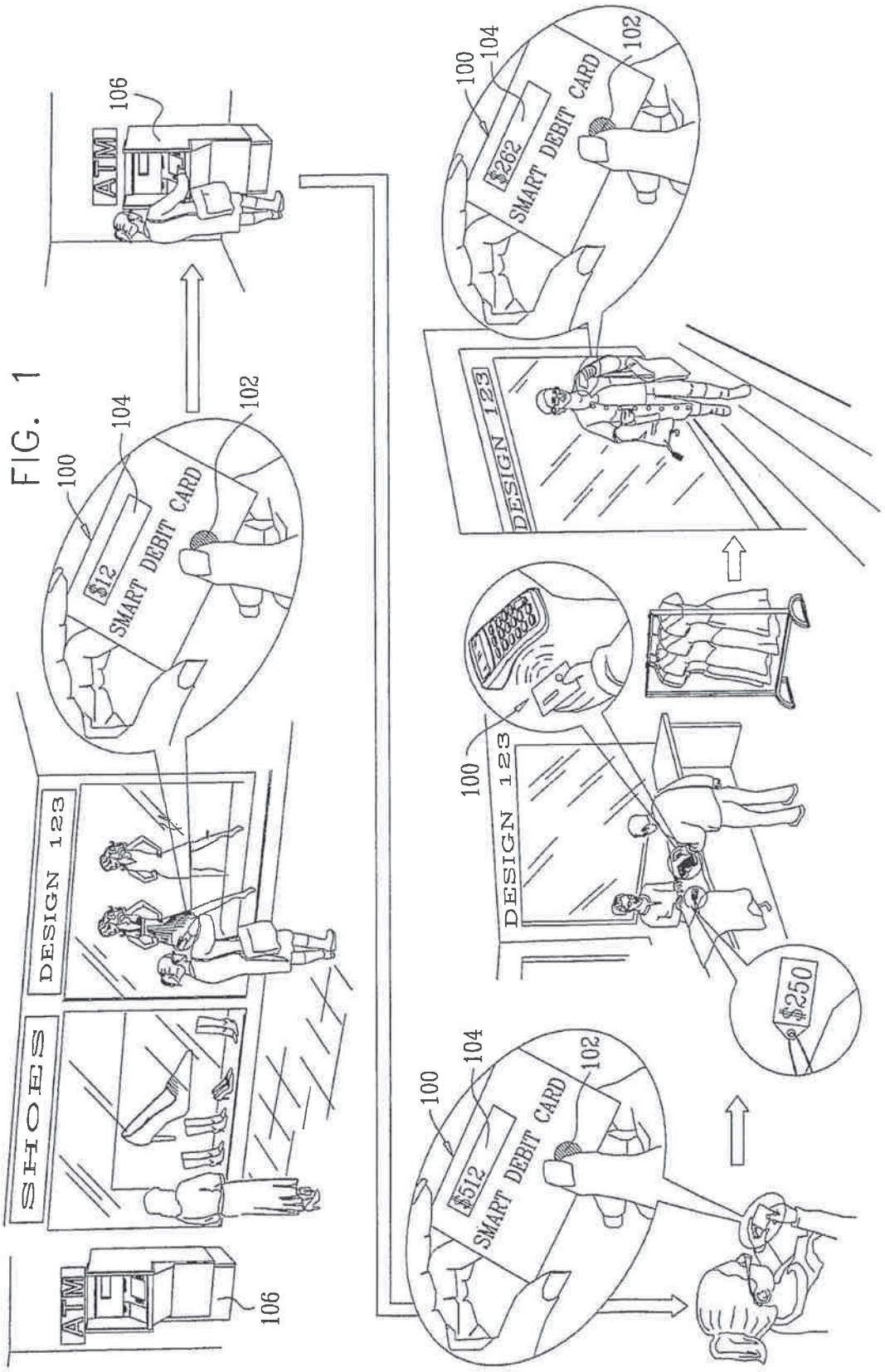
FIG. 1


ATM
106
SHOES
DESIGN 123
100
104
102
$12
SMART DEBIT CARD
$512
$250
$262

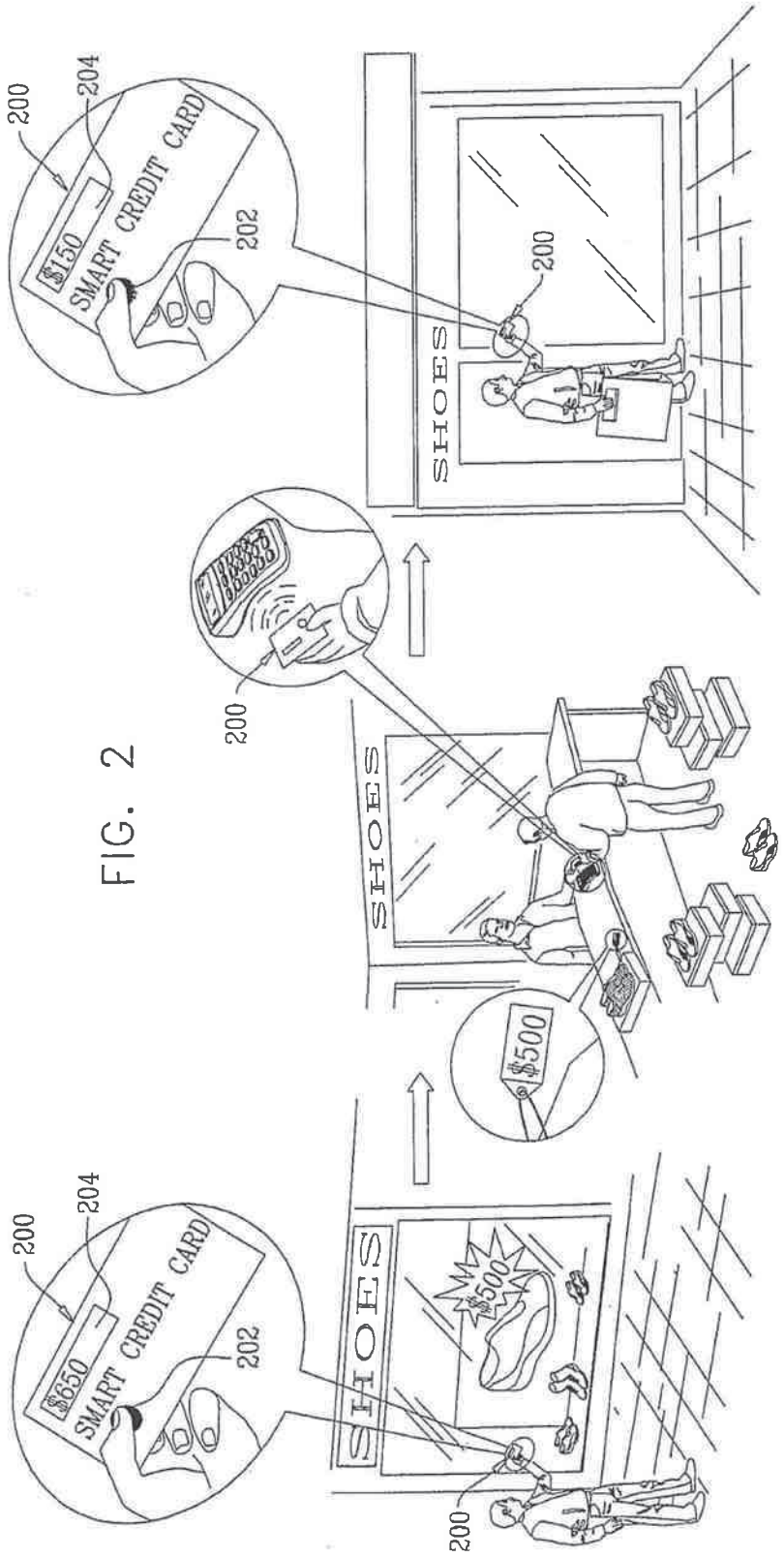

