FIG. 1

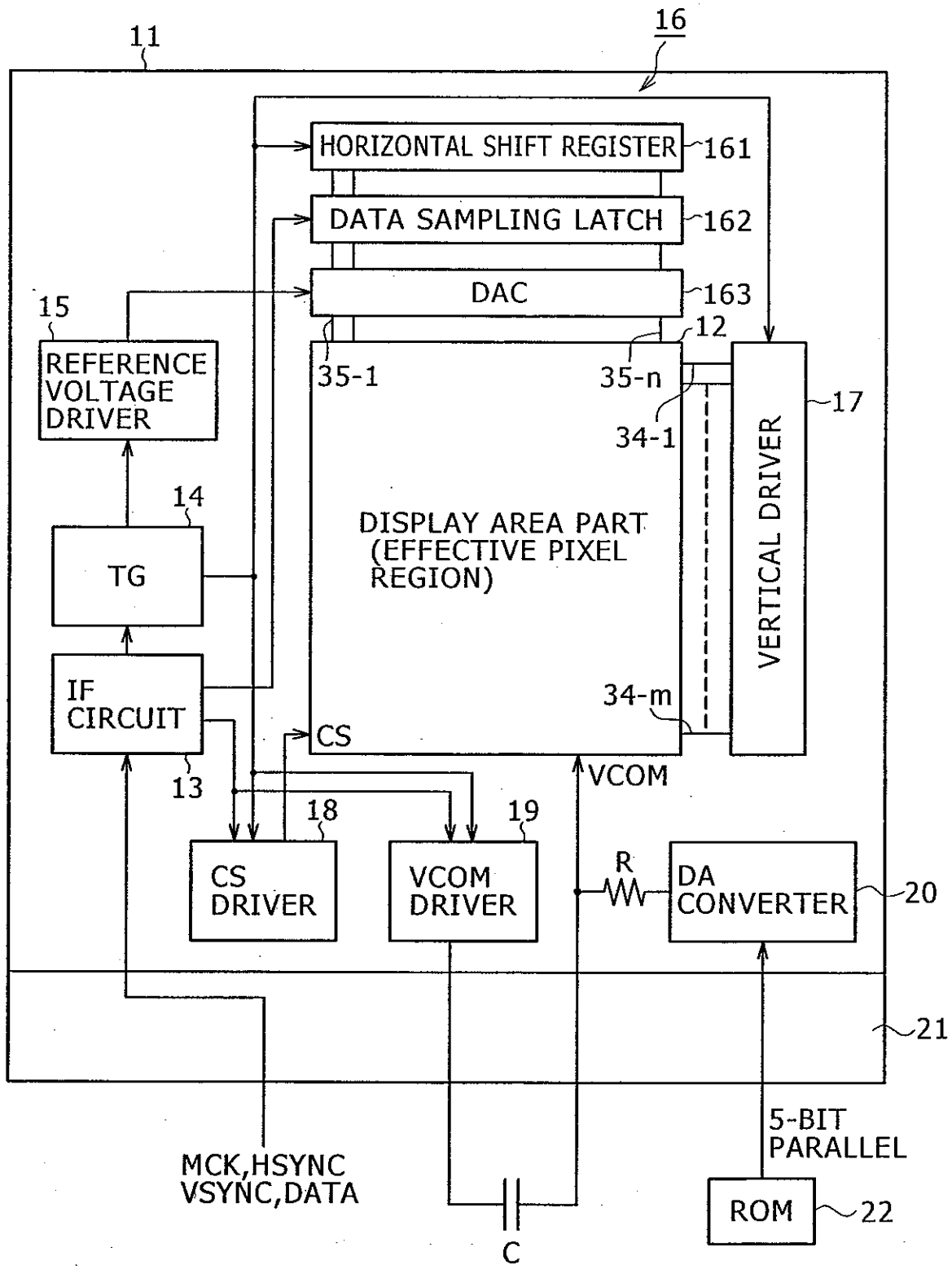

11
16
HORIZONTAL SHIFT REGISTER
161
DATA SAMPLING LATCH
162
DAC
163
15
REFERENCE VOLTAGE DRIVER
35-1
35-n
12
34-1
17
VERTICAL DRIVER
14
TG
DISPLAY AREA PART (EFFECTIVE PIXEL REGION)
IF CIRCUIT
34-m
CS
VCOM
13
18
19
CS DRIVER
VCOM DRIVER
R
DA CONVERTER
20
21
5-BIT PARALLEL
MCK,HSYNC VSYNC,DATA
ROM
22
C

