 700 ^{15}N BP (^{13}C-) 7.2.17

Table 7.19. Filter HQ 700 ^{15}N BP (^{13}C-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{15}N	71.0	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ^{59}Co, ^{13}C...	166.1	> 176.0
Minimum Rejection (dB)	85	90
Mechanical Dimensions and Weight		
Case 6H073 (mm)	277 x 98 x 37	
Weight (kg)	1.6	

Table 7.20. Filter HQ 700 ^{14}N BP (^{15}N-) Specifications

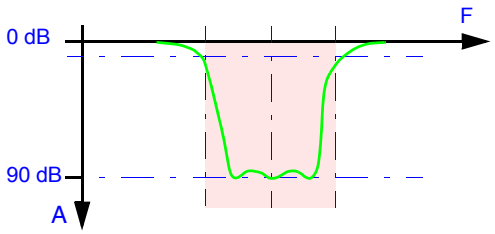
RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{14}N	50.6	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ^{15}N...	> 71.0	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 4S063D (mm)	188 x 103 x 65	
Weight (kg)	1.3	

Avance 750MHz

8

Bandstop Filter 8.1

Figure 8.1. Bandstop Filter HQ 750MHz Diagram



W1346285 Filter HQ 750 ^{1}H S 8.1.1

Table 8.1. Filter HQ 750 ^{1}H S Specifications

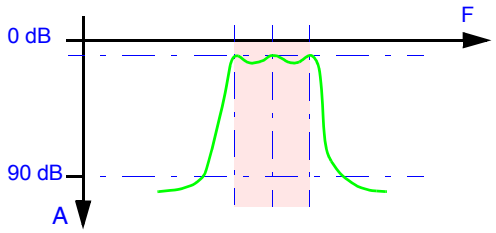
RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ...^{31}P, ^{19}F	< 303.7	705.8
Maximum Insertion Loss (dB)	0.4	0.8
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ^{1}H	750.1	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 3S063 (mm)	160 x 105 x 50	
Weight (kg)	1.1	

Table 8.2. Filter HQ 750 ^{19}F S Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ...^{31}P, ^{1}H	< 303.7	750.1
Maximum Insertion Loss (dB)	0.4	0.8
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ^{19}F	705.8	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 3S063 (mm)	160 x 105 x 50	
Weight (kg)	1.1	

Bandpass Filter 8.2

Figure 8.2. Bandpass Filter HQ 750MHz Diagram



W1346297 - Filter HQ 750 ^{1}H BP (-^{31}P, ^{19}F) 8.2.1

Table 8.3. Filter HQ 750 ^{1}H BP (-^{31}P, ^{19}F) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 2% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H	750.1	
Maximum Insertion Loss (dB)	0.7	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{19}F	< 303.7	705.8
Minimum Rejection (dB)	110	45
Mechanical Dimensions and Weight		
Case 5R045 (mm)	227 x 65 x 39	
Weight (kg)	0.7	

W1346289 - Filter HQ 750 ^{1}H BP (^{19}F) 8.2.2

Table 8.4. Filter HQ 750 ^{1}H BP (^{19}F) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H	750.1	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{19}F	< 303.7	705.8
Minimum Rejection (dB)	80	90
Mechanical Dimensions and Weight		
Case 8R055P (mm)	282 x 79 x 54	
Weight (kg)	1.6	

W1346301 - Filter HQ 750 ^{19}F BP (-^{31}P, ^{1}H) 8.2.3

Table 8.5. Filter HQ 750 ^{19}F BP (-^{31}P, ^{1}H) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{19}F	705.8	
Maximum Insertion Loss (dB)	0.7	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{1}H	< 303.7	750.1
Minimum Rejection (dB)	110	45
Mechanical Dimensions and Weight		
Case 5R045 (mm)	227 x 65 x 39	
Weight (kg)	0.7	

W1346293 - Filter HQ 750 ^{19}F BP (^{1}H) 8.2.4

Table 8.6. Filter HQ 750 ^{19}F BP (^{1}H) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{19}F	705.8	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{1}H	< 303.7	750.1
Minimum Rejection (dB)	80	90
Mechanical Dimensions and Weight		
Case 8R055P (mm)	282 x 79 x 54	
Weight (kg)	1.6	

W1346305 - Filter HQ 750 ^{7}Li - ^{31}P BP (-^{87}Rb, ^{19}F-) 8.2.5

Table 8.7. Filter HQ 750 ^{7}Li - ^{31}P BP (-^{87}Rb, ^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{7}Li...^{31}P	291.5...303.7	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{87}Rb, ^{19}F...	< 245.4	> 705.8
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 6R125 (mm)	249 x 153 x 39	
Weight (kg)	1.5	

W1346475 - Filter HQ 750 ^{7}Li - ^{31}P BP (-^{13}C,^{19}F-) 8.2.6

Table 8.8. Filter HQ 750 ^{7}Li - ^{31}P BP (-^{13}C,^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{7}Li...^{31}P	291.5...303.7	
Maximum Insertion Loss (dB)	0.5	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{13}C, ^{19}F...	< 188.6	> 705.8
Minimum Rejection (dB)	90	80
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346309 - Filter HQ 750 ^{71}Ga - ^{87}Rb BP (-^{13}C, ^{7}Li-) 8.2.7

Table 8.9. Filter HQ 750 ^{71}Ga - ^{87}Rb BP (-^{13}C, ^{7}Li-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{71}Ga...^{87}Rb	228.8...245.4	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{13}C, ^{7}Li...	< 188.6	> 291.5
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 6R125 (mm)	249 x 153 x 39	
Weight (kg)	1.5	

W1346313 - Filter HQ 750 ^{13}C - ^{23}Na BP (-^{29}Si, ^{71}Ga-) 8.2.8

Table 8.10. Filter HQ 750 ^{13}C - ^{23}Na BP (-^{29}Si, ^{71}Ga-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{13}C...^{23}Na	188.6...198.4	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{29}Si, ^{71}Ga...	< 149.0	> 228.8
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 6R125 (mm)	249 x 153 x 39	
Weight (kg)	1.5	

W1346463 - Filter HQ 750 ^{59}Co - ^{23}Na BP (-^{2}H, ^{19}F-) 8.2.9

Table 8.11. Filter HQ 750 ^{59}Co - ^{23}Na BP (-^{2}H, ^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{59}Co...^{23}Na	178.0...198.4	
Maximum Insertion Loss (dB)	0.6	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{2}H, ^{19}F...	< 115.2	> 705.8
Minimum Rejection (dB)	90	80
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346317 - Filter HQ 750 ^{59}Co - ^{23}Na BP (-^{15}N) 8.2.10

Table 8.12. Filter HQ 750 ^{59}Co - ^{23}Na (-^{15}N) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{59}Co...^{23}Na	178.0...198.4	
Maximum Insertion Loss (dB)	0.5	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{15}N	< 76.0	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 4H073 (mm)	204 x 97 x 37	
Weight (kg)	1.1	

W1346321 - Filter HQ 750 ^{29}Si BP (-^{2}H, ^{13}C-) 8.2.11

Table 8.13. Filter HQ 750 ^{29}Si BP (-^{2}H, ^{13}C-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{29}Si	149.0	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{2}H, ^{13}C...	< 115.2	> 188.6
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 6R125 (mm)	249 x 153 x 39	
Weight (kg)	1.5	

W1346456 - Filter HQ 750 ^{17}O - ^{2}H BP (^{11}B-) 8.2.12

Table 8.14. Filter HQ 750 ^{17}O - ^{2}H BP (^{11}B-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{17}O...^{2}H	101.7...115.2	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ^{11}B, ^{31}P...	240.6	> 303.7
Minimum Rejection (dB)	75	85
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346493 - Filter HQ 750 ^{17}O - ^{2}H BP (-^{15}N, ^{29}Si-) 8.2.13

Table 8.15. Filter HQ 750 ^{17}O - ^{2}H BP (-^{15}N, ^{29}Si-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{17}O...^{2}H	101.7...115.2	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{15}N, ^{29}Si...	< 76.0	> 149.0
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 7R155 (mm)	334 x 194 x 54	
Weight (kg)	3.4	

W1346325 - Filter HQ 750 ^{133}Cs - ^{2}H BP (-^{15}N, ^{29}Si-) 8.2.14

Table 8.16. Filter HQ 750 ^{133}Cs - ^{2}H BP (-^{15}N, ^{29}Si-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{133}Cs...^{2}H	98.4...115.2	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{15}N, ^{29}Si...	< 76.0	> 149.0
Minimum Rejection (dB)	90	80
Mechanical Dimensions and Weight		
Case 8H073 (mm)	336 x 100 x 37	
Weight (kg)	2.0	

W1346329 - Filter HQ 750 ^{15}N BP (-^{14}N, ^{2}H-) 8.2.15

Table 8.17. Filter HQ 750 ^{15}N BP (-^{14}N, ^{2}H-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{15}N	76.0	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{14}N, ^{2}H...	< 54.2	> 115.2
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346333 - Filter HQ 750 ^{15}N BP (^{13}C-) 8.2.16

Table 8.18. Filter HQ 750 ^{15}N BP (^{13}C-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{15}N	76.0	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ^{59}Co, ^{13}C...	178.0	> 188.6
Minimum Rejection (dB)	85	90
Mechanical Dimensions and Weight		
Case 5H169 (mm)	241 x 192 x 37	
Weight (kg)	2.5	