200
204
$150
SMART CREDIT CARD
202
SHOES
200
200
SHOES
$500
200
204
$650
SMART CREDIT CARD
202
SHOES
$500
200

FIG. 2

FIG. 3

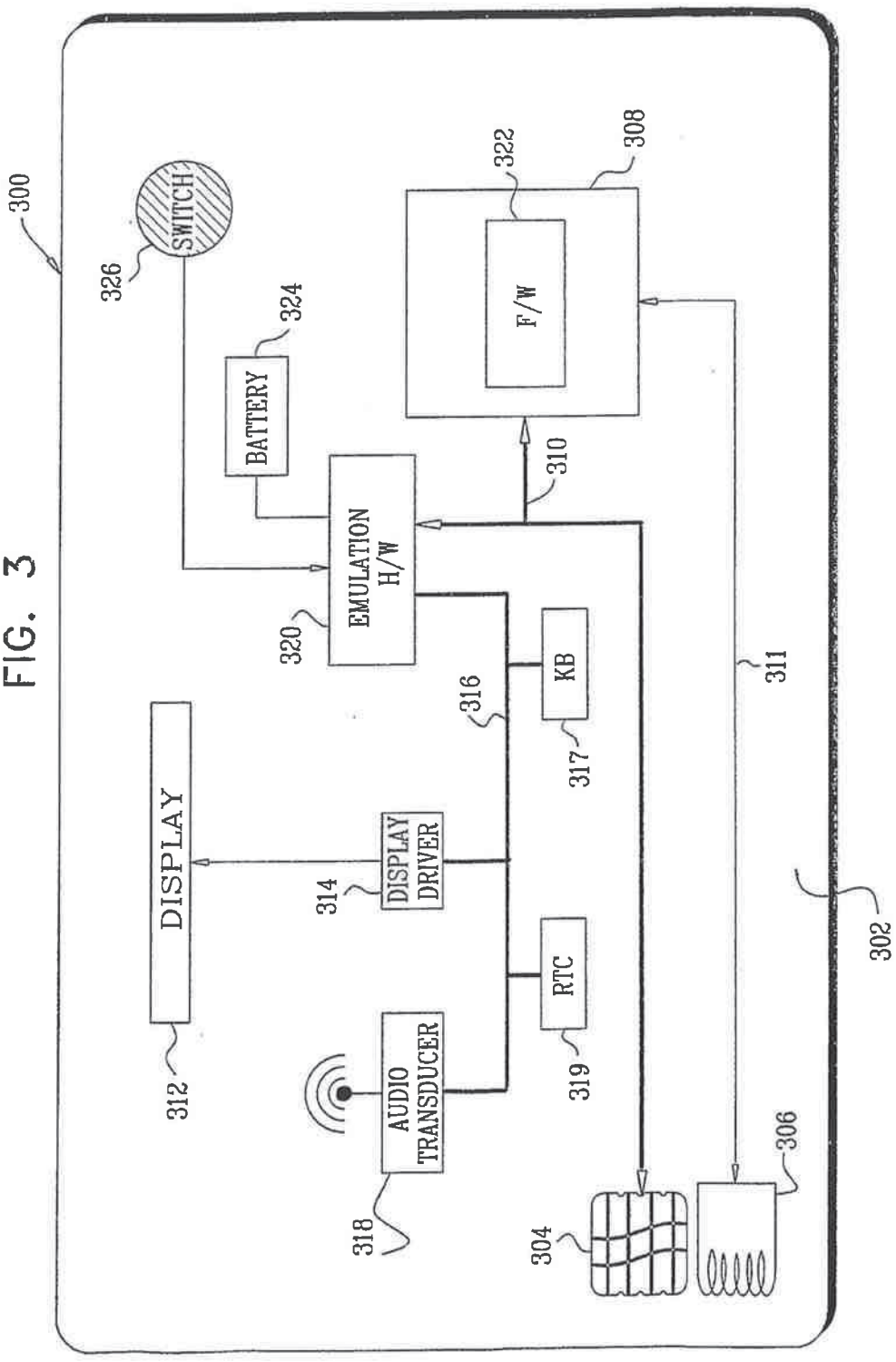

300
SWITCH
326
BATTERY
324
322
308
F/W
310
EMULATION H/W
320
316
KB
317
311
DISPLAY
312
314
DISPLAY DRIVER
RTC
319
AUDIO TRANSDUCER
318
304
306
302

