

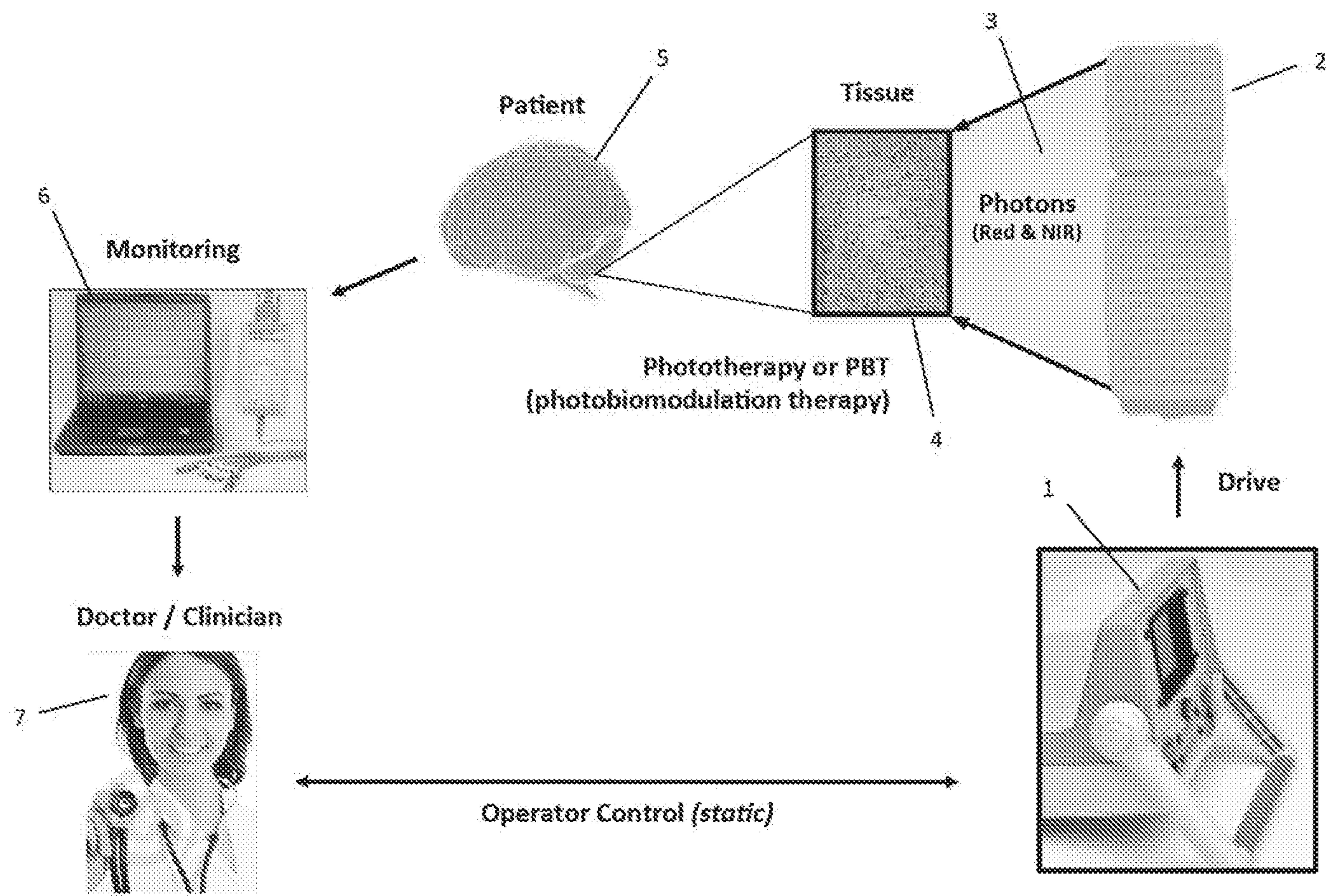


Figure 1

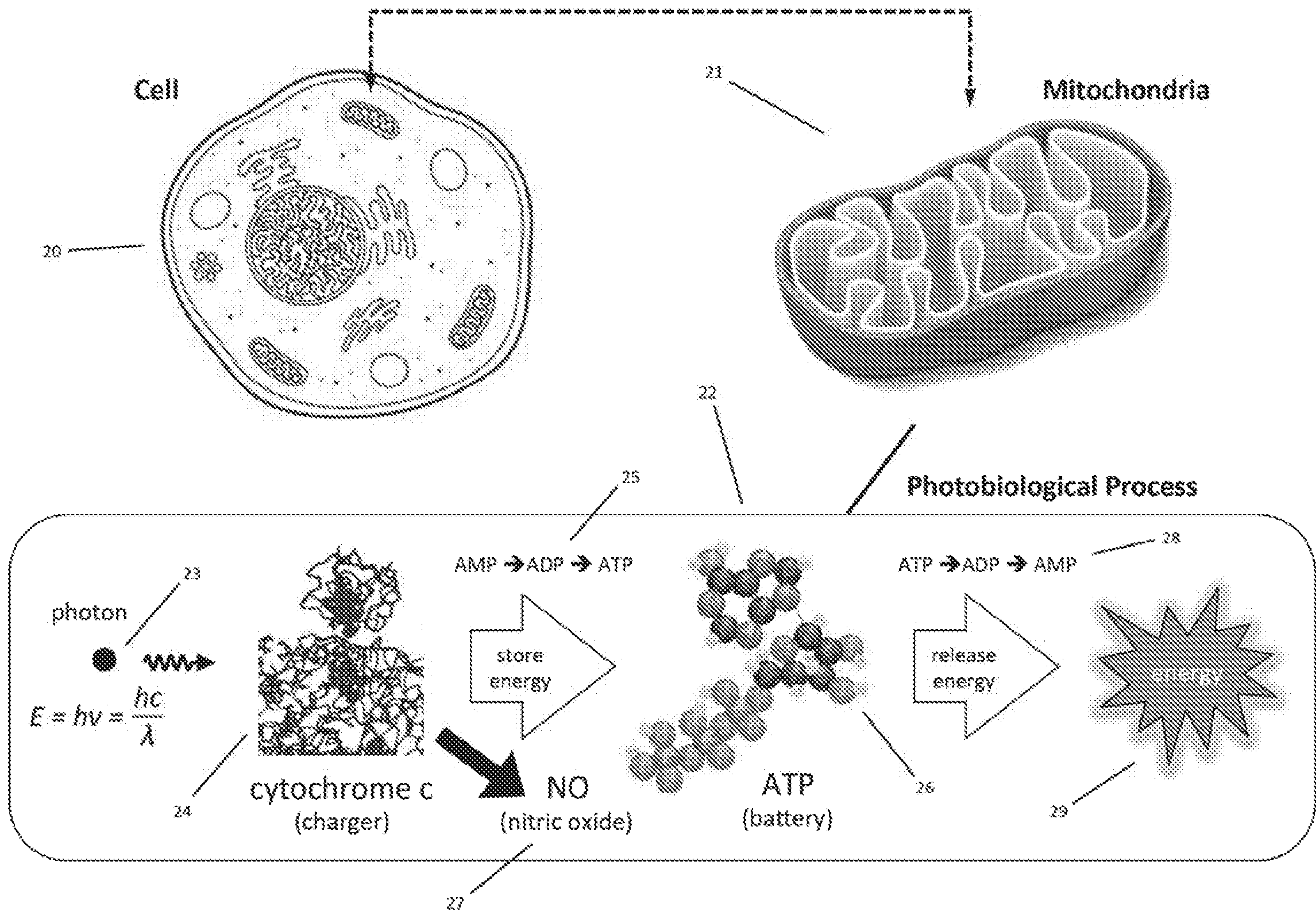


Figure 2

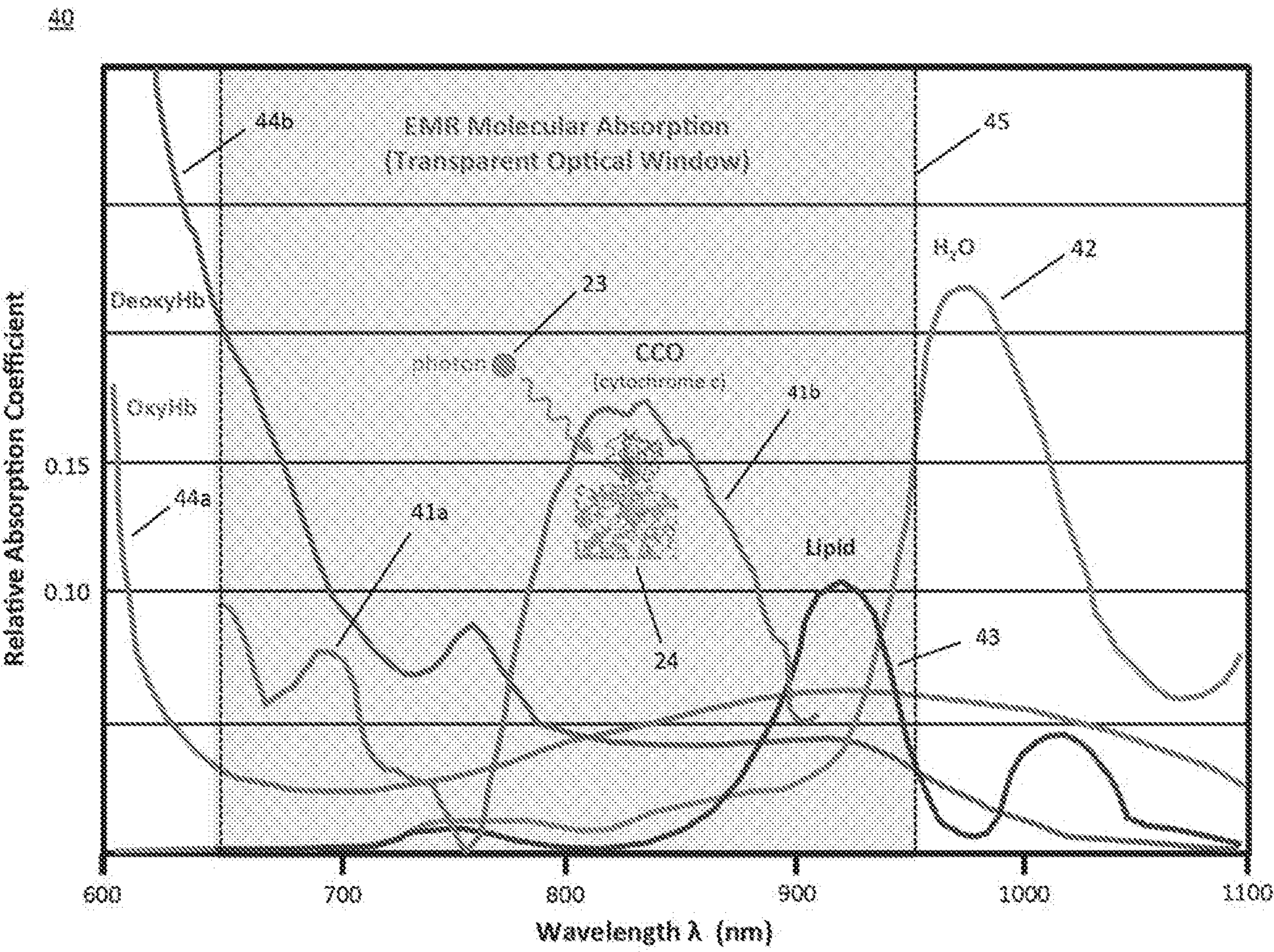
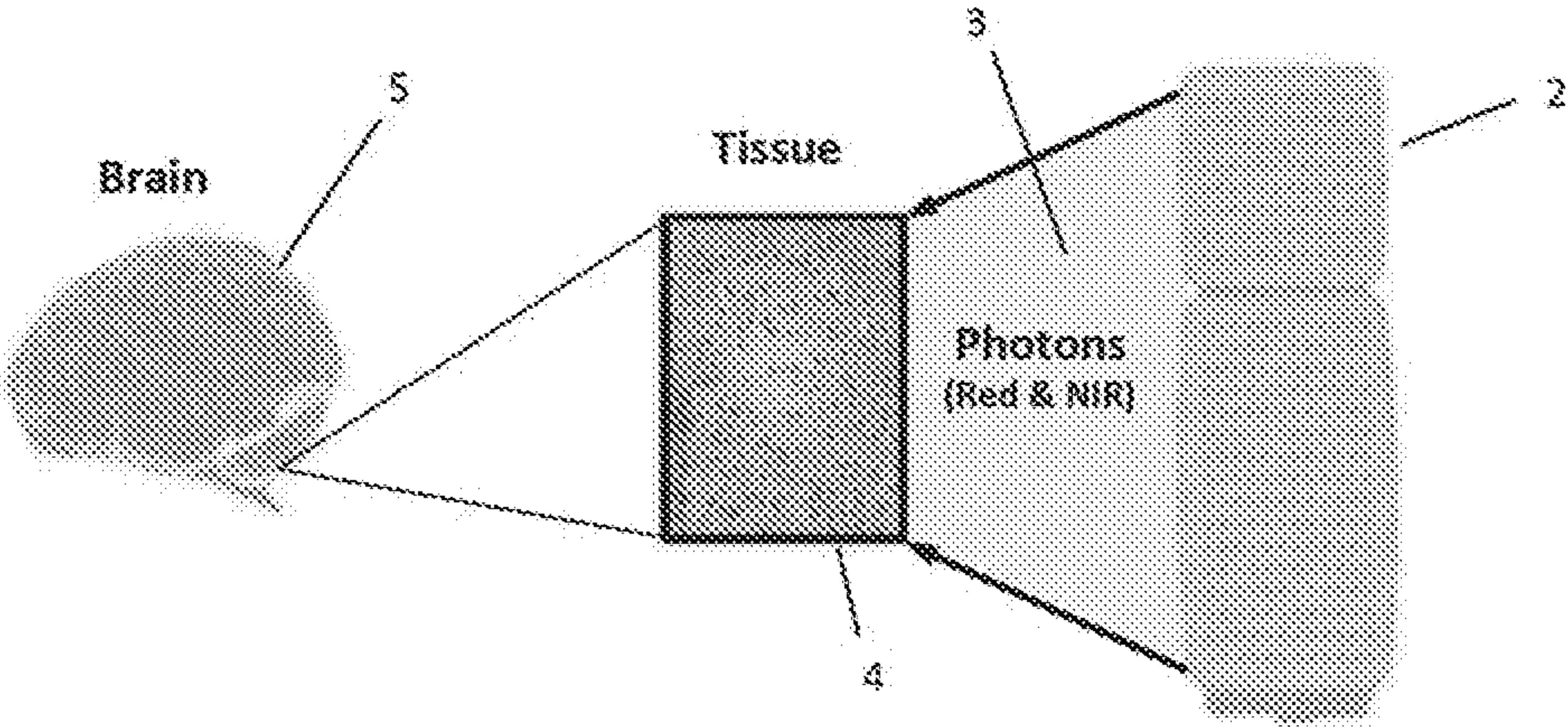


Figure 3

Photobiomodulation
therapy (PBT), phototherapy,
photochemical, non-optical
photochemical stimulation



Sight, image processing,
photo-optical / visual
stimulation, training

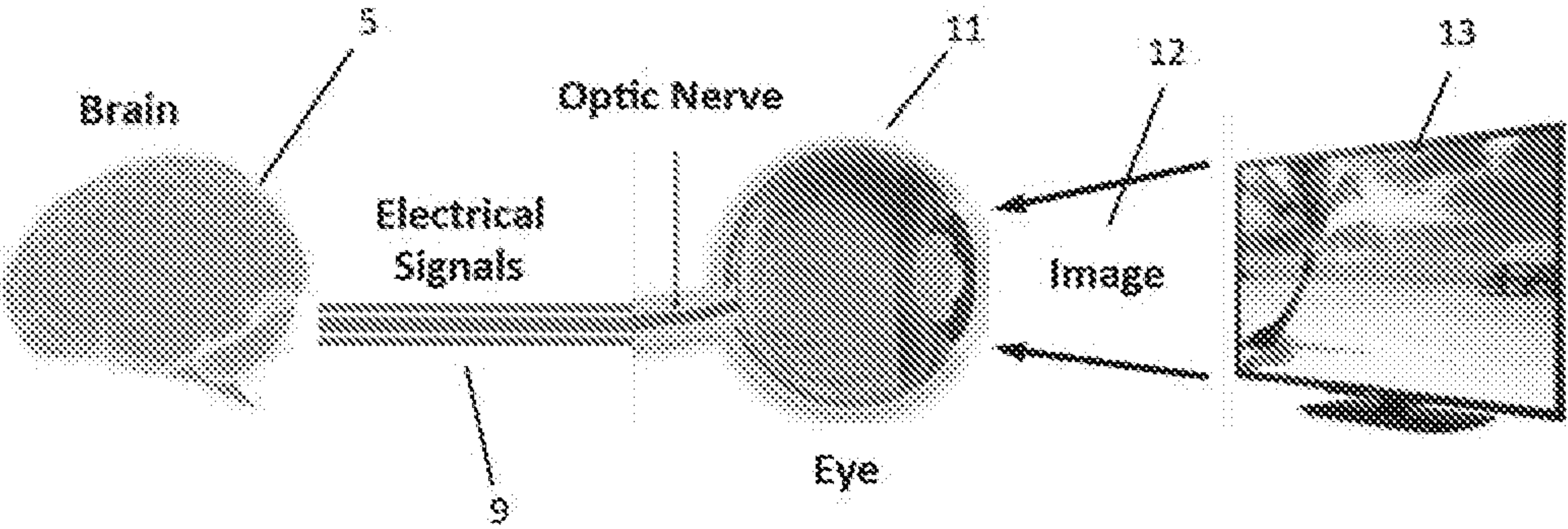
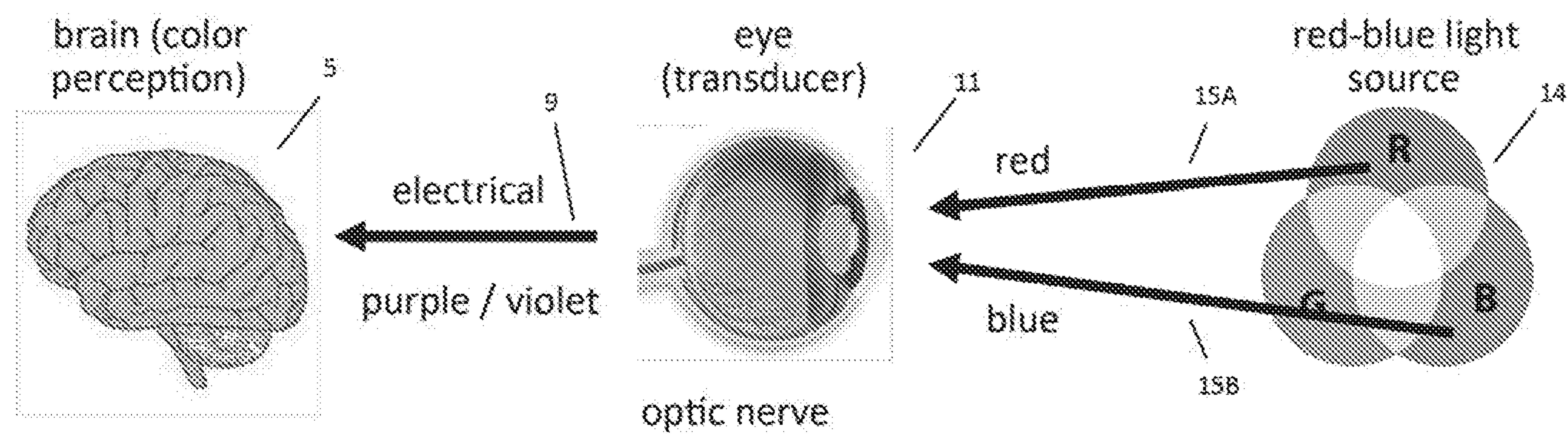


Figure 4A

Sight (Photo-Optical / Visual Stimulation)



Photobiomodulation (Photo-Chemical Process)

