

DATA SHEET

Part No.	AN15876A
Package Code No.	QFS100-P-1414A

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AN15876A

The video switch IC for HDTV

■ Overview

AN15876A has the video switch portion which consists of a seven-channel output in a nineteen-channel input, first blanking selection switch, HV through output, Low-pass filter function and a 75 Ω -driver output function. It contributes to the rationalization design of a television system.

■ Features

- 75 Ω -driver output for YCV (Output 3, Output 4, Output 5)
- Output 1 & Output 2 can be switched between LPF (6.75 MHz, 13.5 MHz, or 27 MHz) & through
- Output 3, Output 4 & Output 5 always have LPF (6.75 MHz)
- Output 7 can be switched between LPF (6.75 MHz or 13.5 MHz) & through
- Output 1 can be switched among 0 dB, 1.12 dB, 0.94 dB or mute
- Output 2 can be switched among 0 dB, 6.0 dB, 5.85 dB or mute
- Output 6, Output 7 can be switched among 0 dB, 6.0 dB, or mute
- Various input mode can be selected by using flexible internal switch
- Comparators for S-pin detection \times 3
- Comparators for D-pin detection \times 7
- Comparators for Aspect ratio \times 5 (4 : 3 / 4 : 3 letter box / 16 : 9)
- Each output channel has a power save mode
- HV through output
- First blanking pulse selection switch
- General output \times 4
- Display flag of state change
- High frequency (0 dB at 100 MHz (OUT1))
- Support the I²C-bus

■ Applications

- For color TV

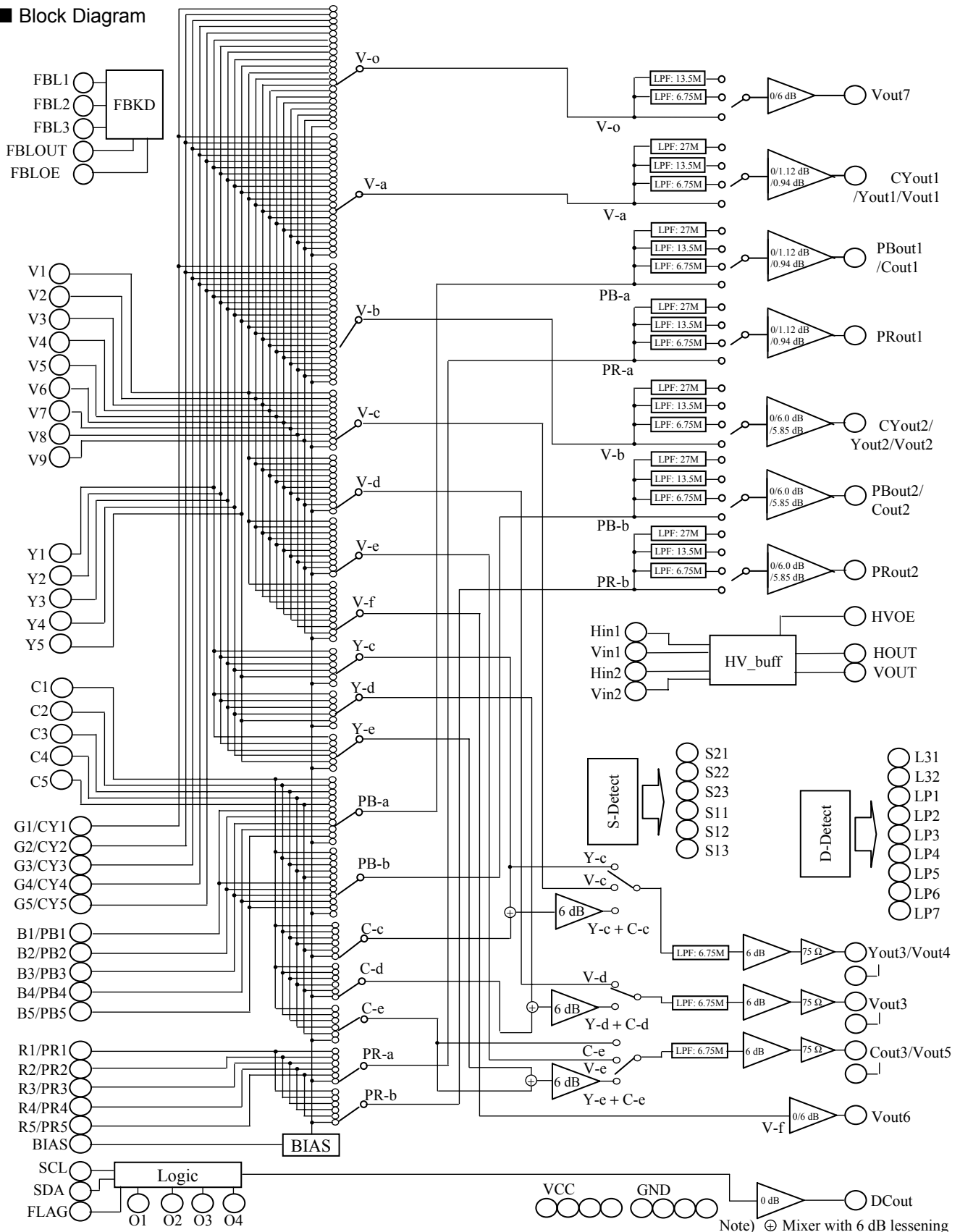
■ Package

- 100-pin plastic quad flat package (QFP type)