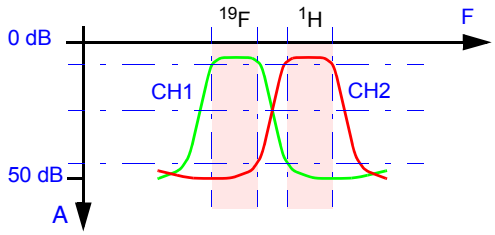
W1346337 - Filter HQ 750 ^{14}N BP (^{15}N-) 8.2.17

Table 8.19. Filter HQ 750 ^{14}N BP (^{15}N-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{14}N	54.2	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ^{15}N...	> 76.0	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

Diplexer Filters 8.3

Figure 8.3. Diplexer Filter HQ 750MHz Diagram



W1346378 Diplexer HQ 750 ^{1}H / ^{19}F 8.3.1

Table 8.20. Diplexer HQ 750 ^{1}H / ^{19}F Specifications

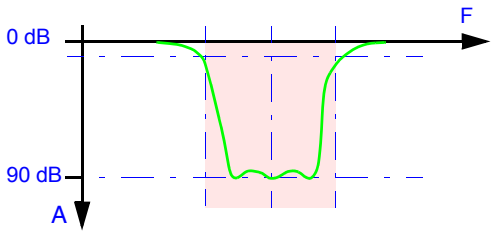
RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H, ^{19}F	750.1	705.8
Maximum Insertion Loss (dB)	0.6	0.6
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ^{19}F, ^{1}H	705.8	750.1
Minimum Rejection (dB)	50	50
Mechanical Dimensions and Weight		
Case 4S063D (mm)	188 x 103 x 65	
Weight (kg)	1.3	

Avance 800MHz

9

Bandstop Filter 9.1

Figure 9.1. Bandstop Filter HQ 800MHz Diagram



W1346286 - Filter HQ 800 ^{1}H S 9.1.1

Table 9.1. Filter HQ 800 ^{1}H S Specifications

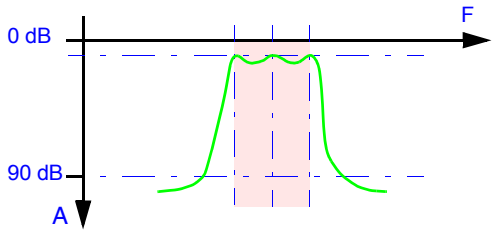
RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ...^{31}P, ^{19}F	< 323.9	752.9
Maximum Insertion Loss (dB)	0.4	0.8
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ^{1}H	800.1	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 3S063 (mm)	160 x 105 x 50	
Weight (kg)	1.1	

Table 9.2. Filter HQ 800 ^{19}F S Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ...^{31}P, ^{1}H	< 323.9	800.1
Maximum Insertion Loss (dB)	0.4	0.8
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ^{19}F	752.9	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 3S063 (mm)	160 x 105 x 50	
Weight (kg)	1.1	

Bandpass Filter 9.2

Figure 9.2. Bandpass Filter HQ 800MHz Diagram



W1346298 - Filter HQ 800 ^{1}H BP (-^{31}P, ^{19}F) 9.2.1

Table 9.3. Filter HQ 800 ^{1}H BP (-^{31}P, ^{19}F) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 2% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H	800.1	
Maximum Insertion Loss (dB)	0.7	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{19}F	< 323.9	752.9
Minimum Rejection (dB)	110	45
Mechanical Dimensions and Weight		
Case 5R045 (mm)	227 x 65 x 39	
Weight (kg)	0.7	

W1346290 - Filter HQ 800 ^{1}H BP (^{19}F) 9.2.2

Table 9.4. Filter HQ 800 ^{1}H BP (^{19}F) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H	800.1	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{19}F	< 323.9	752.9
Minimum Rejection (dB)	80	90
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346302 - Filter HQ 800 ^{19}F BP (-^{31}P, ^{1}H) 9.2.3

Table 9.5. Filter HQ 800 ^{19}F BP (-^{31}P, ^{1}H) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 2% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{19}F	752.9	
Maximum Insertion Loss (dB)	0.7	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{1}H	< 323.9	800.1
Minimum Rejection (dB)	110	45
Mechanical Dimensions and Weight		
Case 5R045 (mm)	227 x 65 x 39	
Weight (kg)	0.7	

W1346294 - Filter HQ 800 ^{19}F BP (^{1H}) 9.2.4

Table 9.6. Filter HQ 800 ^{19}F BP (^{1}H) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{19}F	752.9	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{1}H	< 323.9	800.1
Minimum Rejection (dB)	80	90
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346306 - Filter HQ 800 ^{7}Li - ^{31}P BP (-^{87}Rb, ^{19}F-) 9.2.5

Table 9.7. Filter HQ 800 ^{7}Li - ^{31}P BP (-^{87}Rb, ^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{7}Li...^{31}P	311.0...323.9	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{87}Rb, ^{19}F...	< 261.8	> 752.9
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 6R125 (mm)	249 x 153 x 39	
Weight (kg)	1.5	

W1346476 - Filter HQ 800 ^{7}Li - ^{31}P BP (-^{13}C,^{19}F-) 9.2.6

Table 9.8. Filter HQ 800 ^{7}Li - ^{31}P BP (-^{13}C,^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{7}Li...^{31}P	311.0...323.9	
Maximum Insertion Loss (dB)	0.5	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{13}C, ^{19}F...	< 201.2	> 752.9
Minimum Rejection (dB)	90	80
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346310 - Filter HQ 800 ^{71}Ga - ^{87}Rb BP(-^{13}C, ^{7}Li-) 9.2.7

Table 9.9. Filter HQ 800 ^{71}Ga - ^{87}Rb BP (-^{13}C, ^{7}Li-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{71}Ga...^{87}Rb	244.0...261.8	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{13}C, ^{7}Li...	< 201.2	> 311.0
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 6R125 (mm)	249 x 153 x 39	
Weight (kg)	1.5	

W1346314 - Filter HQ 800 ^{13}C - ^{23}Na BP (-^{29}Si, ^{71}Ga-) 9.2.8

Table 9.10. Filter HQ 800 ^{13}C - ^{23}Na BP (-^{29}Si, ^{71}Ga-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{13}C...^{23}Na	201.2...211.7	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{29}Si, ^{71}Ga...	< 159.0	> 244.0
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 6R125 (mm)	249 x 153 x 39	
Weight (kg)	1.5	

W1346464 - Filter HQ 800 ^{59}Co - ^{23}Na BP (-^{2}H, ^{19}F-) 9.2.9

Table 9.11. Filter HQ 800 ^{59}Co - ^{23}Na BP (-^{2}H, ^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{59}Co...^{23}Na	189.8...211.7	
Maximum Insertion Loss (dB)	0.6	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{2}H, ^{19}F...	< 122.8	> 752.9
Minimum Rejection (dB)	90	80
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346318 - Filter HQ 800 ^{59}Co - ^{23}Na BP (-^{15}N) 9.2.10

Table 9.12. Filter HQ 800 ^{59}C0 - ^{23}Na BP (-^{15}N) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{59}Co...^{23}Na	189.8...211.7	
Maximum Insertion Loss (dB)	0.5	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{15}N	< 81.1	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 4H073 (mm)	204 x 97 x 37	
Weight (kg)	1.1	

W1346322 - Filter HQ 800 ^{29}Si BP (-^{2}H, ^{13}C-) 9.2.11

Table 9.13. Filter HQ 800 ^{29}Si BP (-^{2}H, ^{13}C-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{29}Si	159.0	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{2}H, ^{13}C...	< 122.8	> 201.2
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 6R125 (mm)	249 x 153 x 39	
Weight (kg)	1.5	

W1346457 - Filter HQ 800 ^{17}O - ^{2}H BP (^{11}B-) 9.2.12

Table 9.14. Filter HQ 800 ^{17}O - ^{2}H BP (^{11}B-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{17}O...^{2}H	108.5...122.8	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ^{11}B, ^{31}P...	256.6	> 323.9
Minimum Rejection (dB)	75	85
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346326 - Filter HQ 800 ^{17}O - ^{2}H BP (-^{15}N, ^{29}Si-) 9.2.13

Table 9.15. Filter HQ 800 ^{17}O - ^{2}H BP (-^{15}N, ^{29}Si-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{17}O...^{2}H	108.5...122.8	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{15}N, ^{29}Si...	< 81.1	> 159.0
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 7R155 (mm)	334 x 194 x 54	
Weight (kg)	3.4	

W1346330 - Filter HQ 800 ^{15}N BP (-^{14}N, ^{2}H-) 9.2.14

Table 9.16. Filter HQ 800 ^{15}N BP (-^{14}N, ^{2}H-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{15}N	81.1	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{14}N, ^{2}H...	< 57.8	> 122.8
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H169 (mm)	336 x 197 x 37	
Weight (kg)	3.9	