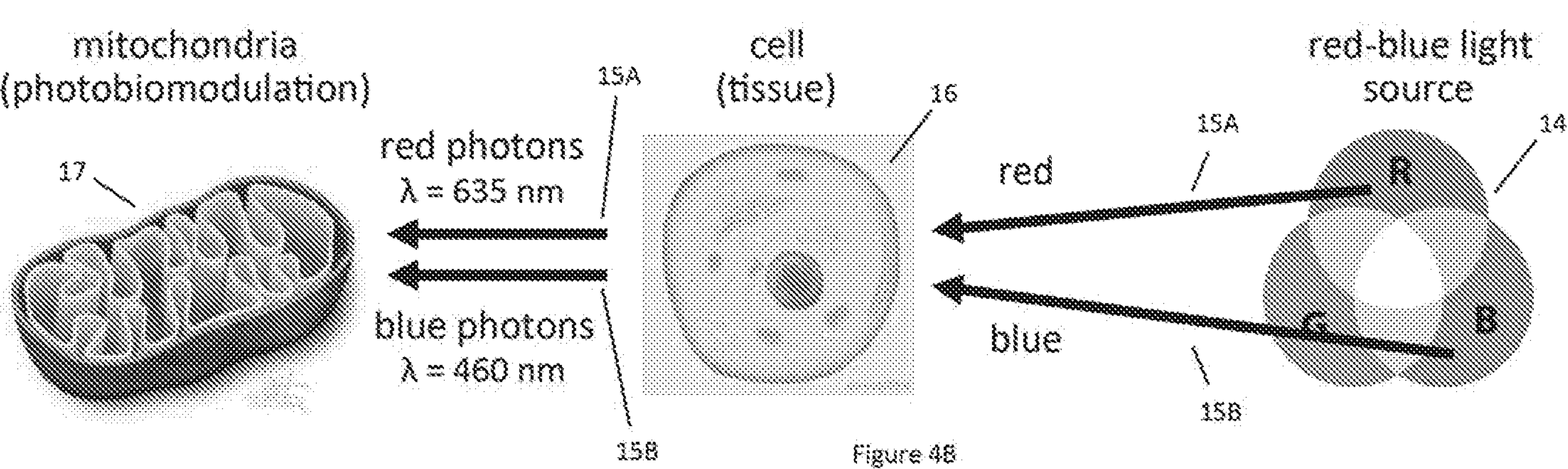


Figure 48

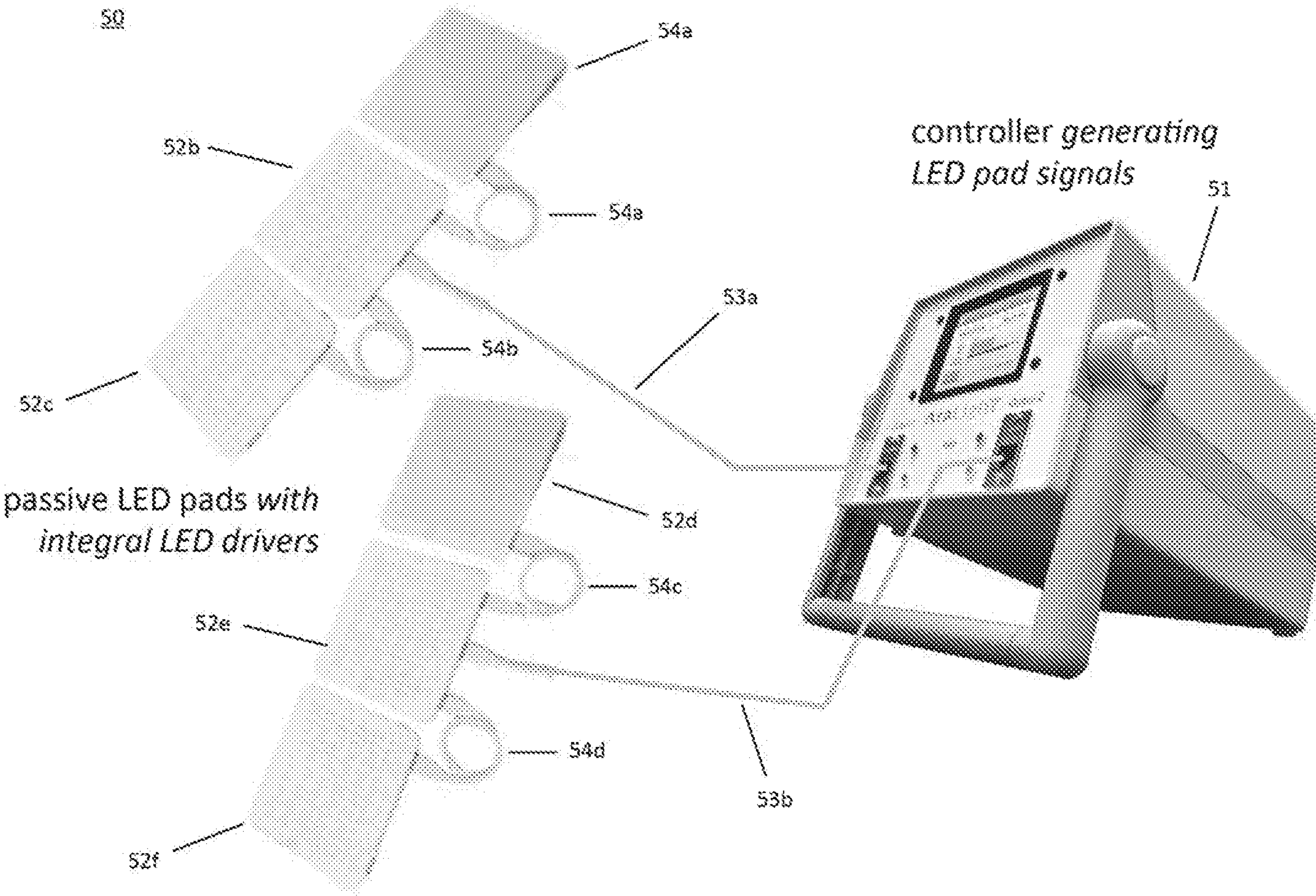


Figure 5

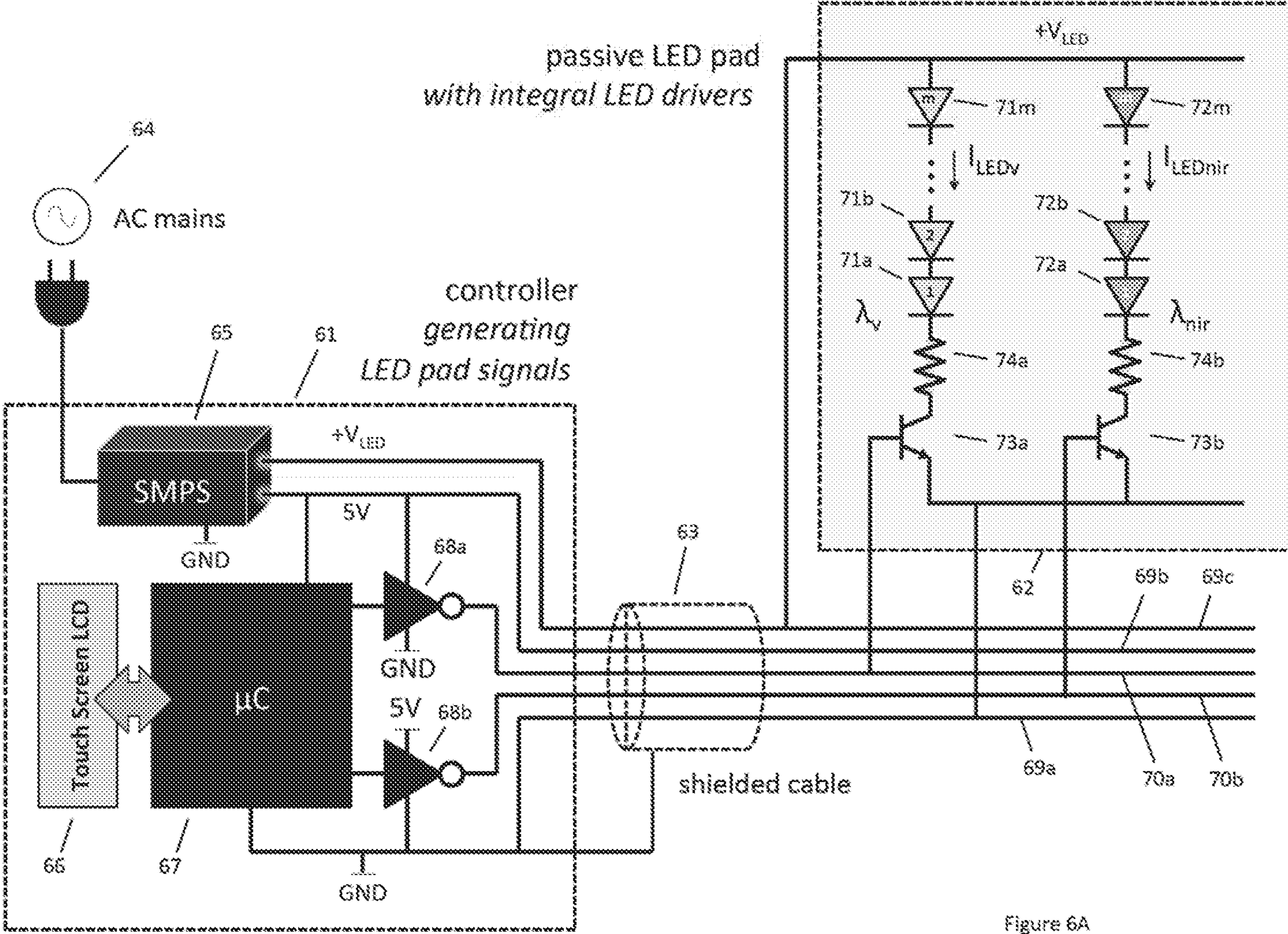


Figure 6A

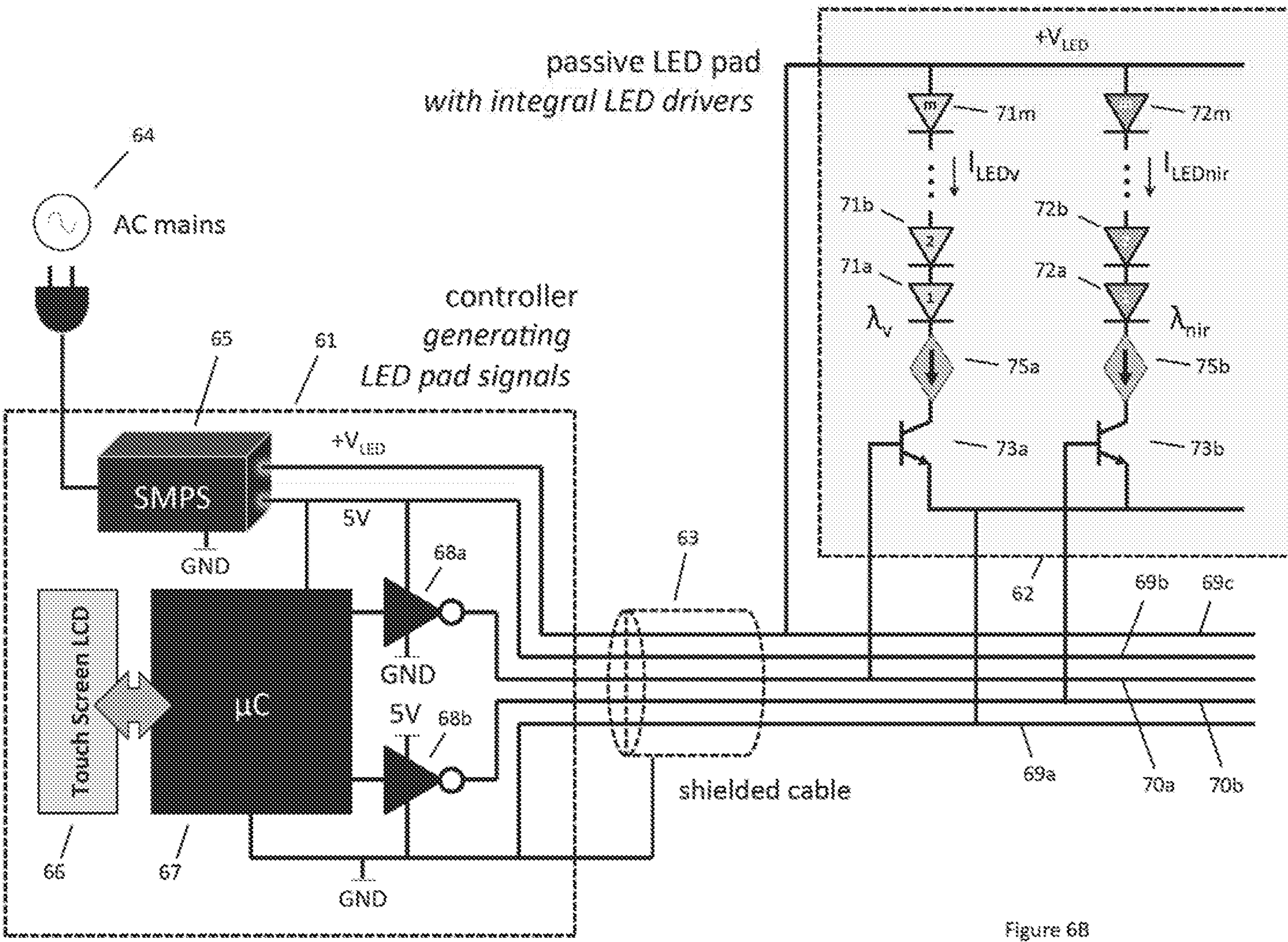


Figure 68

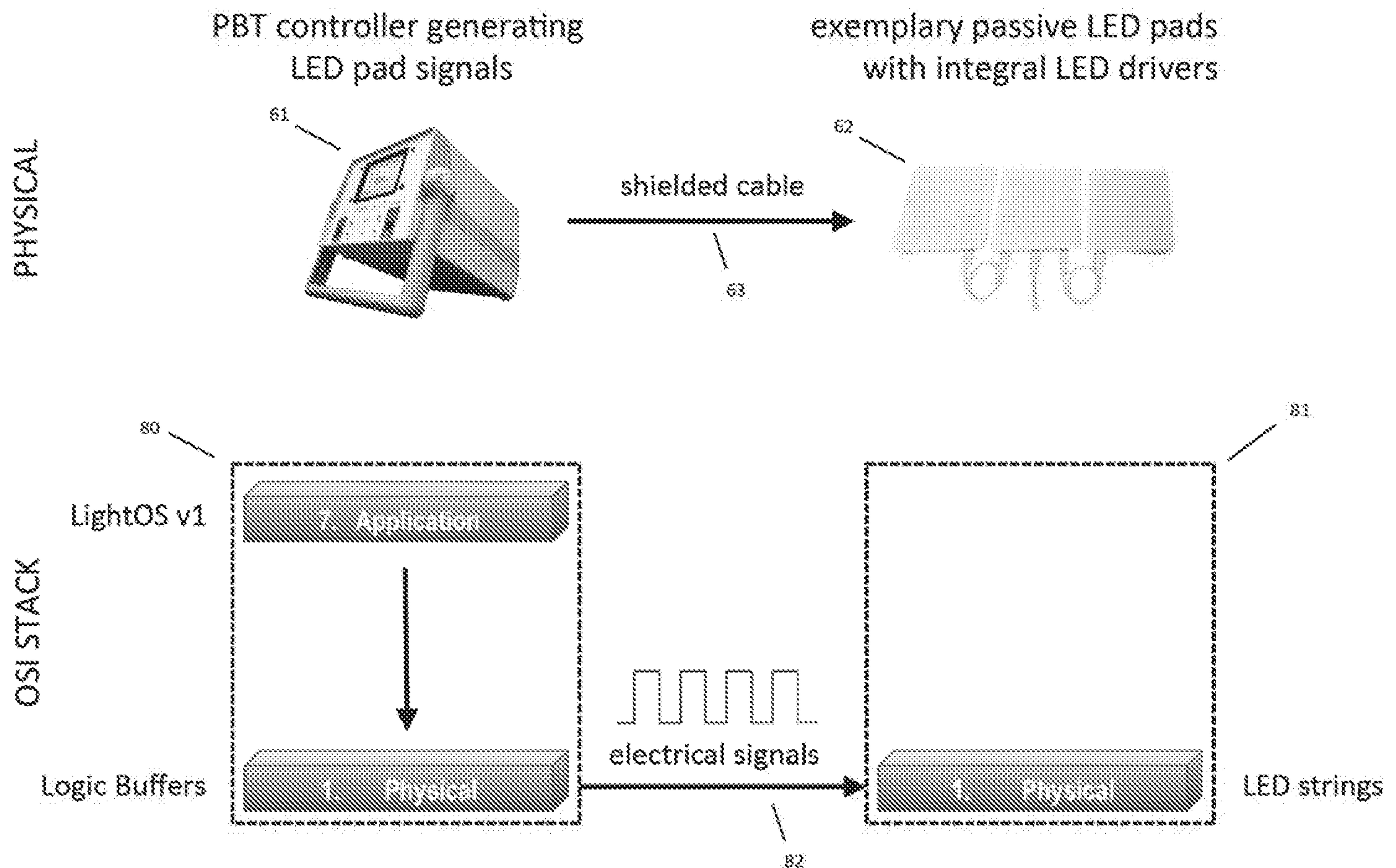


Figure 7

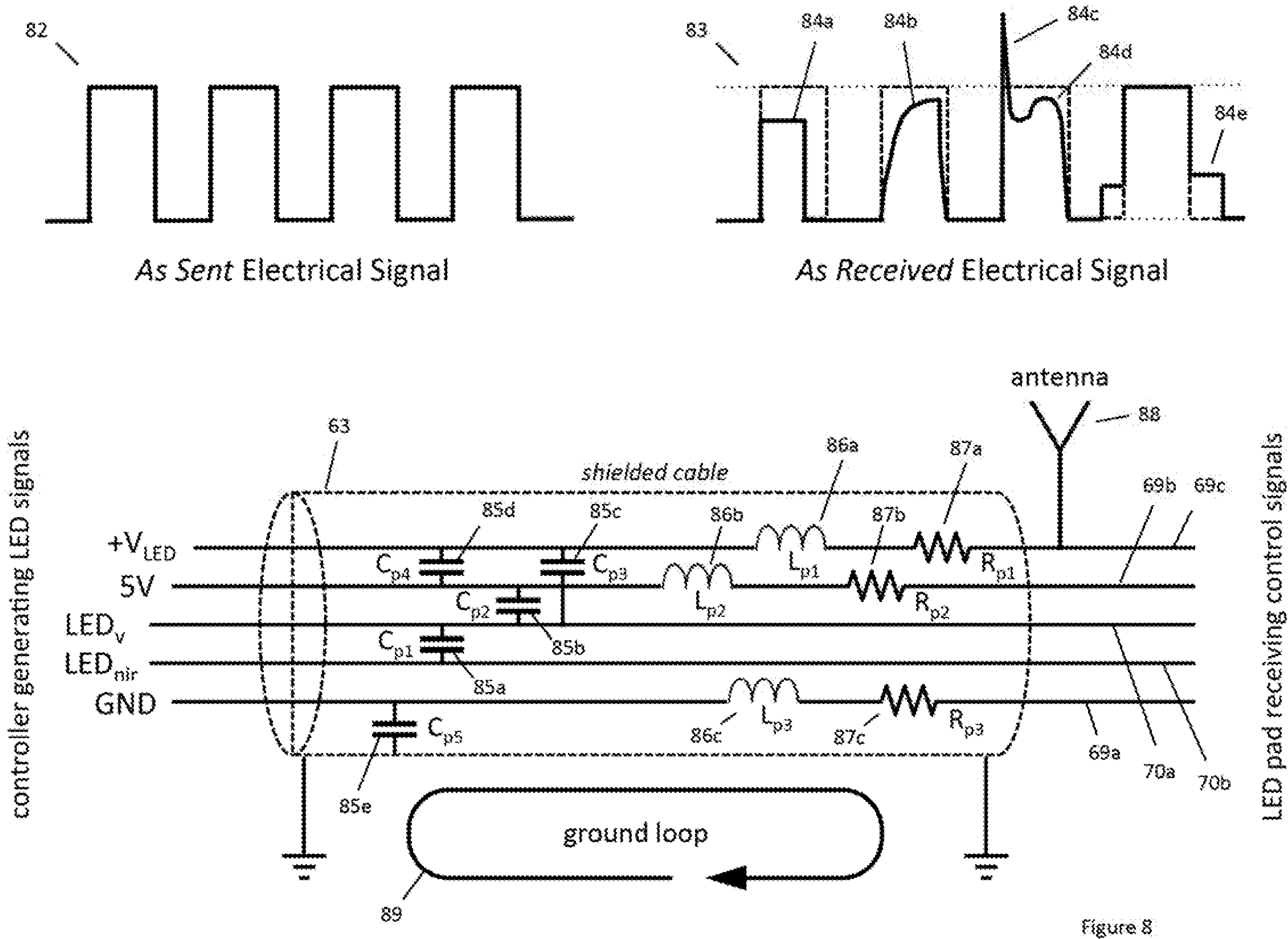


Figure 8

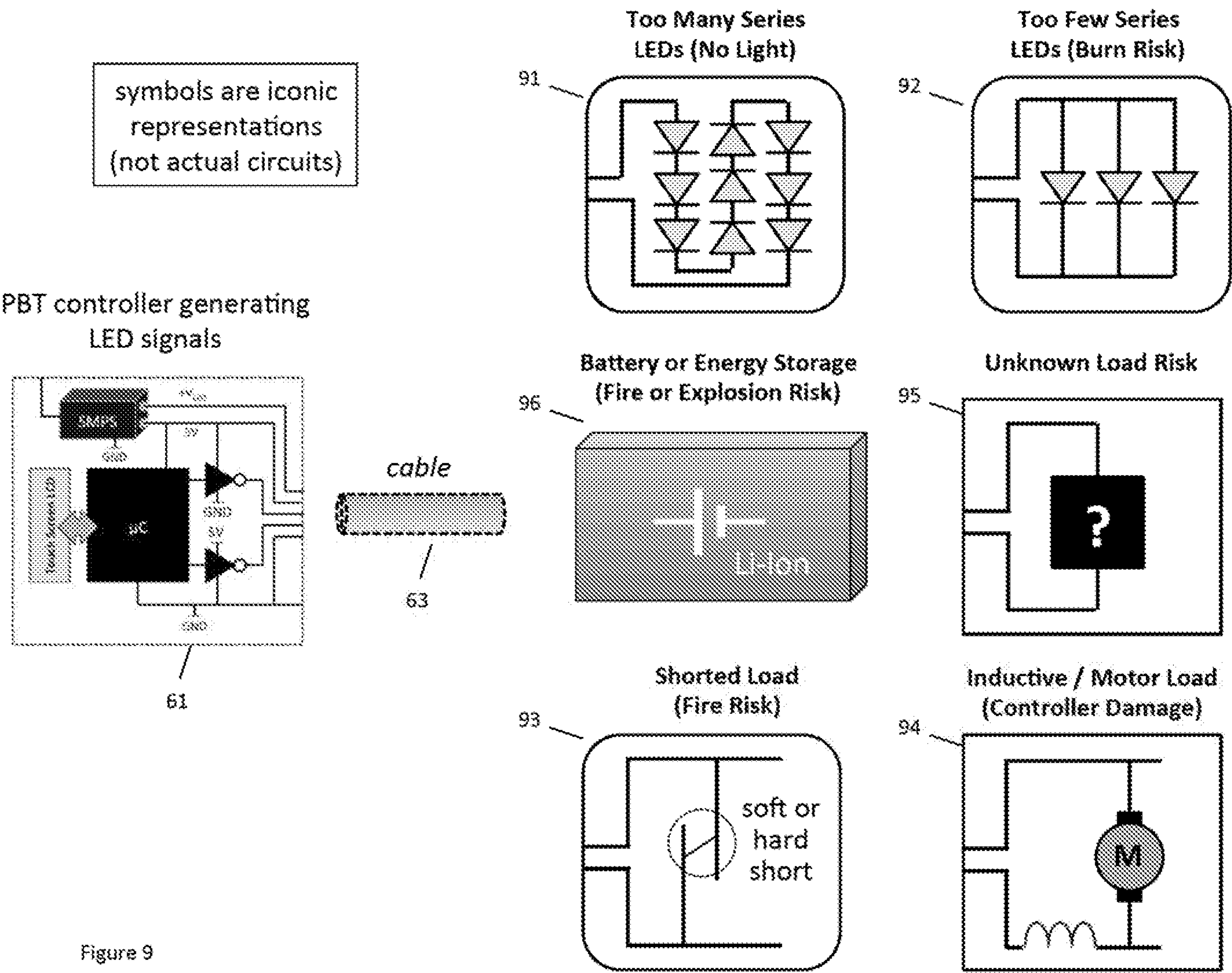


Figure 9

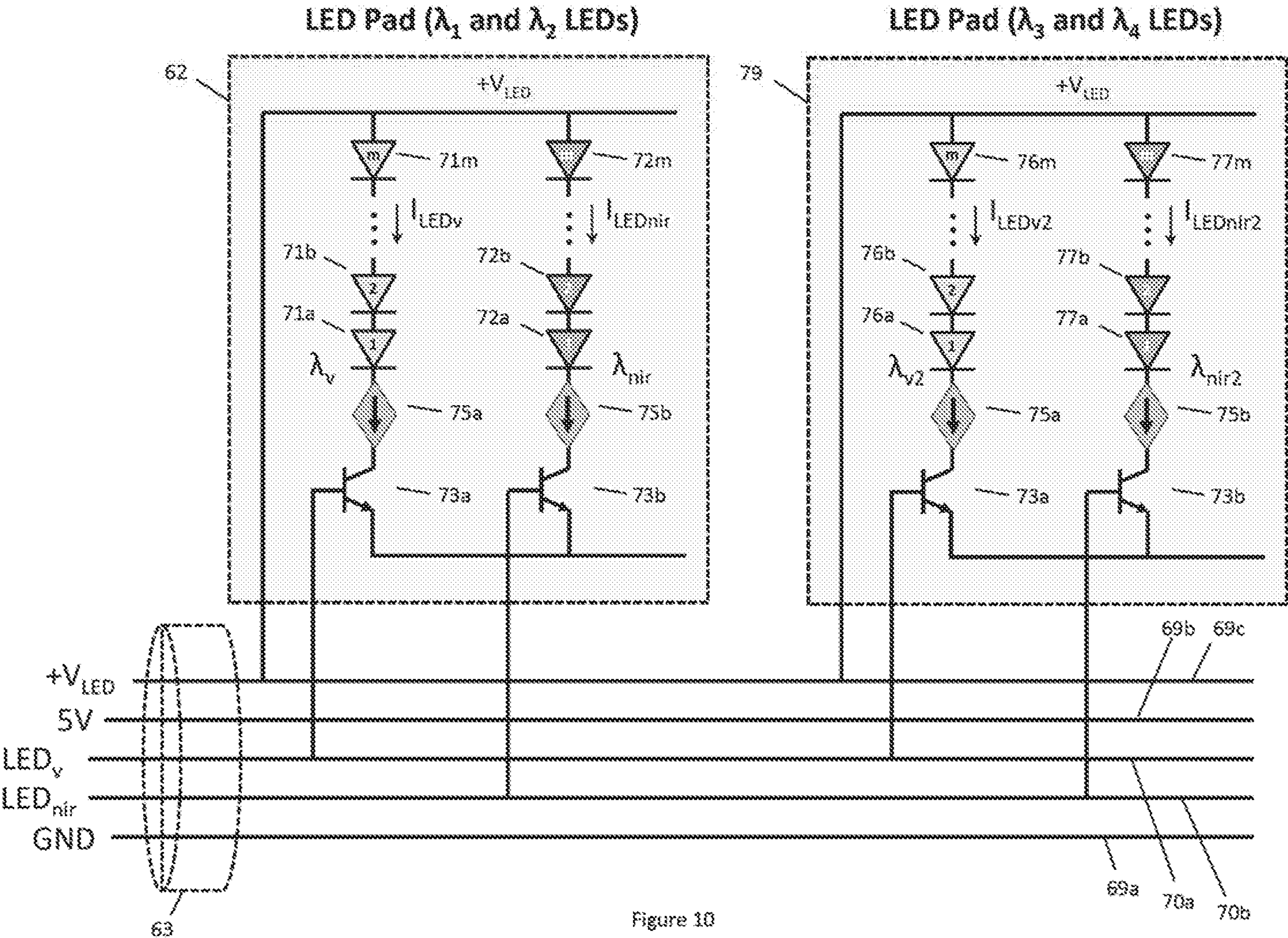


Figure 10

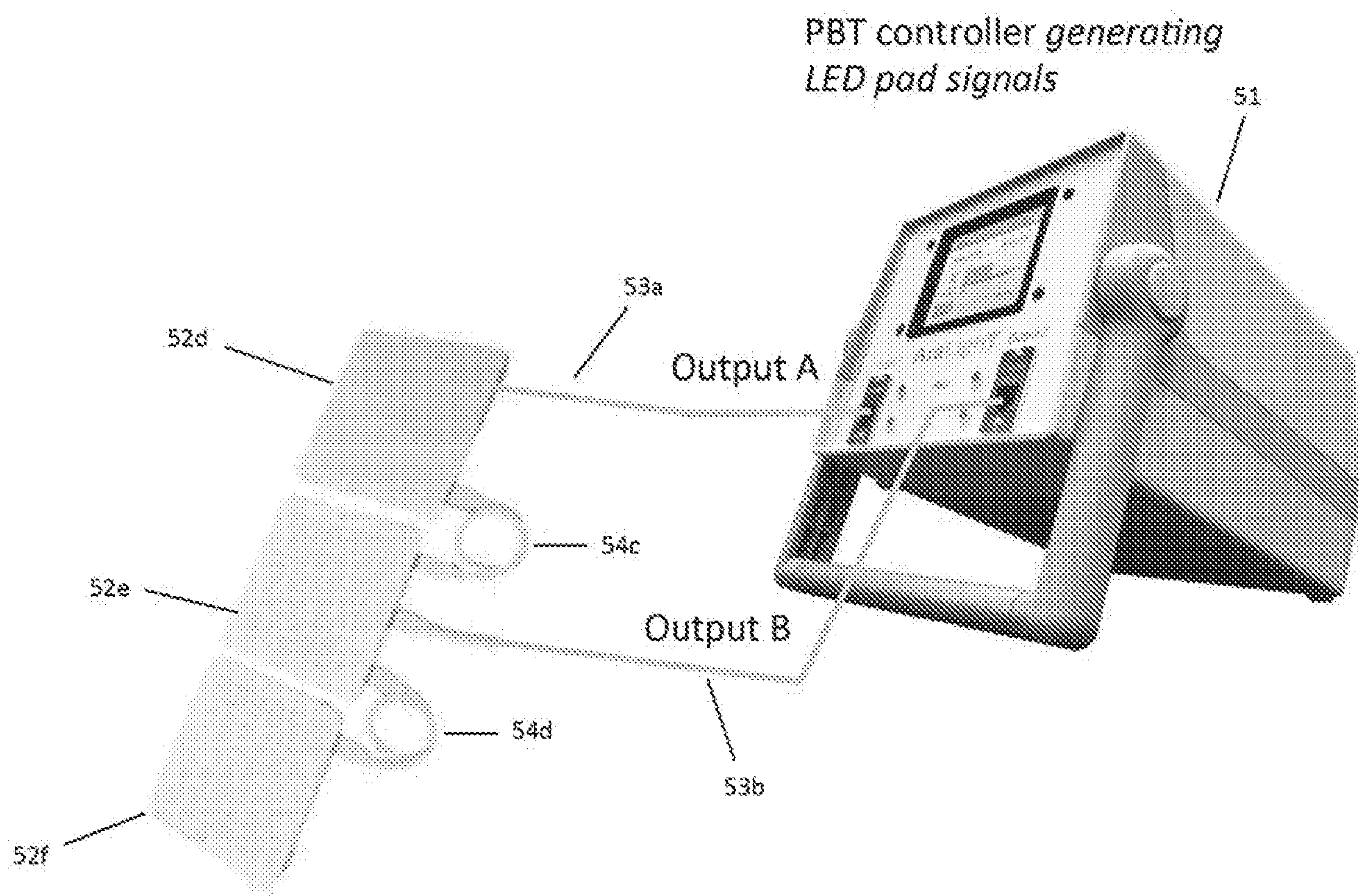


Figure 11A

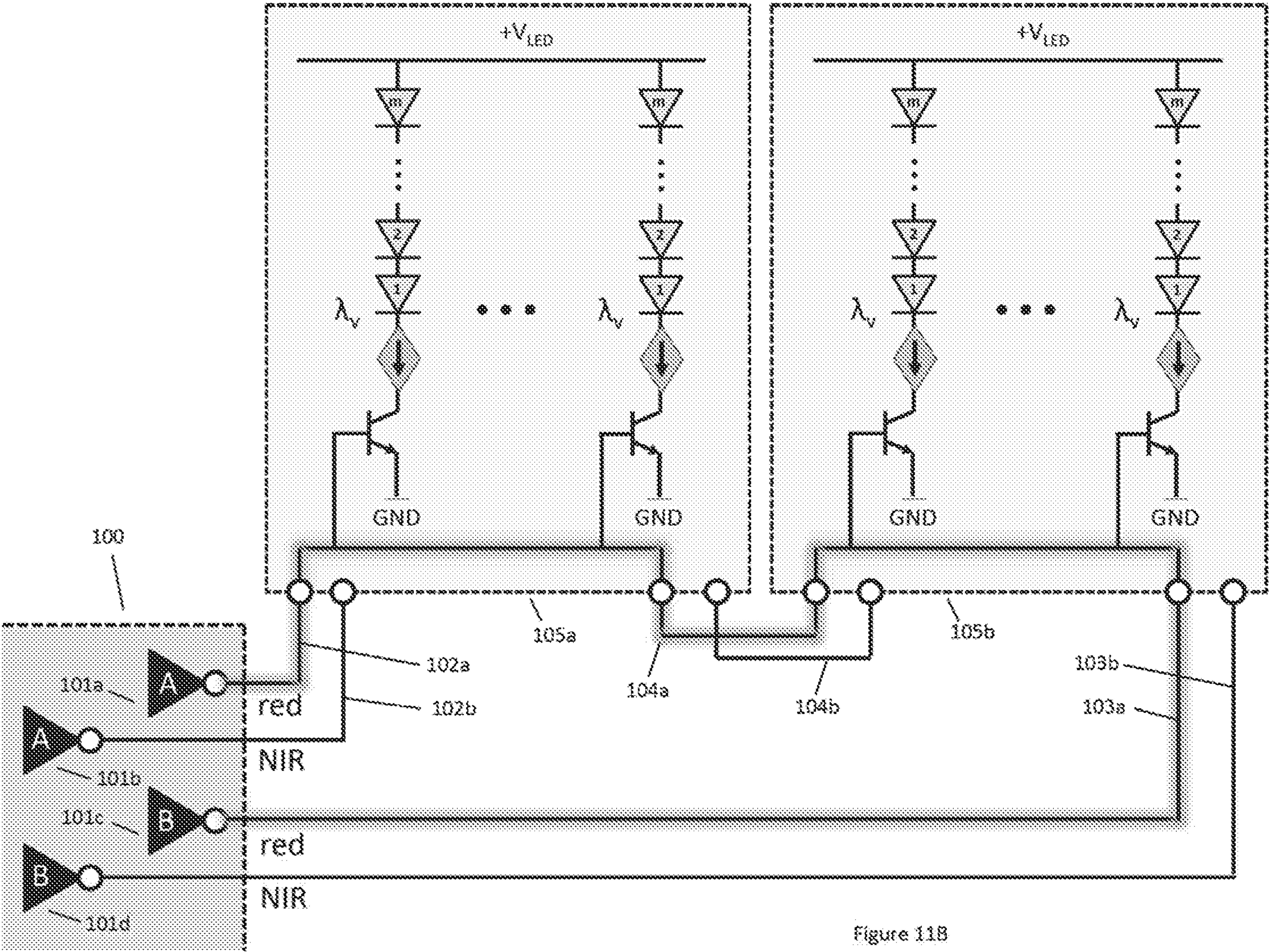


Figure 11B

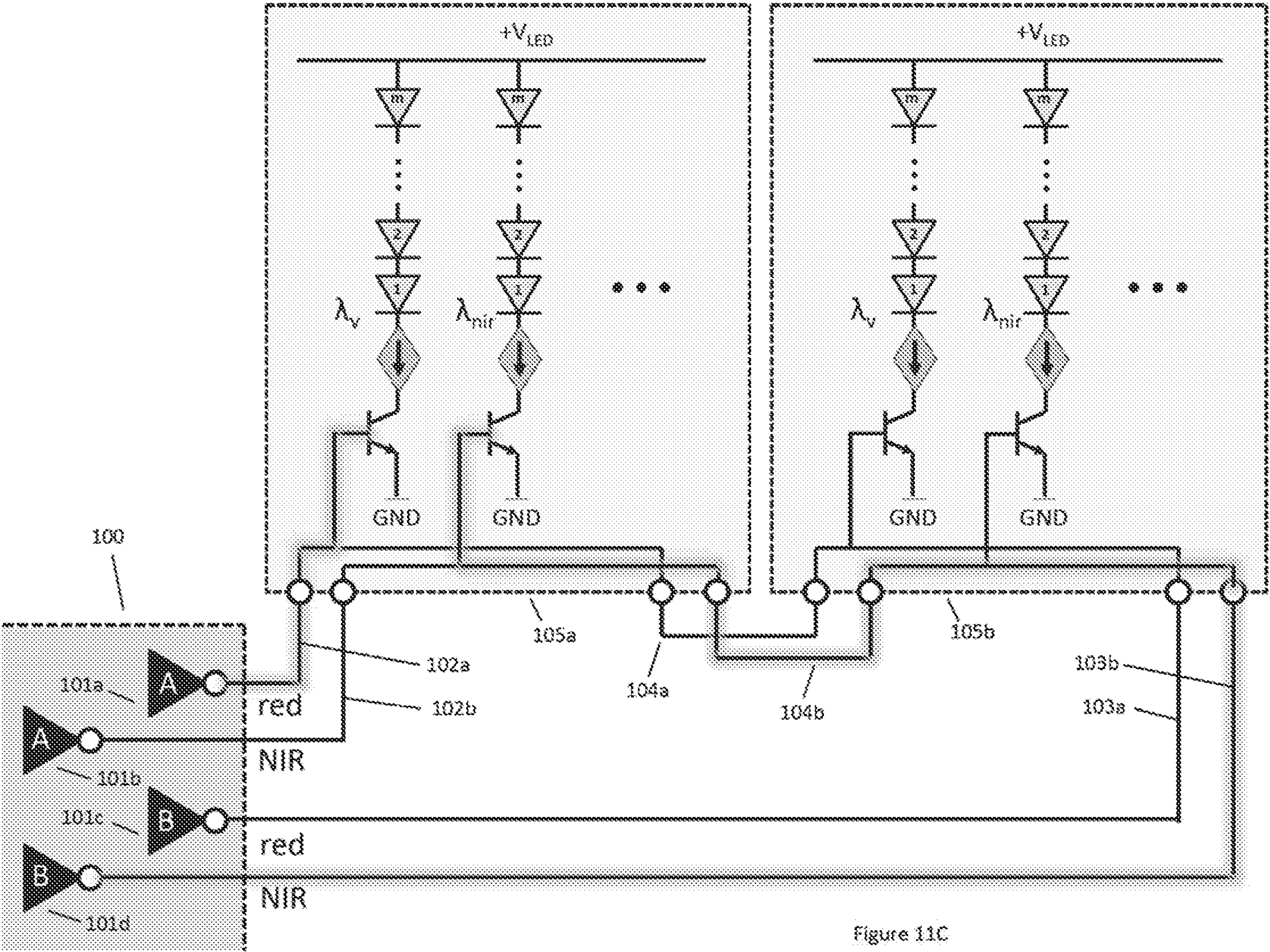


Figure 11C

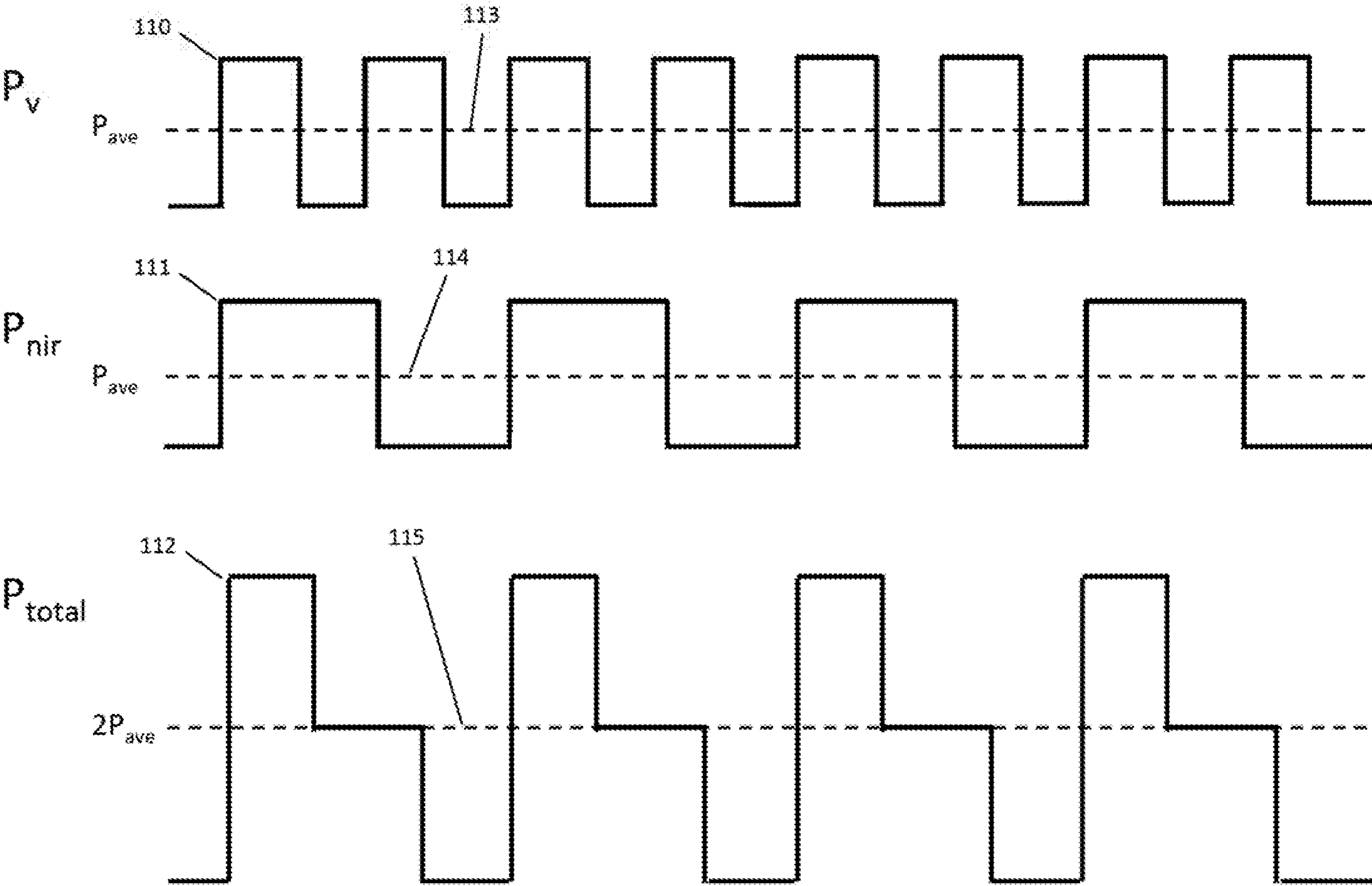


Figure 11D

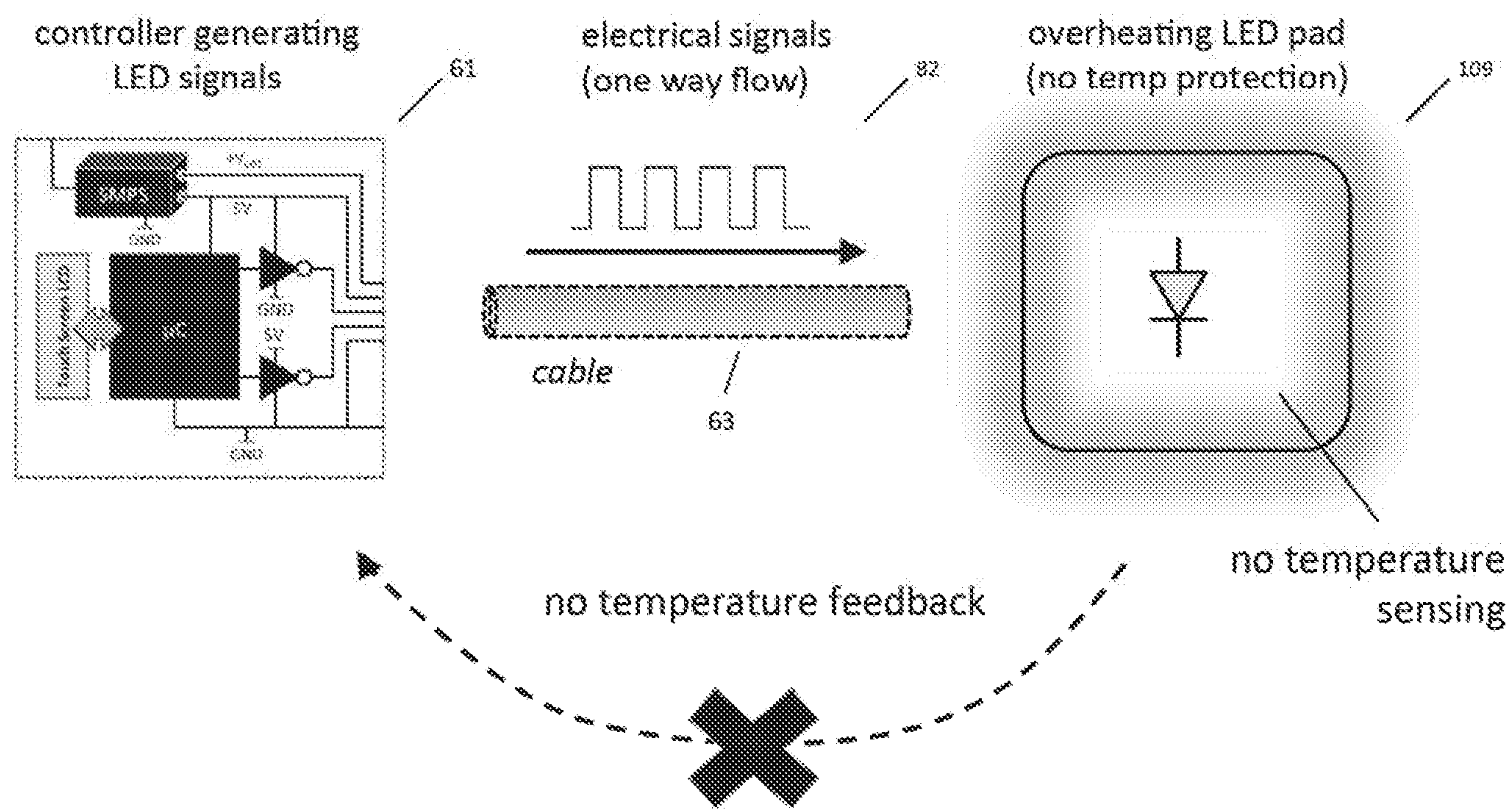


Figure 12

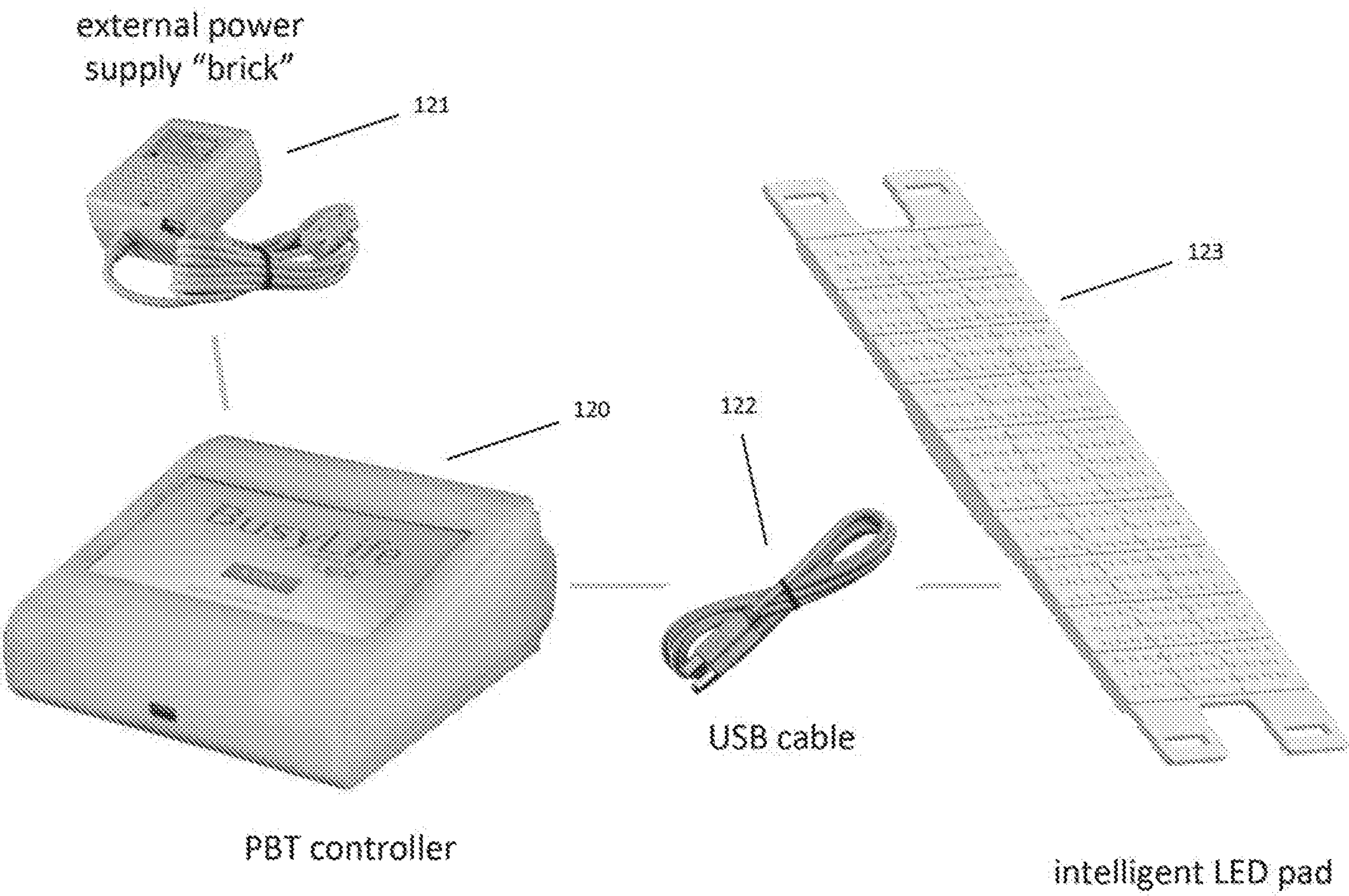


Figure 13

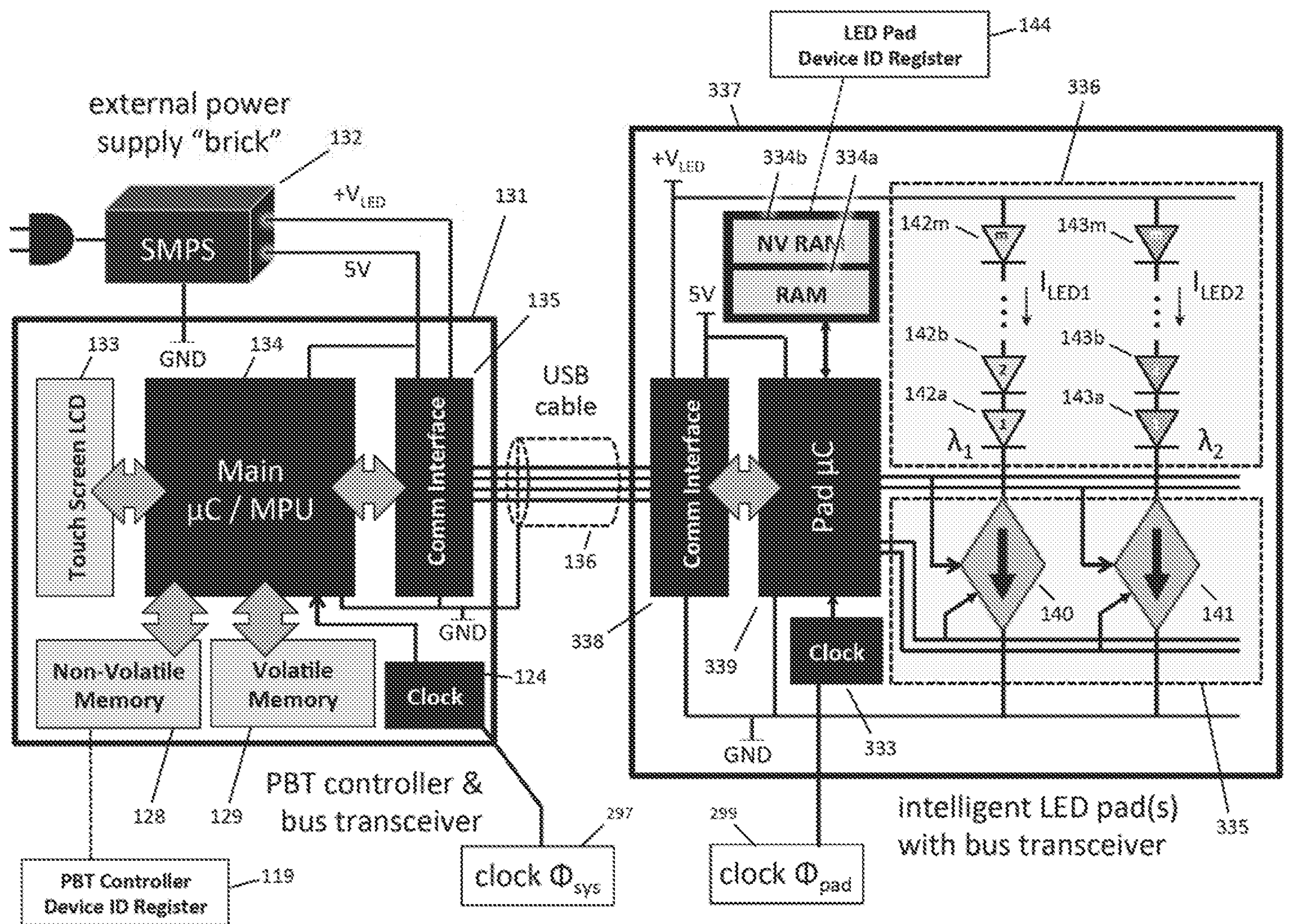


Figure 14

PHYSICAL

OSI STACK

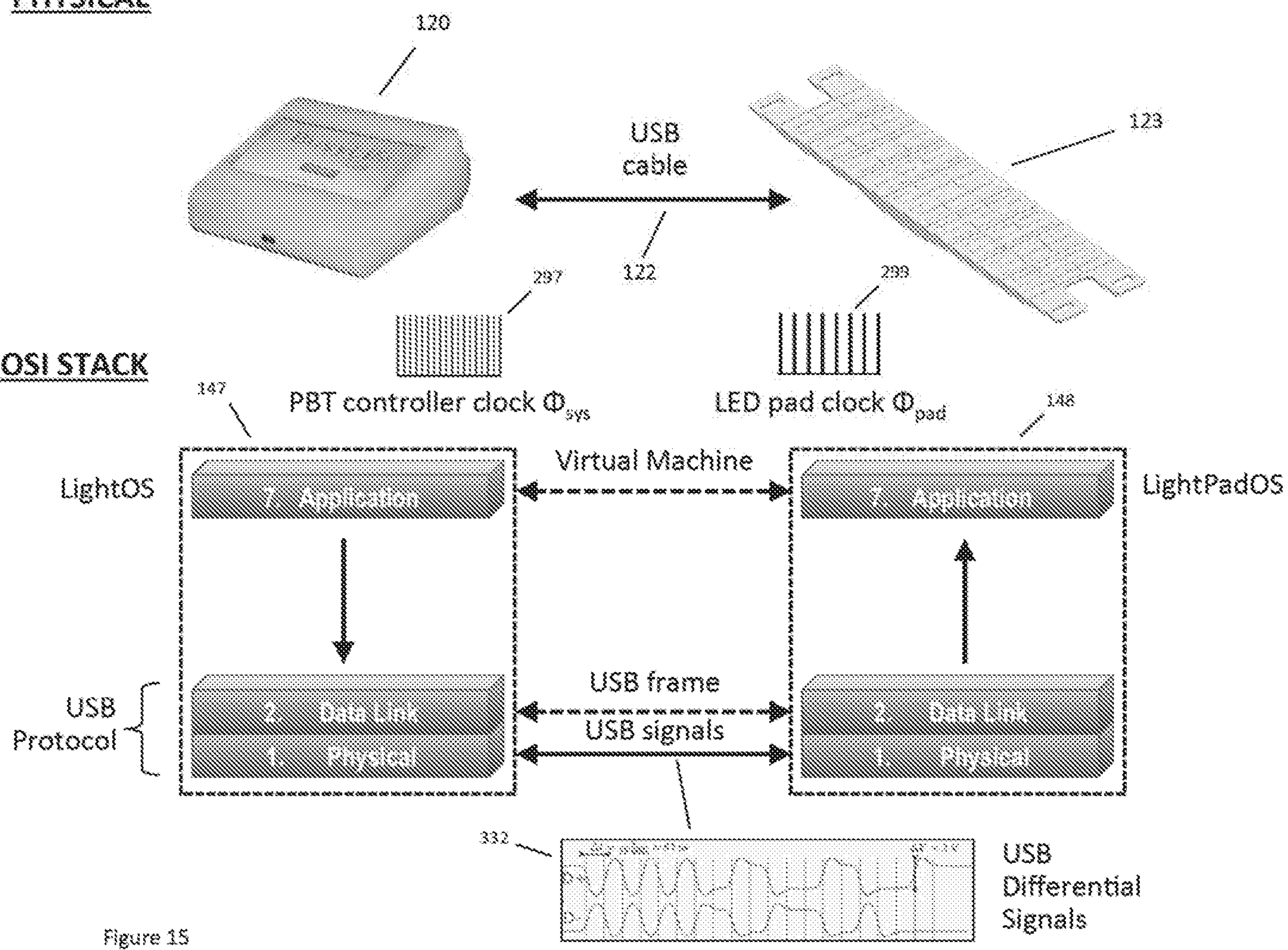
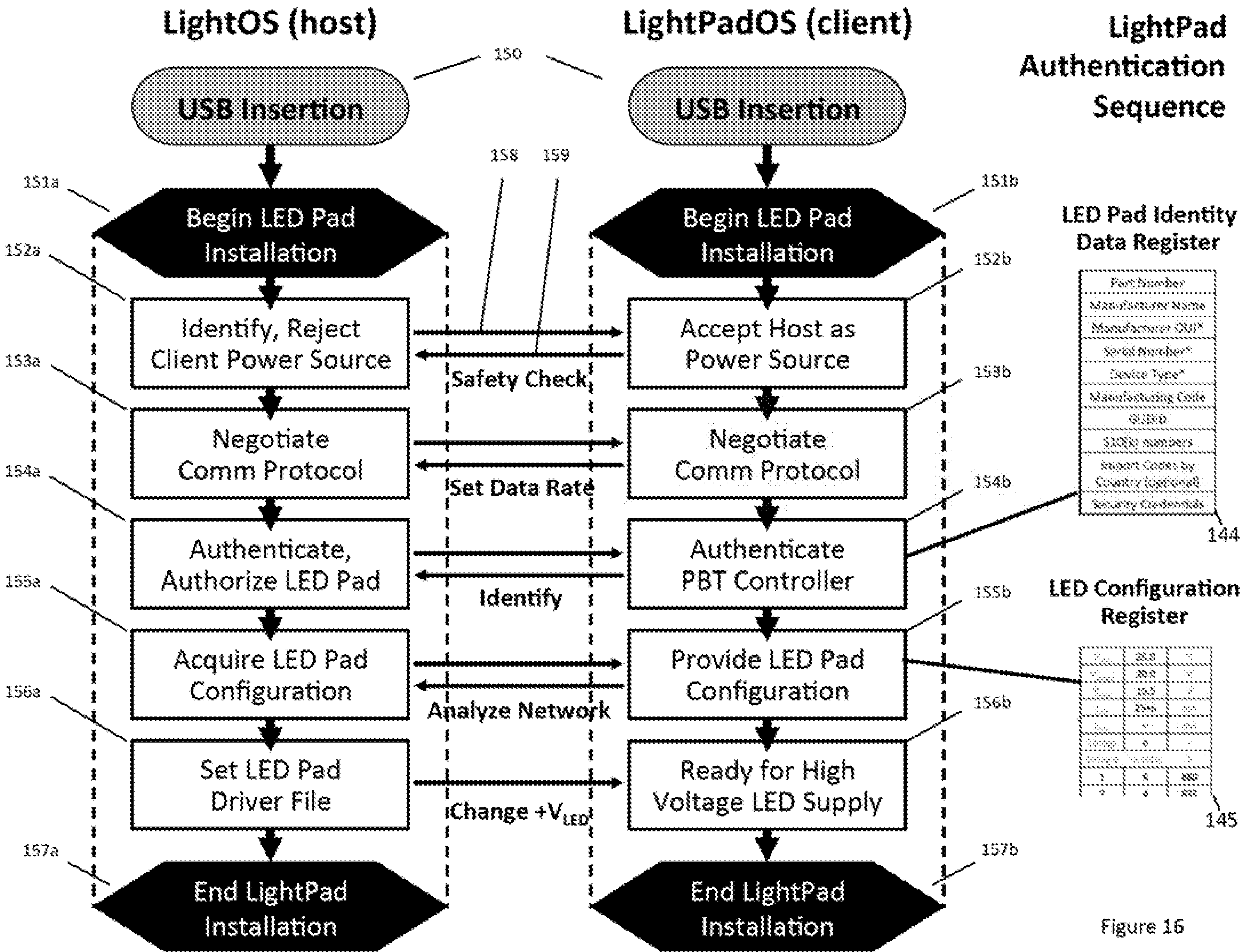


Figure 15



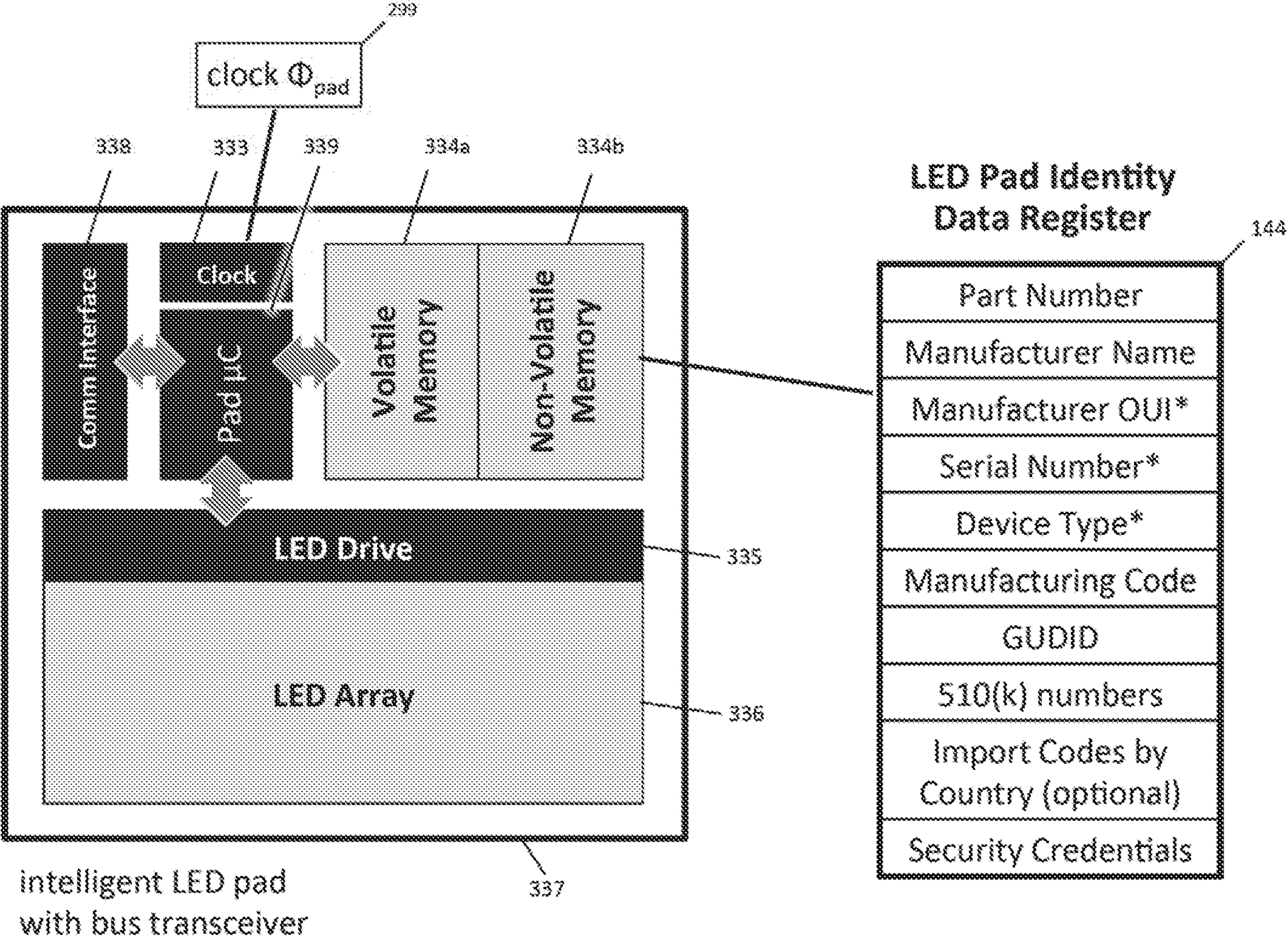


Figure 17

* Device ID codes used in MAC address

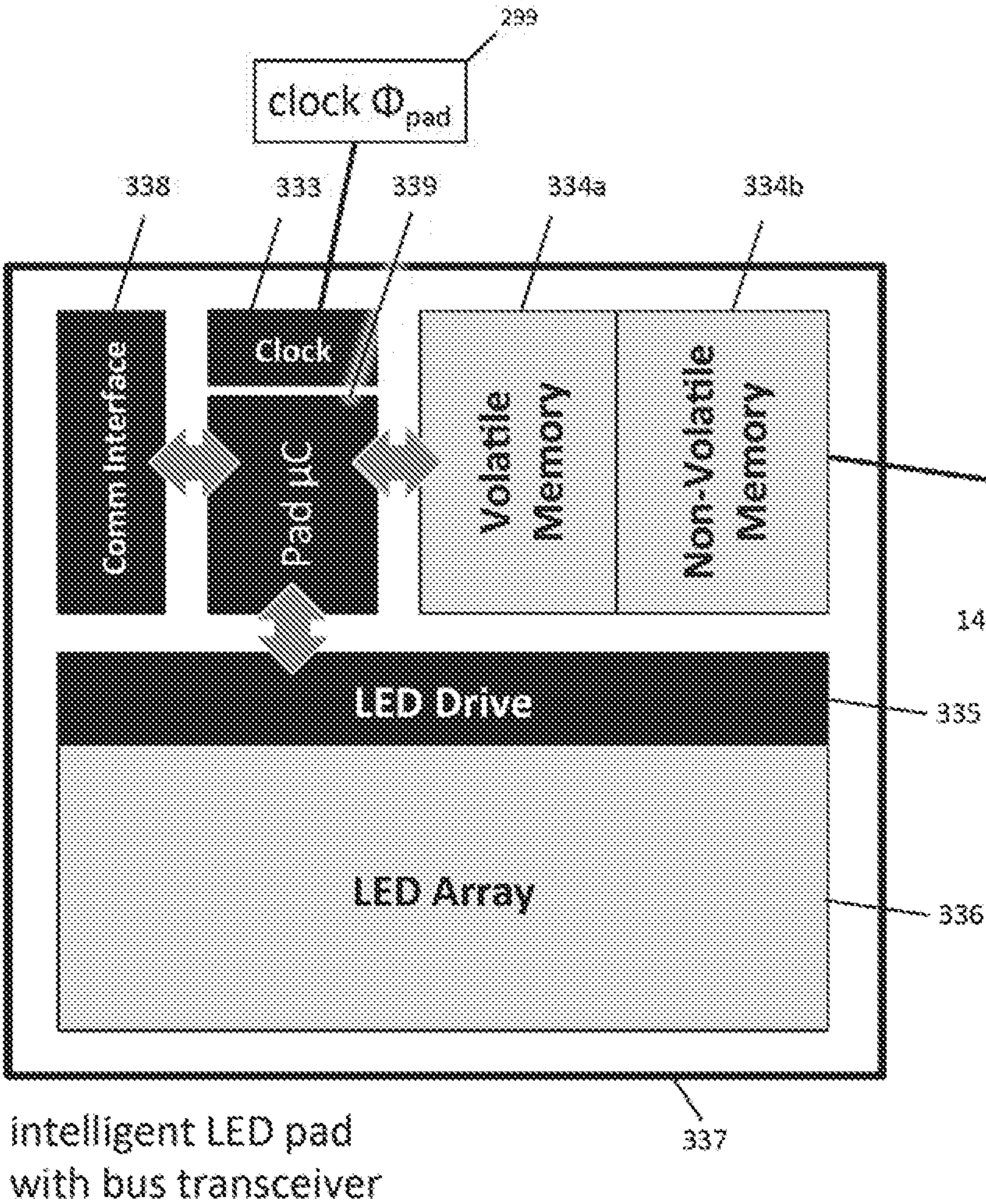


Figure 18

LED Configuration Register

V_{min}	19.0	V
V_{target}	20.0	V
V_{max}	25.0	V
I_{min}	600	mA
I_{max}	1500	mA
α ratio	1,000,016	—
Strings	n	—
String #	m LEDs	λ
1	6	880
2	4	635
3	4	450
4	6	880
5	4	635
6	4	450
⋮	⋮	⋮
n th	4	450

