EISCAT

FIR FILTERS

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1. Fir filters for 15 MHz AD

Filter name	Sampling speed (us)	Bandwith (kHz)	Filter view
b700d9.fir	0.6	1400	b700d9.ps
b800d9.fir	0.6	1600	b800d9.ps
b600d12.fir	0.8	1200	b600d12.ps
b800d12.fir	0.8	1600	b800d12.ps
b500d15.fir	1.0	1000	b500d15.ps
b250d30.fir	2.0	500	b250d30.ps
b210d36.fir	2.4	420	b210d36.ps
b170d45.fir	3.0	340	b170d45.ps
b150d60.fir	4.0	300	b150d60.ps
b83d90.fir	6.0	166	b83d90.ps
b25d105.fir	7.0	50	b25d105.ps
b72d105.fir	7.0	144	b72d105.ps
b75d105.fir	7.0	150	b75d105.ps
b62d120.fir	8.0	124	b62d120.ps
b25d150.fir	10.0	50	b25d150.ps
b35d150.fir	10.0	70	b35d150.ps
b50d150.fir	10.0	100	b50d150.ps

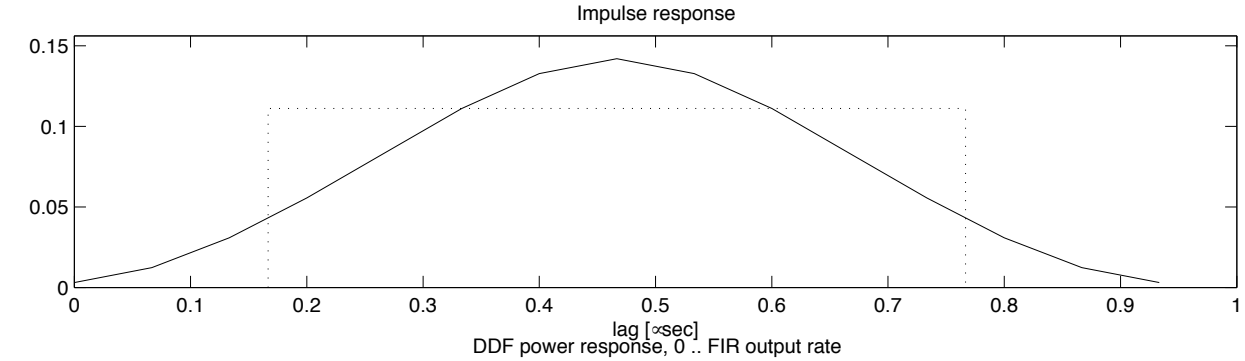
b30d180.fir	12.0	60	b30d180.ps
b42d180.fir	12.0	84	b42d180.ps
b50d180.fir	12.0	100	b50d180.ps
b25d210.fir	14.0	50	b25d210.ps
b15d225.fir	15.0	30	b15d225.ps
b20d225.fir	15.0	40	b20d225.ps
b30d225.fir	15.0	60	b30d225.ps
b31d240.fir	16.0	62	b31d240.ps
b25d300.fir	20.0	50	b25d300.ps
b50d300.fir	20.0	100	b50d300.ps
b25d315.fir	21.0	50	b25d315.ps
b21d360.fir	24.0	42	b21d360.ps
b16d450.fir	30.0	32	b16d450.ps

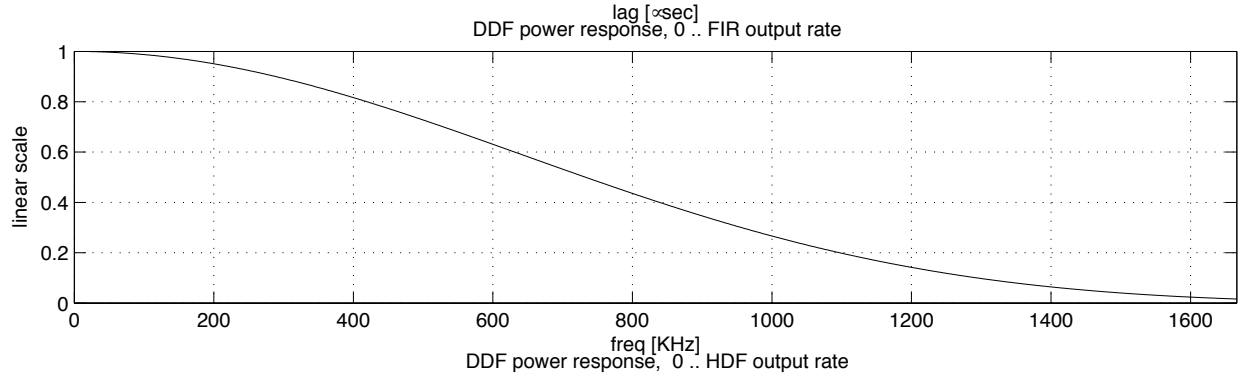
2. Fir filters for 10 MHz AD

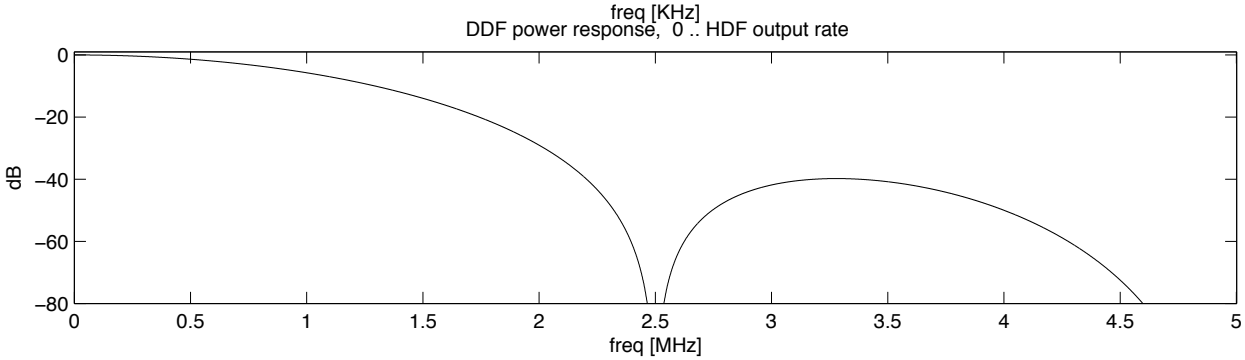
Filter name	Sampling speed (us)	Bandwith (kHz)	Filter view
w600d6.fir	0.6	1200	w600d6.ps
w125d40.fir	4.0	250	w125d40.ps
w83d60.fir	6.0	166	w83d60.ps
w70d70.fir	7.0	140	w70d70.ps
w50d100.fir	10.0	100	w50d100.ps
w20d150.fir	15.0	40	w20d150.ps
w30d150.fir	15.0	60	w30d150.ps
w33d150.fir	15.0	66	w33d150.ps
w30d160.fir	16.0	60	w30d160.ps
w25d200.fir	20.0	50	w25d200.ps

3. b700d9.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 13-May-2003
% ddfplan15(3,4,3,2,2)

% L,N=   2,2
% F_CLK > 1 x CLK_IN

% HDF pole1: 5000000.000 Hz
% FIR pole1: 2500000.000 Hz
H_STAGES 4
H_GROWTH 43

H_DRATE  2
H_BYP    0
F_CLA    0

F_TAPS   2
F_ESYM   1
F_DRATE  2
F_BYP    0
F_0AD    0

TAP 0 0x32916  % 0.3951
TAP 1 0x6522C  % 0.7901
```

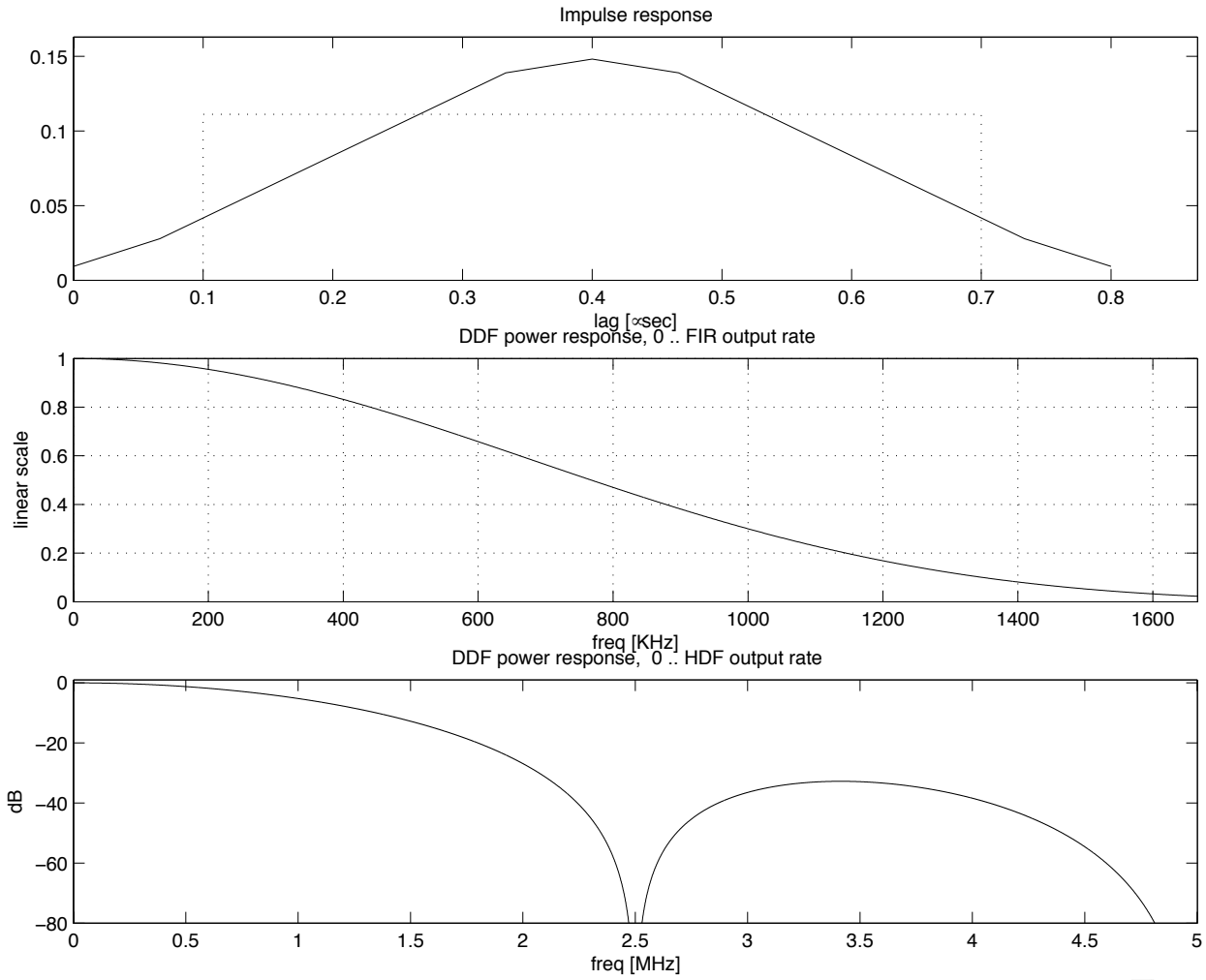

Impulse response
0.15
0.1
0.05
0
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
lag [∝sec]


DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
200
400
600
800
1000
1200
1400
1600
freq [KHz]


DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
freq [MHz]

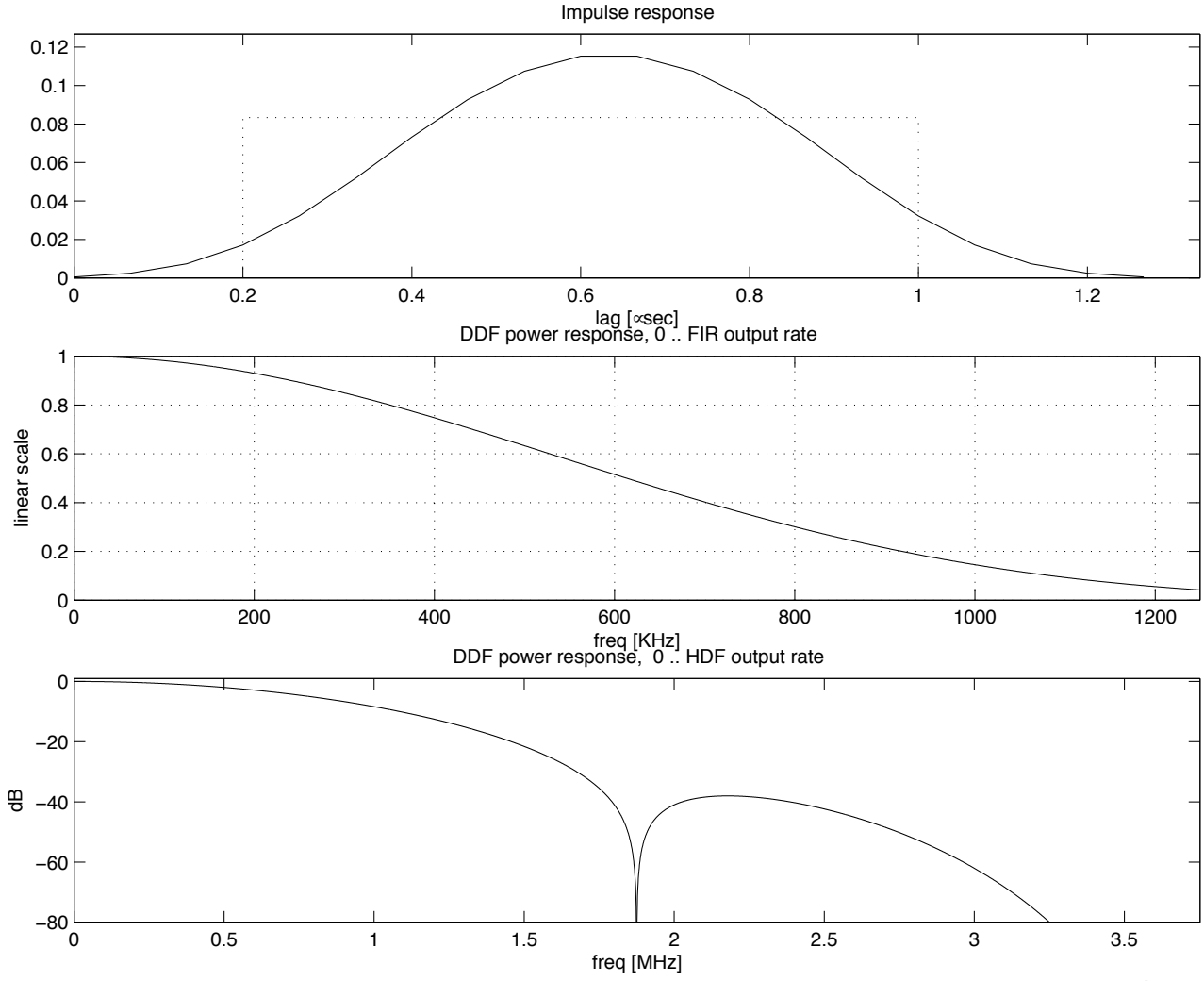
4. b800d9.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 27-May-2003
% L,N=   2,2
% F_CLK > 1 x CLK_IN
%ddfplan15(3,3,3,2,2)
% HDF pole1: 5000000.000 Hz
% FIR pole1: 2500000.000 Hz
H_STAGES 3
%H_GROWTH 45
H_GROWTH 45

H_DRATE  2
H_BYP    0
F_CLA    0

F_TAPS   2
F_ESYM   1
F_DRATE  2
F_BYP    0
F_0AD    0

TAP 0 0x25ED1  % 0.2963
TAP 1 0x4BDA1  % 0.5926
```


Impulse response
0.15
0.1
0.05
0
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
200
400
600
800
1000
1200
1400
1600
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
freq [MHz]

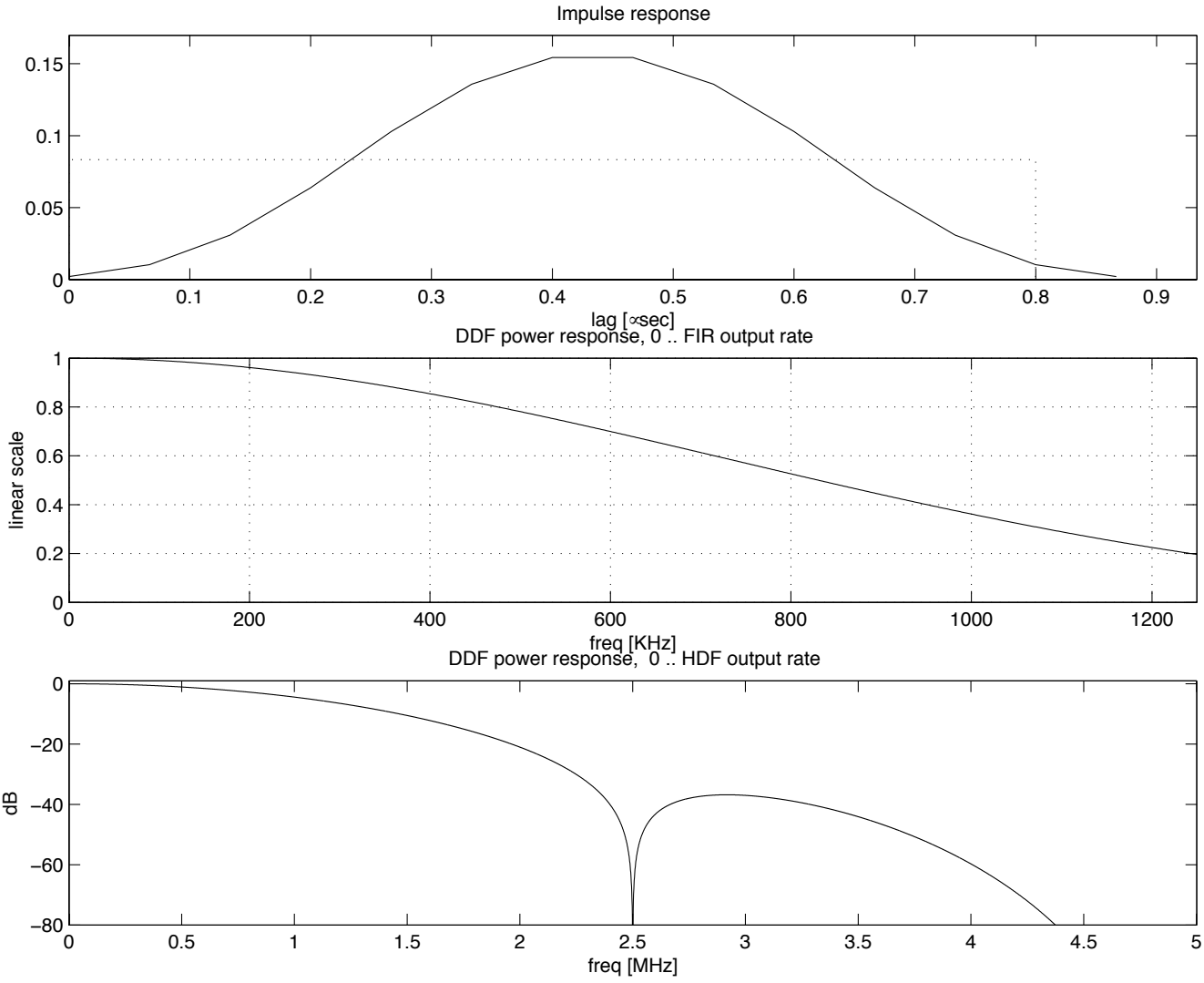
5. b600d12.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 05-Aug-2002
% L,N=   1,2
% F_CLK > 0.666667 x CLK_IN
% ddfplan15(4,5,3,1,2)
% HDF pole1: 3750000.000 Hz
% FIR pole1: 1875000.000 Hz
H_STAGES 5
H_GROWTH 40

H_DRATE  3
H_BYP    0
F_CLA    0

F_TAPS   1
F_ESYM   1
F_DRATE  2
F_BYP    0
F_0AD    0

TAP 0 0x40000  % 0.5000
```


Impulse response
0.12
0.1
0.08
0.06
0.04
0.02
0
0
0.2
0.4
0.6
0.8
1
1.2
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
200
400
600
800
1000
1200
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.5
1
1.5
2
2.5
3
3.5
freq [MHz]

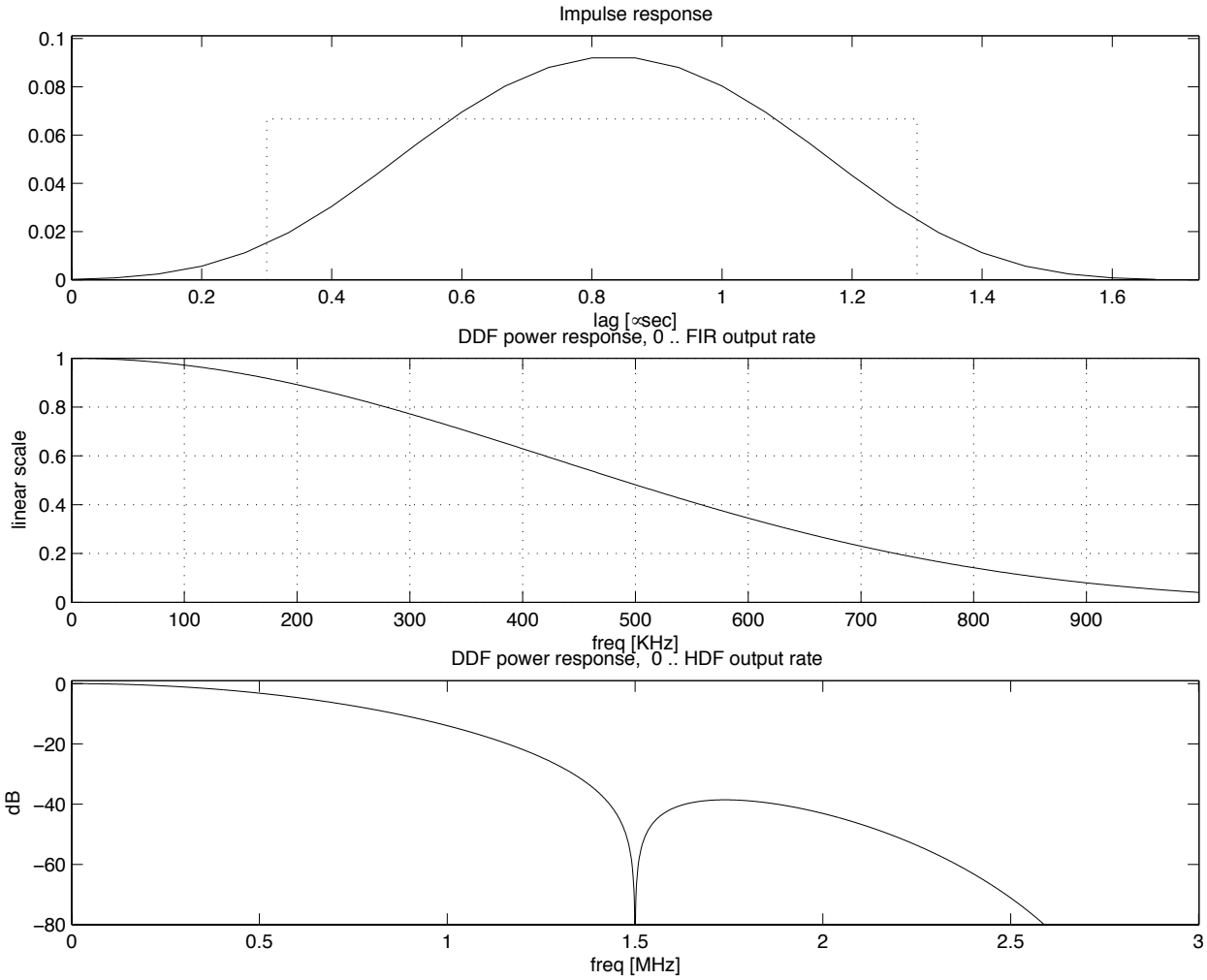
6. b800d12.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 06-Aug-2002
% L,N=   1,2
% F_CLK > 0.75 x CLK_IN
% ddfplan15(3,5,4,1,2)
% HDF pole1: 5000000.000 Hz
% FIR pole1: 2500000.000 Hz
H_STAGES 5
H_GROWTH 42

H_DRATE  2
H_BYP    0
F_CLA    0

F_TAPS   1
F_ESYM   1
F_DRATE  3
F_BYP    0
F_0AD    0

TAP 0 0x436C8  % 0.5267
```


Impulse response
0.15
0.1
0.05
0
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
200
400
600
800
1000
1200
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
freq [MHz]

