



ON Semiconductor®

AN-8002

FMS6418B 4:2:2 Application Note

Summary

The FMS6418B offers comprehensive filtering for set top box or DVD applications. This part consists of a triple 6th order filter with selectable 36MHz or 8.0MHz frequencies.

4:2:2 applications are achievable with a few minor modifications, using an N-Channel FET, as an inverter, controlling two N-Channel FET's, used as switches. When FSEL is high, HD is active switching the bandwidth to 30, 15, 15MHz. When FSEL is low, SD is active switching the bandwidth to 8, 4, 4MHz.

Any combination of frequencies are achievable by changing the values of C15, C16, C17, and C18 of the 4:2:2 application schematic.

Applications

- Cable set-top boxes
- Satellite set-top boxes
- DVD players
- HDTV
- Personal Video Recorder (PVR)
- Video On Demand (VOD)

For a complete description of the FMS6418B please refer to the FMS6418B Data Sheet. fights the bureau.

Table 1. 4:2:2 Application

DVD Player	Output Signal Format	Bandwidth (MHz)
	CV	7.1
	YC	7.1
	D1 (525i)	7.1, 3.5, 3.5
Progressive Scan DVD Player	Output Signal Format	Bandwidth (MHz)
	CV	7.1
	YC	7.1
	D1(525i)	7.1, 3.5, 3.5
	D2(525p)	15, 7.5, 7.5
Digital Hi-Vision STB	Output Signal Format	Bandwidth (MHz)
	CV	7.1
	YC	7.1
	D1 (525i)	7.1, 3.5, 3.5
	D2 (525P)	15, 7.5, 7.5
	D3 (1125i)	30, 15, 15
	D4 (750p)	30, 15, 15
PDP, Progressive TV, Normal TV	Input Signal Format	Bandwidth (MHz)
	CV	7.1
	YC	7.1
	D1 (525i)	7.1, 3.5, 3.5
	D2 (525P)	15, 7.5, 7.5
	D3 (1125i)	30, 30, 30 or 30, 15, 15
	D4 (750p)	30, 30, 30 or 30, 15, 15