FIG. 4

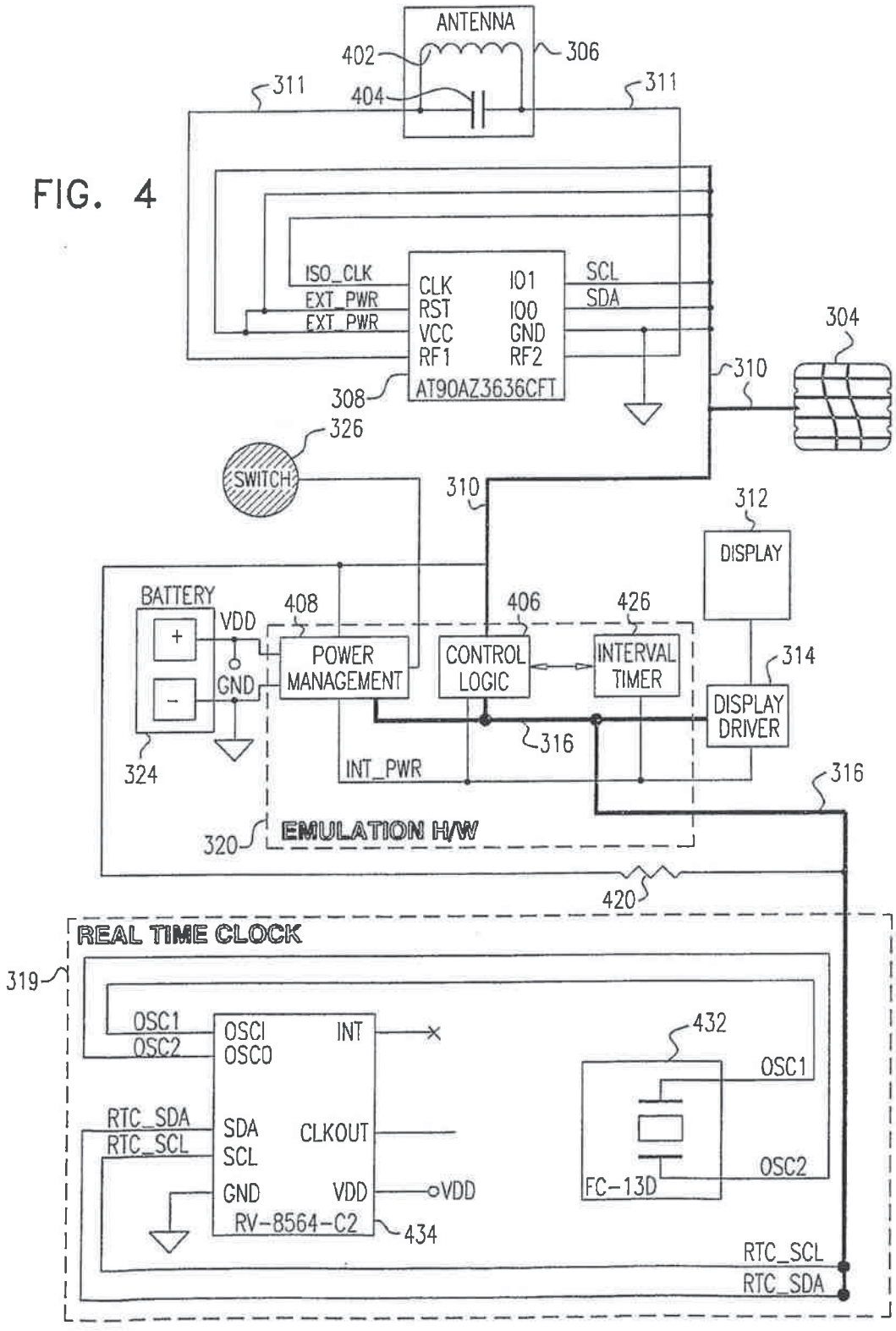

ANTENNA
402
306
311
404
311
ISO_CLK
EXT_PWR
EXT_PWR
CLK
RST
VCC
RF1
IO1
IO0
GND
RF2
SCL
SDA
AT90AZ3636CFT
308
304
310
326
SWITCH
310
312
DISPLAY
BATTERY
VDD
GND
408
406
426
POWER MANAGEMENT
CONTROL LOGIC
INTERVAL TIMER
314