W1346334 - Filter HQ 800 ^{15}N BP (^{13}C-) 9.2.15

Table 9.17. Filter HQ 800 ^{15}N BP (^{13}C-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{15}N	81.1	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ^{59}Co, ^{13}C...	189.8	> 201.2
Minimum Rejection (dB)	85	90
Mechanical Dimensions and Weight		
Case 5H169 (mm)	241 x 192 x 37	
Weight (kg)	2.5	

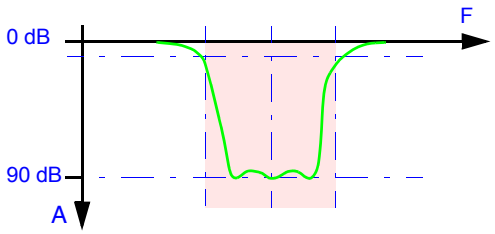
Table 9.18. Filter HQ 800 ^{14}N BP (^{15}N-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{14}N	57.8	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ^{15}N...	> 81.1	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 4S063D (mm)	188 x 103 x 65	
Weight (kg)	1.3	

Avance 900MHz 10

Bandstop Filter 10.1

Figure 10.1. Bandstop Filter HQ 900MHz Diagram



W1346287 - Filter HQ 900 ^{1}H S 10.1.1

Table 10.1. Filter HQ 900 ^{1}H S Specifications

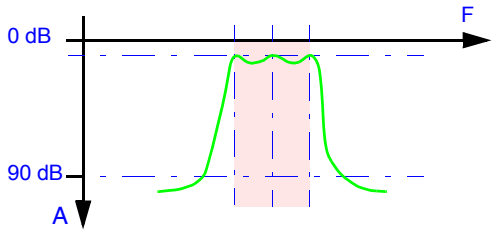
RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ...^{31}P, ^{19}F	< 364.4	847.0
Maximum Insertion Loss (dB)	0.4	0.8
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ^{1}H	900.1	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 3S063 (mm)	160 x 105 x 50	
Weight (kg)	1.1	

Table 10.2. Filter HQ 900 ^{19}F S Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ...^{31}P, ^{1}H	< 364.4	900.1
Maximum Insertion Loss (dB)	0.4	0.8
Minimum Return Loss (dB)	20	20
Frequency Stop (MHz) : ^{19}F	847.0	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 3S063 (mm)	160 x 105 x 50	
Weight (kg)	1.1	

Bandpass Filter 10.2

Figure 10.2. Bandpass Filter HQ 900MHz Diagram



W1346299 - Filter HQ 900 ^{1}H BP (-^{31}P, ^{19}F) 10.2.1

Table 10.3. Filter HQ 900 ^{1}H BP (-^{31}P, ^{19}F) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 2% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H	900.1	
Maximum Insertion Loss (dB)	0.7	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{19}F	< 364.4	847.0
Minimum Rejection (dB)	110	45
Mechanical Dimensions and Weight		
Case 5R045 (mm)	227 x 65 x 39	
Weight (kg)	0.7	

W1346291 - Filter HQ 900 ^{1}H BP (^{19}F) 10.2.2

Table 10.4. Filter HQ 900 ^{1}H BP (^{19}F) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{1}H	900.1	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{19}F	< 364.4	847.0
Minimum Rejection (dB)	80	90
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346303 - Filter HQ 900 ^{19}F BP (-^{31}P, ^{1}H) 10.2.3

Table 10.5. Filter HQ 900 ^{19}F BP (-^{31}P, ^{1}H) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 2% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{19}F	847.0	
Maximum Insertion Loss (dB)	0.7	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{1}H	< 364.4	900.1
Minimum Rejection (dB)	110	45
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346295 - Filter HQ 900 ^{19}F BP (^{1}H) 10.2.4

Table 10.6. Filter HQ 900 ^{19}F BP (^{1}H) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{19}F	847.0	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{31}P, ^{1}H	< 364.4	900.1
Minimum Rejection (dB)	80	90
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346307 - Filter HQ 900 ^{7}Li - ^{31}P BP (-^{87}Rb, ^{19}F-) 10.2.5

Table 10.7. Filter HQ 900 ^{7}Li - ^{31}P BP (-^{87}Rb, ^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{7}Li...^{31}P	349.8...364.4	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{87}Rb, ^{19}F...	< 294.5	> 847.0
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 6R125 (mm)	249 x 153 x 39	
Weight (kg)	1.5	

W1346477 - Filter HQ 900 ^{7}Li - ^{31}P BP (-^{13}C,^{19}F-) 10.2.6

Table 10.8. Filter HQ 900 ^{7}Li - ^{31}P BP (-^{13}C,^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{7}Li...^{31}P	349.8...364.4	
Maximum Insertion Loss (dB)	0.5	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{13}C, ^{19}F...	< 226.3	> 847.0
Minimum Rejection (dB)	90	80
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346311 - Filter HQ 900 ^{71}Ga - ^{87}Rb BP (-^{13}C, ^{7}Li-) 10.2.7

Table 10.9. Filter HQ 900 ^{71}Ga - ^{87}Rb BP (-^{13}C, ^{7}Li-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{71}Ga...^{87}Rb	274.5...294.5	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{13}C, ^{7}Li...	< 226.3	> 349.8
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 6R125 (mm)	249 x 153 x 39	
Weight (kg)	1.5	

W1346315 - Filter HQ 900 ^{13}C - ^{23}Na BP (-^{29}Si, ^{71}Ga-) 10.2.8

Table 10.10. Filter HQ 900 ^{13}C - ^{23}Na BP (-^{29}Si, ^{71}Ga-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{13}C...^{23}Na	226.3...238.1	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{29}Si, ^{71}Ga...	< 178.8	> 274.5
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 6R125 (mm)	249 x 153 x 39	
Weight (kg)	1.5	

W1346465 - Filter HQ 900 ^{59}Co - ^{23}Na BP (-^{2}H, ^{19}F-) 10.2.9

Table 10.11. Filter HQ 900 ^{59}Co - ^{23}Na BP (-^{2}H, ^{19}F-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{59}Co...^{23}Na	213.6...238.1	
Maximum Insertion Loss (dB)	0.6	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{2}H, ^{19}F...	< 138.2	> 847.0
Minimum Rejection (dB)	90	80
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346319 - Filter HQ 900 ^{59}Co - ^{23}Na BP (-^{15}N) 10.2.10

Table 10.12. Filter HQ 900 ^{59}Co - ^{23}Na BP (-^{15}N) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{59}Co...^{23}Na	213.6...238.1	
Maximum Insertion Loss (dB)	0.5	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ...^{15}N	< 91.2	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 4H073 (mm)	204 x 97 x 37	
Weight (kg)	1.1	

W1346458 - Filter HQ 900 ^{17}O - ^{2}H BP (^{11}B-) 10.2.11

Table 10.13. Filter HQ 900 ^{17}O - ^{2}H BP (^{11}B-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{17}O...^{2}H	122.0...138.2	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ^{11}B, ^{31}P...	288.7	> 364.4
Minimum Rejection (dB)	75	85
Mechanical Dimensions and Weight		
Case * (mm)	L x W x H	
Weight (kg)	0.0	

W1346323 - Filter HQ 900 ^{29}Si BP (-^{2}H, ^{13}C-) 10.2.12

Table 10.14. Filter HQ 900 ^{29}Si BP (-^{2}H, ^{13}C-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{29}Si	178.8	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{2}H, ^{13}C...	< 138.2	> 226.3
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 6R125 (mm)	249 x 153 x 39	
Weight (kg)	1.5	

W1346327 - Filter HQ 900 ^{17}O - ^{2}H BP (-^{15}N, ^{29}Si-) 10.2.13

Table 10.15. Filter HQ 900 ^{17}O - ^{2}H BP (-^{15}N, ^{29}Si-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{17}O...^{2}H	122.0...138.2	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{15}N, ^{29}Si...	< 91.2	> 178.8
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 7R155 (mm)	334 x 194 x 54	
Weight (kg)	3.4	

W1346331 - Filter HQ 900 ^{15}N BP (-^{14}N, ^{2}H-) 10.2.14

Table 10.16. Filter HQ 900 ^{15}N BP (-^{14}N, ^{2}H-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{15}N	91.2	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ...^{14}N, ^{2}H...	< 65.0	> 118.0
Minimum Rejection (dB)	90	90
Mechanical Dimensions and Weight		
Case 8H169 (mm)	336 x 197 x 37	
Weight (kg)	3.9	

W1346335 - Filter HQ 900 ^{15}N BP (^{13}C-) 10.2.15

Table 10.17. Filter HQ 900 ^{15}N BP (^{13}C-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{15}N	91.2	
Maximum Insertion Loss (dB)	0.8	
Minimum Return Loss (dB)	20	
Frequency Stop (MHz) : ^{59}Co, ^{13}C...	213.6	> 226.3
Minimum Rejection (dB)	85	90
Mechanical Dimensions and Weight		
Case 5H169 (mm)	241 x 192 x 37	
Weight (kg)	2.5	

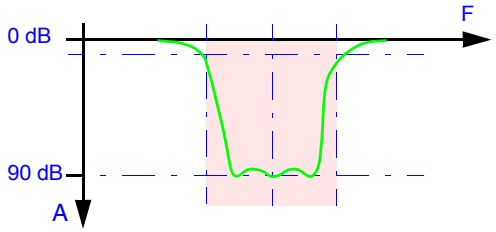
Table 10.18. Filter HQ 900 ^{14}N BP (^{15}N-) Specifications