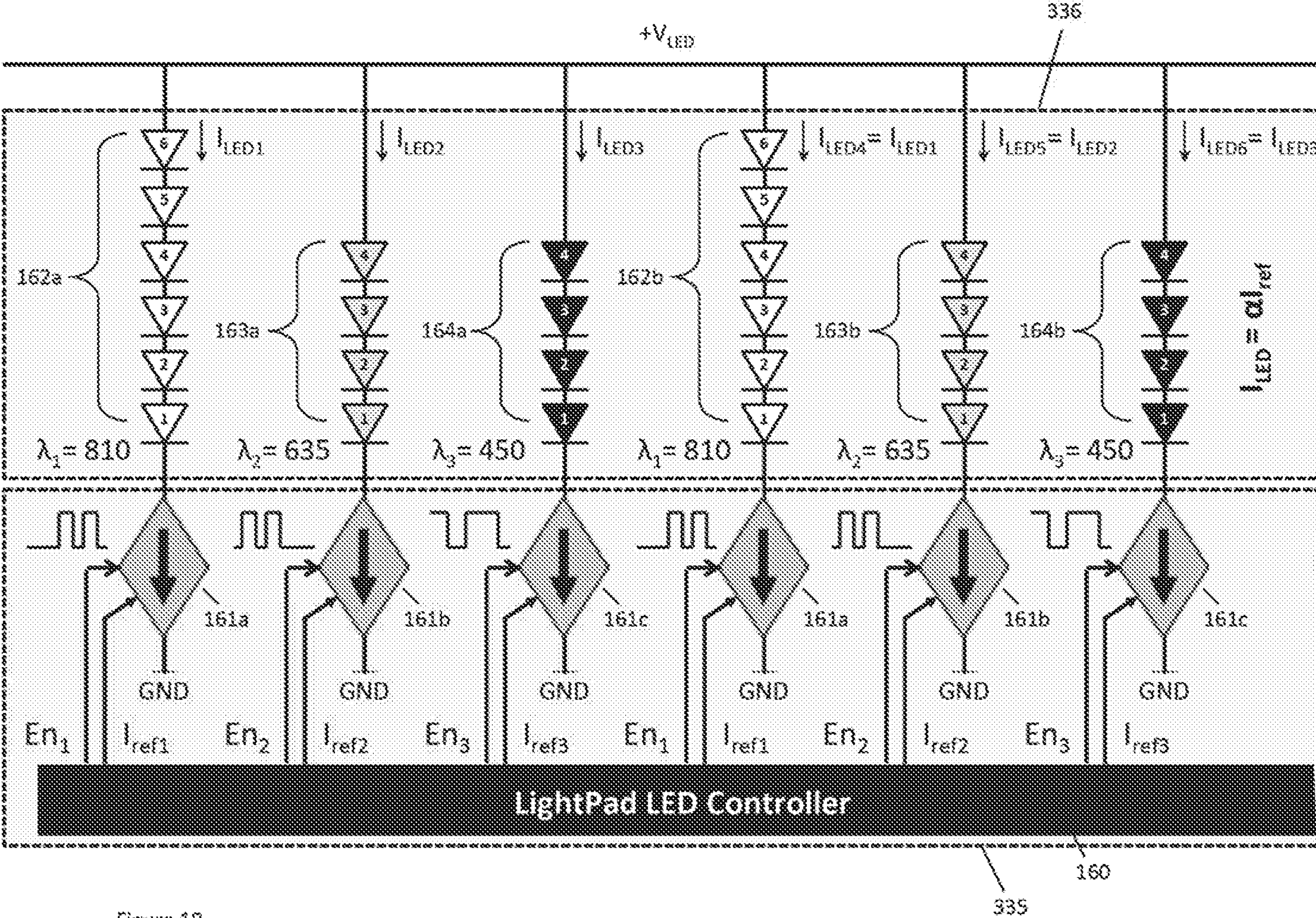


Figure 19

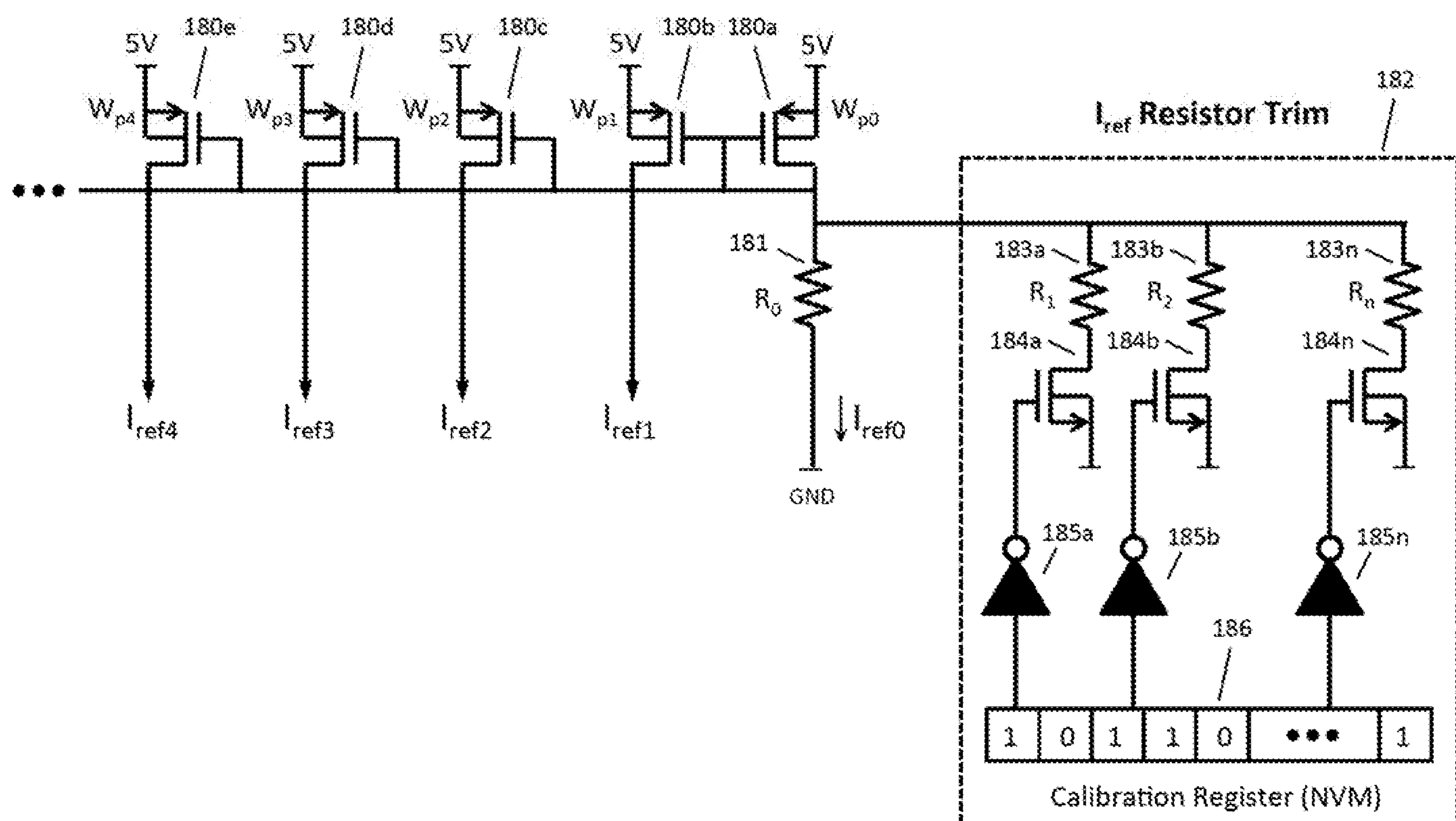


Figure 21A

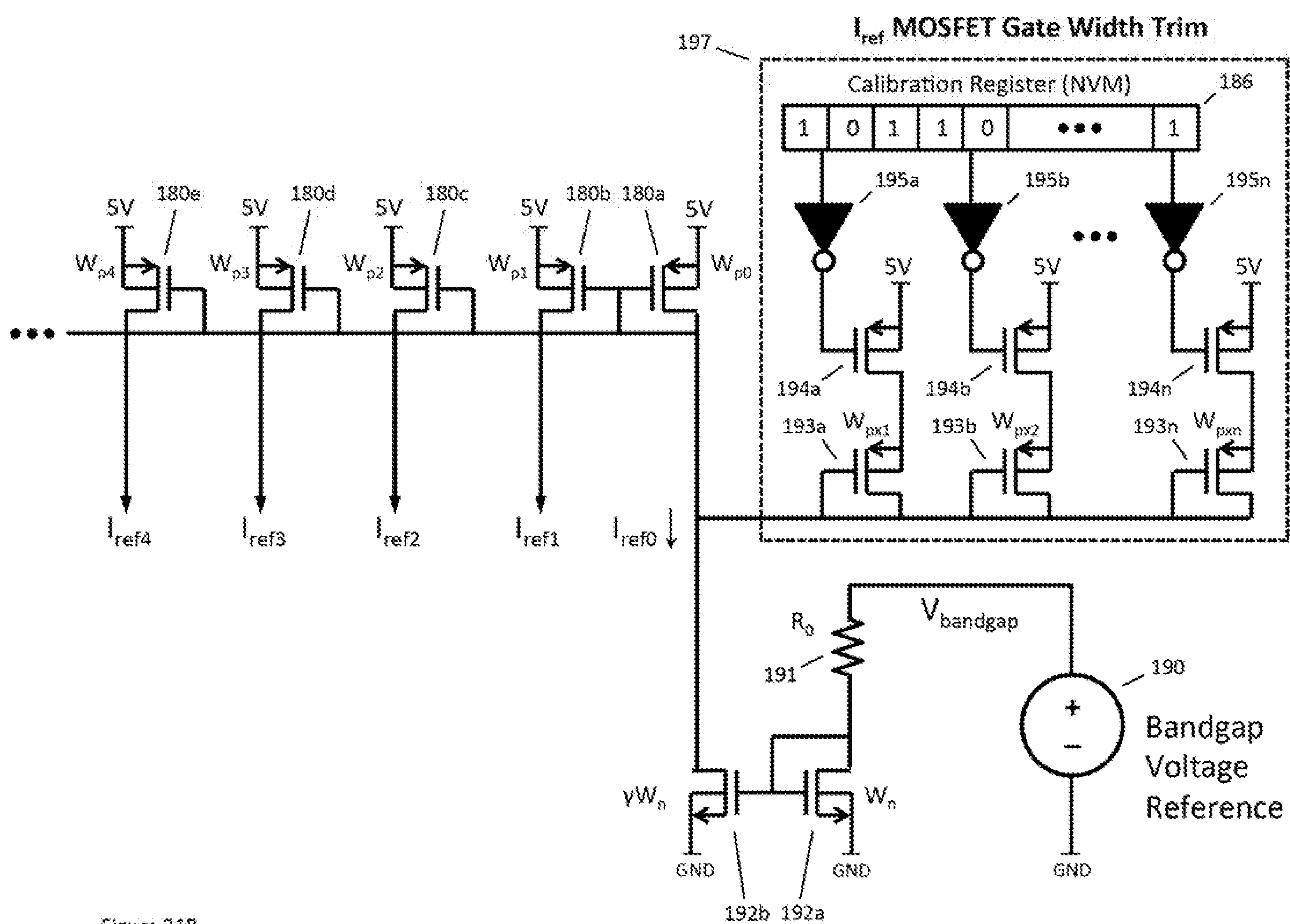


Figure 21B

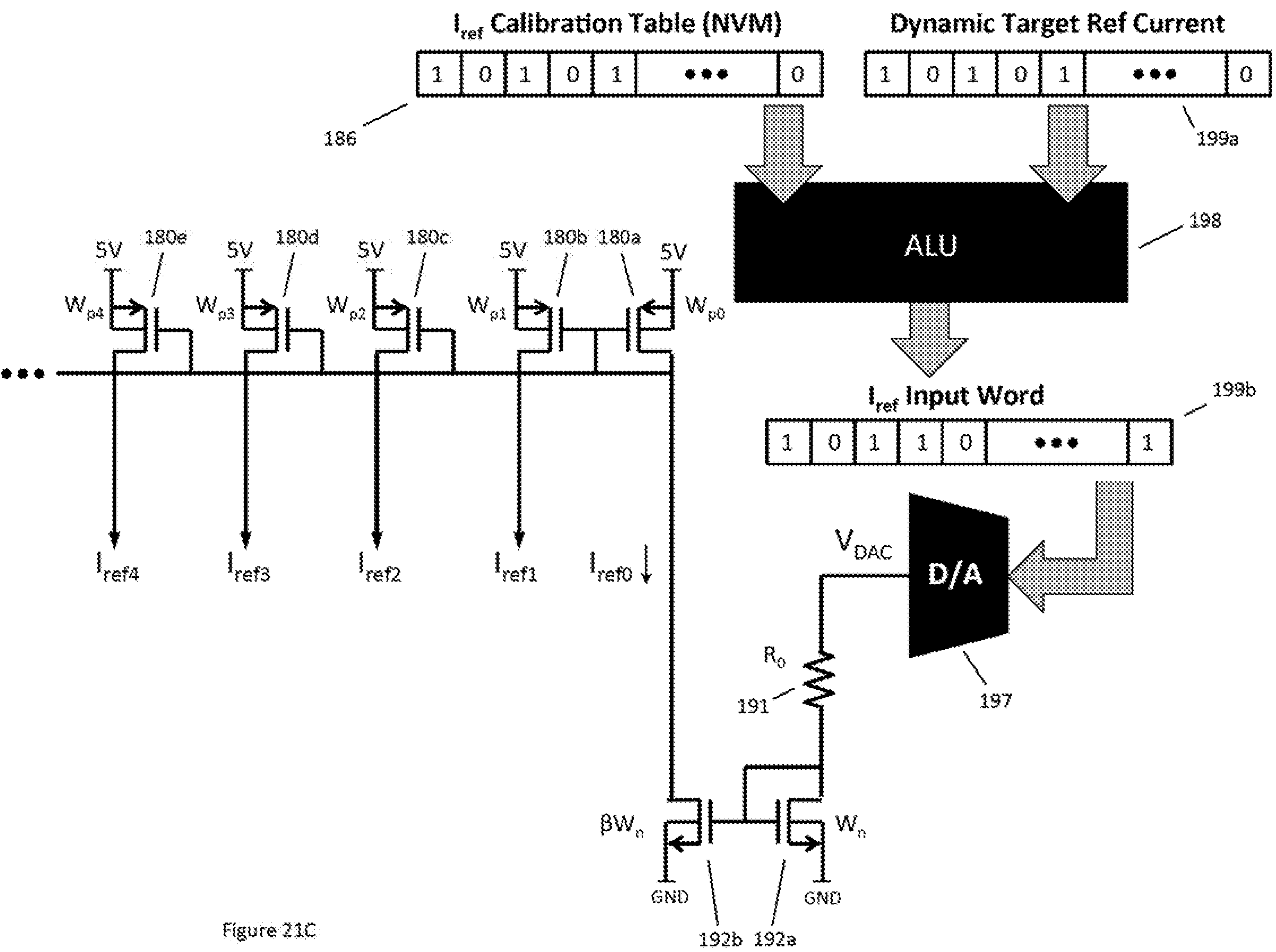


Figure 21C

Function

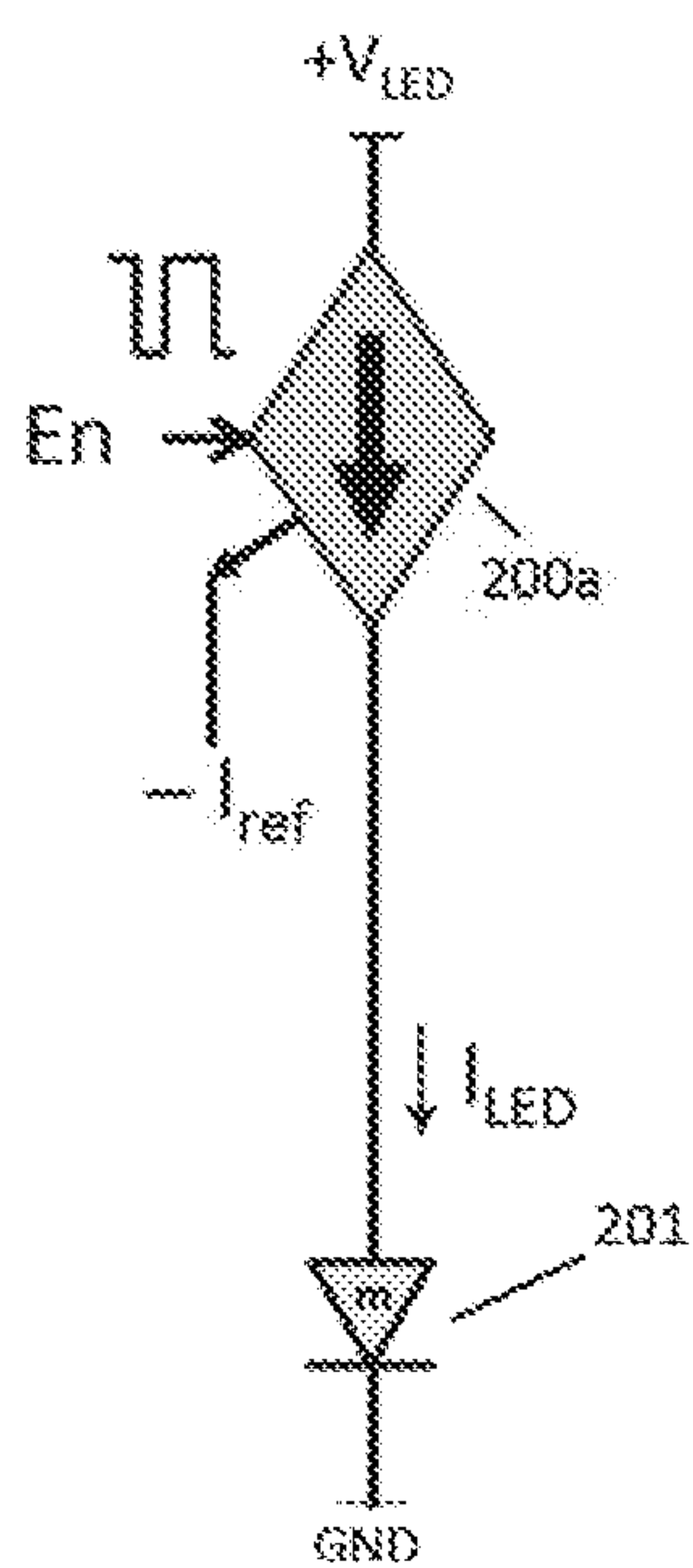


Figure 22A

Block Diagram

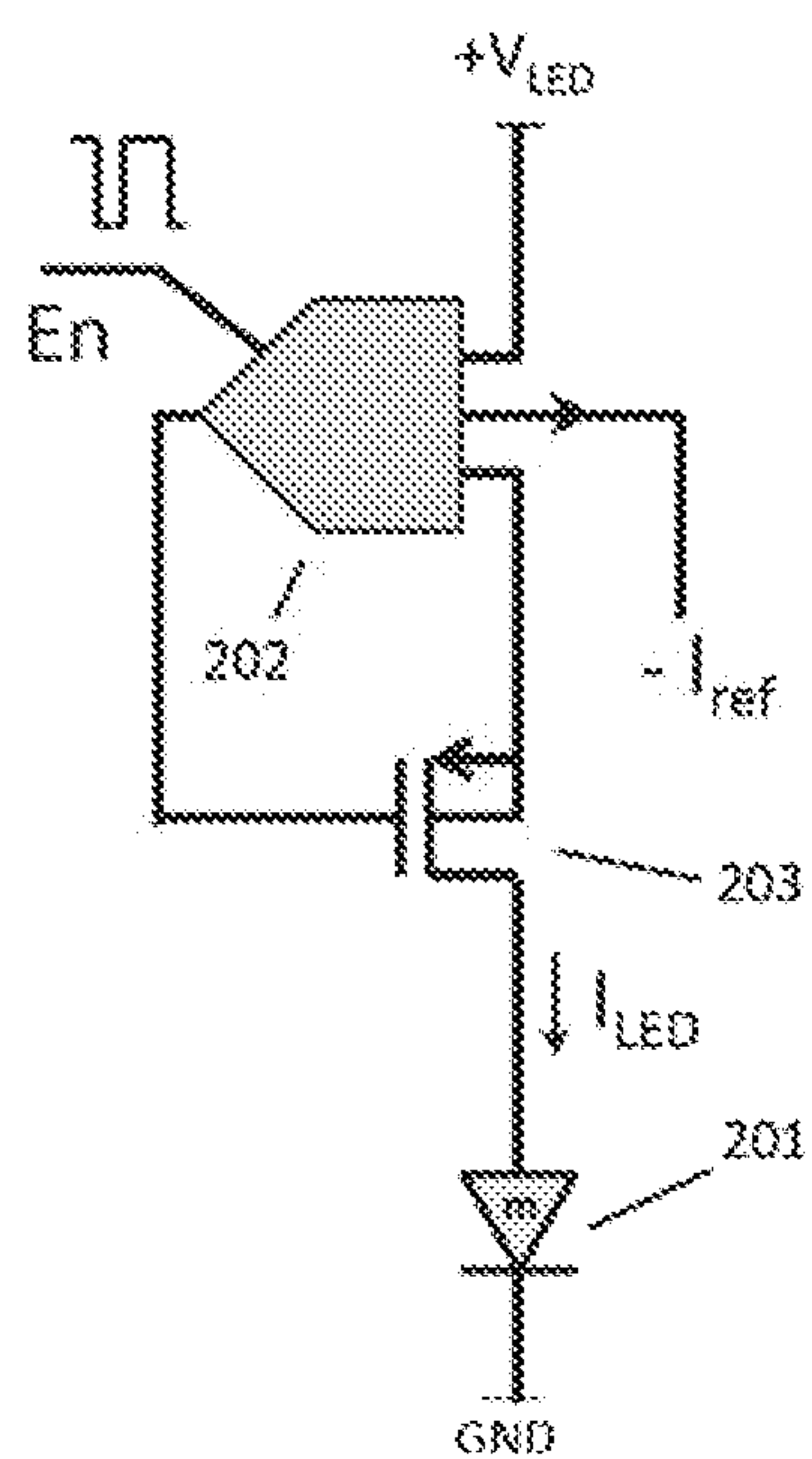


Figure 228

Circuit Schematic

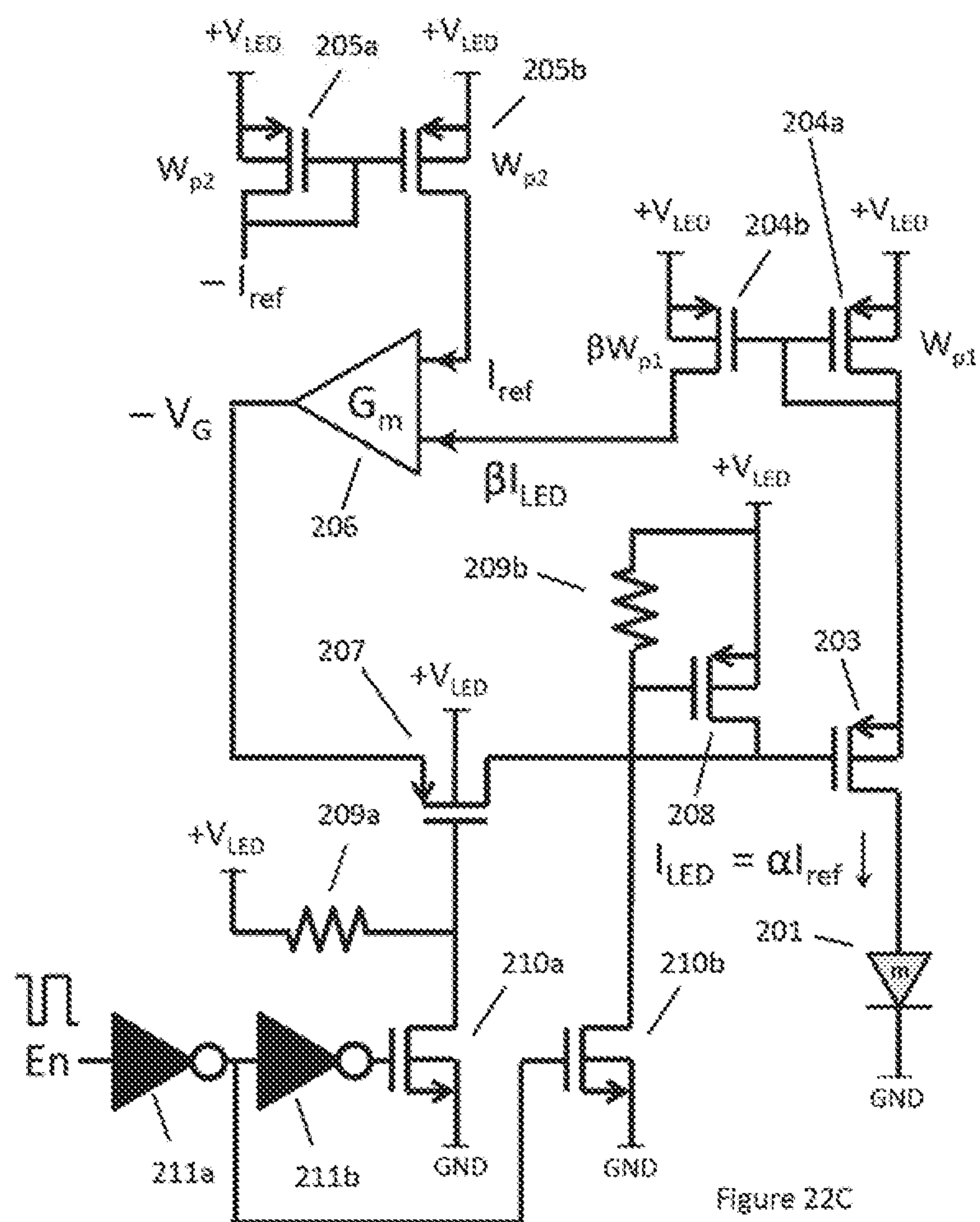


Figure 22C

Function

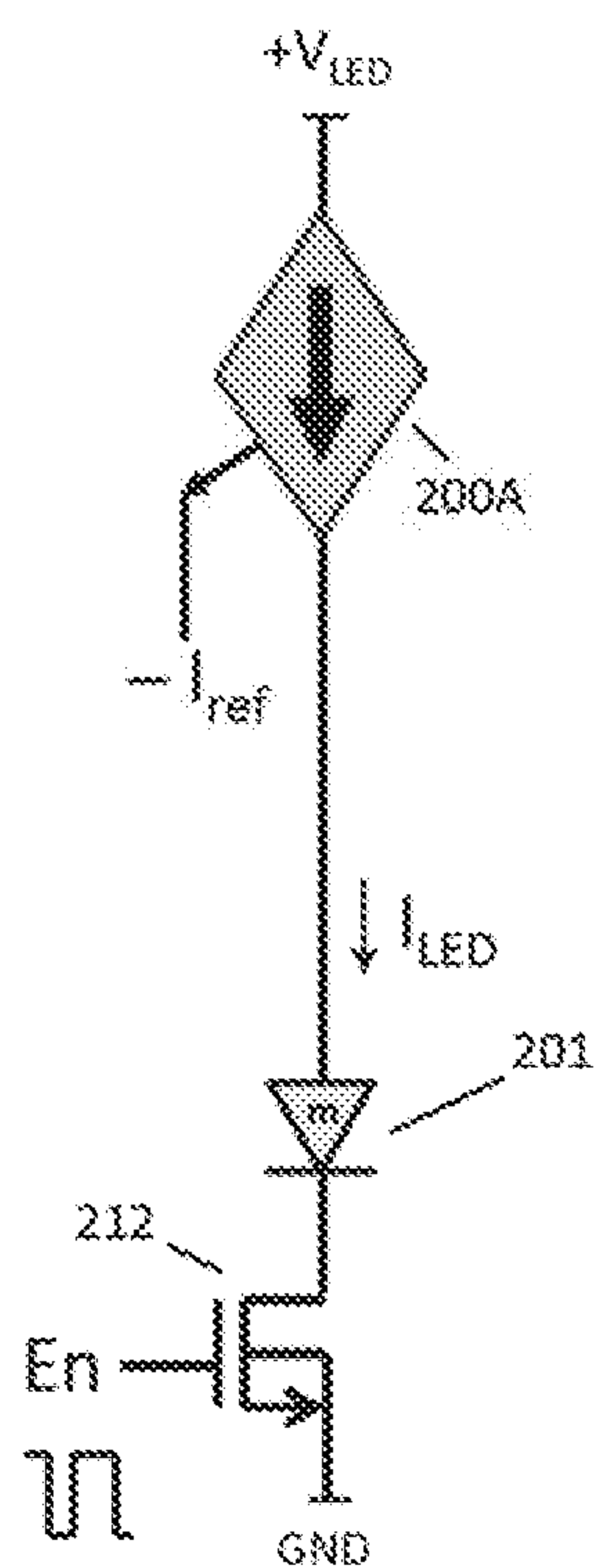


Figure 29A

Block Diagram

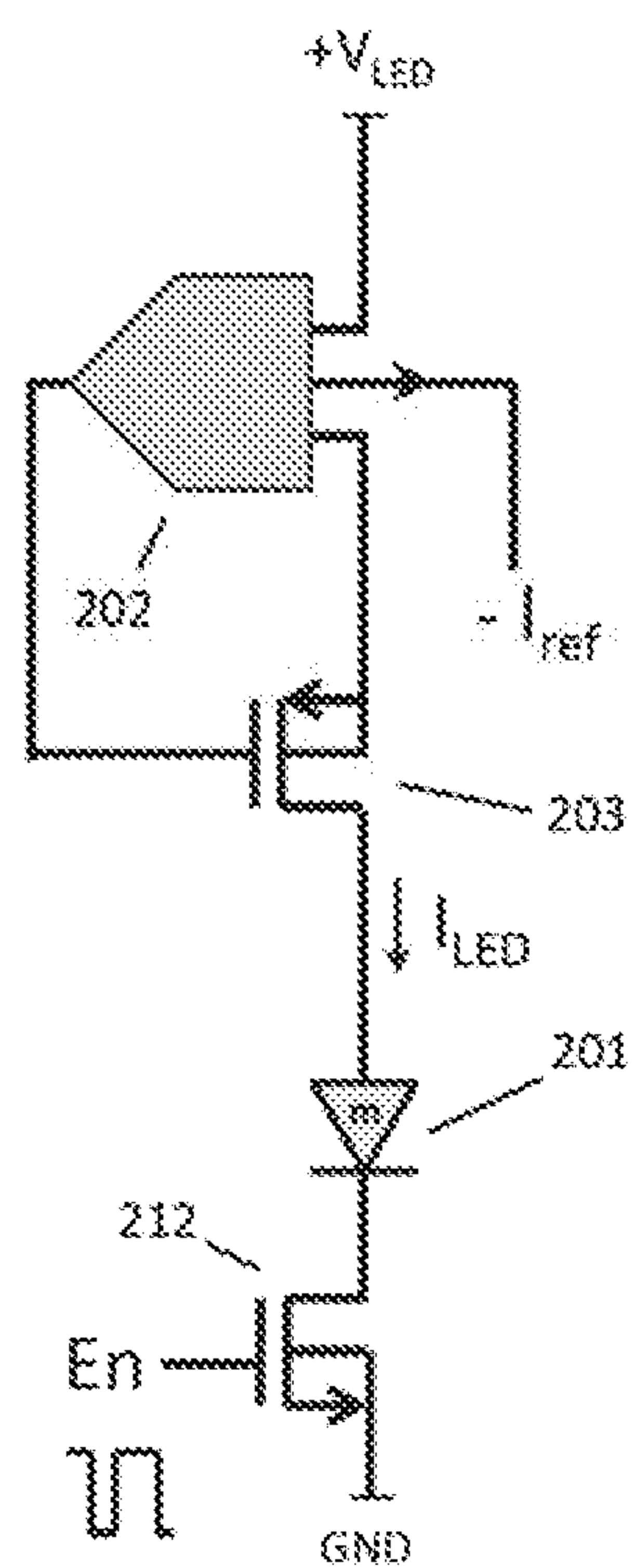


Figure 238

Circuit Schematic

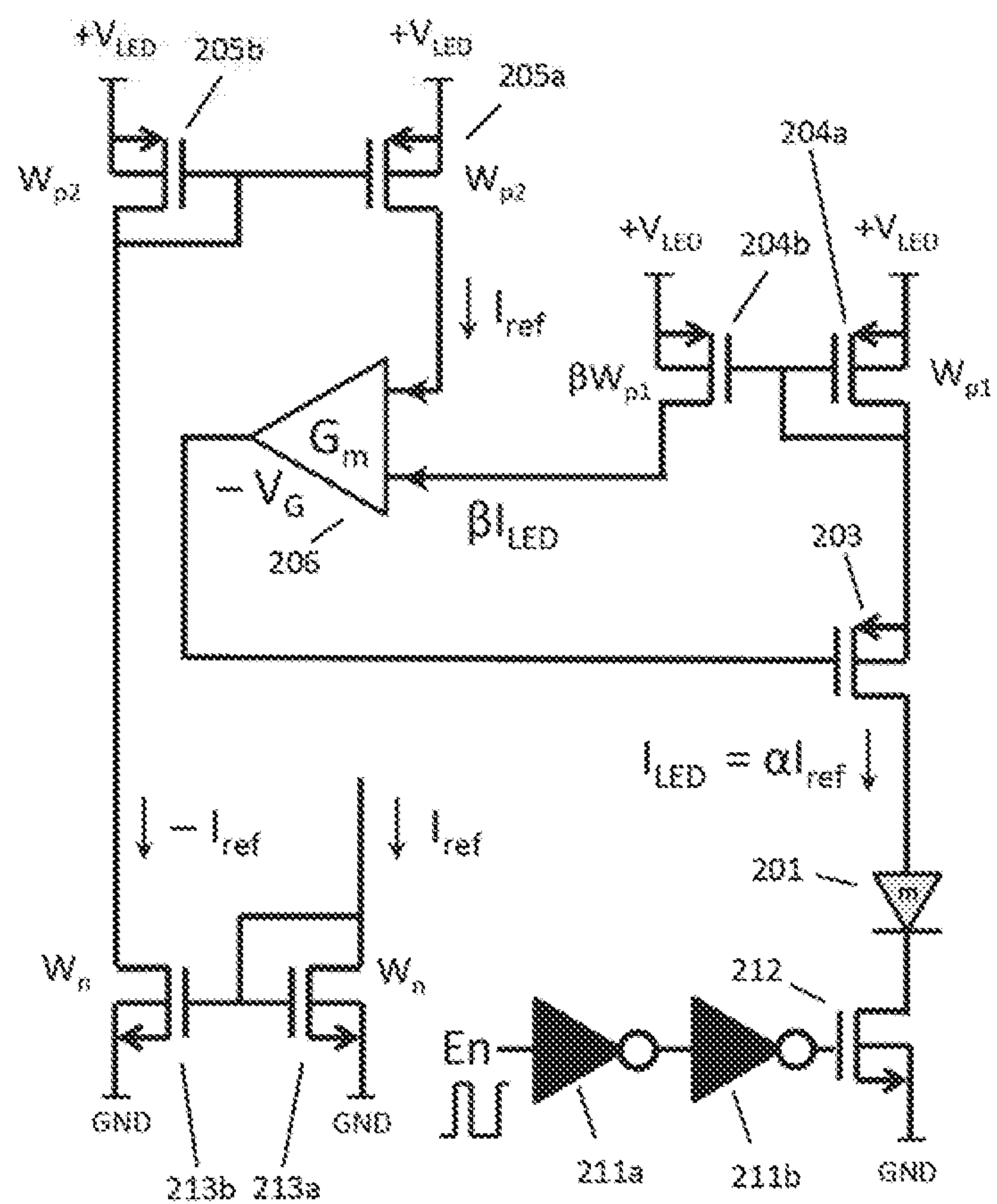


Figure 23C

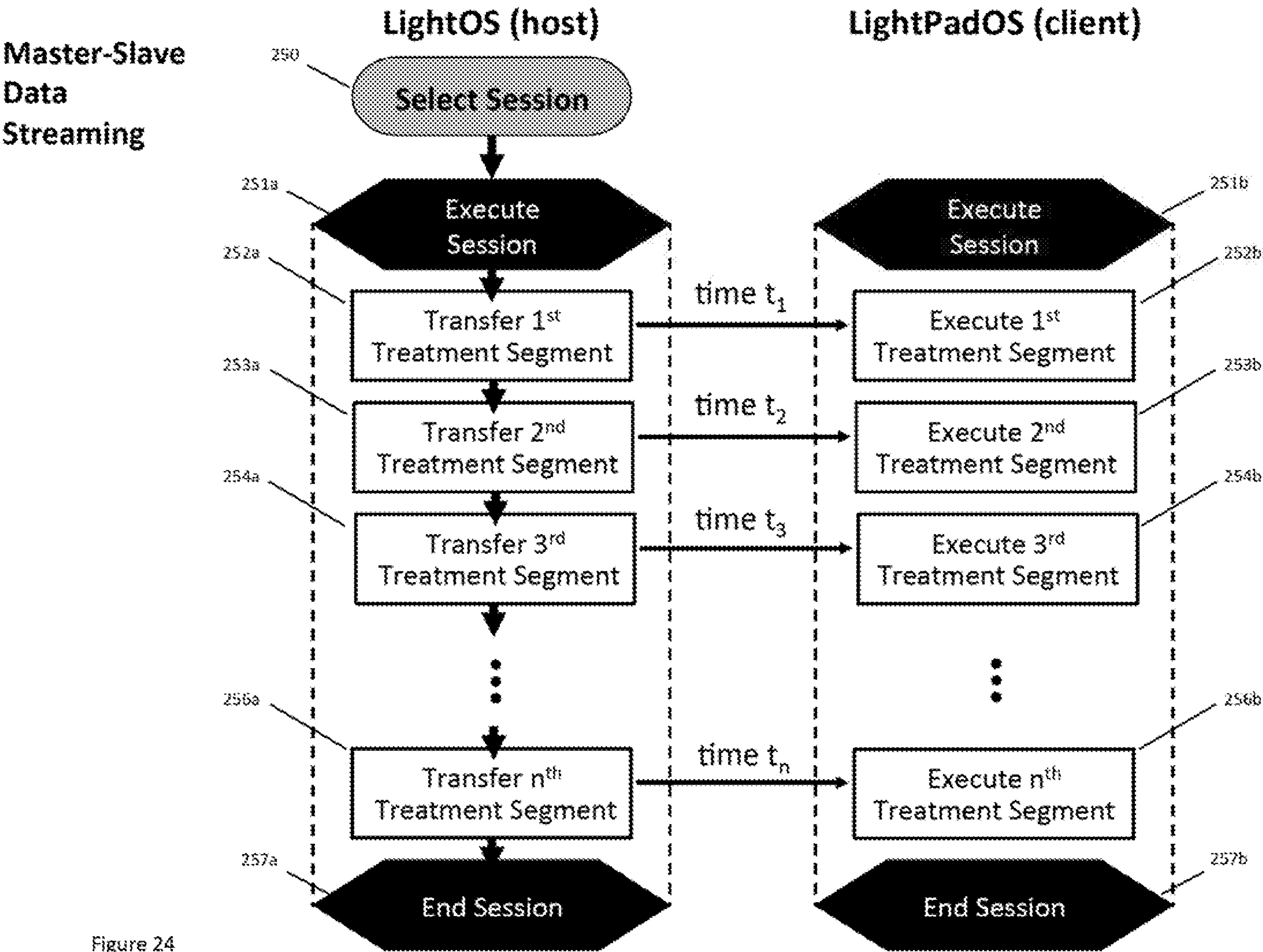


Figure 24

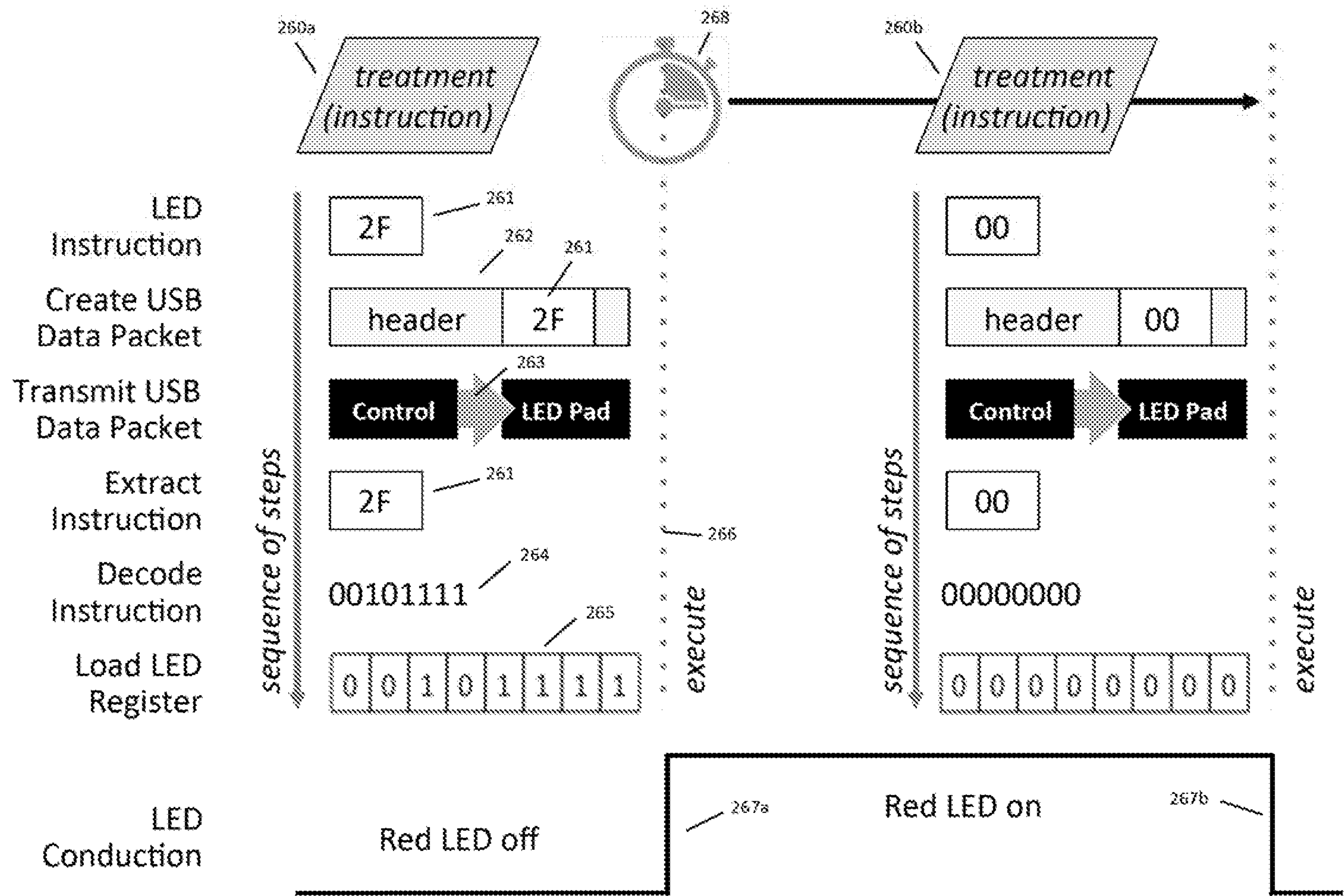


Figure 25

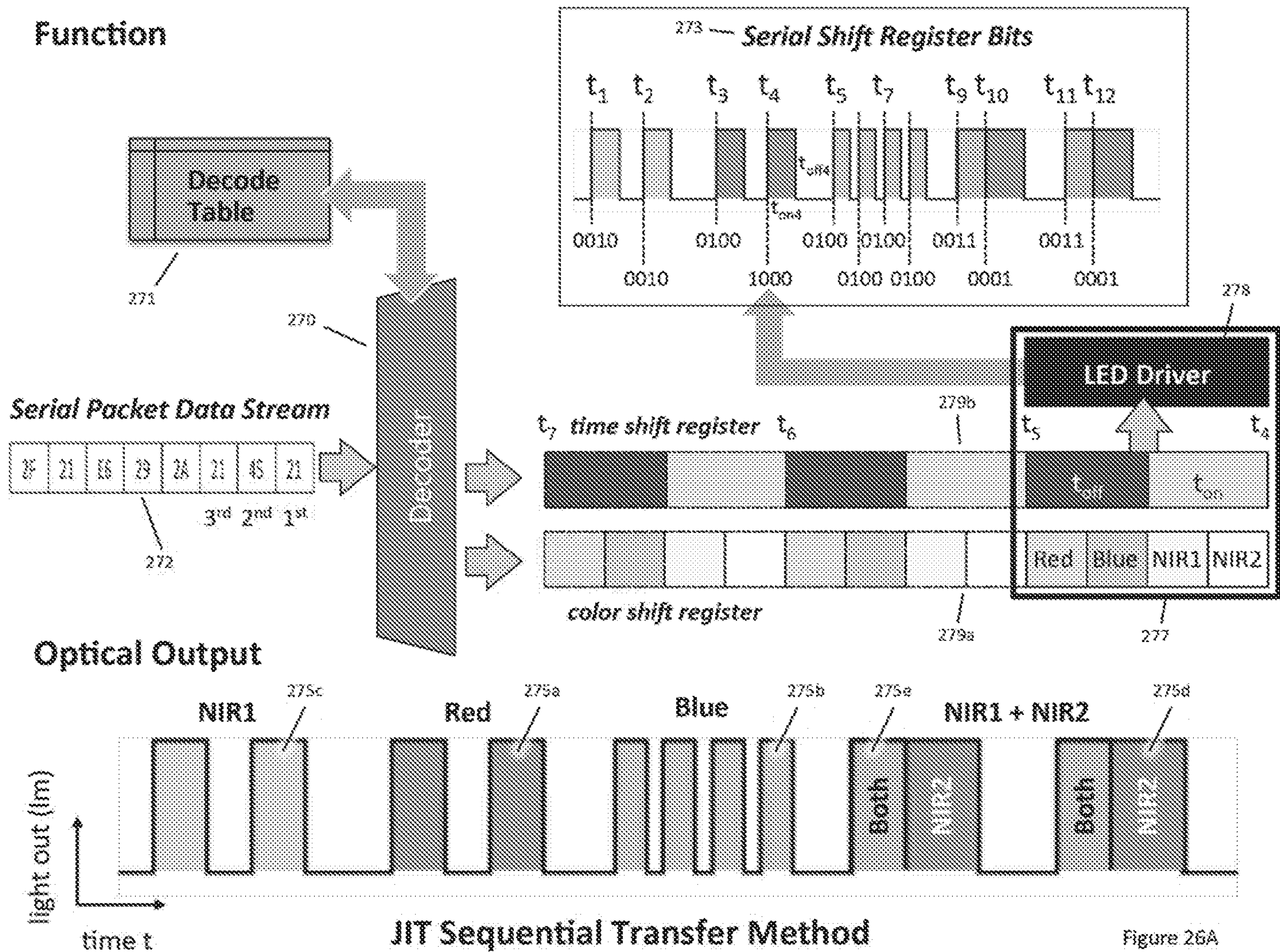


Figure 26A

Function

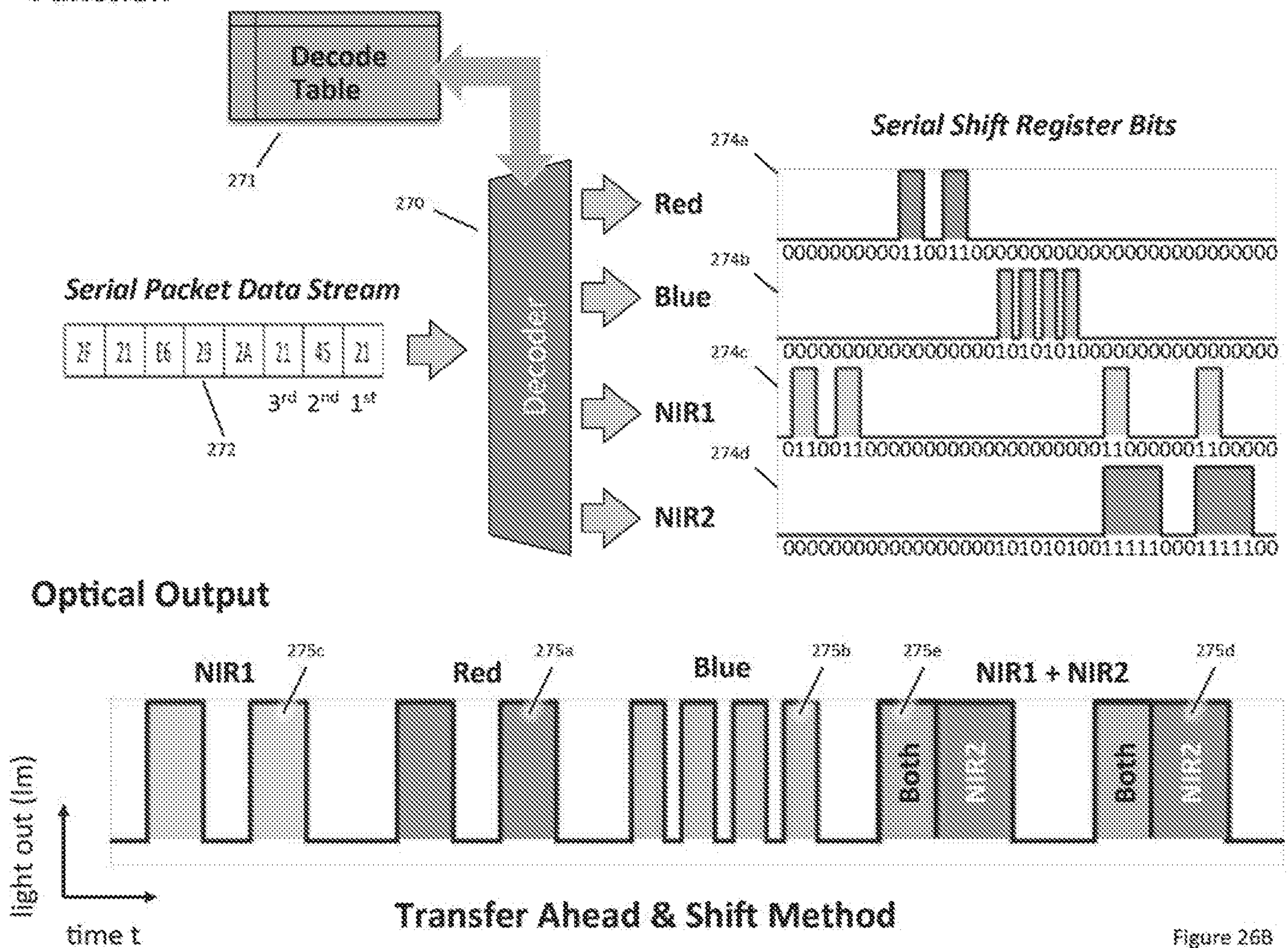


Figure 268

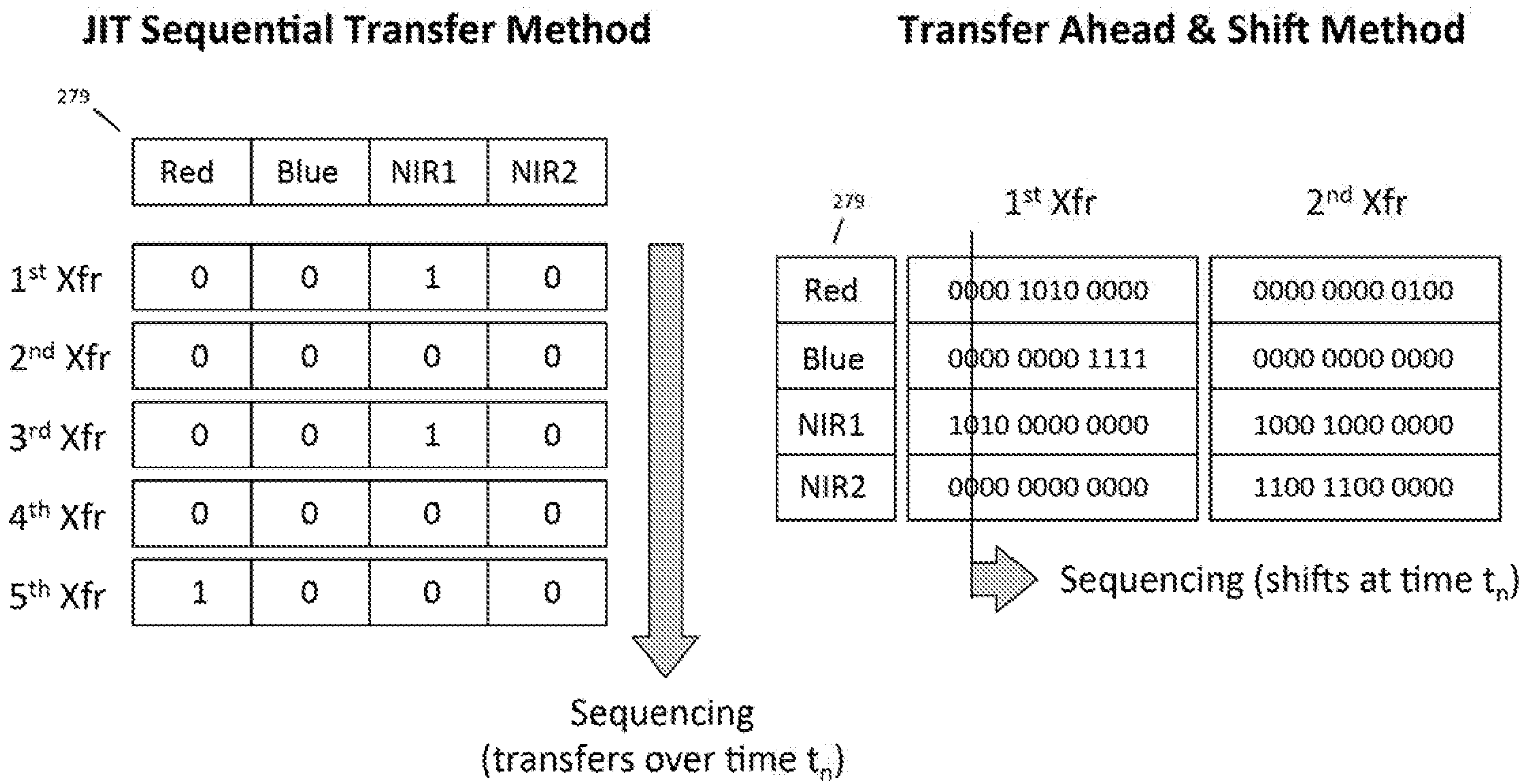


Figure 26C

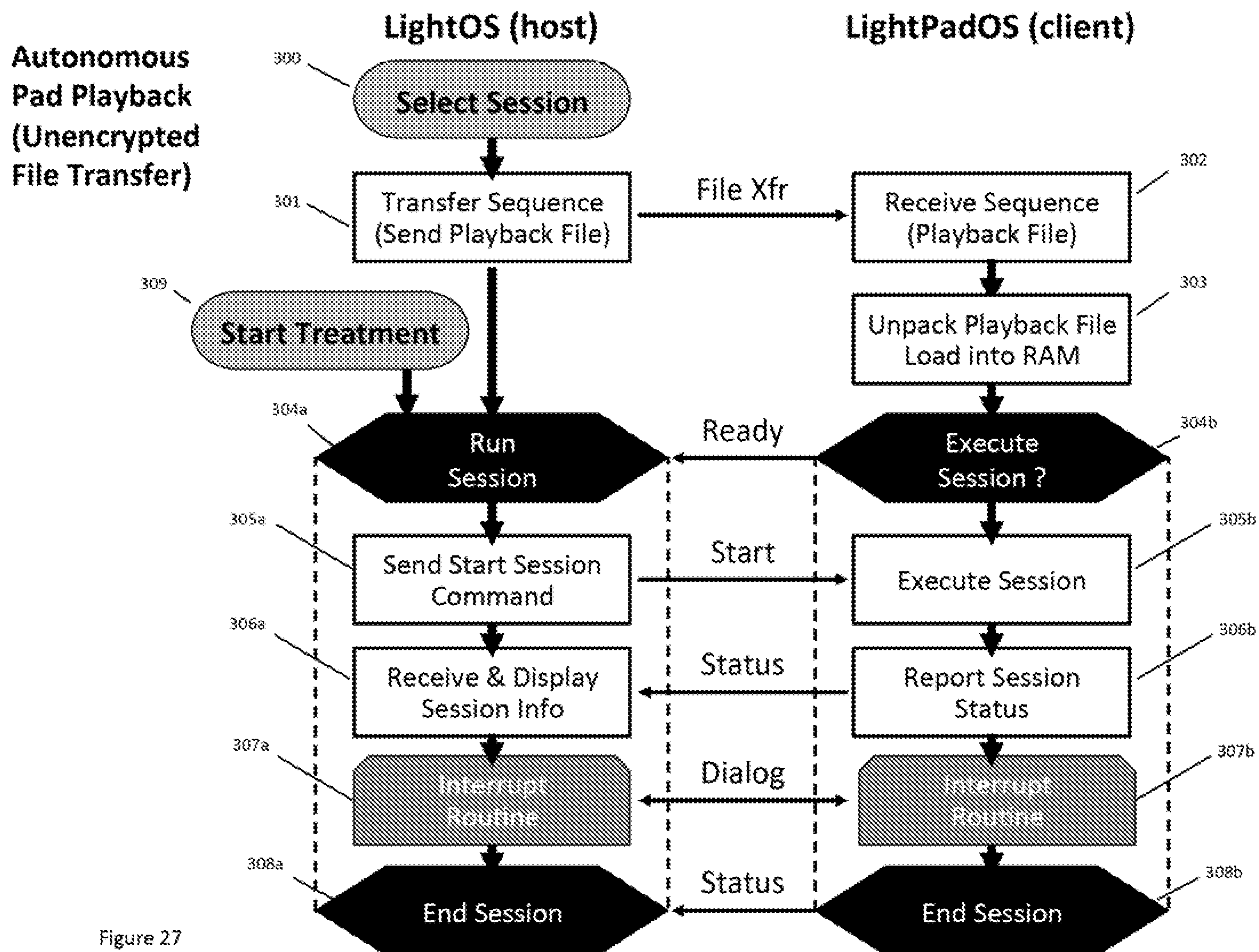


Figure 27

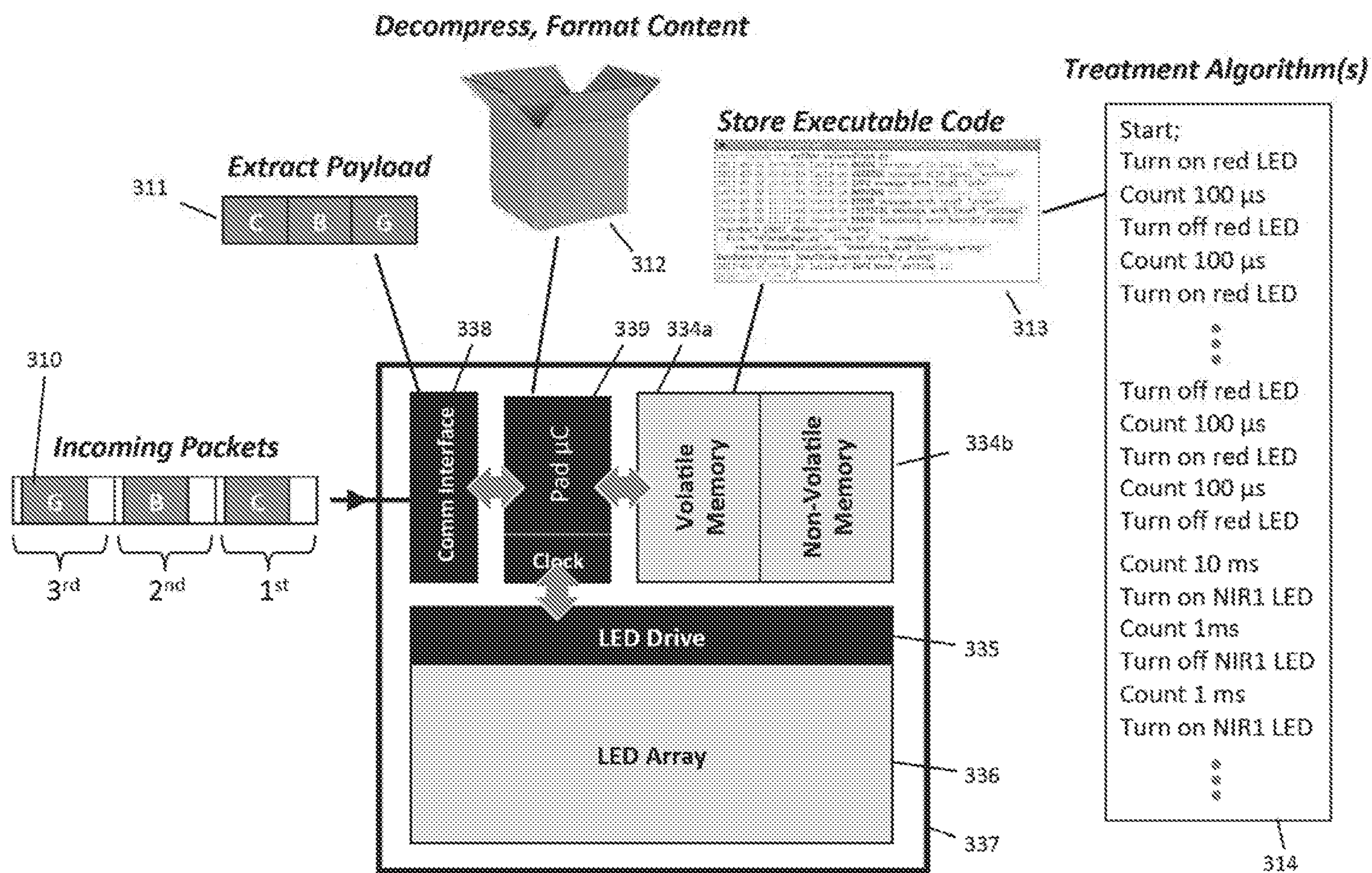


Figure 28

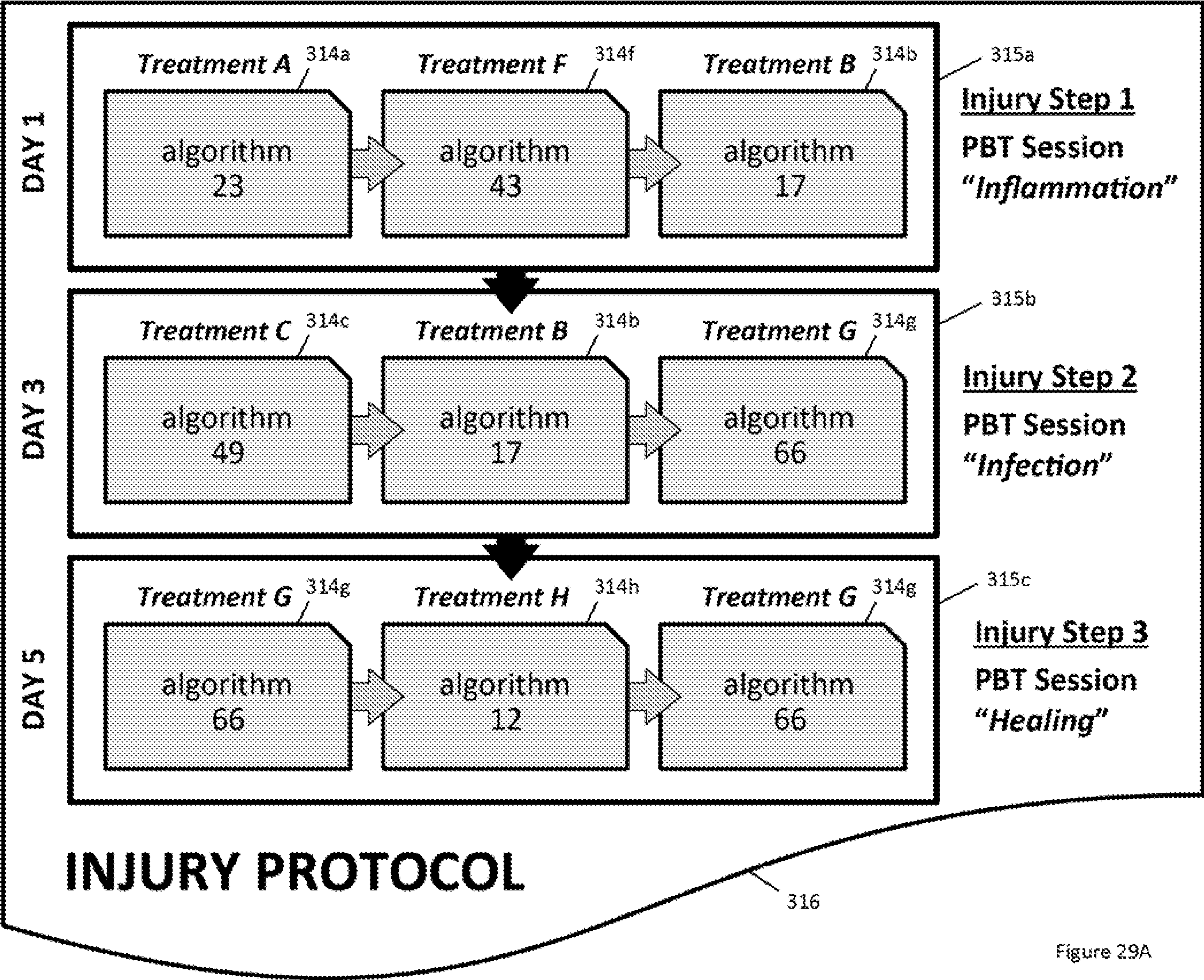


Figure 29A

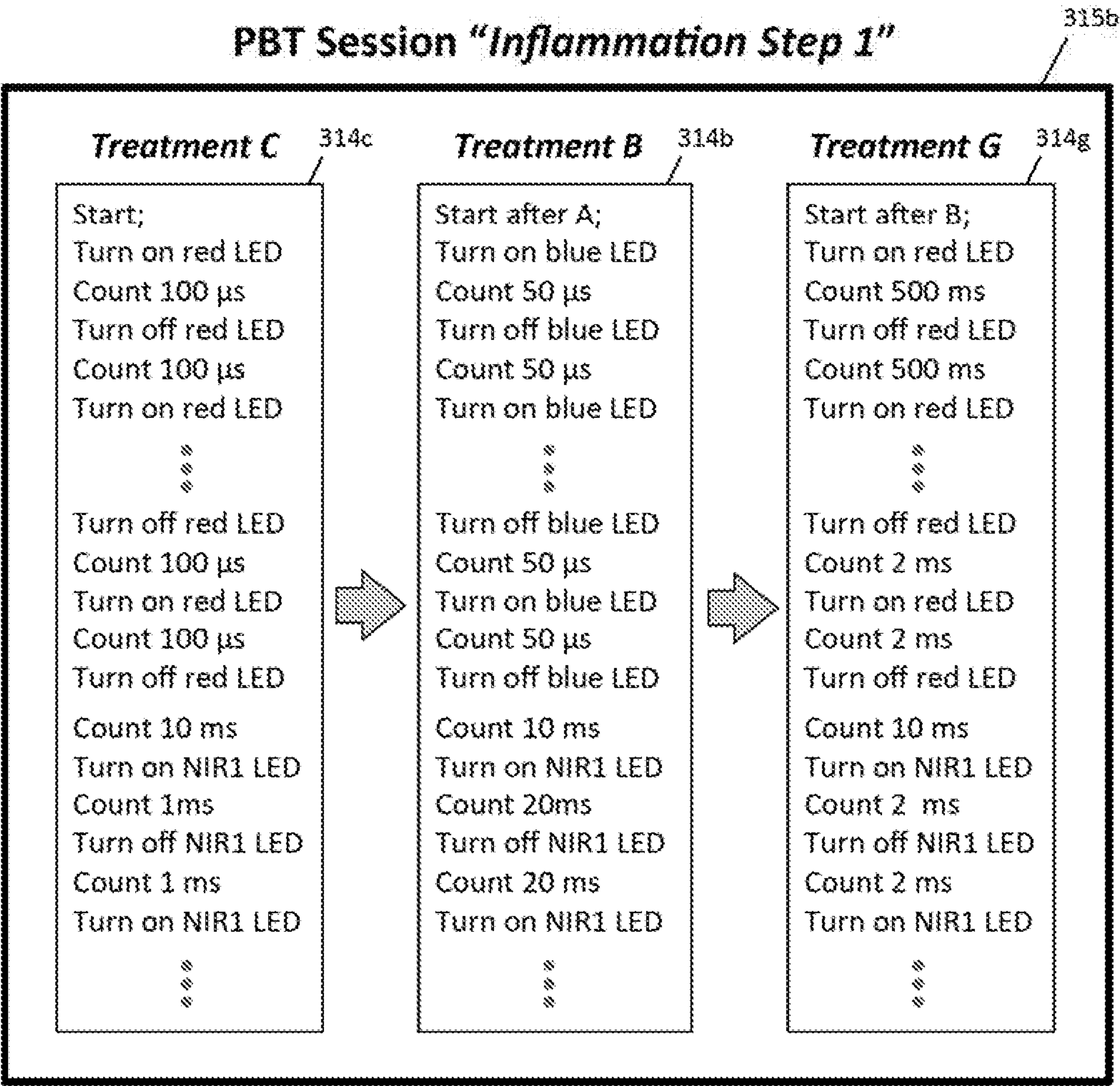


Figure 298

Arndt-Schultz Biphasic Dose Response Model for PBT

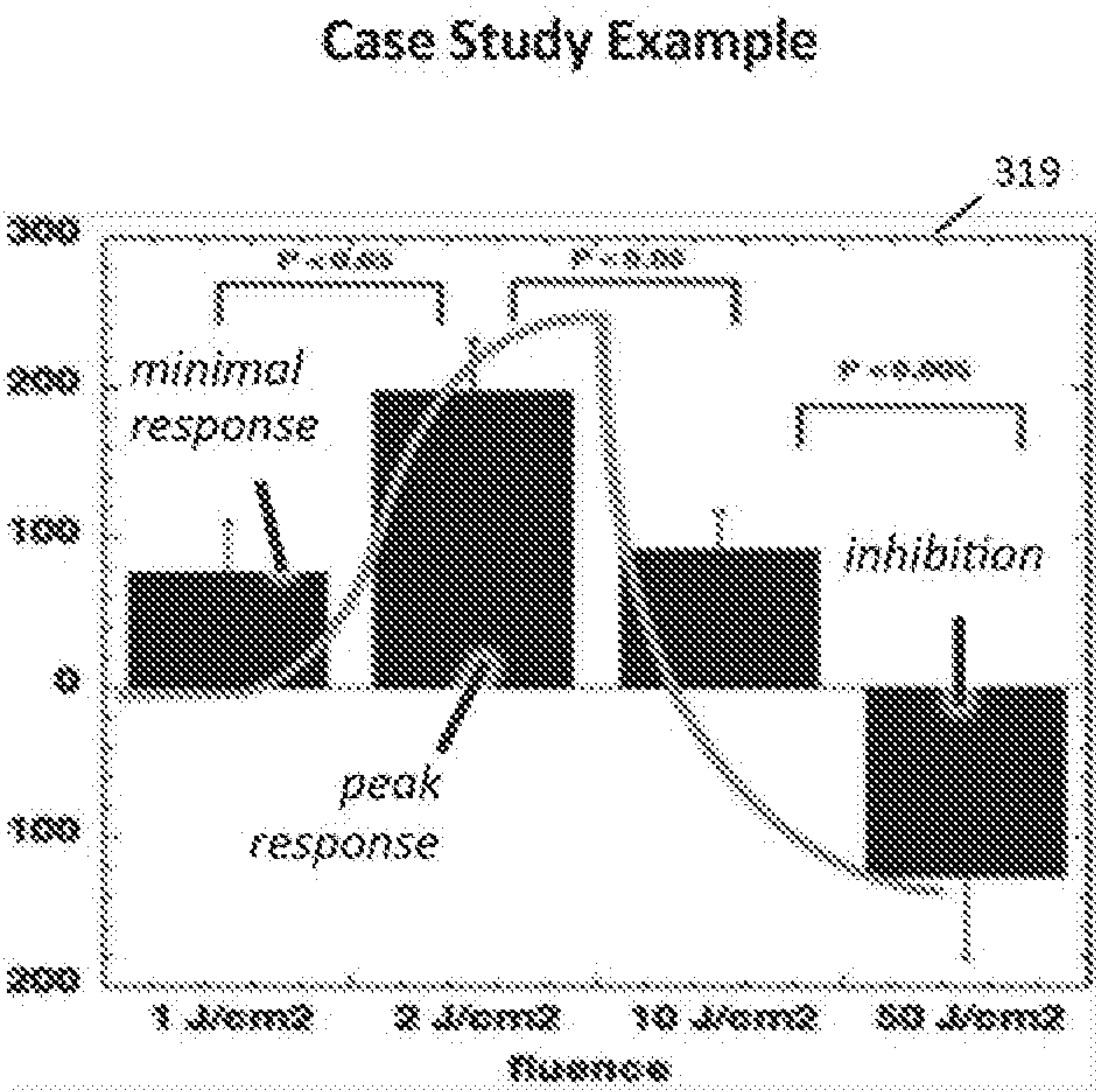
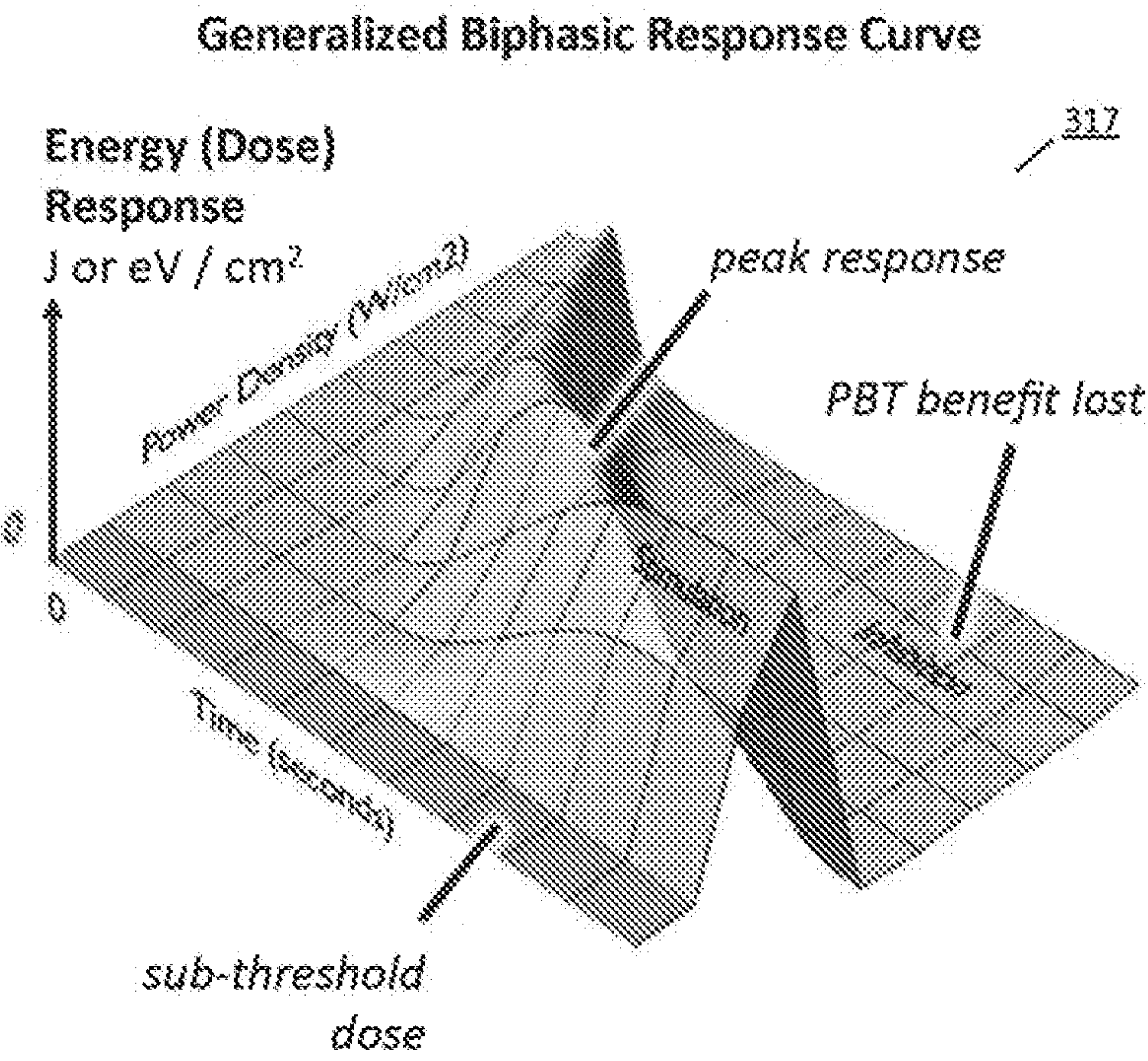