FIG. 2

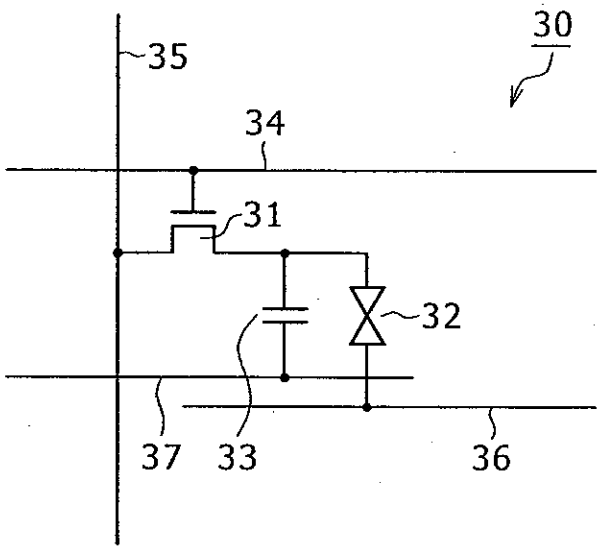

30
35
34
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33
36

FIG. 3

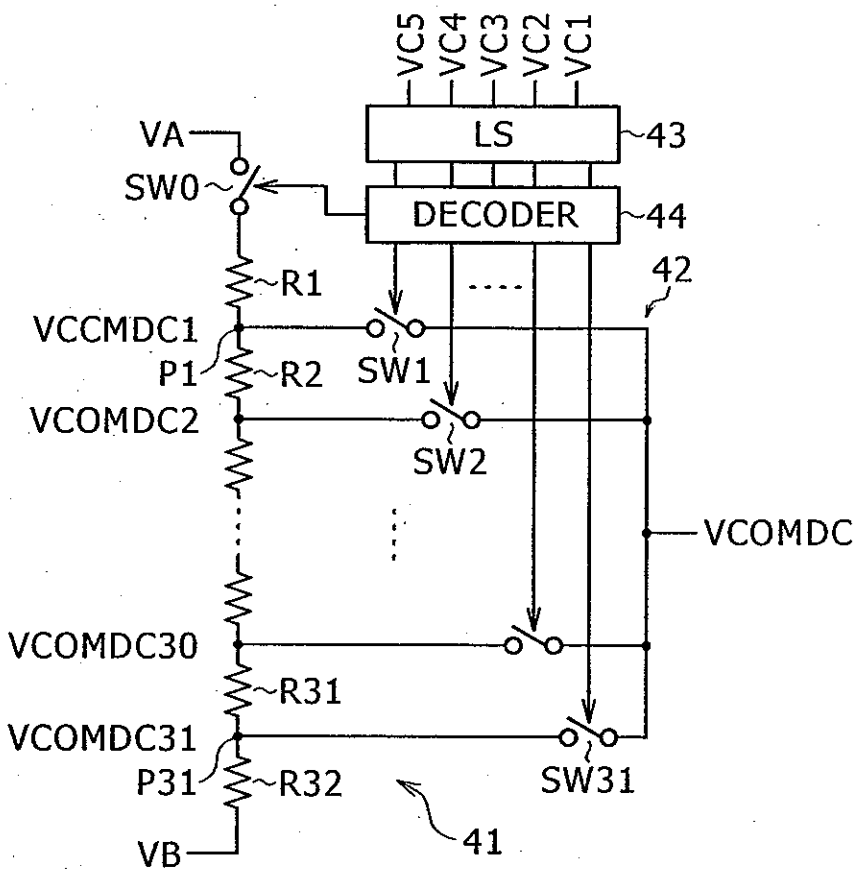

VC5
VC4
VC3
VC2
VC1
LS
43
VA
SW0
DECODER
44
42
R1
VCCMDC1
P1
R2
SW1
VCOMDC2
SW2
VCOMDC
VCOMDC30
R31
VCOMDC31
P31
R32
SW31
VB
41

FIG. 4

VC5	VC4	VC3	VC2	VC1	SELECTED LINE	OUTPUT VOLTAGE[V]
L	L	L	L	L	NONE	Hi-Z
L	L	L	L	H	VCOMDC1	VDD/2+0.075
L	L	L	H	L	VCOMDC2	VDD/2+0.05
L	L	L	H	H	VCOMDC3	VDD/2+0.025
L	L	H	L	L	VCOMDC4	VDD/2
L	L	H	L	H	VCOMDC5	VDD/2-0.025
L	L	H	H	L	VCOMDC6	VDD/2-0.05
L	L	H	H	H	VCOMDC7	VDD/2-0.075
L	H	L	L	L	VCOMDC8	VDD/2-0.1
L	H	L	L	H	VCOMDC9	VDD/2-0.125
L	H	L	H	L	VCOMDC10	VDD/2-0.15
L	H	L	H	H	VCOMDC11	VDD/2-0.175
L	H	H	L	L	VCOMDC12	VDD/2-0.2
L	H	H	L	H	VCOMDC13	VDD/2-0.225
L	H	H	H	L	VCOMDC14	VDD/2-0.25
L	H	H	H	H	VCOMDC15	VDD/2-0.275
H	L	L	L	L	VCOMDC16	VDD/2-0.3
H	L	L	L	H	VCOMDC17	VDD/2-0.325
H	L	L	H	L	VCOMDC18	VDD/2-0.35
H	L	L	H	H	VCOMDC19	VDD/2-0.375
H	L	H	L	L	VCOMDC20	VDD/2-0.4
H	L	H	L	H	VCOMDC21	VDD/2-0.425
H	L	H	H	L	VCOMDC22	VDD/2-0.45
H	L	H	H	H	VCOMDC23	VDD/2-0.475
H	H	L	L	L	VCOMDC24	VDD/2-0.5
H	H	L	L	H	VCOMDC25	VDD/2-0.525
H	H	L	H	L	VCOMDC26	VDD/2-0.55
H	H	L	H	H	VCOMDC27	VDD/2-0.575
H	H	H	L	L	VCOMDC28	VDD/2-0.6
H	H	H	L	H	VCOMDC29	VDD/2-0.625
H	H	H	H	L	VCOMDC30	VDD/2-0.65
H	H	H	H	H	VCOMDC31	VDD/2-0.675