RF Power Specification		
Maximum Power Operating	1kW @ 100ms 5% duty cycle	
Operating Temperature Range (°C)	15...50	
RF Low Level Specification		
Frequency Pass (MHz) : ^{14}N	65.0	
Maximum Insertion Loss (dB)	1	
Minimum Return Loss (dB)	15	
Frequency Stop (MHz) : ^{15}N...	> 91.2	
Minimum Rejection (dB)	90	
Mechanical Dimensions and Weight		
Case 4S063D (mm)	188 x 103 x 65	
Weight (kg)	1.3	

Filters category 11

Bandstop Filter 11.1

Figure 11.1. Bandstop Filter HQ Diagram



Filters HQ ^{1}H S 11.1.1

Table 11.1. Filters HQ ^{1}H S Specifications

Part Number	Number of Cells	Filter (MHz)	Frequency Pass (MHz)	Frequency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346253	3	300	<121.5 / 282.4	300.1	0.4 / 0.8	20 / 20	90	3S063
W1346254	3	400	<162.0 / 376.5	400.1	0.4 / 0.8	20 / 20	90	3S063
W1346232	3	500	<202.5 / 470.6	500.1	0.4 / 0.8	20 / 20	90	3S063
W1346255	3	600	<242.9 / 564.7	600.1	0.4 / 0.8	20 / 20	90	3S063
W1346284	3	700	<283.4 / 658.8	700.1	0.4 / 0.8	20 / 20	90	3S063
W1346285	3	750	<303.7 / 705.8	750.1	0.4 / 0.8	20 / 20	90	3S063
W1346286	3	800	<323.9 / 752.9	800.1	0.4 / 0.8	20 / 20	90	3S063
W1346287	3	900	<364.4 / 847.0	900.1	0.4 / 0.8	20 / 20	90	3S063

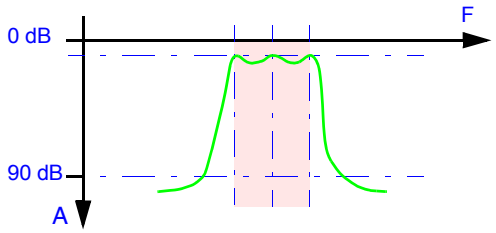
Filters HQ ^{19}F S *11.1.2*

Table 11.2. Filters HQ ^{19}F S Specifications

Part Number	Number of Cells	Filter (MHz)	Frequency Pass (MHz)	Frequency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346369	3	300	<121.5 / 300.1	282.4	0.4 / 0.8	20 / 20	90	3S063
W1346370	3	400	<162.0 / 400.1	376.5	0.4 / 0.8	20 / 20	90	3S063
W1346358	3	500	<202.5 / 500.1	470.6	0.4 / 0.8	20 / 20	90	3S063
W1346371	3	600	<242.9 / 600.1	564.7	0.4 / 0.8	20 / 20	90	3S063
W1346387	3	700	<283.4 / 700.1	658.8	0.4 / 0.8	20 / 20	90	3S063
W1346385	3	750	<303.7 / 750.1	705.8	0.4 / 0.8	20 / 20	90	3S063
W1346386	3	800	<323.9 / 800.1	752.9	0.4 / 0.8	20 / 20	90	3S063
W1346388	3	900	<364.4 / 800.1	847.0	0.4 / 0.8	20 / 20	90	3S063

Bandpass Filters 11.2

Figure 11.2. Bandpass Filter HQ Diagram



Filters HQ ^{1}H BP (-^{31}P, ^{19}F) 11.2.1

Table 11.3. Filters HQ ^{1}H BP (-^{31}P, ^{19}F) Specifications

Part Number	Number of Cells	Filter (MHz)	Frequency Pass (MHz)	Frequency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346239	5	300	300.1	<121.5 / 282.4	0.7	20	110 / 45	5R100
W1346407	5	360	360.1	<145.8 / 338.8	0.7	20	110 / 45	5R100
W1346240	5	400	400.1	<162.0 / 376.5	0.7	20	110 / 45	5R100
W1346223	5	500	500.1	<202.5 / 470.6	0.7	20	110 / 45	5R069
W1346241	5	600	600.1	<242.9 / 564.7	0.7	20	110 / 45	5R069
W1346296	5	700	700.1	<283.4 / 658.8	0.7	20	110 / 45	5R045
W1346297	5	750	750.1	<303.7 / 705.8	0.7	20	110 / 45	5R045
W1346298	5	800	800.1	<323.9 / 752.9	0.7	20	110 / 45	5R045
W1346299	5	900	900.1	<364.4 / 847.0	0.7	20	110 / 45	5R045

Filters HQ ^{1}H BP (^{19}F) 11.2.2

Table 11.4. Filters HQ ^{1}H BP (^{19}F) Specifications

Part Number	Number of Cells	Filter (MHz)	Frequency Pass (MHz)	Frequency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346235	8	300	300.1	<121.5 / 282.4	0.8	20	80 / 90	8R105P
W1346408	8	360	360.1	<145.8 / 338.8	0.8	20	80 / 90	8R105P
W1346204	8	400	400.1	<162.0 / 376.5	0.8	20	80 / 90	8R105P
W1346247	8	500	500.1	<202.5 / 470.6	0.8	20	80 / 90	8R055P
W1346228	8	600	600.1	<242.9 / 564.7	0.8	20	80 / 90	8R055P
W1346288	8	700	700.1	<283.4 / 658.8	0.8	20	80 / 90	8R055P
W1346289	8	750	750.1	<303.7 / 705.8	0.8	20	80 / 90	8R055P
W1346290	8	800	800.1	<323.9 / 752.9	0.8	20	80 / 90	*
W1346291	8	900	900.1	<364.4 / 847.0	0.8	20	80 / 90	*

Filters HQ ^{19}F BP (-^{31}P, ^{1}H) 11.2.3

Table 11.5. Filters HQ ^{19}F BP (-^{31}P, ^{1}H) Specifications

Part Number	Number of Cells	Filter (MHz)	Frequency Pass (MHz)	Frequency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346249	5	300	282.4	<121.5 / 300.1	0.7	20	110 / 45	5R100
W1346403	5	360	338.8	<145.8 / 360.1	0.7	20	110 / 45	5R100
W1346250	5	400	376.5	<162.0 / 400.1	0.7	20	110 / 45	5R100
W1346251	5	500	470.6	<202.5 / 500.1	0.7	20	110 / 45	5R069
W1346252	5	600	564.7	<242.9 / 600.1	0.7	20	110 / 45	5R069
W1346300	5	700	658.8	<283.4 / 700.1	0.7	20	110 / 45	5R045
W1346301	5	750	705.8	<303.7 / 750.1	0.7	20	110 / 45	5R045
W1346302	5	800	752.9	<323.9 / 800.1	0.7	20	110 / 45	5R045
W1346303	5	900	847.0	<364.4 / 900.1	0.7	20	110 / 45	5R045

Filters HQ ^{19}F BP (^{1}H) 11.2.4

Table 11.6. Filters HQ ^{19}F BP (^{1}H) Specifications

Part Number	Number of Cells	Filter (MHz)	Frequency Pass (MHz)	Frequency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346236	8	300	282.4	<121.5 / 300.1	0.8	20	80 / 90	8R105P
W1346404	8	360	338.8	<145.8 / 360.1	0.8	20	80 / 90	8R105P
W1346205	8	400	376.5	<162.0 / 400.1	0.8	20	80 / 90	8R105P
W1346248	8	500	470.6	<202.5 / 500.1	0.8	20	80 / 90	8R055P
W1346229	8	600	564.7	<242.9 / 600.1	0.8	20	80 / 90	8R055P
W1346292	8	700	658.8	<283.4 / 700.1	0.8	20	80 / 90	8R055P
W1346293	8	750	705.8	<303.7 / 750.1	0.8	20	80 / 90	8R055P
W1346294	8	800	752.9	<323.9 / 800.1	0.8	20	80 / 90	*
W1346295	8	900	847.0	<364.4 / 900.1	0.8	20	80 / 90	*

Filters HQ ^{19}F - ^{1}H BP (-^{31}P) 11.2.5

Table 11.7. Filters HQ ^{19}F - ^{1}H BP (-^{31}P) Specifications

Part Number	Number of Cells	Filter (MHz)	Frequency Pass (MHz)	Frequency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346368	5	300	282.4 / 300.1	<121.5	0.8 / 08	20	110	5R100
W1346373	5	400	376.5 / 400.1	<162.0	0.8 / 0.8	20	110	5R100
W1346374	5	500	470.6 / 500.1	<202.5	0.8 / 0.8	20	110	5R069
W1346375	5	600	564.7 / 600.1	<242.9	0.8 / 0.8	20	110	5R069