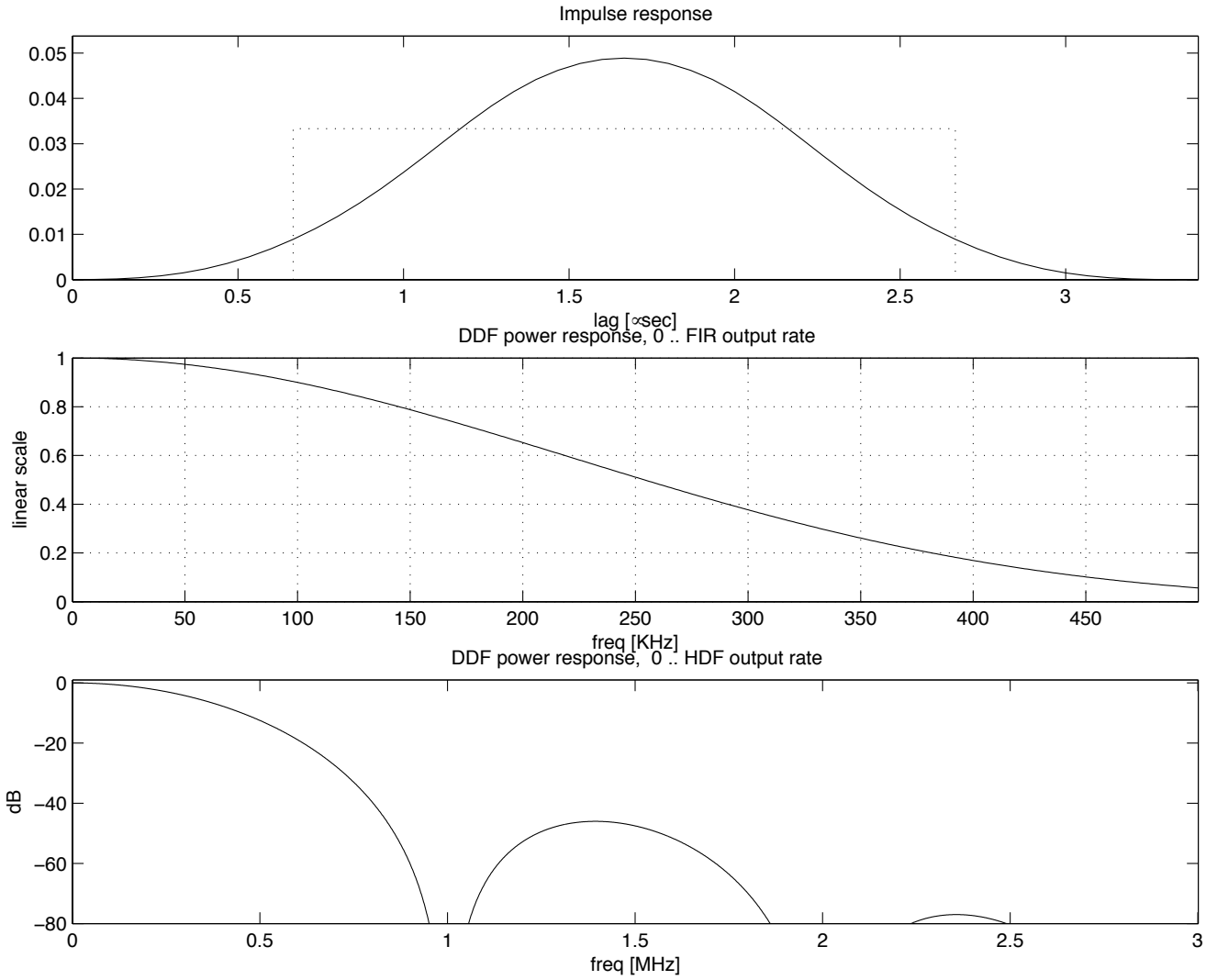
7. b500d15.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 25-Oct-2000
% L,N=   1,2
% ddfplan15(5,5,3,1,2)
% F_CLK > 0.533333 x CLK_IN

% HDF pole1: 3000000.000 Hz
% FIR pole1: 1500000.000 Hz
H_STAGES 5
H_GROWTH 38

H_DRATE  4
H_BYP    0
F_CLA    0

F_TAPS   1
F_ESYM   1
F_DRATE  2
F_BYP    0
F_0AD    0

TAP 0 0x53E2D  % 0.6554
```


Impulse response
0.1
0.08
0.06
0.04
0.02
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
100
200
300
400
500
600
700
800
900
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.5
1
1.5
2
2.5
3
freq [MHz]

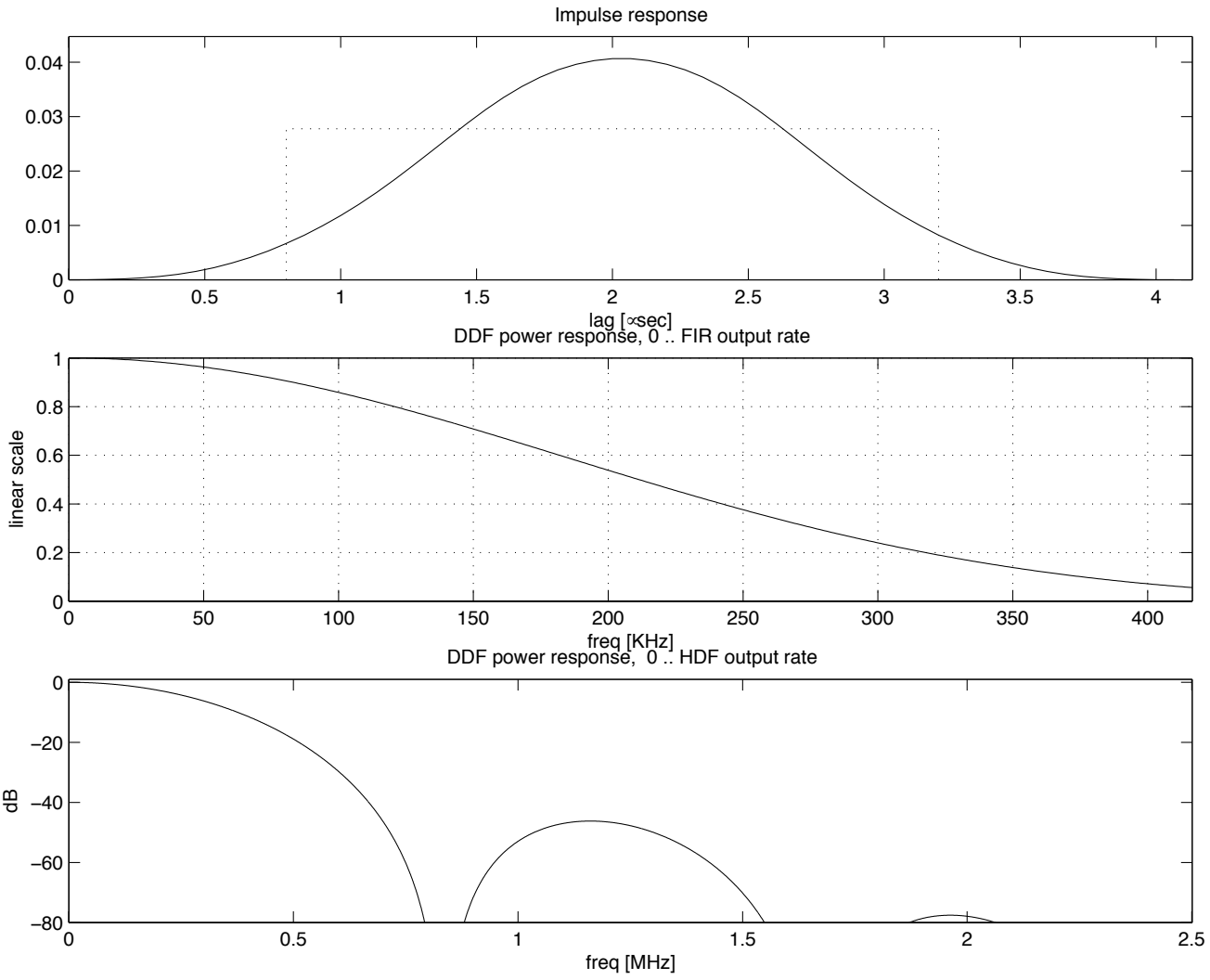
8. b250d30.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 06-Jun-2000
% L,N=   3,3
% F_CLK > 0.466667 x CLK_IN
% ddfplan15(5,5,6,3,3)
% HDF pole1: 3000000.000 Hz
% FIR pole1: 1000000.000 Hz
H_STAGES 5
H_GROWTH 38

H_DRATE  4
H_BYP    0
F_CLA    0

F_TAPS   6
F_ESYM   1
F_DRATE  5
F_BYP    0
F_0AD    0

TAP 0 0x0636C  % 0.0485
TAP 1 0x12A43  % 0.1456
TAP 2 0x25486  % 0.2913
TAP 3 0x2B7F2  % 0.3398
```


Impulse response
0.05
0.04
0.03
0.02
0.01
0
0
0.5
1
1.5
2
2.5
3
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
50
100
150
200
250
300
350
400
450
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.5
1
1.5
2
2.5
3
freq [MHz]

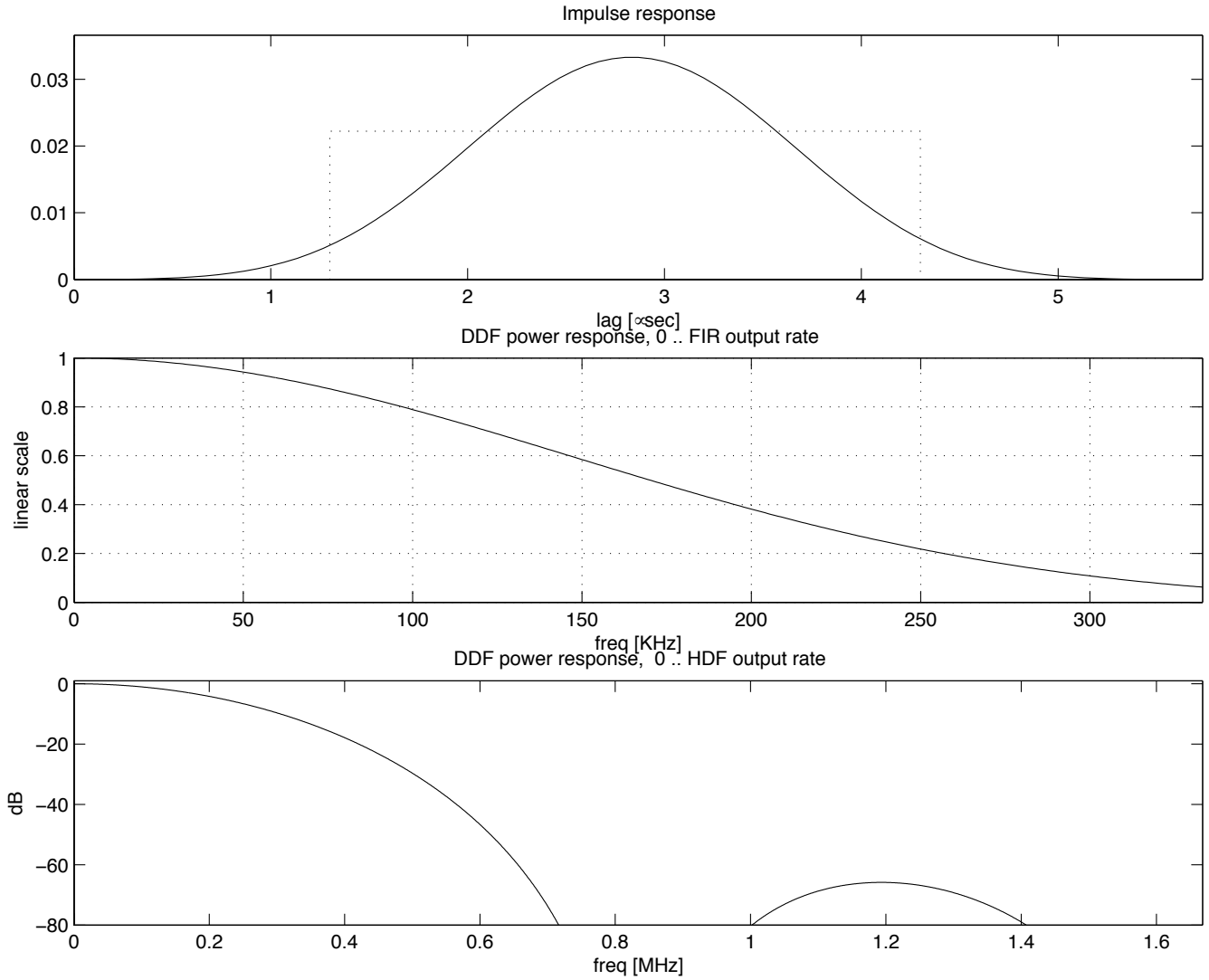
9. b210d36.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 12-Sep-2002
% L,N=   3,3
% F_CLK > 0.388889 x CLK_IN
% ddfplan15(6,5,6,3,3)
% HDF pole1: 2500000.000 Hz
% FIR pole1: 833333.333 Hz
H_STAGES 5
H_GROWTH 37

H_DRATE  5
H_BYP    0
F_CLA    0

F_TAPS   6
F_ESYM   1
F_DRATE  5
F_BYP    0
F_0AD    0

TAP 0 0x04FE9  % 0.0390
TAP 1 0x0EFBB  % 0.1171
TAP 2 0x1DF75  % 0.2341
TAP 3 0x22F5E  % 0.2731
```


Impulse response
0.04
0.03
0.02
0.01
0
0
0.5
1
1.5
2
2.5
3
3.5
4
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
50
100
150
200
250
300
350
400
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.5
1
1.5
2
2.5
freq [MHz]

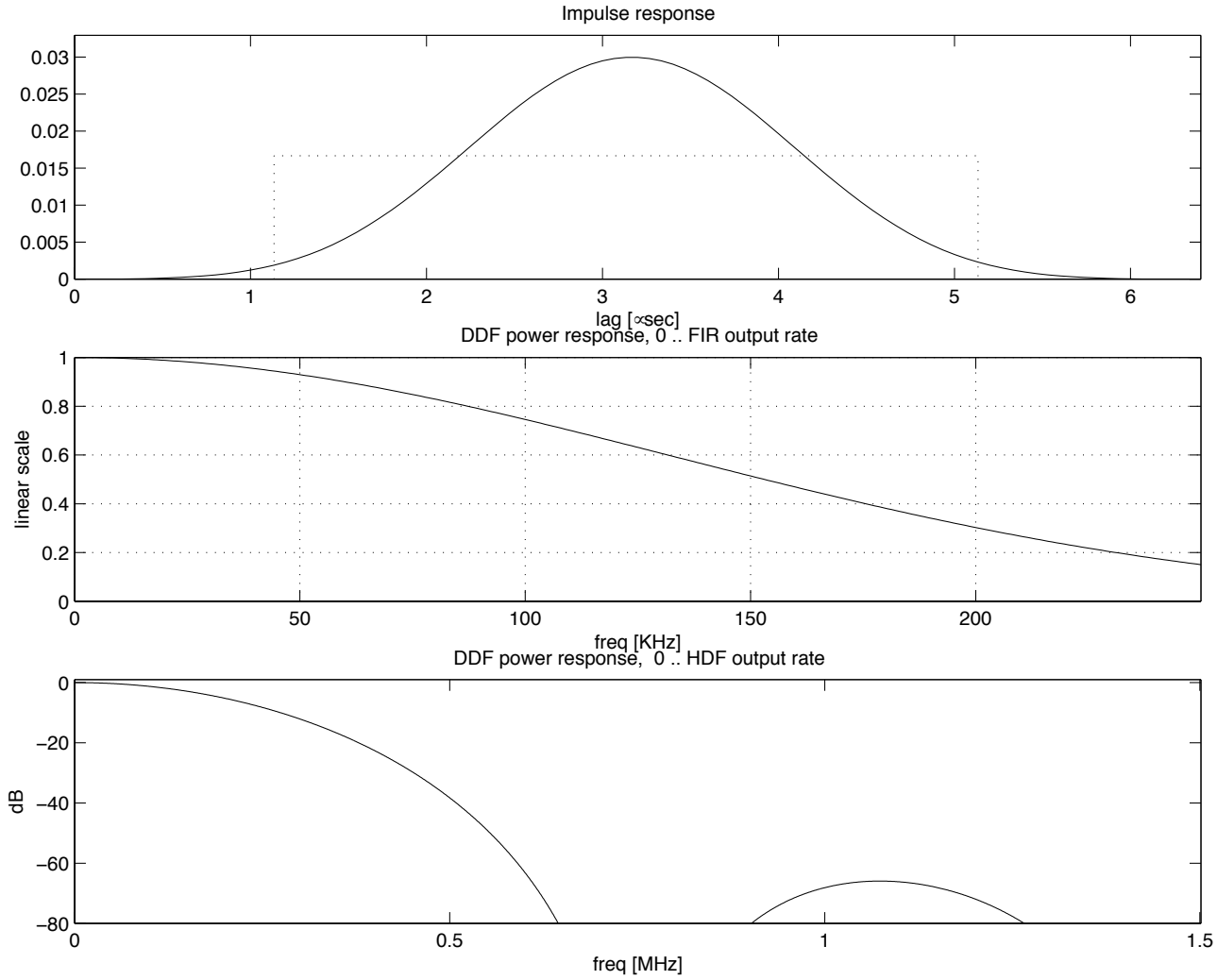
10. b170d45.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 27-Nov-2001
% L,N=   5,2
% F_CLK > 0.266667 x CLK_IN
%ddfplan15(9,5,5,5,2)
% HDF pole1: 1666666.667 Hz
% FIR pole1: 833333.333 Hz
H_STAGES 5
H_GROWTH 34

H_DRATE  8
H_BYP    0
F_CLA    0

F_TAPS   5
F_ESYM   1
F_DRATE  4
F_BYP    0
F_0AD    0

TAP 0 0x04708  % 0.0347
TAP 1 0x16328  % 0.1734
TAP 2 0x2C64F  % 0.3468
```


Impulse response
0.03
0.02
0.01
0
0
1
2
3
4
5
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
50
100
150
200
250
300
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
freq [MHz]

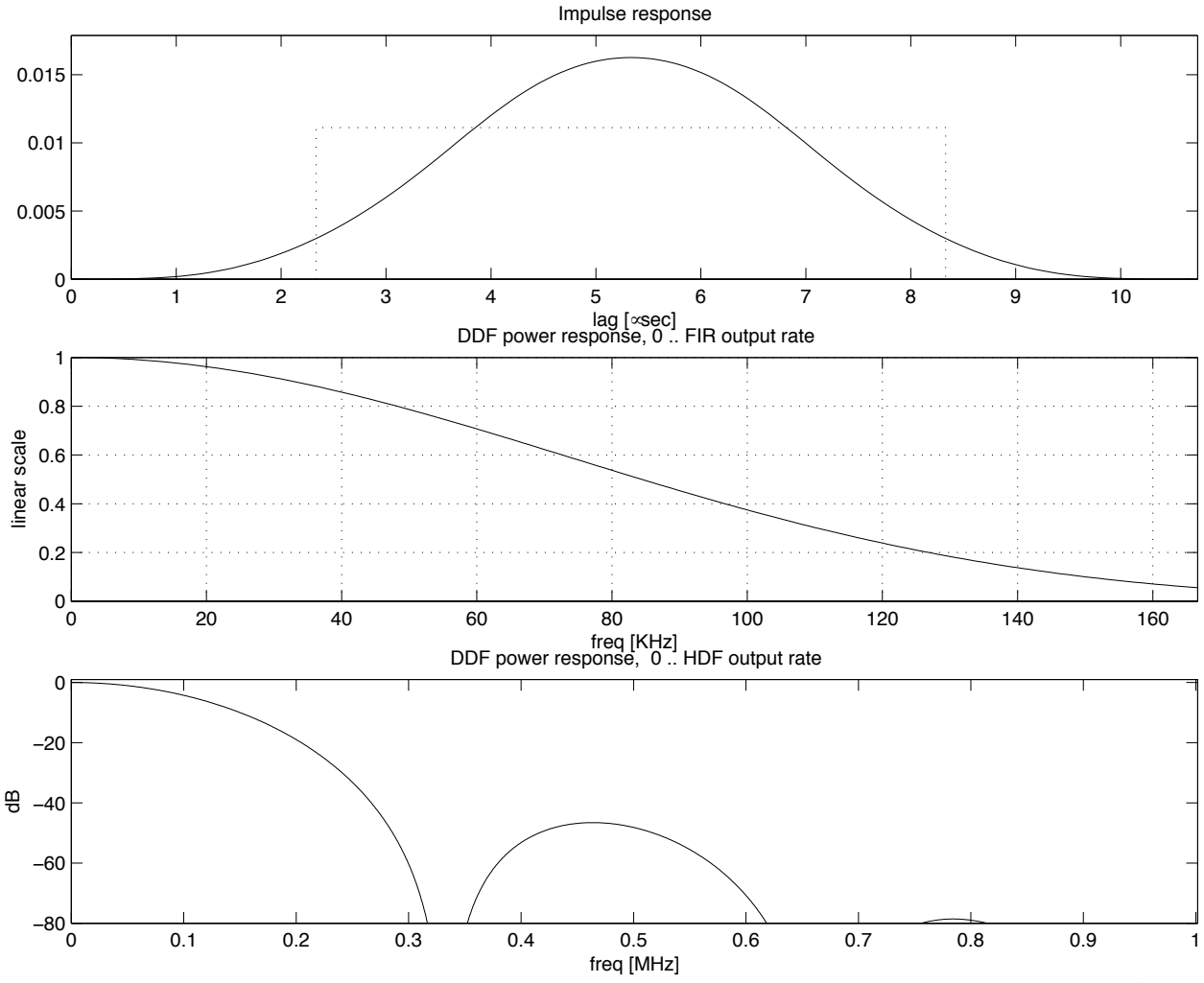
11. b150d60.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 14-Mar-2001
% L,N=   5,2
% F_CLK > 0.216667 x CLK_IN
%ddfplan15(10,5,6,5,2)
% HDF pole1: 1500000.000 Hz
% FIR pole1: 750000.000 Hz
H_STAGES 5
H_GROWTH 33

H_DRATE  9
H_BYP    0
F_CLA    0

F_TAPS   5
F_ESYM   1
F_DRATE  5
F_BYP    0
F_0AD    0

TAP 0 0x053E3  % 0.0410
TAP 1 0x1A36E  % 0.2048
TAP 2 0x346DC  % 0.4096
```


Impulse response
0.03
0.025
0.02
0.015
0.01
0.005
0
0
1
2
3
4
5
6
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
50
100
150
200
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.5
1
1.5
freq [MHz]

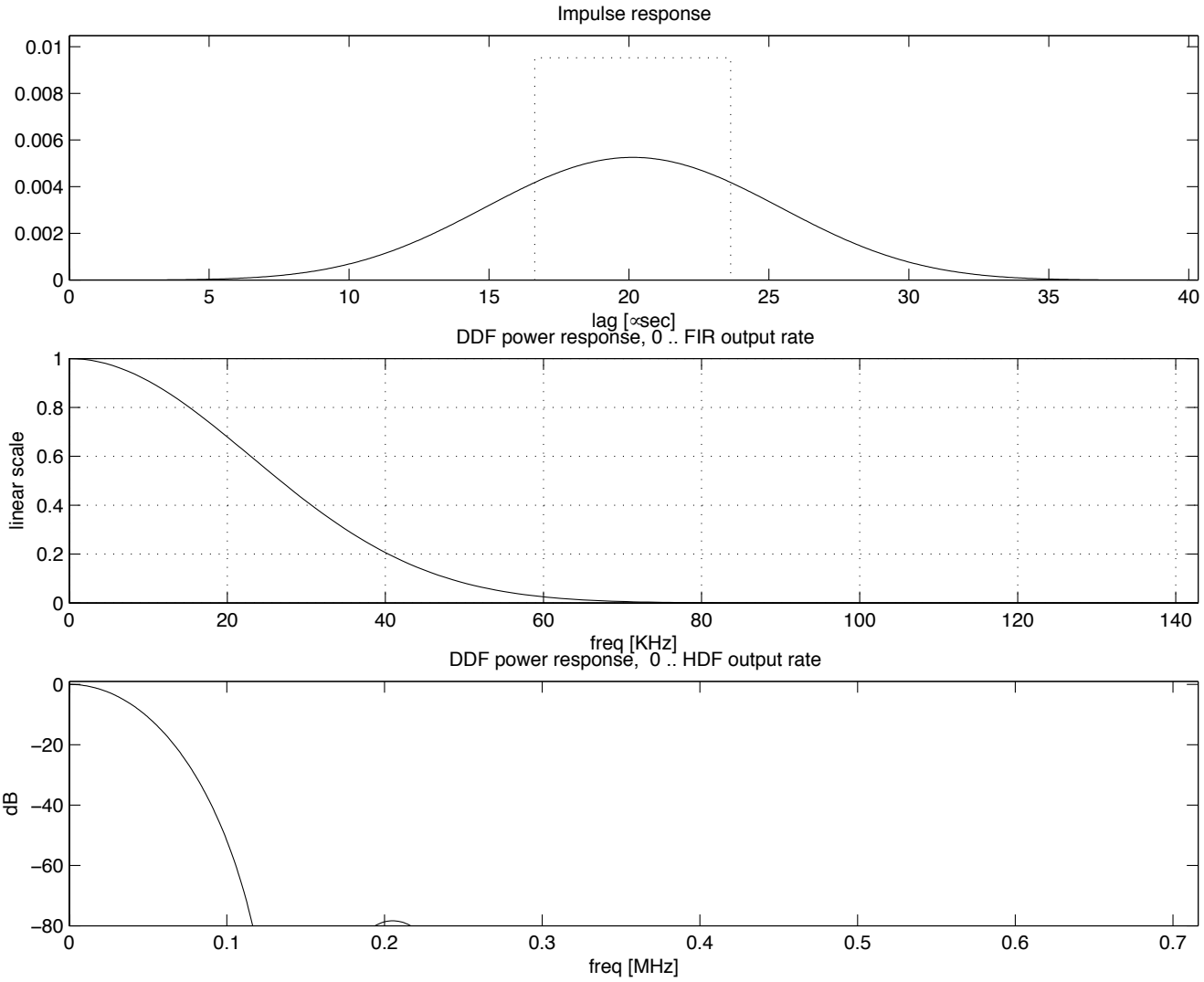
12. b83d90.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 07-Nov-2001
% L,N=   3,3
% F_CLK > 0.155556 x CLK_IN
% ddfplan15(15,5,6,3,3)
% HDF pole1: 1000000.000 Hz
% FIR pole1: 333333.333 Hz
H_STAGES 5
H_GROWTH 30

H_DRATE  14
H_BYP    0
F_CLA    0

F_TAPS   6
F_ESYM   1
F_DRATE  5
F_BYP    0
F_0AD    0

TAP 0 0x068BD  % 0.0511
TAP 1 0x13A38  % 0.1534
TAP 2 0x27470  % 0.3069
TAP 3 0x2DD2D  % 0.3580
```