Figure 30

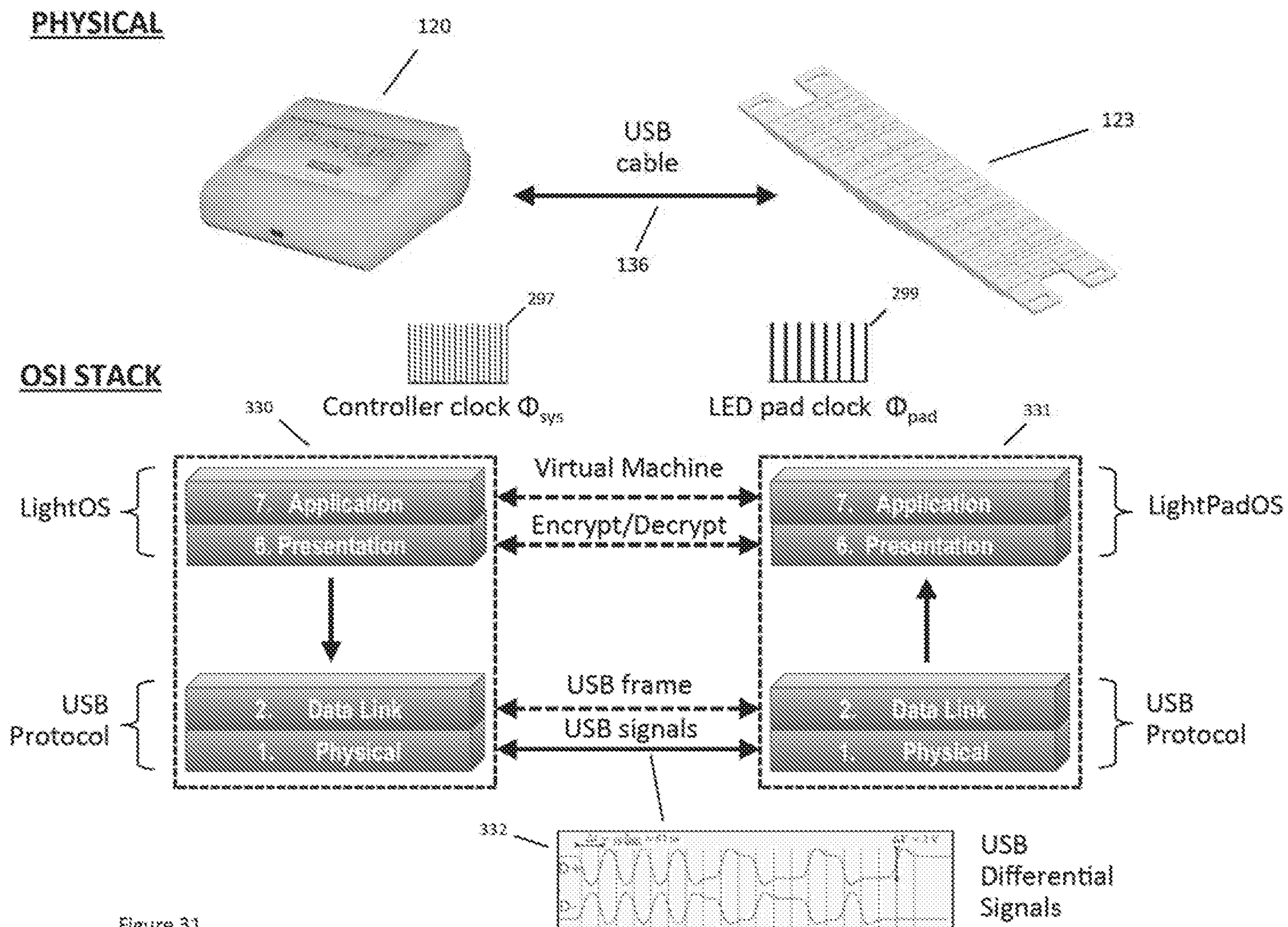


Figure 31

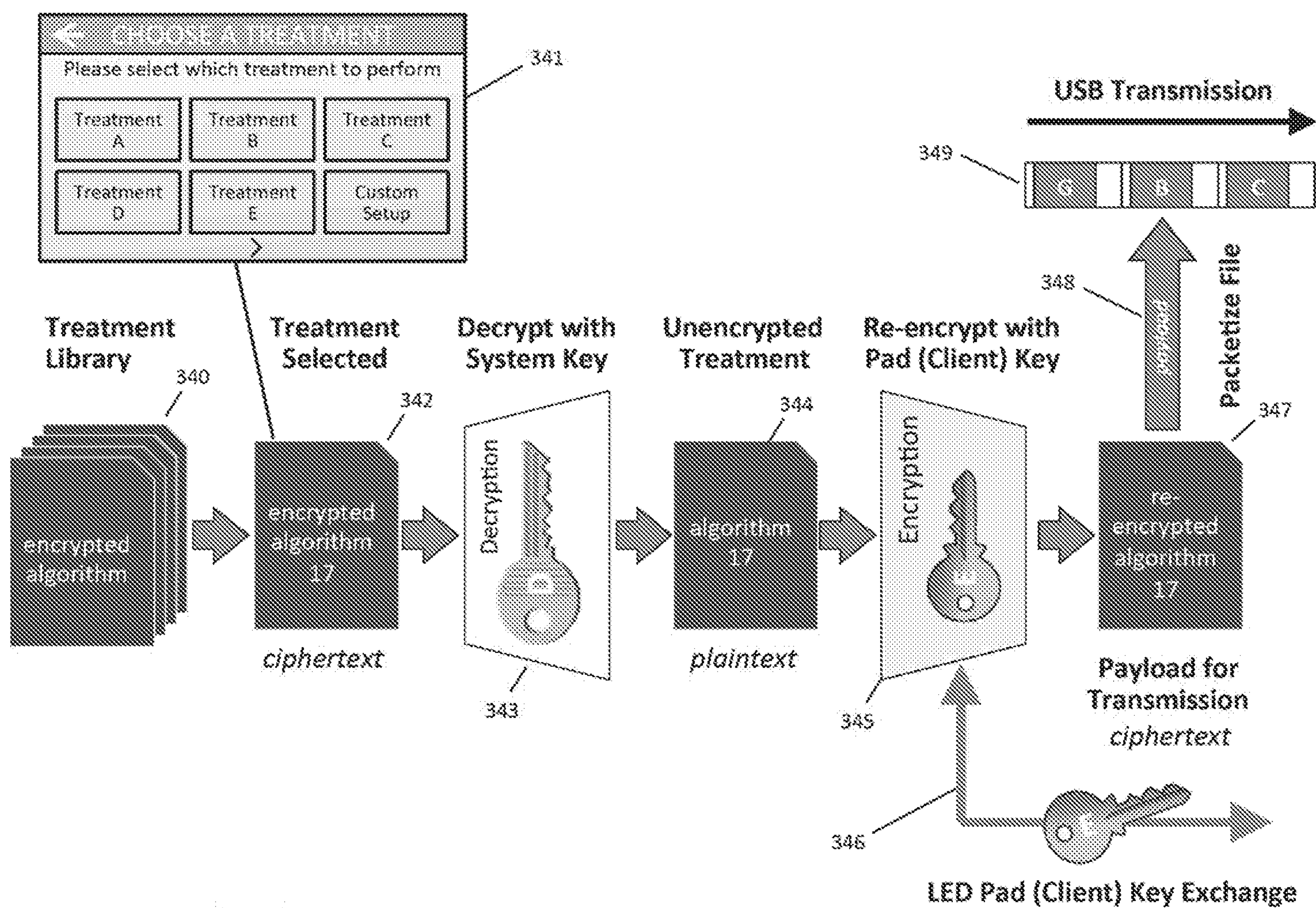


Figure 32

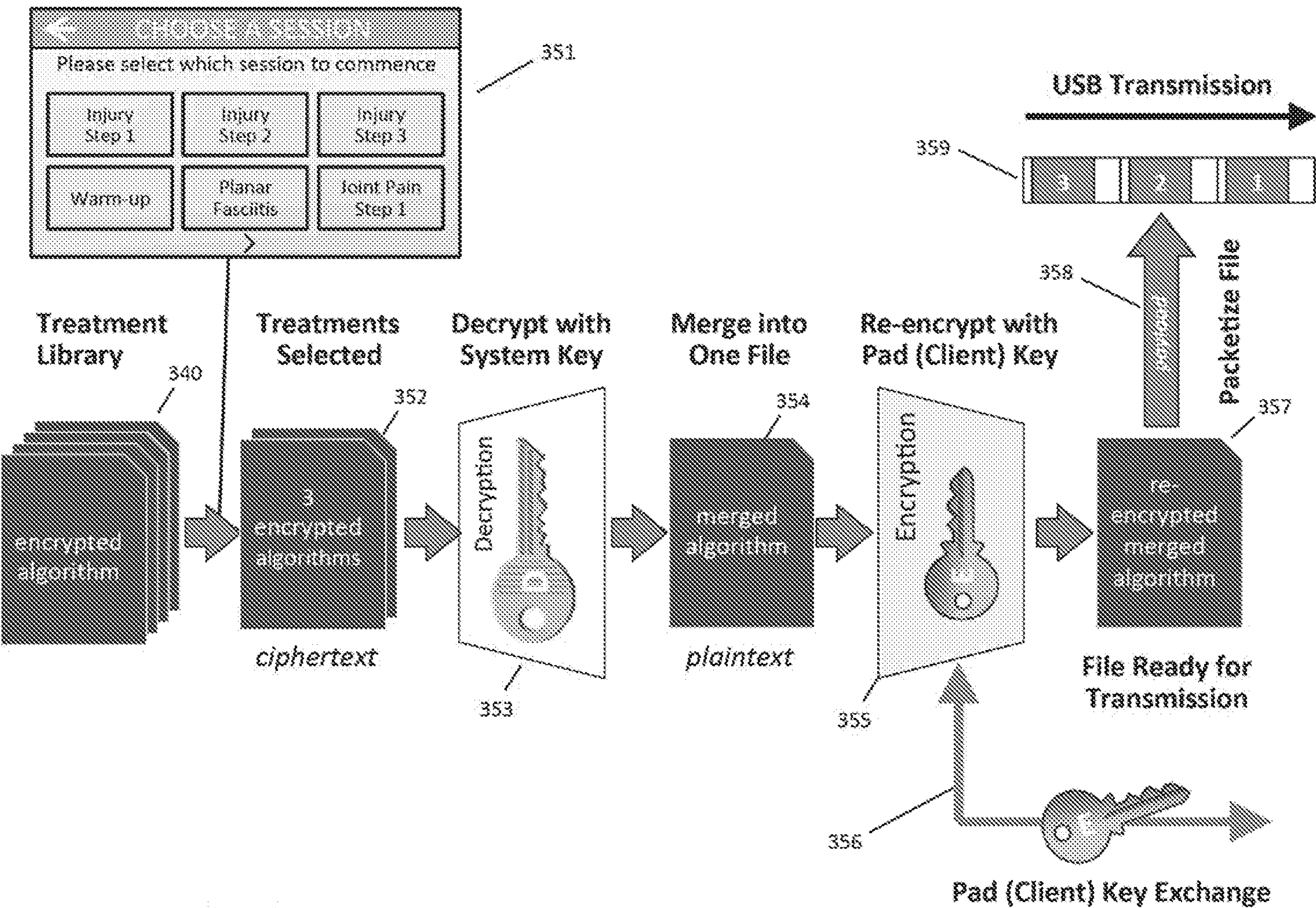


Figure 33

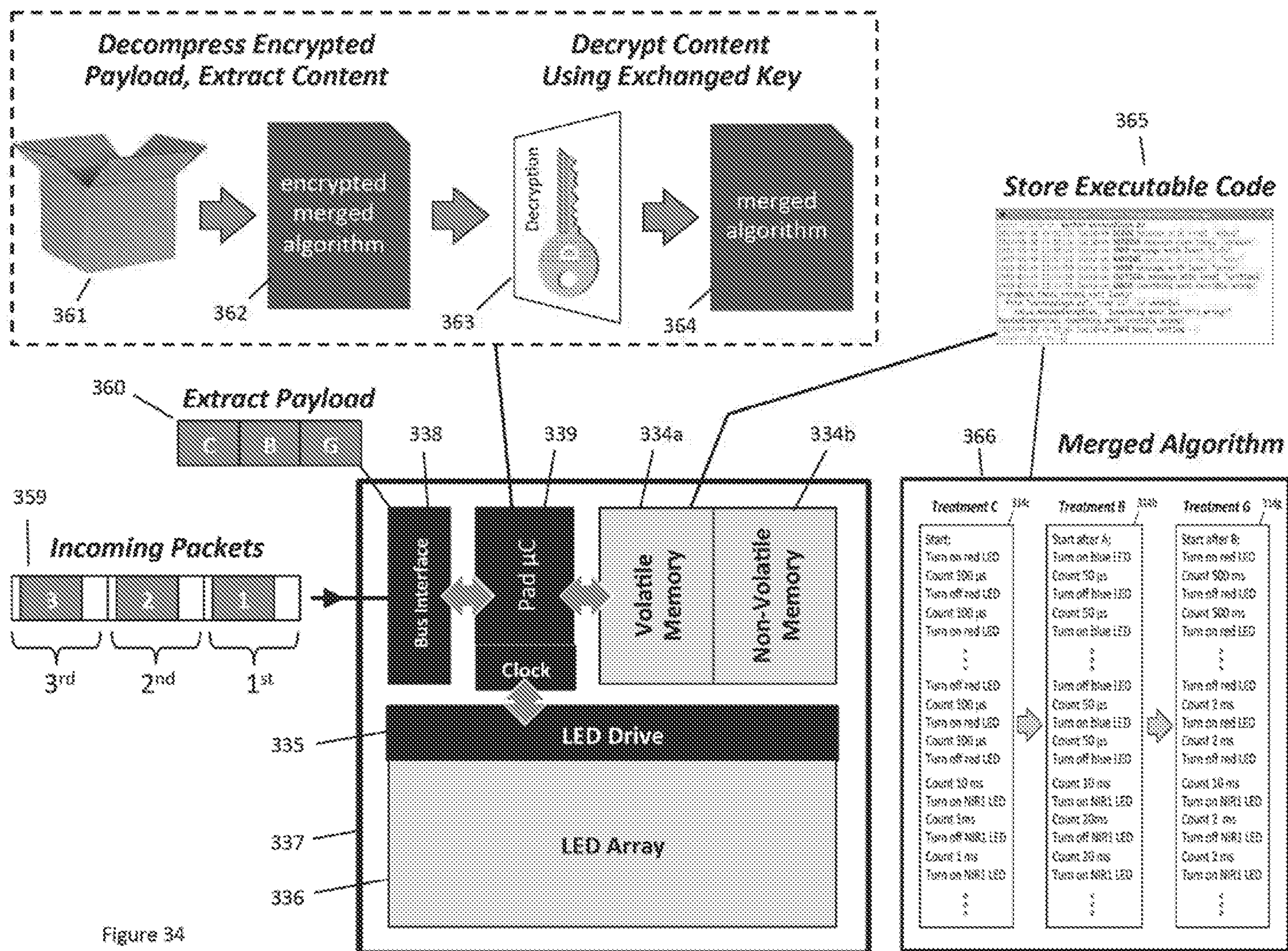


Figure 34

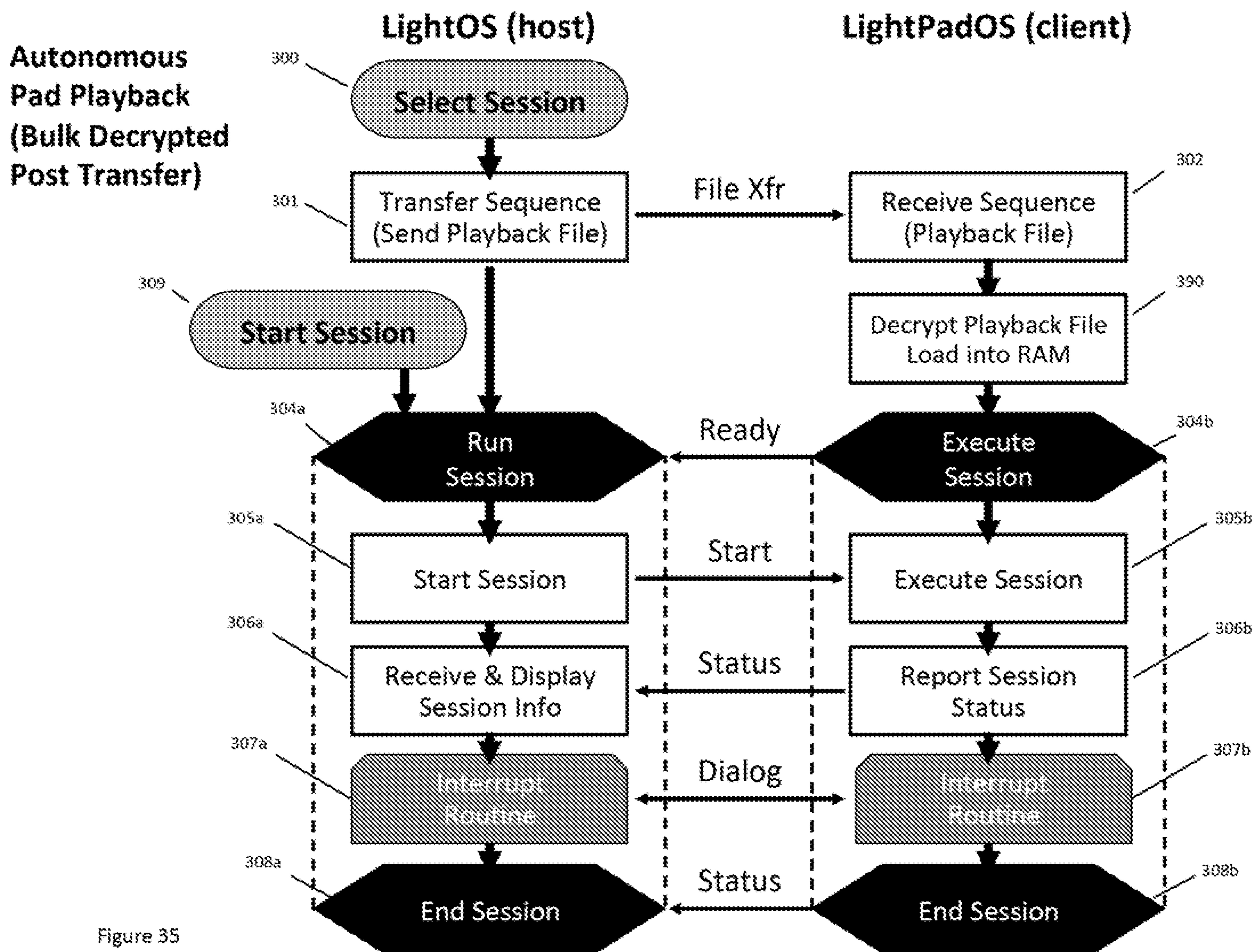


Figure 35

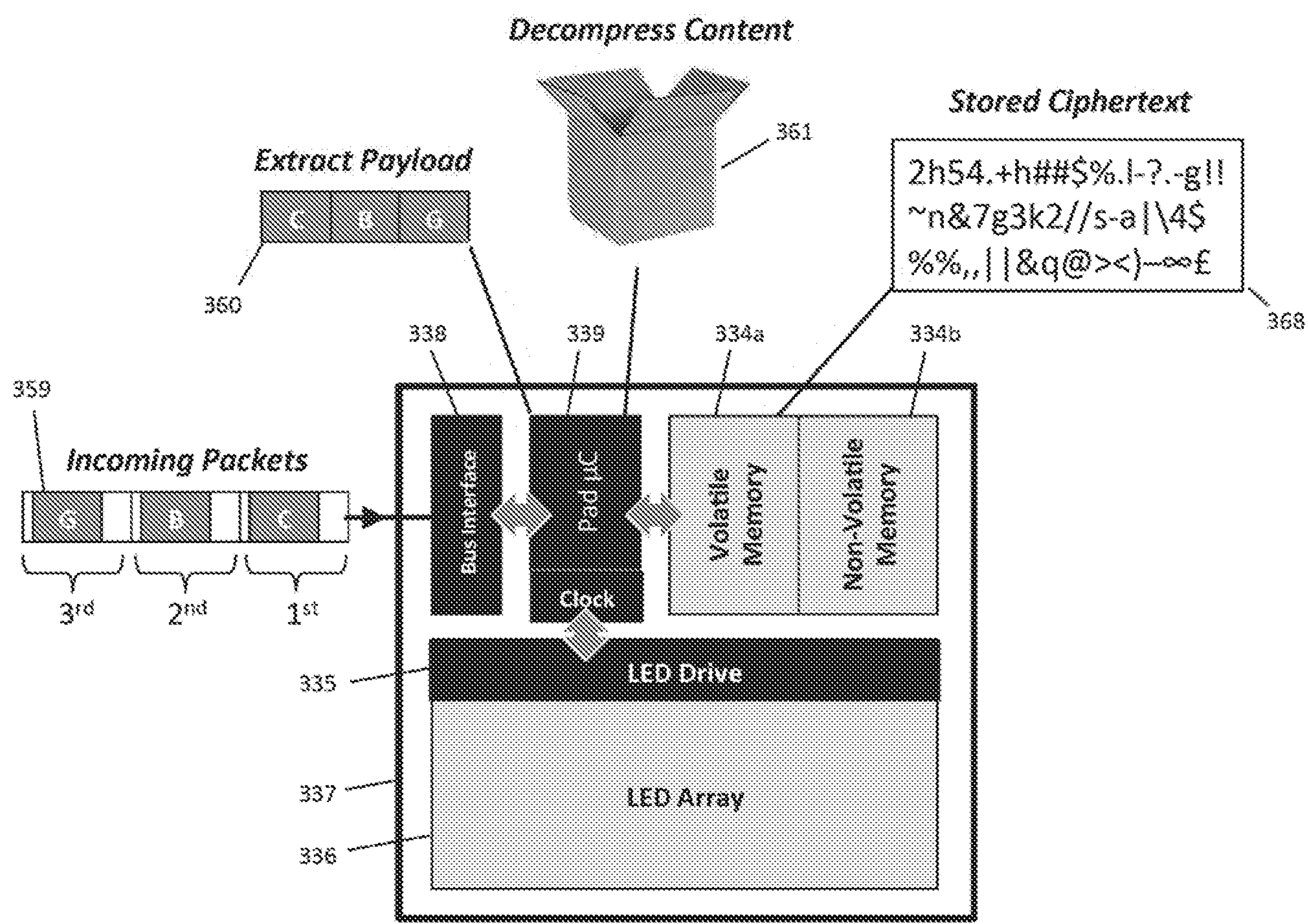


Figure 36

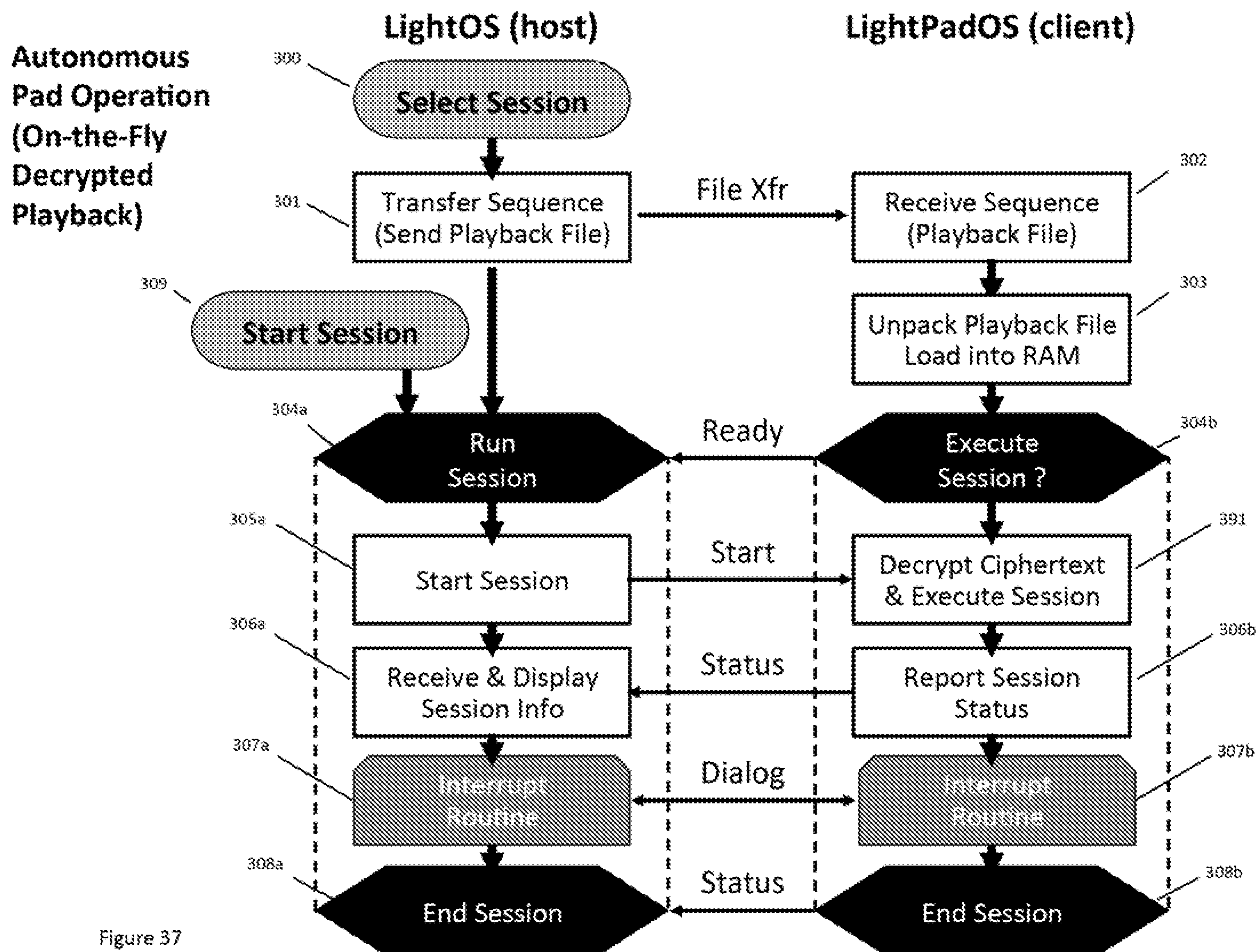


Figure 37

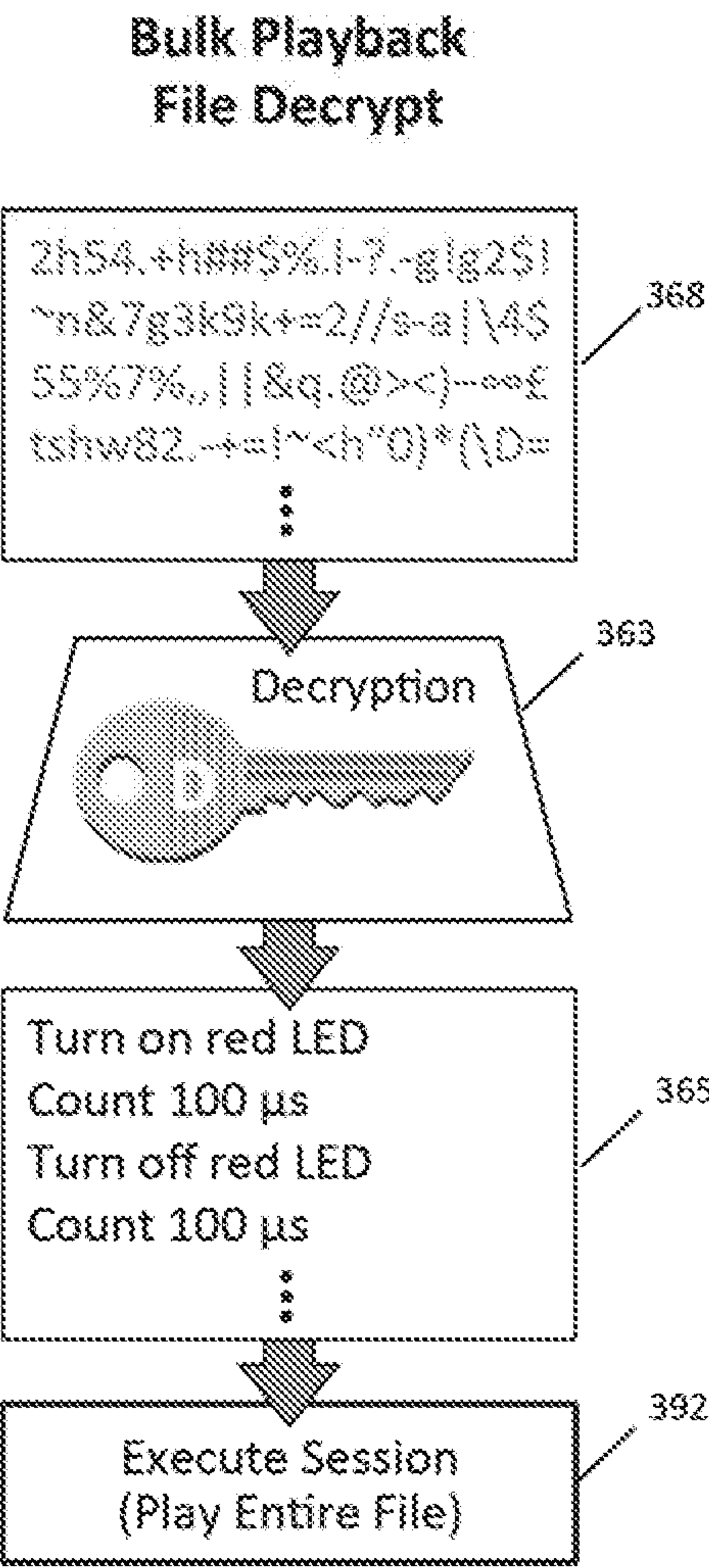
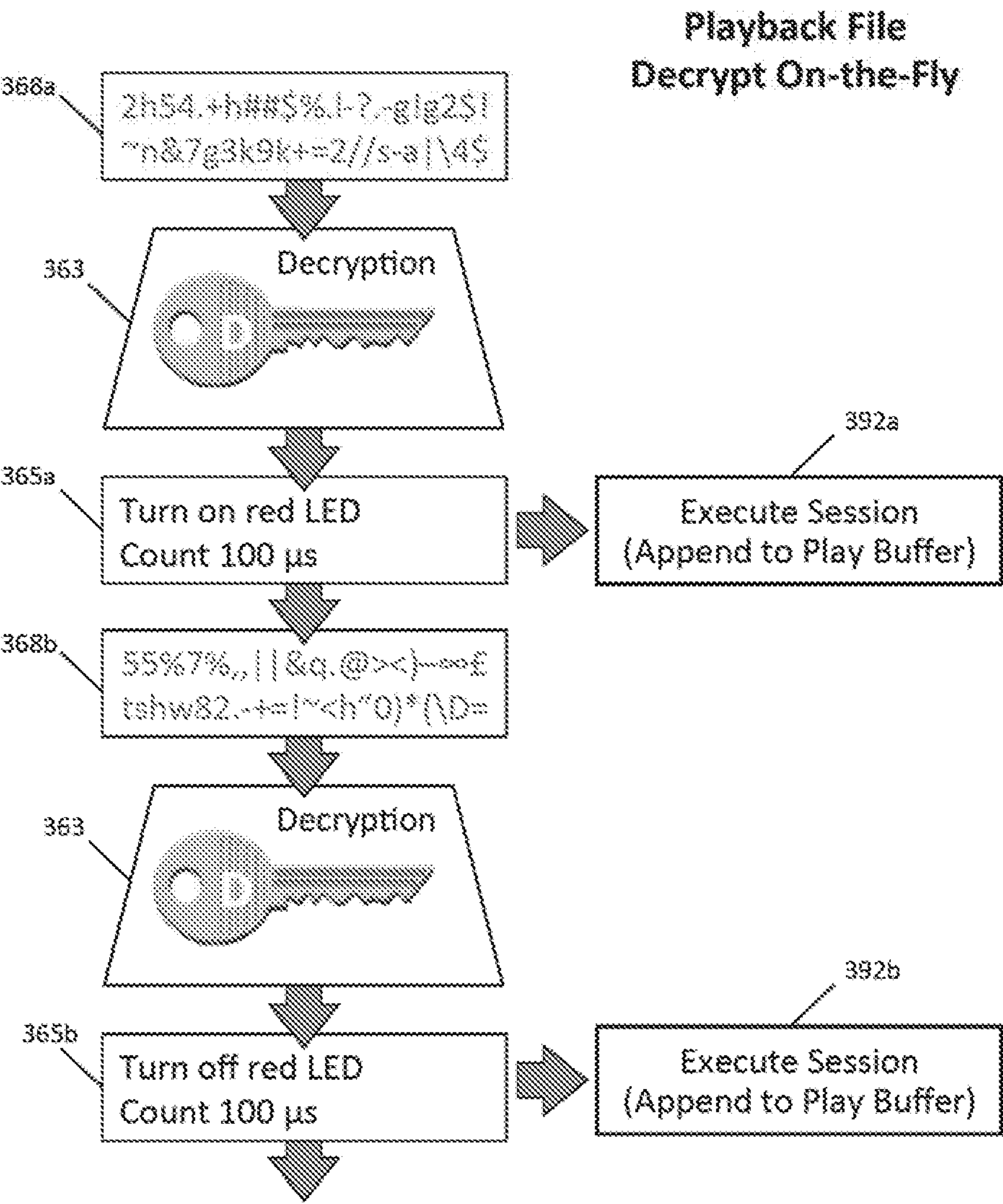


Figure 38



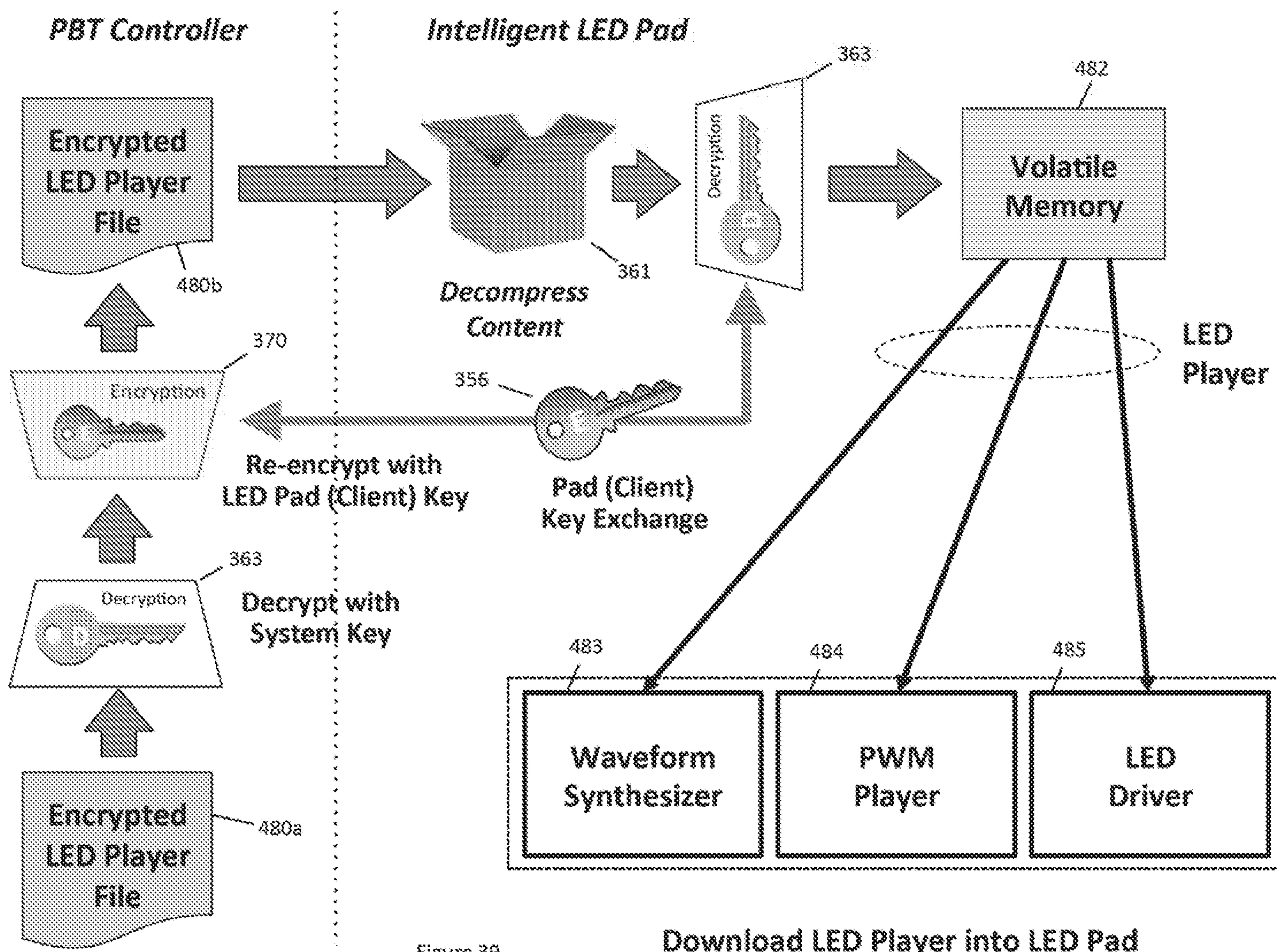


Figure 39

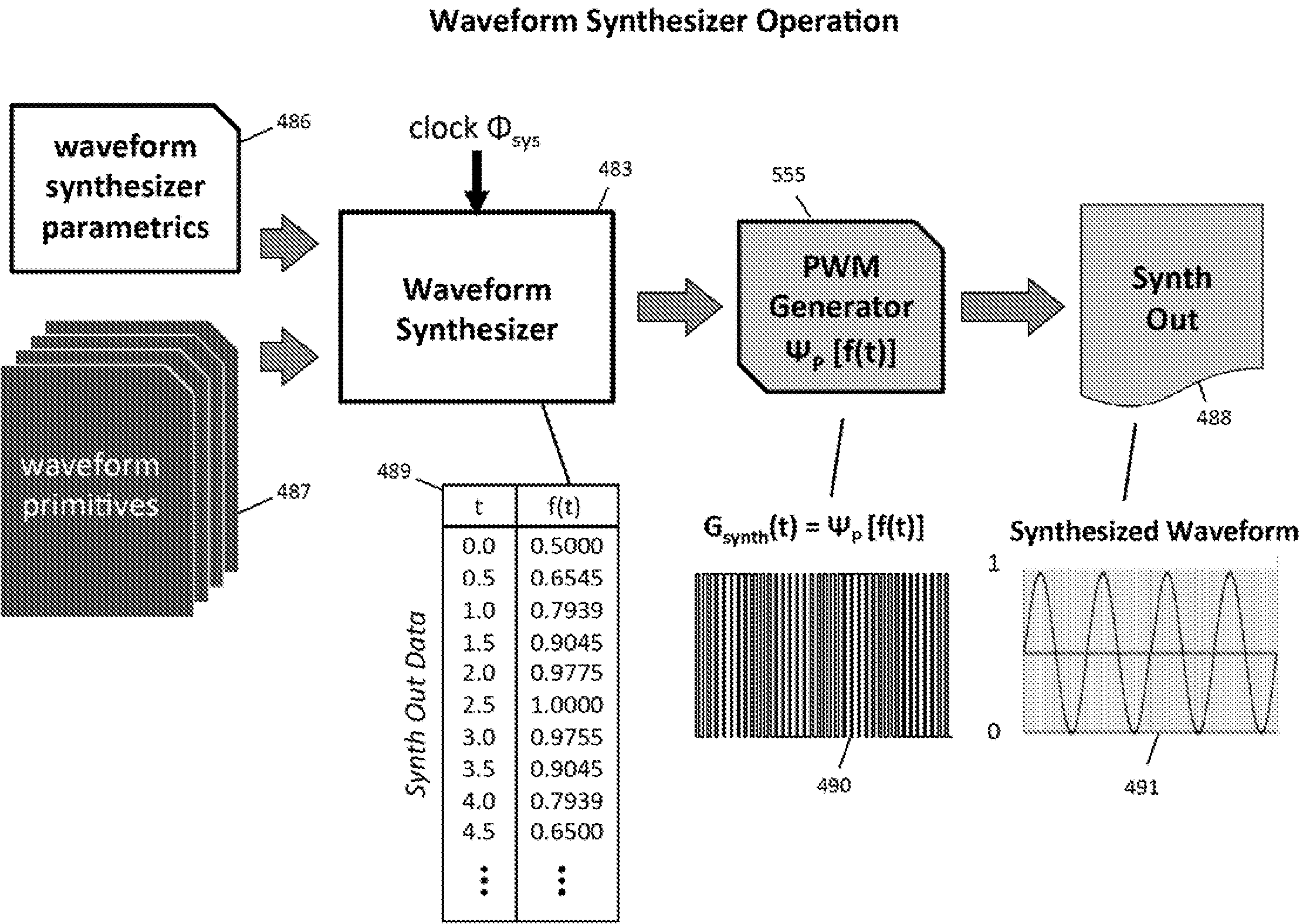


Figure 40

PWM Player Operation

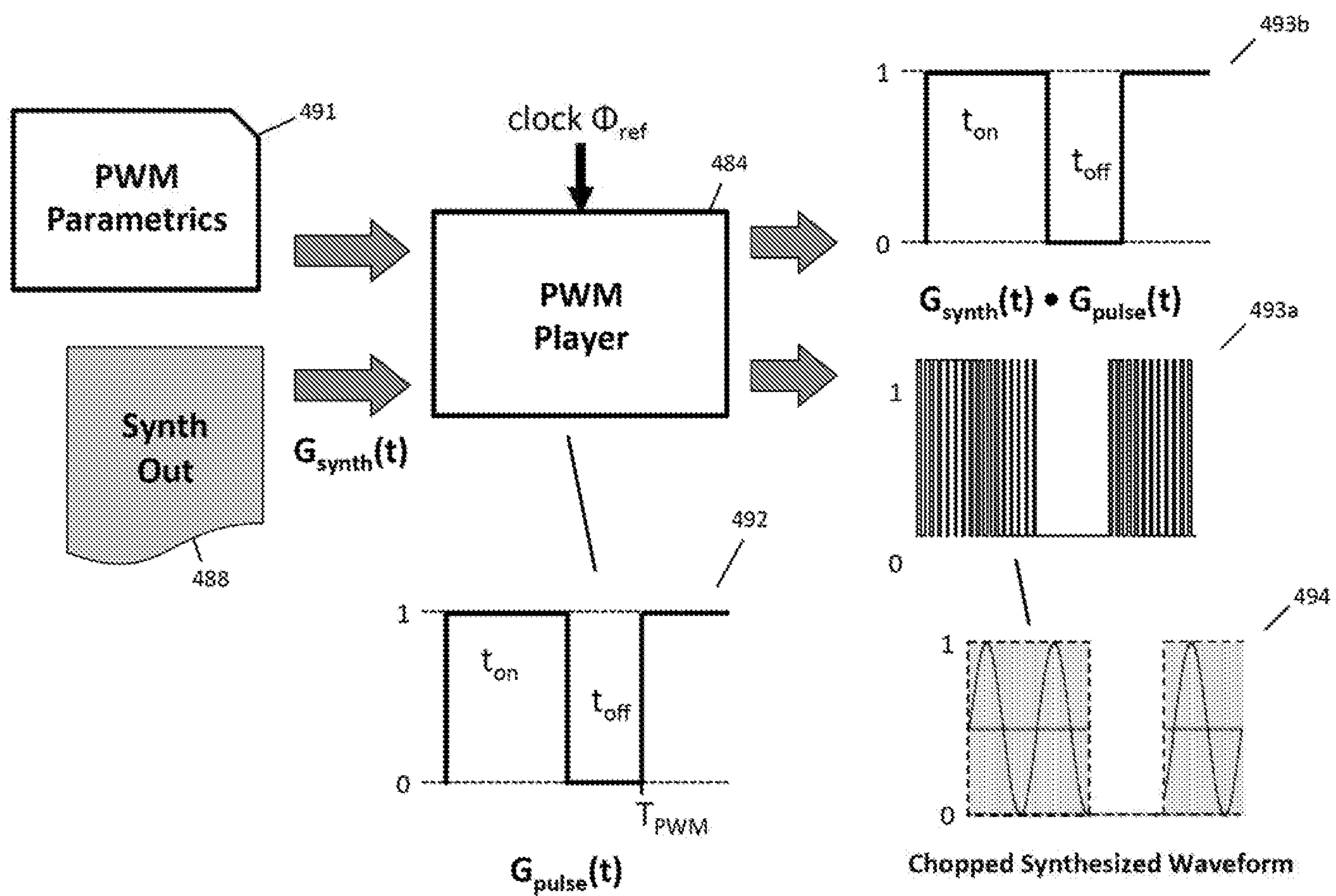


Figure 41

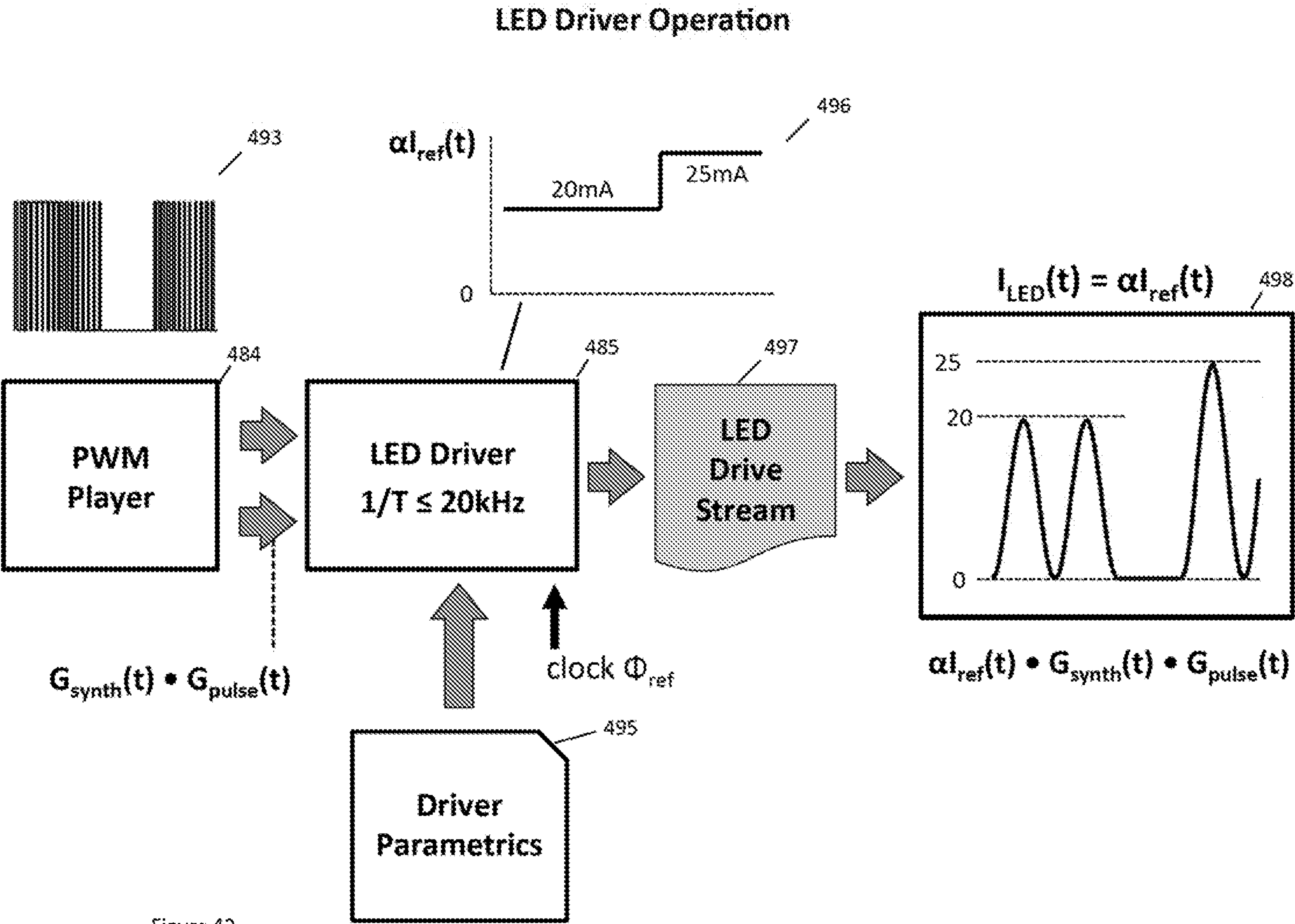


Figure 42

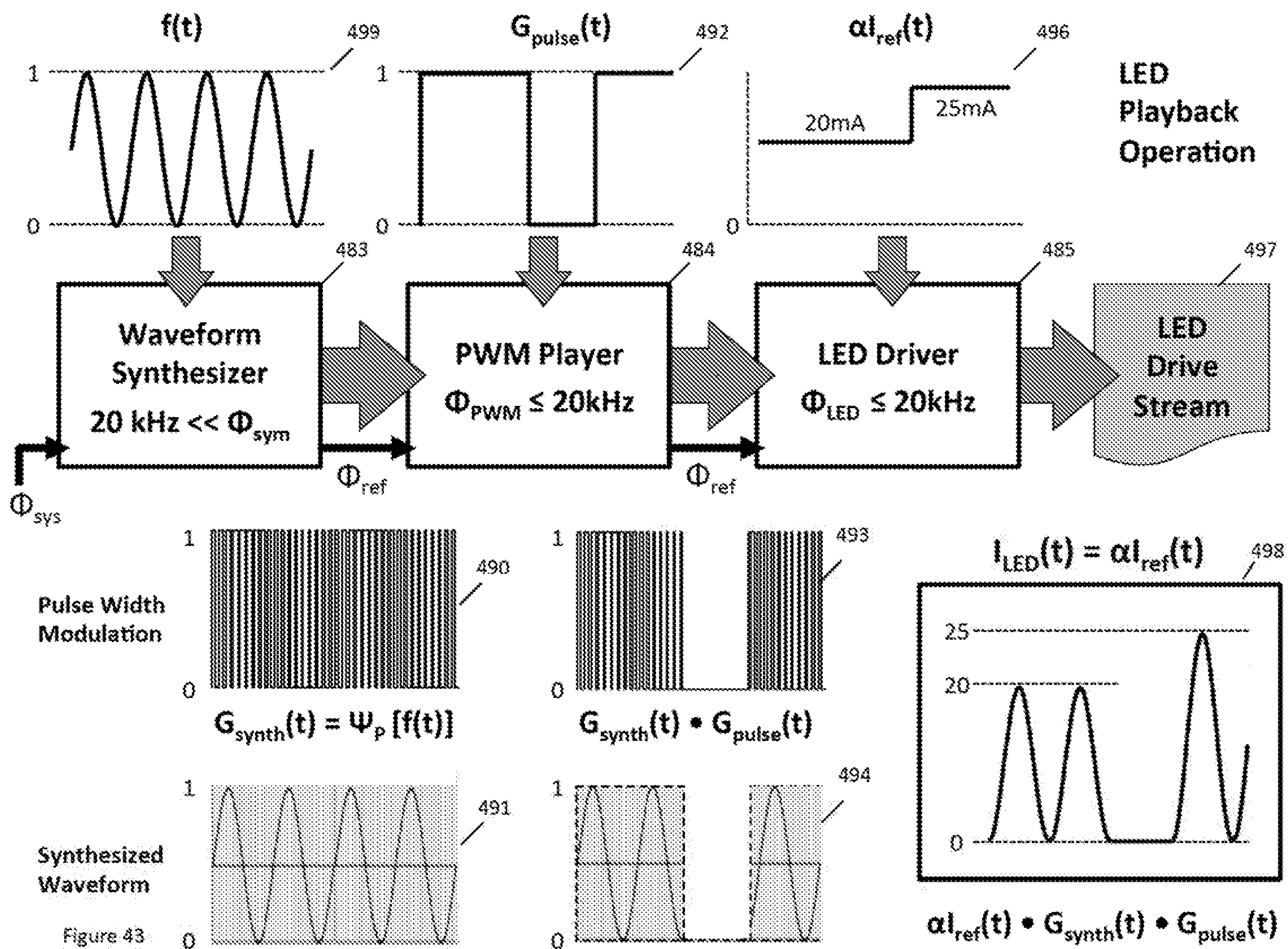


Figure 43

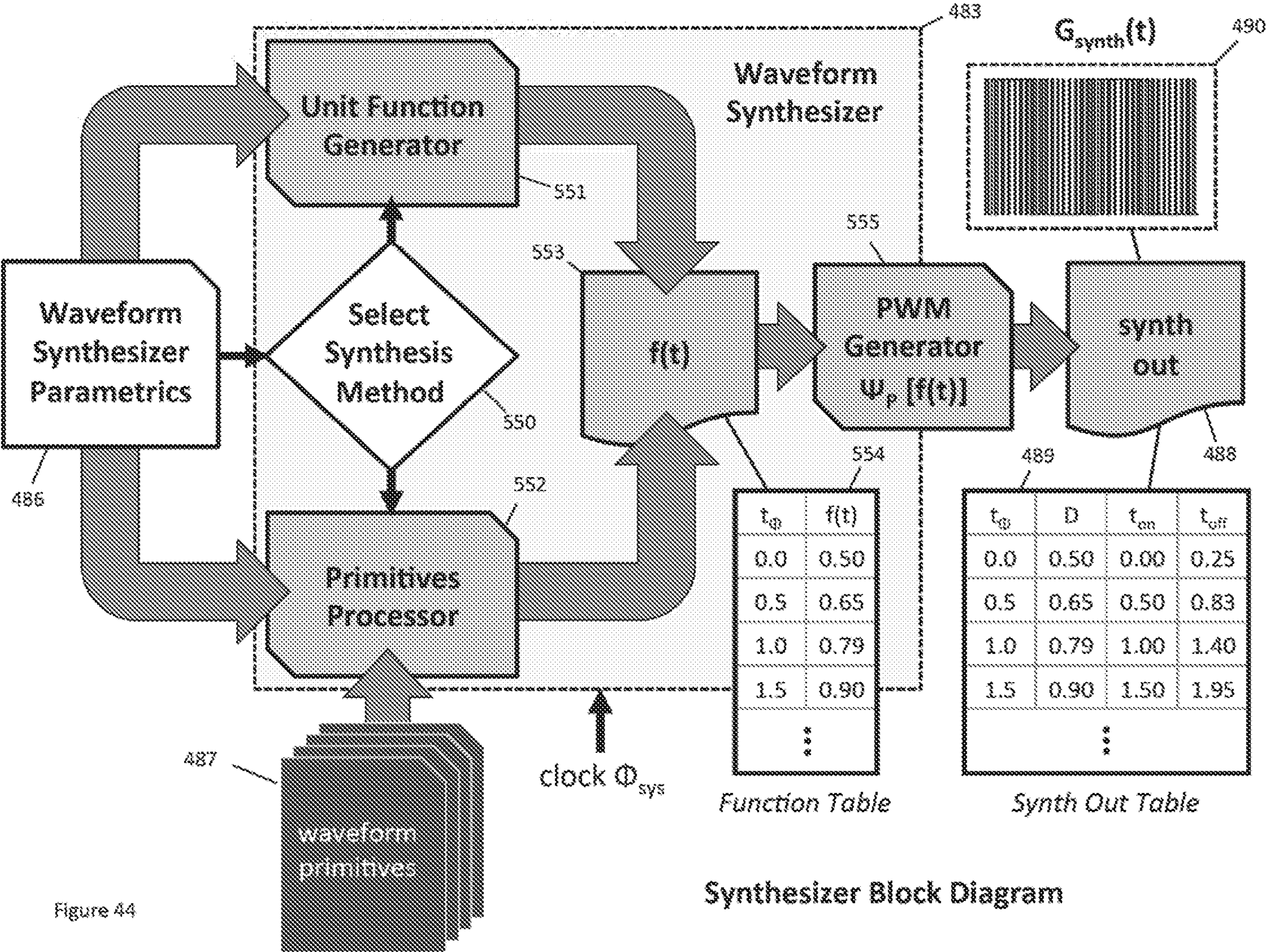


Figure 44

Waveform	Unit Functions $f(t) \leq 1$
Constant	$f(t) = 1$
Triangle	$f(t) = 1 - 2 \cdot \text{ABS} [\text{MOD} (tf, 1) - 0.5]$
Sawtooth	$f(t) = \text{MOD} (tf, 1)$
Sine / Chord	$f(t) = A_a(0.5 + 0.5[A_a \sin(2\pi tf_a) + A_b \sin(2\pi tf_b) + A_c \sin(2\pi tf_c)] / [(A_a + A_b + A_c)]) + 0.5(1 - A_a)$

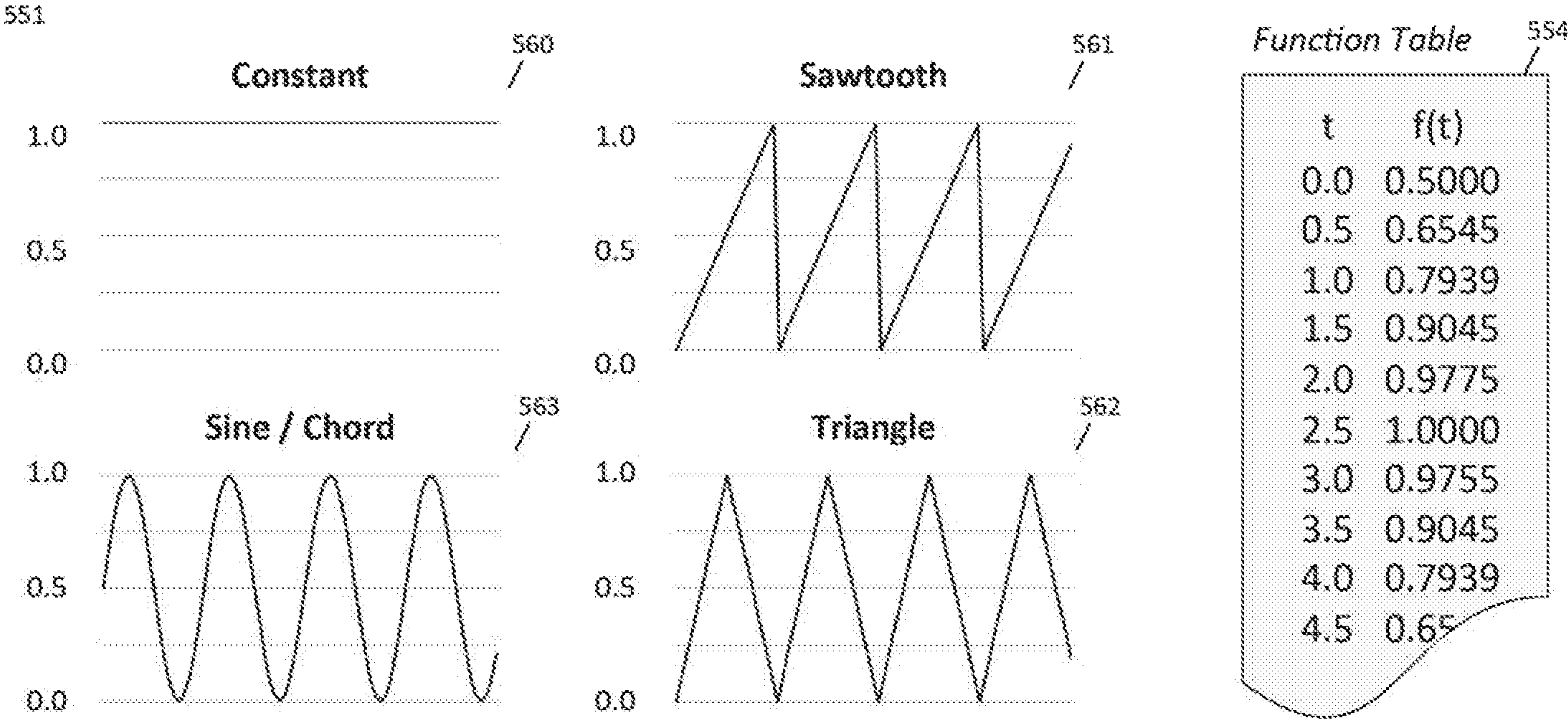


Figure 45

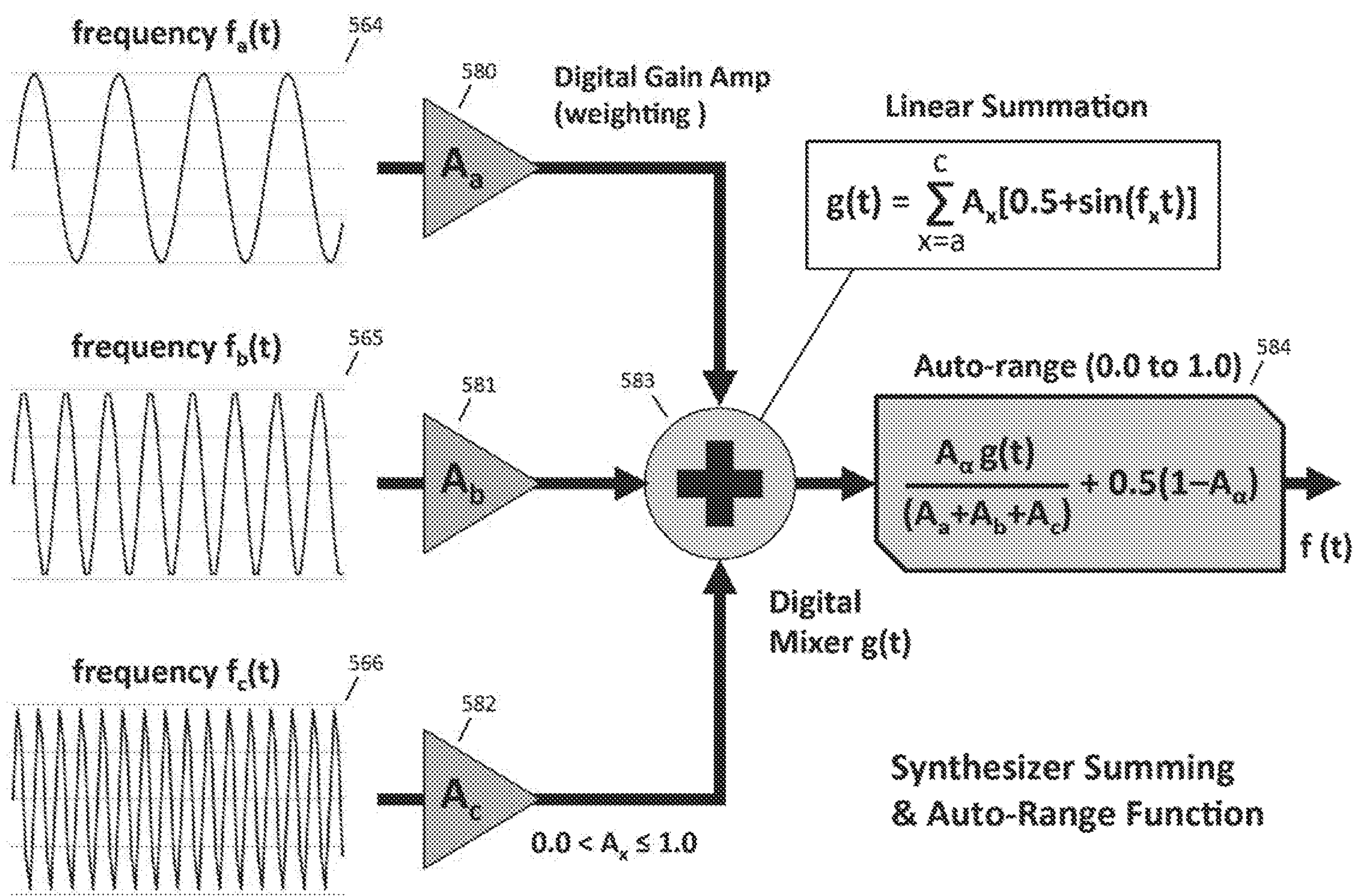


Figure 46

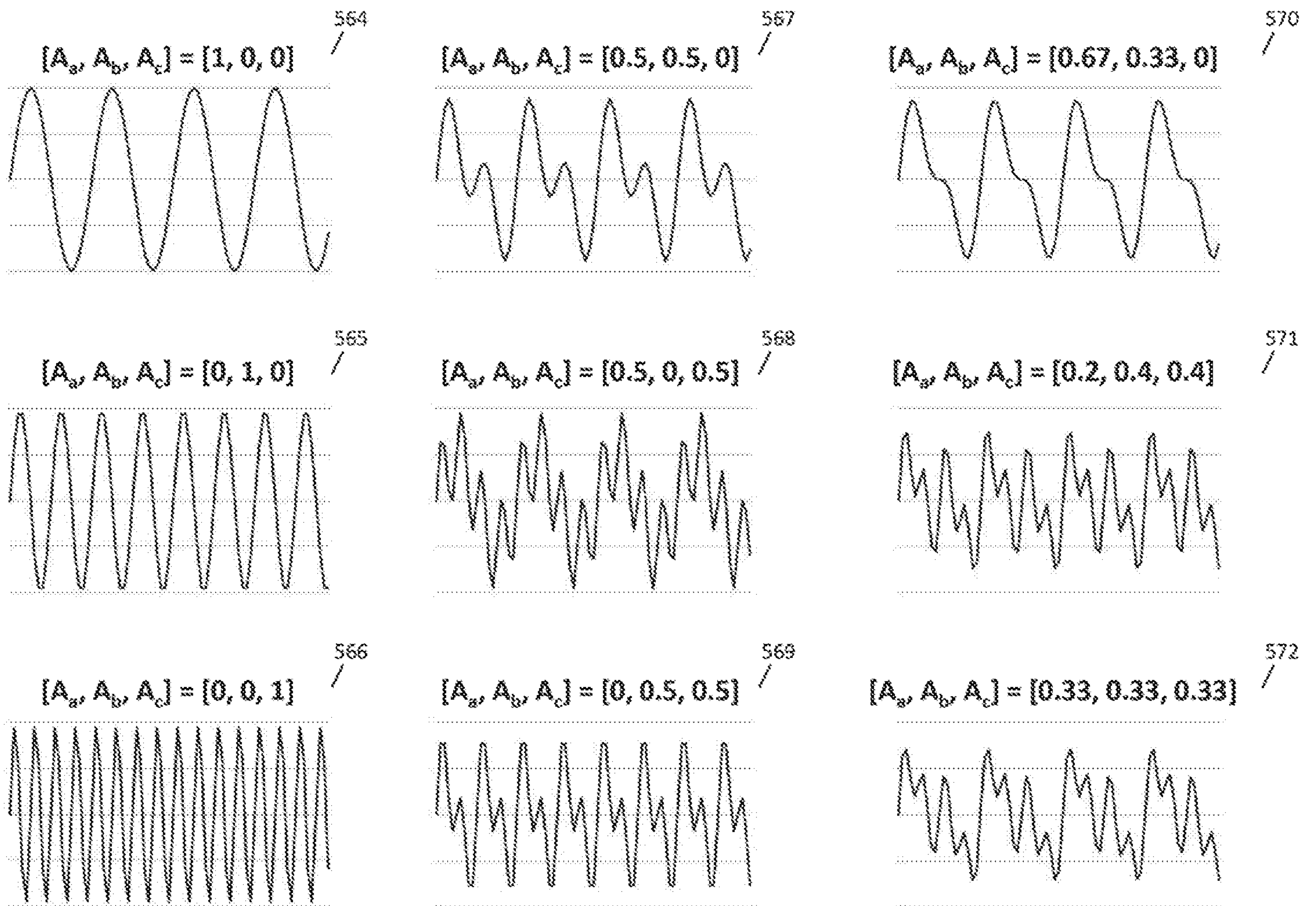


Figure 47

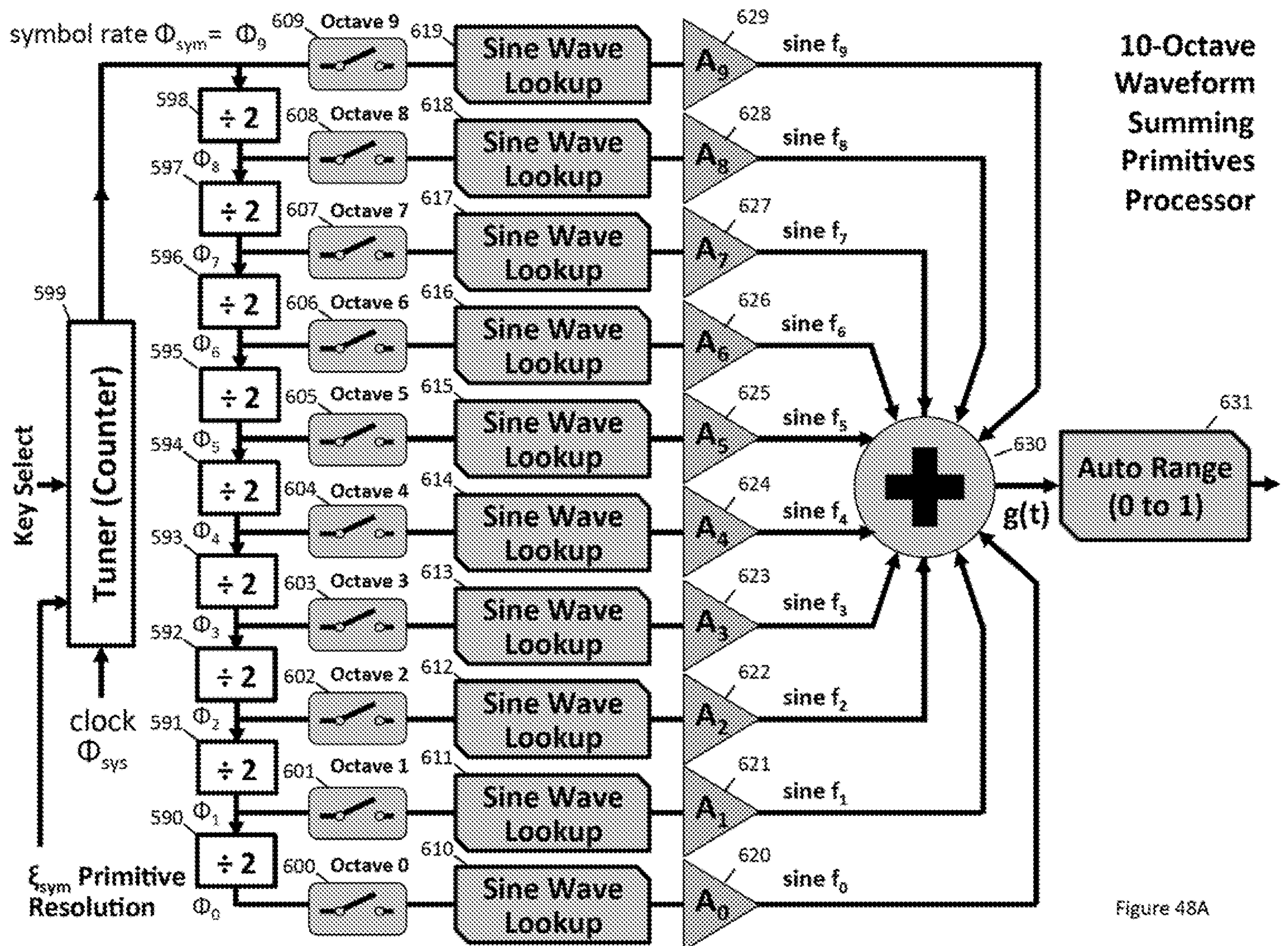


Figure 48A

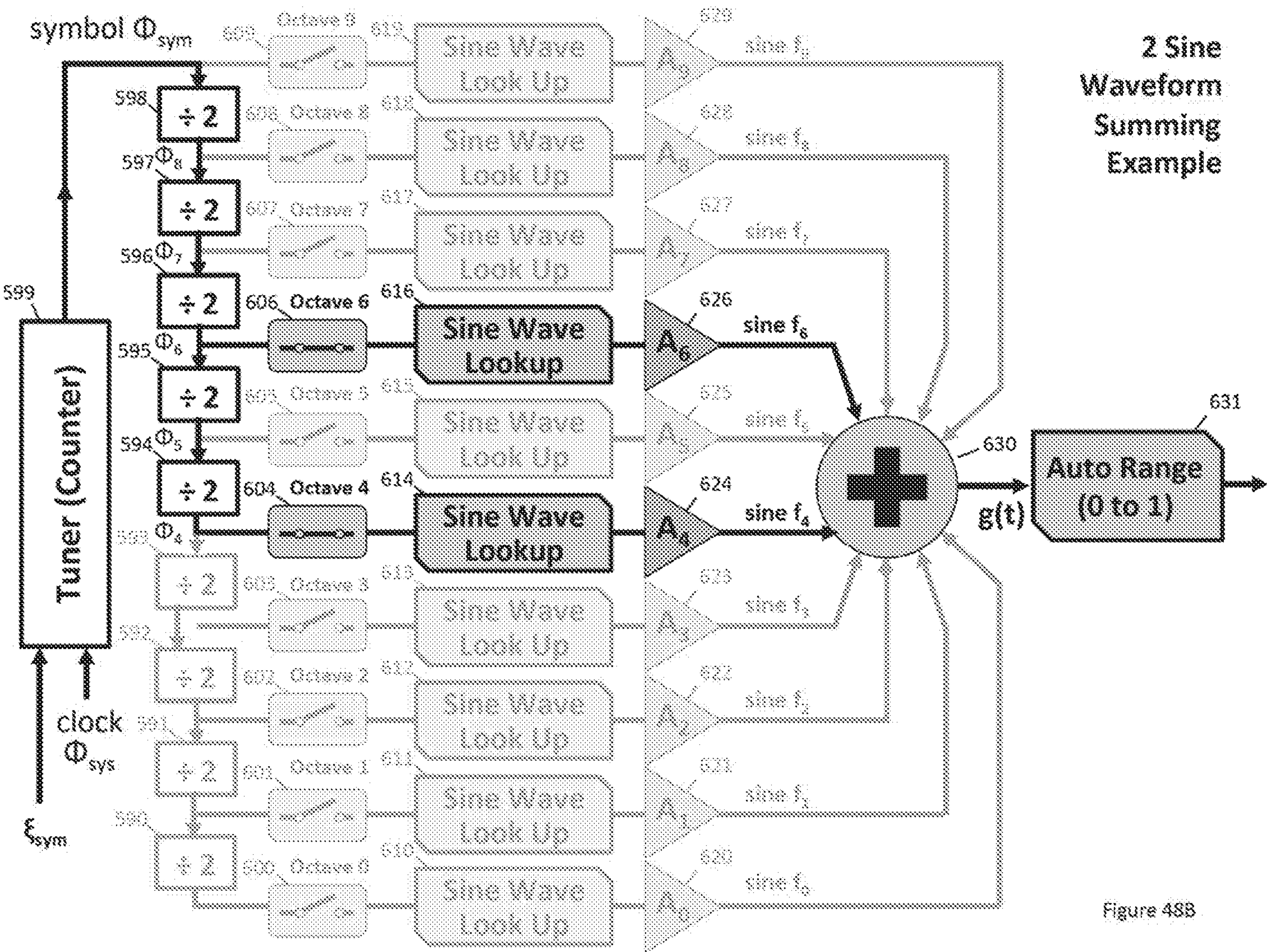


Figure 488

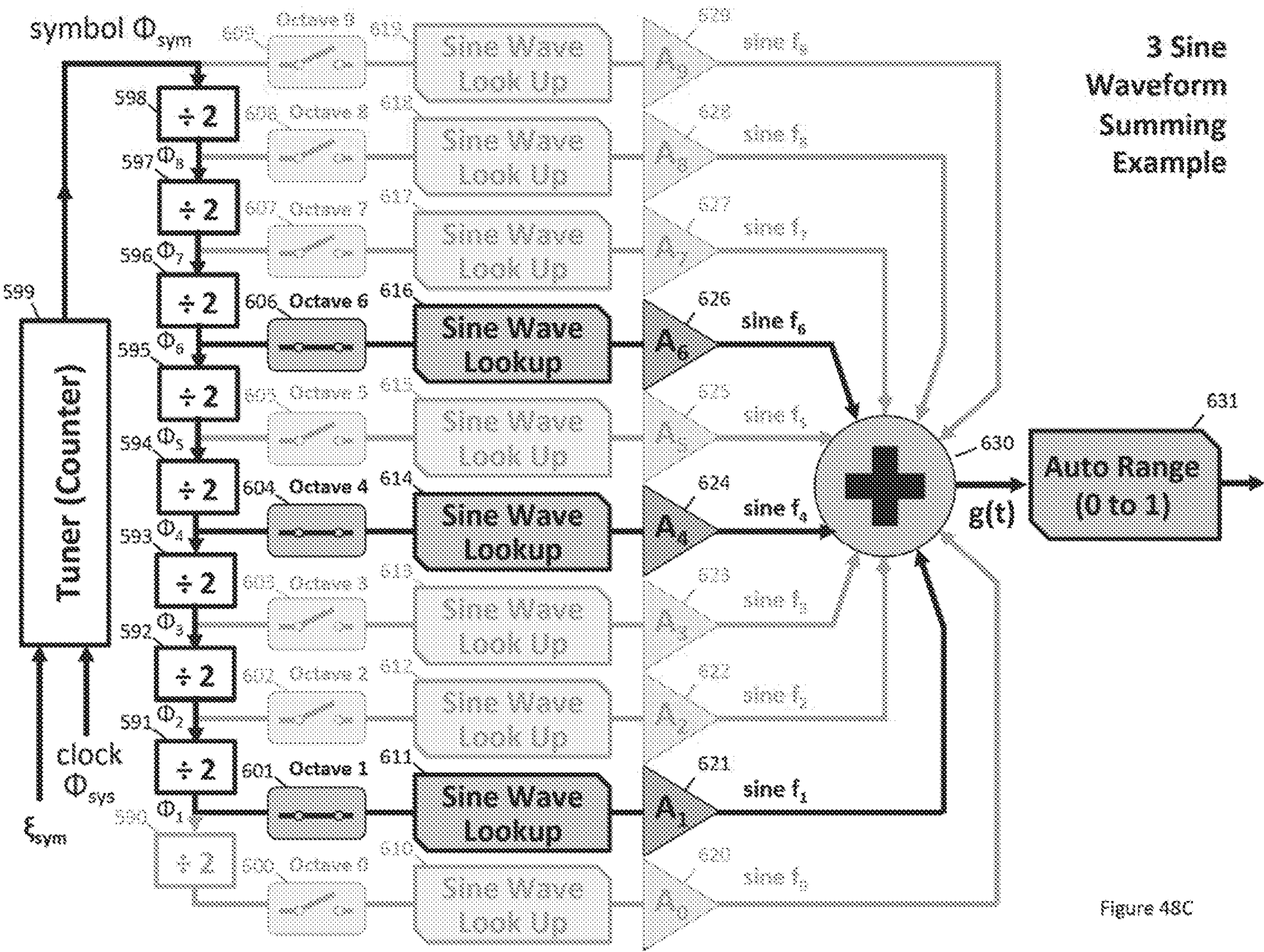
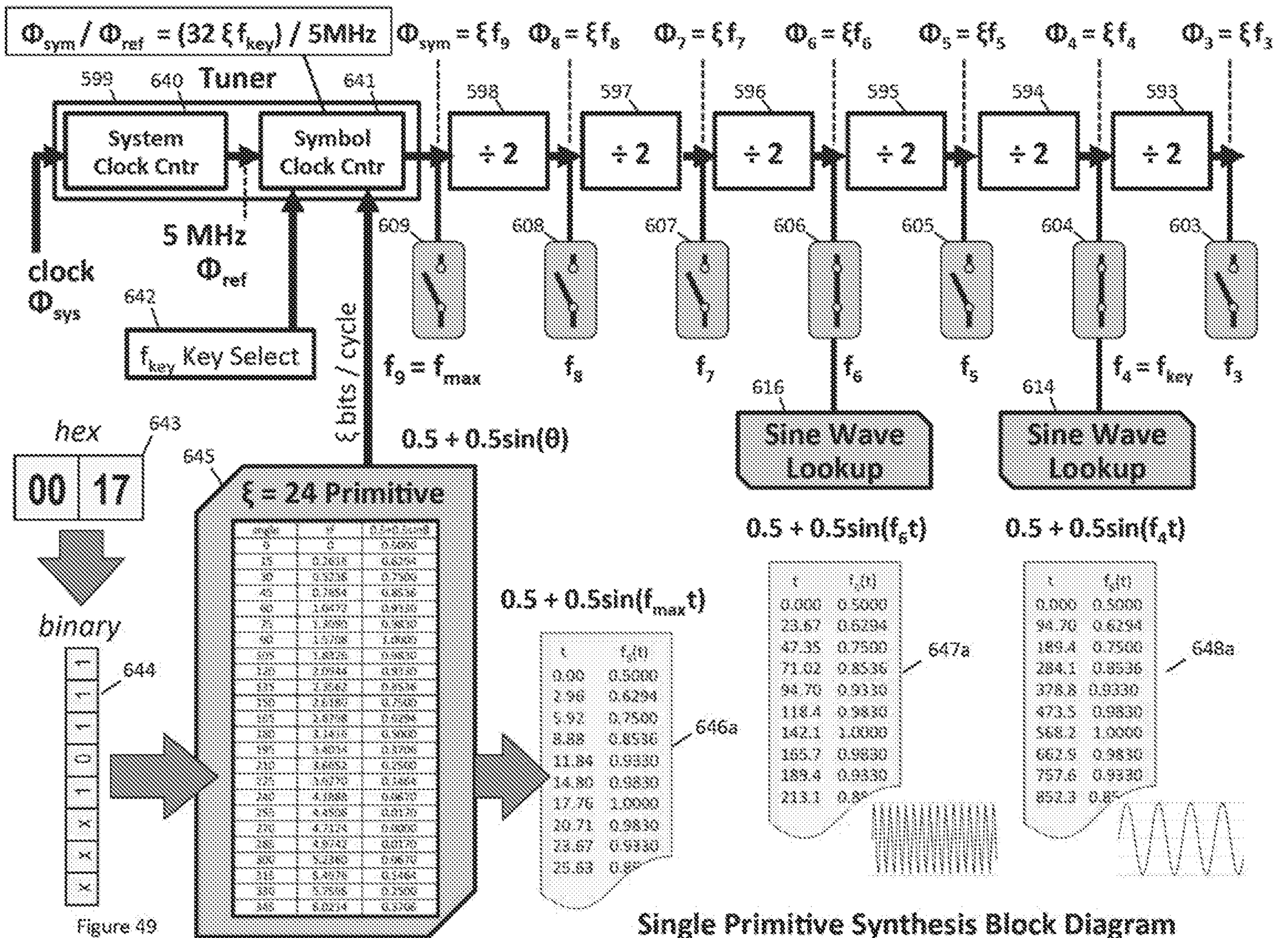
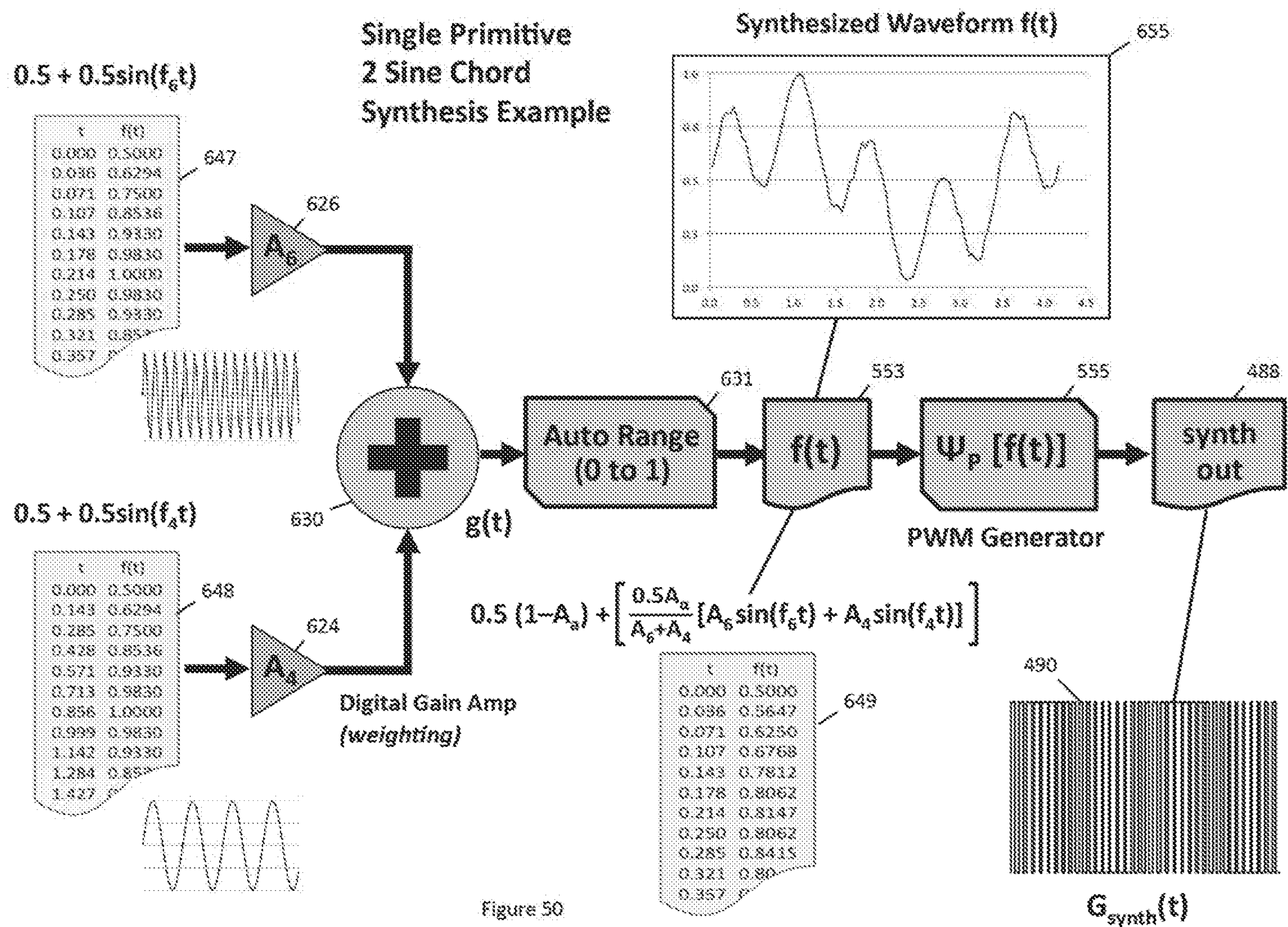