FIG. 5

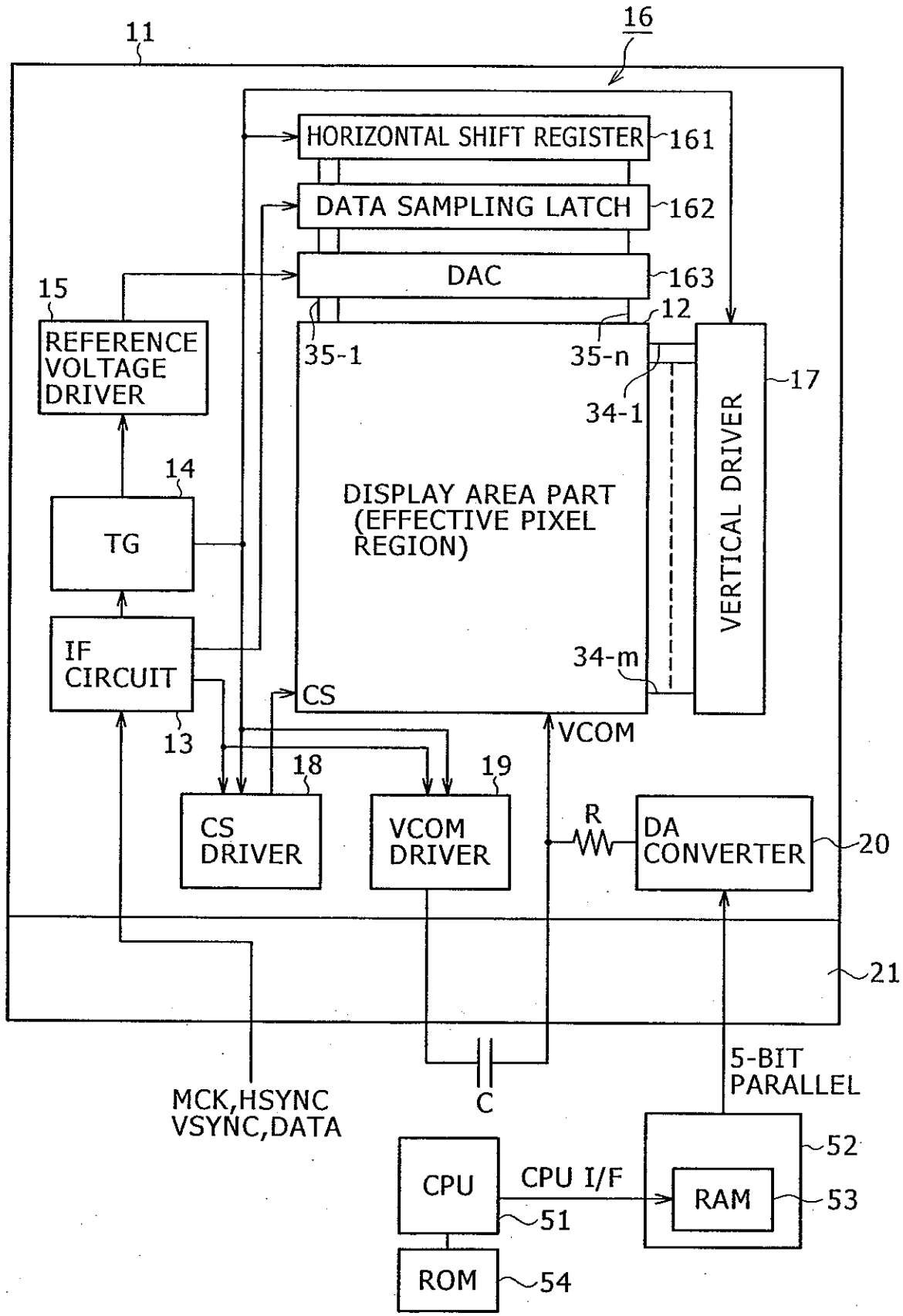

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R
DA CONVERTER
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21
MCK,HSYNC VSYNC,DATA
C
5-BIT PARALLEL
52
CPU
CPU I/F
RAM
53
51
ROM
54

FIG. 6