■ Type

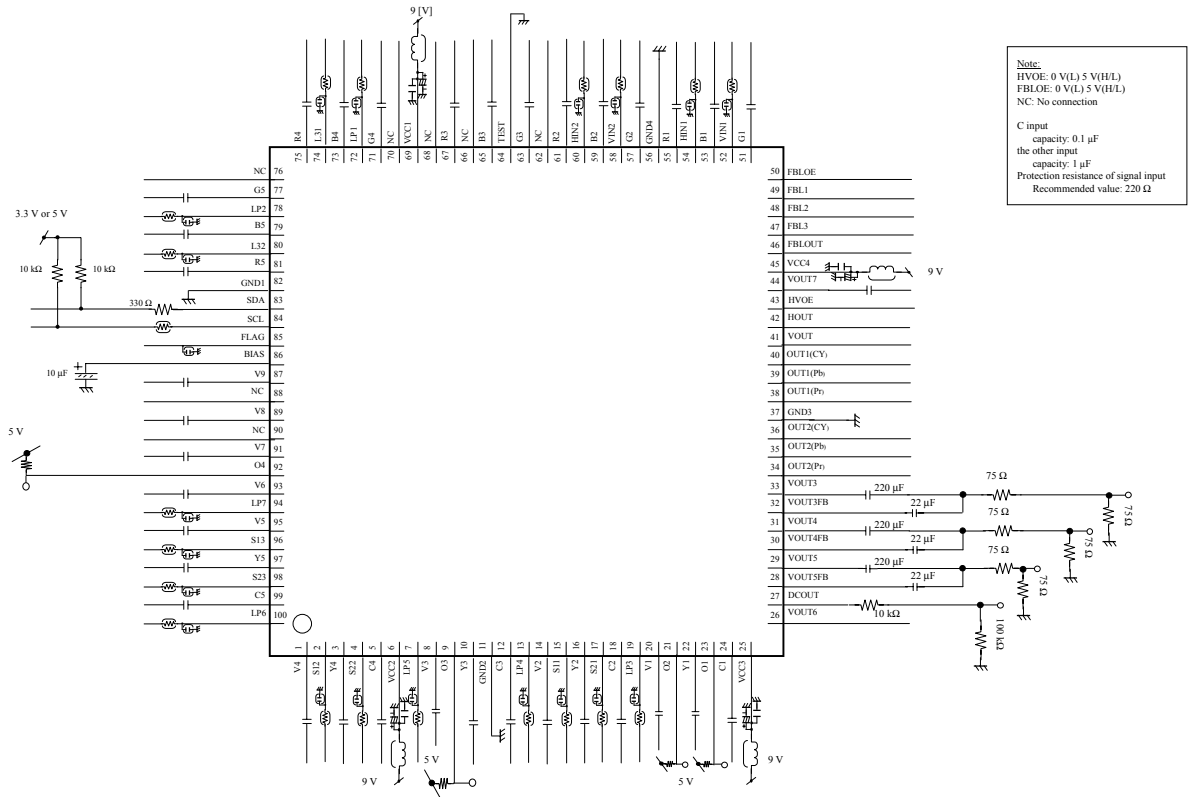
- Silicon monolithic Bi-CMOS IC

■ Block Diagram



Note) ⊕ Mixer with 6 dB lessening

Application Circuit Example



■ Pin Descriptions

Pin No.	Pin name	Type	Description
1	V4	Input	V4 signal input
2	S12	Input	Pin Status detection
3	Y4	Input	Y4 signal input
4	S22	Input	Aspect ratio detection
5	C4	Input	C4 signal input
6	VCC2	Power supply	9.0 V power supply
7	LP5	Input	Pin Status detection
8	V3	Input	V3 signal input
9	O3	Output	Control signal output pin
10	Y3	Input	Y3 signal input
11	GND2	Ground	Ground
12	C3	Input	C3 signal input
13	LP4	Input	Pin Status detection
14	V2	Input	V2 signal input
15	S11	Input	Pin Status detection
16	Y2	Input	Y2 signal input
17	S21	Input	Aspect ratio detection
18	C2	Input	C2 signal input
19	LP3	Input	Pin Status detection
20	V1	Input	V1 signal input
21	O2	Output	Control signal output pin
22	Y1	Input	Y1 signal input
23	O1	Output	Control signal output pin
24	C1	Input	C1 signal input
25	VCC3	Power supply	9.0 V power supply
26	VOUT6	Output	VOUT6 signal output
27	DCOUT	Output	Output DC voltage that can be controlled
28	VOUT5FB	Output	Feed Back signal for VOUT5 output
29	VOUT5	Output	VOUT5 signal output
30	VOUT4FB	Output	Feed Back signal for VOUT4 output
31	VOUT4	Output	VOUT4 signal output
32	VOUT3FB	Output	Feed Back signal for VOUT3 output