Impulse response
0.015
0.01
0.005
0
0 1 2 3 4 5 6 7 8 9 10
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0 20 40 60 80 100 120 140 160
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
freq [MHz]

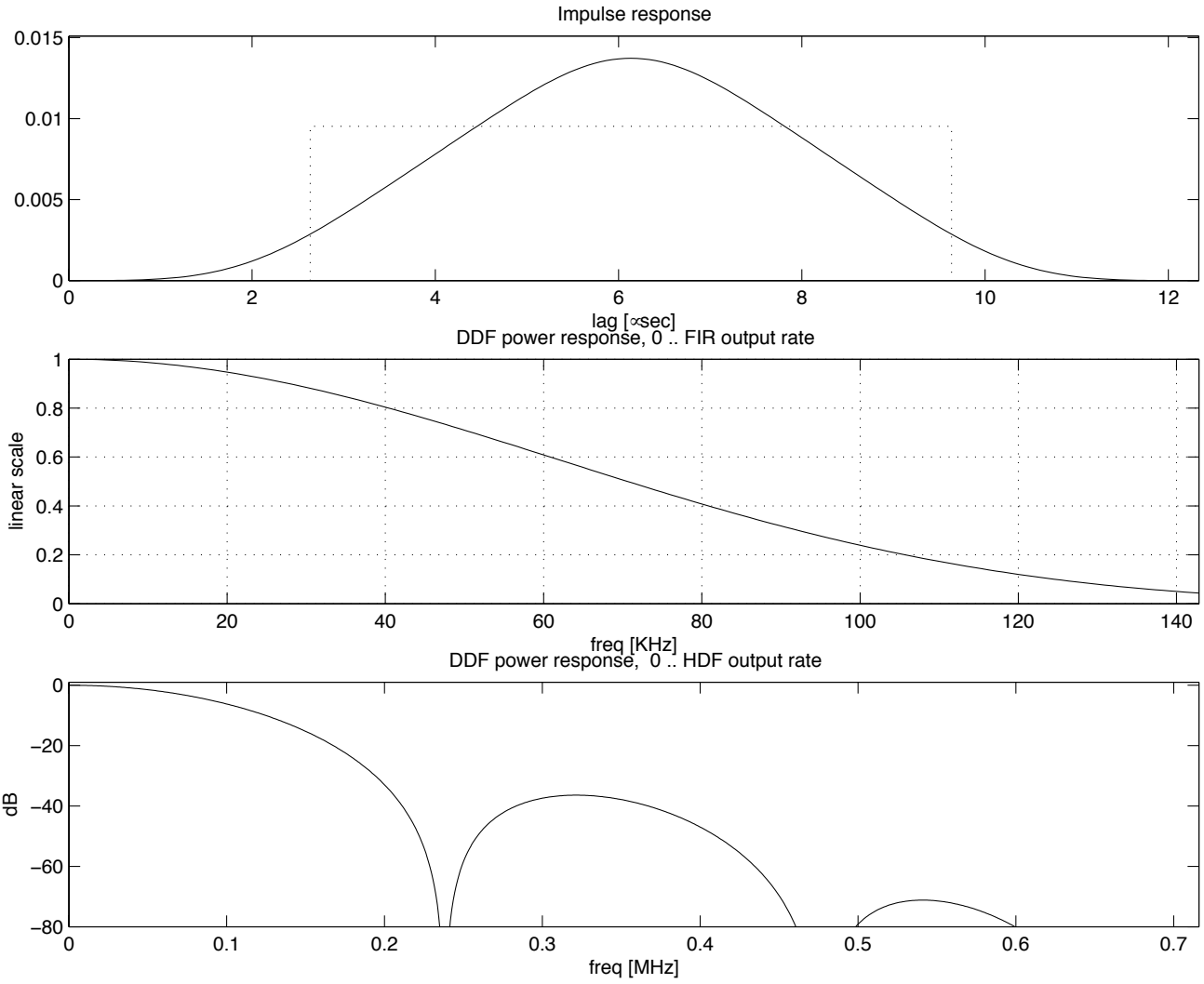
13. b25d105.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 05-Jun-2000
% L,N=   6,5
% F_CLK > 0.209524 x CLK_IN
%ddfplan15(21,5,5,6,5)
% HDF pole1: 714285.714 Hz
% FIR pole1: 142857.143 Hz
H_STAGES 5
H_GROWTH 28

H_DRATE  20
H_BYP    0
F_CLA    0

F_TAPS   24
F_ESYM   1
F_DRATE  4
F_BYP    0
F_0AD    0

TAP 0 0x00022  % 0.0001
TAP 1 0x000CF  % 0.0004
TAP 2 0x002D4  % 0.0014
TAP 3 0x0078A  % 0.0037
TAP 4 0x010F6  % 0.0083
TAP 5 0x0211D  % 0.0162
TAP 6 0x03958  % 0.0280
TAP 7 0x059A6  % 0.0438
TAP 8 0x08003  % 0.0625
TAP 9 0x0A7B9  % 0.0819
TAP 10 0x0CAB9  % 0.0990
TAP 11 0x0E2F3  % 0.1108
TAP 12 0x0EBB3  % 0.1151
```


Impulse response
0.01
0.008
0.006
0.004
0.002
0
0
5
10
15
20
25
30
35
40
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
20
40
60
80
100
120
140
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
freq [MHz]

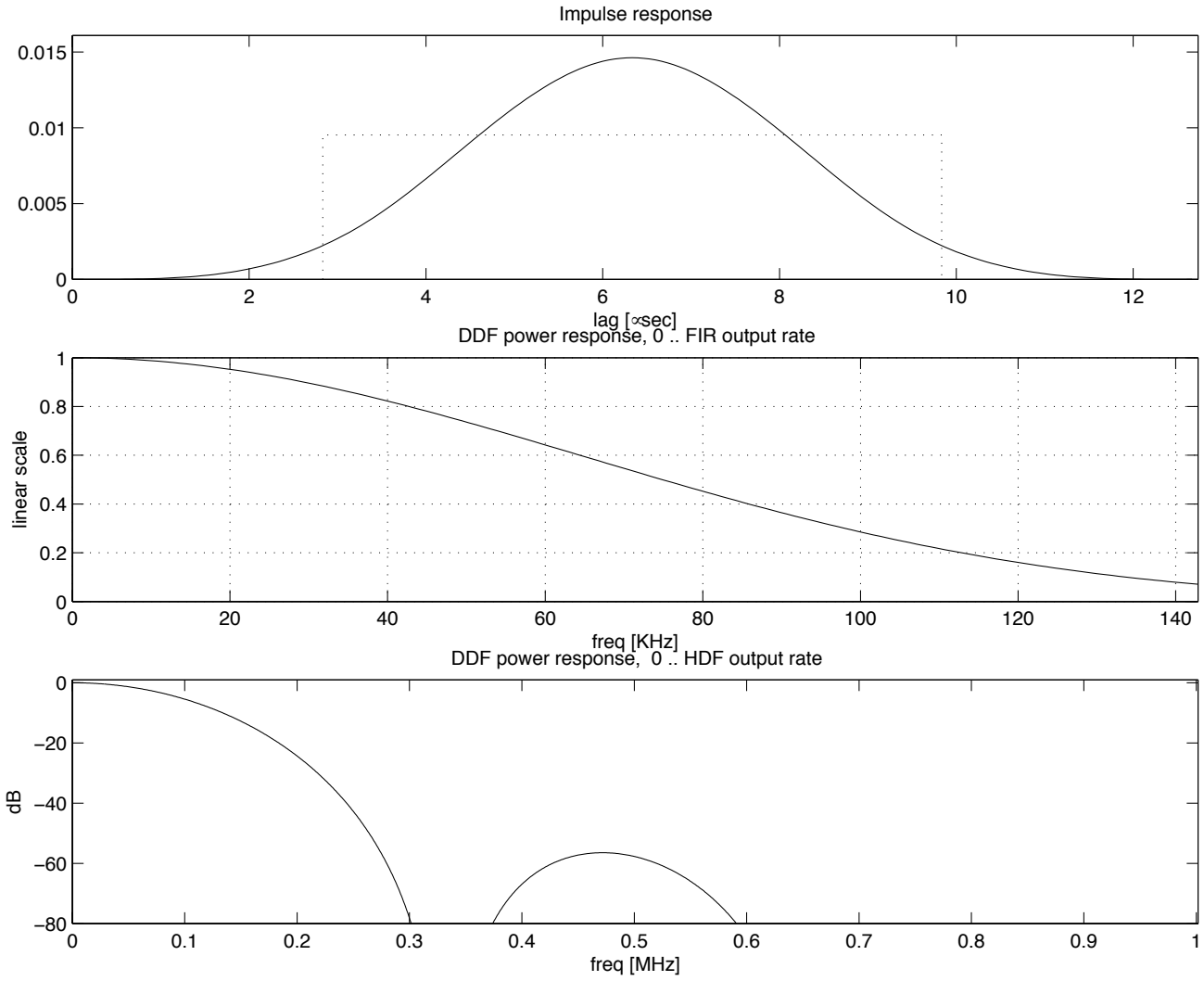
14. b72d105.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 23-Aug-2000
% L,N=   2,3
%ddfplan15(21,5,5,2,3)
% F_CLK > 0.114286 x CLK_IN

% HDF pole1: 714285.714 Hz
% FIR pole1: 238095.238 Hz
H_STAGES 5
H_GROWTH 28

H_DRATE  20
H_BYP    0
F_CLA    0

F_TAPS   4
F_ESYM   1
F_DRATE  4
F_BYP    0
F_0AD    0

TAP 0 0x0E9B2  % 0.1141
TAP 1 0x1D364  % 0.2282
TAP 2 0x2BD16  % 0.3423
```


Impulse response
0.015
0.01
0.005
0
0
2
4
6
8
10
12
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
20
40
60
80
100
120
140
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
freq [MHz]

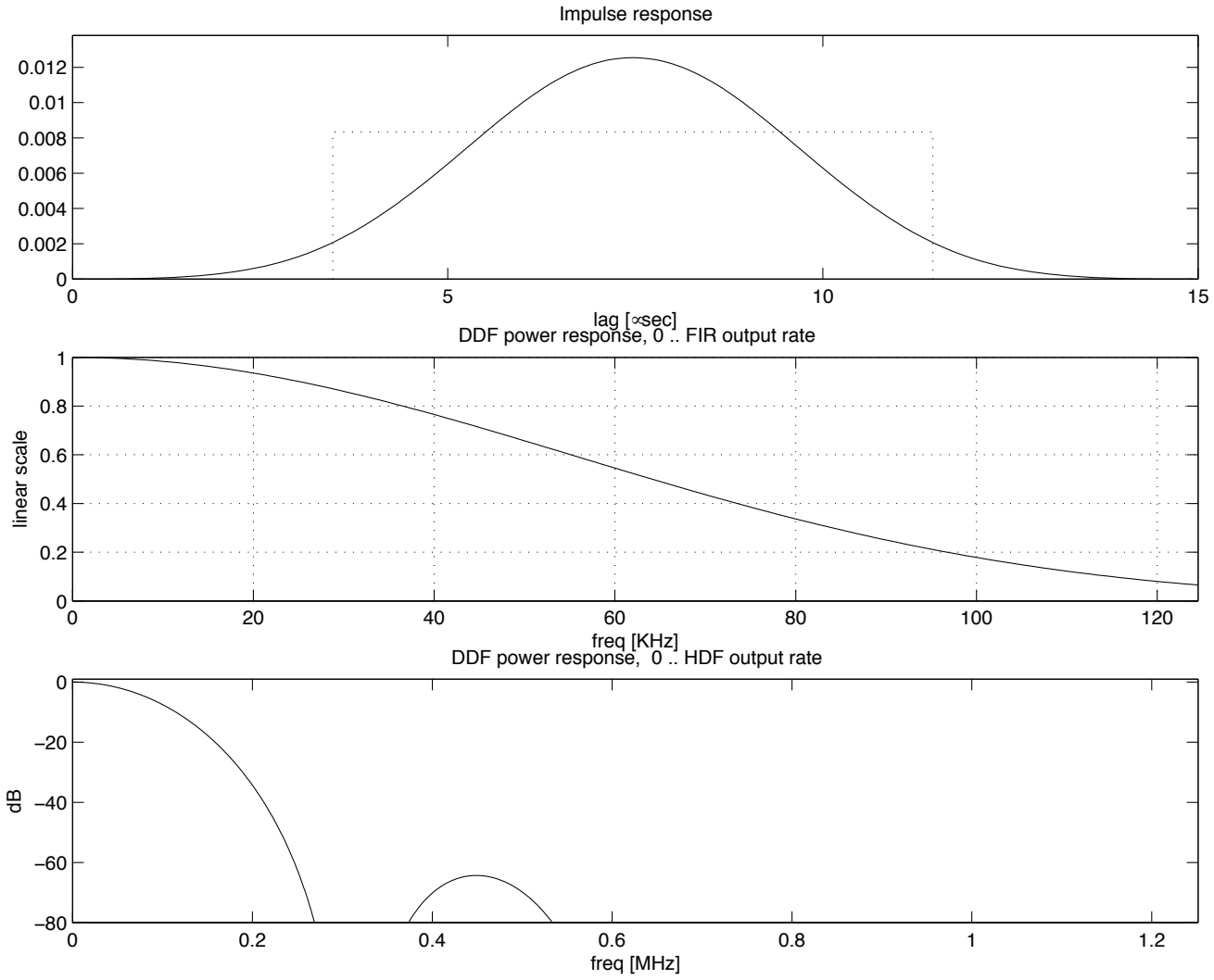
15. b75d105.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 06-Jun-2000
% L,N=   4,3
% F_CLK > 0.152381 x CLK_IN
%  ddfplan15(15,5,7,4,3)
% HDF pole1: 1000000.000 Hz
% FIR pole1: 333333.333 Hz
H_STAGES 5
H_GROWTH 30

H_DRATE  14
H_BYP    0
F_CLA    0

F_TAPS   8
F_ESYM   1
F_DRATE  6
F_BYP    0
F_0AD    0

TAP 0 0x022EA  % 0.0170
TAP 1 0x08BA7  % 0.0682
TAP 2 0x15D22  % 0.1705
TAP 3 0x22E9C  % 0.2728
TAP 4 0x29759  % 0.3239
```


Impulse response
0.015
0.01
0.005
0
0
2
4
6
8
10
12
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
20
40
60
80
100
120
140
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
freq [MHz]

16. b62d120.fir

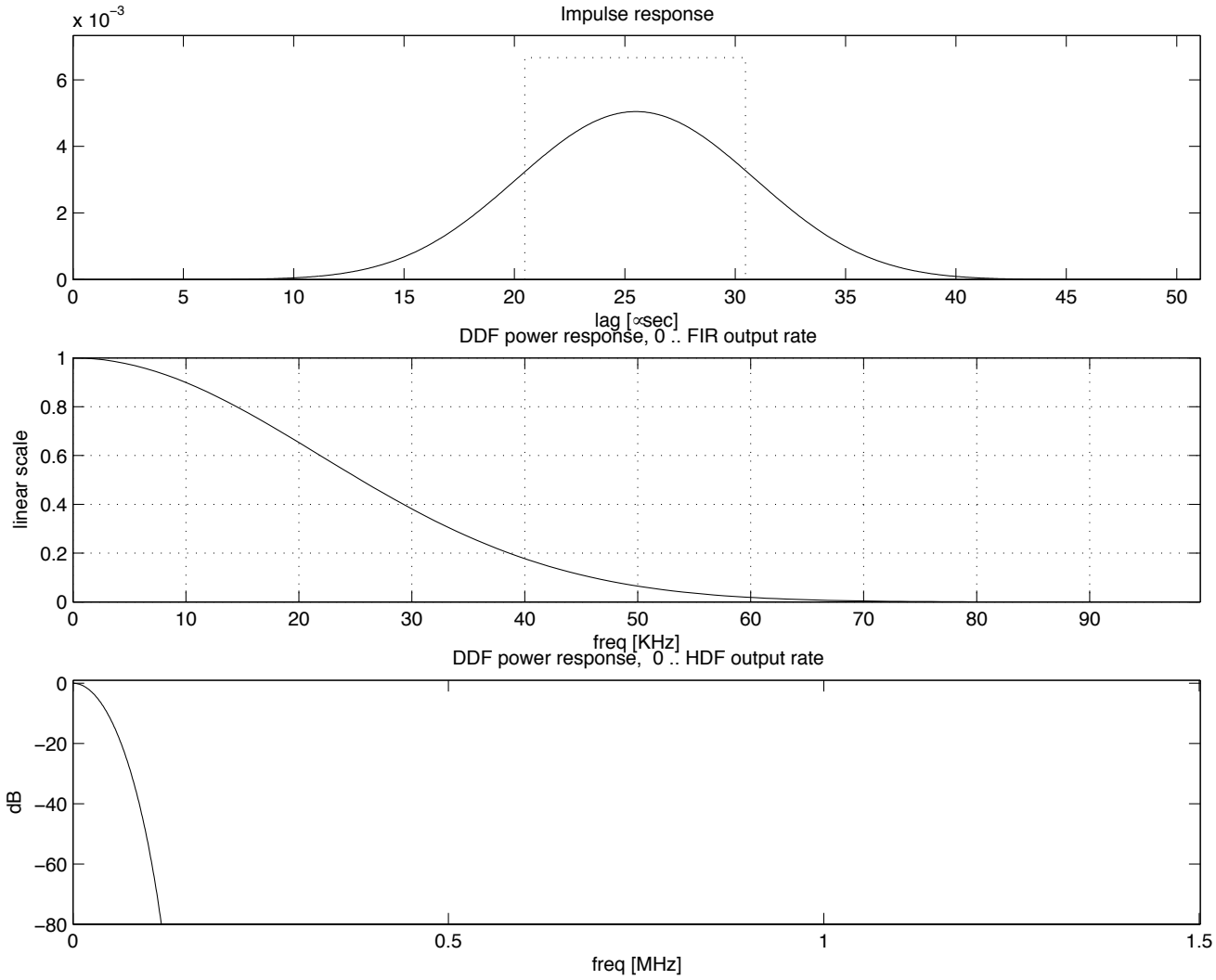
```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 08-Sep-2001
% L,N=   5,4
% F_CLK > 0.183333 x CLK_IN
%ddfplan15(12,4,10,5,4)
% HDF pole1: 1250000.000 Hz
% FIR pole1: 312500.000 Hz
H_STAGES 4
H_GROWTH 35

H_DRATE  11
H_BYP    0
F_CLA    0

F_TAPS   15
F_ESYM   1
F_DRATE  9
F_BYP    0
F_0AD    0

TAP 0 0x00329  % 0.0015
TAP 1 0x00FCD  % 0.0077
TAP 2 0x02F68  % 0.0231
TAP 3 0x06E9E  % 0.0540
TAP 4 0x0CD6F  % 0.1003
TAP 5 0x13F36  % 0.1559
TAP 6 0x1AAAB  % 0.2083
TAP 7 0x1E9E0  % 0.2392
```


Impulse response
0.012
0.01
0.008
0.006
0.004
0.002
0
0
5
10
15
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
20
40
60
80
100
120
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.2
0.4
0.6
0.8
1
1.2
freq [MHz]

17. b25d150.fir

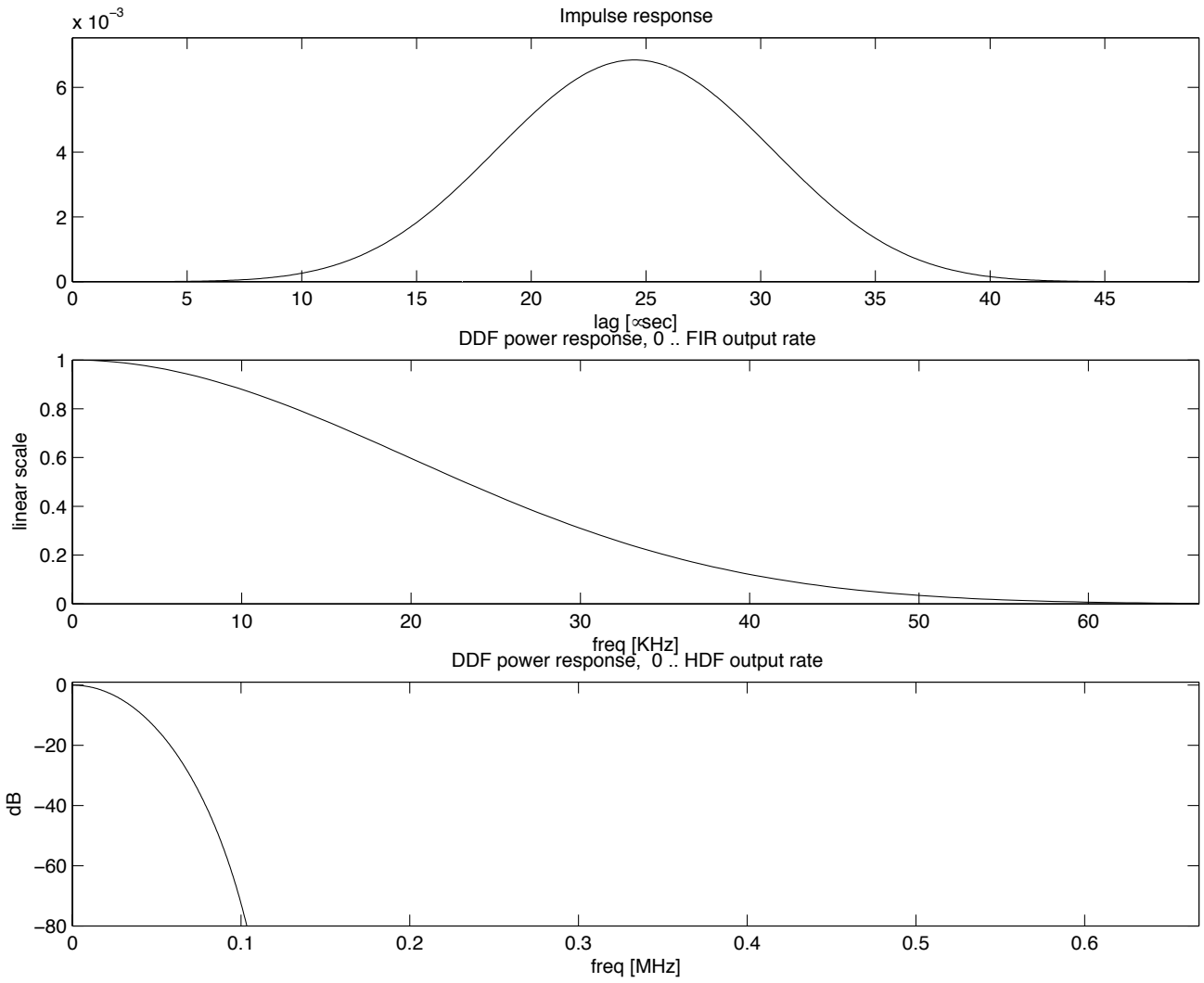
```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 29-May-2000
% ddfplan15(10,5,15,9,9)
% L,N=   9,9
% F_CLK > 0.373333 x CLK_IN