Filters HQ ^{7}Li - ^{31}P BP (-^{87}Rb, ^{19}F-) 11.2.6

Table 11.8. Filters HQ ^{7}Li - ^{31}P BP (-^{87}Rb, ^{19}F-) Specifications

Part Number	Number of Cells	Filter (MHz)	Frequency Pass (MHz)	Frequency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346269	8	300	116.6...121.5	<98.2 / >282.4	1	15	90	8H073
W1346256	8	400	155.5...162.0	<130.9 / >376.5	1	15	90	8H073
W1346262	8	500	194.4...202.5	<163.6 / >470.6	1	15	90	8H073
W1346279	8	600	233.2...242.9	<196.4 / >564.7	1	15	90	8H073
W1346304	8	700	272.1...283.4	<229.1 / >658.8	1	15	90	8H073
W1346305	6	750	291.5...303.7	<245.4 / >705.8	1	15	90	6R125
W1346306	6	800	311.0...323.9	<261.8 / >752.9	1	15	90	6R125
W1346307	6	900	349.8...364.4	<294.5 / >847.0	1	15	90	6R125

Filters HQ ^{7}Li - ^{31}P BP (-^{13}C, ^{19}F-) 11.2.7

Table 11.9. Filters HQ ^{7}Li - ^{31}P BP (-^{13}C,^{19}F-) Specifications

Part Number	Number of Cells	Filter (MHz)	Frequency Pass (MHz)	Frequency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346372	6	300	116.6...121.5	<98.2 / >282.4	0.5	20	90 / 80	*
W1346349	6	400	155.5...162.0	<100.6 / >376.5	0.5	20	90 / 80	6H073
W1346351	6	500	194.4...202.5	<125.8 / >470.6	0.5	20	90 / 80	6H073
W1346367	6	600	233.2...242.9	<150.9 / >564.7	0.5	20	90 / 80	6H073
W1346474	6	700	272.1...283.4	<176.0 / >658.8	0.5	20	90 / 80	*
W1346475	6	750	291.5...303.7	<188.6 / >705.8	0.5	20	90 / 80	*
W1346476	6	800	311.0...323.9	<201.2 / >752.9	0.5	20	90 / 80	*
W1346477	6	900	349.8...364.4	<226.3 / >847.0	0.5	20	90 / 80	*

Filters HQ ^{71}Ga - ^{87}Rb BP (-^{13}C, ^{31}P-) 11.2.8

Table 11.10. Filters HQ ^{71}Ga - ^{87}Rb BP (-^{13}C, ^{31}P-) Specifications

Part Number	Number of Cells	Filter (MHz)	Frequency Pass (MHz)	Frequency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346270	8	300	91.5...98.2	<75.5 / >121.5	1	15	90 / 90	*
W1346257	8	400	122.0...130.9	<100.6 / >162.0	1	15	90 / 90	8H073
W1346263	8	500	152.5...163.6	<125.8 / >202.5	1	15	90 / 90	8H097
W1346280	8	600	183.0...196.4	<150.9 / >242.9	1	15	90 / 90	8H097

Filters HQ ^{71}Ga - ^{87}Rb BP (-^{13}C, ^{7}Li-) 11.2.9

Table 11.11. Filters HQ ^{71}Ga - ^{87}Rb BP (-^{13}C, ^{7}Li-) Specifications

Part Number	Number of Cells	Filter (MHz)	Frequency Pass (MHz)	Frequency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346308	6	700	213.5...229.1	<176.0 / >272.1	1	15	90 / 90	6R125
W1346309	6	750	228.8...245.4	<188.6 / >291.5	1	15	90 / 90	6R125
W1346310	6	800	244.0...261.8	<201.2 / >311.0	1	15	90 / 90	6R125
W1346311	6	900	274.5...294.5	<226.3 / >349.8	1	15	90 / 90	6R125

Filters HQ ^{13}C - ^{23}Na BP (-^{29}Si, ^{71}Ga-) 11.2.10

Table 11.12. Filters HQ ^{13}C - ^{23}Na BP (-^{29}Si, ^{71}Ga-) Specifications

Part Number	Number of Cells	Filter (MHz)	Frequency Pass (MHz)	Frequency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346488	7	400	100.6...105.8	<79.5 / >122.0	1	15	90 / 90	7R155
W1346489	7	500	125.8...132.3	<99.3 / >152.5	1	15	90 / 90	7R155
W1346490	7	600	150.9...158.7	<119.1 / >183.0	1	15	90 / 90	*
W1346491	6	700	176.0...185.2	<139.1 / >213.5	1	15	90 / 90	6R125
W1346313	6	750	188.6...198.4	<149.0 / >228.8	1	15	90 / 90	6R125
W1346314	6	800	201.2...211.7	<159.0 / >244.0	1	15	90 / 90	6R125
W1346315	6	900	226.3...238.1	<178.8 / >274.5	1	15	90 / 90	6R125

Filters HQ ^{59}Co - ^{23}Na BP (-^{29}Si,^{87}Rb-) 11.2.11

Table 11.13. Filters HQ ^{59}Co - ^{23}Na BP (-^{29}Si, ^{87}Rb-) Specifications

Part Number	Number of Cells	Filter (MHz)	Frequency Pass (MHz)	Frequency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346271	8	300	71.2...79.4	<59.6 / >98.2	1	15	90 / 90	8H133
W1346258	8	400	94.9...105.8	<79.5 / >130.9	1	15	90 / 90	8H133
W1346264	8	500	118.7...132.3	<99.4 / >163.6	1	15	90 / 90	8H097
W1346276	8	600	142.4...158.7	<119.2 / >196.4	1	15	90 / 90	8H097
W1346312	8	700	166.1...185.2	<139.1 / >229.1	1	15	90 / 90	8H073

Filters HQ ^{59}Co - ^{23}Na BP (-^{2}H, ^{19}F-) 11.2.12

Table 11.14. Filters HQ ^{59}Co - ^{23}Na BP (-^{2}H, ^{19}F-) Specifications

Part Number	Number of Cells	Filter (MHz)	Frequency Pass (MHz)	Frequency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346459	6	300	71.2...79.4	<46.0 / >282.4	0.6	20	90 / 80	*
W1346440	6	400	94.9...105.8	<61.4 / >376.5	0.6	20	90 / 80	6H073
W1346460	6	500	118.7...132.3	<76.8 / >470.6	0.6	20	90 / 80	6H073
W1346461	6	600	142.4...158.7	<92.1 / >564.7	0.6	20	90 / 80	6H073
W1346462	6	700	166.1...185.2	<107.5 / >658.8	0.6	20	90 / 80	*
W1346463	6	750	178.0...198.4	<115.2 / >705.8	0.6	20	90 / 80	*
W1346464	6	800	189.8...211.7	<122.8 / >752.9	0.6	20	90 / 80	*
W1346465	6	900	213.6...238.1	<138.2 / >847.0	0.6	20	90 / 80	*

Filters HQ ^{59}Co - ^{23}Na BP (-^{15}N) 11.2.13

Table 11.15. Filters HQ ^{59}Co - ^{23}Na BP (-^{15}N) Specifications

Part Number	Number of Cells	Filter (MHz)	Frequency Pass (MHz)	Frequency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346275	4	300	71.2...79.4	<30.4	0.5	20	90	4H073
W1346226	4	400	94.9...105.8	<40.6	0.5	20	90	4H073
W1346224	4	500	118.7...132.3	<50.7	0.5	20	90	4H073
W1346230	4	600	142.4...158.7	<60.8	0.5	20	90	4H073
W1346316	4	700	166.1...185.2	<71.0	0.5	20	90	4H073
W1346317	4	750	178.0...198.4	<76.0	0.5	20	90	4H073
W1346318	4	800	189.8...211.7	<81.1	0.5	20	90	4H073
W1346319	4	900	213.6...238.1	<91.2	0.5	20	90	4H073

Filters HQ ^{29}Si BP (-^{2}H, ^{13}C-) 11.2.14

Table 11.16. Filters HQ ^{29}Si BP (-^{2}H, ^{13}C-) Specifications

Part Number	Number of Cells	Filter (MHz)	Frequency Pass (MHz)	Frequency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346272	8	300	59.6	<46.0 / >75.5	1	15	90 / 90	8H133
W1346259	8	400	79.5	<61.4 / >100.6	1	15	90 / 90	8H133
W1346265	8	500	99.4	<76.8 / >125.8	1	15	90 / 90	8H169
W1346281	8	600	119.2	<92.1 / >150.9	1	15	90 / 90	8H097
W1346320	7	700	139.1	<107.5 / >176.0	1	15	90 / 90	7R155
W1346321	6	750	149.0	<115.2 / >188.6	1	15	90 / 90	6R125
W1346322	6	800	159.0	<122.8 / >201.2	1	15	90 / 90	6R125
W1346323	6	900	178.8	<138.2 / >226.3	1	15	90 / 90	6R125

Filters HQ ^{17}O - ^{2}H BP (^{11}B-) 11.2.15

Table 11.17. Filters HQ ^{17}O - ^{2}H BP (^{11}B-) Specifications

Part Number	Number of Cells	Filter (MHz)	Frequency Pass (MHz)	Frequency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346452	5	300	40.7...46.0	96.3 / >121.5	0.8	20	75 / 85	*
W1346442	5	400	54.2...61.4	128.3 / >162.0	0.8	20	75 / 85	5H169
W1346453	6	500	67.8...76.7	160.4 / >202.5	0.8	20	75 / 85	*
W1346454	6	600	81.3...92.1	192.5 / >242.9	0.8	20	75 / 85	6H073
W1346455	6	700	94.9...107.5	224.5 / >283.4	0.8	20	75 / 85	*
W1346456	6	750	101.7...115.2	240.6 / >303.7	0.8	20	75 / 85	*
W1346457	6	800	108.5...122.8	256.6 / >323.9	0.8	20	75 / 85	*
W1346458	6	900	122.0...138.2	288.7 / >364.4	0.8	20	75 / 85	*