■ Pin Descriptions (continued)

Pin No.	Pin name	Type	Description
33	VOUT3	Output	VOUT3 signal output
34	OUT2(Pr)	Output	OUT2(Pr) signal output
35	OUT2(Pb)	Output	OUT2(Pb) signal output
36	OUT2(CY)	Output	OUT2(CY) signal output
37	GND3	Ground	Ground
38	OUT1(Pr)	Output	OUT1(Pr) signal output
39	OUT1(Pb)	Output	OUT1(Pb) signal output
40	OUT1(CY)	Output	OUT1(CY) signal output
41	VOUT	Output	Independent V signal output
42	HOUT	Output	Independent H signal output
43	HVOE	Input	Independent signal output control
44	VOUT7	Output	VOUT7 signal output
45	VCC4	Power supply	9.0 V power supply
46	FBLOUT	Output	First Blanking signal output
47	FBL3	Input	First Blanking signal input
48	FBL2	Input	First Blanking signal input
49	FBL1	Input	First Blanking signal input
50	FBLOE	Input	First Blanking signal output control
51	G1	Input	G1 signal input
52	VIN1	Input	Independent V signal input 1
53	B1	Input	B1 signal input
54	HIN1	Input	Independent H signal input 1
55	R1	Input	R1 signal input
56	GND4	Ground	Ground
57	G2	Input	G2 signal input
58	VIN2	Input	Independent V signal input 2
59	B2	Input	B2 signal input
60	HIN2	Input	Independent H signal input 2
61	R2	Input	R2 signal input
62	NC	—	N.C.
63	G3	Input	G3 signal input
64	TEST	input	Test pin

■ Pin Descriptions (continued)

Pin No.	Pin name	Type	Description
65	B3	Input	B3 signal input
66	NC	—	N.C.
67	R3	Input	R3 signal input
68	NC	—	N.C.
69	VCC1	Power supply	9.0 V power supply
70	NC	—	N.C.
71	G4	Input	G4 signal input
72	LP1	Input	Pin Status detection
73	B4	Input	B4 signal input
74	L31	Input	Aspect ratio detection
75	R4	Input	R4 signal input
76	NC	—	N.C.
77	G5	Input	G5 signal input
78	LP2	Input	Pin Status detection
79	B5	Input	B5 signal input
80	L32	Input	Aspect ratio detection
81	R5	Input	R5 signal input
82	GND1	Ground	Ground
83	SDA	Input/Output	I ² C bus data input
84	SCL	Input	I ² C bus clock input
85	FLAG	Output	Read Flag signal output
86	BIAS	Output	Internal bias monitor
87	V9	Input	V9 signal input
88	NC	—	N.C.
89	V8	Input	V8 signal input
90	NC	—	N.C.
91	V7	Input	V7 signal input
92	O4	Output	Control signal output pin
93	V6	Input	V6 signal input
94	LP7	Input	Pin Status detection
95	V5	Input	V5 signal input
96	S13	Input	Pin Status detection

■ Pin Descriptions (continued)

Pin No.	Pin name	Type	Description
97	Y5	Input	Y5 signal input
98	S23	Input	Aspect ratio detection
99	C5	Input	C5 signal input
100	LP6	Input	Pin Status detection

■ Absolute Maximum Ratings

A No.	Parameter	Symbol	Rating	Unit	Note
1	Supply voltage	V_{CC}	10.0	V	*1
2	Supply current	I_{CC}	120	mA	
3	Power dissipation	P_D	715	mW	*2
4	Operating ambient temperature	T_{opr}	-20 to +75	°C	*3
5	Storage temperature	T_{stg}	-55 to +150	°C	*3

Note) *1: The values under the condition not exceeding the above absolute maximum ratings and the power dissipation.

*2: The power dissipation shown is the value at $T_a = 75^\circ\text{C}$ for the independent (unmounted) IC package.

*3: Except for the power dissipation, operating ambient temperature, and storage temperature, all ratings are for $T_a = 25^\circ\text{C}$.

■ Operating Supply Voltage Range

Parameter	Symbol	Range	Unit	Note
Supply voltage range	V_{CC}	8.5 to 9.5	V	*

Note) *: The values under the condition not exceeding the above absolute maximum ratings and the power dissipation.

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