% HDF pole1: 1500000.000 Hz
% FIR pole1: 166666.667 Hz
H_STAGES 5
H_GROWTH 33

H_DRATE  9
H_BYP    0
F_CLA    0

F_TAPS   72
F_ESYM   1
F_DRATE  14
F_BYP    0
F_0AD    0

TAP 0 0x00000  % 0.0000
TAP 1 0x00000  % 0.0000
TAP 2 0x00000  % 0.0000
TAP 3 0x00000  % 0.0000
TAP 4 0x00001  % 0.0000
TAP 5 0x00002  % 0.0000
TAP 6 0x00005  % 0.0000
TAP 7 0x0000B  % 0.0000
TAP 8 0x00017  % 0.0000
TAP 9 0x0002B  % 0.0001
TAP 10 0x0004D  % 0.0001
TAP 11 0x00085  % 0.0003
TAP 12 0x000DD  % 0.0004
TAP 13 0x00161  % 0.0007
TAP 14 0x00223  % 0.0010
TAP 15 0x00336  % 0.0016
TAP 16 0x004B2  % 0.0023
TAP 17 0x006B1  % 0.0033
TAP 18 0x0094F  % 0.0045
TAP 19 0x00CA8  % 0.0062
TAP 20 0x010D5  % 0.0082
TAP 21 0x015ED  % 0.0107
TAP 22 0x01BFD  % 0.0137
TAP 23 0x0230A  % 0.0171
TAP 24 0x02B0D  % 0.0210
TAP 25 0x033F1  % 0.0254
TAP 26 0x03D91  % 0.0301
TAP 27 0x047B7  % 0.0350
TAP 28 0x05223  % 0.0401
TAP 29 0x05C84  % 0.0452
TAP 30 0x06683  % 0.0501
```

```
TAP 31 0x06FC6  % 0.0546
TAP 32 0x077F0  % 0.0586
TAP 33 0x07EAD  % 0.0619
TAP 34 0x083B6  % 0.0643
TAP 35 0x086D3  % 0.0658
TAP 36 0x087E0  % 0.0663
```


Impulse response
x 10^-3
6
4
2
0
0
5
10
15
20
25
30
35
40
45
50
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
10
20
30
40
50
60
70
80
90
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.5
1
1.5
freq [MHz]

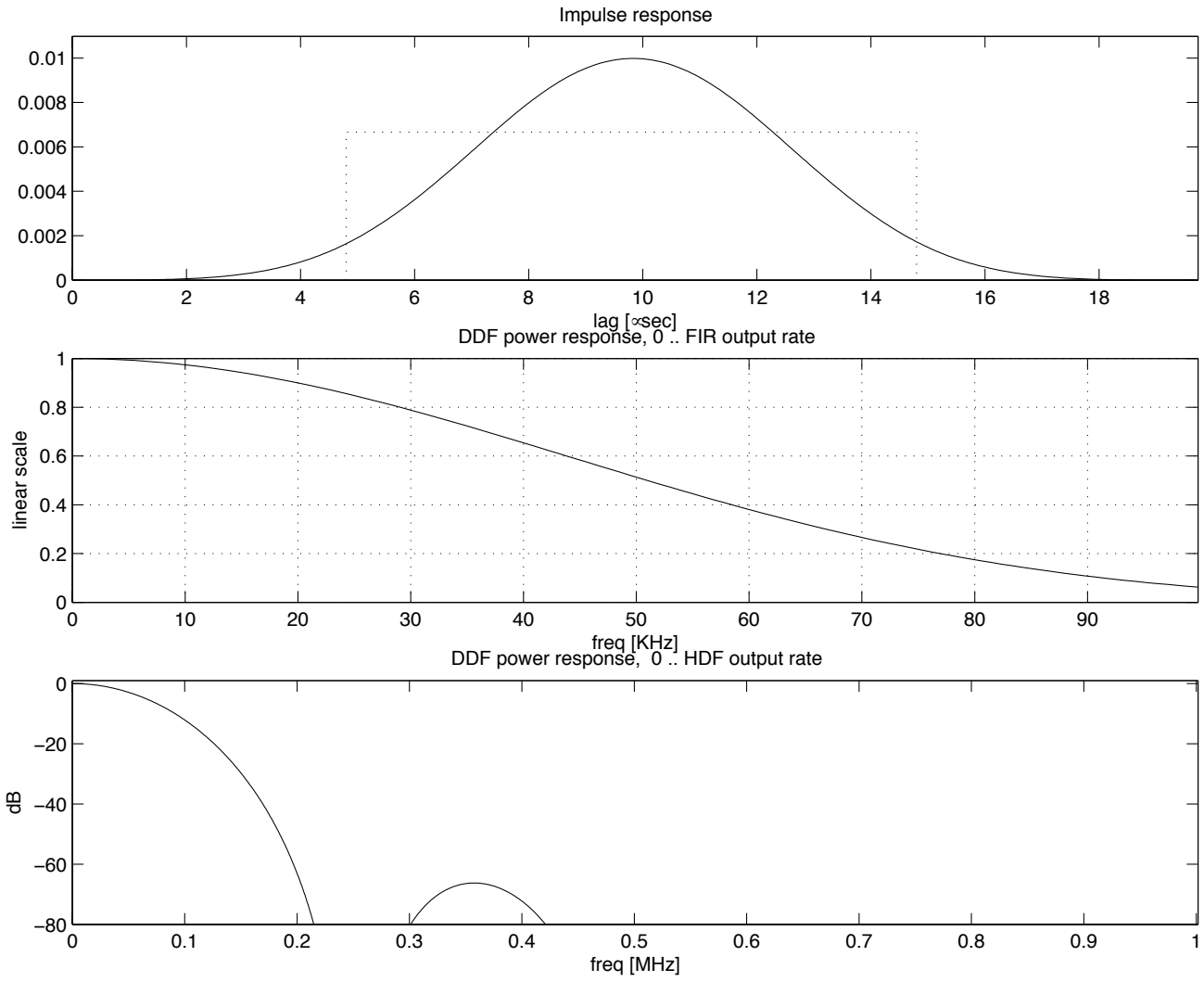
18. b35d150.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 10-Oct-2000
% ddfplan(15,5,10,7,5)
% L,N=   7,5
% F_CLK > 0.193333 x CLK_IN

% HDF pole1: 1000000.000 Hz
% FIR pole1: 200000.000 Hz
H_STAGES 5
H_GROWTH 30

H_DRATE  14
H_BYP    0
F_CLA    0

F_TAPS   28
F_ESYM   1
F_DRATE  9
F_BYP    0
F_0AD    0

TAP 0 0x00009  % 0.0000
TAP 1 0x00041  % 0.0001
TAP 2 0x00103  % 0.0005
TAP 3 0x0030A  % 0.0015
TAP 4 0x0079A  % 0.0037
TAP 5 0x01078  % 0.0080
TAP 6 0x01FAC  % 0.0155
TAP 7 0x03705  % 0.0269
TAP 8 0x0576B  % 0.0427
TAP 9 0x07FF6  % 0.0625
TAP 10 0x0AD92  % 0.0848
TAP 11 0x0DB2E  % 0.1070
TAP 12 0x10274  % 0.1262
TAP 13 0x11D0F  % 0.1392
TAP 14 0x12678  % 0.1438
```


Impulse response
x 10^-3
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
freq [MHz]

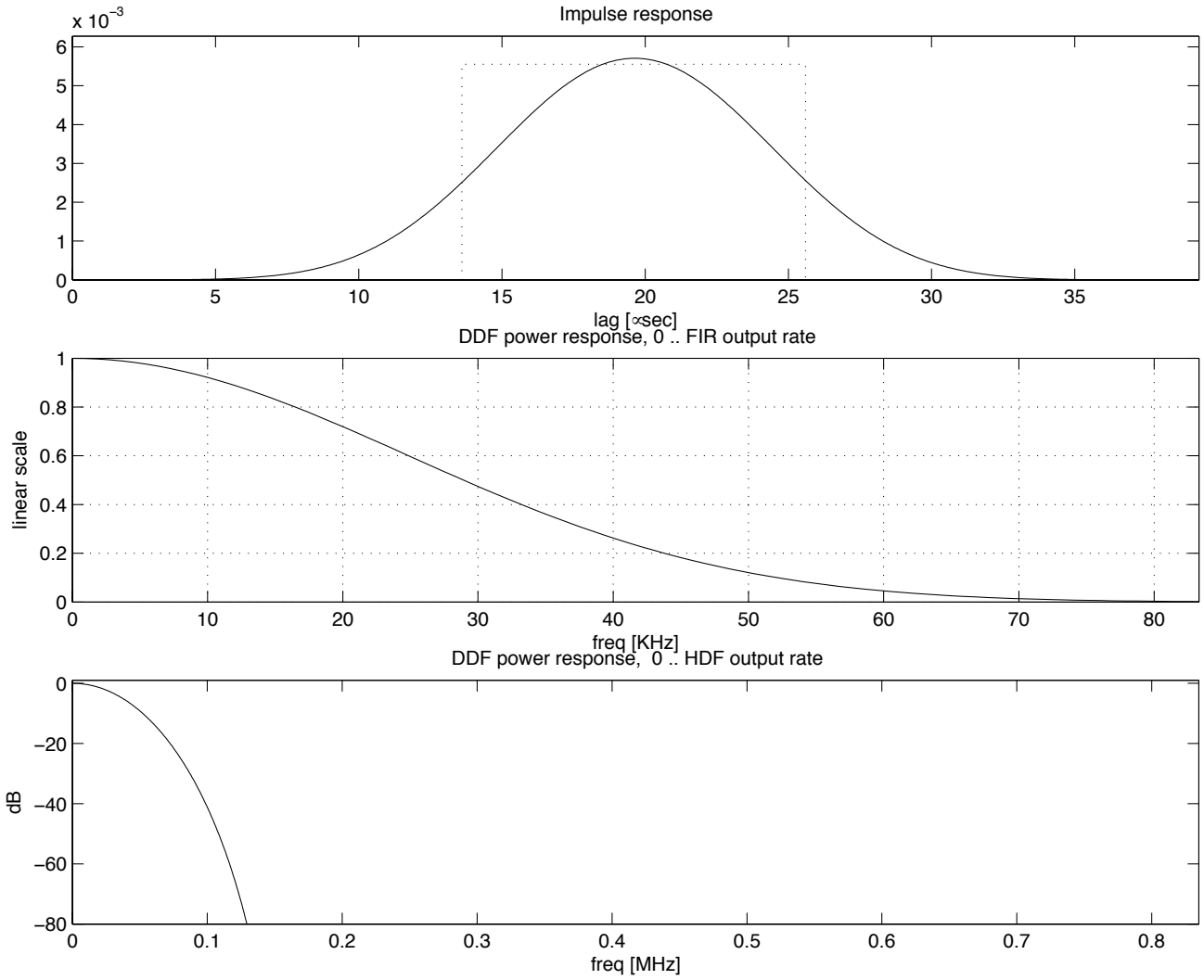
19. b50d150.fir

```
FIRPAR_VS 0.1

% b50d150.fir
% ddfplan15(15,5,10,5,4)

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 02-Nov-2002
% L,N=   5,4
% F_CLK > 0.146667 x CLK_IN

% HDF pole1: 1000000.000 Hz
% FIR pole1: 250000.000 Hz
H_STAGES 5
H_GROWTH 30

H_DRATE  14
H_BYP    0
F_CLA    0

F_TAPS   15
F_ESYM   1
F_DRATE  9
F_BYP    0
F_0AD    0

TAP 0 0x002C3  % 0.0013
TAP 1 0x00DCF  % 0.0067
TAP 2 0x0296D  % 0.0202
TAP 3 0x060A9  % 0.0472
TAP 4 0x0B382  % 0.0877
TAP 5 0x116EE  % 0.1362
TAP 6 0x174D4  % 0.1820
TAP 7 0x1AC10  % 0.2090
```


Impulse response
0.01
0.008
0.006
0.004
0.002
0
0
2
4
6
8
10
12
14
16
18
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
10
20
30
40
50
60
70
80
90
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
freq [MHz]

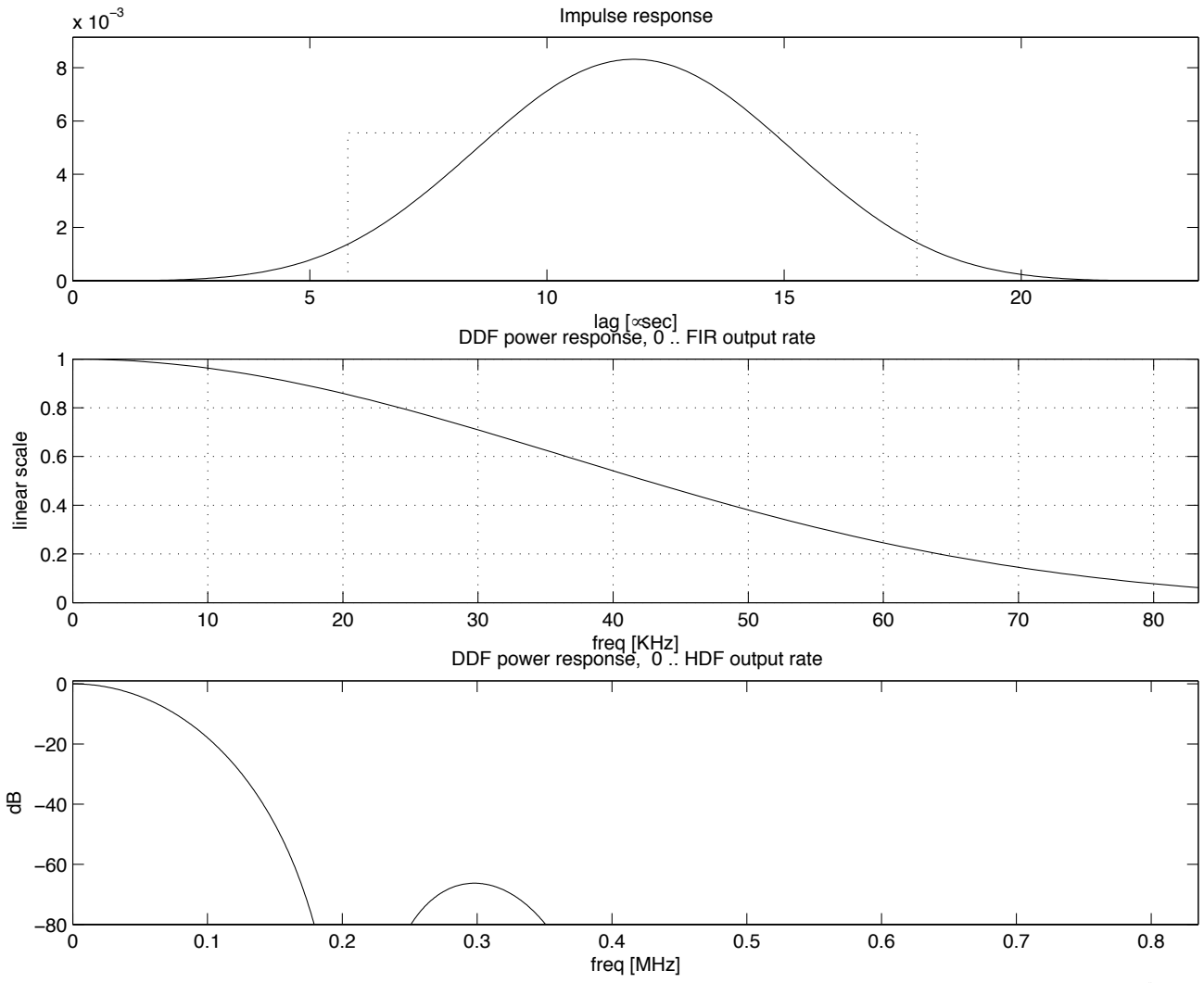
20. b30d180.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 26-Nov-2001
% ddfplan15(18,5,10,7,5)
% L,N=   7,5
% F_CLK > 0.161111 x CLK_IN

% HDF pole1: 833333.333 Hz
% FIR pole1: 166666.667 Hz
H_STAGES 5
H_GROWTH 29

H_DRATE  17
H_BYP    0
F_CLA    0

F_TAPS   28
F_ESYM   1
F_DRATE  9
F_BYP    0
F_0AD    0

TAP 0 0x00007  % 0.0000
TAP 1 0x00034  % 0.0001
TAP 2 0x000D1  % 0.0004
TAP 3 0x00272  % 0.0012
TAP 4 0x0061C  % 0.0030
TAP 5 0x00D3D  % 0.0065
TAP 6 0x01975  % 0.0124
TAP 7 0x02C39  % 0.0216
TAP 8 0x04643  % 0.0343
TAP 9 0x066D9  % 0.0502
TAP 10 0x08B82  % 0.0681
TAP 11 0x0B02A  % 0.0860
TAP 12 0x0CFBC  % 0.1014
TAP 13 0x0E51E  % 0.1119
TAP 14 0x0ECAF  % 0.1156
```


Impulse response
x 10^-3
6
5
4
3
2
1
0
0
5
10
15
20
25
30
35
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
10
20
30
40
50
60
70
80
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
freq [MHz]

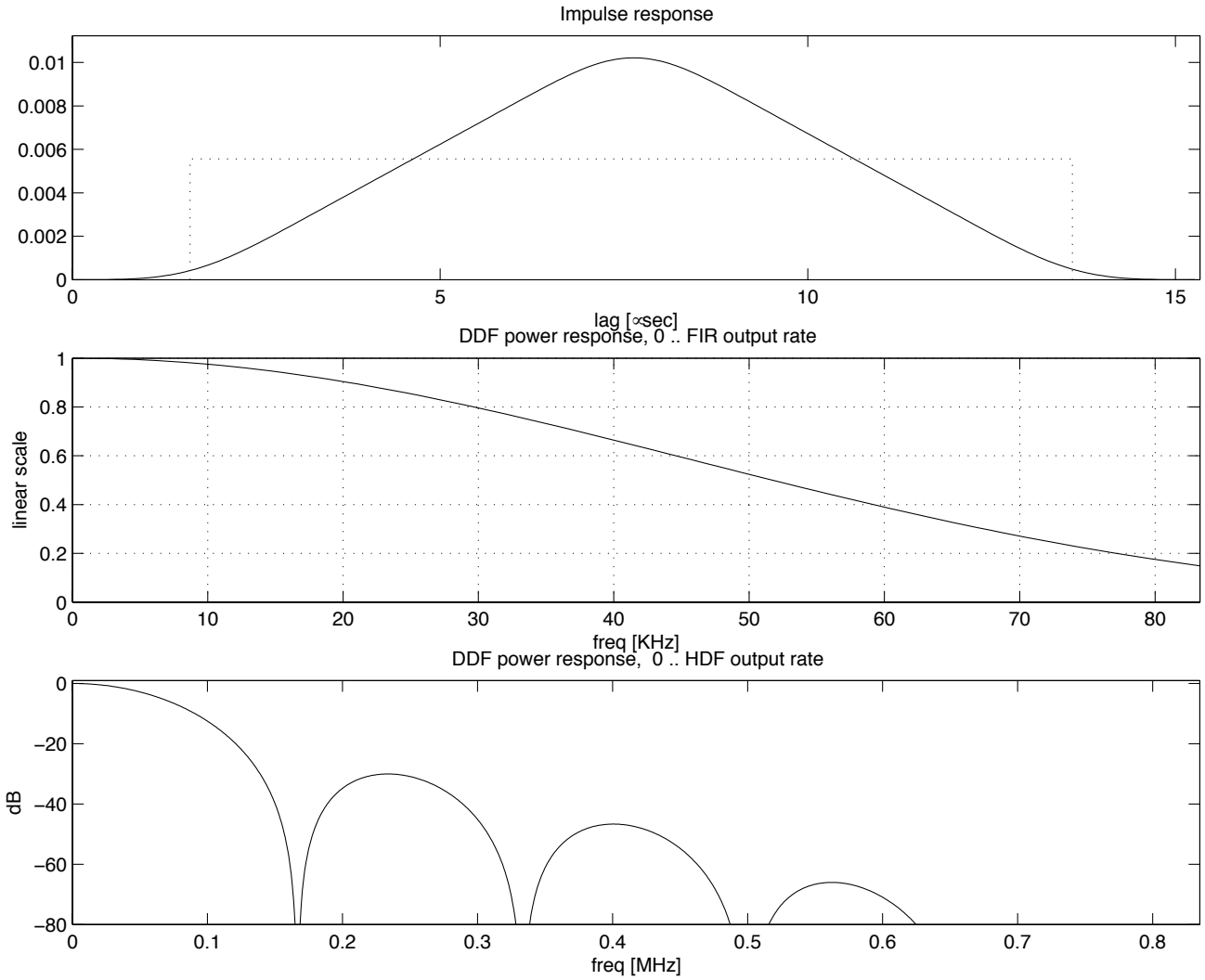
21. b42d180.fir

```
FIRPAR_VS 0.1
%=======================================
% b42d180.fir
% +- 42 kHz filter for 12 usec sampling
%=======================================
% DDFplan 1.1 - assuming 15.0 MHz A/D
% 24-Nov-2000
% ddfplan15(18,5,10,5,4) --
% L,N=   5,4
% F_CLK > 0.122222 x CLK_IN
% HDF pole1: 833333.333 Hz
% FIR pole1: 208333.333 Hz

H_STAGES 5
H_GROWTH 29

H_DRATE  17
H_BYP    0
F_CLA    0

F_TAPS   15
F_ESYM   1
F_DRATE  9
F_BYP    0
F_0AD    0

TAP 0 0x00238  % 0.0011
TAP 1 0x00B19  % 0.0054
TAP 2 0x0214C  % 0.0163
TAP 3 0x04DB1  % 0.0379
TAP 4 0x09048  % 0.0704
TAP 5 0x0E031  % 0.1095
TAP 6 0x12BA9  % 0.1463
TAP 7 0x1580E  % 0.1680
```


Impulse response
x 10^-3
8
6
4
2
0
0
5
10
15
20
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
10
20
30
40
50
60
70
80
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
freq [MHz]

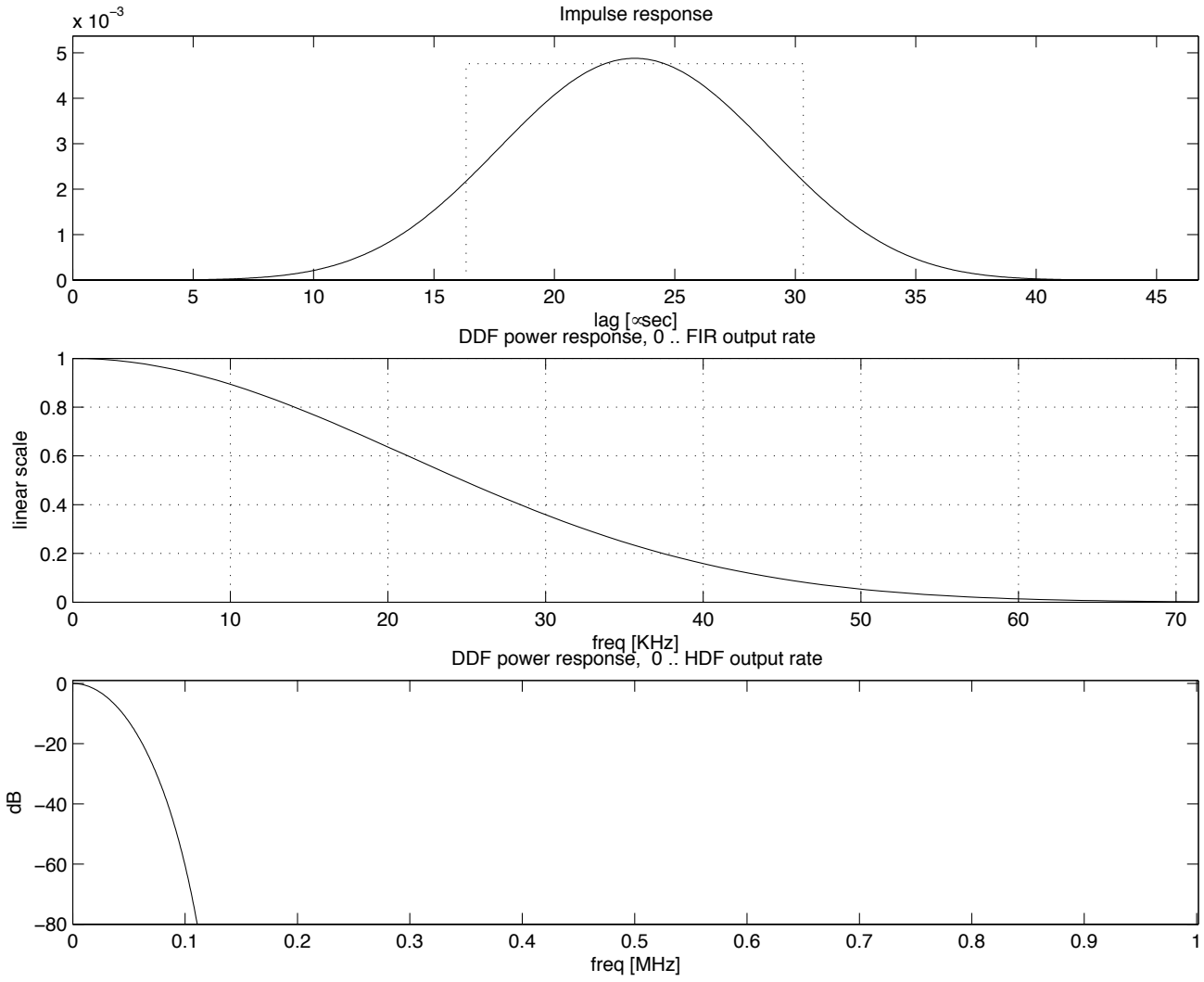
22. b50d180.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 23-Nov-2002
% L,N=   2,5
% F_CLK > 0.105556 x CLK_IN
% ddfplan15(18,5,10,2,5)
% HDF pole1: 833333.333 Hz
% FIR pole1: 166666.667 Hz
H_STAGES 5
H_GROWTH 29

H_DRATE  17
H_BYP    0
F_CLA    0

F_TAPS   8
F_ESYM   1
F_DRATE  9
F_BYP    0
F_0AD    0

TAP 0 0x05AEB  % 0.0444
TAP 1 0x0B5D7  % 0.0888
TAP 2 0x110C2  % 0.1332
TAP 3 0x16BAE  % 0.1776
TAP 4 0x1C699  % 0.2220
```