Filters HQ ^{17}O - ^{2}H BP (-^{15}N, ^{29}Si-) 11.2.16

Table 11.18. Filters HQ ^{17}O - ^{2}H BP (-^{15}N, ^{29}Si-) Specifications

Part Number	Number of Cells	Filter (MHz)	Frequency Pass (MHz)	Frequency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346492	7	700	94.9...107.5	<71.0 / >139.1	1	15	90 / 90	7R155
W1346493	7	750	101.7...115.2	<76.1 / >149.0	1	15	90 / 90	7R155
W1346326	7	800	108.5...122.8	<81.1 / >159.0	1	15	90 / 90	7R155
W1346327	7	900	122.0...138.2	<91.2 / >178.8	1	15	90 / 90	7R155

Filters HQ ^{133}Cs - ^{2}H BP (-^{15}N, ^{29}Si-) 11.2.17

Table 11.19. Filters HQ ^{133}Cs - ^{2}H BP (-^{15}N, ^{29}Si-) Specifications

Part Number	Number of Cells	Filter (MHz)	Frequency Pass (MHz)	Frequency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346273	8	300	39.4...46.0	<30.4 / >59.6	1	15	90 / 80	8H169
W1346260	8	400	52.5...61.4	<40.6 / >79.5	1	15	90 / 80	8H133
W1346266	8	500	65.6...76.8	<50.7 / >99.4	1	15	90 / 80	8H133
W1346282	8	600	78.7...92.1	<60.8 / >119.2	1	15	90 / 80	8H139
W1346324	8	700	91.8...107.5	<71.0 / >139.1	1	15	90 / 80	8H097
W1346325	8	750	98.4...115.2	<76.0 / >149.0	1	15	90 / 80	8H073

Filters HQ ^{15}N BP (-^{14}N, ^{2}H-) *11.2.18*

Table 11.20. Filters HQ ^{15}N BP (-^{14}N, ^{2}H-) Specifications

Part Number	Number of Cells	Filter (MHz)	Frequency Pass (MHz)	Frequency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346274	8	300	30.4	<21.7 / >46.0	1	15	90 / 90	8H169
W1346261	8	400	40.6	<28.9 / >61.4	1	15	90 / 90	8H133
W1346267	8	500	50.7	<36.1 / >65.6	1	15	90 / 90	8H133
W1346277	8	600	60.8	<43.4 / >78.7	1	15	90 / 90	8H139
W1346328	8	700	71.0	<50.6 / >91.8	1	15	90 / 90	8H139
W1346329	8	750	76.0	<54.2 / >98.4	1	15	90 / 90	*
W1346330	8	800	81.1	<57.8 / >104.9	1	15	90 / 90	8H169
W1346331	8	900	91.2	<65.0 / >118.0	1	15	90 / 90	8H169

Filters HQ ^{15}N BP (^{13}C) *11.2.19*

Table 11.21. Filters HQ ^{15}N BP (-^{13}C) Specifications

Part Number	Number of Cells	Filter (MHz)	Frequency Pass (MHz)	Frequency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346278	5	300	30.4	71.2 / >75.5	0.8	20	85 / 90	5H169
W1346227	5	400	40.6	94.9 / >100.6	0.8	20	85 / 90	5H133
W1346225	5	500	50.7	118.7 / >125.8	0.8	20	85 / 90	5H133
W1346231	5	600	60.8	142.4 / >150.9	0.8	20	85 / 90	5H133
W1346332	6	700	71.0	166.1 / >176.0	0.8	20	85 / 90	6H073
W1346333	5	750	76.0	178.0 / >188.6	0.8	20	85 / 90	5H169
W1346334	5	800	81.1	189.8 / >201.2	0.8	20	85 / 90	5H169
W1346335	5	900	91.2	213.6 / >226.3	0.8	20	85 / 90	5H169

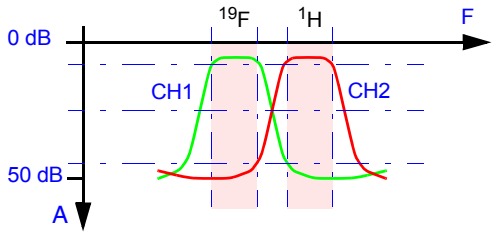
Filters HQ ^{14}N BP (^{15}N-) *11.2.20*

Table 11.22. Filters HQ ^{14}N BP (^{15}N-) Specifications

Part Number	Number of Cells	Filter (MHz)	Freqency Pass (MHz)	Freqency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346268	8	500	36.1	>50.7	1	15	90	*
W1346283	8	600	43.4	>60.8	1	15	90	*
W1346336	8	700	50.6	>71.0	1	15	90	*
W1346337	8	750	54.2	>76.0	1	15	90	*
W1346338	8	800	57.8	>81.1	1	15	90	*
W1346339	8	900	65.0	>91.2	1	15	90	*

Diplexer Filters 11.3

Figure 11.3. Diplexer Filter HQ Diagram



Diplexer HQ ^{1}H / ^{19}F 11.3.1

Table 11.23. Diplexer HQ ^{1}H / ^{19}F Specifications

Part Number	Number of Cells	Filter (MHz)	Frequency Pass (MHz)	Frequency Stop (MHz)	Maximum Insertion Loss (dB)	Minimum Return Loss (dB)	Minimum Rejection (dB)	Case
W1346237	4	300	300.1 / 282.4	282.4 / 300.1	0.6	20	50	4S063D
W1346416	4	360	360.1 / 338.8	338.8 / 360.1	0.6	20	50	4S063D
W1346345	4	400	400.1 / 376.5	376.5 / 400.1	0.6	20	50	4S063D
W1346346	4	500	500.1 / 470.6	470.6 / 500.1	0.6	20	50	4S063D
W1346347	4	600	600.1 / 564.7	564.7 / 600.1	0.6	20	50	4S063D
W1346378	4	750	750.1 / 705.8	705.8 / 750.1	0.6	20	50	4S063D

Filters category

Filters case 12

Notchs Filters 12.1

Case 3S063 12.1.1

Mechanical dimensions (mm) : 160 x 105 x 50
Weight (kg) : 1,1

Figure 12.1. 3S063 View

Case 4S063D *12.1.2*

Mechanical dimensions (mm) : 188 x 103 x 65
Weight (kg) : 1,3

Figure 12.2. 4S063D View

Rods Filters 12.2

Case 5R045 12.2.1

Mechanical dimensions (mm) : 227 x 65 x 39
Weight (kg) : 0,7

Figure 12.3. 5R045 View

Case 5R069 12.2.2

Mechanical dimensions (mm) : 227 x 89 x 39
Weight (kg) : 0,9

Figure 12.4. 5R069 View

Case 5R100 12.2.3

Mechanical dimensions (mm) : 227 x 120 x 39
Weight (kg) : 1,2

Figure 12.5. 5R100 View

Case 6R125 12.2.4

Mechanical dimensions (mm) : 249 x 153 x 39
Weight (kg) : 1,5

Figure 12.6. 6R125 View

Case 7R155 12.2.5

Mechanical dimensions (mm) : 334 x 194 x 54
Weight (kg) : 3,4

Figure 12.7. 7R155 View

Case 8R055P 12.2.6

Mechanical dimensions (mm) : 282 x 79 x 53
Weight (kg) : 1,6

Figure 12.8. 8R055P View

Case 8R105P 12.2.7

Mechanical dimensions (mm) : 277 x 128 x 53
Weight (kg) : 2,6

Figure 12.9. 8R105P View

Helicals Filters 12.3

Case 4H073 12.3.1

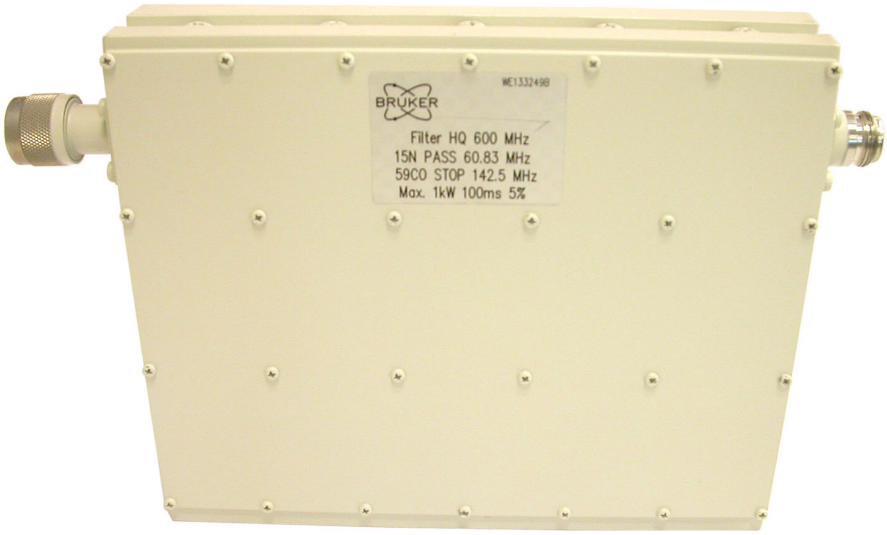
Mechanical dimensions (mm) : 204 x 97 x 37
Weight (kg) : 1,1