Figure 48C





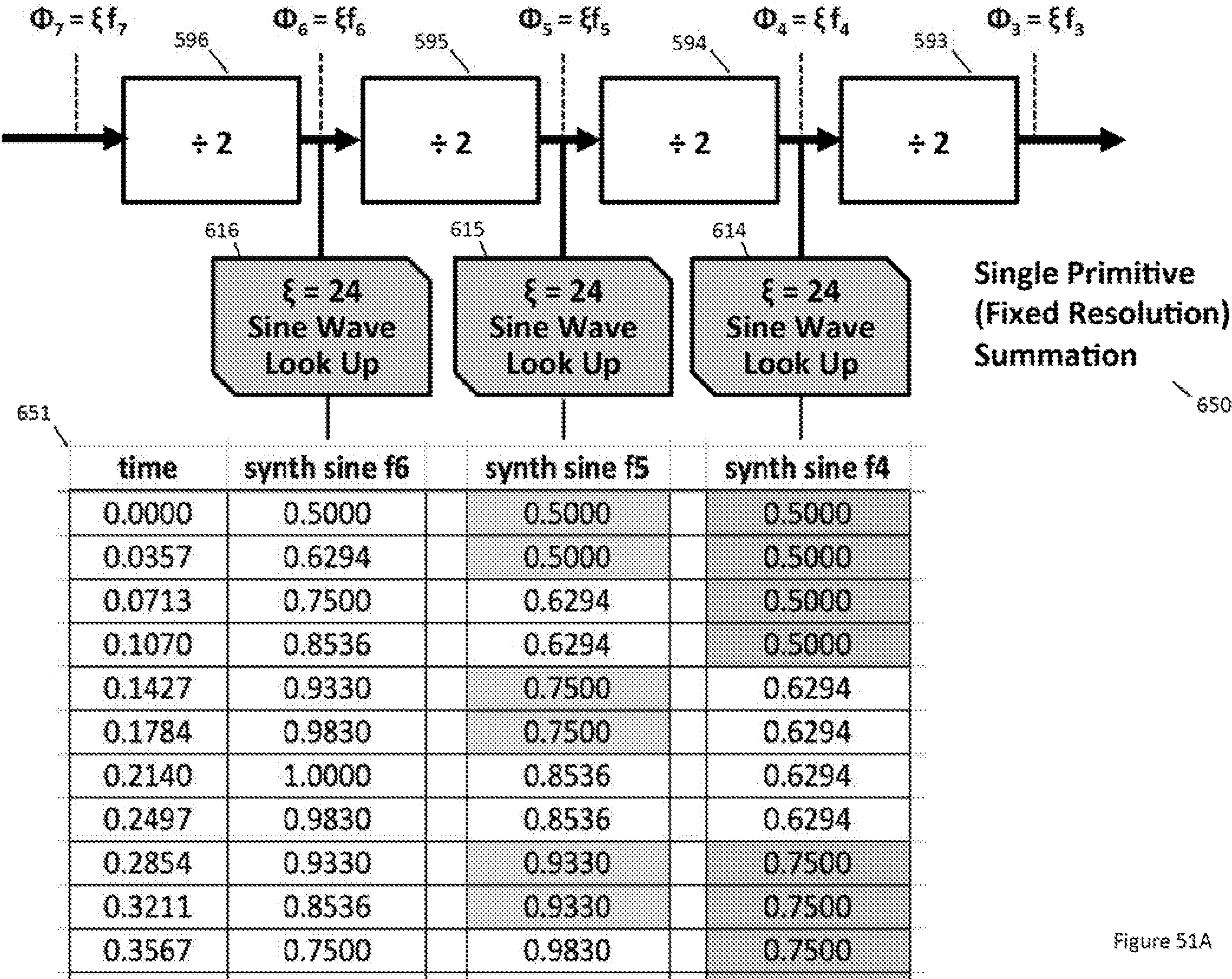


Figure 51A

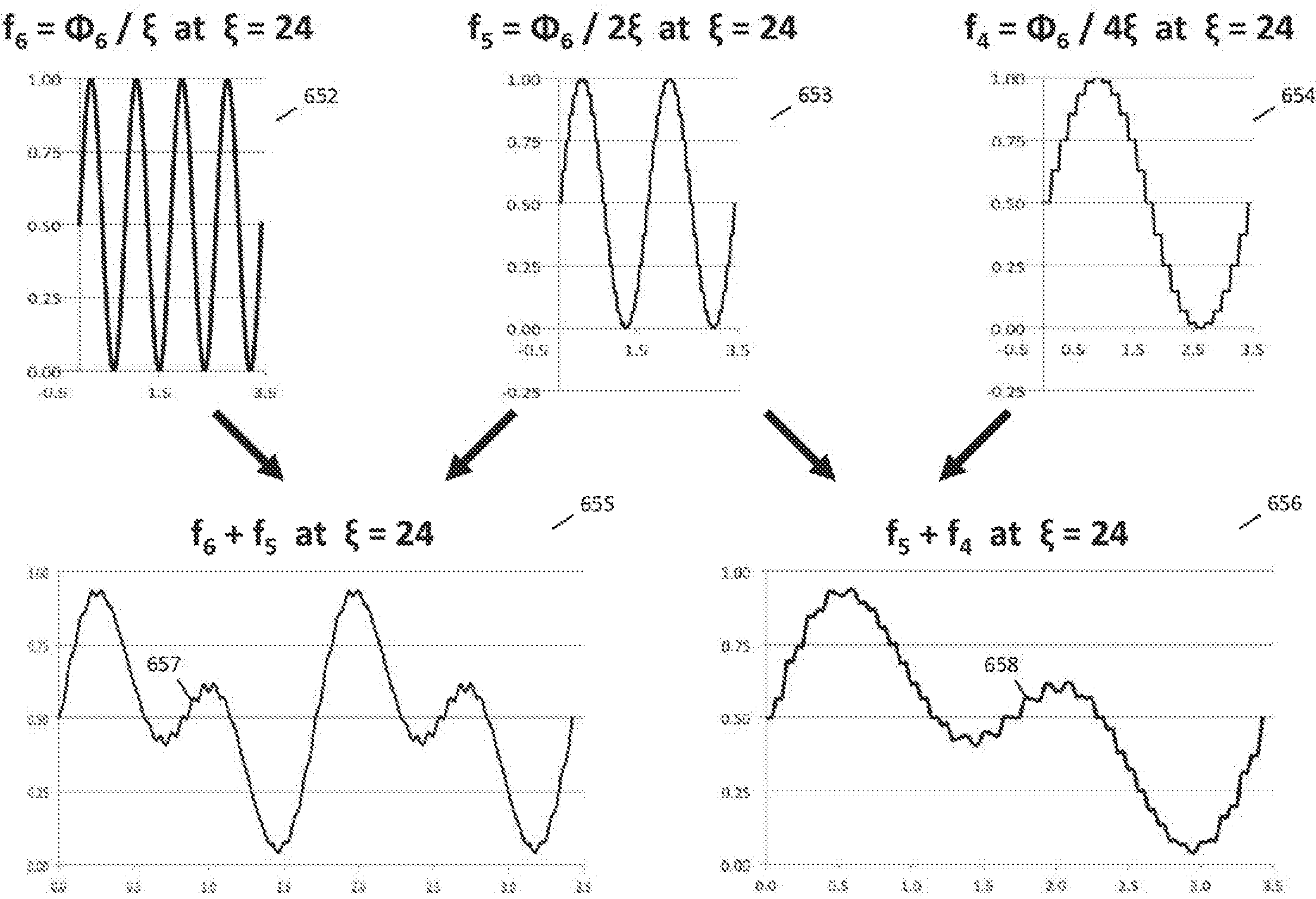


Figure S18

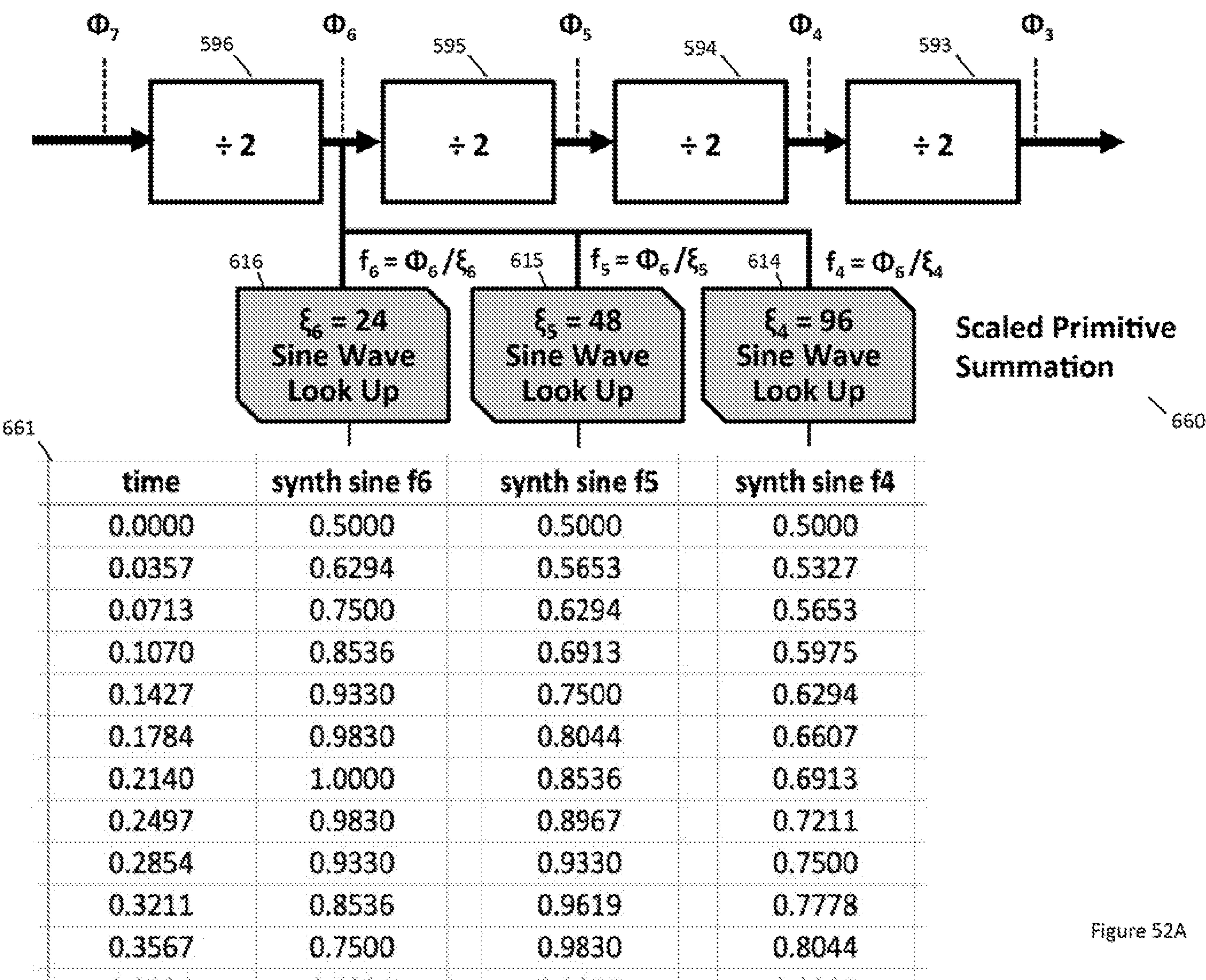


Figure 52A

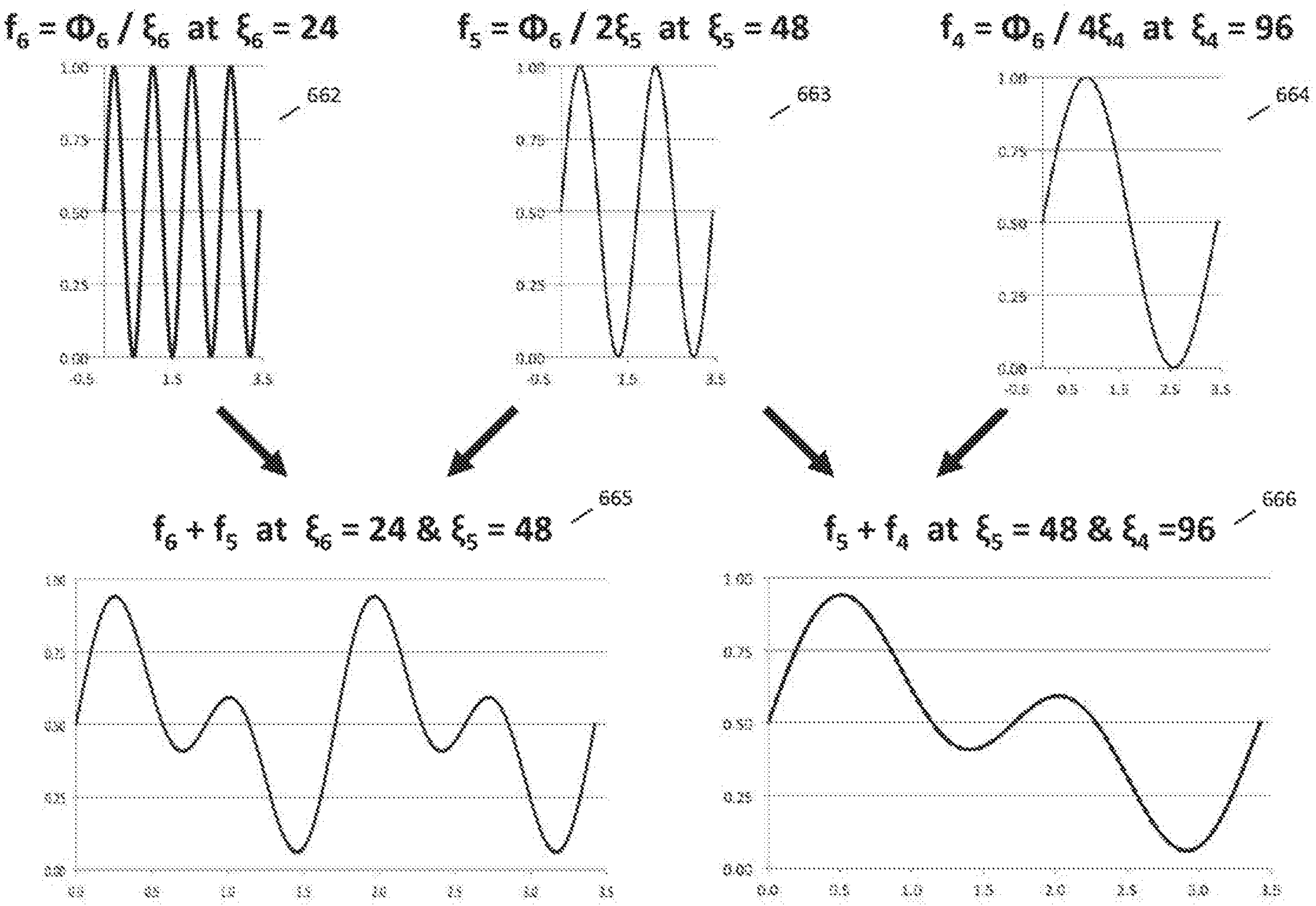


Figure 528

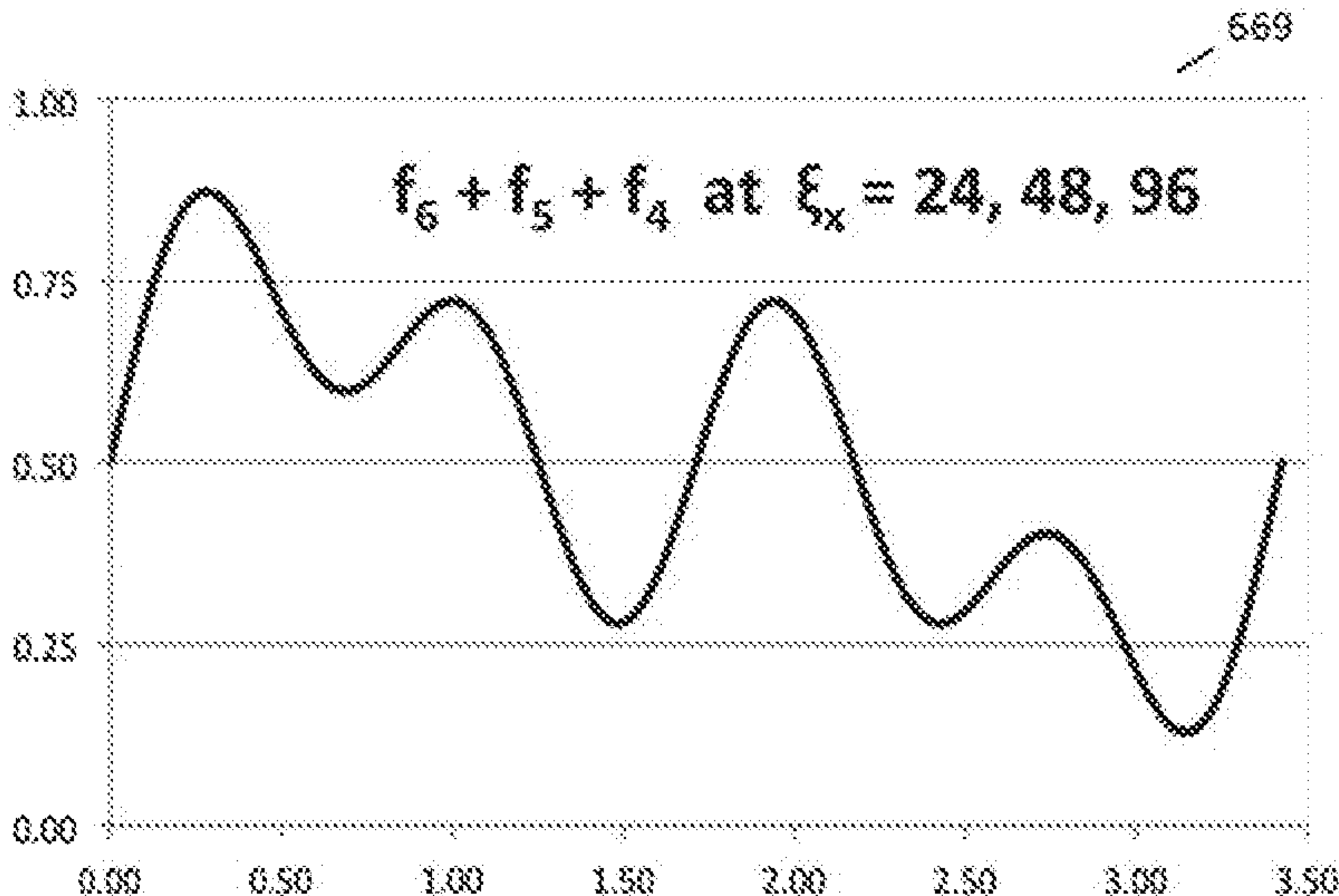
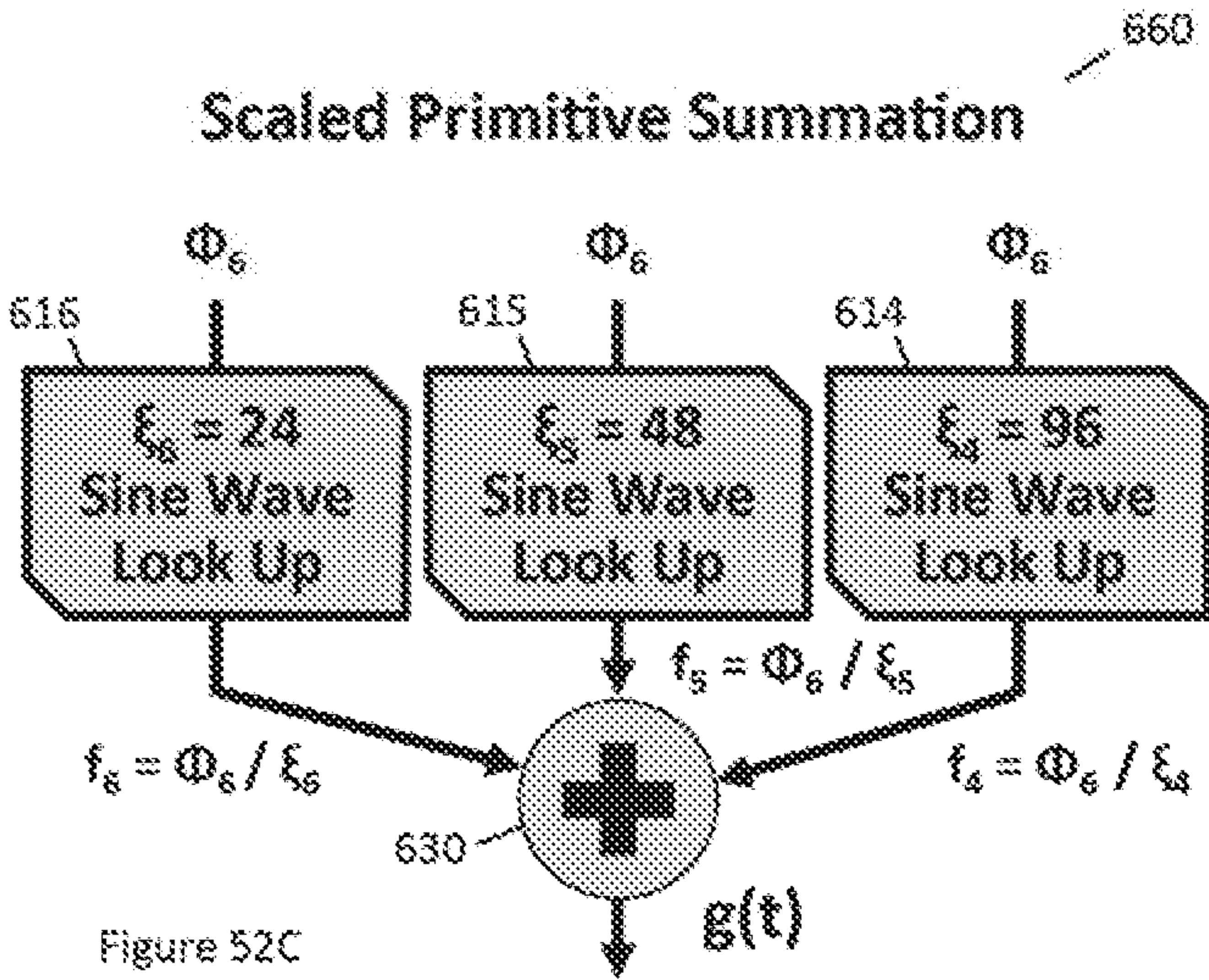
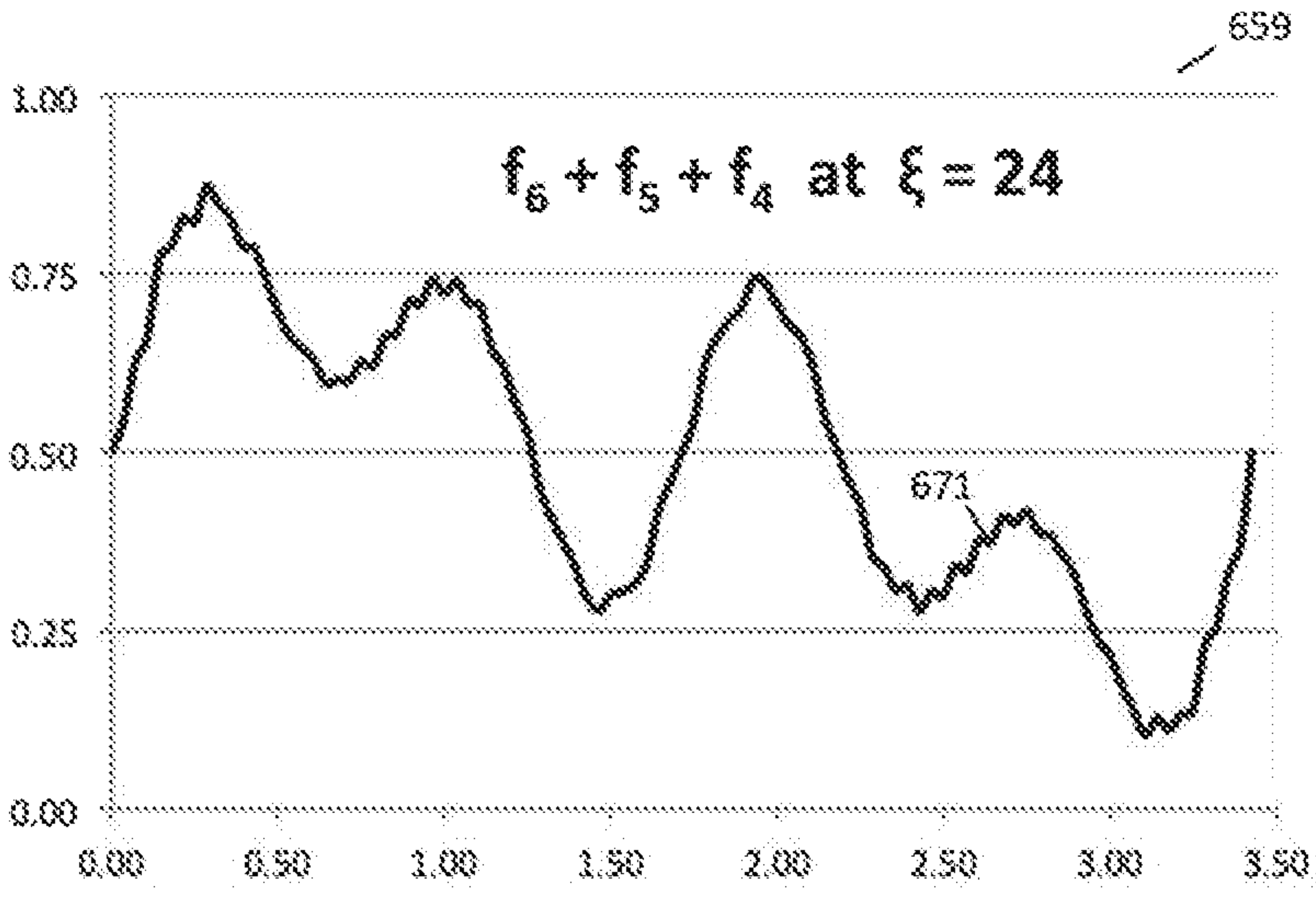
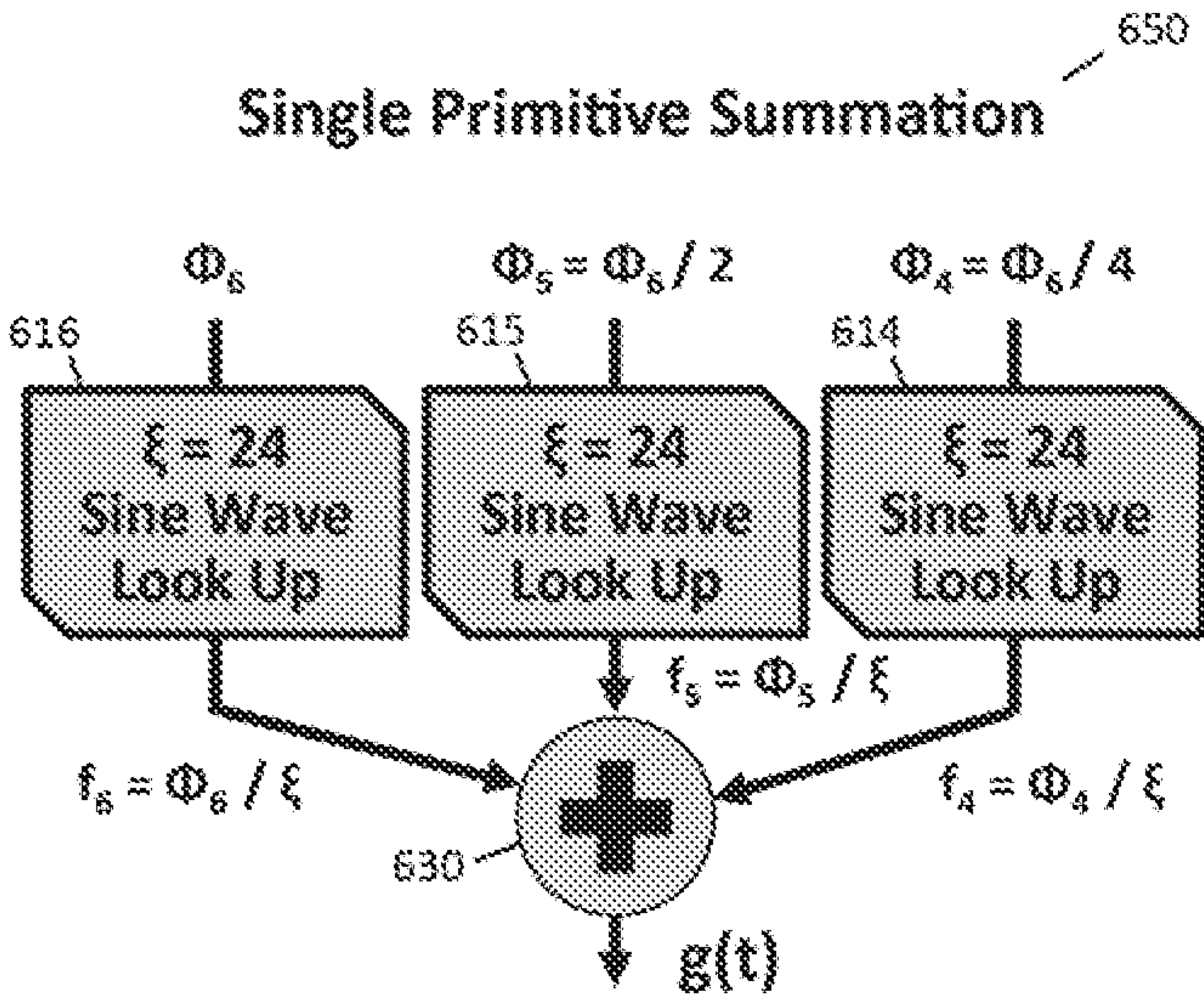


Figure 52C

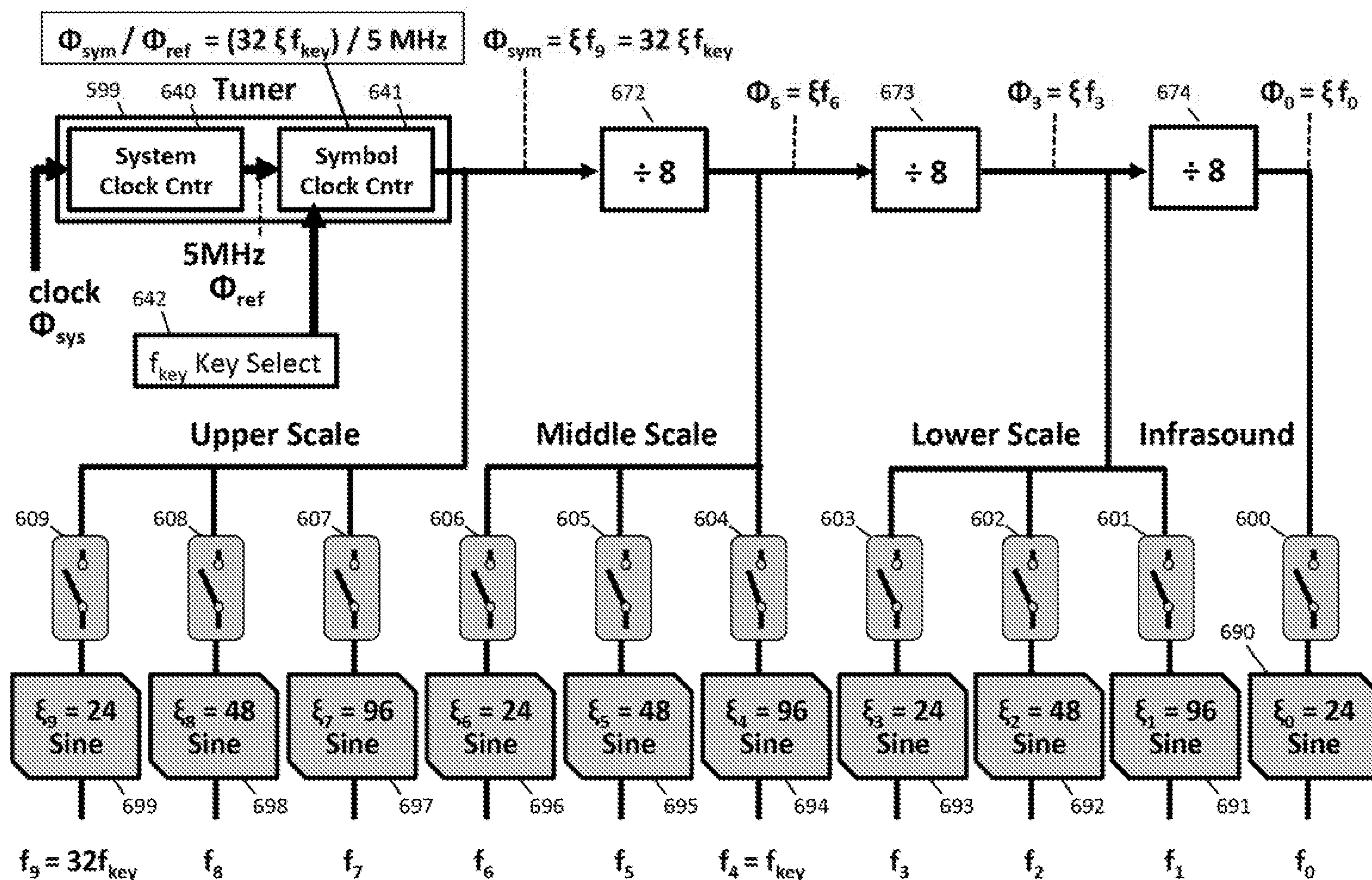


Figure 53

Quad-Range Scaled-Primitive Synthesis Block Diagram

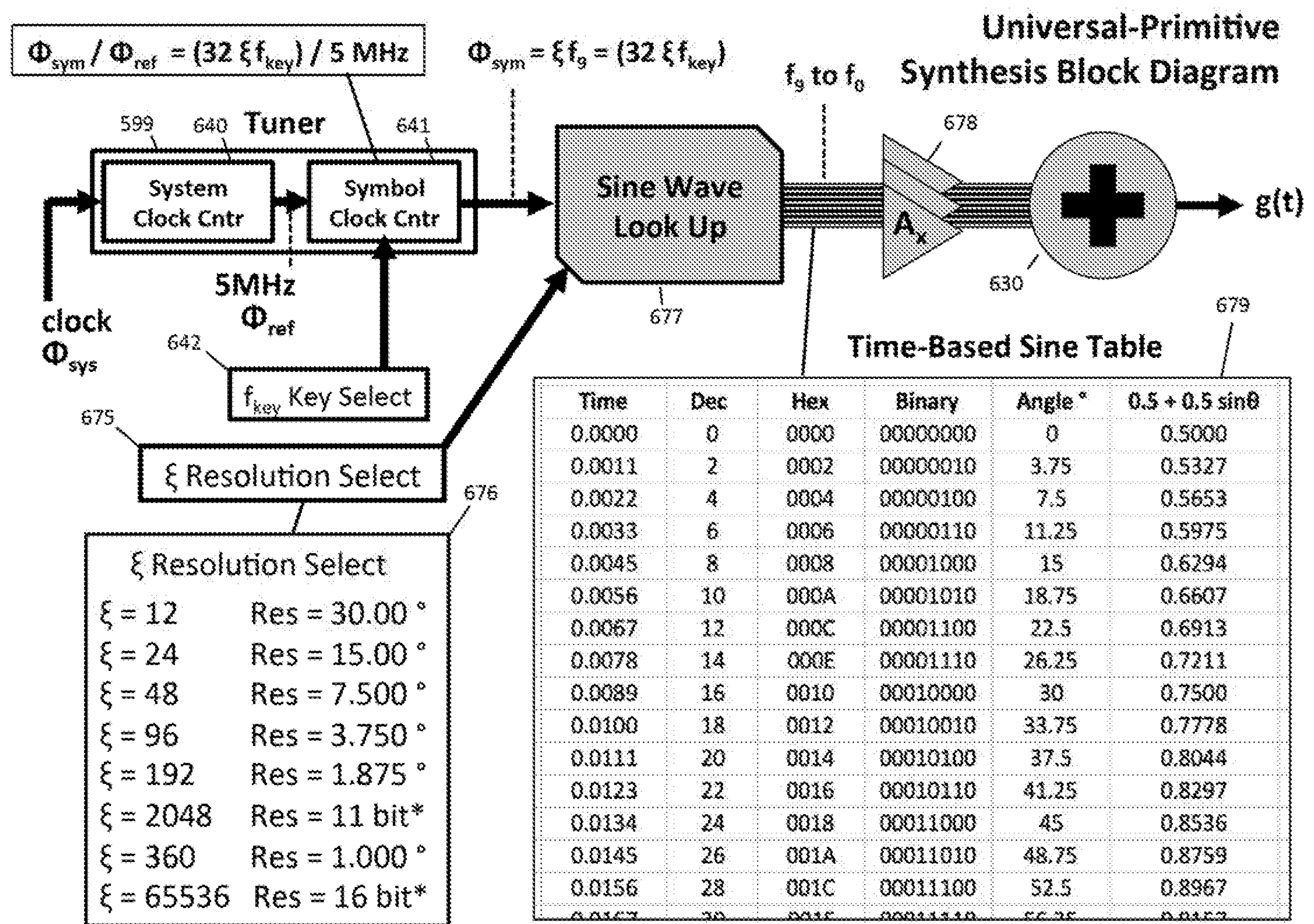
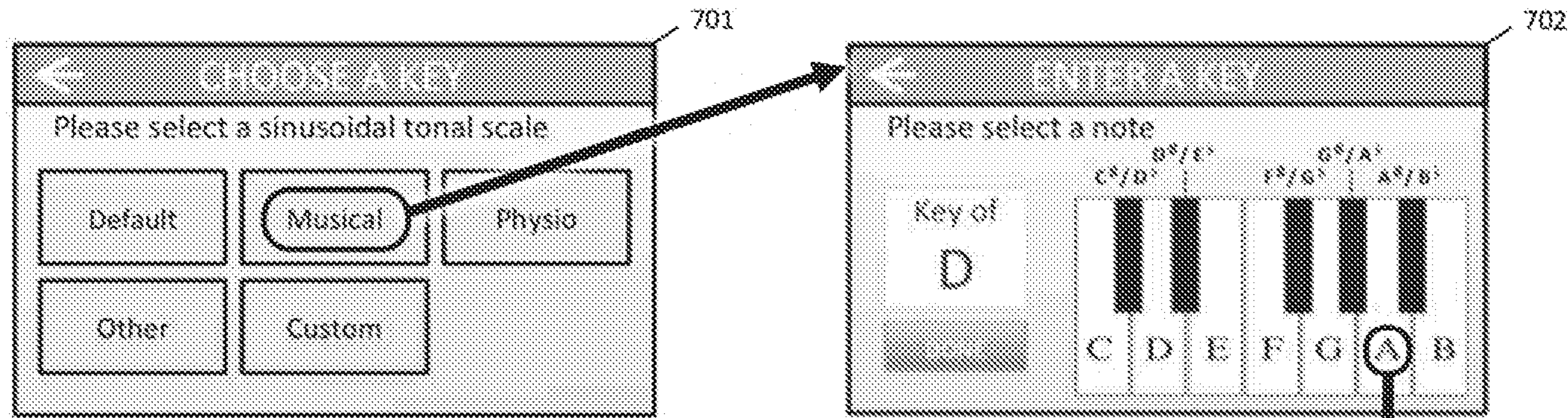


Figure 54

Set Global Key (Musical)

1. User selects scale type (UI top menu)



2. Frequency loaded into f_{key} register

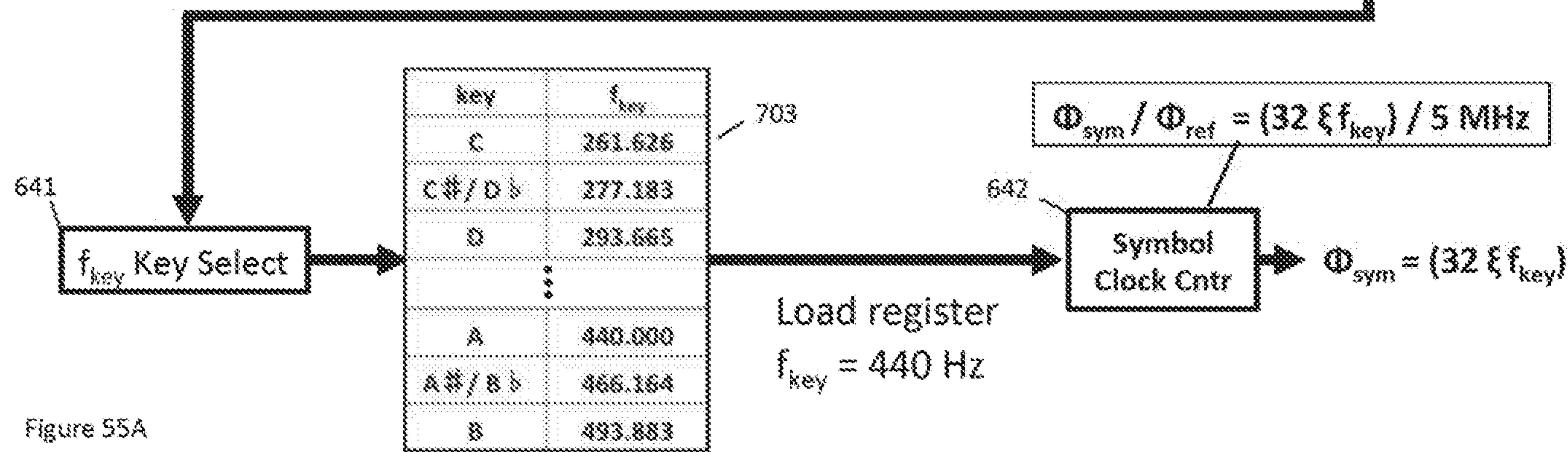
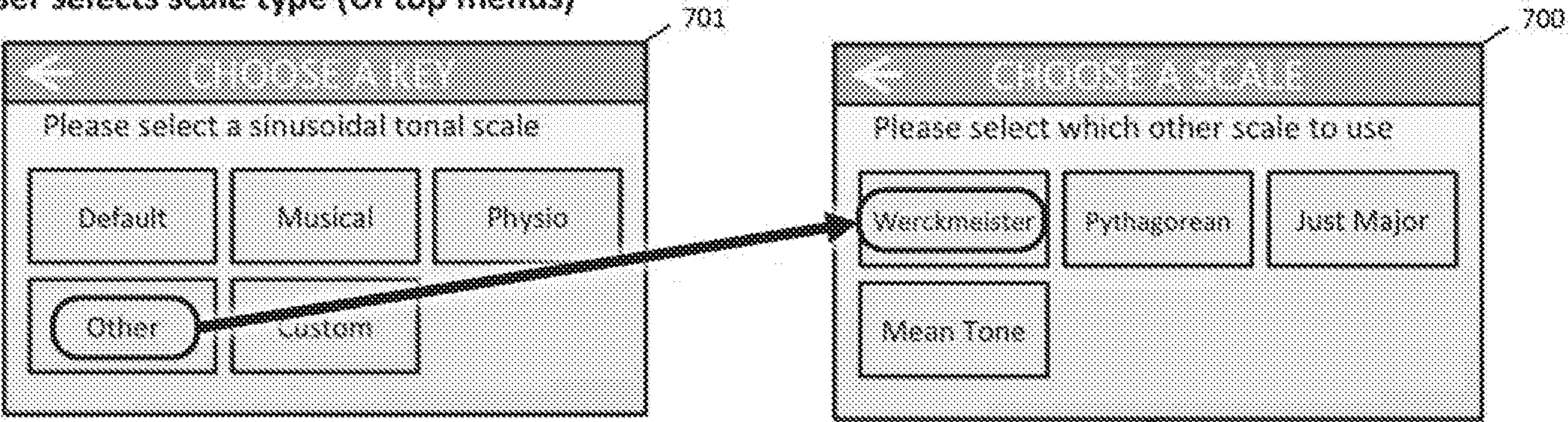


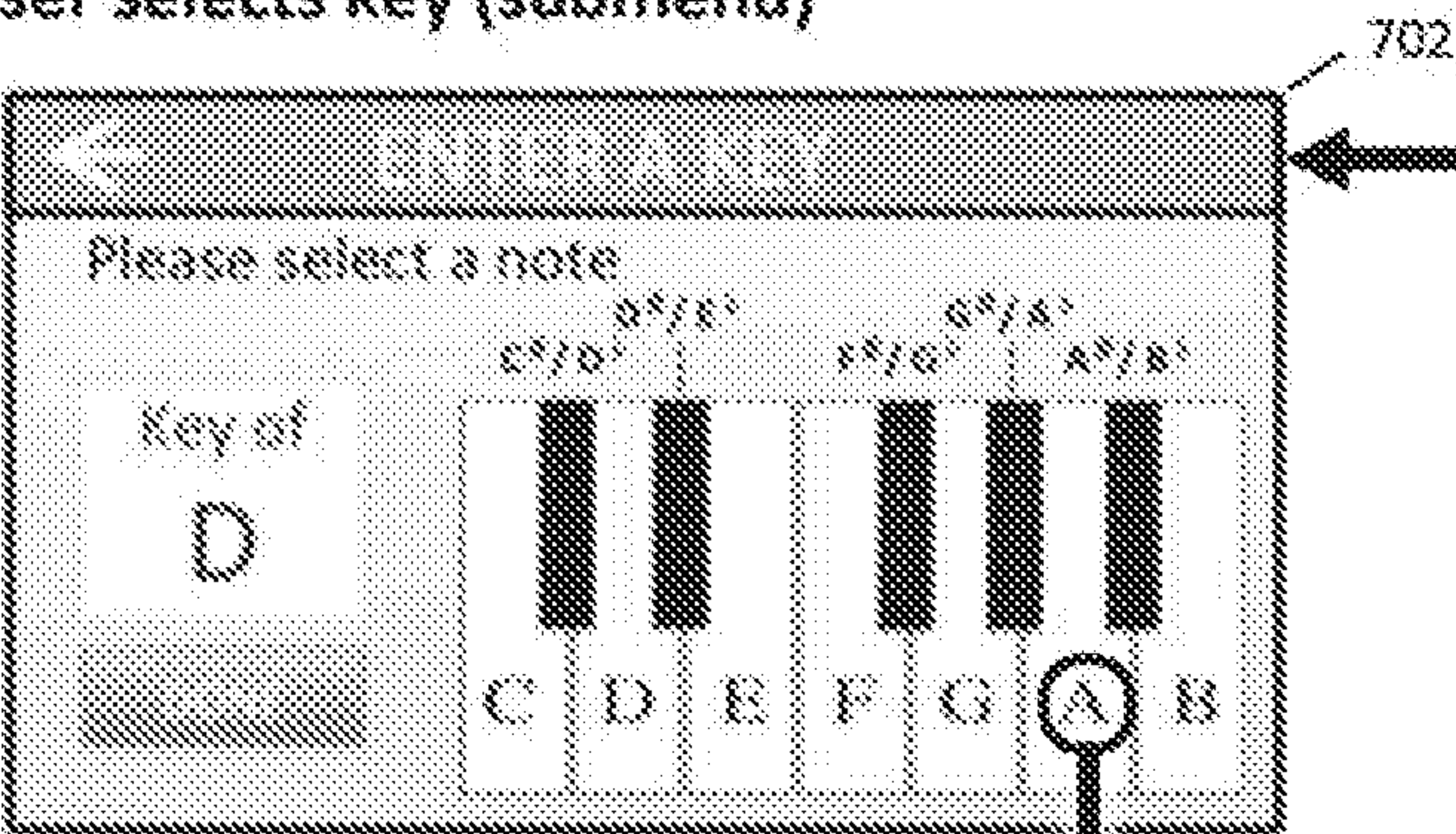
Figure 55A

Set Global Key (Other)

1. User selects scale type (UI top menus)



2. User selects key (submenu)



3. Frequency loaded into f_{key} register

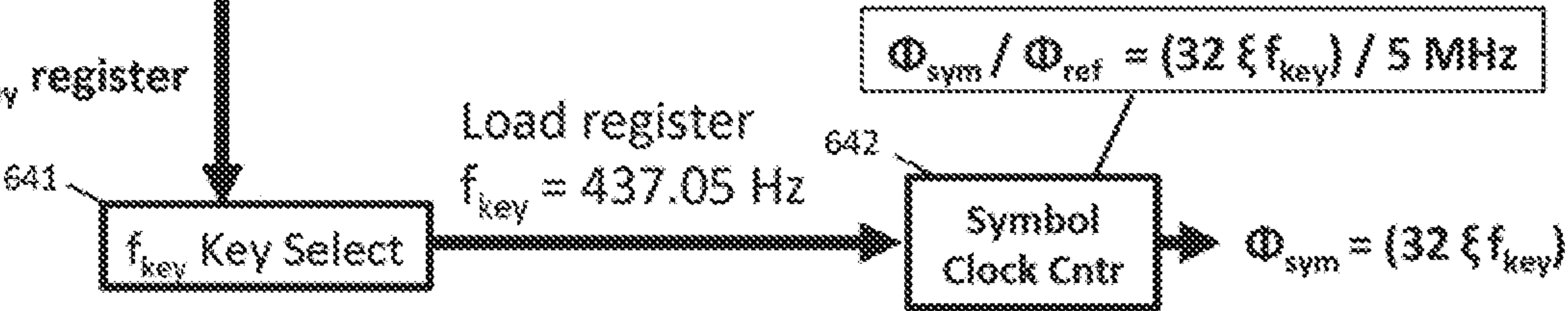
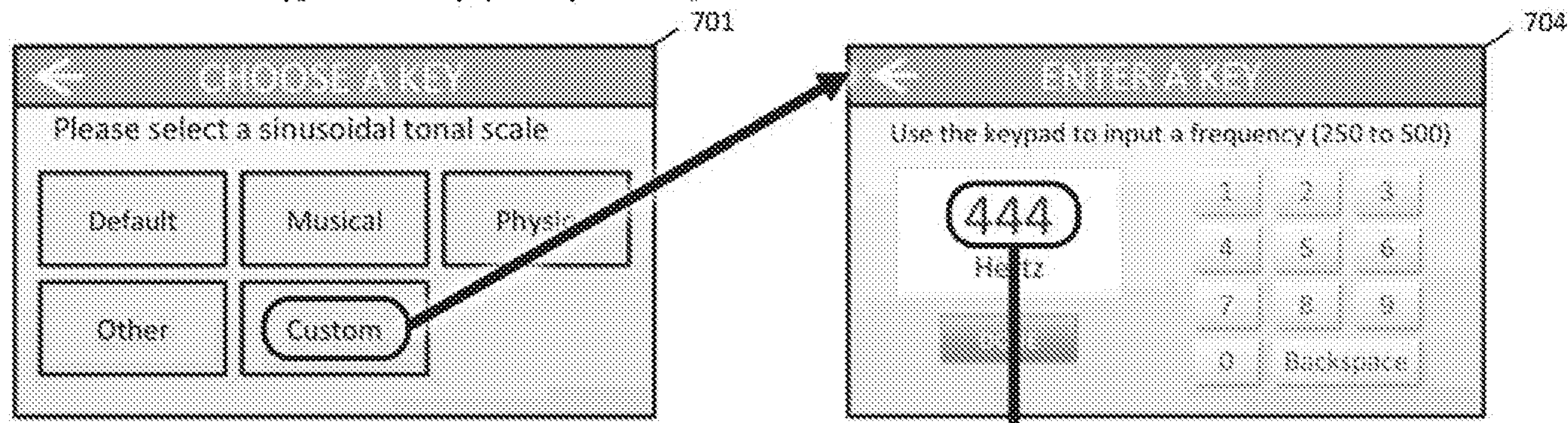


Figure 55B

Set Global Key (Custom)

1. User selects scale type and key (UI top menu)



2. Frequency loaded into f_{key} register

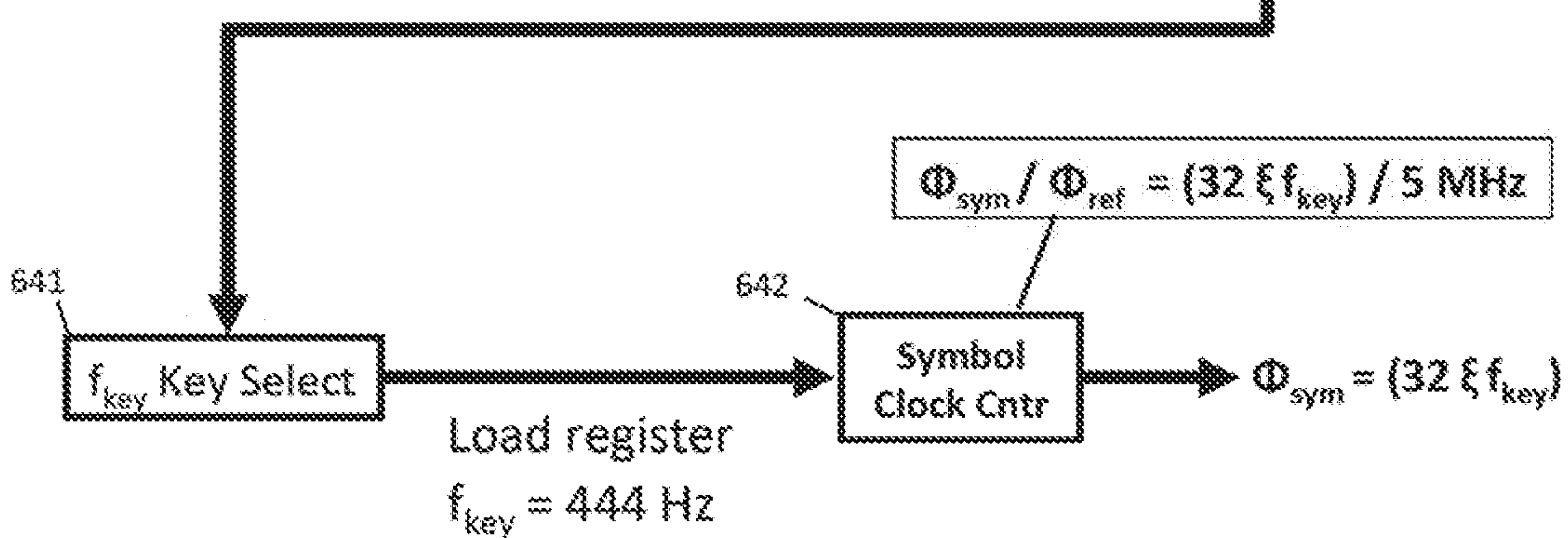


Figure 56

Algorithmic Tri/Quad Chord Builder
Synthesis Block Diagram

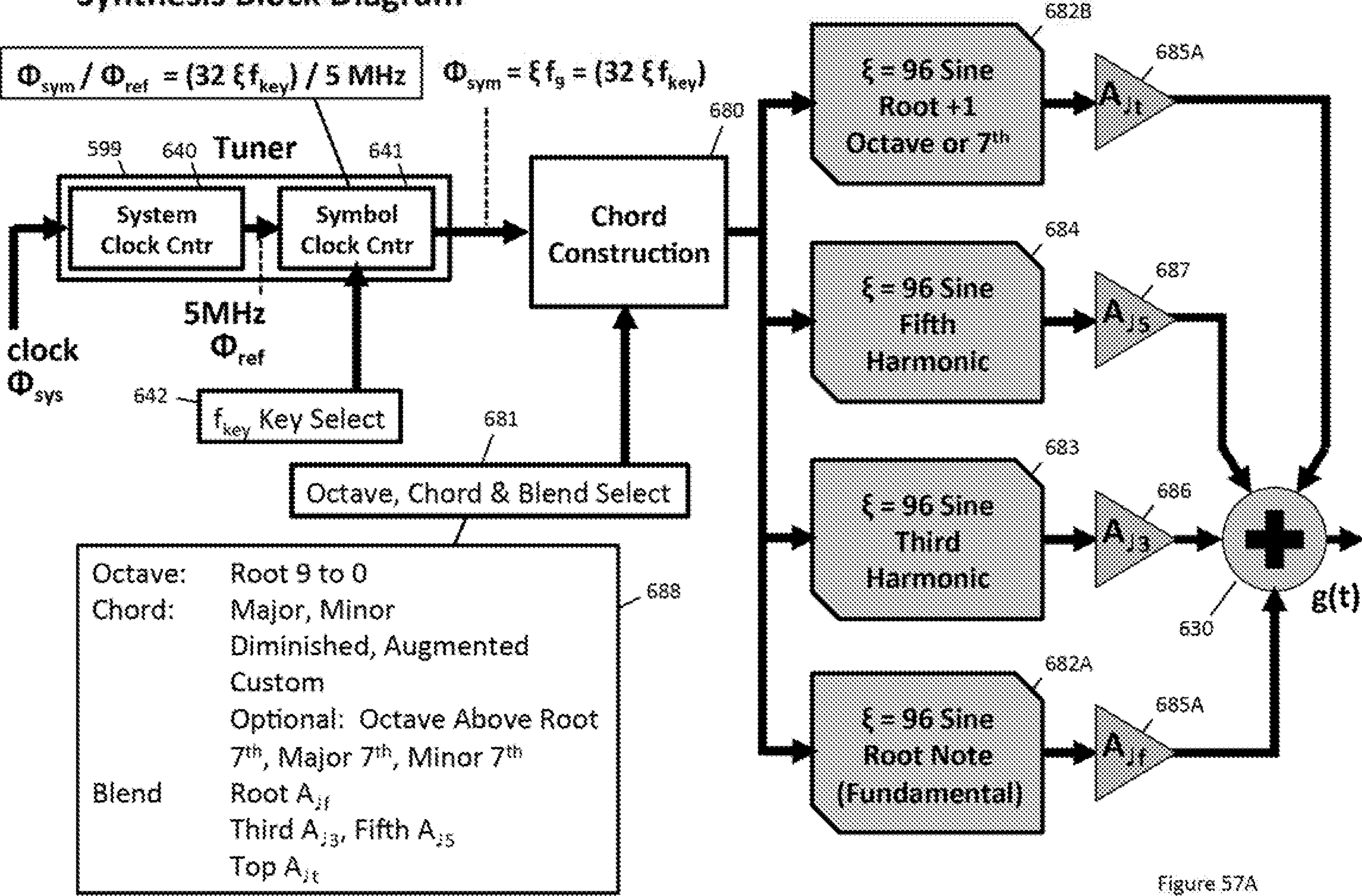
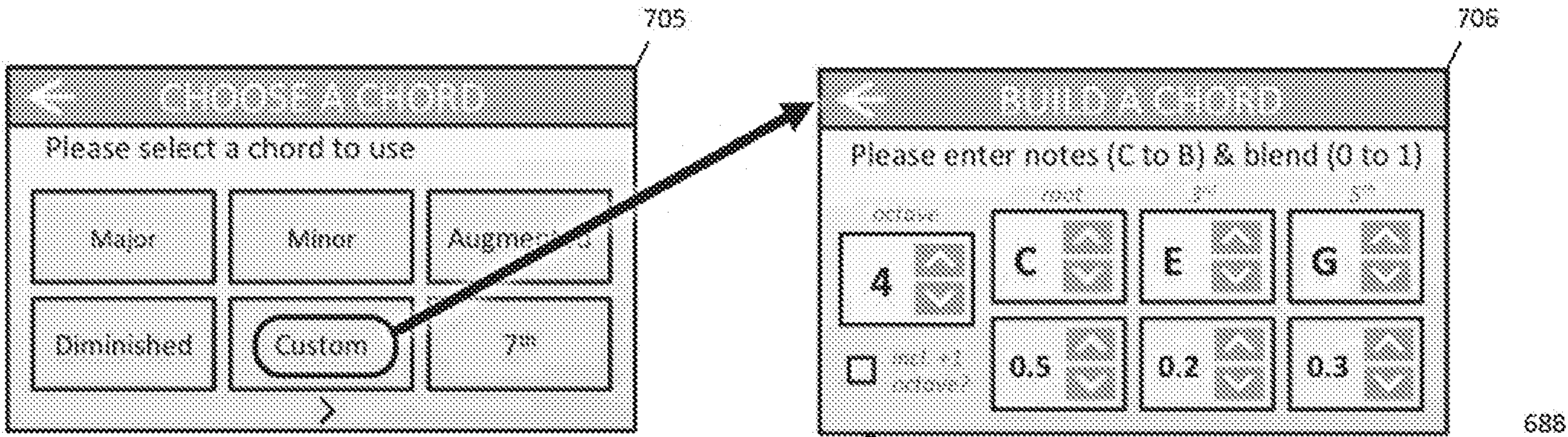