Impulse response
0.01
0.008
0.006
0.004
0.002
0
0
5
10
15
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
10
20
30
40
50
60
70
80
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
freq [MHz]

23. b25d210.fir

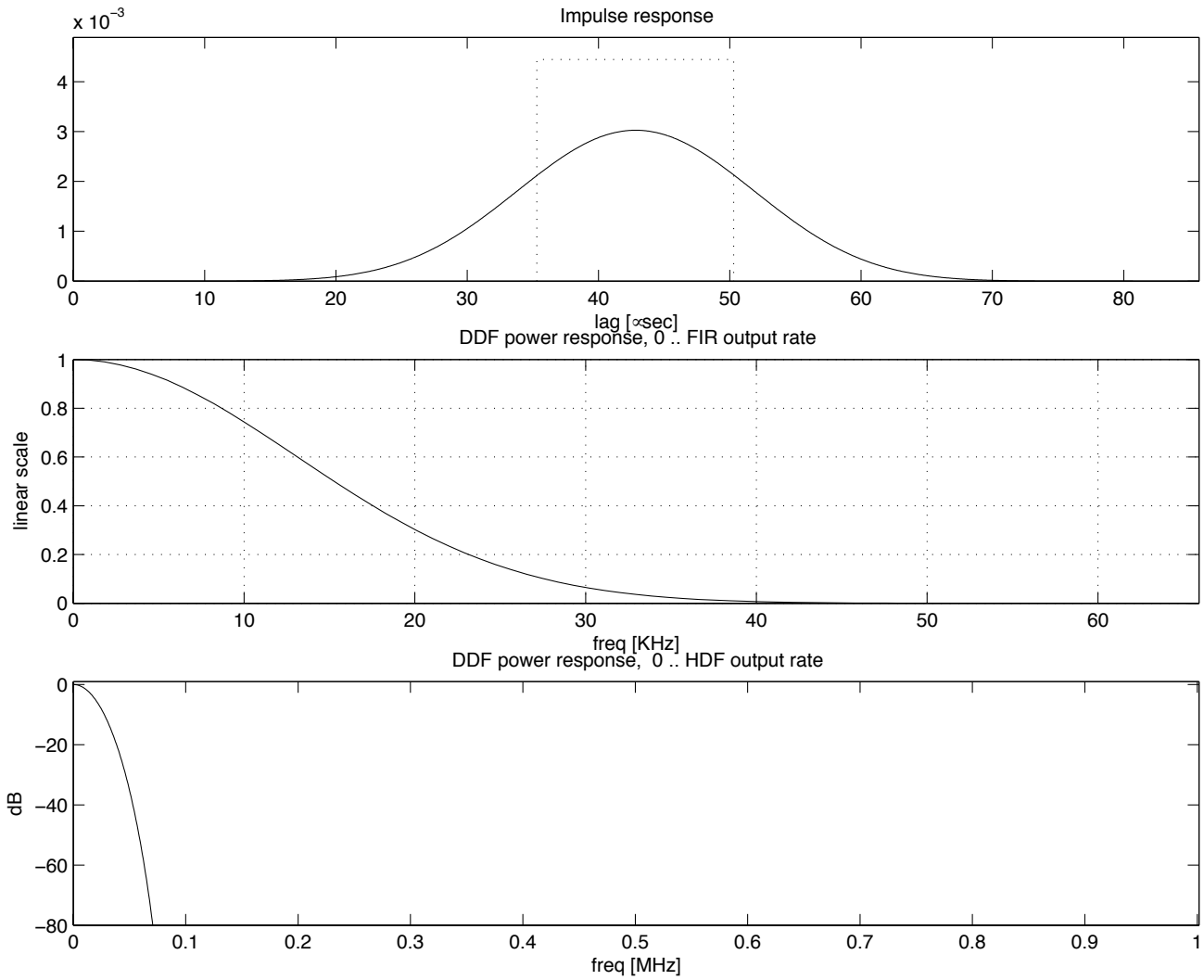
```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 11-Dec-2001
% ddfplan15(15,5,14,7,7)
% L,N=   7,7
% F_CLK > 0.190476 x CLK_IN

% HDF pole1: 1000000.000 Hz
% FIR pole1: 142857.143 Hz
H_STAGES 5
H_GROWTH 30

H_DRATE  14
H_BYP    0
F_CLA    0

F_TAPS   42
F_ESYM   1
F_DRATE  13
F_BYP    0
F_0AD    0

TAP 0 0x00001  % 0.0000
TAP 1 0x00006  % 0.0000
TAP 2 0x00019  % 0.0000
TAP 3 0x0004A  % 0.0001
TAP 4 0x000B9  % 0.0004
TAP 5 0x00196  % 0.0008
TAP 6 0x0032C  % 0.0015
TAP 7 0x005DE  % 0.0029
TAP 8 0x00A25  % 0.0050
TAP 9 0x01083  % 0.0081
TAP 10 0x0197B  % 0.0124
TAP 11 0x02573  % 0.0183
TAP 12 0x034A4  % 0.0257
TAP 13 0x046F5  % 0.0346
TAP 14 0x05BEC  % 0.0449
TAP 15 0x072A8  % 0.0560
TAP 16 0x089ED  % 0.0673
TAP 17 0x0A035  % 0.0782
TAP 18 0x0B3D9  % 0.0878
TAP 19 0x0C33B  % 0.0953
TAP 20 0x0CD0A  % 0.1001
TAP 21 0x0D068  % 0.1018
```


Impulse response
x 10^-3
5
4
3
2
1
0
0
5
10
15
20
25
30
35
40
45
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
10
20
30
40
50
60
70
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
freq [MHz]

24. b15d225.fir

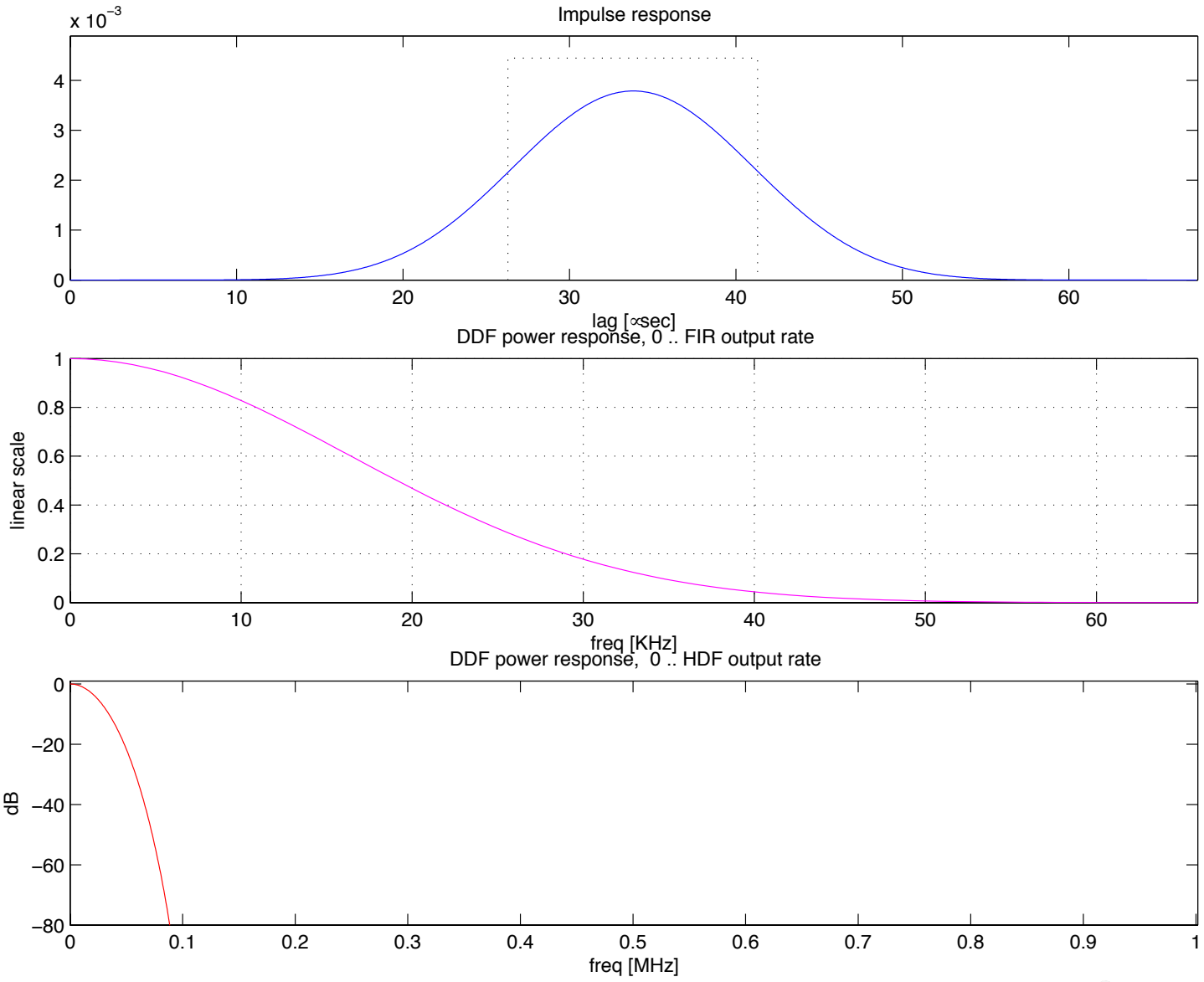
```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 23-May-2000
% L,N=   9,10
% F_CLK > 0.266667 x CLK_IN
% ddfplan15(15,5,15,9,10)
% HDF pole1: 1000000.000 Hz
% FIR pole1: 100000.000 Hz
H_STAGES 5
H_GROWTH 30

H_DRATE  14
H_BYP    0
F_CLA    0

F_TAPS   81
F_ESYM   1
F_DRATE  14
F_BYP    0
F_0AD    0

TAP 0 0x00000  % 0.0000
TAP 1 0x00000  % 0.0000
TAP 2 0x00000  % 0.0000
TAP 3 0x00000  % 0.0000
TAP 4 0x00000  % 0.0000
TAP 5 0x00001  % 0.0000
TAP 6 0x00002  % 0.0000
TAP 7 0x00005  % 0.0000
TAP 8 0x00009  % 0.0000
TAP 9 0x00012  % 0.0000
TAP 10 0x00020  % 0.0001
TAP 11 0x00037  % 0.0001
TAP 12 0x0005B  % 0.0002
TAP 13 0x00092  % 0.0003
TAP 14 0x000E4  % 0.0004
TAP 15 0x0015B  % 0.0007
TAP 16 0x00201  % 0.0010
TAP 17 0x002E5  % 0.0014
TAP 18 0x00417  % 0.0020
TAP 19 0x005A9  % 0.0028
TAP 20 0x007AD  % 0.0037
TAP 21 0x00A37  % 0.0050
TAP 22 0x00D5A  % 0.0065
TAP 23 0x01126  % 0.0084
TAP 24 0x015A8  % 0.0106
TAP 25 0x01AEA  % 0.0131
TAP 26 0x020EF  % 0.0161
TAP 27 0x027B0  % 0.0194
TAP 28 0x02F1F  % 0.0230
TAP 29 0x03727  % 0.0269
TAP 30 0x03FA5  % 0.0311
TAP 31 0x04870  % 0.0354
```

```
TAP 32 0x05155  % 0.0397
TAP 33 0x05A1A  % 0.0440
TAP 34 0x06284  % 0.0481
TAP 35 0x06A51  % 0.0519
TAP 36 0x07144  % 0.0553
TAP 37 0x07722  % 0.0582
TAP 38 0x07BBA  % 0.0604
TAP 39 0x07EE1  % 0.0620
TAP 40 0x0807C  % 0.0627
```


Impulse response
x 10^-3
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
freq [MHz]

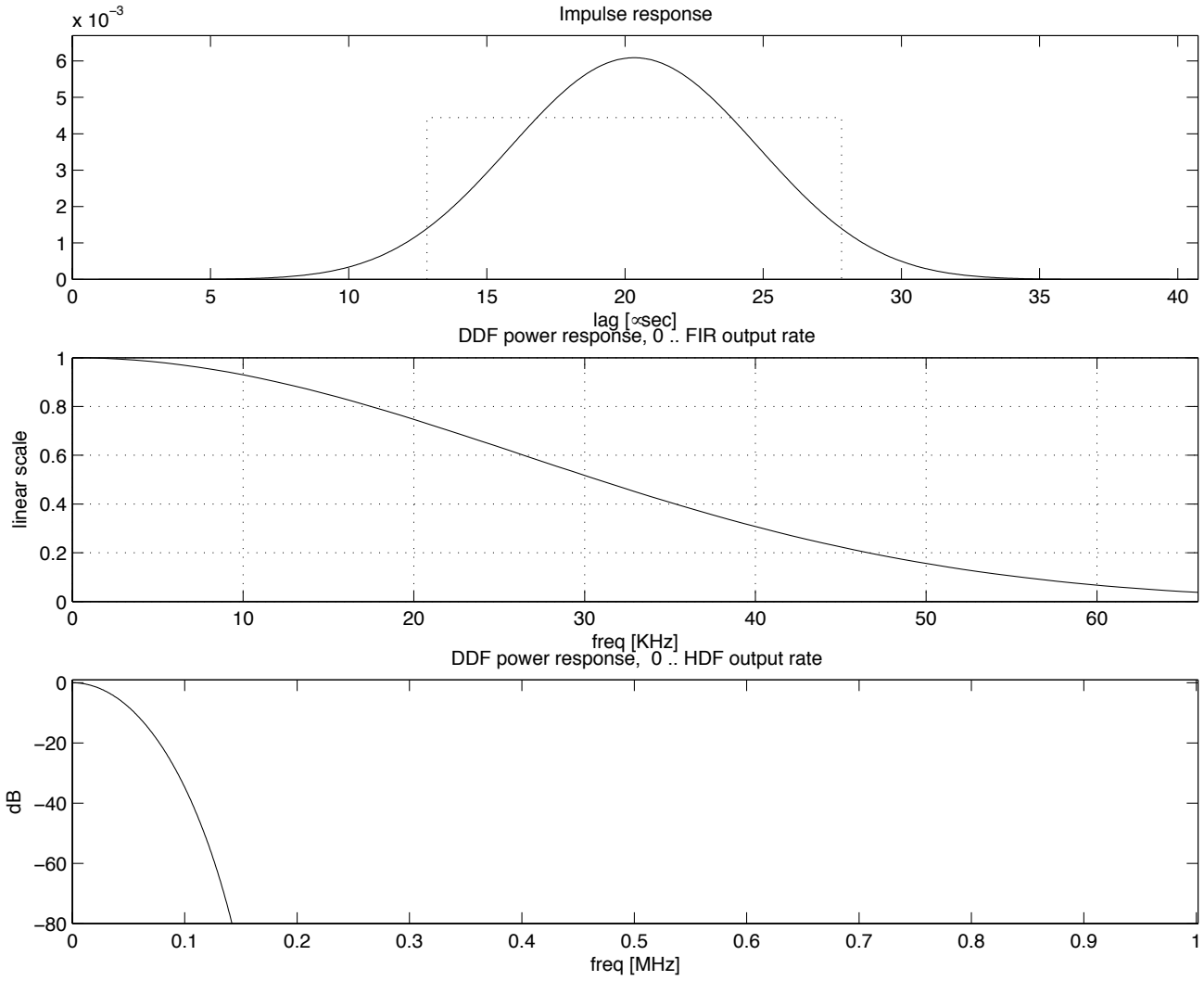
25. b20d225.fir

```
FIRPAR_VS 0.1
% DDFplan 1.1 - assuming 15.0 MHz A/D
% ddfplan15(15,5,15,9,8)
% 29-Nov-1999
% L,N= 9,8
% F_CLK > 0.226667 x CLK_IN

% HDF pole1: 1000000.000 Hz
% FIR pole1: 125000.000 Hz
H_STAGES 5

H_GROWTH 30
H_DRATE 14
H_BYP 0

F_CLA 0
F_TAPS 63
F_ESYM 1
F_DRATE 14
F_BYP 0
F_0AD 0

TAP 0 0x00000 % 0.0000
TAP 1 0x00000 % 0.0000
TAP 2 0x00000 % 0.0000
TAP 3 0x00001 % 0.0000
TAP 4 0x00003 % 0.0000
TAP 5 0x00007 % 0.0000
TAP 6 0x00010 % 0.0000
TAP 7 0x00023 % 0.0001
TAP 8 0x00045 % 0.0001
TAP 9 0x00083 % 0.0002
TAP 10 0x000EA % 0.0004
TAP 11 0x00190 % 0.0008
TAP 12 0x0028F % 0.0012
TAP 13 0x0040B % 0.0020
TAP 14 0x0062B % 0.0030
TAP 15 0x0091C % 0.0044
TAP 16 0x00D0E % 0.0064
TAP 17 0x01230 % 0.0089
TAP 18 0x018A7 % 0.0120
TAP 19 0x02092 % 0.0159
TAP 20 0x029FA % 0.0205
TAP 21 0x034D3 % 0.0258
TAP 22 0x040F6 % 0.0317
TAP 23 0x04E1E % 0.0381
TAP 24 0x05BEA % 0.0449
TAP 25 0x069DD % 0.0517
TAP 26 0x07769 % 0.0583
TAP 27 0x083F2 % 0.0644
TAP 28 0x08EDF % 0.0698
TAP 29 0x097A0 % 0.0740
TAP 30 0x09DBE % 0.0770
TAP 31 0x0A0E4 % 0.0786
```


Impulse response
x 10^-3
4
3
2
1
0
0
10
20
30
40
50
60
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
10
20
30
40
50
60
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
freq [MHz]

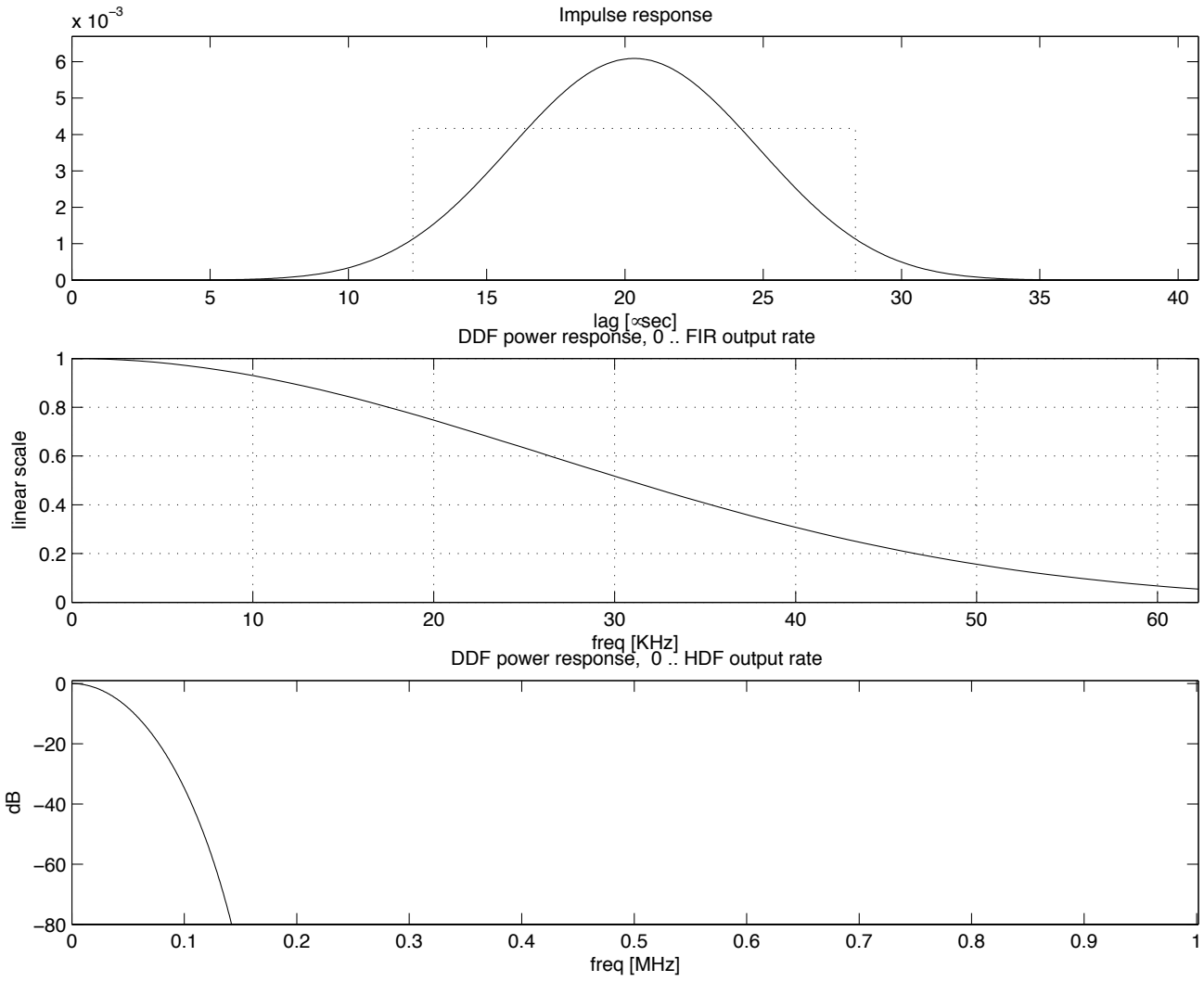
26. b30d225.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 19-May-2000
% ddfplan15(15,5,15,9,5
% L,N=   9,5
% F_CLK > 0.168889 x CLK_IN