DISPLAY DRIVER
316
324
INT_PWR
316
320
EMULATION H/W
420
REAL TIME CLOCK
319
OSC1
OSC2
OSCI
OSCO
INT
RTC_SDA
RTC_SCL
SDA
SCL
CLKOUT
GND
VDD
VDD
RV-8564-C2
434
432
OSC1
OSC2
FC-13D
RTC_SCL
RTC_SDA

FIG. 5

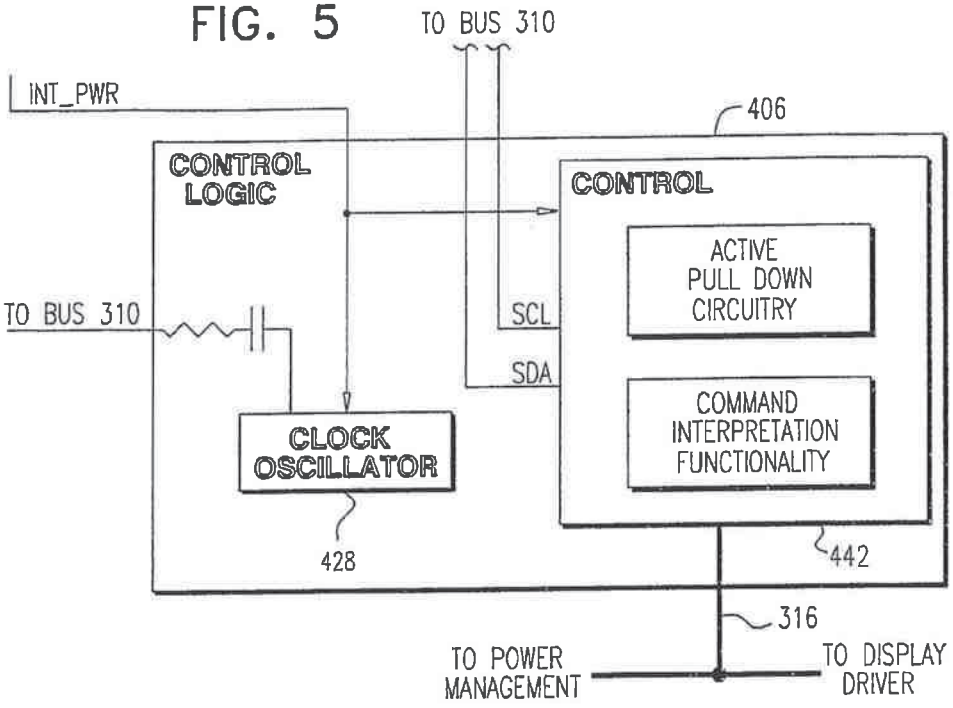
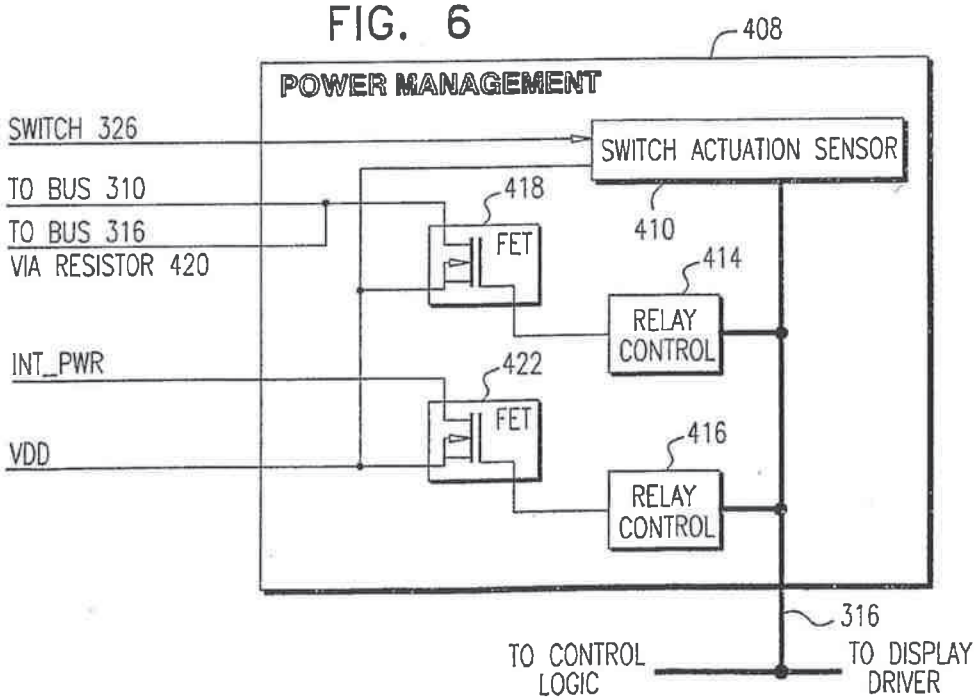