Figure 12.10.4H073 View

Case 5H133 12.3.2

Mechanical dimensions (mm) : 241 x 157 x 37
Weight (kg) : 1,9

Figure 12.11.5H133 View



Case 5H169 *12.3.3*

Mechanical dimensions (mm) : 241 x 192 x 37
Weight (kg) : 2,5

Figure 12.12.6H073 View

Case 6H073 *12.3.4*

Mechanical dimensions (mm) : 277 x 98 x 37
Weight (kg) : 1,6

Figure 12.13.6H073 View

Case 8H073 12.3.5

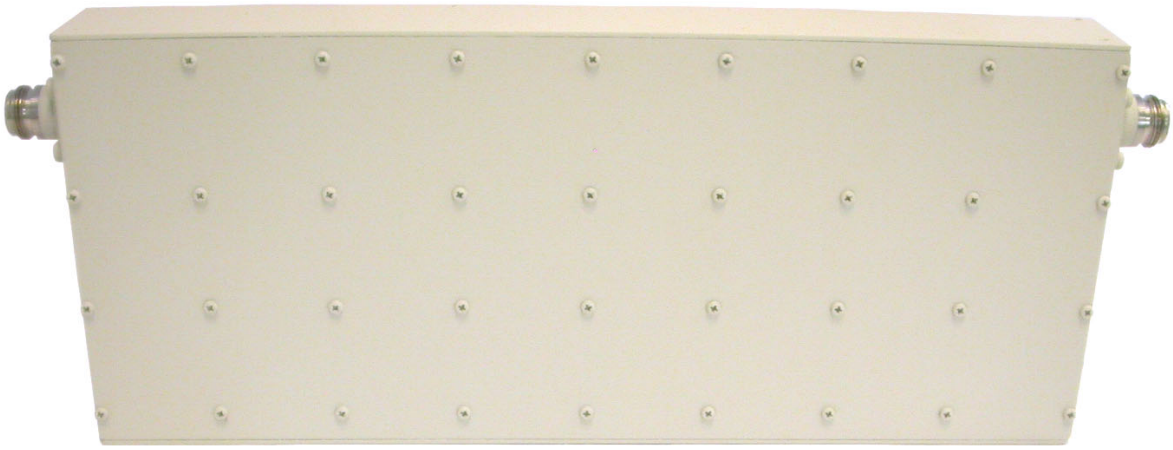
Mechanical dimensions (mm) : 336 x 100 x 37
Weight (kg) : 2.0

Figure 12.14.8H073 View

Case 8H097 12.3.6

Mechanical dimensions (mm) : 336 x 125 x 37
Weight (kg) : 2.5

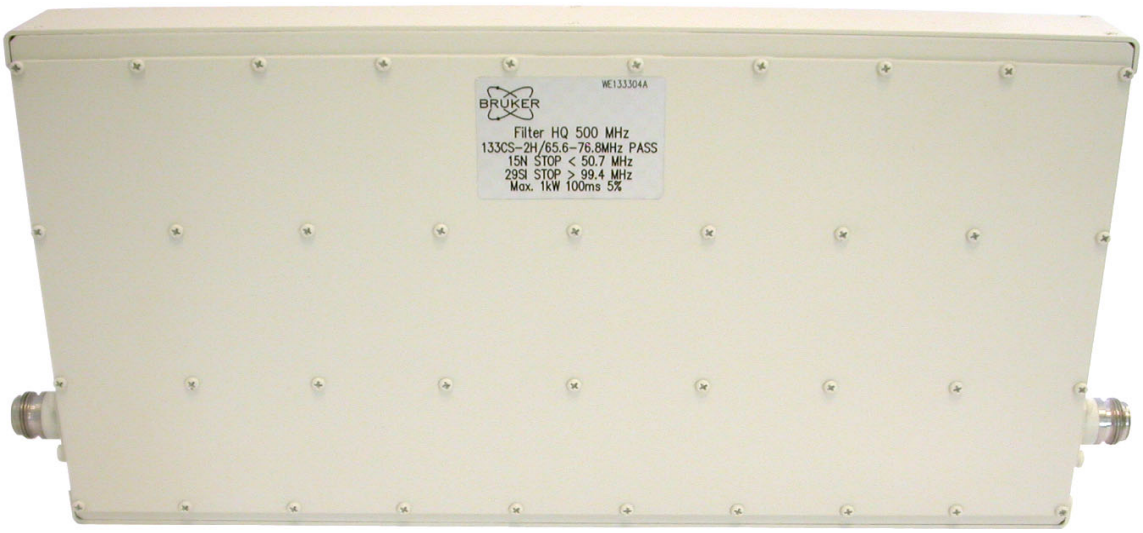
Figure 12.15.8H097 View



Case 8H133 12.3.7

Mechanical dimensions (mm) : 336 x 160 x 37
Weight (kg) : 2,9

Figure 12.16.8H133 View



Case 8H139 12.3.8

Mechanical dimensions (mm) : 336 x 166 x 37
Weight (kg) : 3,4

Figure 12.17.8H139 View

Mechanical dimensions (mm) : 336 x 197 x 37
Weight (kg) : 3,9

Figure 12.18.8H169 View

Filters case

Chemicool 13

Periodic Table 13.1

Table 13.1. Periodic Elements Table

	1												13	14	15	16	17	18
	Ia	2											IIIa	IVa	Va	VIa	VIIa	VIII
1	H	IIa																He
2	Li	Be	3	4	5	6	7	8	9	10	11	12	B	C	N	O	F	Ne
3	Na	Mg	IIIb	IVb	Vb	VIb	VIIb	|----	VIIIb	----|	Ib	IIb	Al	Si	P	S	Cl	Ar
4	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
5	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
6	cs	Ba	*	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
7	Fr	Ra	**	Unq	Unp	Unh	Ns	Hs	Mt	Uun	Uuu							

*	La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
**	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr

Alkali metals	Transition metals	Halogens	Lanthanoids
Alkali earth metals	Other metals	Noble gases	Actinoids