% HDF pole1: 1000000.000 Hz
% FIR pole1: 200000.000 Hz
H_STAGES 5
H_GROWTH 30

H_DRATE  14
H_BYP    0
F_CLA    0

F_TAPS   36
F_ESYM   1
F_DRATE  14
F_BYP    0
F_0AD    0

TAP 0 0x00000  % 0.0000
TAP 1 0x00003  % 0.0000
TAP 2 0x00011  % 0.0000
TAP 3 0x0003D  % 0.0001
TAP 4 0x000B7  % 0.0003
TAP 5 0x001DA  % 0.0009
TAP 6 0x0043B  % 0.0021
TAP 7 0x008BB  % 0.0043
TAP 8 0x0107C  % 0.0080
TAP 9 0x01CC0  % 0.0140
TAP 10 0x02EA4  % 0.0228
TAP 11 0x046C6  % 0.0346
TAP 12 0x064E2  % 0.0493
TAP 13 0x08786  % 0.0662
TAP 14 0x0AC03  % 0.0840
TAP 15 0x0CEAD  % 0.1009
TAP 16 0x0EB69  % 0.1149
TAP 17 0x0FE6F  % 0.1242
TAP 18 0x10518  % 0.1275
```


Impulse response
x 10^-3
6
5
4
3
2
1
0
0
5
10
15
20
25
30
35
40
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
10
20
30
40
50
60
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
freq [MHz]

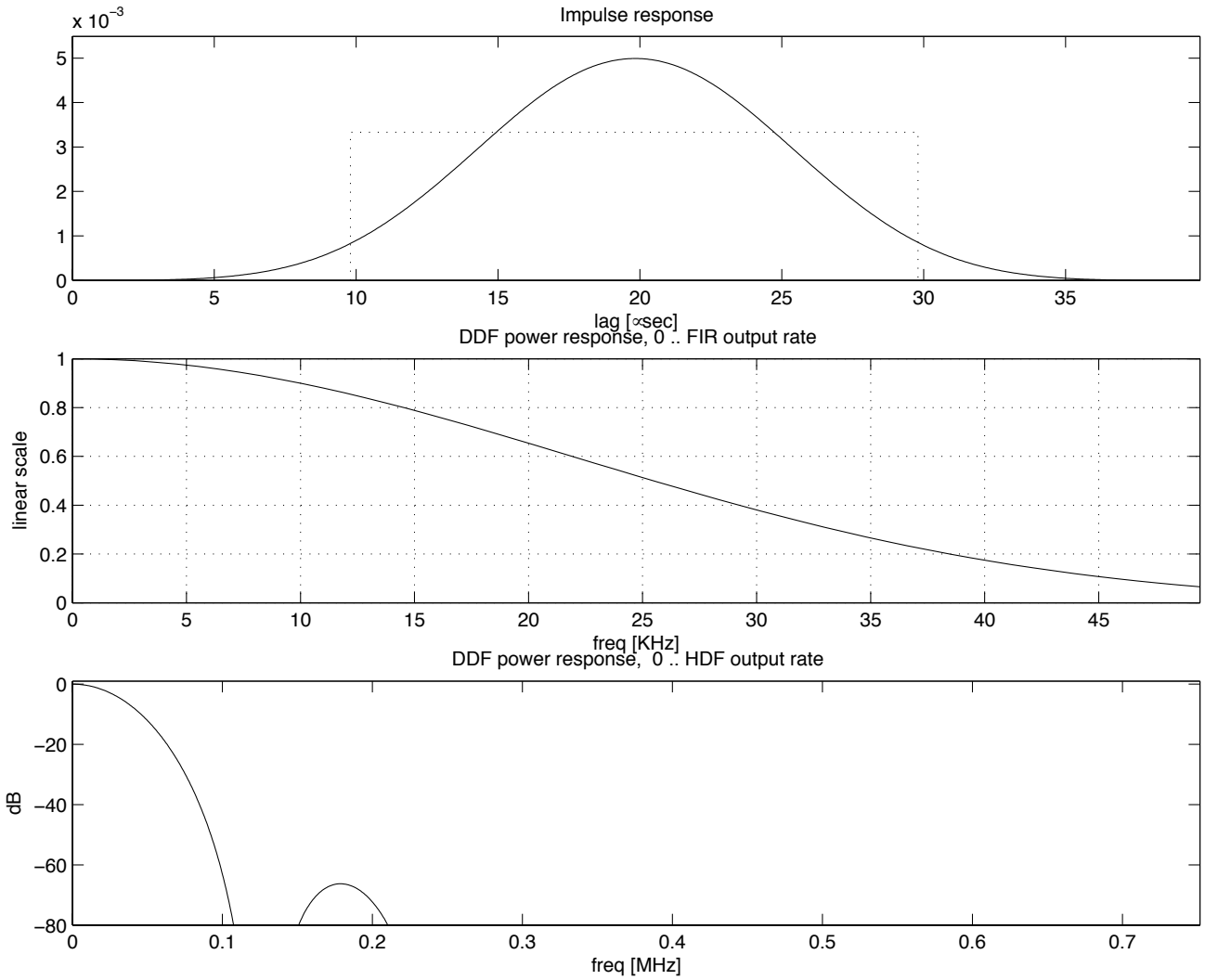
27. b31d240.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 22-Apr-2002
% L,N=   9,5
% F_CLK > 0.1625 x CLK_IN
% ddfplan15(15,5,16,9,5)
% HDF pole1: 1000000.000 Hz
% FIR pole1: 200000.000 Hz
H_STAGES 5
H_GROWTH 30

H_DRATE  14
H_BYP    0
F_CLA    0

F_TAPS   36
F_ESYM   1
F_DRATE  15
F_BYP    0
F_0AD    0

TAP 0 0x00000  % 0.0000
TAP 1 0x00003  % 0.0000
TAP 2 0x00011  % 0.0000
TAP 3 0x0003D  % 0.0001
TAP 4 0x000B7  % 0.0003
TAP 5 0x001DA  % 0.0009
TAP 6 0x0043B  % 0.0021
TAP 7 0x008BB  % 0.0043
TAP 8 0x0107C  % 0.0080
TAP 9 0x01CC0  % 0.0140
TAP 10 0x02EA4  % 0.0228
TAP 11 0x046C6  % 0.0346
TAP 12 0x064E2  % 0.0493
TAP 13 0x08786  % 0.0662
TAP 14 0x0AC03  % 0.0840
TAP 15 0x0CEAD  % 0.1009
TAP 16 0x0EB69  % 0.1149
TAP 17 0x0FE6F  % 0.1242
TAP 18 0x10518  % 0.1275
```


Impulse response
x 10^-3
6
5
4
3
2
1
0
0
5
10
15
20
25
30
35
40
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
10
20
30
40
50
60
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
freq [MHz]

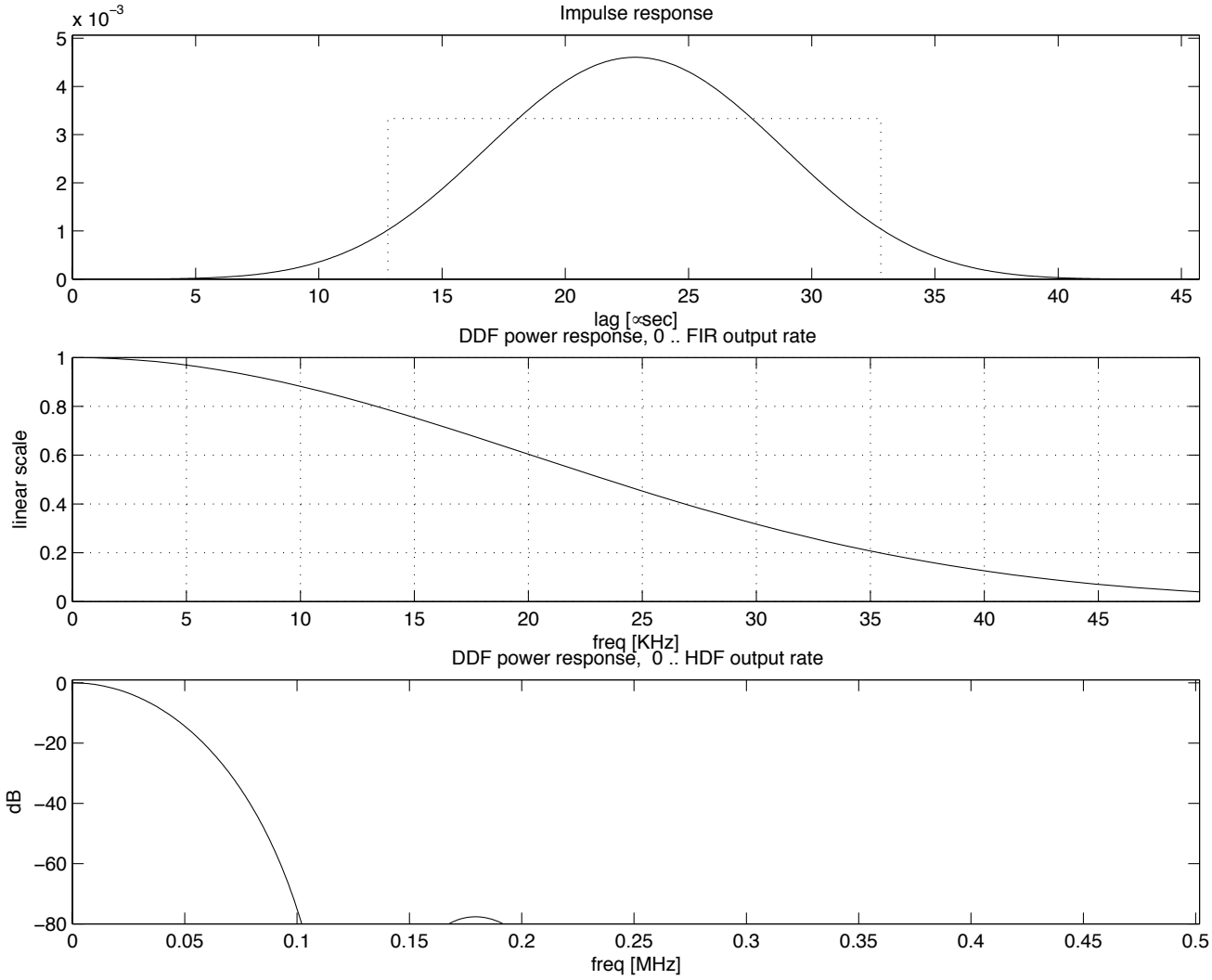
28. b25d300.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 21-Oct-2003
% L,N=   5,6
% F_CLK > 0.106667 x CLK_IN
% ddfplan15(20,5,15,5,6)
% HDF pole1: 750000.000 Hz
% FIR pole1: 125000.000 Hz
H_STAGES 5
H_GROWTH 28

H_DRATE  19
H_BYP    0
F_CLA    0

F_TAPS   25
F_ESYM   1
F_DRATE  14
F_BYP    0
F_0AD    0

TAP 0 0x00058  % 0.0002
TAP 1 0x001BA  % 0.0008
TAP 2 0x0052E  % 0.0025
TAP 3 0x00C15  % 0.0059
TAP 4 0x0182A  % 0.0118
TAP 5 0x02B7F  % 0.0212
TAP 6 0x046C5  % 0.0346
TAP 7 0x0694A  % 0.0514
TAP 8 0x090FD  % 0.0708
TAP 9 0x0BA6A  % 0.0910
TAP 10 0x0E0BB  % 0.1097
TAP 11 0x0FDBB  % 0.1239
TAP 12 0x10D44  % 0.1315
```


Impulse response
x 10^-3
5
4
3
2
1
0
0
5
10
15
20
25
30
35
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
5
10
15
20
25
30
35
40
45
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
freq [MHz]

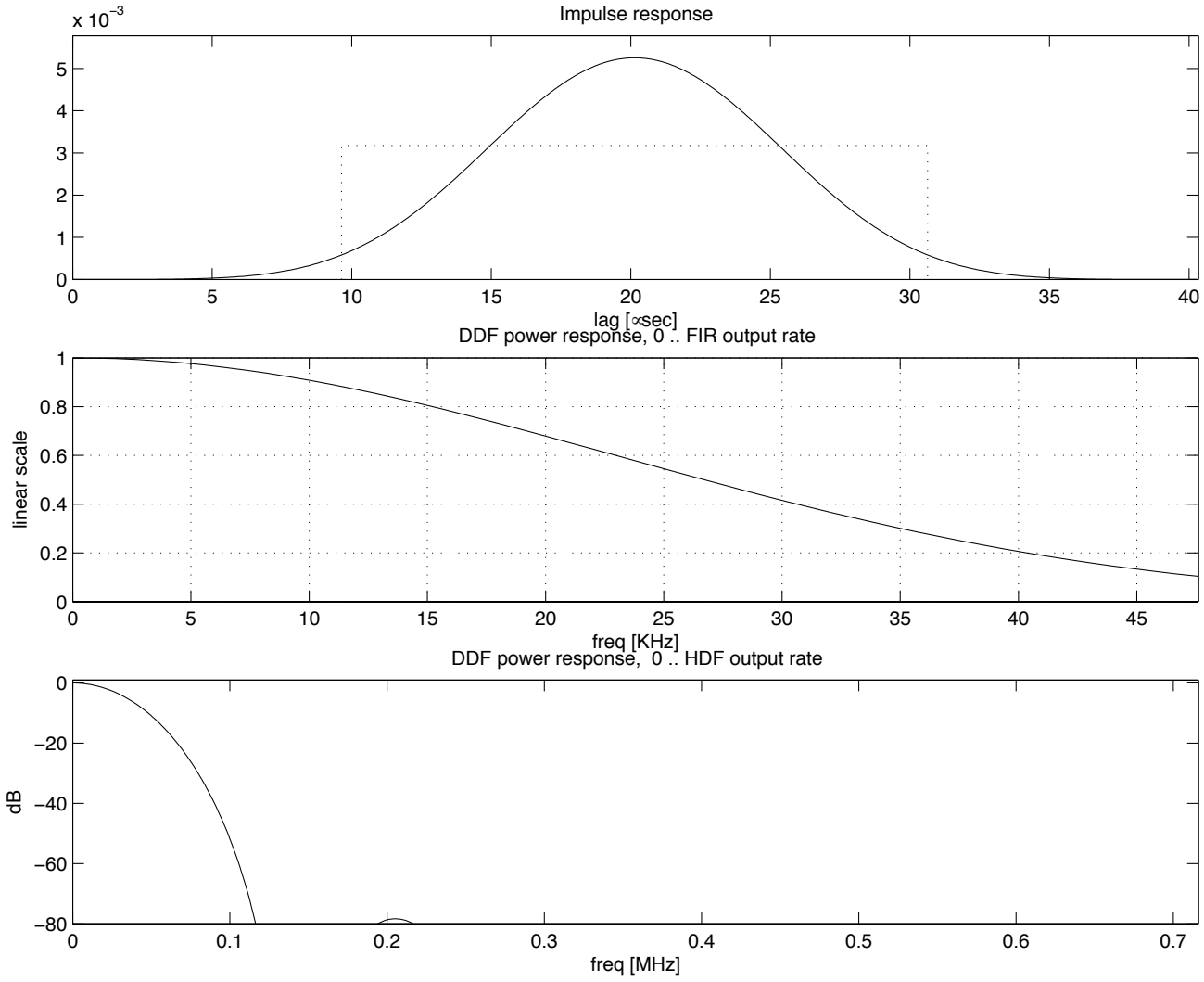
29. b50d300.fir

```
FIRPAR_VS 0.1

% b50d300.fir
% ddfplan15(30,5,10,6,4)
% HDF pole1: 500000.000 Hz
% FIR pole1: 125000.000 Hz
% ans = 4.5733e-05

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 22-Feb-2003
% L,N=   6,4
% F_CLK > 0.08 x CLK_IN

% HDF pole1: 500000.000 Hz
% FIR pole1: 125000.000 Hz
H_STAGES 5
H_GROWTH 25

H_DRATE  29
H_BYP    0
F_CLA    0

F_TAPS   18
F_ESYM   1
F_DRATE  9
F_BYP    0
F_0AD    0

TAP 0 0x000B1  % 0.0003
TAP 1 0x00424  % 0.0020
TAP 2 0x00E80  % 0.0071
TAP 3 0x026AA  % 0.0189
TAP 4 0x052DA  % 0.0405
TAP 5 0x09521  % 0.0728
TAP 6 0x0E7FB  % 0.1133
TAP 7 0x13AD5  % 0.1537
TAP 8 0x178F8  % 0.1841
TAP 9 0x19072  % 0.1955
```


Impulse response
x 10^-3
5
4
3
2
1
0
0
5
10
15
20
25
30
35
40
45
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
5
10
15
20
25
30
35
40
45
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
freq [MHz]

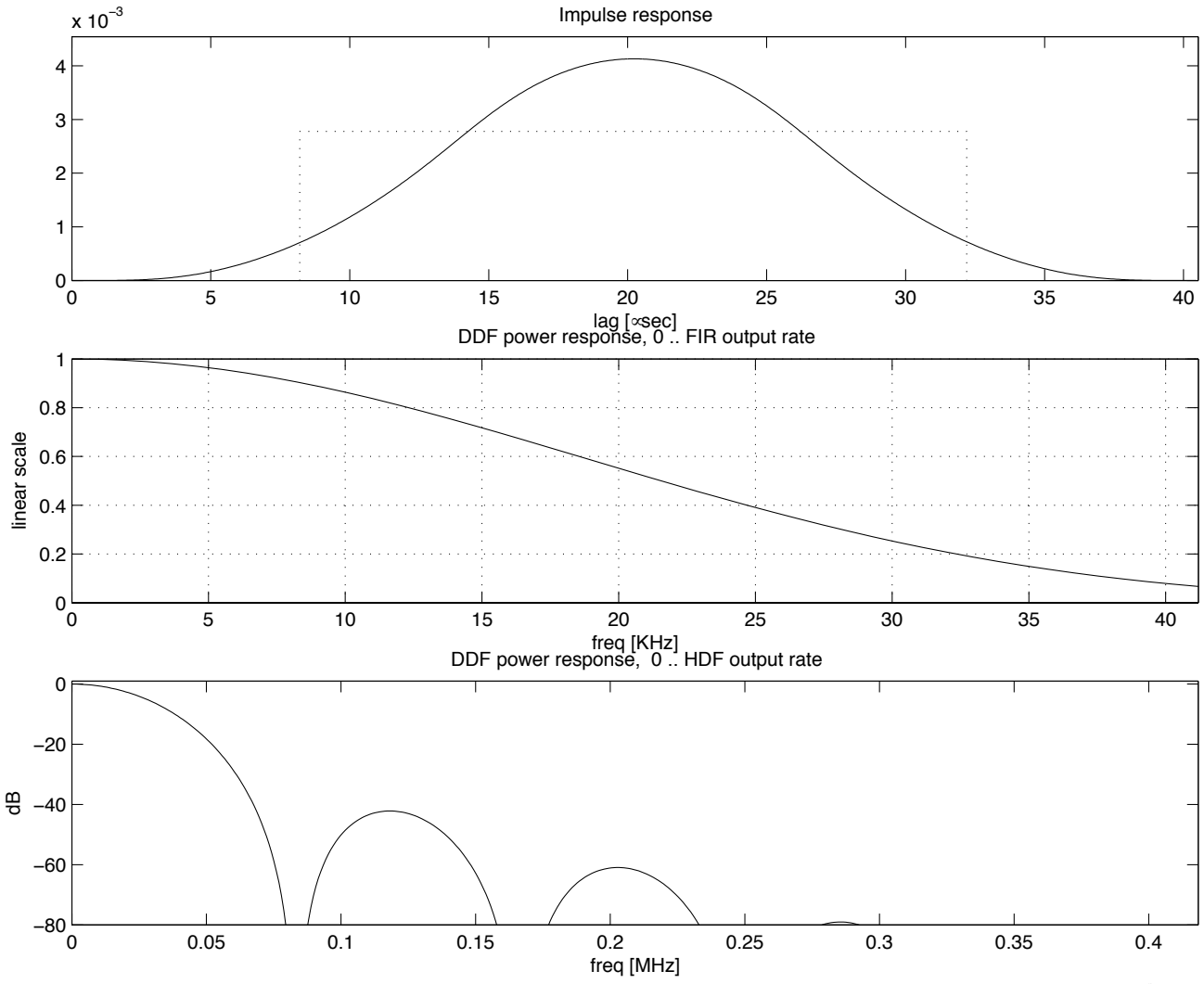
30. b25d315.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 29-May-2000
% L,N=   6,5
% F_CLK > 0.101587 x CLK_IN
% ddfplan15(21,5,15,6,5)
% HDF pole1: 714285.714 Hz
% FIR pole1: 142857.143 Hz
H_STAGES 5
H_GROWTH 28

H_DRATE  20
H_BYP    0
F_CLA    0

F_TAPS   24
F_ESYM   1
F_DRATE  14
F_BYP    0
F_0AD    0

TAP 0 0x00022  % 0.0001
TAP 1 0x000CF  % 0.0004
TAP 2 0x002D4  % 0.0014
TAP 3 0x0078A  % 0.0037
TAP 4 0x010F6  % 0.0083
TAP 5 0x0211D  % 0.0162
TAP 6 0x03958  % 0.0280
TAP 7 0x059A6  % 0.0438
TAP 8 0x08003  % 0.0625
TAP 9 0x0A7B9  % 0.0819
TAP 10 0x0CAB9  % 0.0990
TAP 11 0x0E2F3  % 0.1108
TAP 12 0x0EBB3  % 0.1151
```


Impulse response
x 10^-3
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
freq [MHz]

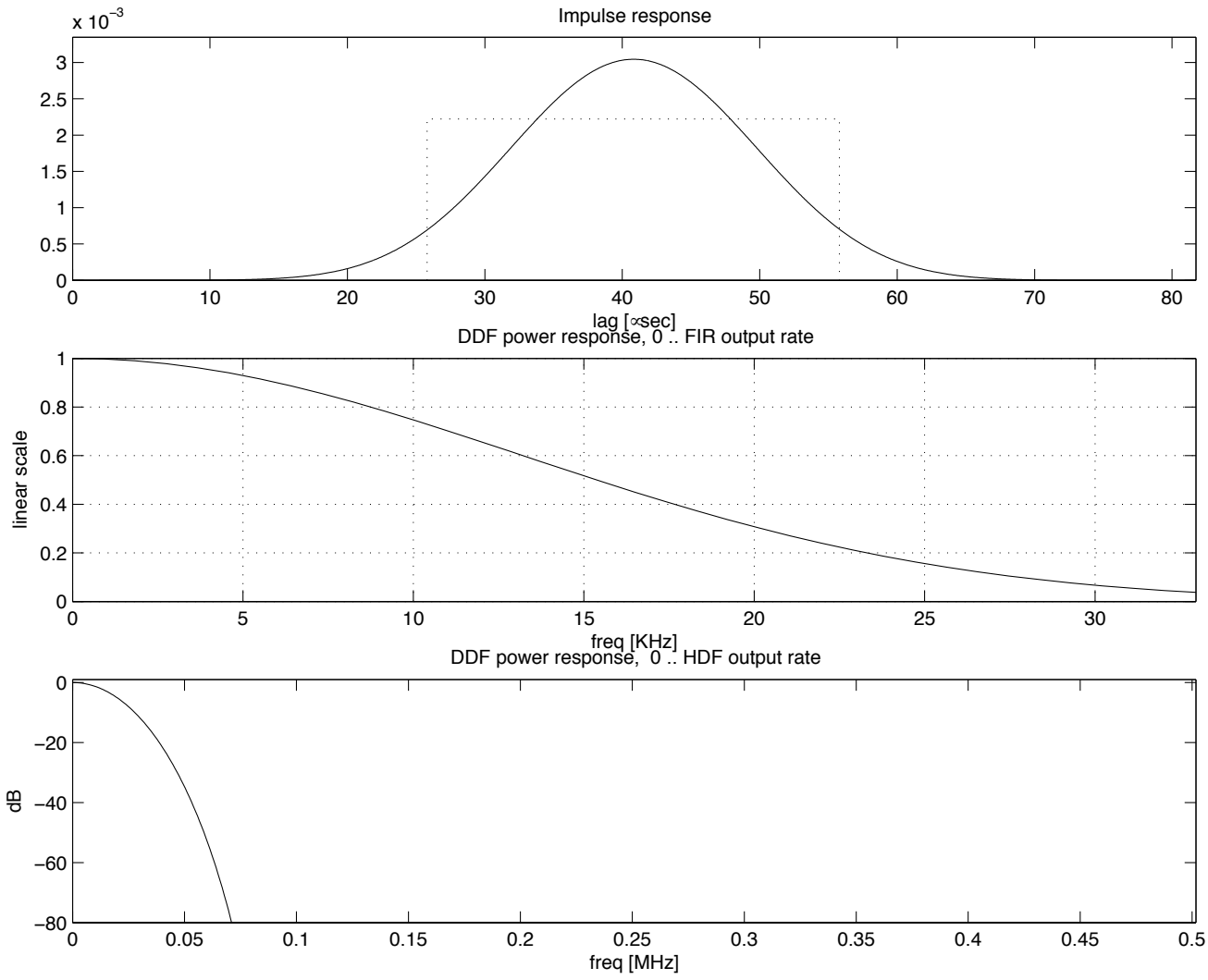
31. b21d360.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 15-Nov-2000
% ddfplan15(36,5,10,3,5) -- for 24 usec sampling interval
% L,N=   3,5
% F_CLK > 0.0583333 x CLK_IN