TO BUS 310
INT_PWR
406
CONTROL LOGIC
CONTROL
ACTIVE PULL DOWN CIRCUITRY
TO BUS 310
SCL
SDA
COMMAND INTERPRETATION FUNCTIONALITY
CLOCK OSCILLATOR
428
442
316
TO POWER MANAGEMENT
TO DISPLAY DRIVER

FIG. 6


408
POWER MANAGEMENT
SWITCH 326
SWITCH ACTUATION SENSOR
TO BUS 310
TO BUS 316
VIA RESISTOR 420
418
FET
410
414
RELAY CONTROL
INT_PWR
422
FET
VDD
416
RELAY CONTROL
316
TO CONTROL LOGIC
TO DISPLAY DRIVER

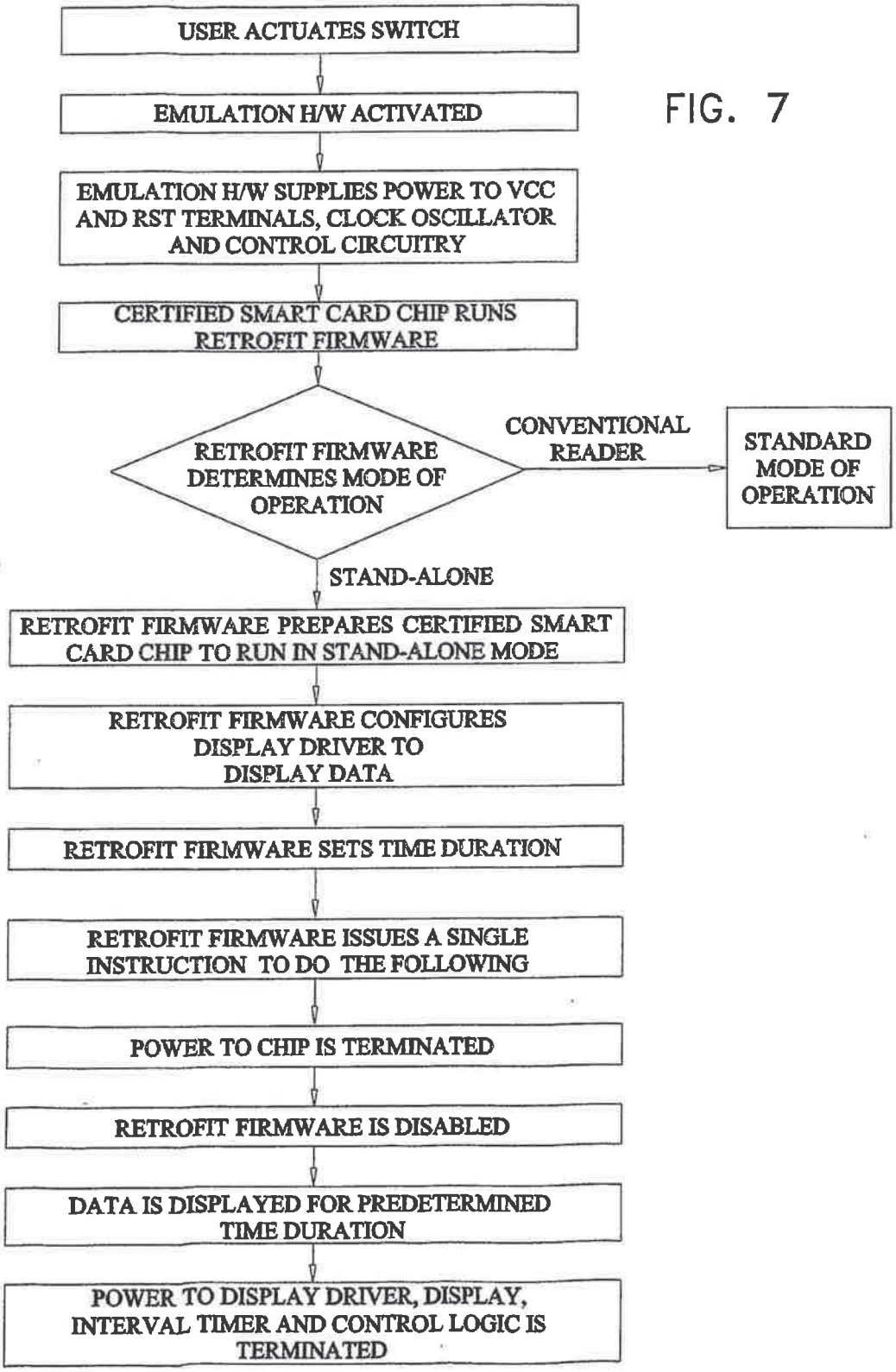

USER ACTUATES SWITCH
EMULATION H/W ACTIVATED
EMULATION H/W SUPPLIES POWER TO VCC AND RST TERMINALS, CLOCK OSCILLATOR AND CONTROL CIRCUITRY
CERTIFIED SMART CARD CHIP RUNS RETROFIT FIRMWARE
RETROFIT FIRMWARE DETERMINES MODE OF OPERATION
CONVENTIONAL READER
STANDARD MODE OF OPERATION
STAND-ALONE
RETROFIT FIRMWARE PREPARES CERTIFIED SMART CARD CHIP TO RUN IN STAND-ALONE MODE
RETROFIT FIRMWARE CONFIGURES DISPLAY DRIVER TO DISPLAY DATA
RETROFIT FIRMWARE SETS TIME DURATION
RETROFIT FIRMWARE ISSUES A SINGLE INSTRUCTION TO DO THE FOLLOWING
POWER TO CHIP IS TERMINATED
RETROFIT FIRMWARE IS DISABLED
DATA IS DISPLAYED FOR PREDETERMINED TIME DURATION
POWER TO DISPLAY DRIVER, DISPLAY, INTERVAL TIMER AND CONTROL LOGIC IS TERMINATED

FIG. 7