Figure 57A

Build a Custom Chord

1. User selects chord builder, octave, notes, and magnitude blend



2. Frequencies loaded into chord construction

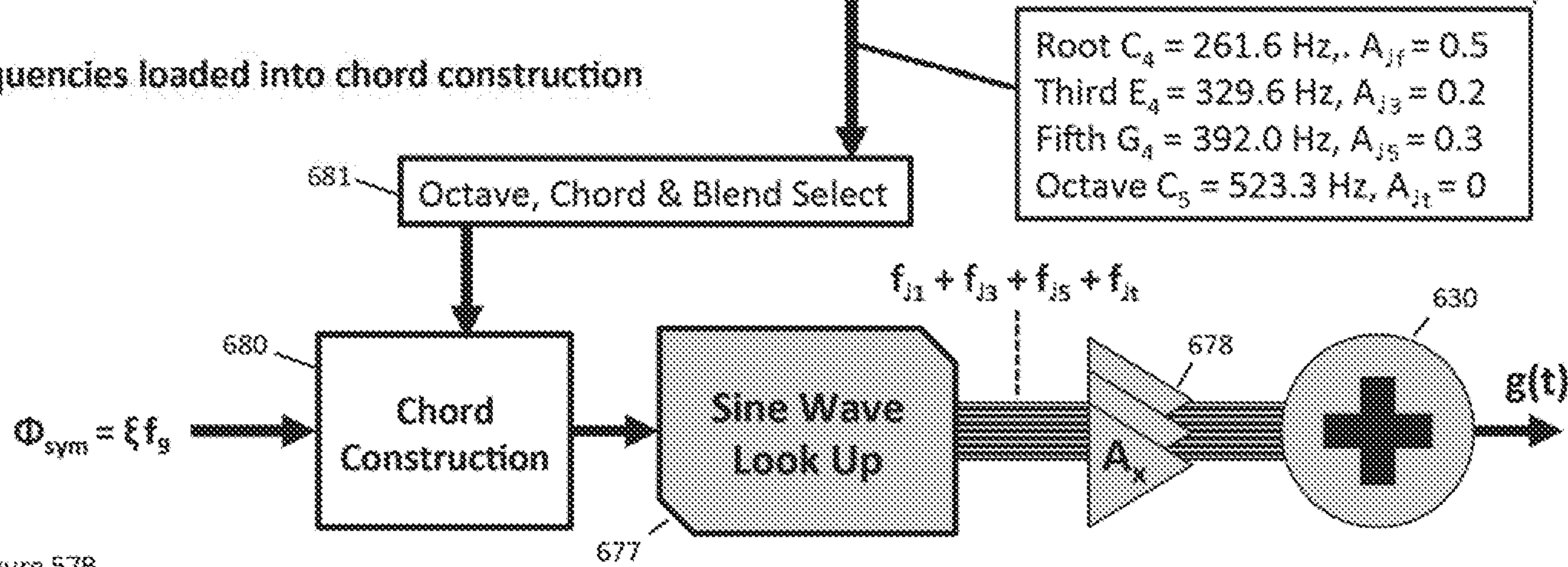
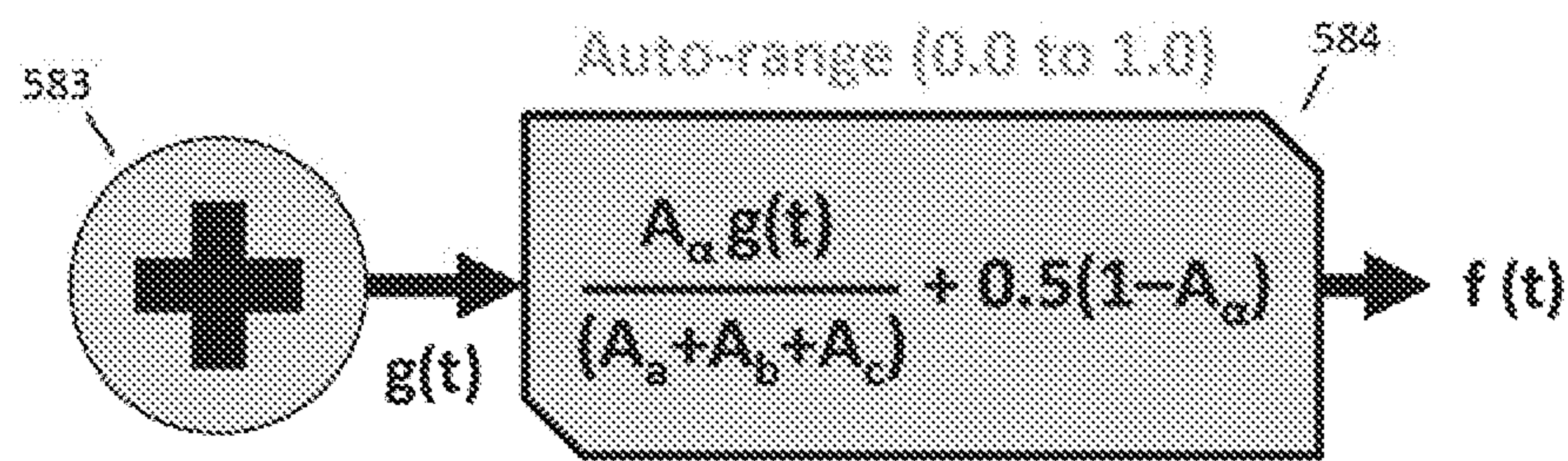


Figure 57B



Un-Amplified Sine Summation Synthesis

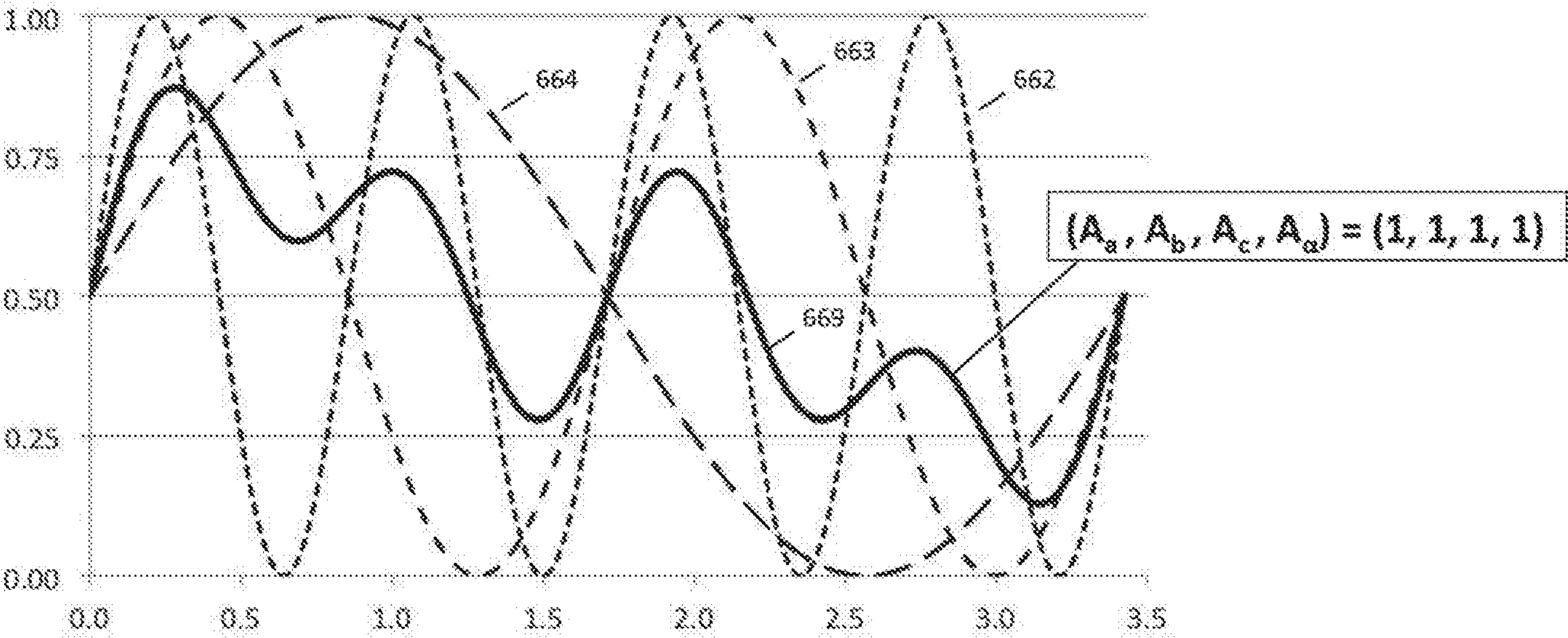
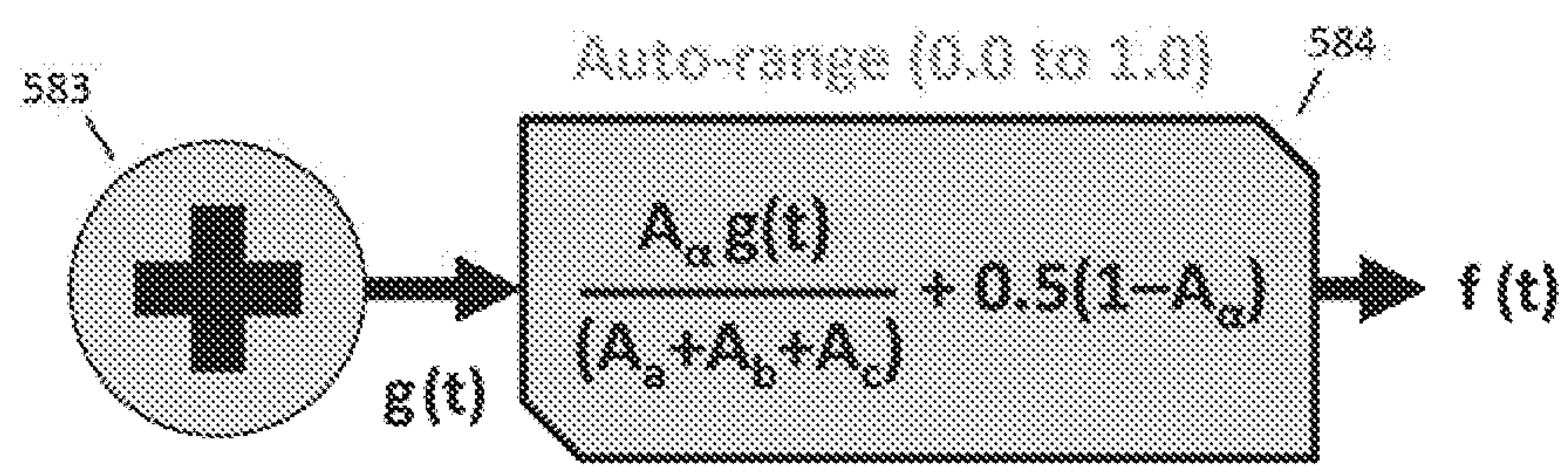


Figure S8A



Amplified vs. Un-Amplified Sine Summation Synthesis

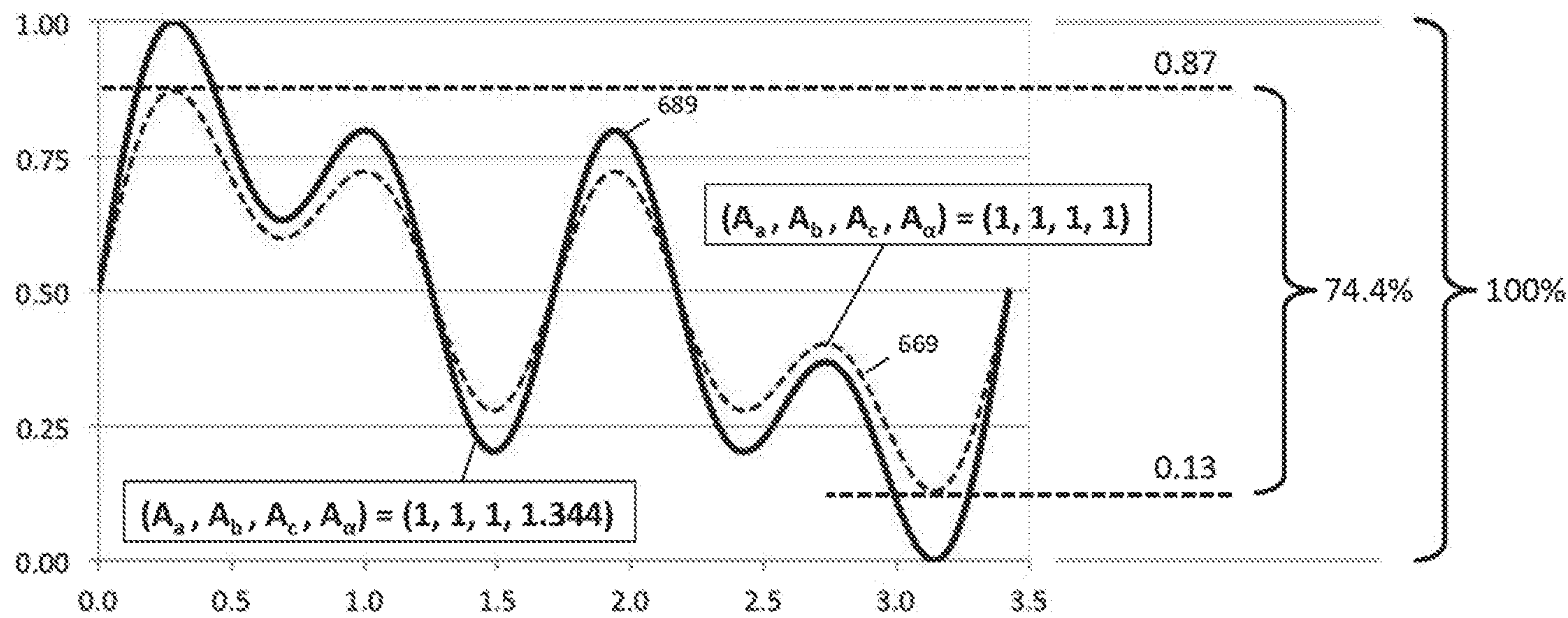


Figure 58B

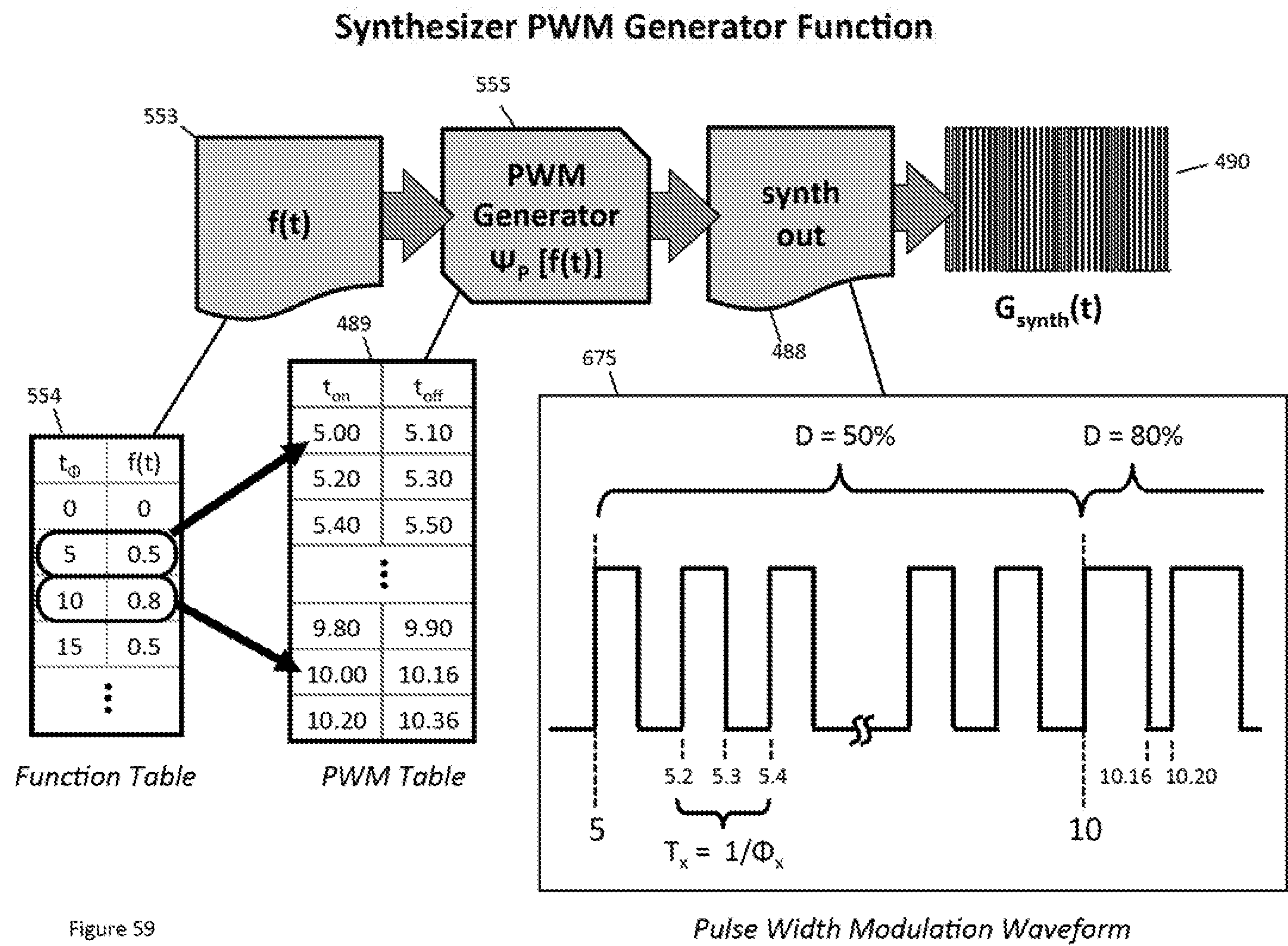


Figure 59

Non-Sinusoidal PWM Generated Functions

Synthesized Waveform

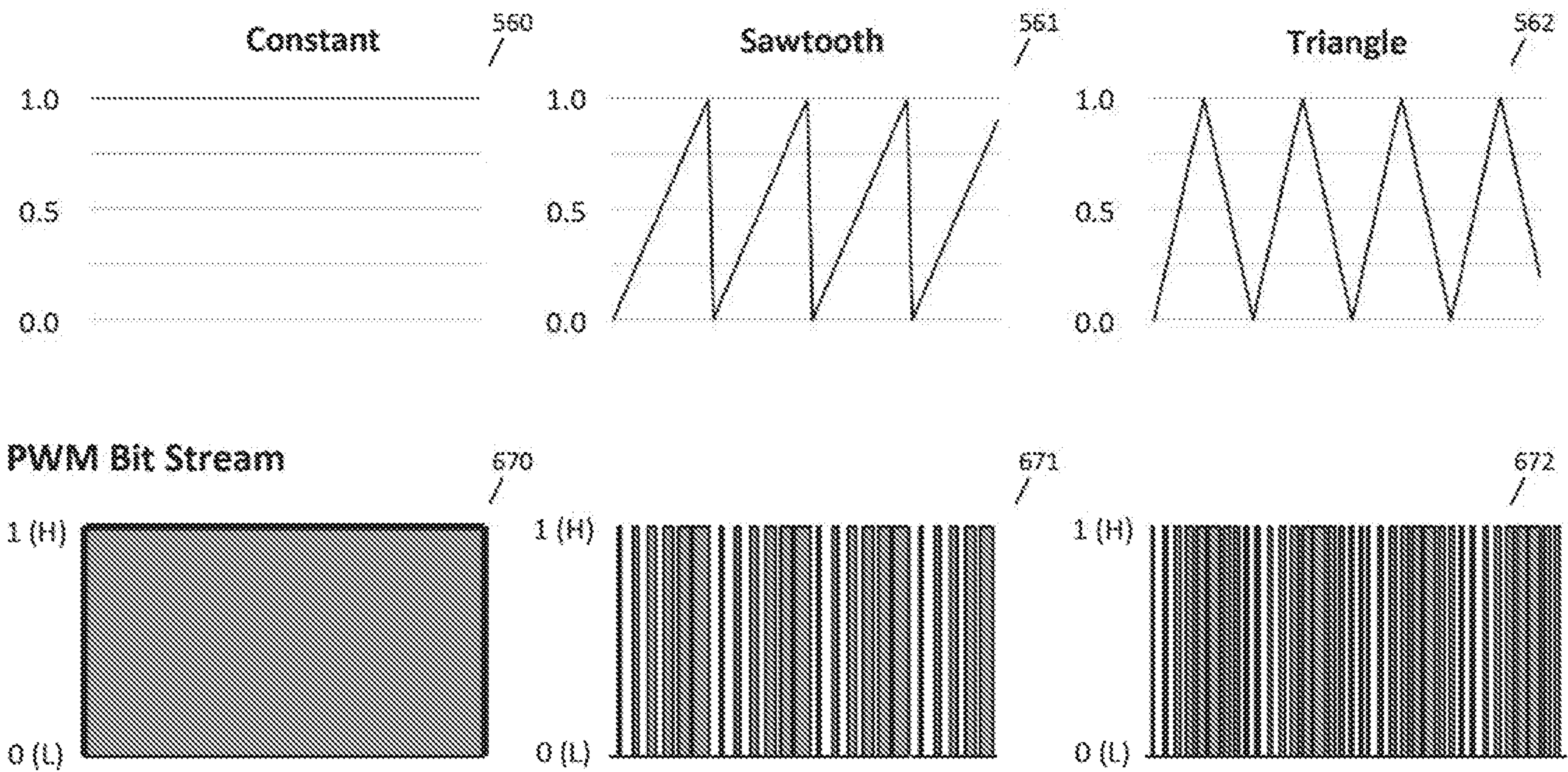


Figure 60

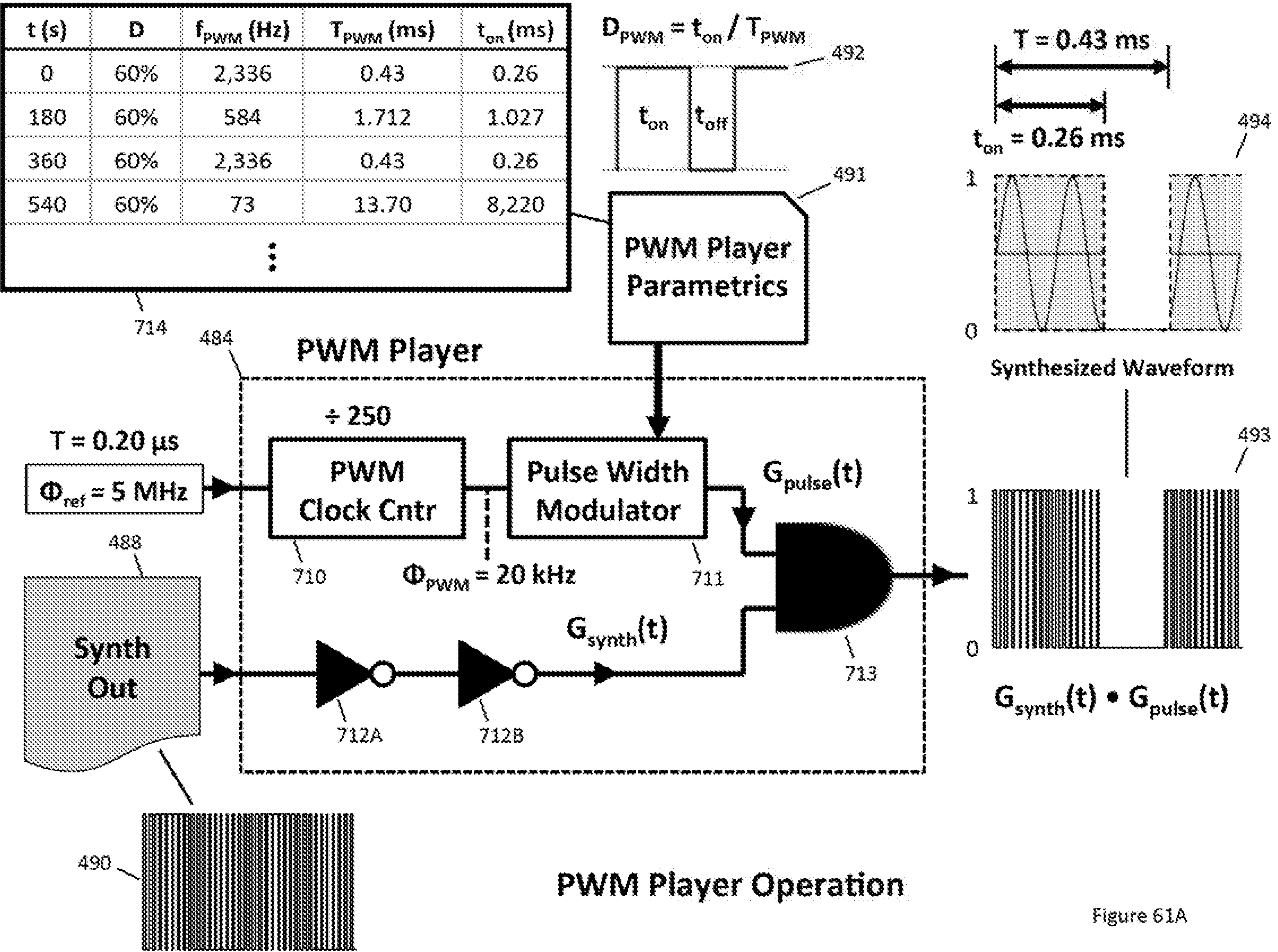
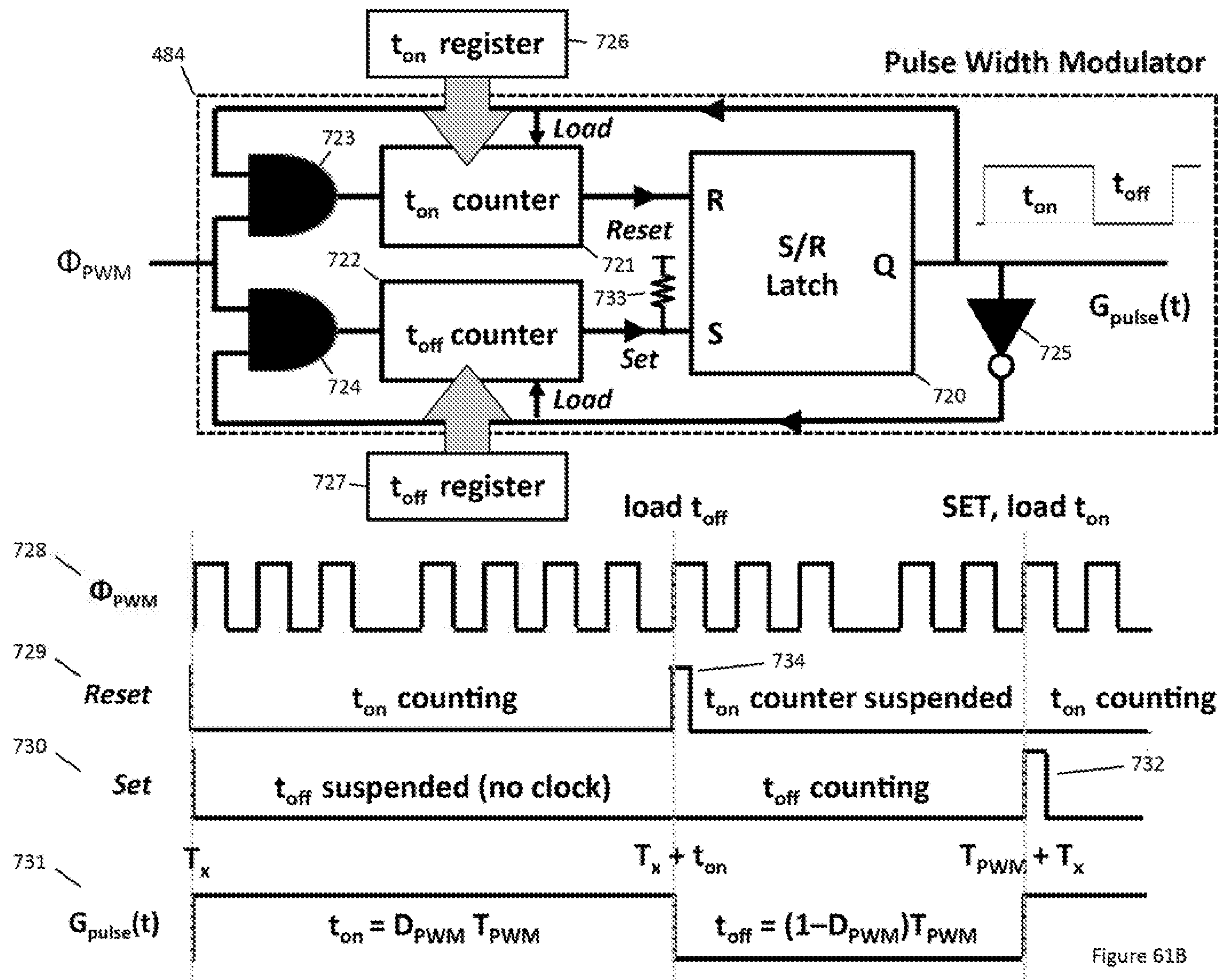