% HDF pole1: 416666.667 Hz
% FIR pole1: 83333.333 Hz
H_STAGES 5
H_GROWTH 24

H_DRATE  35
H_BYP    0
F_CLA    0

F_TAPS   12
F_ESYM   1
F_DRATE  9
F_BYP    0
F_0AD    0

TAP 0 0x0122F  % 0.0089
TAP 1 0x0368D  % 0.0266
TAP 2 0x06D1A  % 0.0533
TAP 3 0x0B5D7  % 0.0888
TAP 4 0x110C2  % 0.1332
TAP 5 0x1474F  % 0.1598
TAP 6 0x1597F  % 0.1687
```


Impulse response
x 10^-3
4
3
2
1
0
0
5
10
15
20
25
30
35
40
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
5
10
15
20
25
30
35
40
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
freq [MHz]

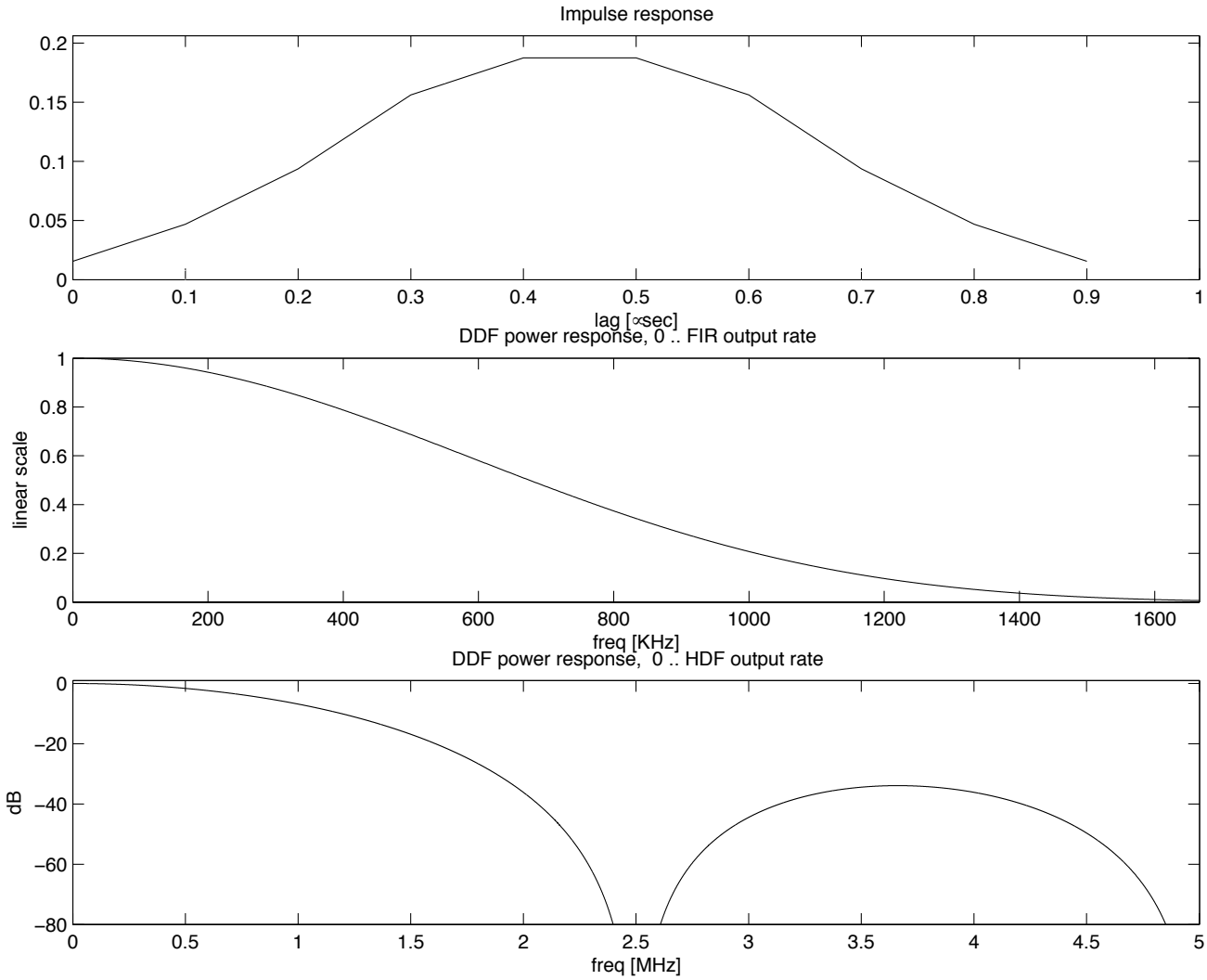
32. b16d450.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 15.0 MHz A/D
% 23-May-2000
% ddfplan15(30,5,15,9,5)
% L,N=   9,5
% F_CLK > 0.0880952 x CLK_IN

% HDF pole1: 500000.000 Hz
% FIR pole1: 100000.000 Hz
H_STAGES 5
H_GROWTH 25

H_DRATE  29
H_BYP    0
F_CLA    0

F_TAPS   36
F_ESYM   1
F_DRATE  14
F_BYP    0
F_0AD    0

TAP 0 0x00000  % 0.0000
TAP 1 0x00003  % 0.0000
TAP 2 0x00011  % 0.0000
TAP 3 0x0003D  % 0.0001
TAP 4 0x000B7  % 0.0003
TAP 5 0x001DA  % 0.0009
TAP 6 0x0043B  % 0.0021
TAP 7 0x008BB  % 0.0043
TAP 8 0x0107C  % 0.0080
TAP 9 0x01CC0  % 0.0140
TAP 10 0x02EA4  % 0.0228
TAP 11 0x046C6  % 0.0346
TAP 12 0x064E2  % 0.0493
TAP 13 0x08786  % 0.0662
TAP 14 0x0AC03  % 0.0840
TAP 15 0x0CEAD  % 0.1009
TAP 16 0x0EB69  % 0.1149
TAP 17 0x0FE6F  % 0.1242
TAP 18 0x10518  % 0.1275
```


Impulse response
x 10^-3
3
2.5
2
1.5
1
0.5
0
0
10
20
30
40
50
60
70
80
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
5
10
15
20
25
30
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
freq [MHz]

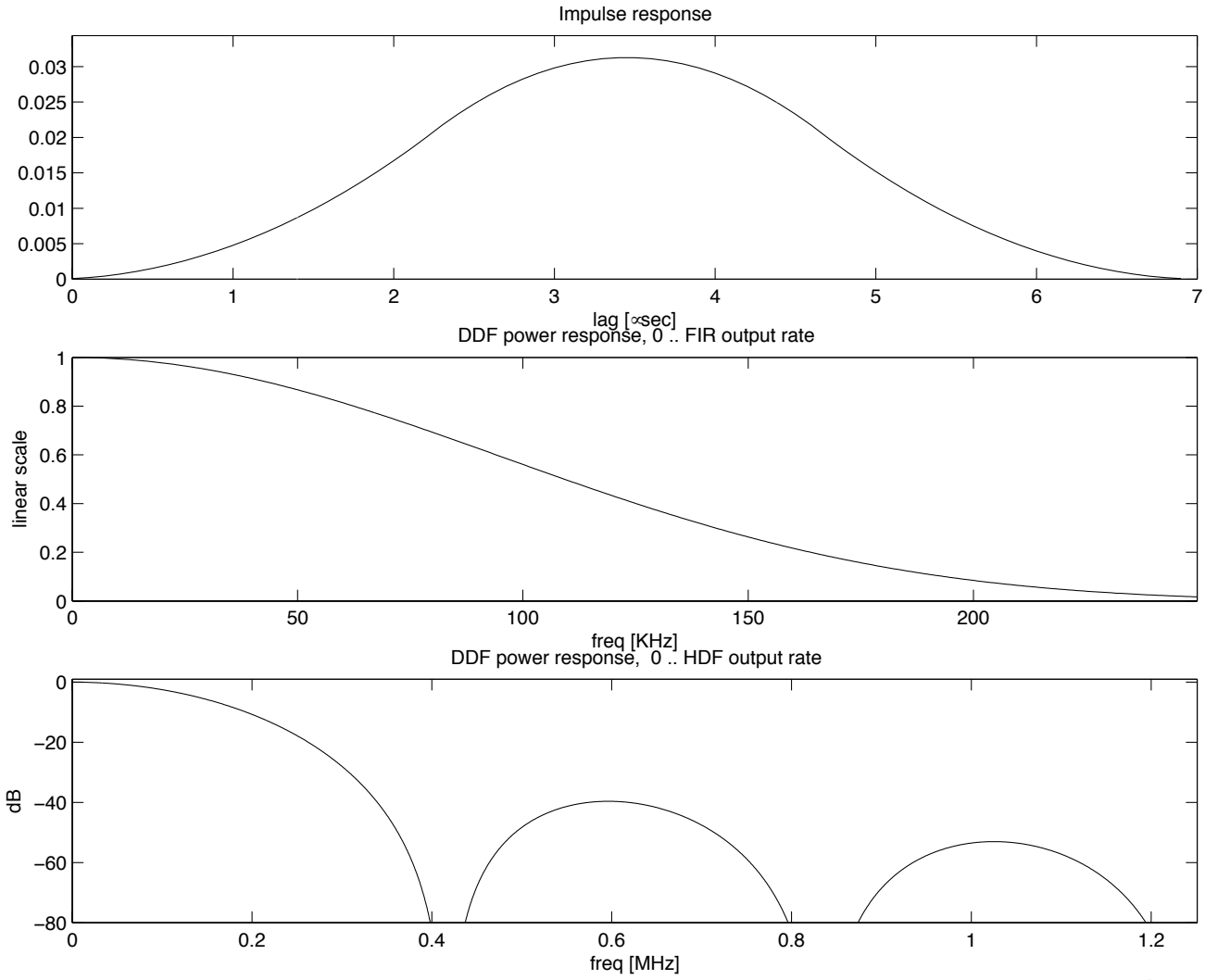
33. w600d6.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 10.0 MHz A/D
% 31-Aug-2002
% L,N=   3,2
% F_CLK > 1.5 x CLK_IN
% ddfplan(2,3,3,3,2)
%
% HDF pole1: 5000000.000 Hz
% FIR pole1: 2500000.000 Hz
H_STAGES 3
H_GROWTH 47

H_DRATE  1
H_BYP    0
F_CLA    0

F_TAPS   3
F_ESYM   1
F_DRATE  2
F_BYP    0
F_0AD    0

TAP 0 0x10000  % 0.1250
TAP 1 0x30000  % 0.3750
```


Impulse response
0.2
0.15
0.1
0.05
0
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
200
400
600
800
1000
1200
1400
1600
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
freq [MHz]

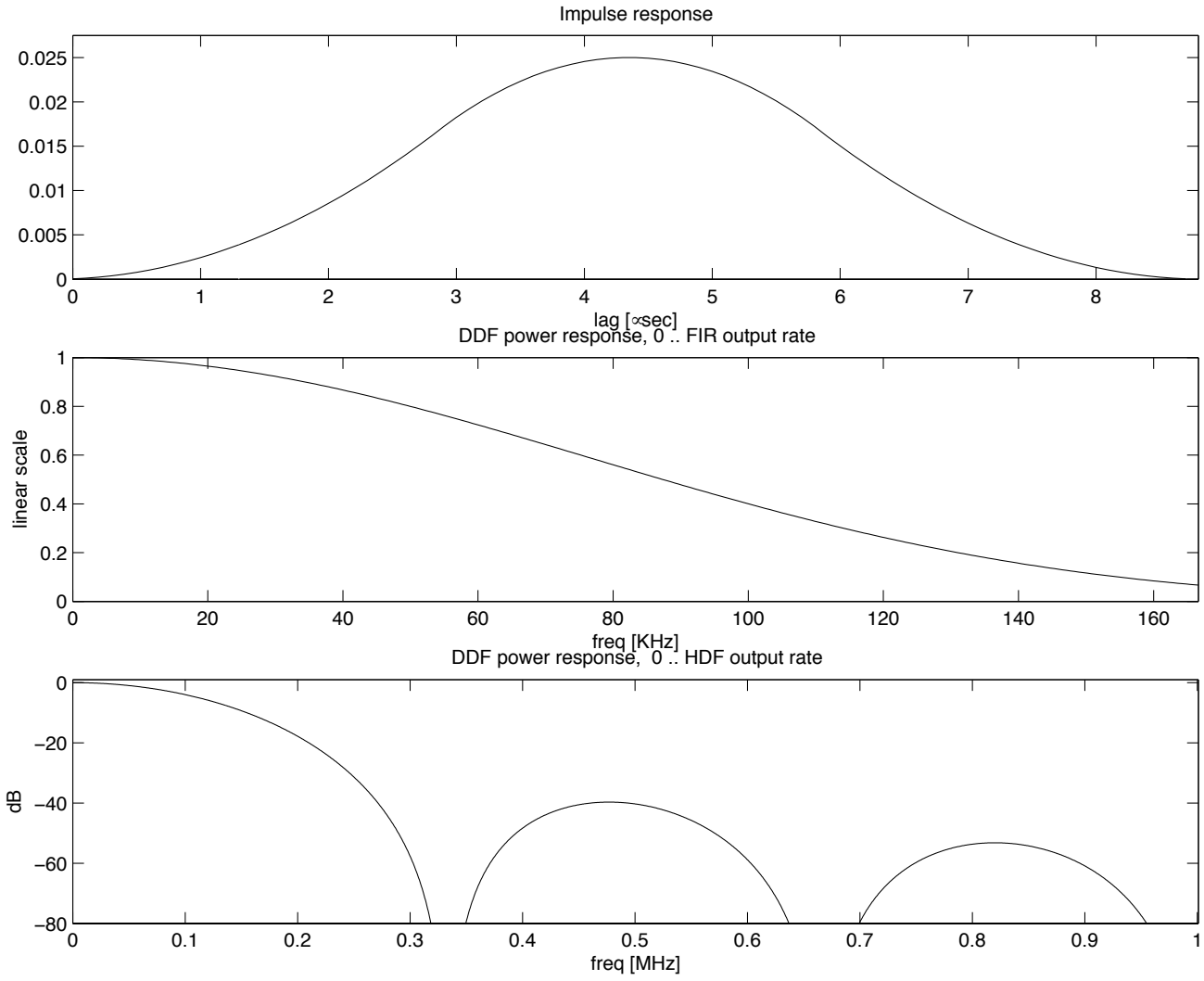
34. w125d40.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 10.0 MHz A/D
% 11-Jun-2002
% L,N=   3,3
% F_CLK > 0.325 x CLK_IN
%ddfplan(8,3,5,3,3)
% HDF pole1: 1250000.000 Hz
% FIR pole1: 416666.667 Hz
H_STAGES 3
H_GROWTH 41

H_DRATE  7
H_BYP    0
F_CLA    0

F_TAPS   6
F_ESYM   1
F_DRATE  4
F_BYP    0
F_0AD    0

TAP 0 0x04BDA  % 0.0370
TAP 1 0x0E38E  % 0.1111
TAP 2 0x1C71C  % 0.2222
TAP 3 0x212F7  % 0.2593
```


Impulse response
0.03
0.025
0.02
0.015
0.01
0.005
0
0
1
2
3
4
5
6
7
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
50
100
150
200
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.2
0.4
0.6
0.8
1
1.2
freq [MHz]

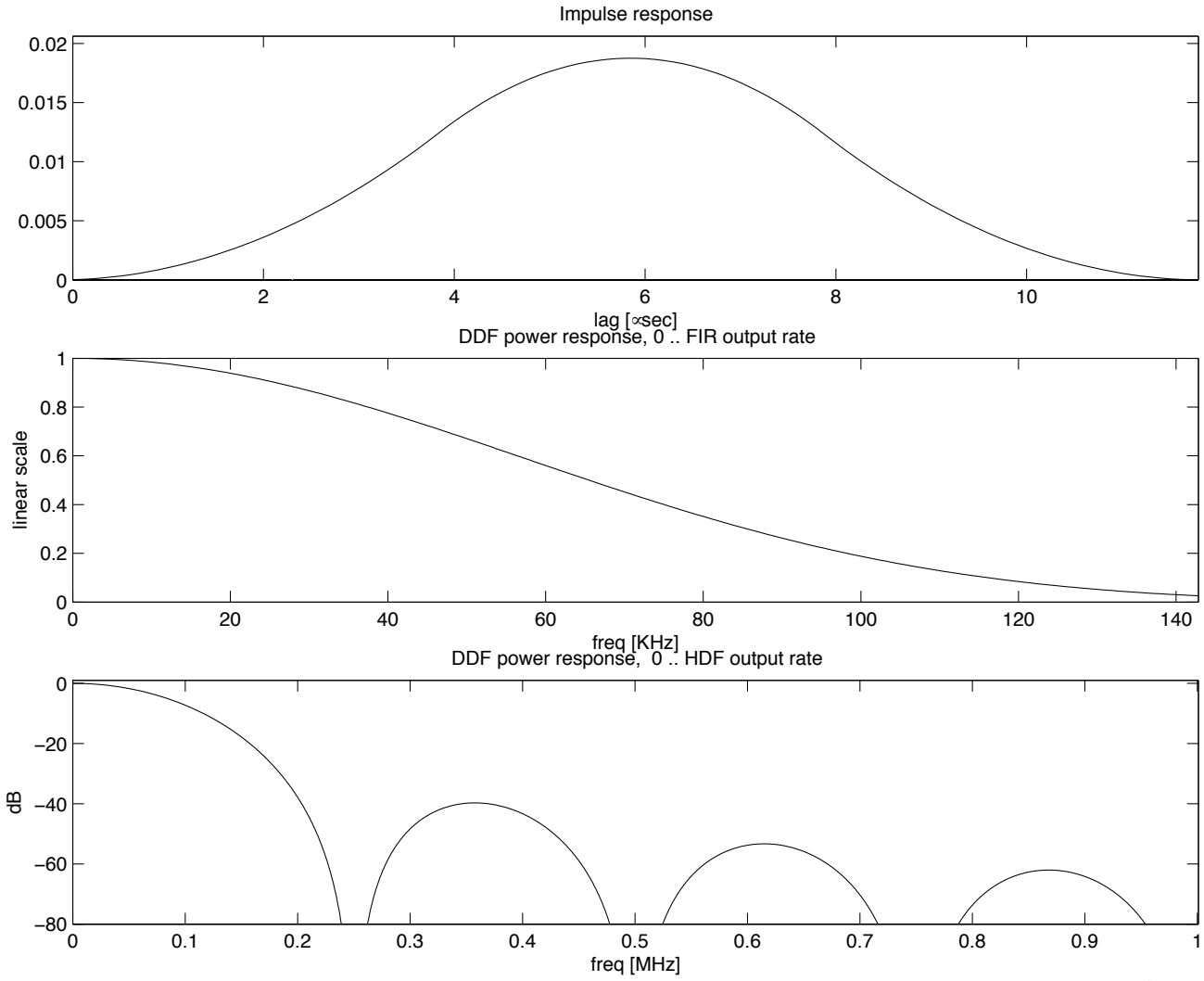
35. w83d60.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 10.0 MHz A/D
% 12-Jun-2002
% L,N=   3,3
% F_CLK > 0.233333 x CLK_IN
% ddfplan(10,3,6,3,3)
% HDF pole1: 1000000.000 Hz
% FIR pole1: 333333.333 Hz
H_STAGES 3
H_GROWTH 40

H_DRATE  9
H_BYP    0
F_CLA    0

F_TAPS   6
F_ESYM   1
F_DRATE  5
F_BYP    0
F_0AD    0

TAP 0 0x04DAC  % 0.0379
TAP 1 0x0E904  % 0.1138
TAP 2 0x1D209  % 0.2276
TAP 3 0x21FB5  % 0.2655
```


Impulse response
0.025
0.02
0.015
0.01
0.005
0
0
1
2
3
4
5
6
7
8
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
20
40
60
80
100
120
140
160
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
freq [MHz]

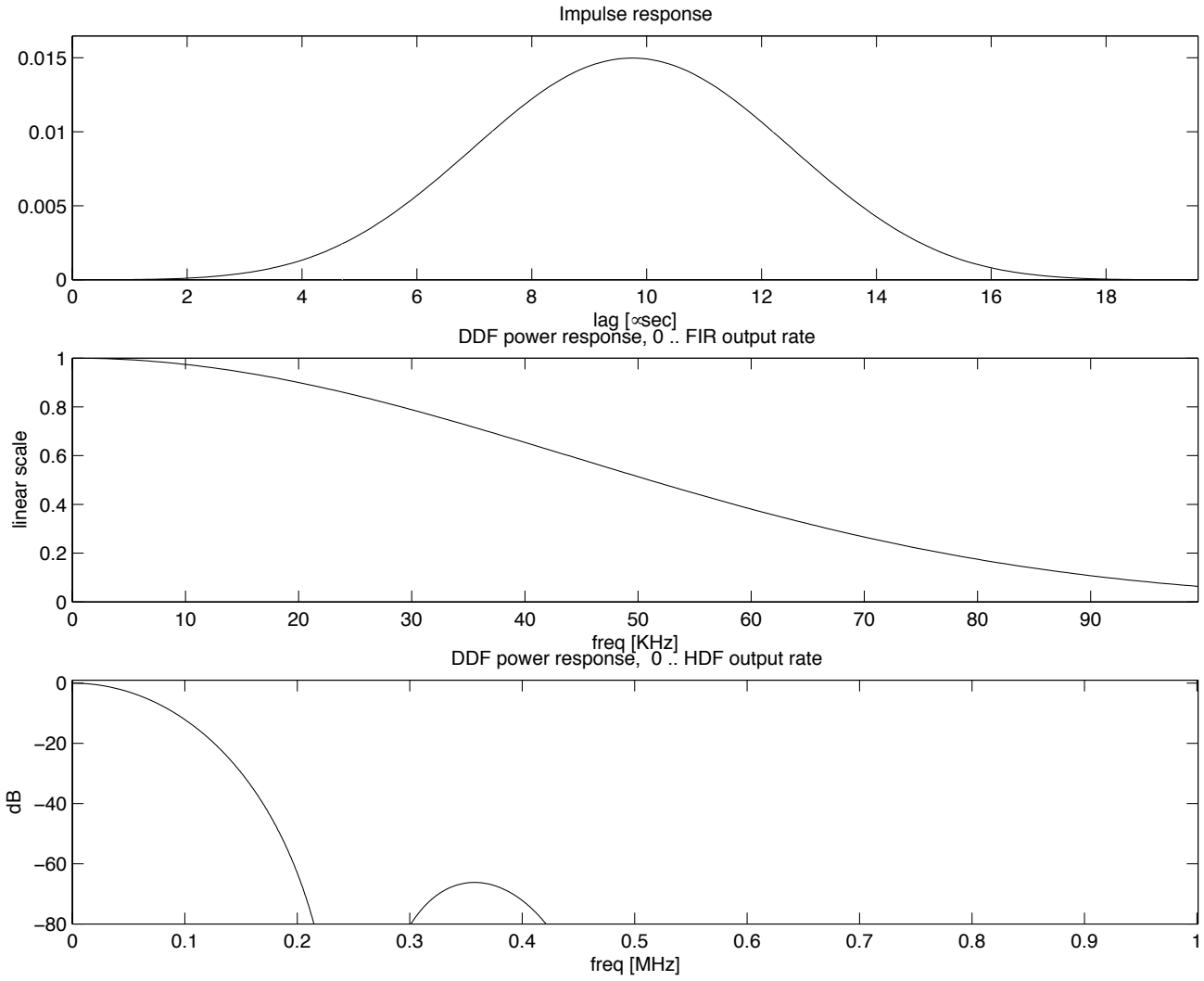
36. w70d70.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 10.0 MHz A/D
% 09-Jun-2002
% L,N=   3,4
% F_CLK > 0.228571 x CLK_IN
%ddfplan(10,3,7,3,4)
% HDF pole1: 1000000.000 Hz
% FIR pole1: 250000.000 Hz
H_STAGES 3
H_GROWTH 40

H_DRATE  9
H_BYP    0
F_CLA    0

F_TAPS   9
F_ESYM   1
F_DRATE  6
F_BYP    0
F_0AD    0

TAP 0 0x020C5  % 0.0160
TAP 1 0x0624E  % 0.0480
TAP 2 0x0C49C  % 0.0960
TAP 3 0x147AE  % 0.1600
TAP 4 0x18937  % 0.1920
```


Impulse response
0.02
0.015
0.01
0.005
0
0
2
4
6
8
10
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
20
40
60
80
100
120
140
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
freq [MHz]