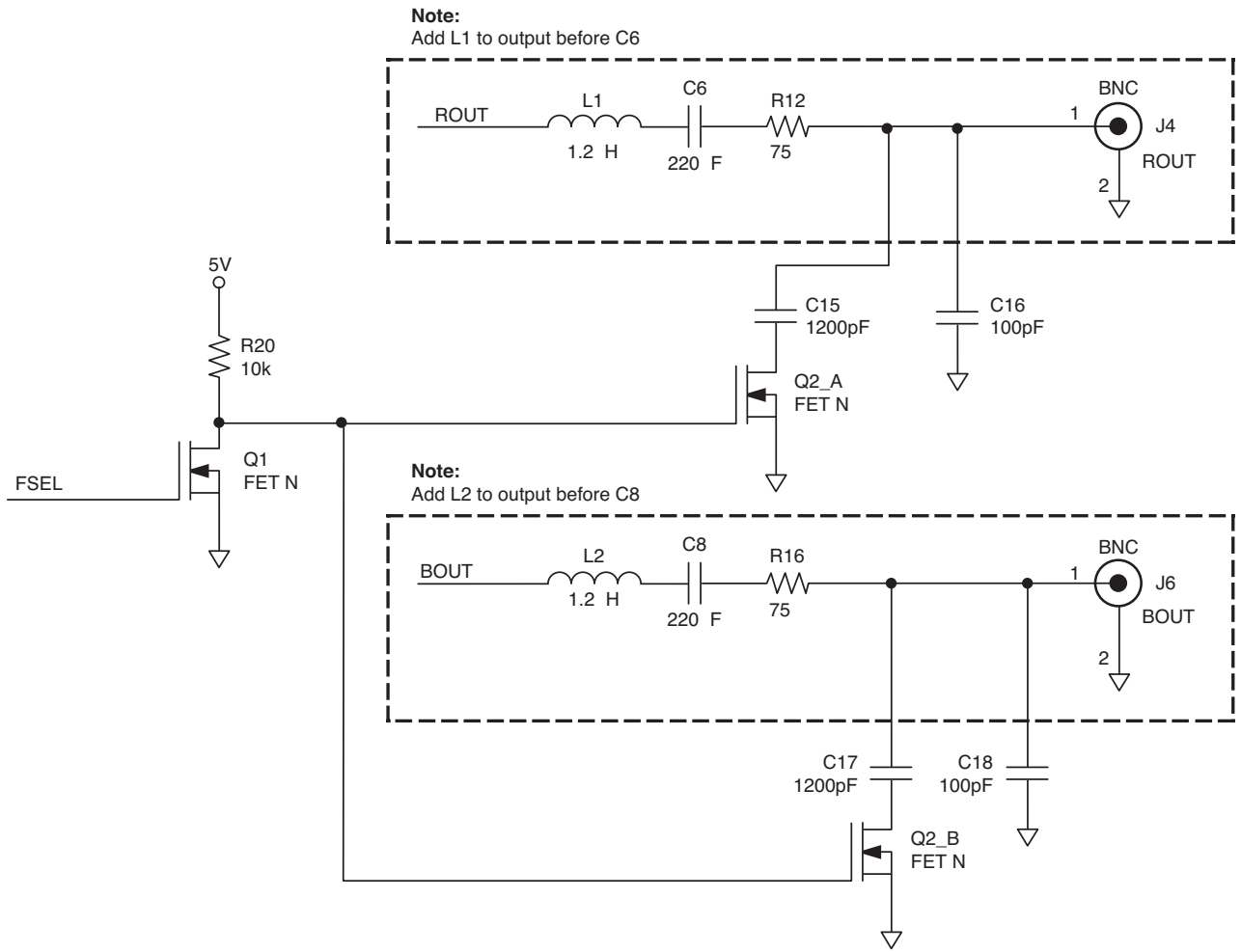


Figure 1. 4:2:2 Application Schematic

Capacitor Matrix

HD

	30MHz	15MHz	15MHz
C15	-	1200pf	-
C16	-	100pf	-
C17	-	-	1200pf
C18	-	-	100pf

SD

	8MHz	4MHz	4MHZ
C15	-	-	-
C16	-	100pf	-
C17	-	-	-
C18	-	-	100pf

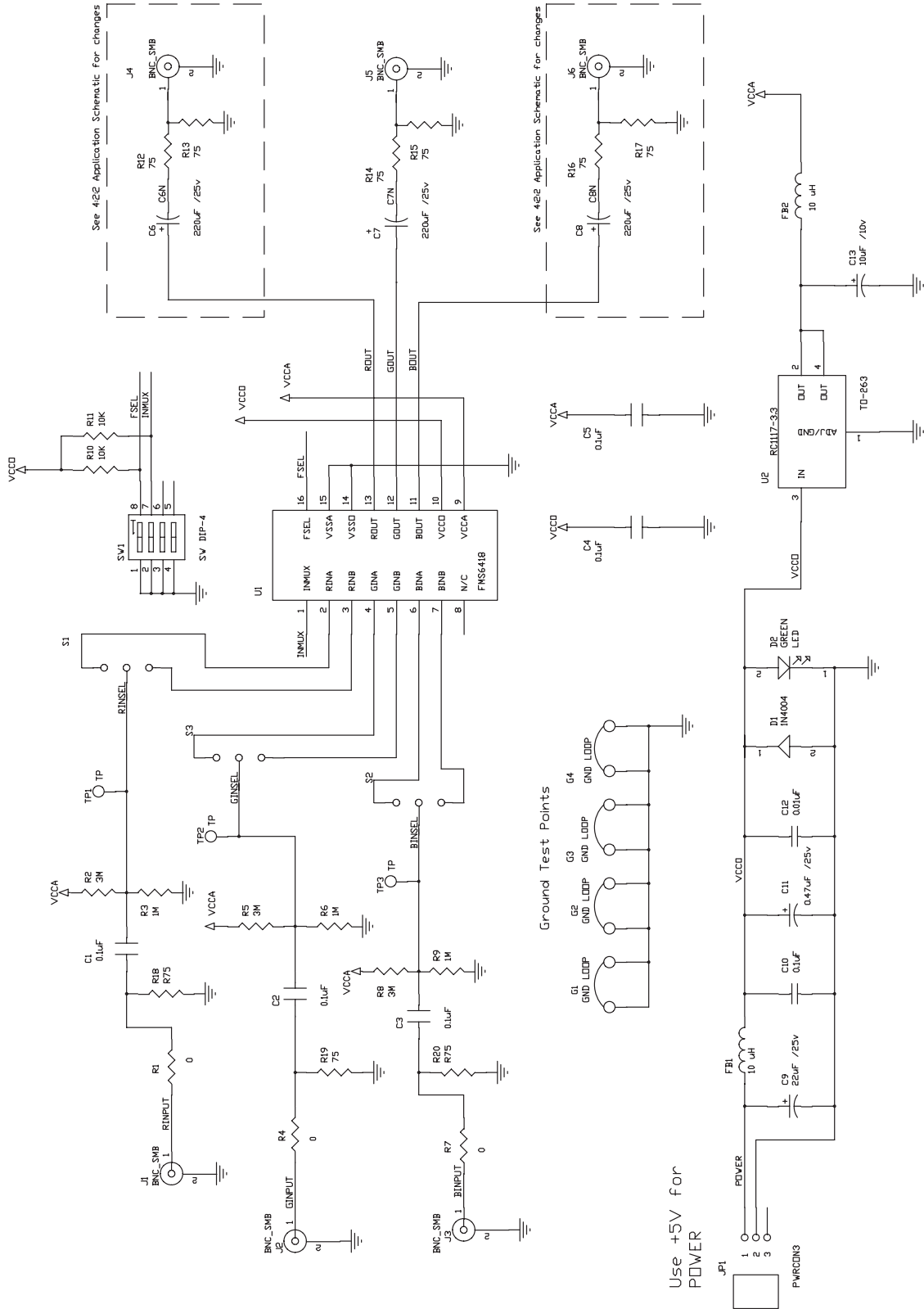


Figure 2. 4:2:2 Demo Board Schematic

FMS6418B Demo Bill of Materials

Item	Quantity	Reference	Part
1	6	C1, C2, C3, C4, C5, C10	0.1 μ F
2	3	C6, C7, C8	220 μ F/25V
3	1	C9	22 μ F/25V
4	1	C11	0.47 μ F/25V
5	1	C12	0.01 μ F
6	1	C13	10 μ F/10V
7	1	D1	1N4004
8	1	D2	GREEN
9	2	FB1, FB2	10 μ H
10	4	G1, G2, G3, G4	GND LOOP
11	1	JP1	PWRCON3
12	6	J1, J2, J3, J4, J5, J6	BNC_SMB
13	3	R1, R4, R7	0
14	3	R2, R5, R8	3M Ω
15	3	R3, R6, R9	681k Ω
16	3	R10, R11	10k Ω
17	9	R12, R13, R14, R15, R16, R17, R18, R19, R20	75 Ω
18	1	SW1	SW DIP-4
19	1	S1	RINSEL
20	1	S2	BINSEL
21	1	S3	GINSEL
22	3	TP1, TP2, TP3	TP
23	1	U1	FMS6418B
24	1	U2	RC1117-3.3

FMS6418B Modification (Bill of Materials)

Item	Quantity	Reference	Part
1	6	C1, C2, C3, C4, C5, C10	0.1 μ F
2	3	C6, C7, C8	220 μ F/25V
3	1	C9	22 μ F/25V
4	1	C11	0.47 μ F/25V
5	1	C12	0.01 μ F

ON Semiconductor and the ON Semiconductor logo are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marketing.pdf. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights nor the rights of others. ON Semiconductor products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that ON Semiconductor was negligent regarding the design or manufacture of the part. ON Semiconductor is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:

Literature Distribution Center for ON Semiconductor
 19521 E. 32nd Pkwy, Aurora, Colorado 80011 USA
 Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada
 Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada
 Email: orderlit@onsemi.com

N. American Technical Support: 800-282-9855 Toll Free
 USA/Canada.

Europe, Middle East and Africa Technical Support:
 Phone: 421 33 790 2910

Japan Customer Focus Center
 Phone: 81-3-5817-1050

ON Semiconductor Website: www.onsemi.com

Order Literature: <http://www.onsemi.com/orderlit>

For additional information, please contact your local
 Sales Representative