Figure 61A



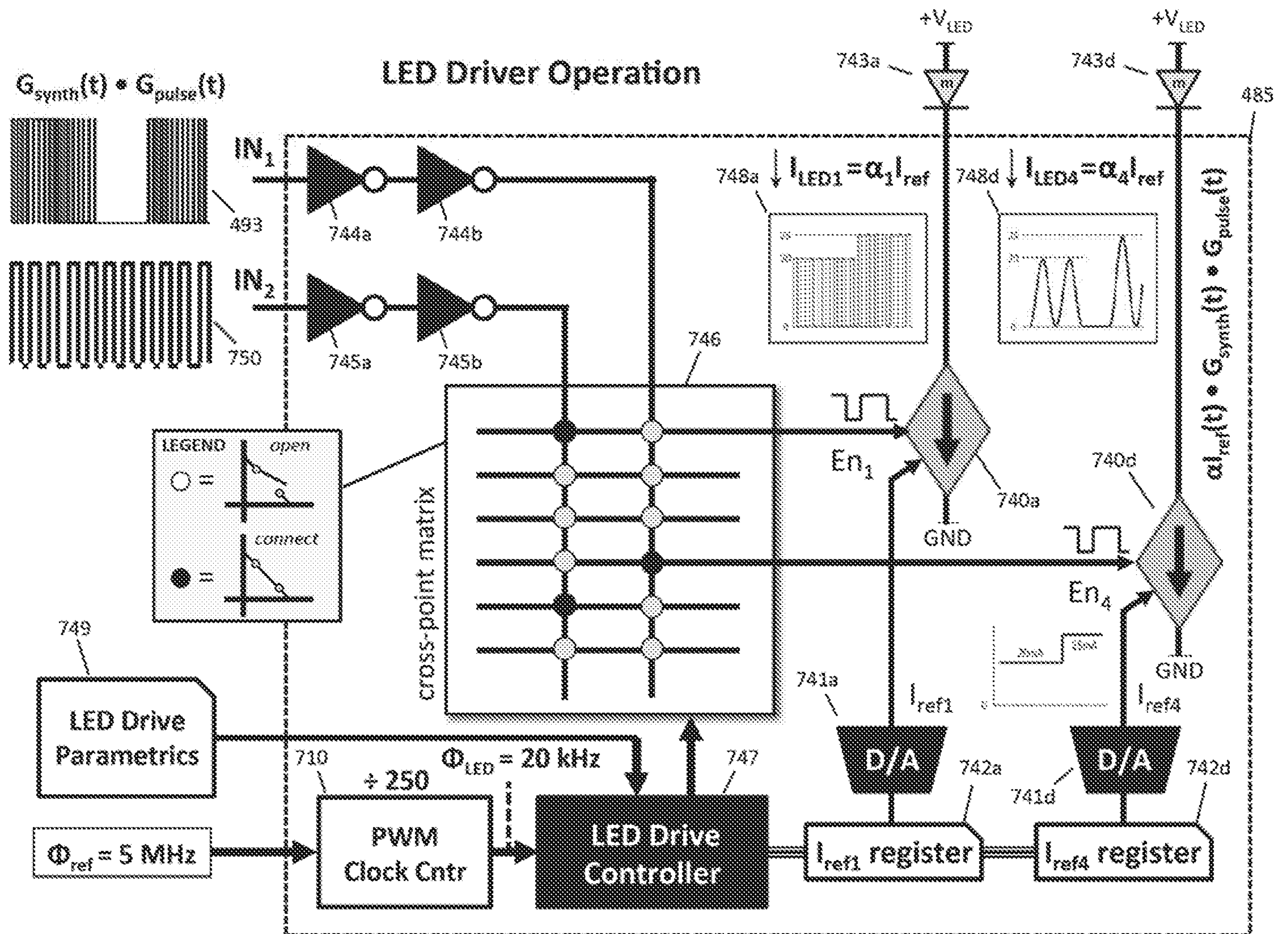


Figure 62

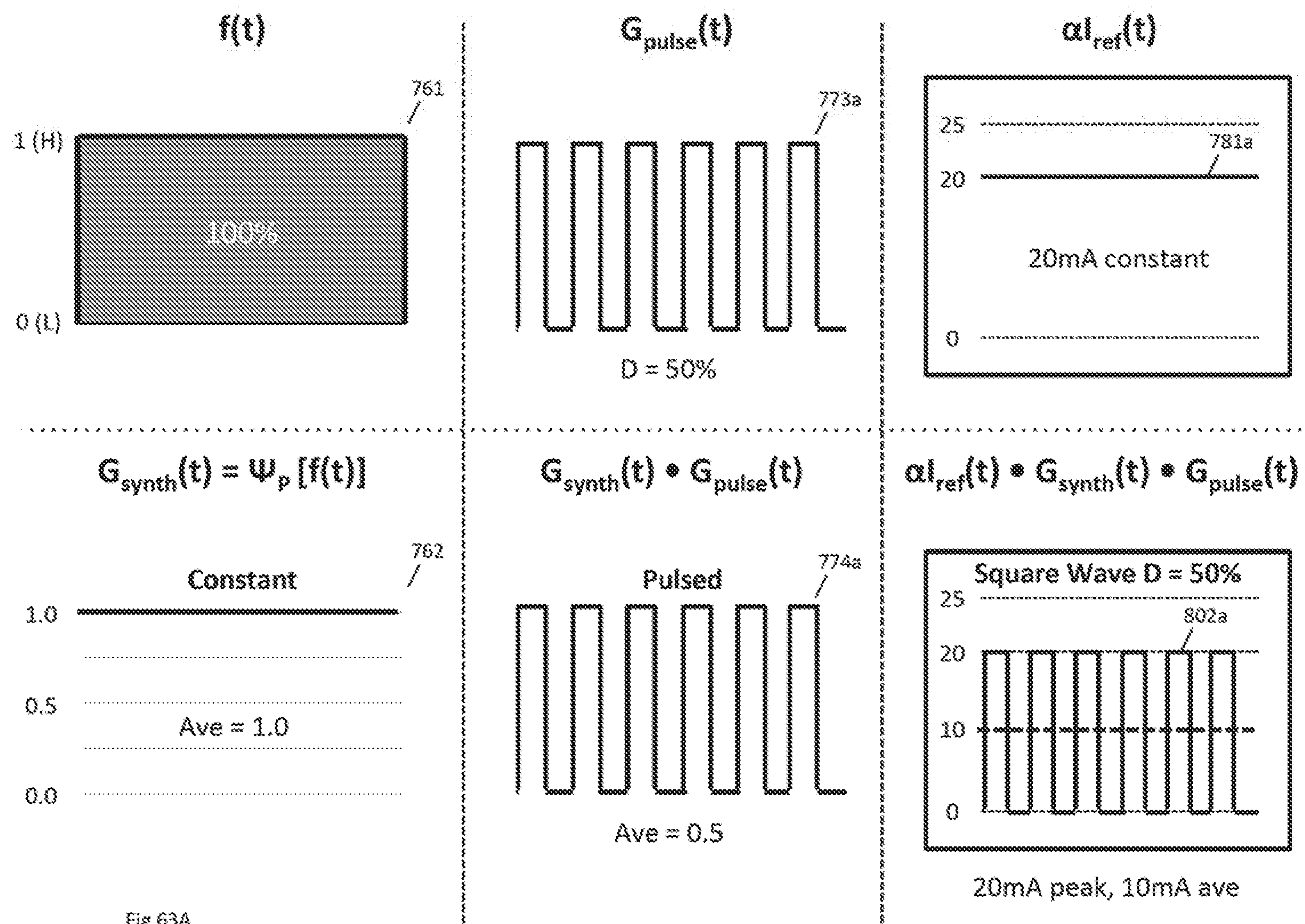


Fig 63A

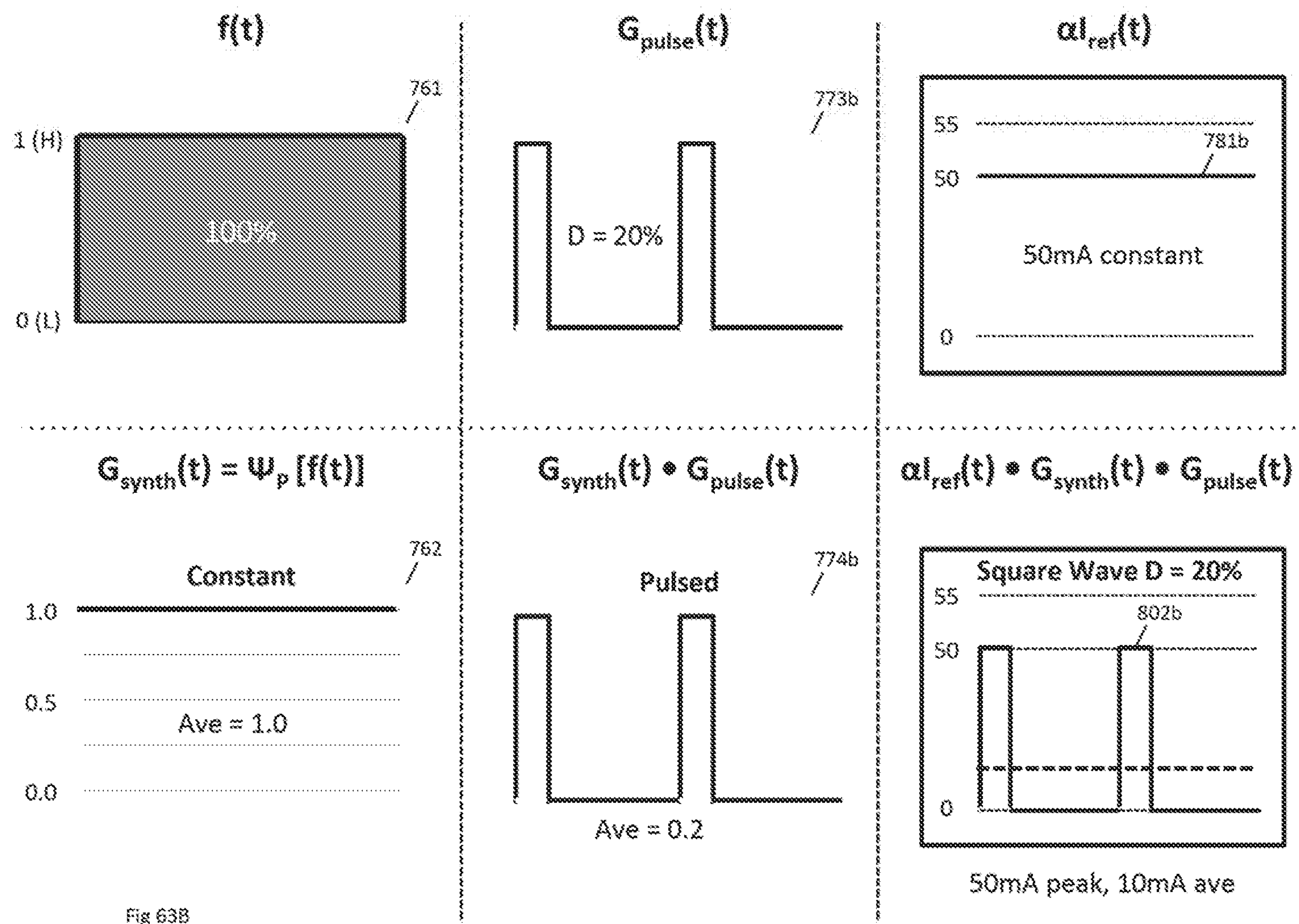


Fig 63B

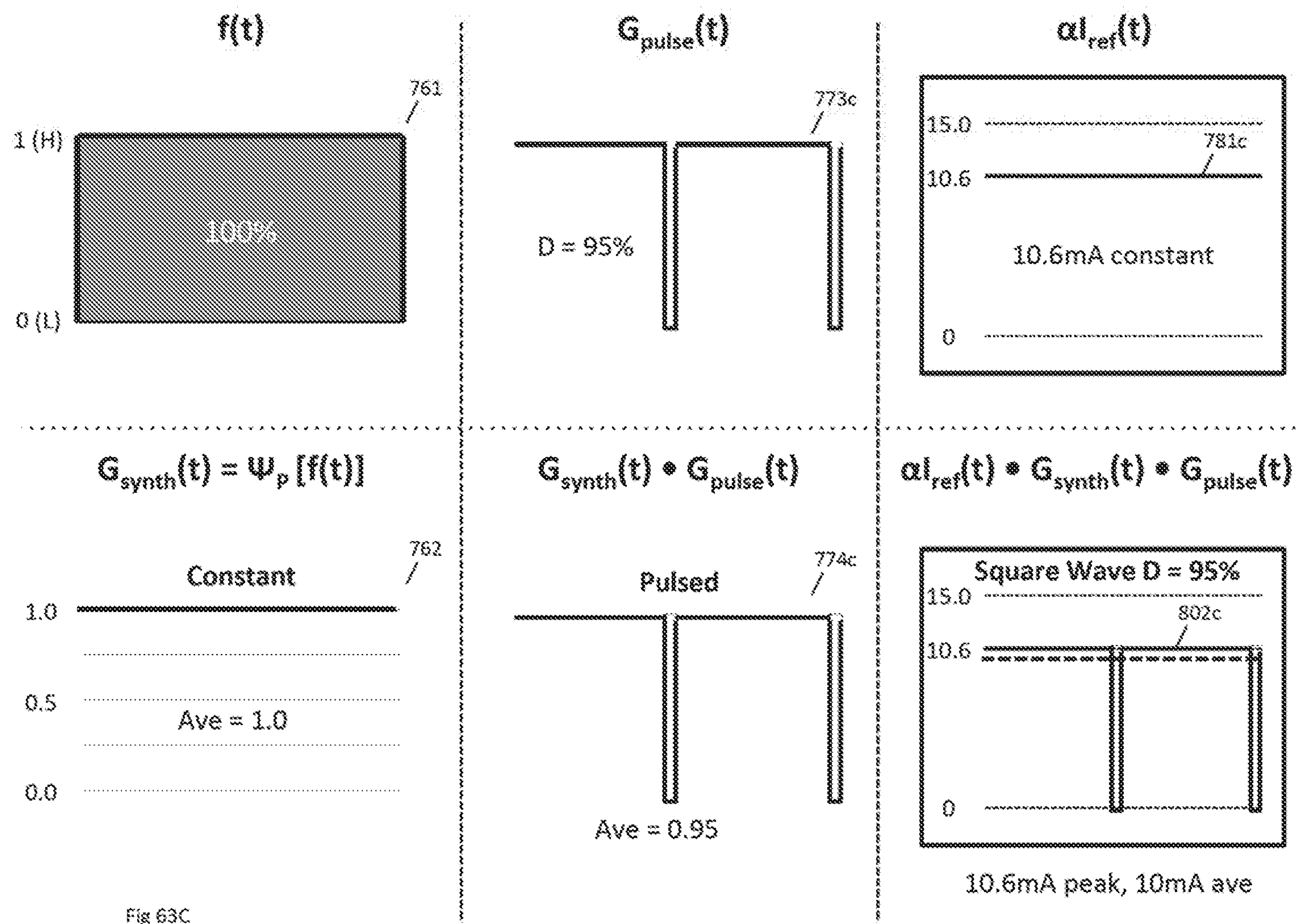


Fig 63C

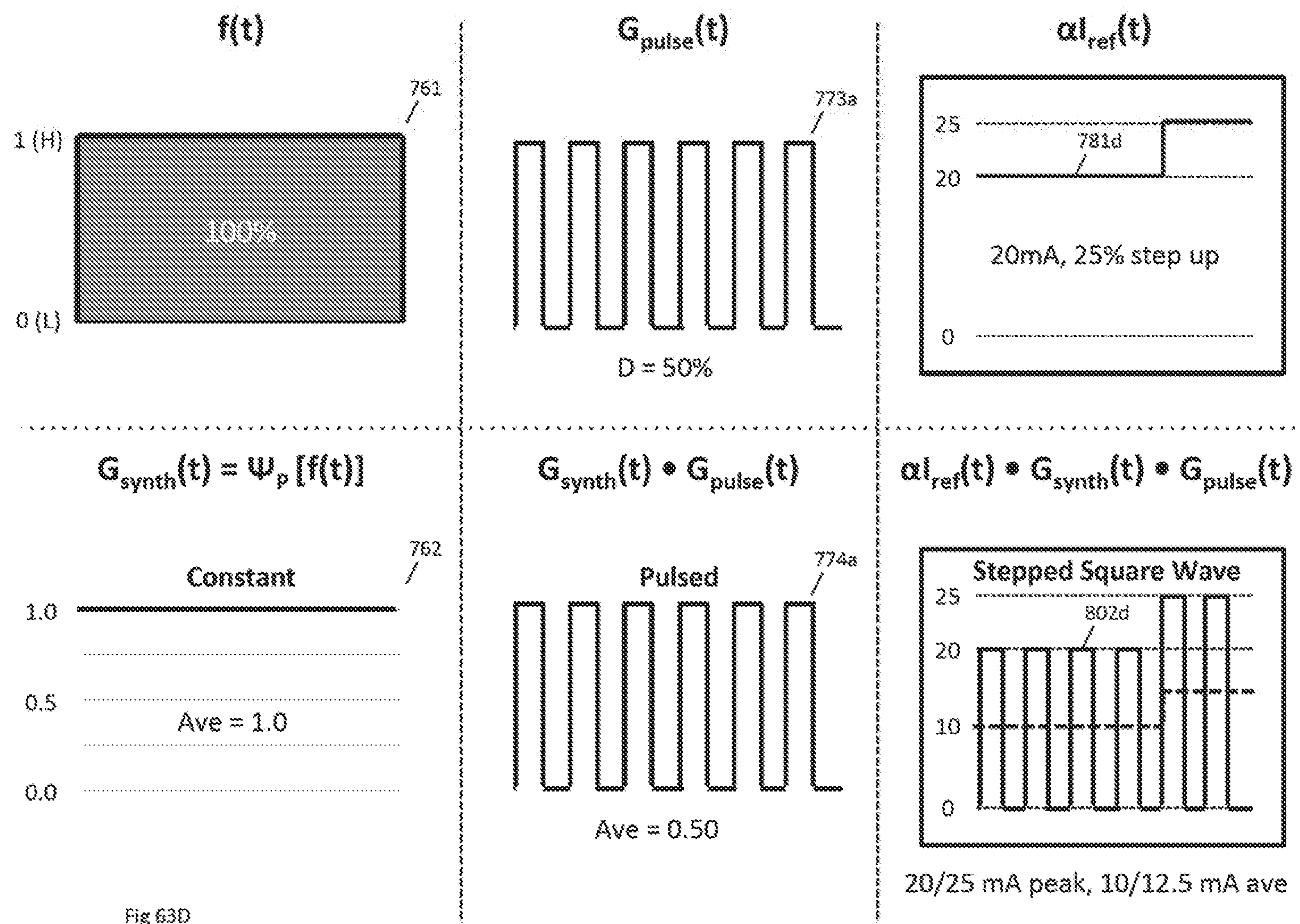


Fig 63D

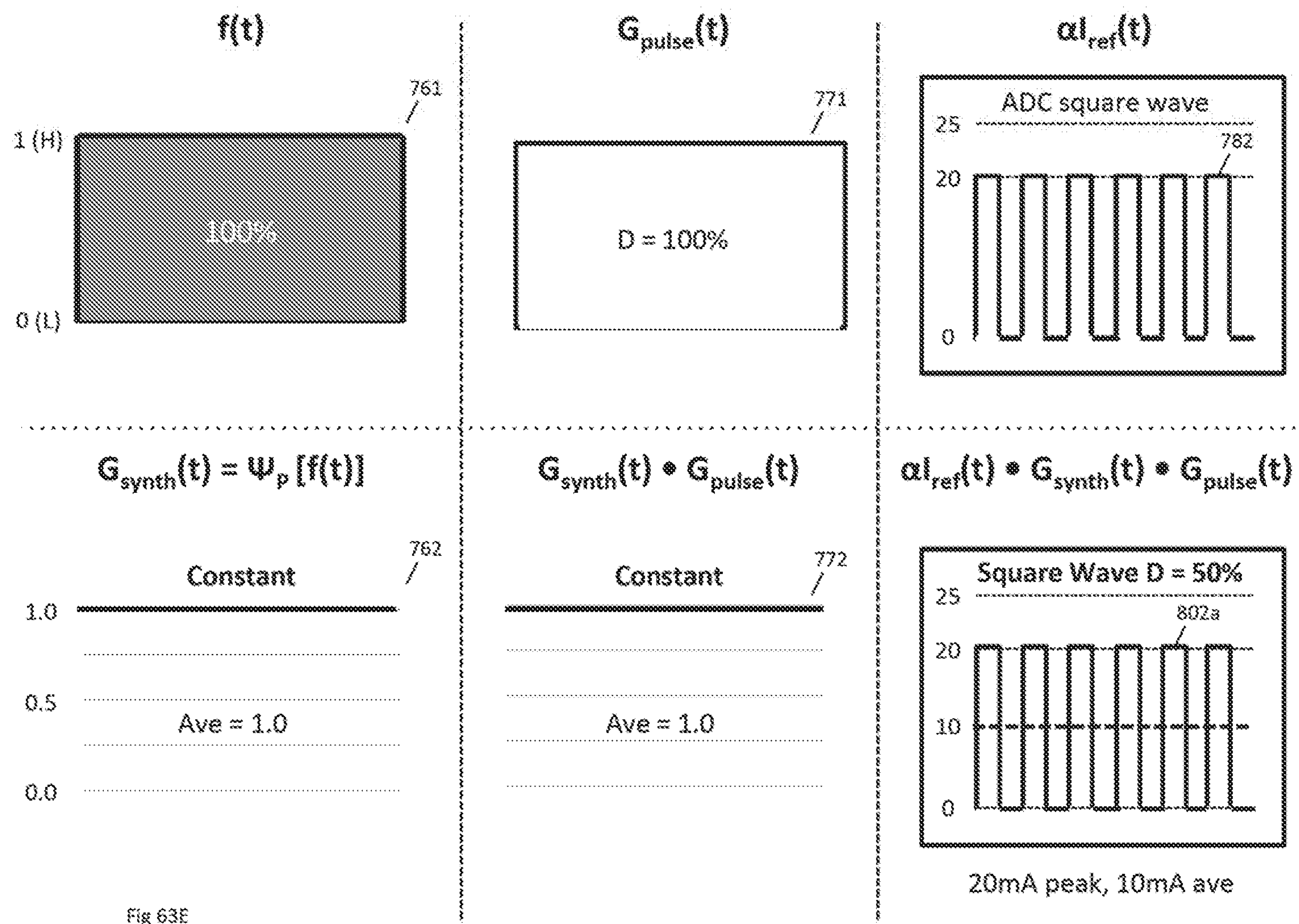


Fig 63E

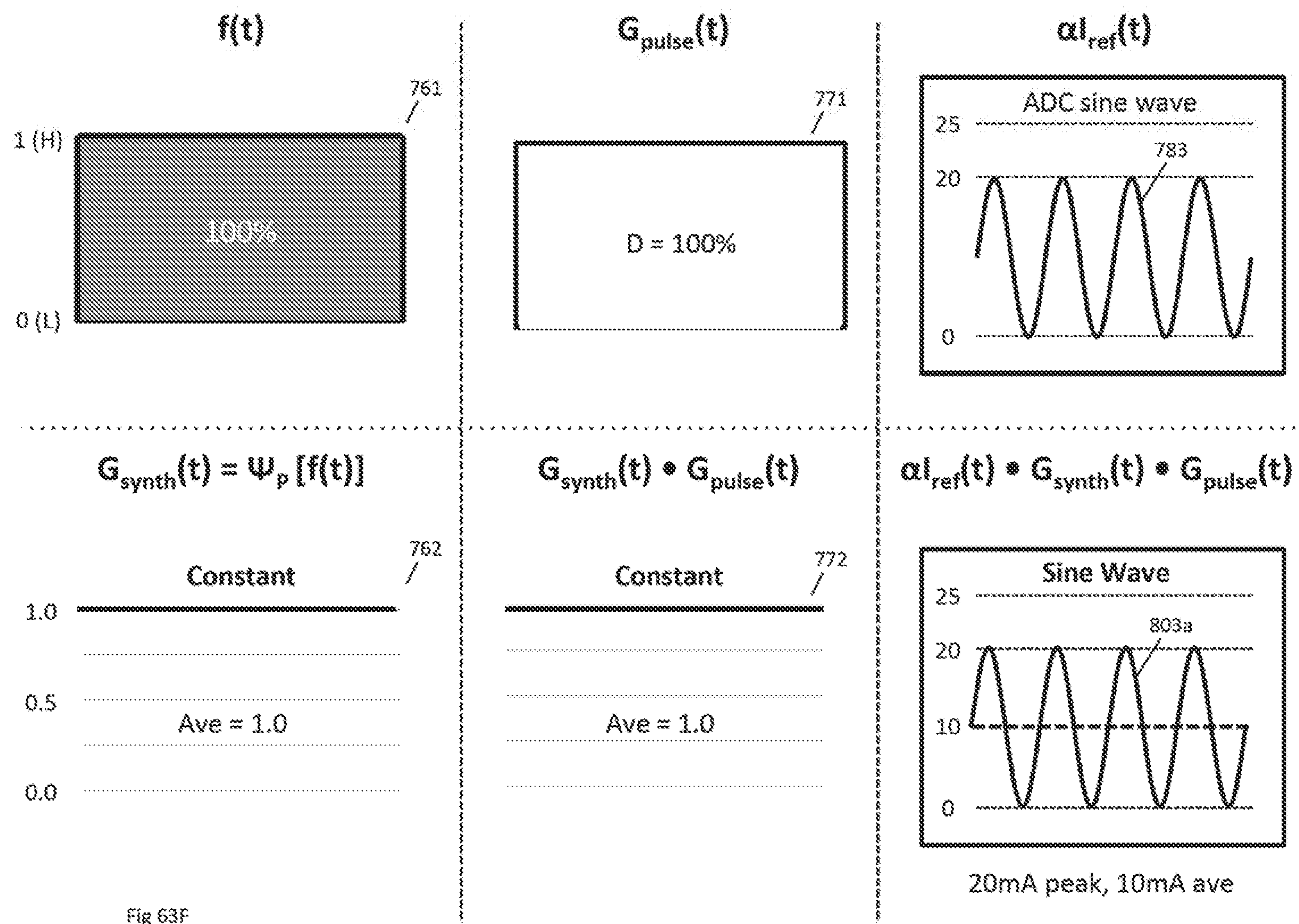


Fig 63F

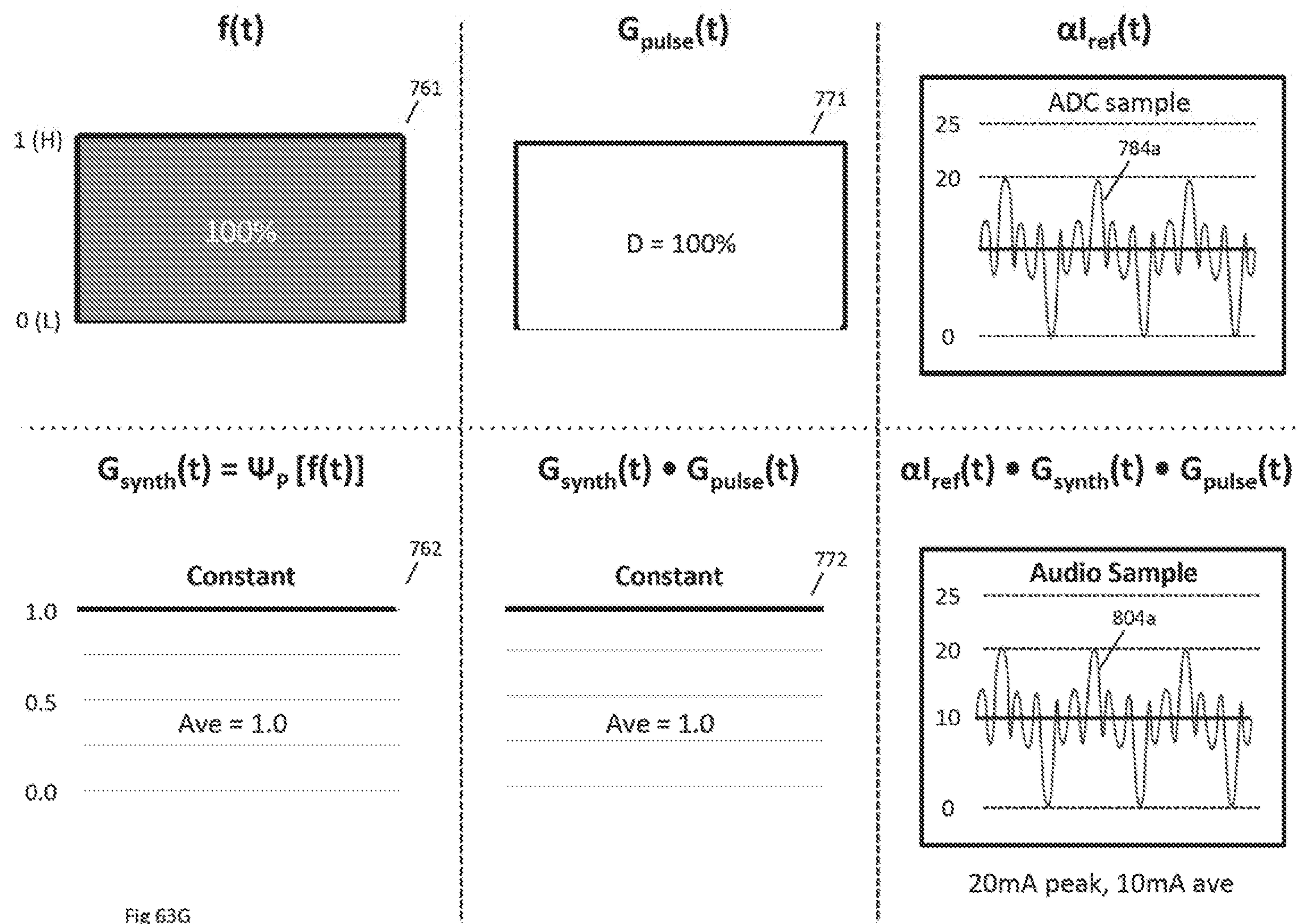


Fig 63G

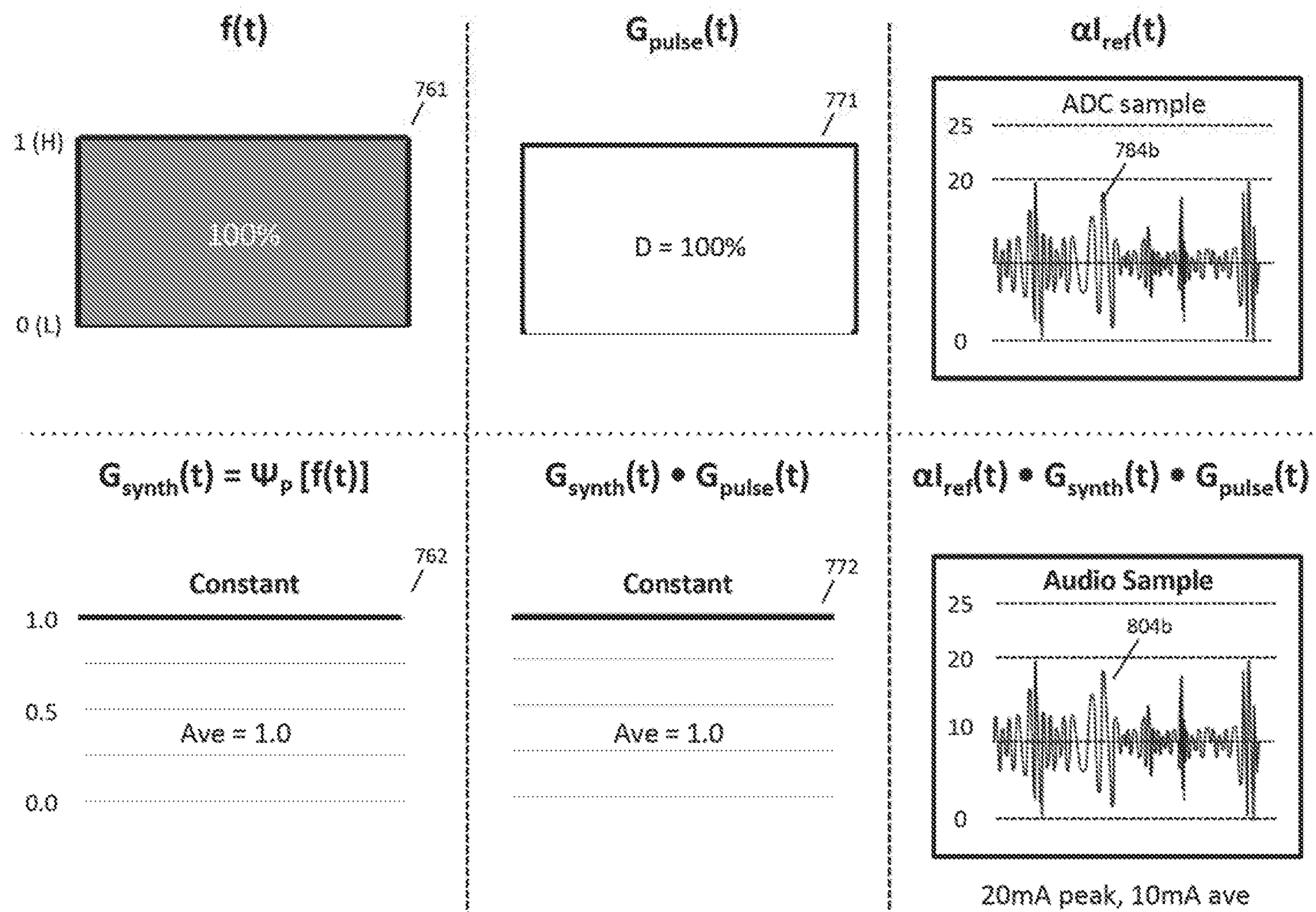


Fig 63H

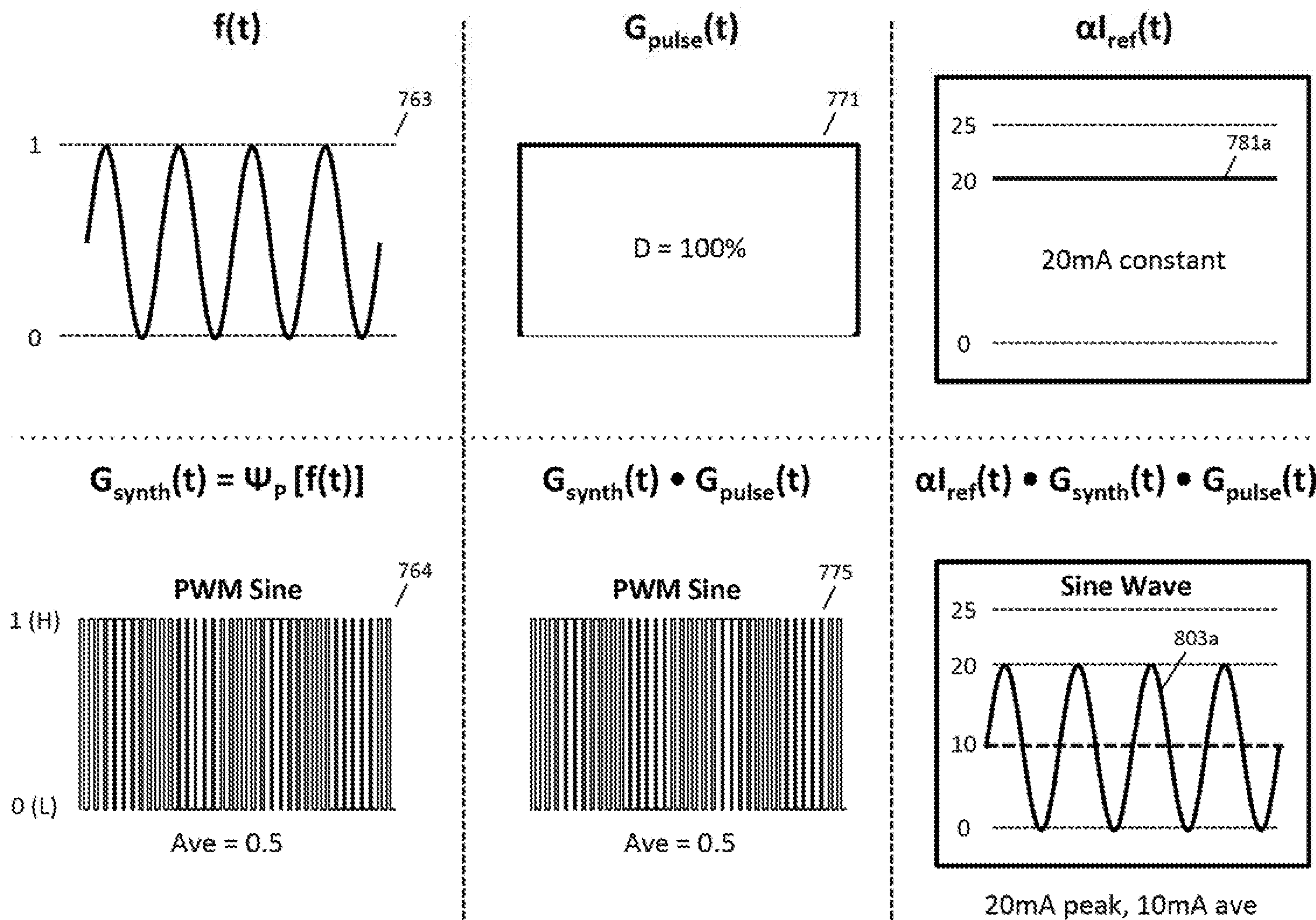


Fig 64A

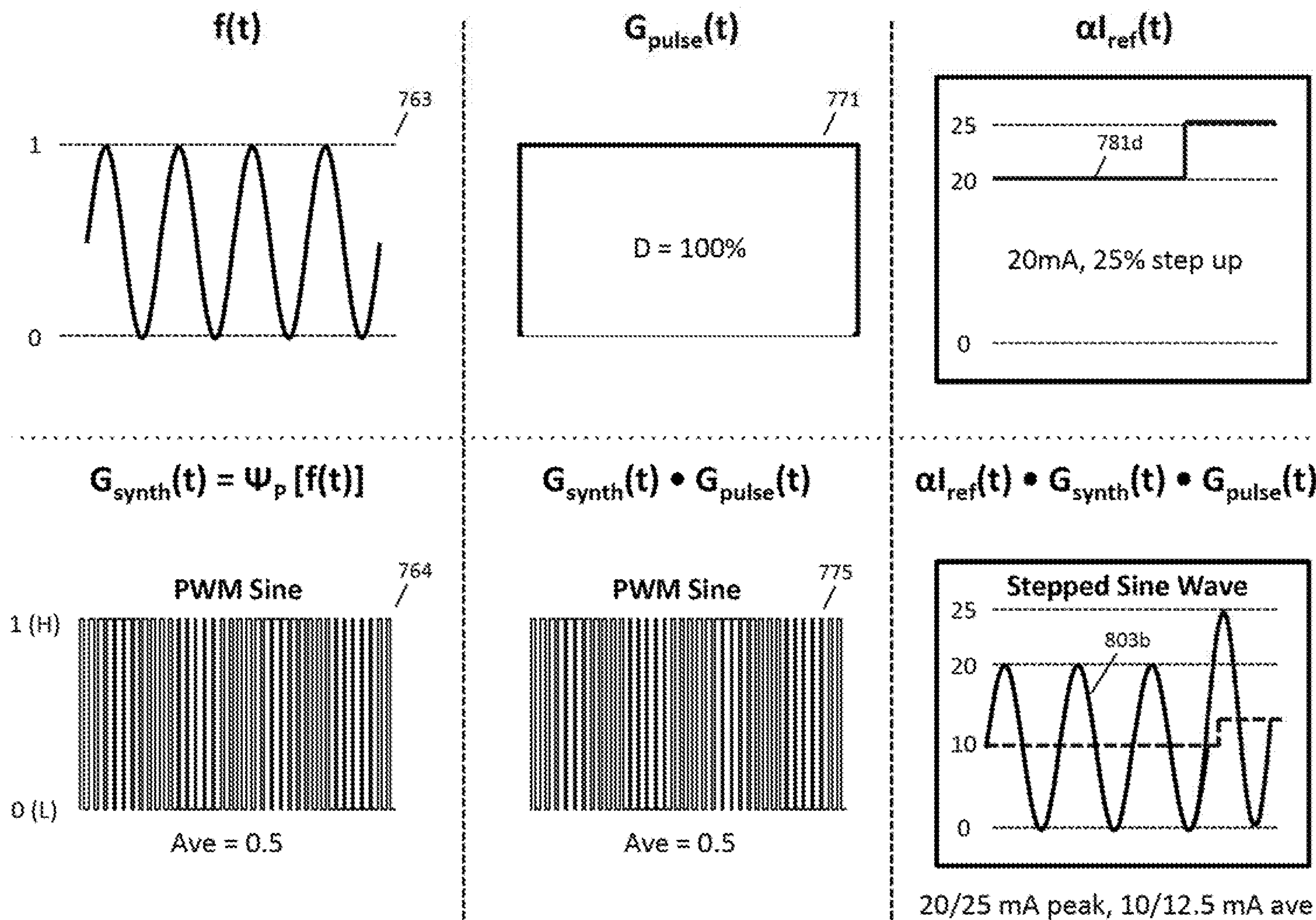


Fig 64B

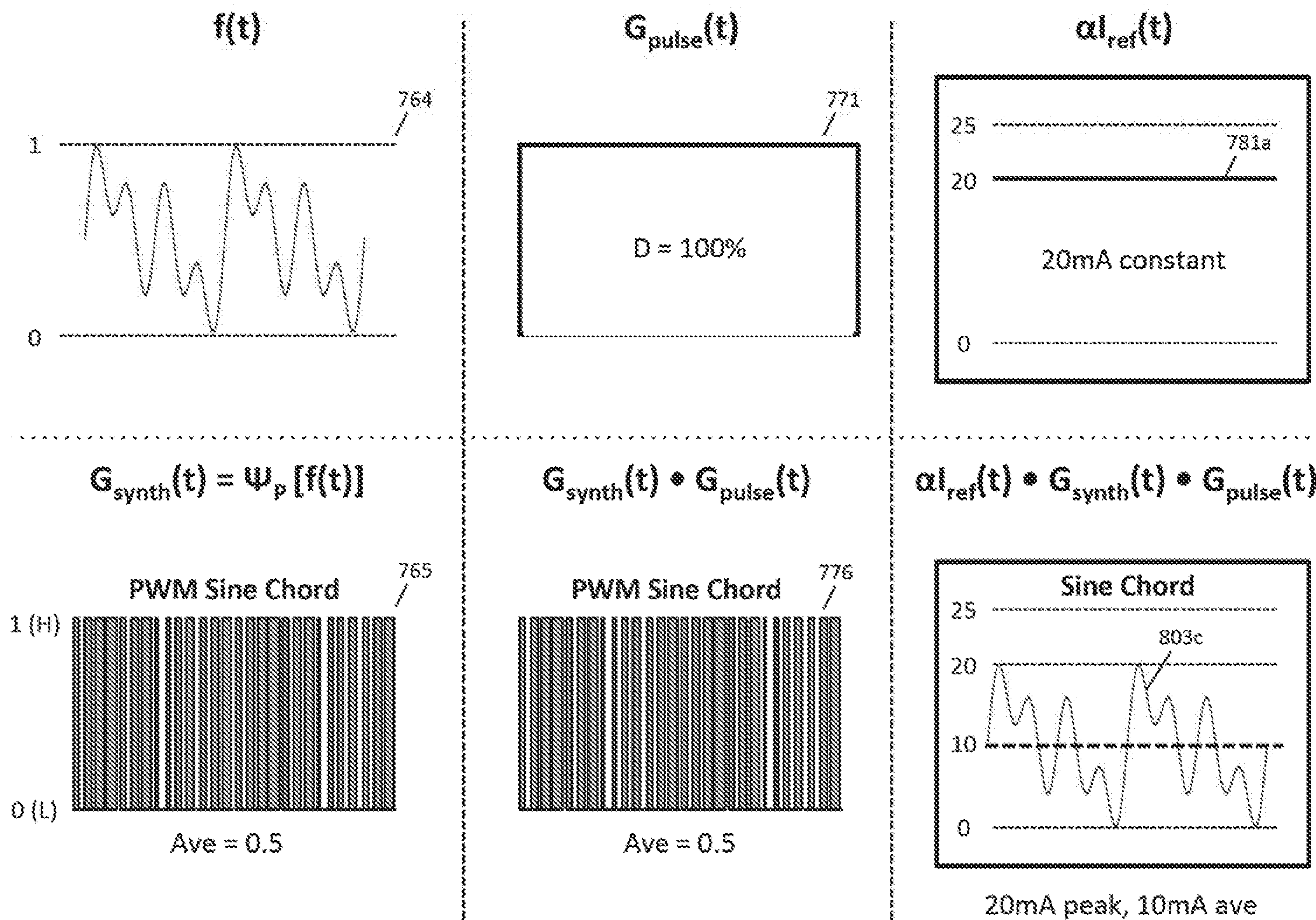


Fig 64C

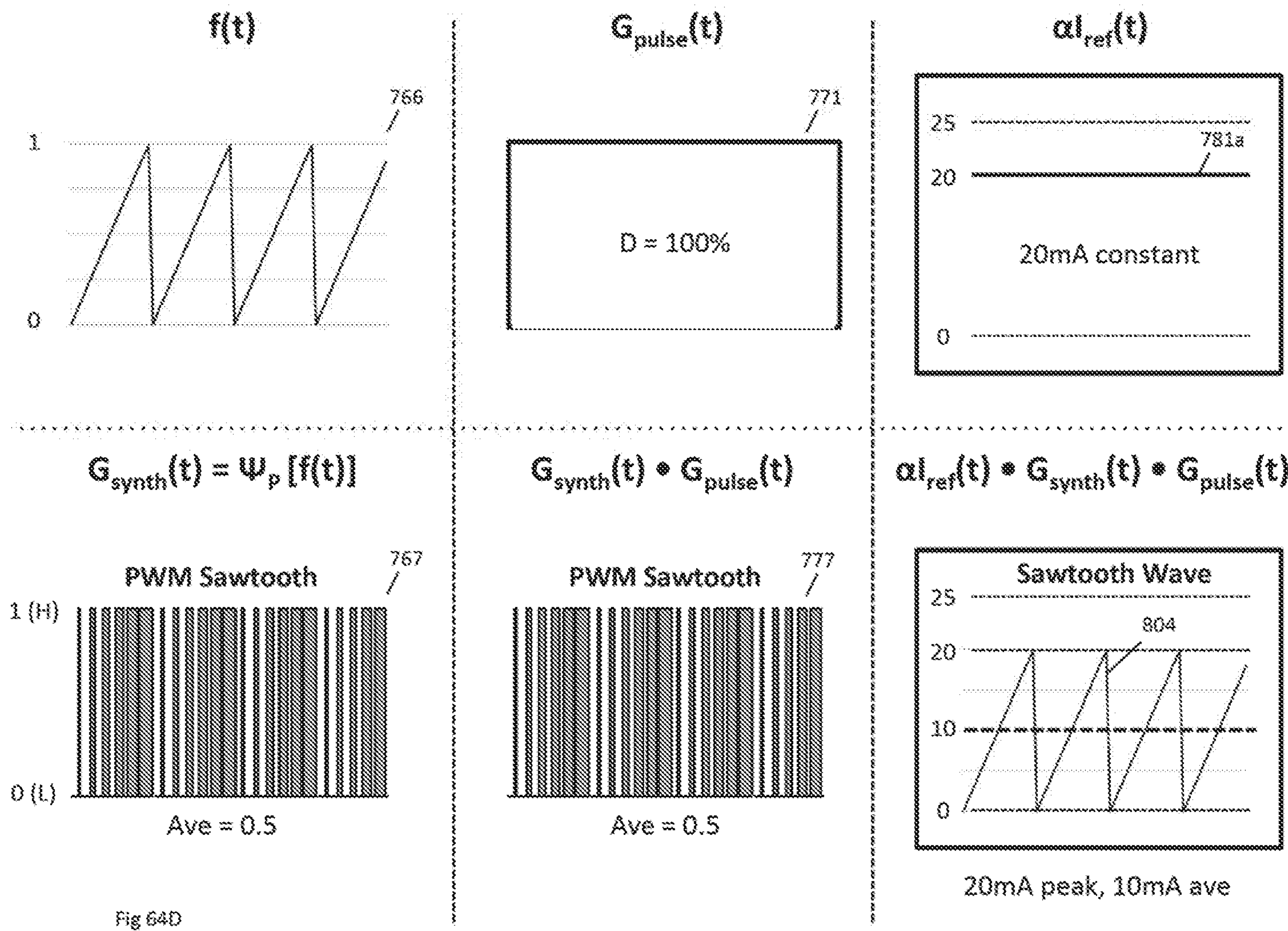


Fig 64D

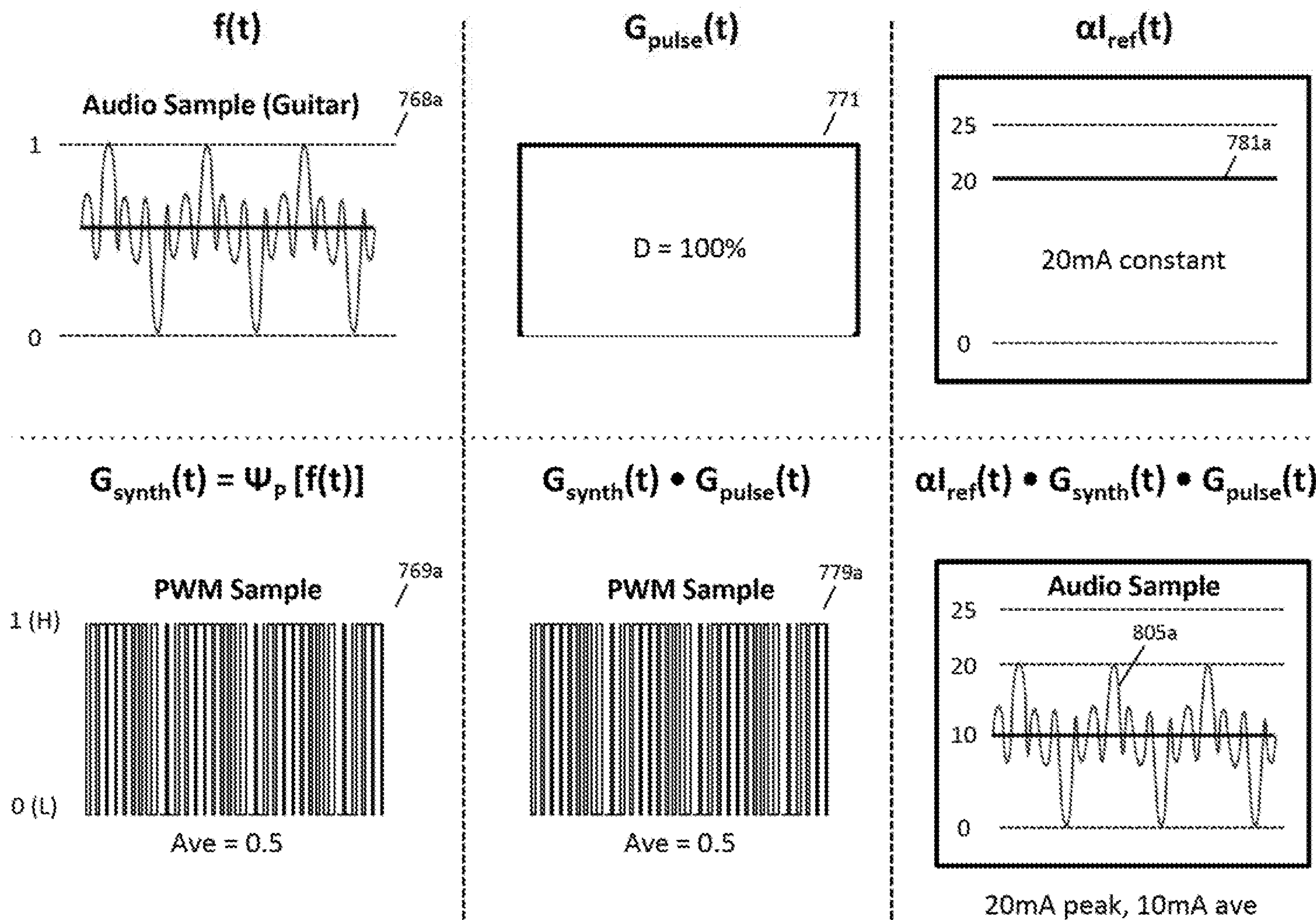


Fig 64E

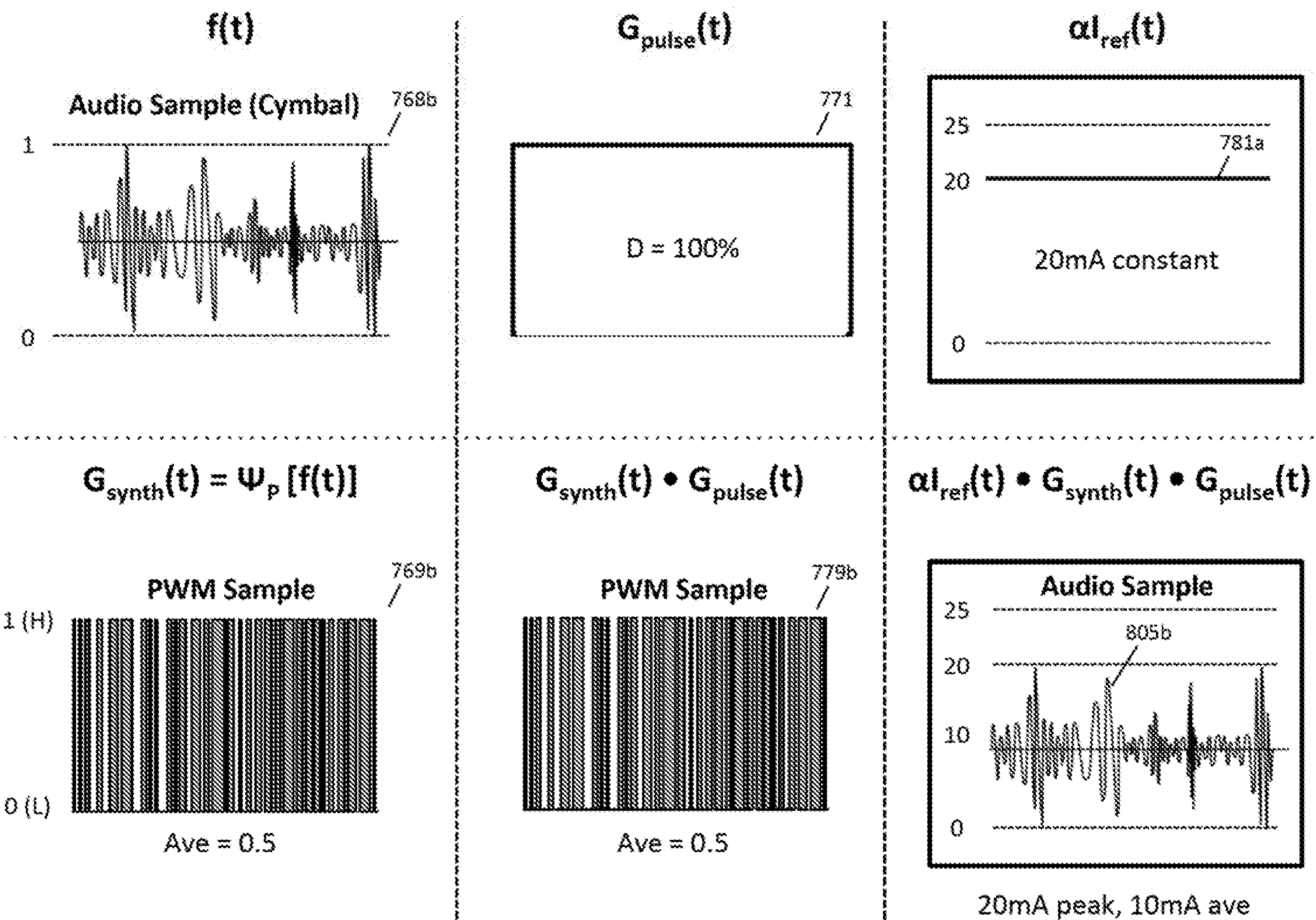


Fig 64F

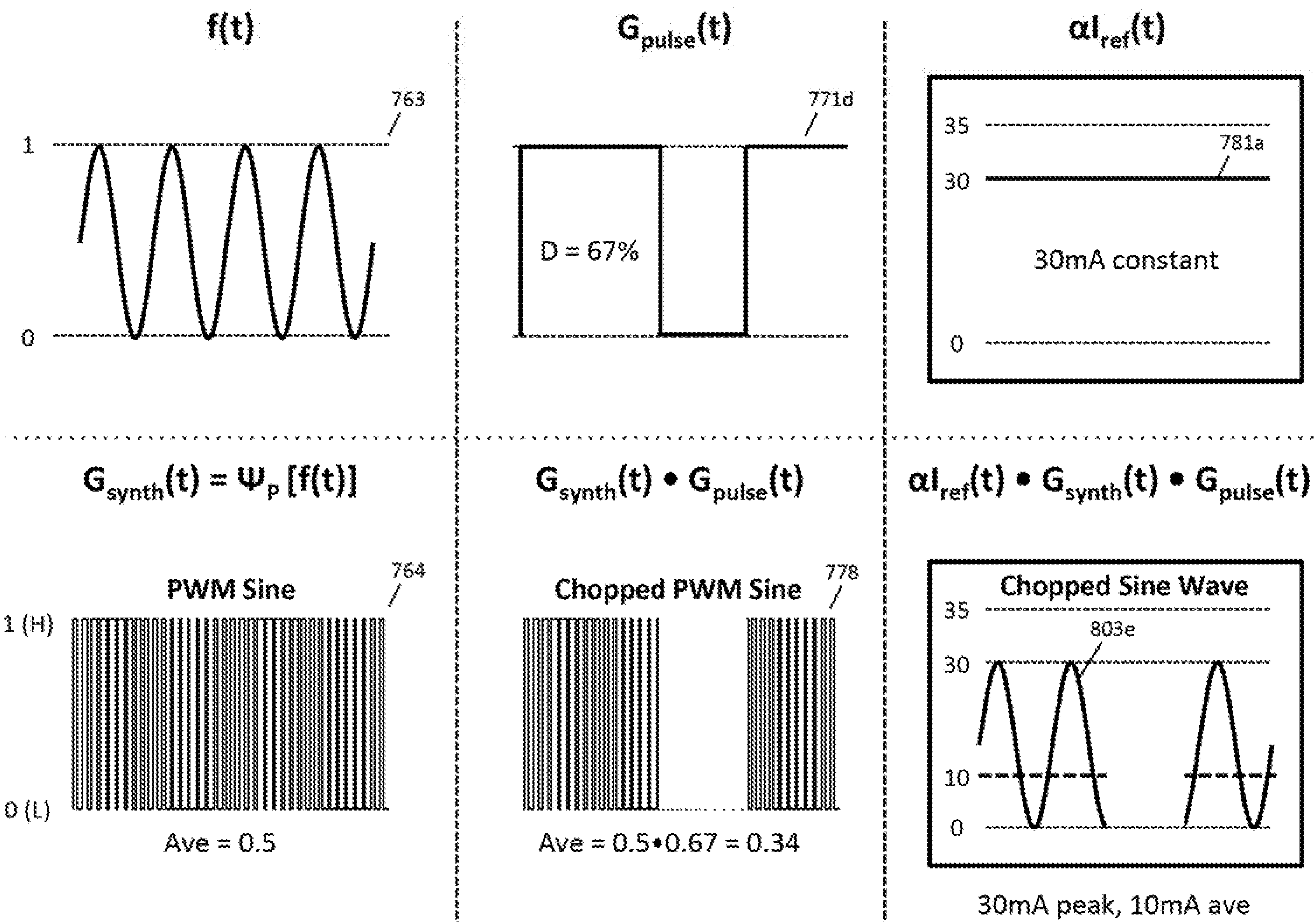


Fig 65

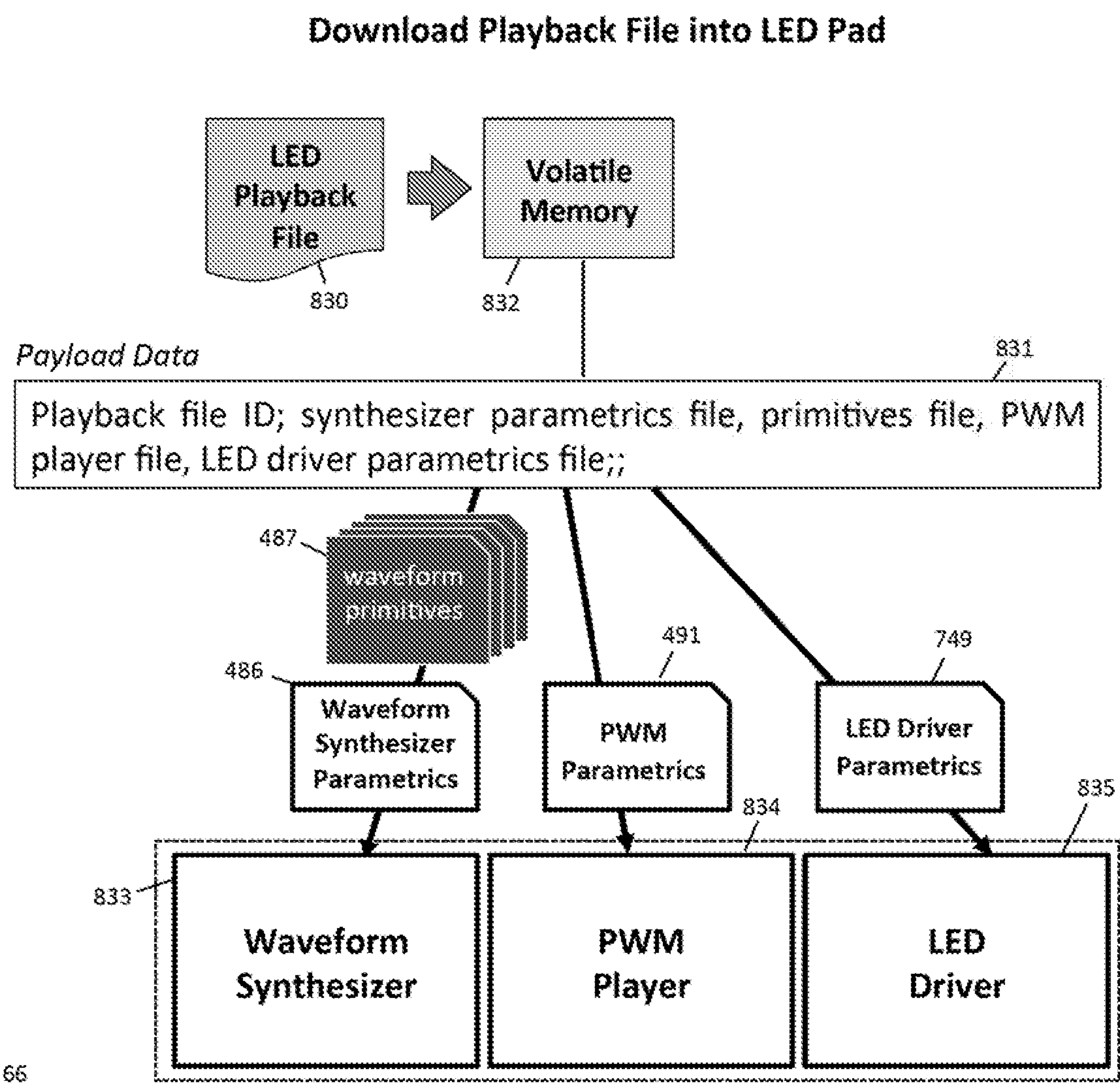


Figure 66

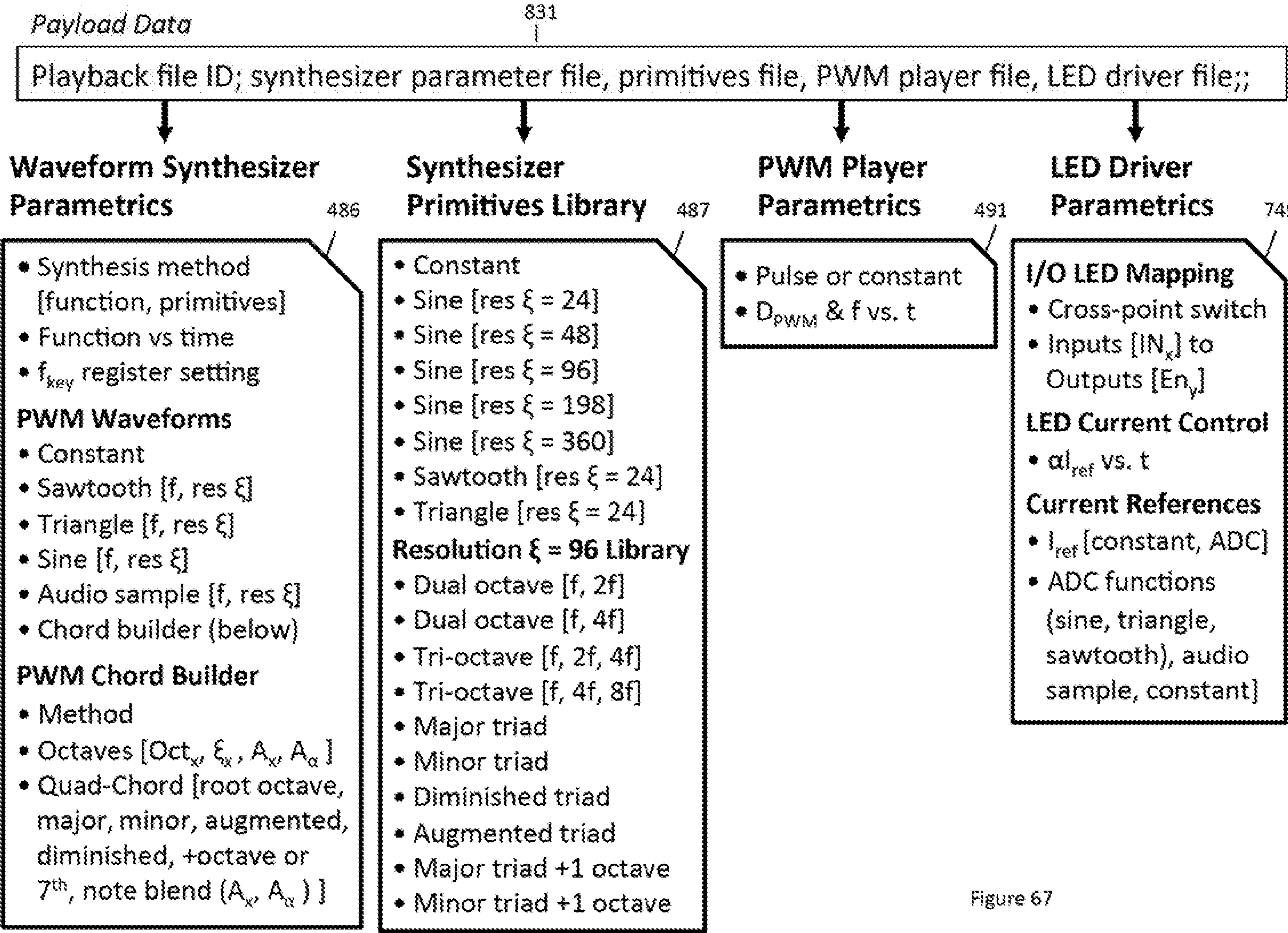


Figure 67

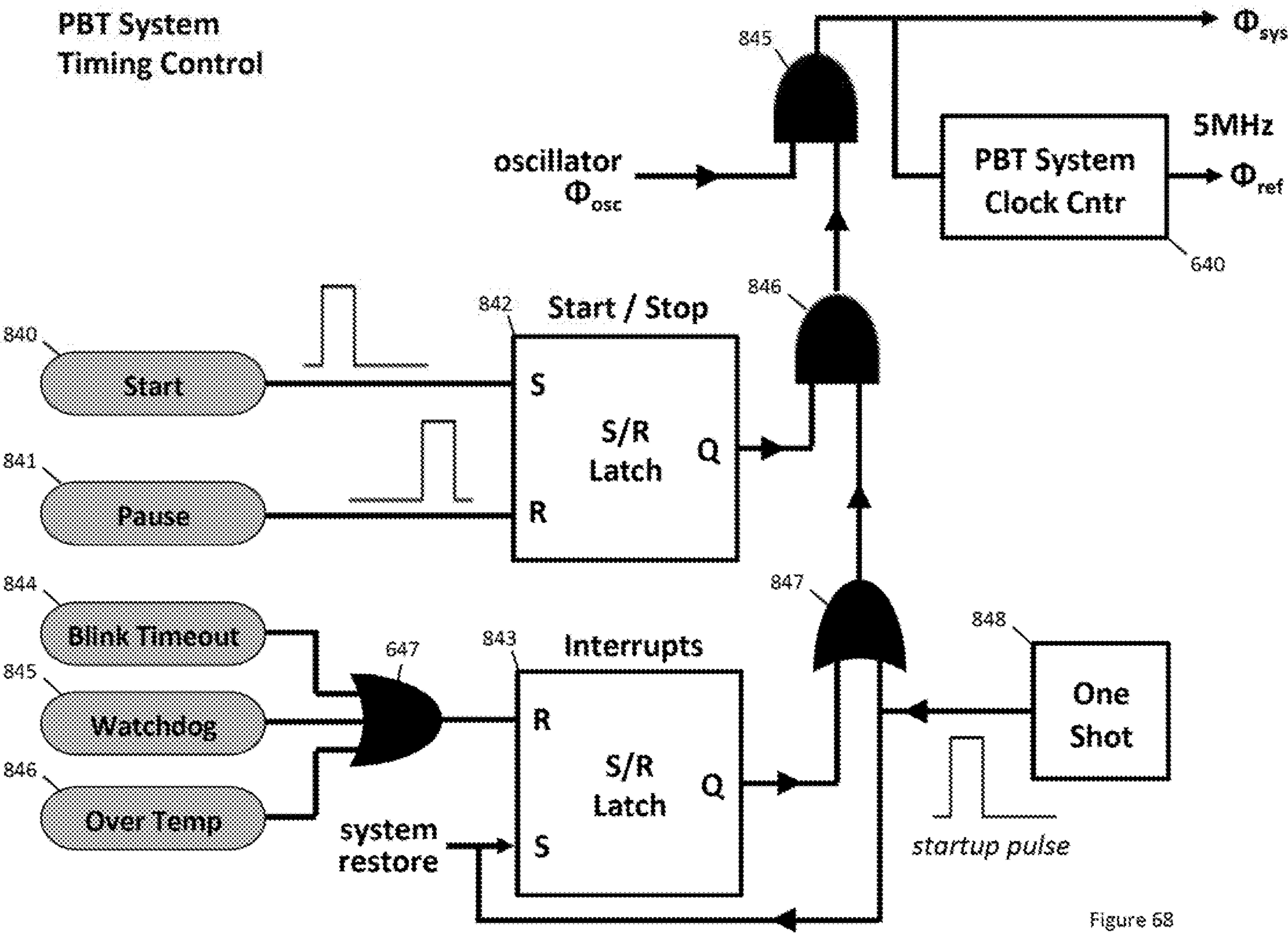


Figure 68

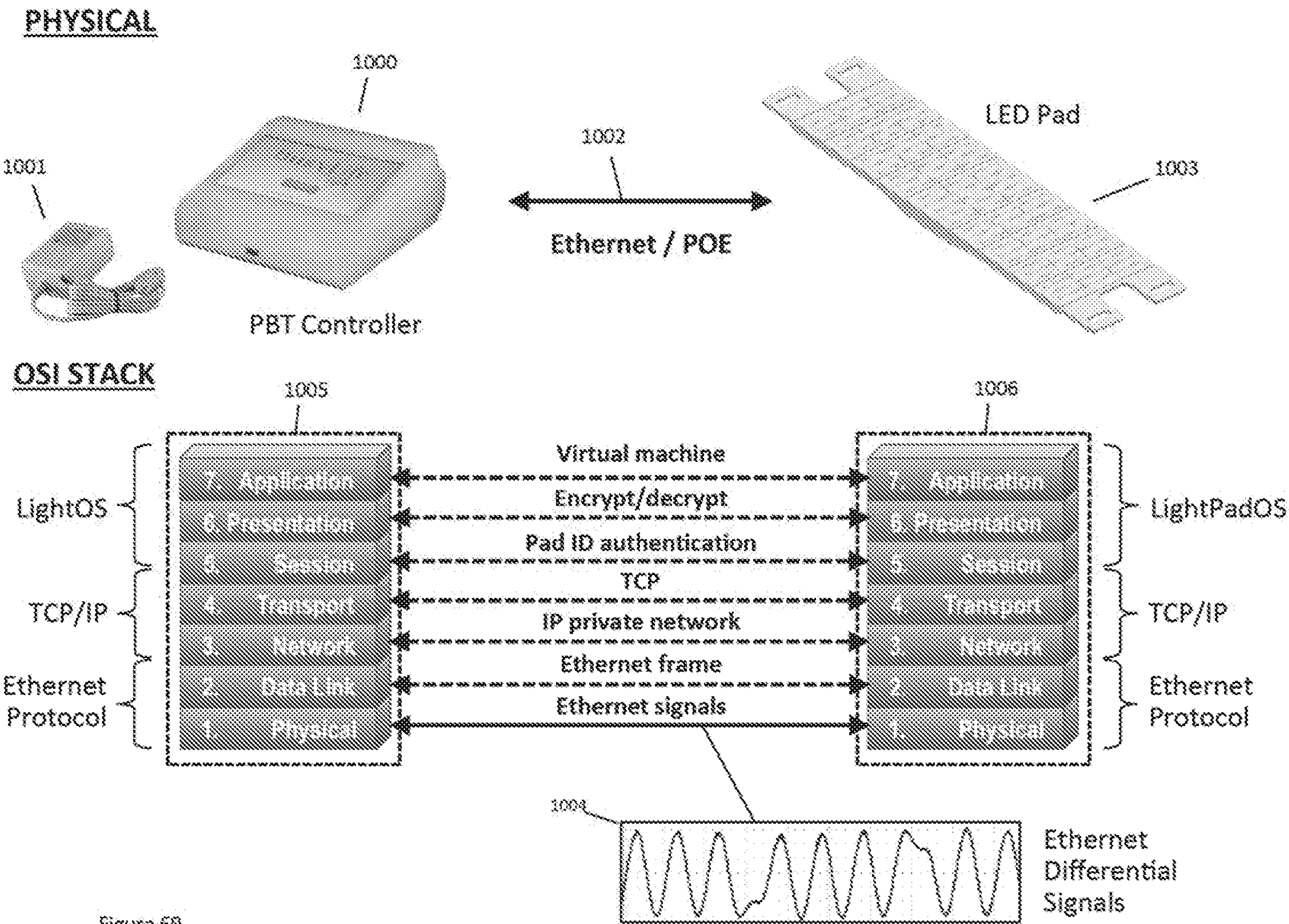


Figure 69

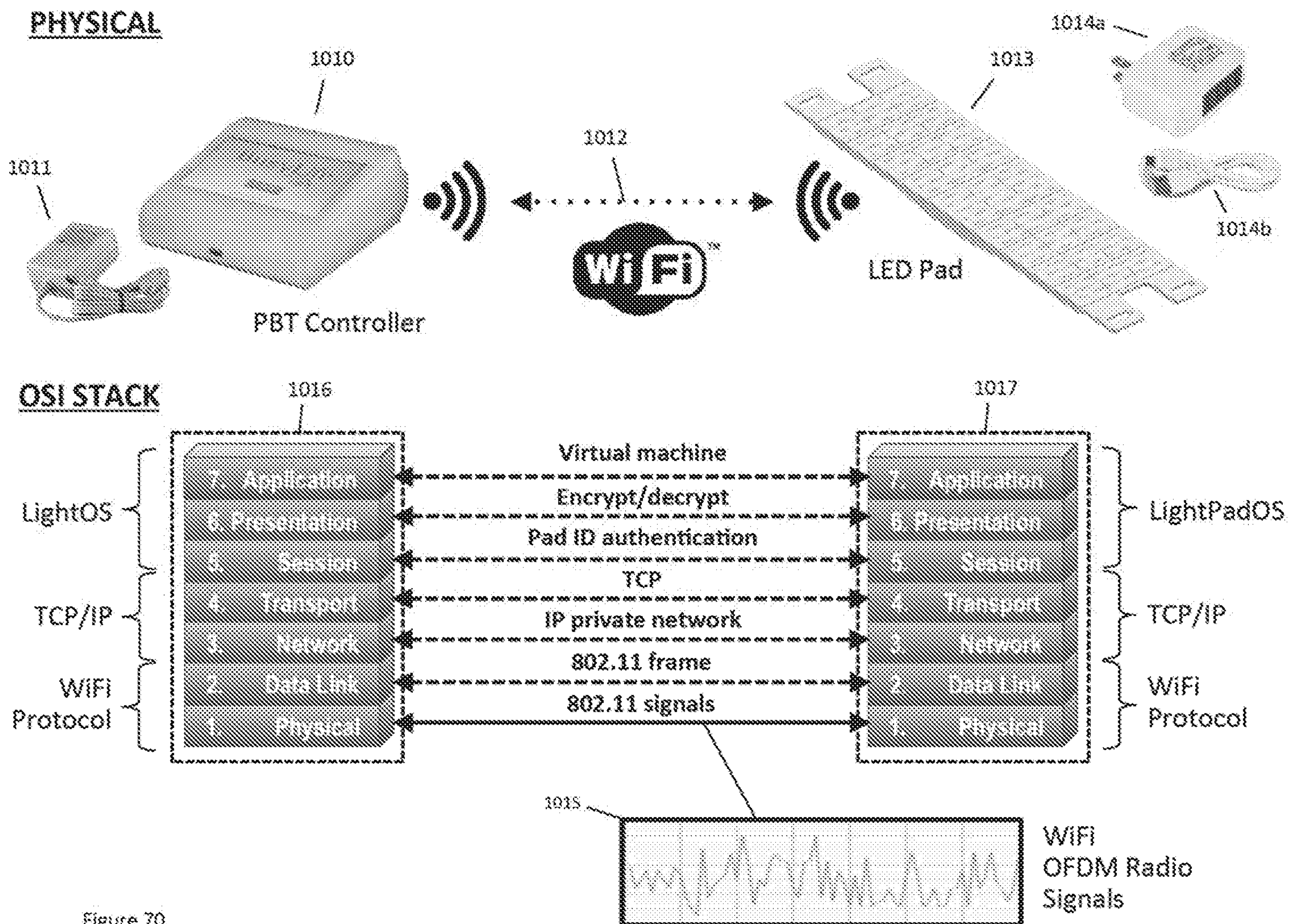


Figure 70