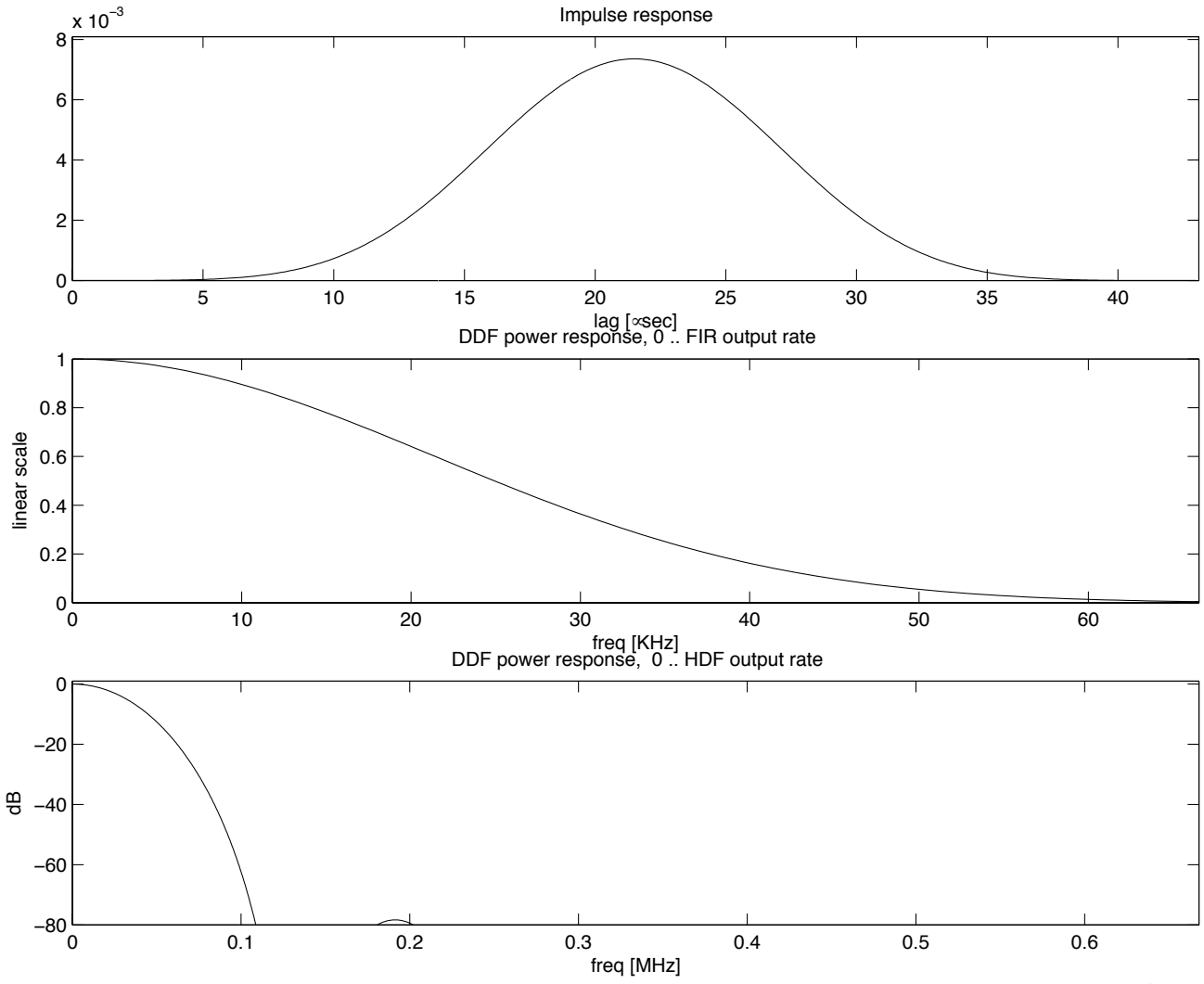
37. w50d100.fir

```
w50d100.fir
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 10.0 MHz A/D
%
% ddfplan10(10,5,10,5,4)
% HDF pole1: 1000000.000 Hz
% FIR pole1: 250000.000 Hz
% ans = 1.9600e-05
%
% 09-Dec-2002
% L,N=   5,4
% F_CLK > 0.22 x CLK_IN

% HDF pole1: 1000000.000 Hz
% FIR pole1: 250000.000 Hz
H_STAGES 5
H_GROWTH 33

H_DRATE  9
H_BYP    0
F_CLA    0

F_TAPS   15
F_ESYM   1
F_DRATE  9
F_BYP    0
F_0AD    0

TAP 0 0x0029F  % 0.0013
TAP 1 0x00D1B  % 0.0064
TAP 2 0x02752  % 0.0192
TAP 3 0x05BC0  % 0.0448
TAP 4 0x0AA65  % 0.0832
TAP 5 0x108C4  % 0.1293
TAP 6 0x161E5  % 0.1728
TAP 7 0x19653  % 0.1984
```


Impulse response
0.015
0.01
0.005
0
0
2
4
6
8
10
12
14
16
18
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
10
20
30
40
50
60
70
80
90
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
freq [MHz]

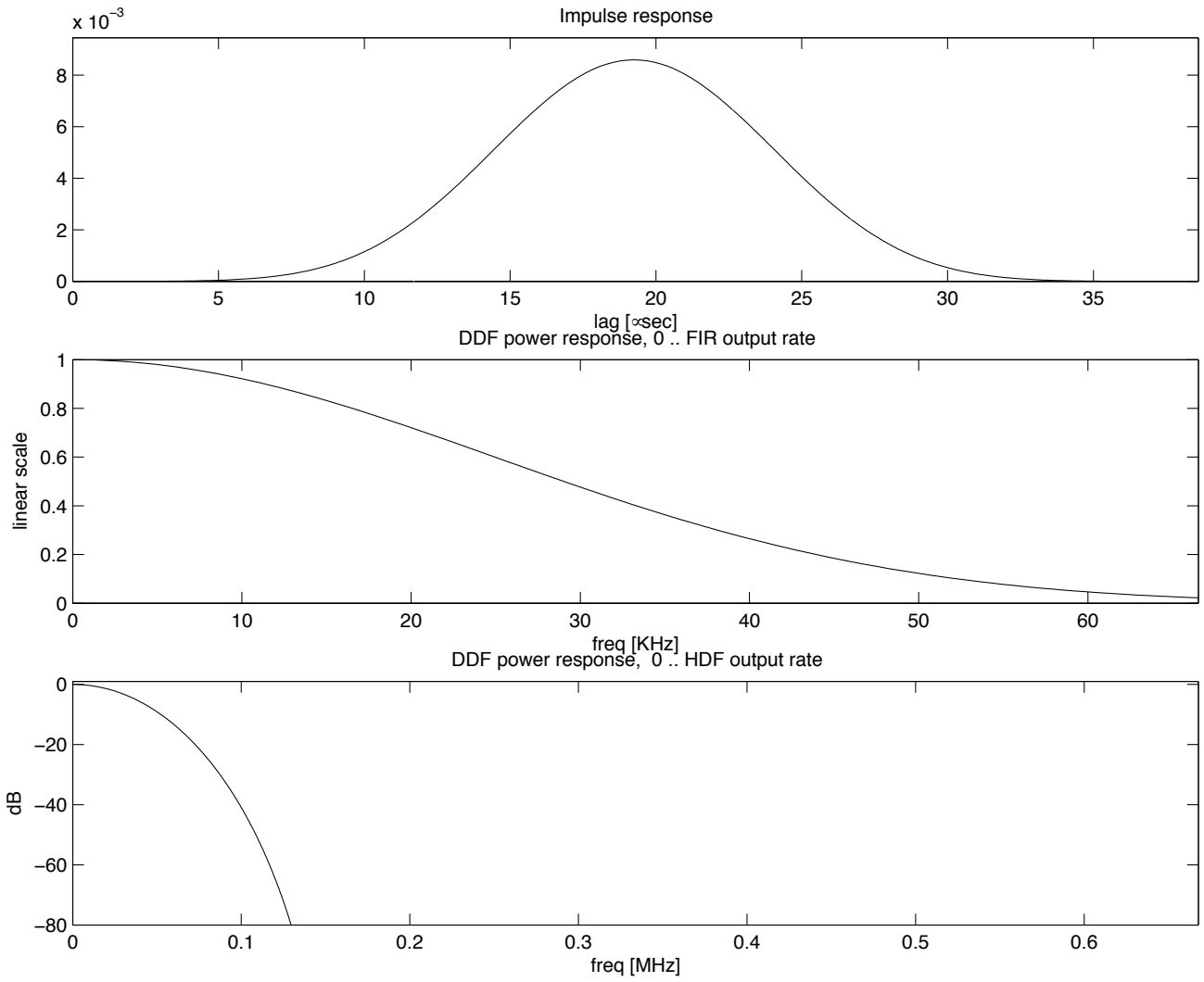
38. w20d150.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 10.0 MHz A/D
% 15-May-2002
% L,N=   6,5
% F_CLK > 0.18 x CLK_IN
%  ddfplan(15,5,10,6,5)
% HDF pole1: 666666.667 Hz
% FIR pole1: 133333.333 Hz
H_STAGES 5
H_GROWTH 30

H_DRATE  14
H_BYP    0
F_CLA    0

F_TAPS   24
F_ESYM   1
F_DRATE  9
F_BYP    0
F_0AD    0

TAP 0 0x0002E  % 0.0001
TAP 1 0x00116  % 0.0005
TAP 2 0x003CD  % 0.0019
TAP 3 0x00A23  % 0.0049
TAP 4 0x016CE  % 0.0111
TAP 5 0x02C86  % 0.0217
TAP 6 0x04D1A  % 0.0376
TAP 7 0x0788A  % 0.0589
TAP 8 0x0AC1F  % 0.0840
TAP 9 0x0E183  % 0.1101
TAP 10 0x11092  % 0.1331
TAP 11 0x13126  % 0.1490
TAP 12 0x13CEA  % 0.1547
```


Impulse response
x 10^-3
8
6
4
2
0
0
5
10
15
20
25
30
35
40
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
10
20
30
40
50
60
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.1
0.2
0.3
0.4
0.5
0.6
freq [MHz]

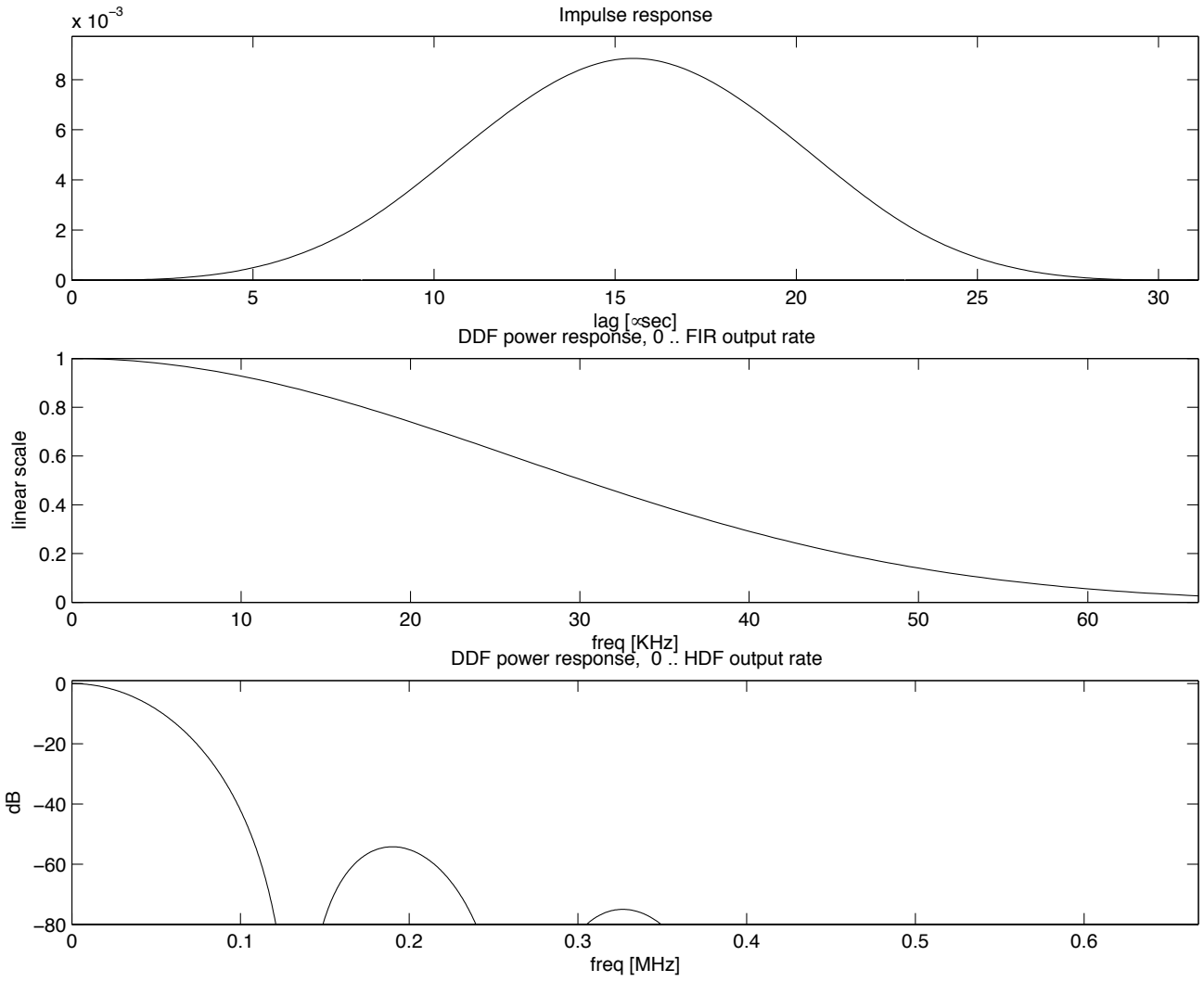
39. w30d150.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 10.0 MHz A/D
% 08-Jun-2002
% L,N=   7,4
% F_CLK > 0.166667 x CLK_IN
%ddfplan(15,5,10,7,4)
% HDF pole1: 666666.667 Hz
% FIR pole1: 166666.667 Hz
H_STAGES 5
H_GROWTH 30

H_DRATE  14
H_BYP    0
F_CLA    0

F_TAPS   21
F_ESYM   1
F_DRATE  9
F_BYP    0
F_0AD    0

TAP 0 0x0002C  % 0.0001
TAP 1 0x00135  % 0.0006
TAP 2 0x004D5  % 0.0024
TAP 3 0x00E80  % 0.0071
TAP 4 0x0230A  % 0.0171
TAP 5 0x04749  % 0.0348
TAP 6 0x07DA8  % 0.0614
TAP 7 0x0C2B3  % 0.0951
TAP 8 0x10C3A  % 0.1310
TAP 9 0x14B0E  % 0.1616
TAP 10 0x16F4E  % 0.1793
```


Impulse response
x 10^-3
8
6
4
2
0
0
5
10
15
20
25
30
35
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
10
20
30
40
50
60
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.1
0.2
0.3
0.4
0.5
0.6
freq [MHz]

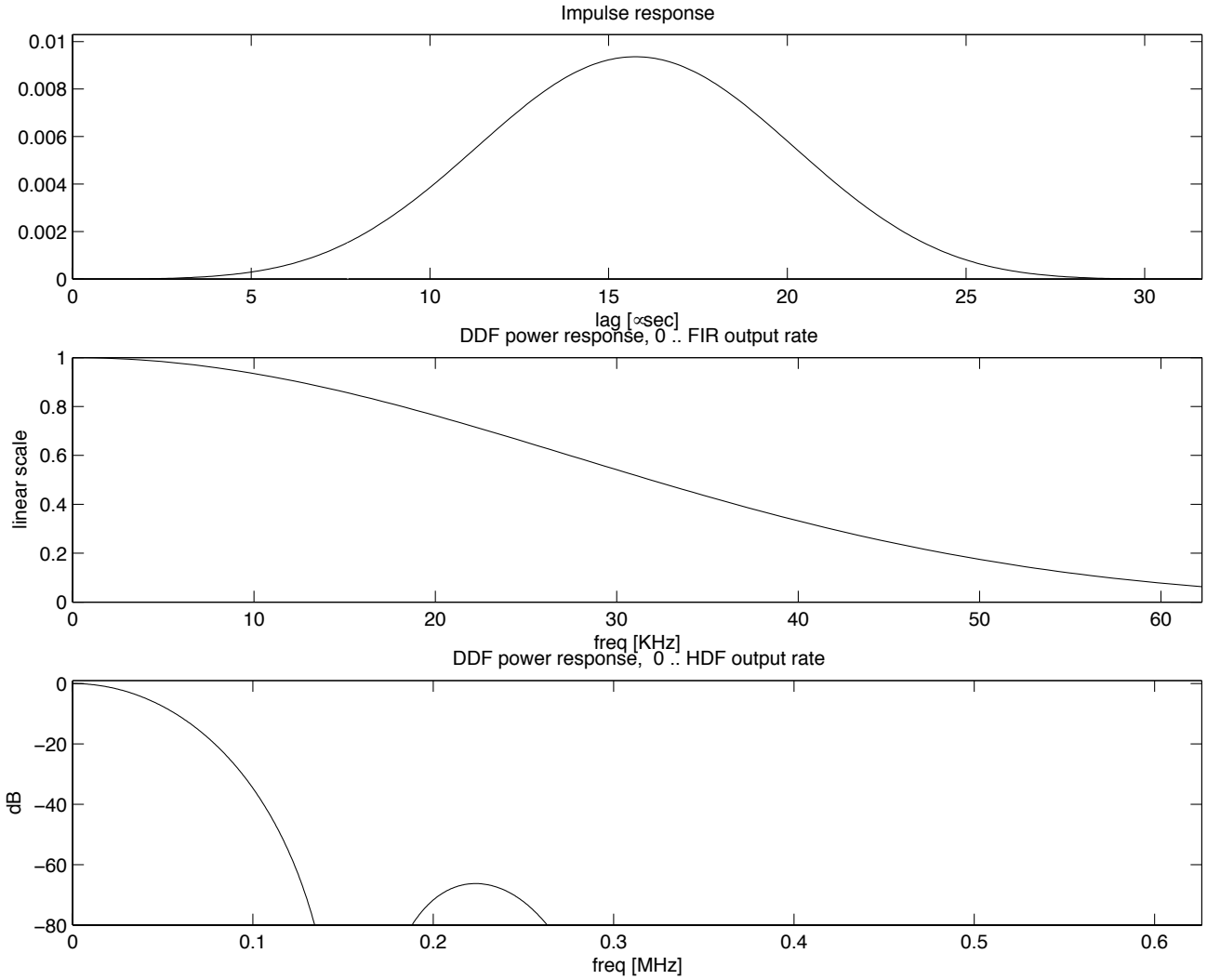
40. w33d150.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 10.0 MHz A/D
% 20-Jan-2003
% L,N=   4,5
% F_CLK > 0.153333 x CLK_IN
% ddfplan(15,5,10,4,5)
% HDF pole1: 666666.667 Hz
% FIR pole1: 133333.333 Hz
H_STAGES 5
H_GROWTH 30

H_DRATE  14
H_BYP    0
F_CLA    0

F_TAPS   16
F_ESYM   1
F_DRATE  9
F_BYP    0
F_0AD    0

TAP 0 0x00486  % 0.0022
TAP 1 0x01219  % 0.0088
TAP 2 0x02D3F  % 0.0221
TAP 3 0x05A7F  % 0.0442
TAP 4 0x09E5E  % 0.0773
TAP 5 0x0EB49  % 0.1149
TAP 6 0x133AF  % 0.1502
TAP 7 0x169FB  % 0.1767
TAP 8 0x1809A  % 0.1878
```


Impulse response
x 10^-3
8
6
4
2
0
0
5
10
15
20
25
30
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
10
20
30
40
50
60
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.1
0.2
0.3
0.4
0.5
0.6
freq [MHz]

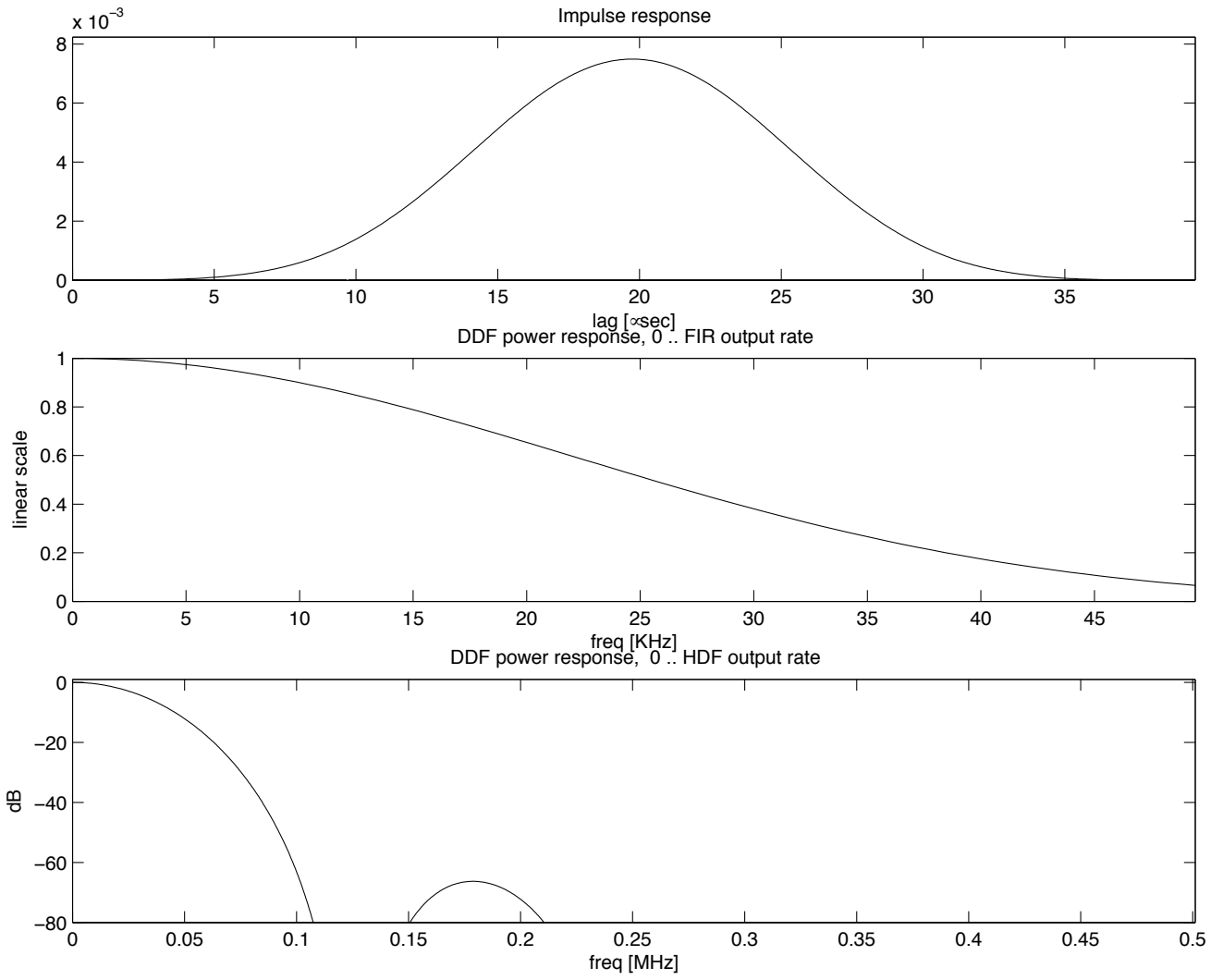
41. w30d160.fir

```
FIRPAR_VS 0.1

% DDFplan 1.1 - assuming 10.0 MHz A/D
% 16-Jul-1999
% ddfplan(16,5,10,5,4)

%HDF pole1: 625000.000 Hz
%FIR pole1: 156250.000 Hz

% L,N=   5,4
% F_CLK > 0.1375 x CLK_IN

H_STAGES 5
H_GROWTH 30

H_DRATE  15
H_BYP    0
F_CLA    0

F_TAPS   15
F_ESYM   1
F_DRATE  9
F_BYP    0
F_0AD    0

TAP 0 0x00200  % 0.0010
TAP 1 0x00A00  % 0.0049
TAP 2 0x01E00  % 0.0146
TAP 3 0x04600  % 0.0342
TAP 4 0x08200  % 0.0635
TAP 5 0x0CA00  % 0.0986
TAP 6 0x10E00  % 0.1318
TAP 7 0x13600  % 0.1514
```


Impulse response
0.01
0.008
0.006
0.004
0.002
0
0
5
10
15
20
25
30
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
10
20
30
40
50
60
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.1
0.2
0.3
0.4
0.5
0.6
freq [MHz]

42. w25d200.fir

```
FIRPAR_VS 0.1

% DDFplan 1.0
% 3-Jan-96
% DDDFPLAN(20,5,10,5,4)
% F_CLK > 0.11 x CLK_IN
%HDF pole1: 500000 Hz
%FIR pole1: 125000 Hz

H_STAGES 5
H_GROWTH 28

H_DRATE  19
H_BYP    0
F_CLA    0

F_TAPS   15
F_ESYM   1
F_DRATE  9
F_BYP    0
F_0AD    0

TAP 0 0x0029F  % 0.0013
TAP 1 0x00D1B  % 0.0064
TAP 2 0x02752  % 0.0192
TAP 3 0x05BC0  % 0.0448
TAP 4 0x0AA65  % 0.0832
TAP 5 0x108C4  % 0.1293
TAP 6 0x161E5  % 0.1728
TAP 7 0x19653  % 0.1984
```


Impulse response
x 10^-3
8
6
4
2
0
0
5
10
15
20
25
30
35
lag [∝sec]
DDF power response, 0 .. FIR output rate
linear scale
1
0.8
0.6
0.4
0.2
0
0
5
10
15
20
25
30
35
40
45
freq [KHz]
DDF power response, 0 .. HDF output rate
dB
0
−20
−40
−60
−80
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
freq [MHz]