NMR Applications frequencies 13.2

Table 13.2. NMR Frequencies Table

Id	Names	200MHZ	300MHZ	400MHZ	500MHZ	600MHZ	700MHZ	750MHZ	800MHZ	900MHZ
^{1}H	Hydrogen	200,132	300,133	400,134	500,136	600,135	700,137	750,137	800,138	900,139
^{2}H	Deuterium	30,723	46,075	61,427	76,778	92,130	107,481	115,157	122,833	138,185
^{3}H	Tritium	213,468	320,133	426,798	533,463	640,127	746,793	800,125	853,457	960,122
^{3}He	Helium	152,458	228,637	304,817	380,996	457,175	533,355	571,444	609,535	685,714
^{6}Li	Lithium	29,452	44,168	58,885	73,601	88,317	103,034	110,392	117,750	132,466
^{7}Li	Lithium	77,778	116,642	155,506	194,370	233,233	272,098	291,529	310,961	349,825
^{9}Be	Beryllium	28,124	42,177	56,229	70,282	84,335	98,388	150,414	112,441	126,493
^{10}B	Boron	21,501	32,244	42,947	53,731	64,474	75,217	80,589	85,961	96,704
^{11}B	Boron	64,186	96,256	128,330	160,402	192,473	224,545	240,581	256,617	288,689
^{13}C	Carbon	50,323	75,469	100,614	125,759	150,905	176,050	188,623	201,195	226,340
^{14}N	Nitrogen	14,431	21,687	28,913	36,139	43,365	50,591	54,204	57,817	65,043
^{15}N	Nitrogen	20,286	30,422	40,558	50,695	60,831	70,967	76,035	81,104	91,240
^{17}O	Oxygen	27,129	40,684	54,240	67,795	81,351	94,906	101,684	108,462	122,017
^{19}F	Fluorine	188,310	282,404	376,498	470,592	564,684	658,779	705,826	752,873	846,967
^{21}Ne	Neon	15,796	23,689	31,582	39,474	47,367	55,260	59,207	63,153	71,046
^{23}Na	Sodium	52,939	79,392	105,844	132,297	158,749	185,202	198,428	211,654	238,107
^{25}Ma	Magnesium	12,251	18,373	24,495	30,616	36,738	42,860	45,921	48,982	55,103
^{27}Al	Aluminium	52,147	78,204	104,261	130,317	156,374	182,431	195,459	208,488	234,544
^{29}Si	Silicon	39,759	59,626	79,493	99,360	119,227	139,094	149,027	158,960	178,827
^{31}P	Phosphorus	81,017	121,499	161,981	202,463	242,944	283,427	303,668	323,909	364,391
^{33}S	Sulfur	15,363	23,040	30,717	38,393	46,070	53,747	57,585	61,423	69,100
^{35}Sl	Chlorine	19,610	29,409	39,208	49,006	58,805	68,604	73,503	78,402	88,201
^{37}Sl	Chlorine	16,322	24,477	32,633	40,789	48,944	57,100	61,178	65,255	73,411
^{39}K	Potassium	9,339	14,006	18,672	23,339	28,005	32,672	35,005	37,338	42,005
^{41}K	Potassium	5,126	7,687	10,248	12,809	15,370	17,931	19,212	20,492	23,053
^{43}Ca	Calcium	13,466	20,195	26,924	33,652	40,381	47,110	50,474	53,838	60,567
^{45}Sc	Scandium	48,616	72,908	97,200	121,493	145,785	170,077	182,223	194,369	218,661
^{47}Ti	Titanium	11,286	16,926	22,565	28,204	33,844	39,483	42,303	45,123	50,762
^{49}Ti	Titanium	11,283	16,921	22,558	28,196	33,834	39,472	42,290	45,109	50,747
^{50}V	Vanadium	19,953	29,923	39,893	49,863	59,833	69,803	74,788	79,773	89,743
^{51}V	Vanadium	52,640	78,943	105,246	131,548	157,851	184,154	197,305	210,457	236,760
^{53}Cr	Chromium	11,313	16,965	22,618	28,271	33,924	39,576	42,403	45,229	50,882
^{55}Mn	Mangan	49,521	74,266	99,010	123,755	148,499	173,244	185,616	197,989	222,733
^{57}Fe	Iron	6,480	9,718	12,956	16,194	19,432	22,670	24,289	25,908	29,146
^{59}Co	Cobalt	47,484	71,211	94,938	118,665	142,391	166,118	177,981	189,845	213,572
^{61}Ni	Nickel	17,883	26,818	35,754	44,690	53,625	62,56	67,028	71,496	80,432
^{63}Cu	Copper	53,093	79,622	106,151	132,680	159,208	185,738	199,002	212,267	238,796
^{65}Cu	Copper	56,870	85,287	113,703	142,120	170,536	198,953	213,161	227,370	255,786
^{67}Zn	Zinc	12,521	18,777	25,034	31,290	37,546	43,803	46,931	50,059	56,316
^{69}Ga	Gallium	48,034	72,035	96,036	120,037	144,038	168,039	180,040	192,041	216,042
^{71}Ga	Gallium	61,034	91,531	122,028	152,525	183,022	213,519	228,767	244,016	274,513
^{73}Ge	Germanium	6,979	10,467	13,954	17,442	20,929	24,416	26,160	27,904	31,391
^{75}As	Arsenic	34,268	51,391	68,513	85,636	102,759	119,882	128,443	137,005	154,127
^{77}Se	Selenium	38,169	57,240	76,312	95,384	114,456	133,528	143,064	152,600	171,672
^{79}Br	Bromine	50,140	75,194	100,248	125,302	150,356	175,410	187,937	200,464	225,518
^{81}Br	Bromine	54,051	81,059	108,067	135,075	162,083	189,091	202,595	216,099	243,107

Id	Names	200MHZ	300MHZ	400MHZ	500MHZ	600MHZ	700MHZ	750MHZ	800MHZ	900MHZ
^{85}Rb	Rubidium	19,324	28,980	38,635	48,291	57,947	67,602	72,430	77,258	86,914
^{87}Rb	Rubidium	65,484	98,204	130,925	163,645	196,366	229,086	245,447	261,807	294,528
^{87}Sr	Strontium	8,673	13,007	17,341	21,675	26,009	30,343	32,510	34,677	39,011
^{89}Y	Yttrium	9,805	14,704	19,604	24,503	29,402	34,302	36,751	39,201	44,101
^{91}Zr	Zirconium	18,605	27,901	37,198	46,494	55,791	65,087	69,736	74,384	83,680
^{93}Nb	Niobium	48,985	73,462	97,939	122,416	146,892	171,369	183,608	195,846	220,323
^{95}Mo	Molybdenum	13,043	19,561	26,078	32,596	39,113	45,631	48,890	52,148	58,666
^{97}Mo	Molybdenum	13,316	19,970	26,624	33,278	39,932	46,586	49,913	53,240	59,894
^{99}Ru	Ruthenium	9,233	13,846	18,459	23,073	27,686	32,299	34,606	36,912	41,526
^{101}Ru	Ruthenium	10,348	15,518	20,688	25,859	31,029	36,200	38,785	41,370	46,541
^{103}Rh	Rhodium	6,374	9,558	12,743	15,928	19,113	22,297	23,890	25,482	28,667
^{105}Pd	Palladium	9,159	13,736	18,313	22,890	27,466	32,043	34,331	36,620	41,196
^{107}Ag	Silver	8,101	12,149	16,197	20,245	24,292	28,340	30,364	32,388	36,436
^{109}Ag	Silver	9,312	13,966	18,619	23,272	27,925	32,579	34,905	37,232	41,885
^{111}Cd	Cadmium	42,429	63,629	84,830	106,031	127,231	148,432	159,032	169,632	190,833
^{113}Cd	Cadmium	44,386	66,564	88,743	110,921	133,099	155,278	166,367	177,457	199,635
^{113}In	Indium	43,761	65,627	87,493	109,360	131,223	153,089	164,022	174,955	196,821
^{115}In	Indium	43,857	65,771	87,685	109,599	131,513	153,427	164,384	175,341	197,255
^{117}Sn	Tin	71,311	106,944	142,577	178,209	213,841	249,474	267,290	285,107	320,739
^{119}Sn	Tin	74,630	111,920	149,211	186,502	223,792	261,083	279,728	298,373	335,664
^{121}Sb	Antimony	47,894	71,825	95,756	119,688	143,619	167,550	179,516	191,482	215,413
^{123}Sb	Antimony	25,934	38,892	51,851	64,812	77,768	90,726	97,206	103,685	116,643
^{123}Te	Tellurium	52,374	78,543	104,713	130,883	157,053	183,223	196,307	209,392	235,562
^{125}Te	Tellurium	63,141	94,690	126,240	157,790	189,339	220,889	236,664	252,439	283,989
^{127}I	Iodine	40,046	60,056	80,065	100,075	120,085	140,095	150,100	160,105	180,115
^{129}Xe	Xenon	55,352	83,011	110,669	138,327	165,985	193,644	207,472	221,302	248,960
^{131}Xe	Xenon	16,412	24,612	32,813	41,013	49,214	57,414	61,514	65,615	73,815
^{133}Cs	Cesium	26,250	39,367	52,483	65,600	78,716	91,833	98,391	104,949	118,065
^{135}Ba	Barium	19,880	29,813	39,747	49,680	59,613	69,547	74,513	79,480	89,414
^{137}Ba	Barium	22,239	33,352	44,460	55,577	66,689	77,802	83,358	88,915	100,027
^{138}La	Lanthanum	26,406	39,601	52,796	65,990	79,185	92,380	98,977	105,574	118,769
^{139}La	Lanthanum	28,270	42,396	56,522	70,648	84,774	98,900	105,963	113,026	127,152
^{141}Pr	Praseodymium	58,621	87,912	117,203	146,495	175,786	205,077	219,723	234,369	263,660
^{143}Nd	Neodymium	10,880	16,317	21,753	27,190	32,626	38,063	40,781	43,499	48,936
^{177}Hf	Hafnium	6,197	9,294	12,390	15,487	18,584	21,680	23,229	24,777	27,873
^{179}Hf	Hafnium	3,798	5,695	7,593	9,490	11,388	13,285	14,234	15,183	17,080
^{181}Ta	Tantalum	23,997	35,987	47,978	59,969	71,959	83,950	89,945	95,940	107,931
^{183}W	Tungsten	8,337	12,503	16,669	20,835	25,001	29,167	31,250	33,333	37,499
^{185}Re	Rhenium	45,081	67,607	90,133	112,660	135,185	157,712	168,975	180,238	202,764
^{187}Re	Rhenium	45,534	68,286	91,038	113,791	136,543	159,295	170,671	182,047	204,800
^{189}Os	Osmium	15,540	23,304	31,069	38,834	46,599	54,364	58,246	62,128	69,893
^{191}Ir	Iridium	3,438	5,156	6,874	8,592	10,310	12,028	12,887	13,746	15,464
^{193}Ir	Iridium	3,744	5,615	7,486	9,357	11,228	13,099	14,034	14,970	16,841
^{195}Pt	Platinum	42,951	64,413	85,875	107,336	128,798	150,260	160,990	171,721	193,183
^{197}Au	Gold	3,461	5,191	6,921	8,650	10,380	12,109	12,974	13,839	15,568
^{199}Hg	Mercury	35,845	53,757	71,668	89,579	107,490	125,401	134,356	143,312	161,223
^{201}Hg	Mercury	13,233	19,845	26,458	33,070	39,682	46,295	49,601	52,907	59,519
^{203}Tl	Thallium	114,522	171,746	228,970	286,194	343,418	400,642	429,254	457,866	515,090
^{205}Tl	Thallium	115,647	173,433	231,219	289,006	346,791	404,578	433,470	462,364	520,150
^{207}Pb	Lead	41,743	62,601	83,459	104,317	125,175	146,033	156,462	166,891	187,749
^{209}Bi	Bismuth	32,158	48,226	64,295	80,363	96,431	112,500	120,534	128,568	144,637

Figures

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Tables

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