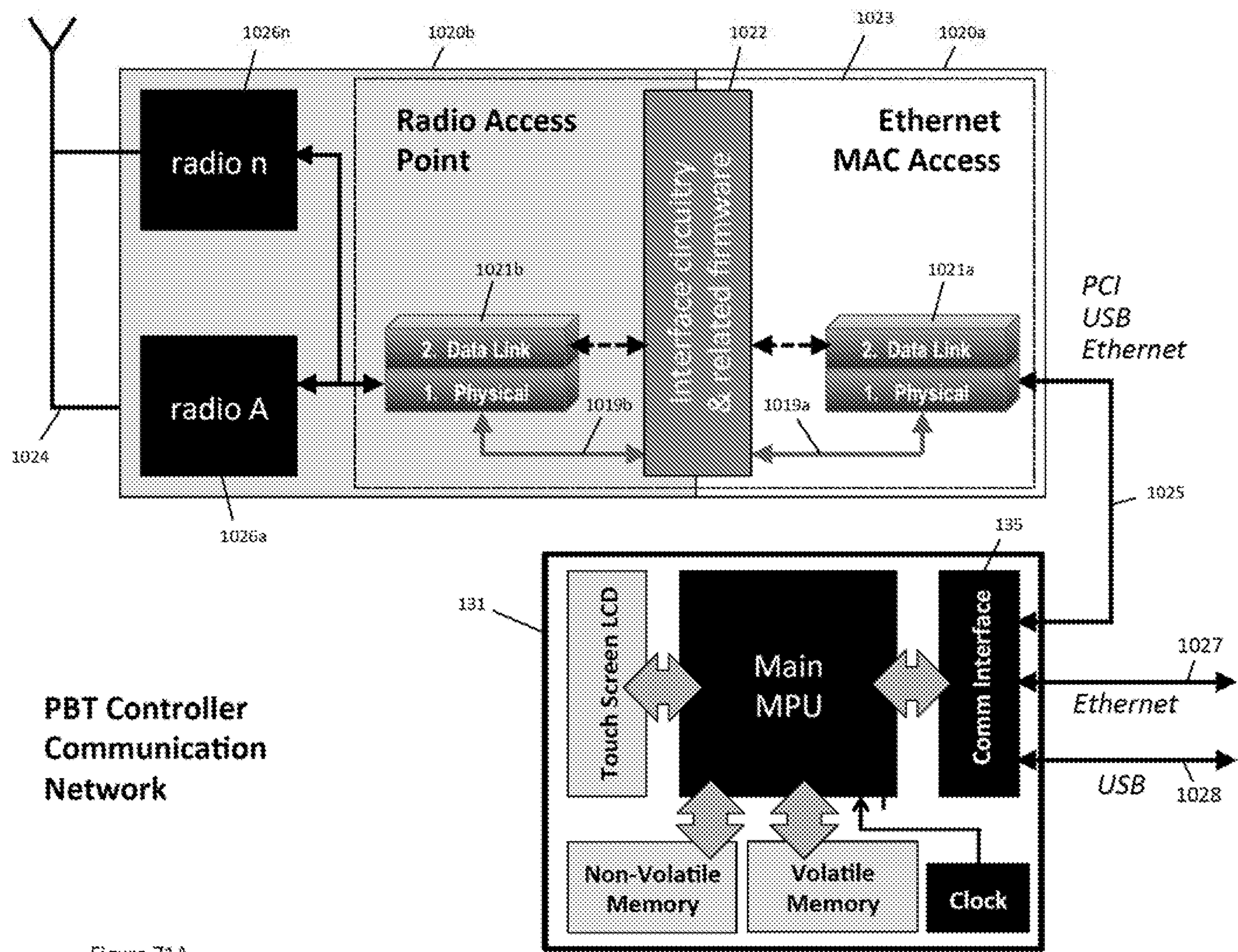


Figure 71A

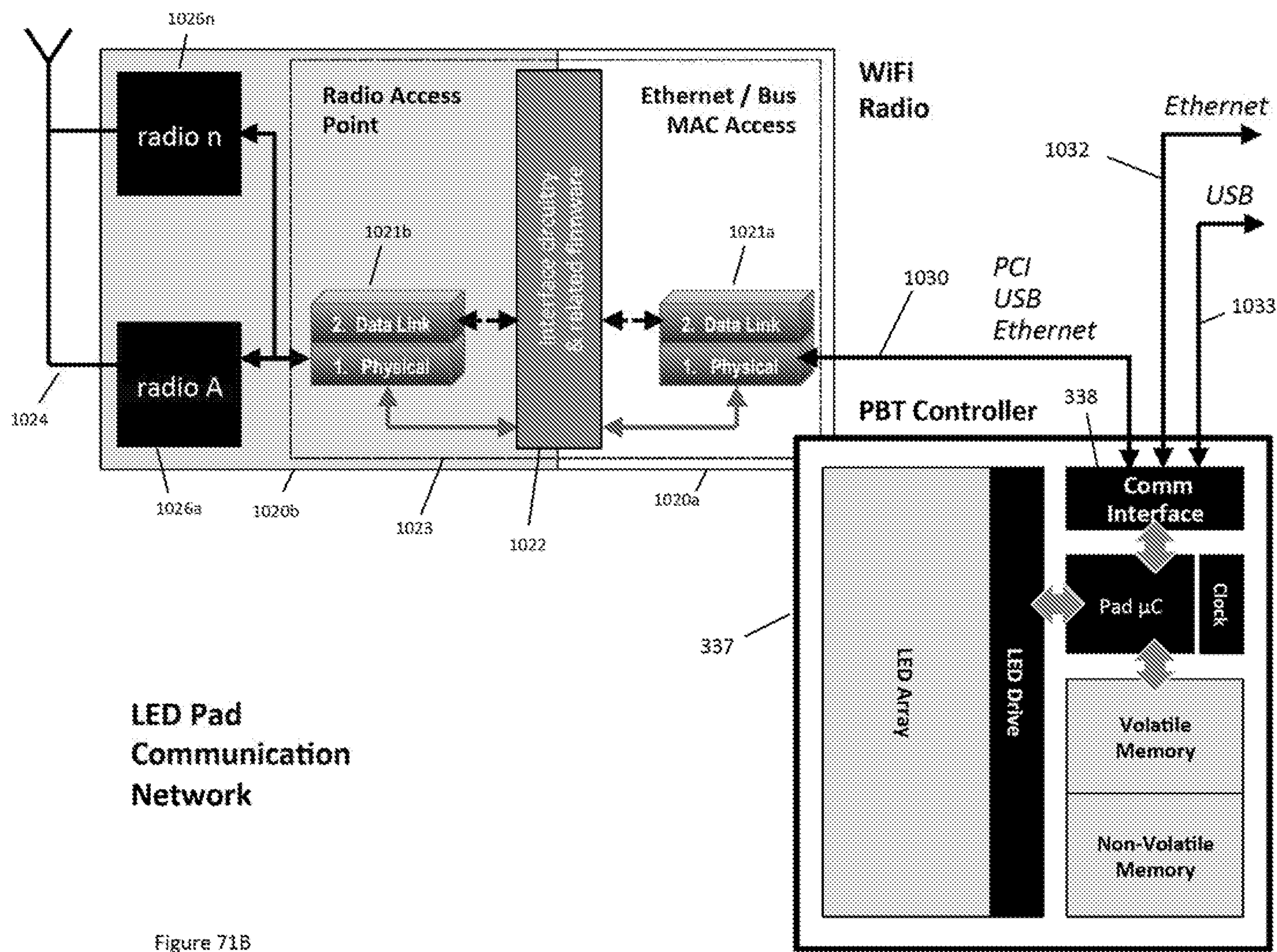


Figure 71B

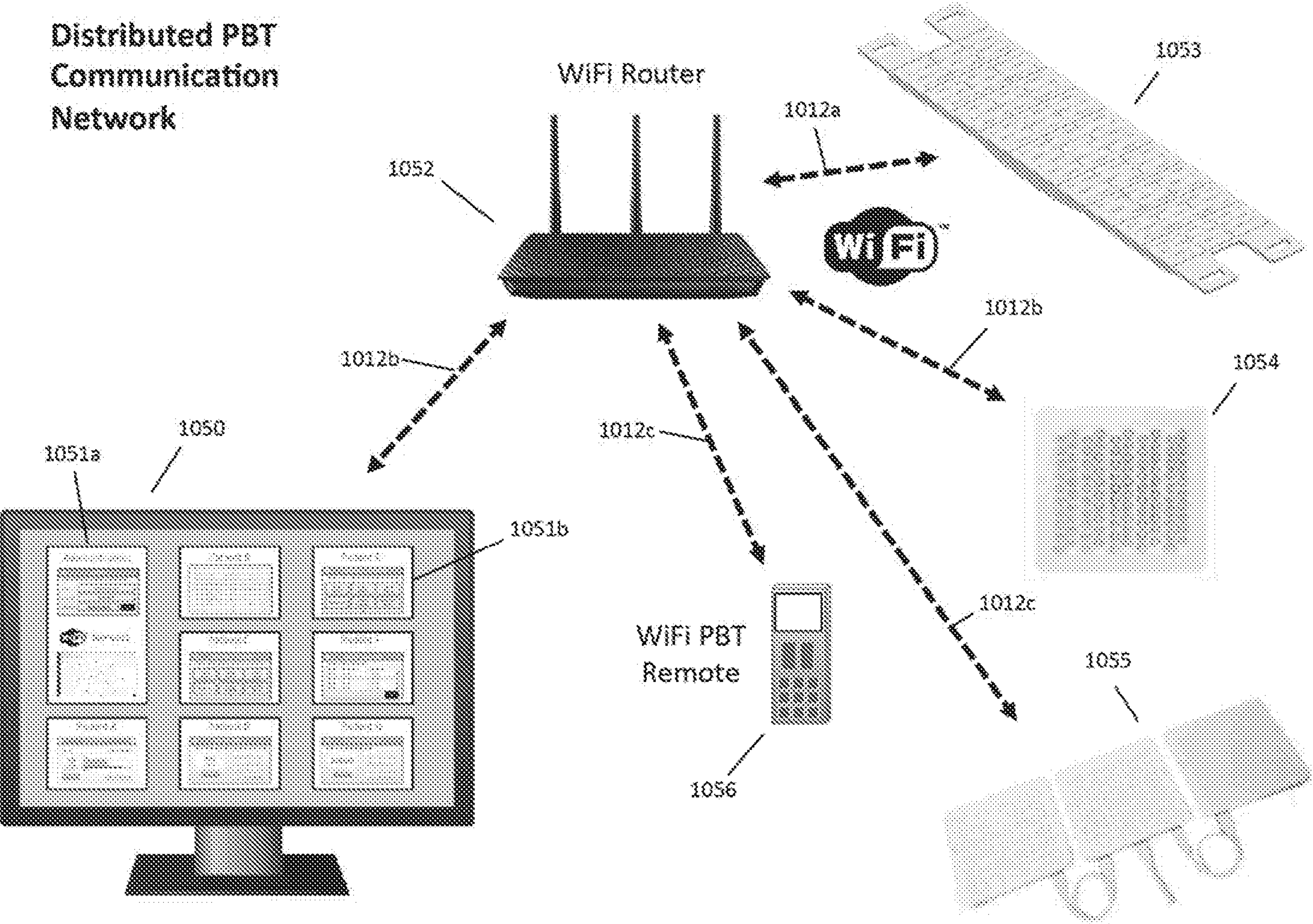


Figure 72

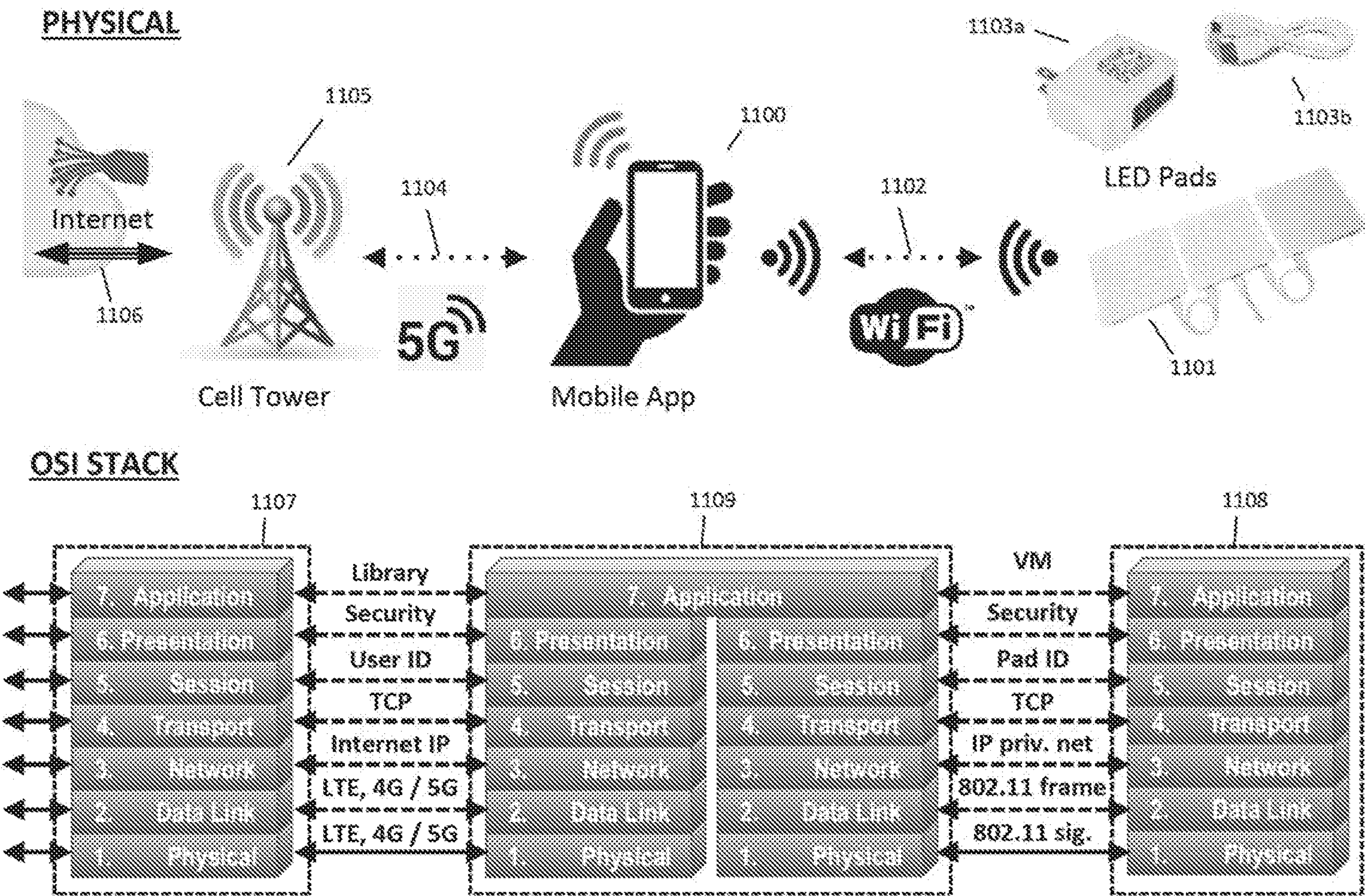


Figure 73

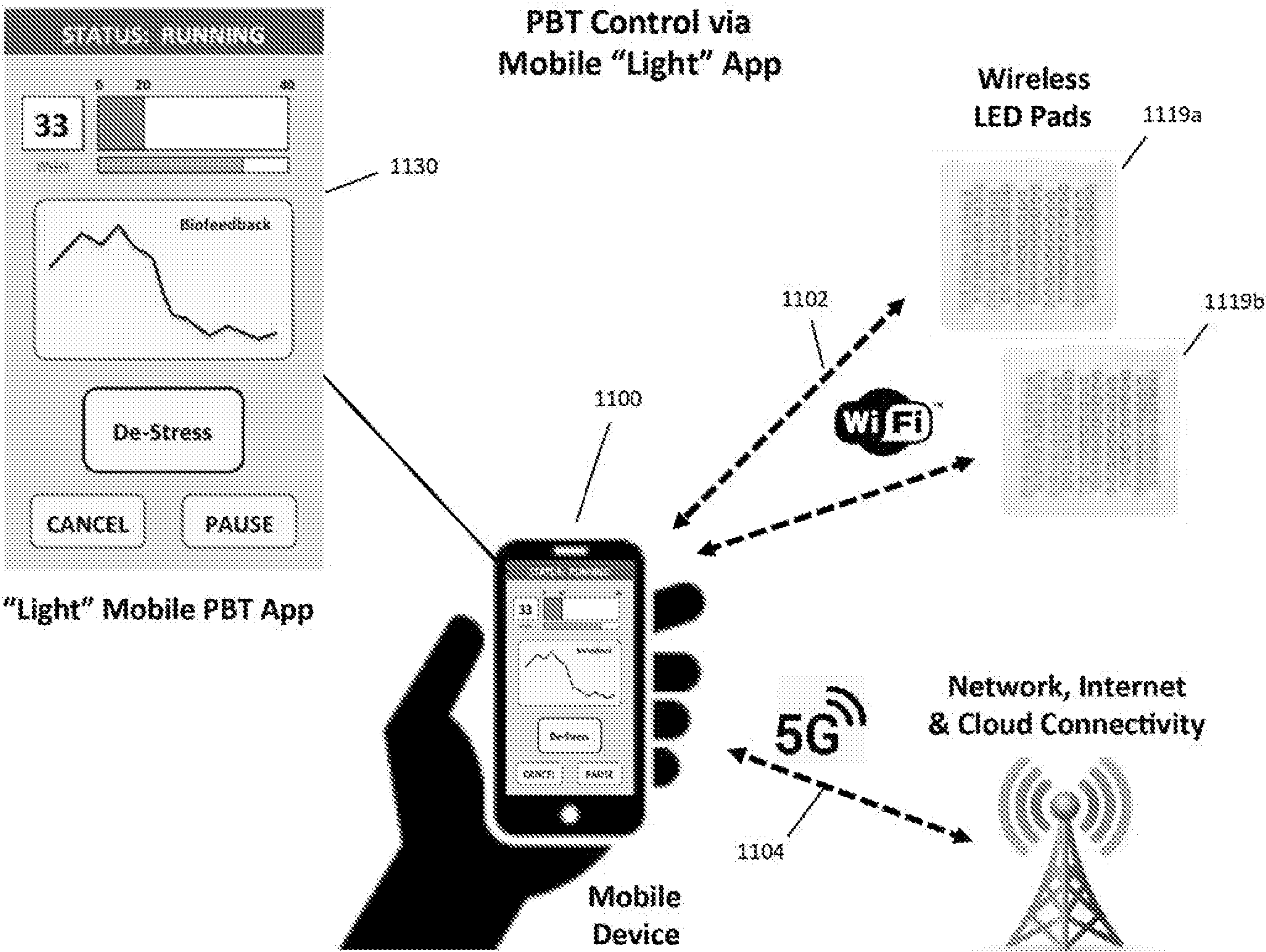


Figure 74

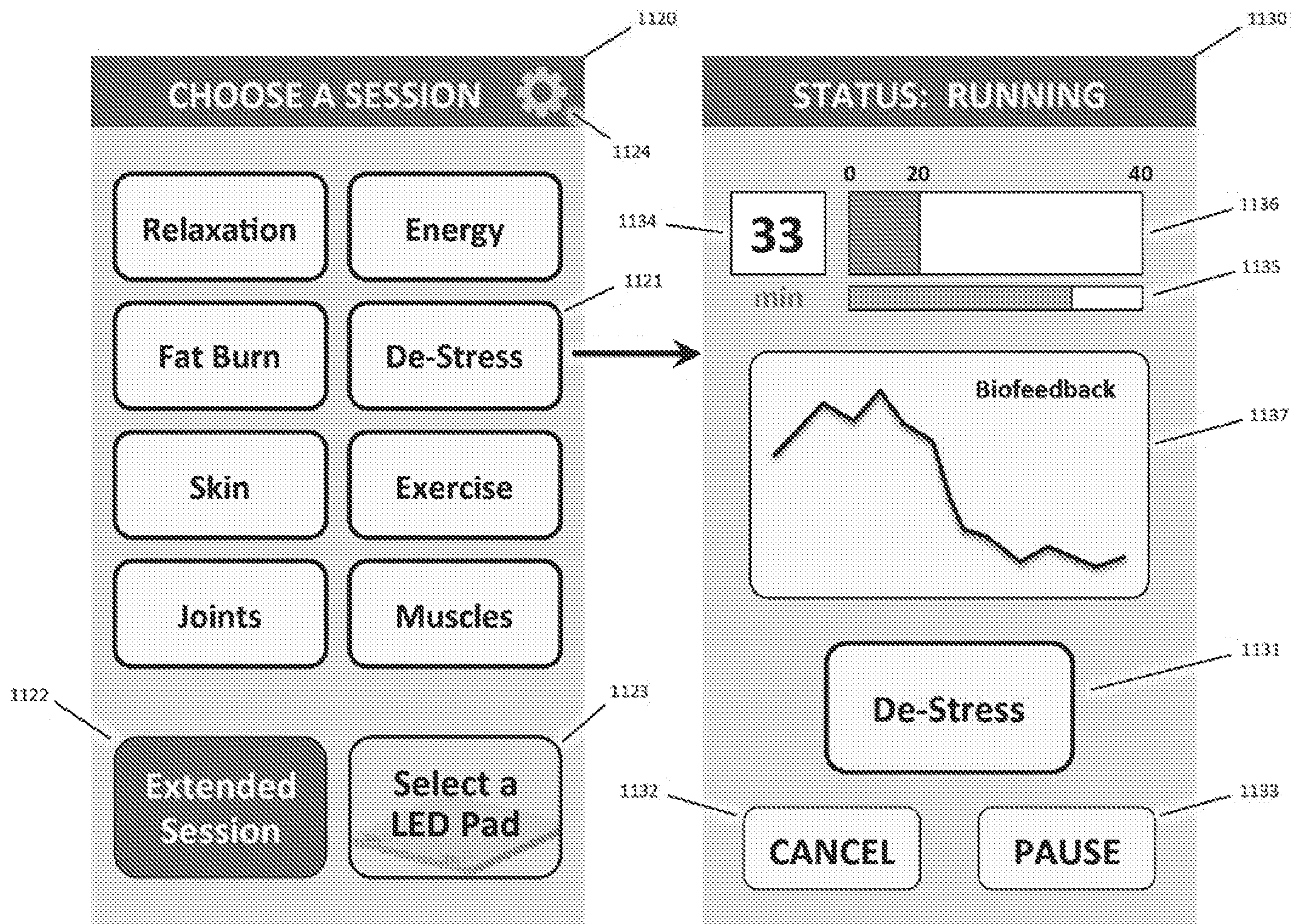


Figure 75

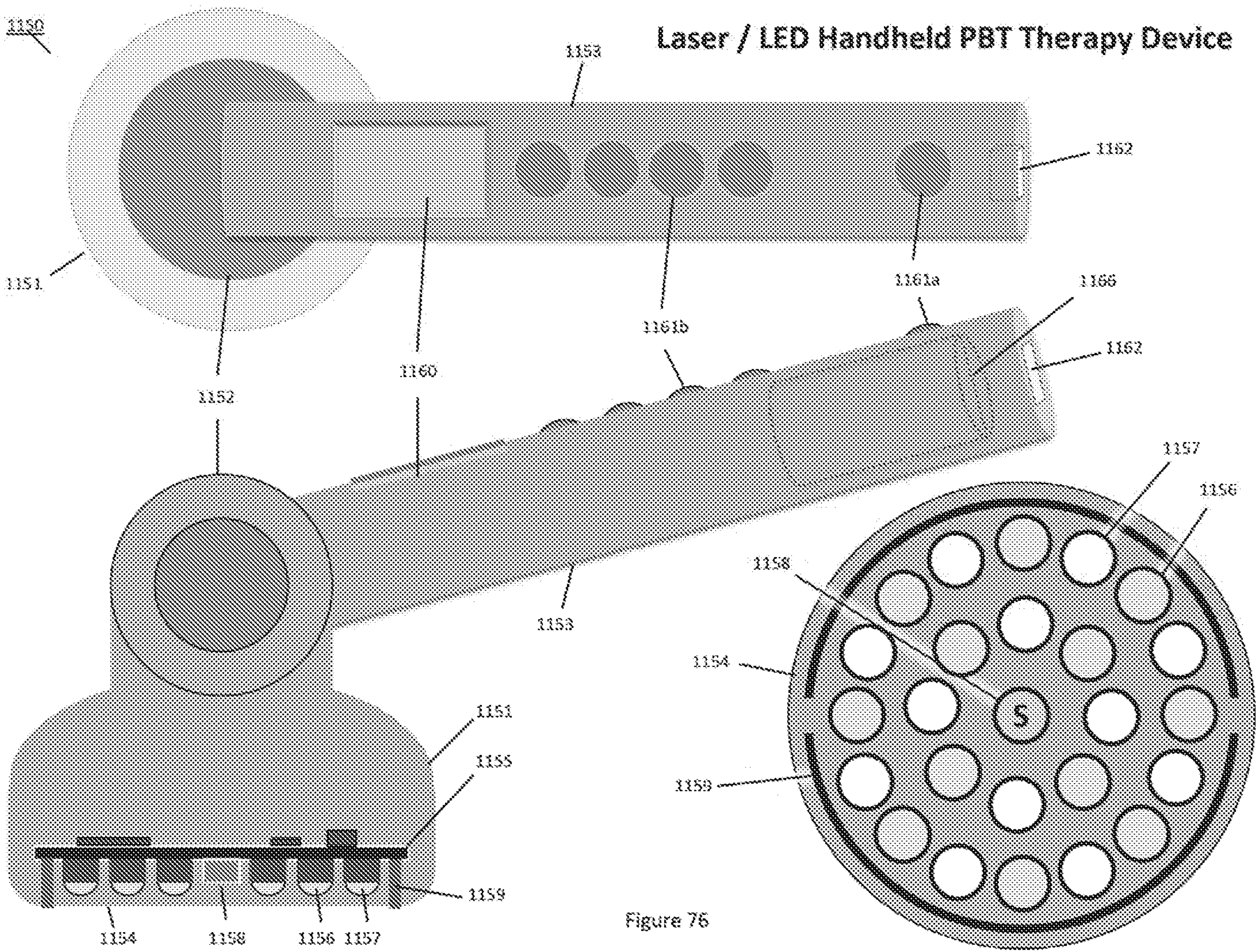


Figure 75

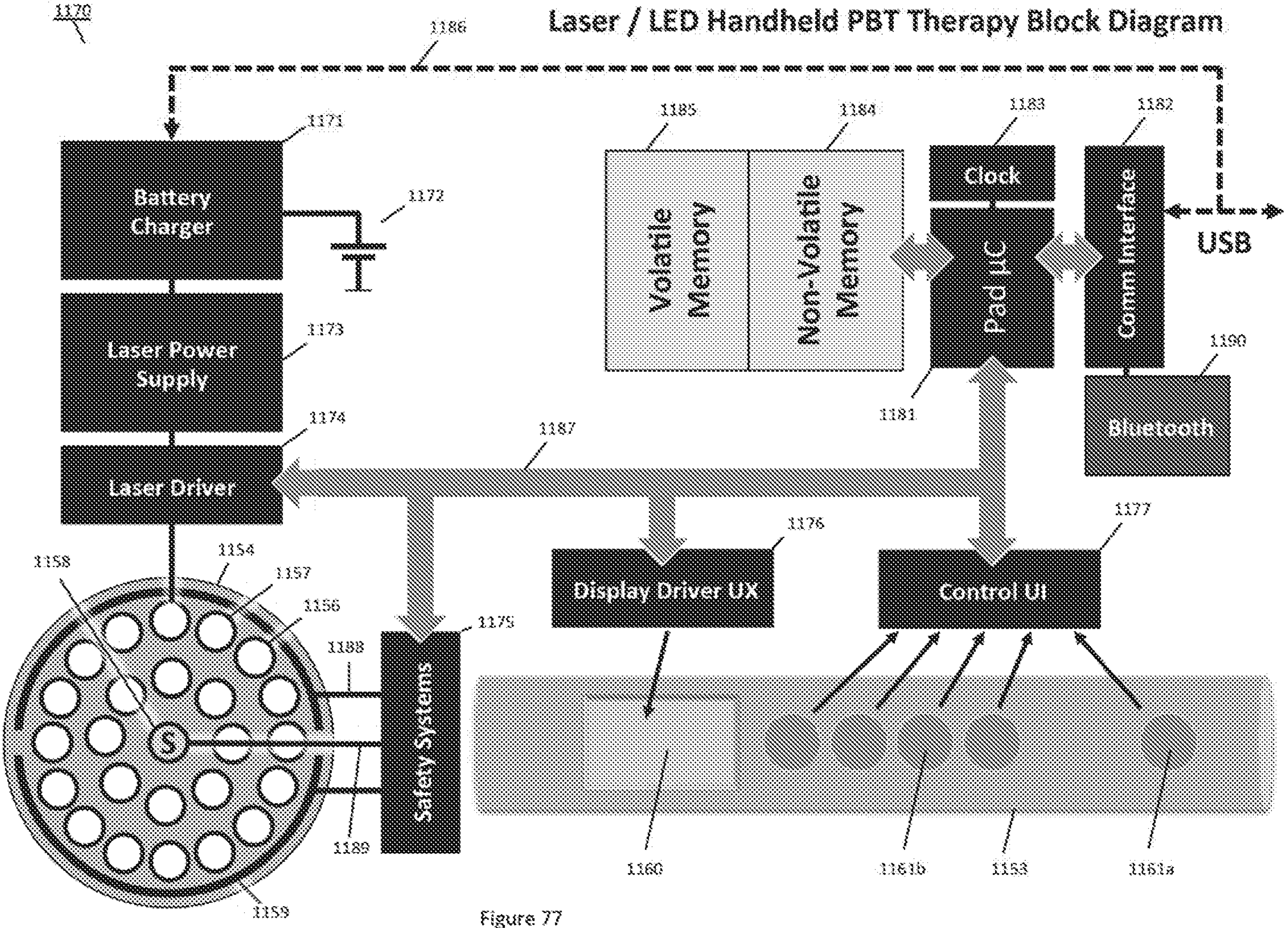


Figure 77

Laser / LED Handheld PBT Sensors

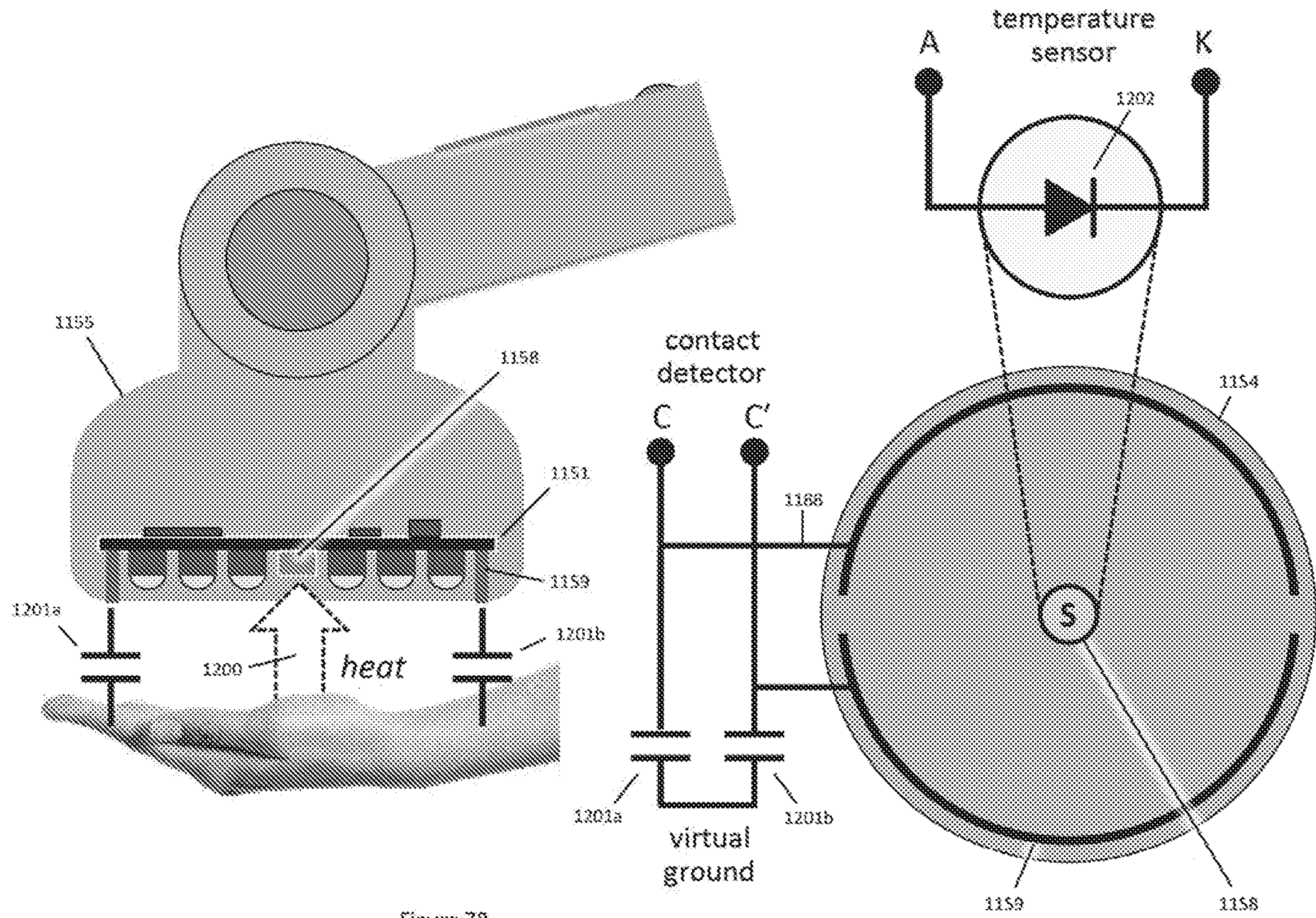
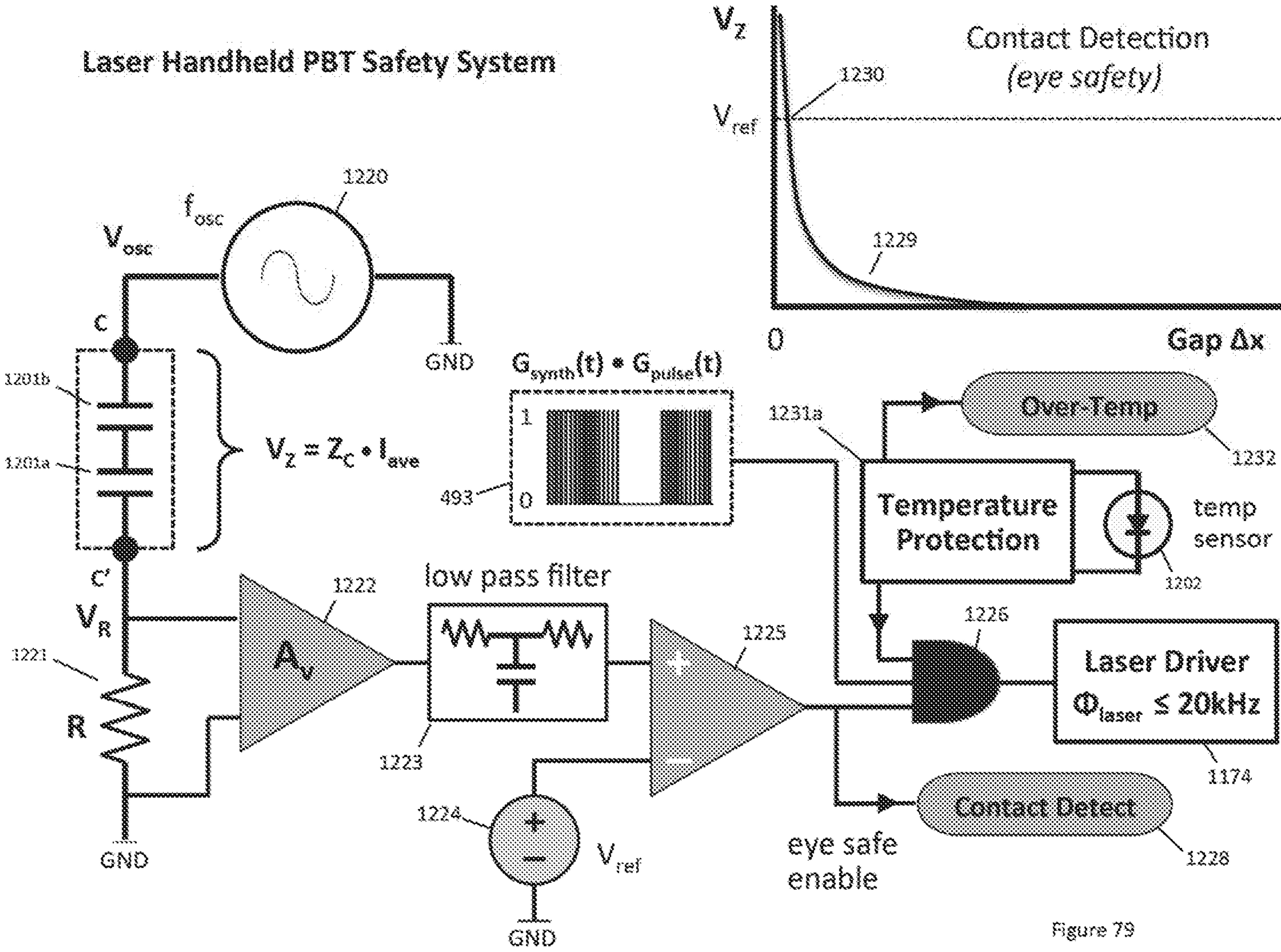


Figure 78



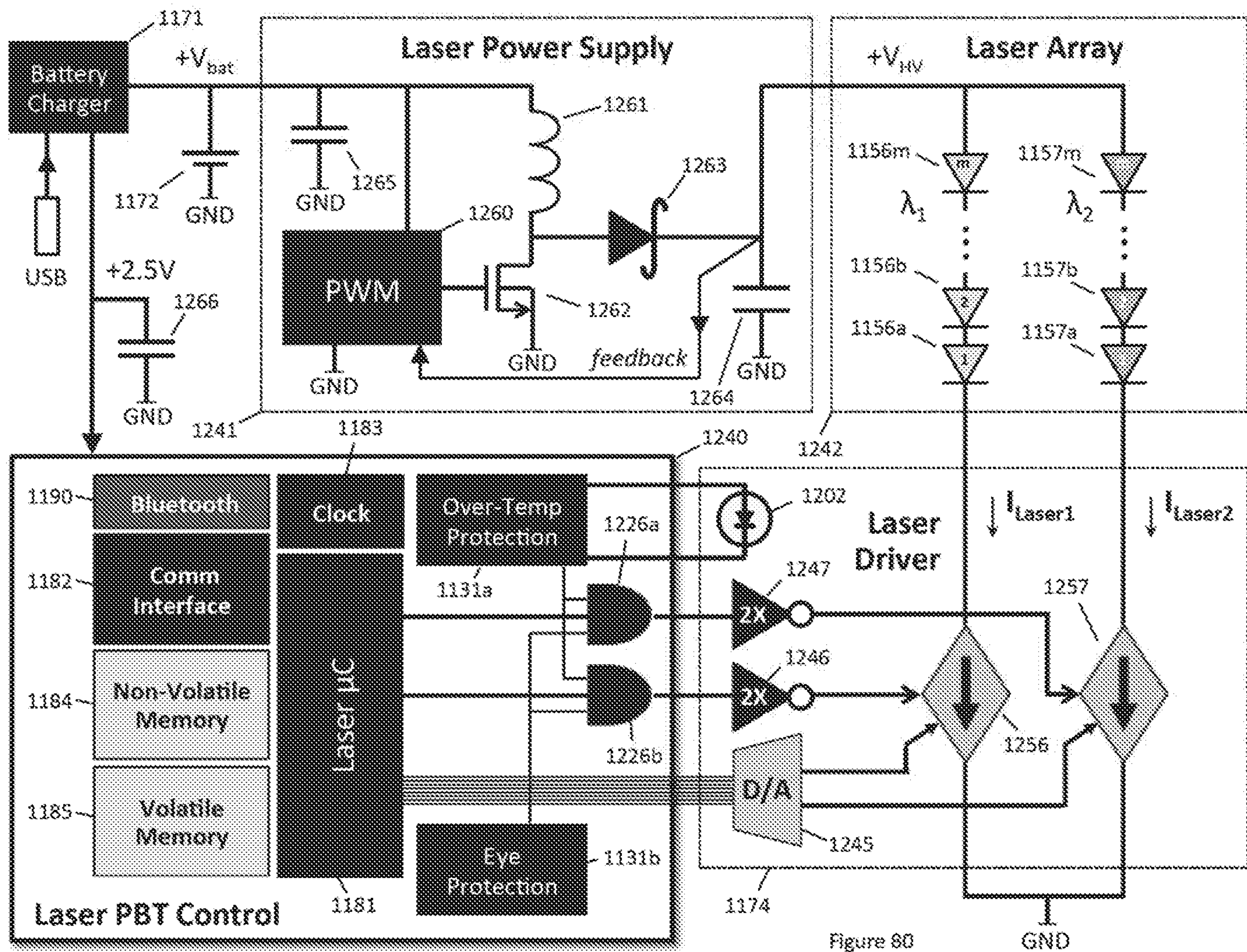


Figure 80

GND

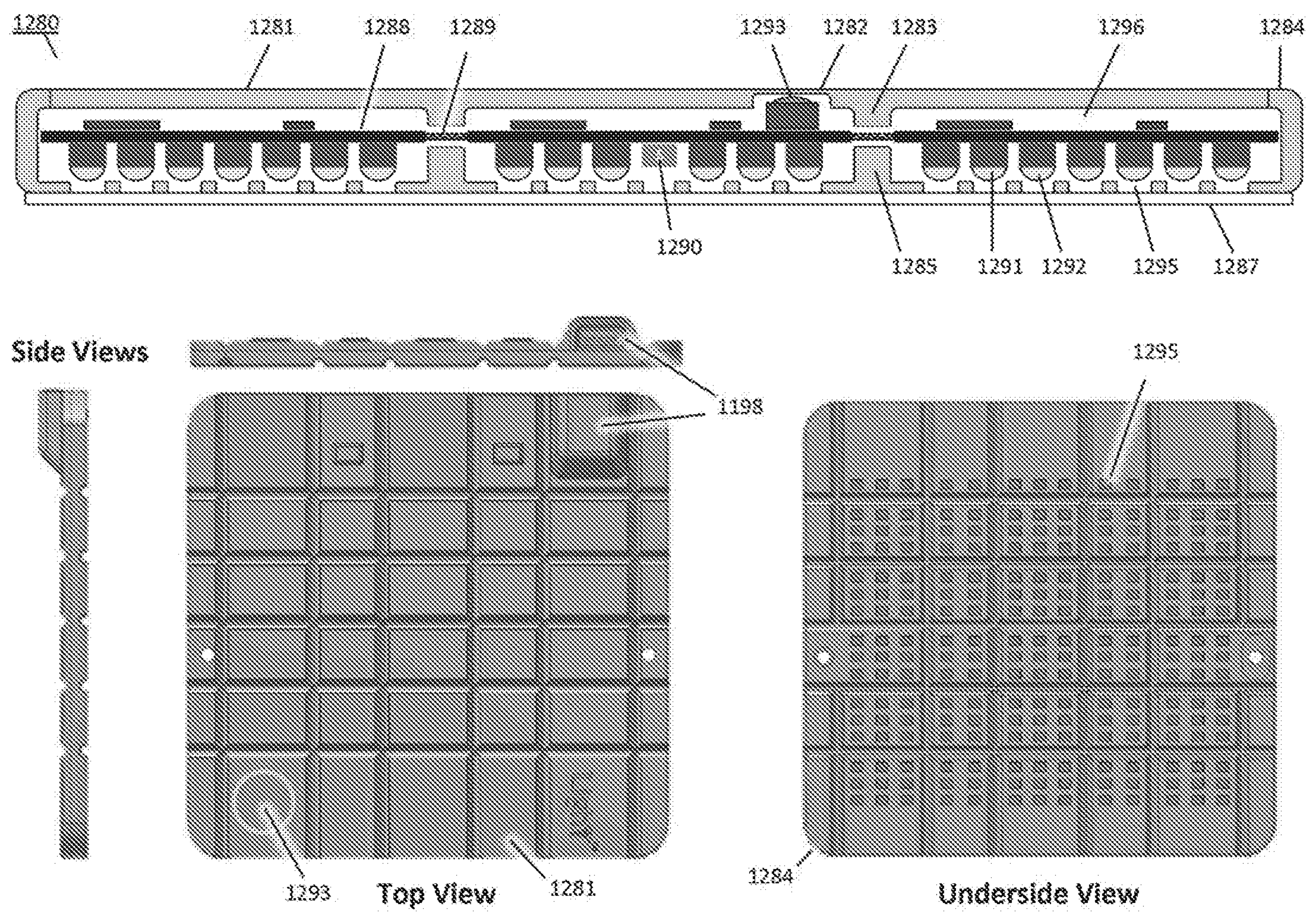


Figure 81A

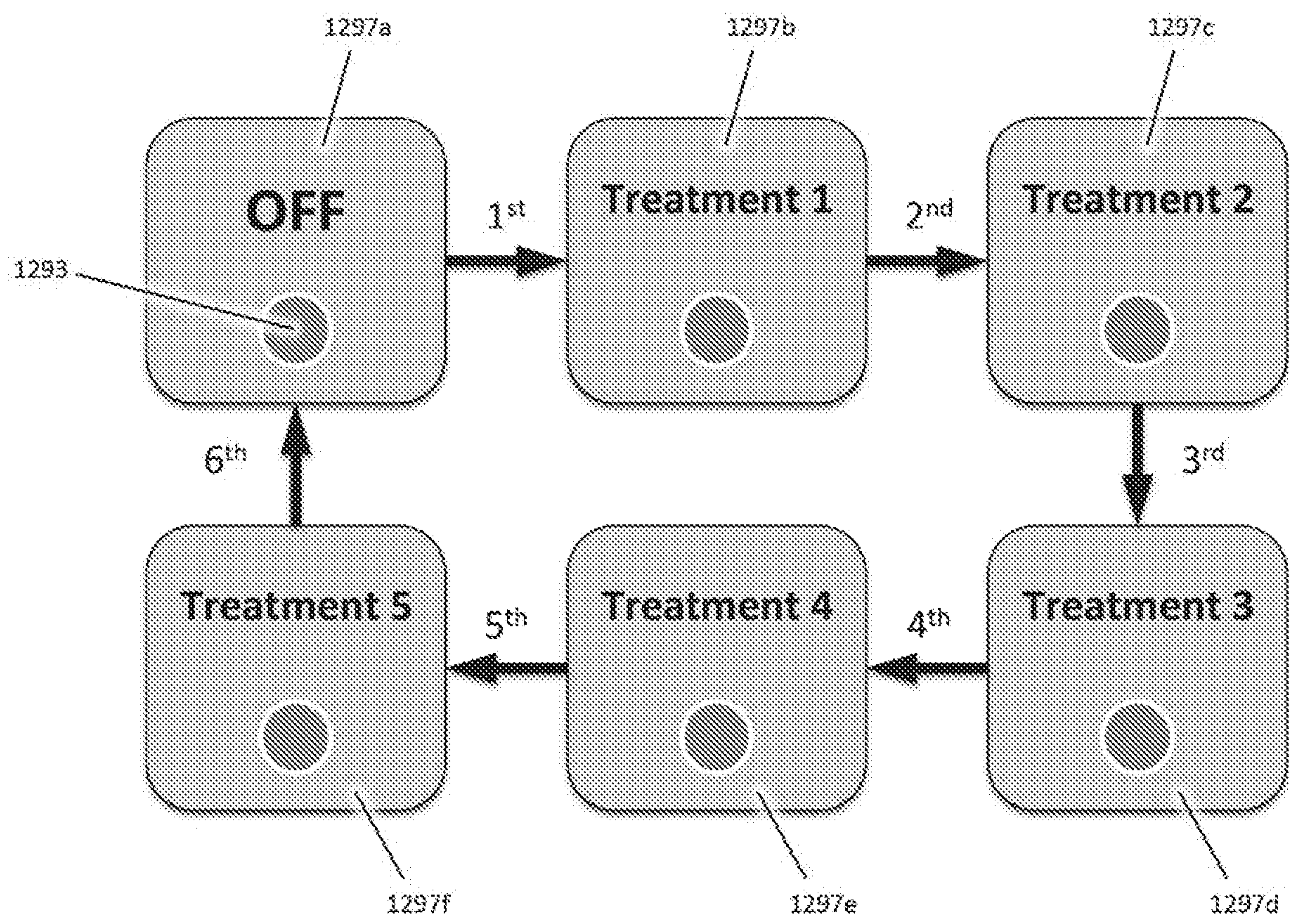


Figure 81B

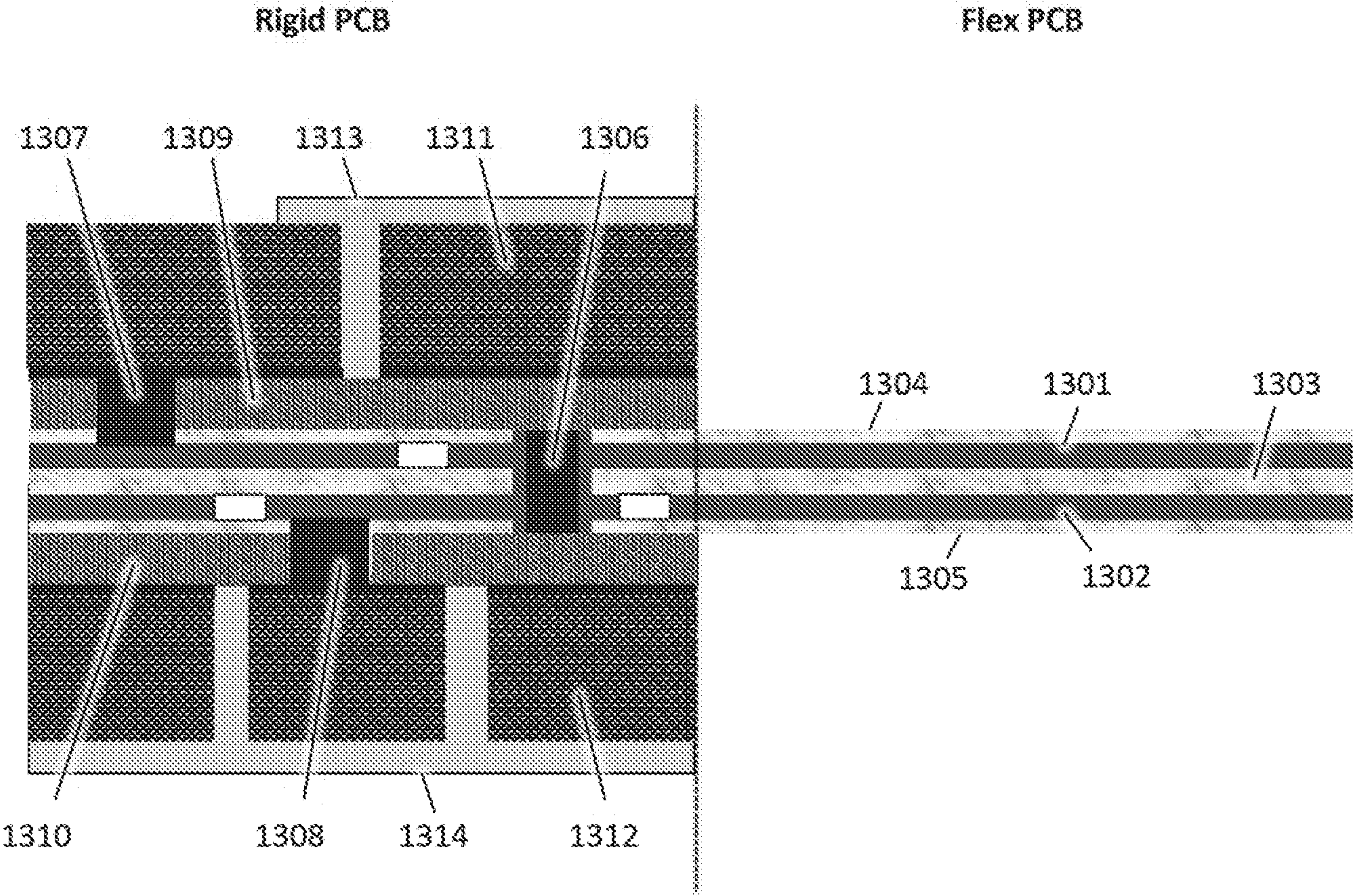


Figure 82

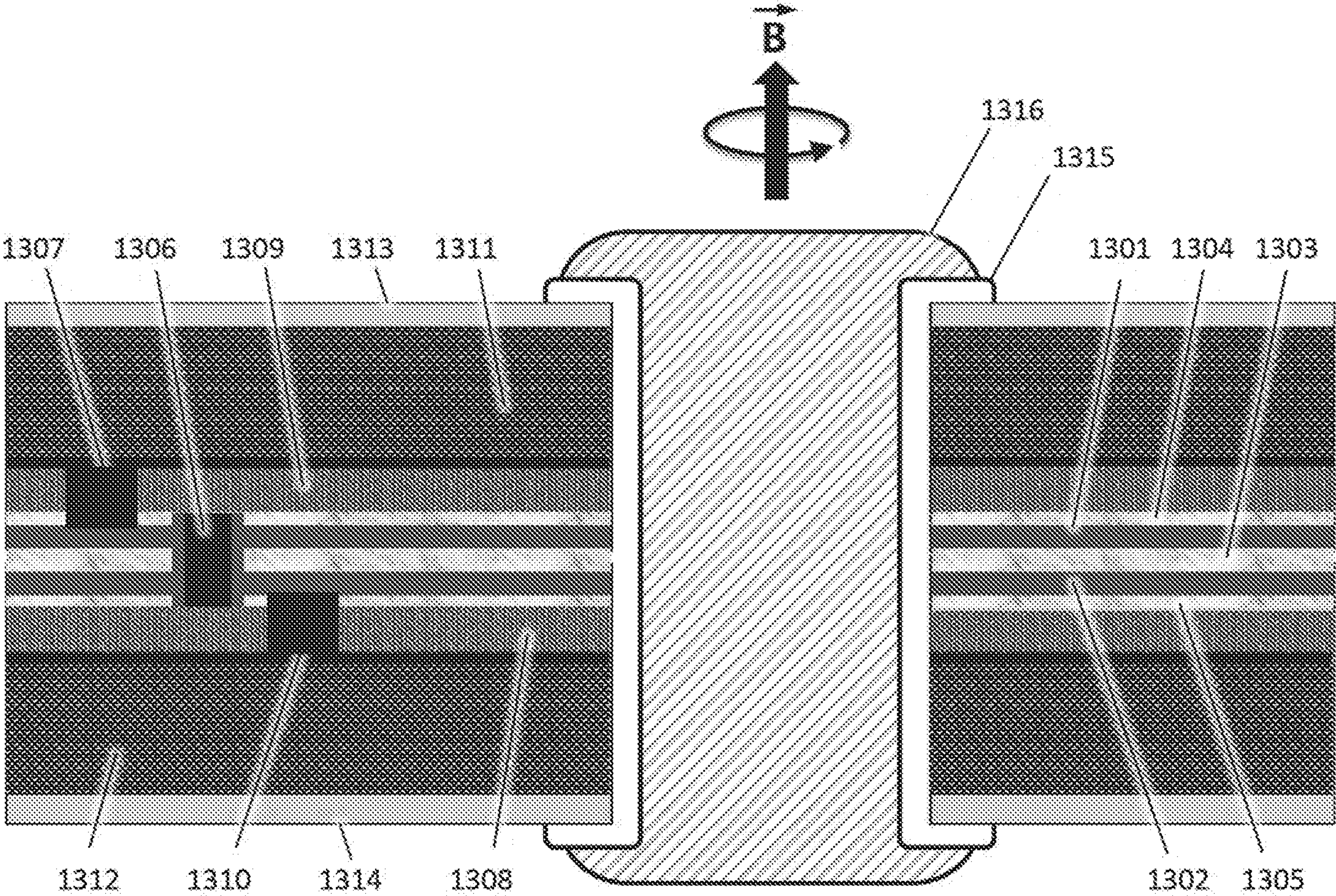


Figure 84

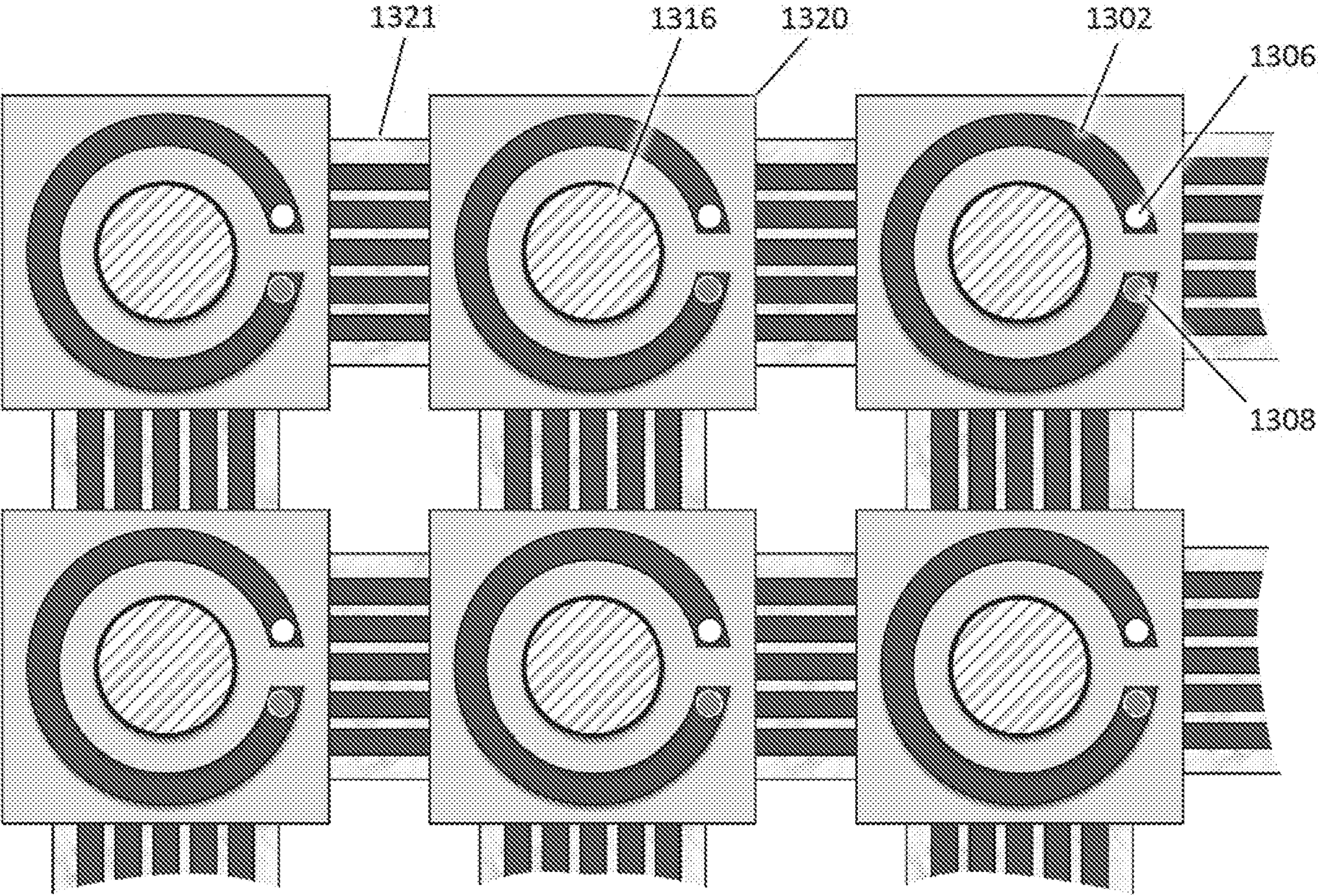


Figure 85

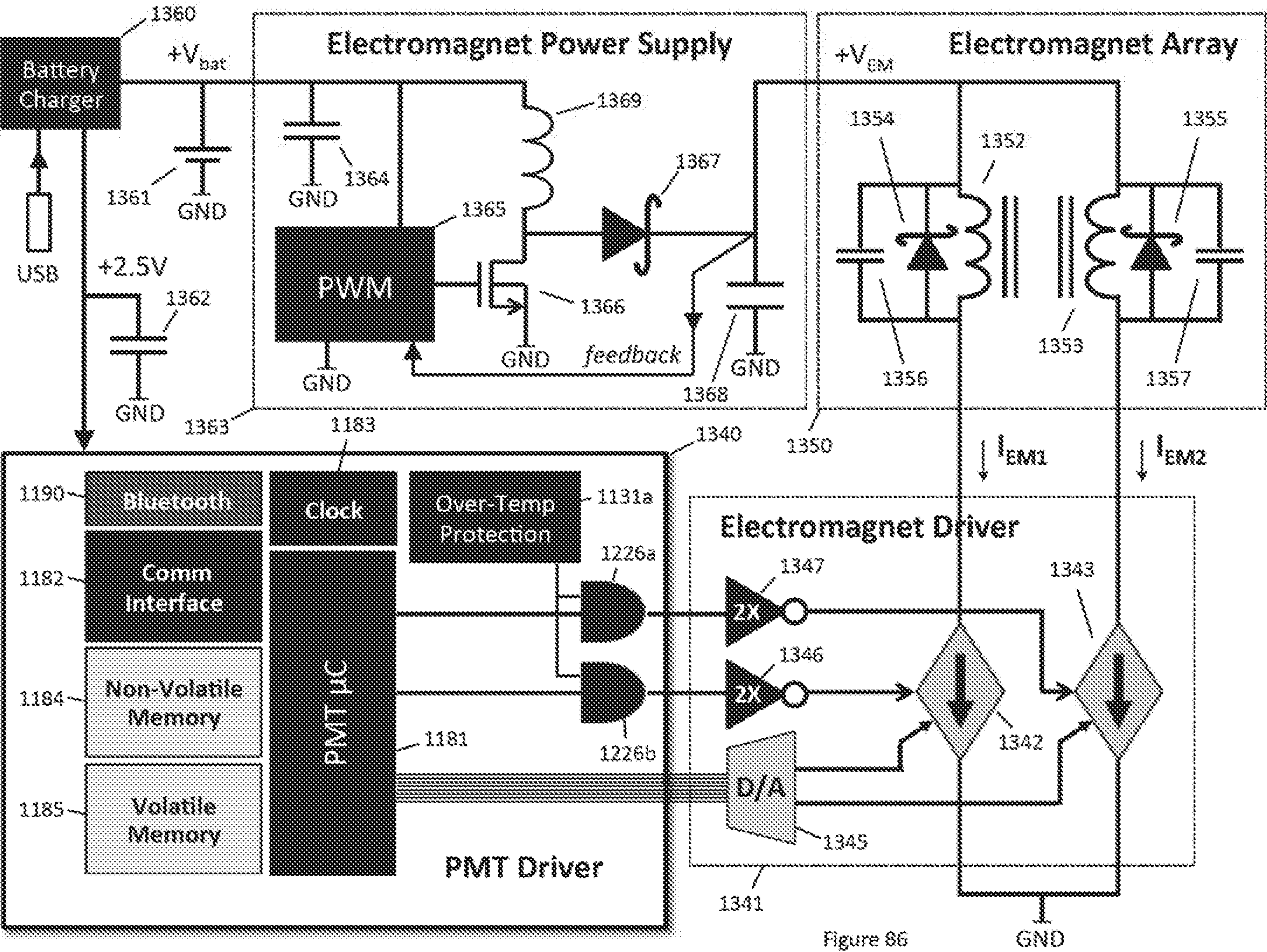


Figure 86

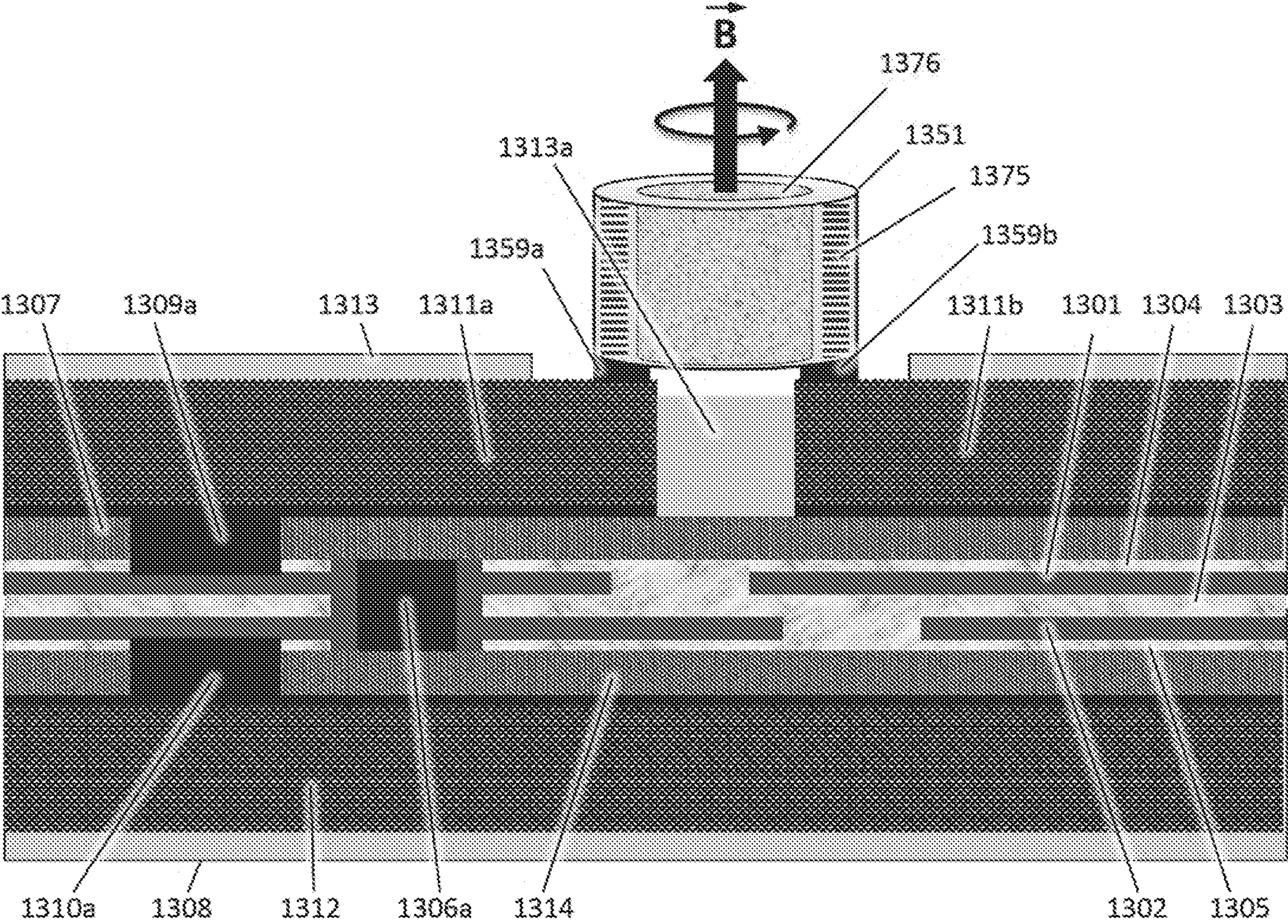


Figure 87

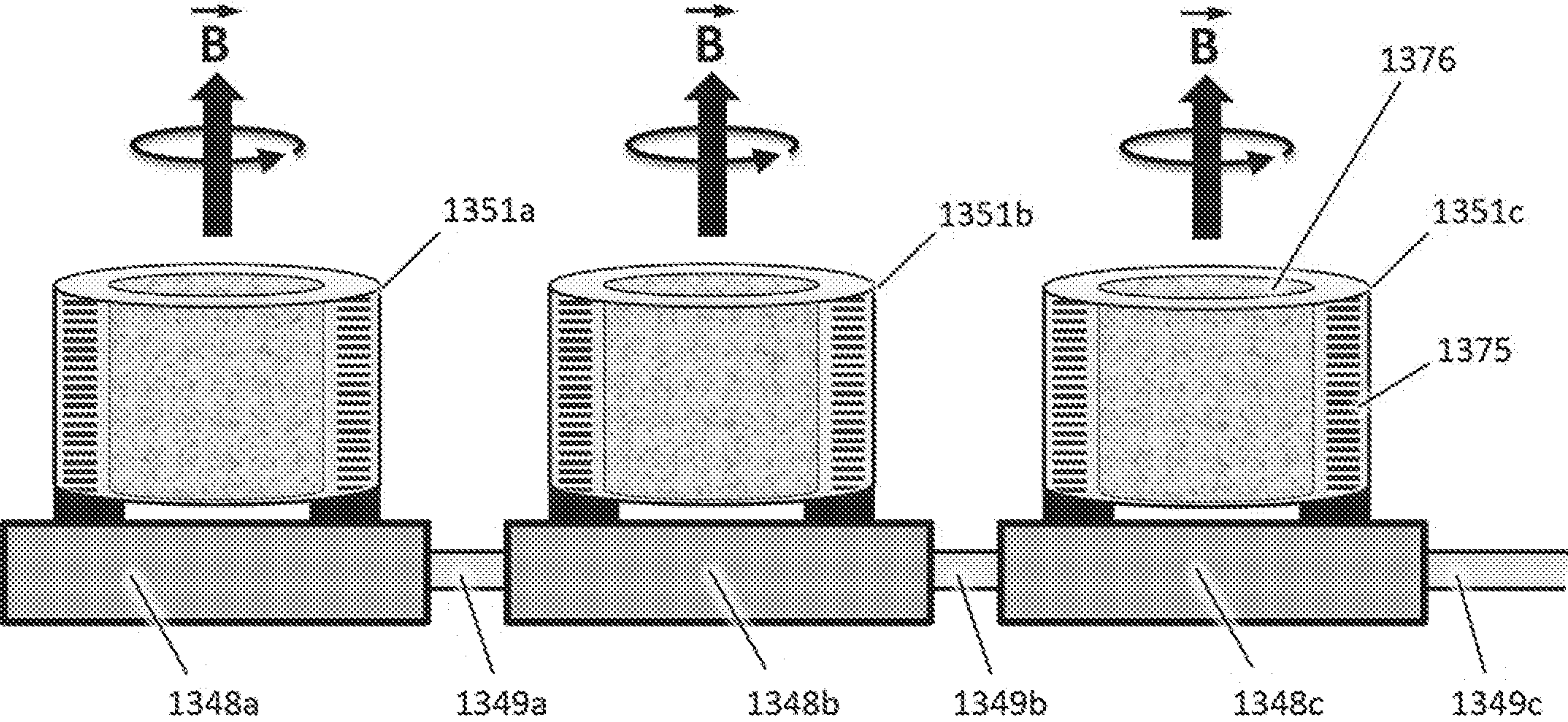


Figure 88A

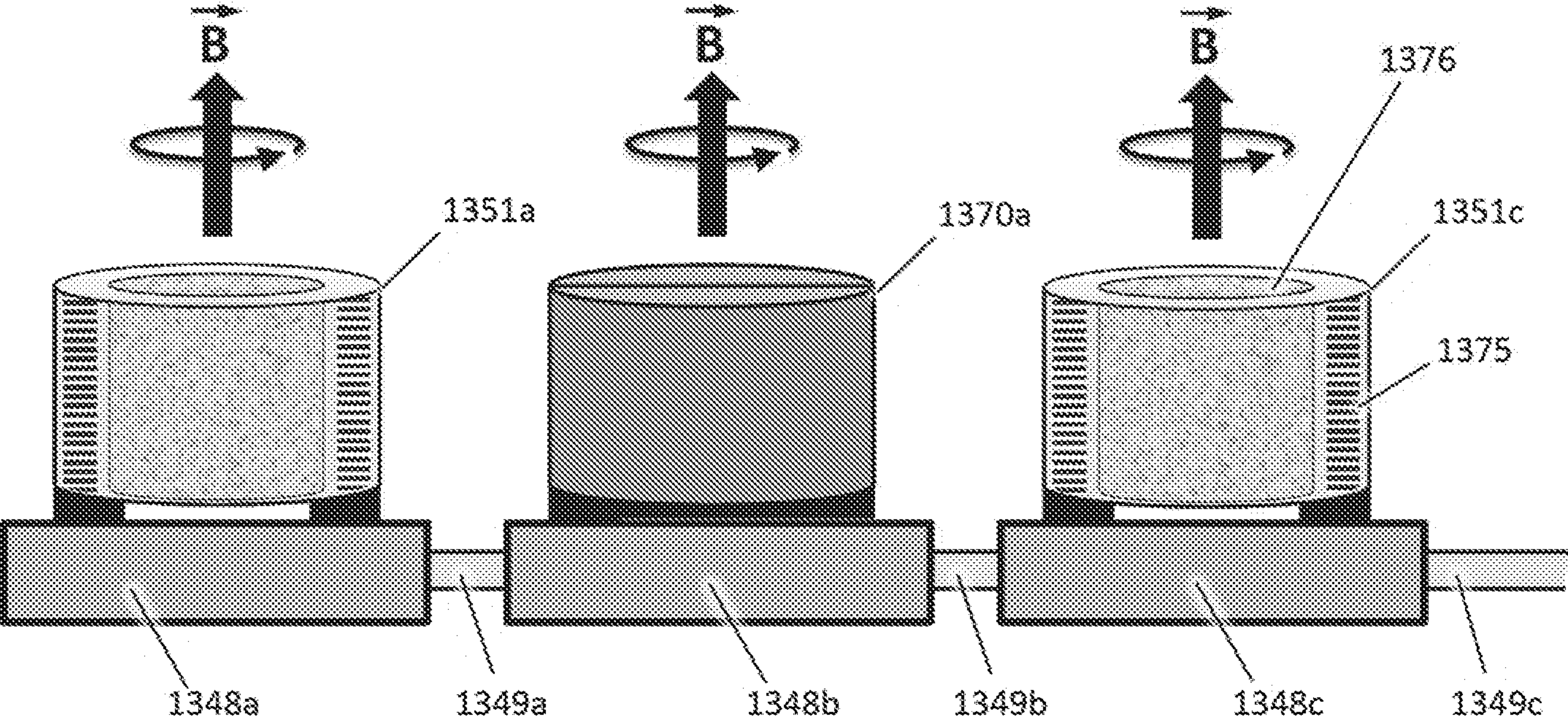


Figure 88B

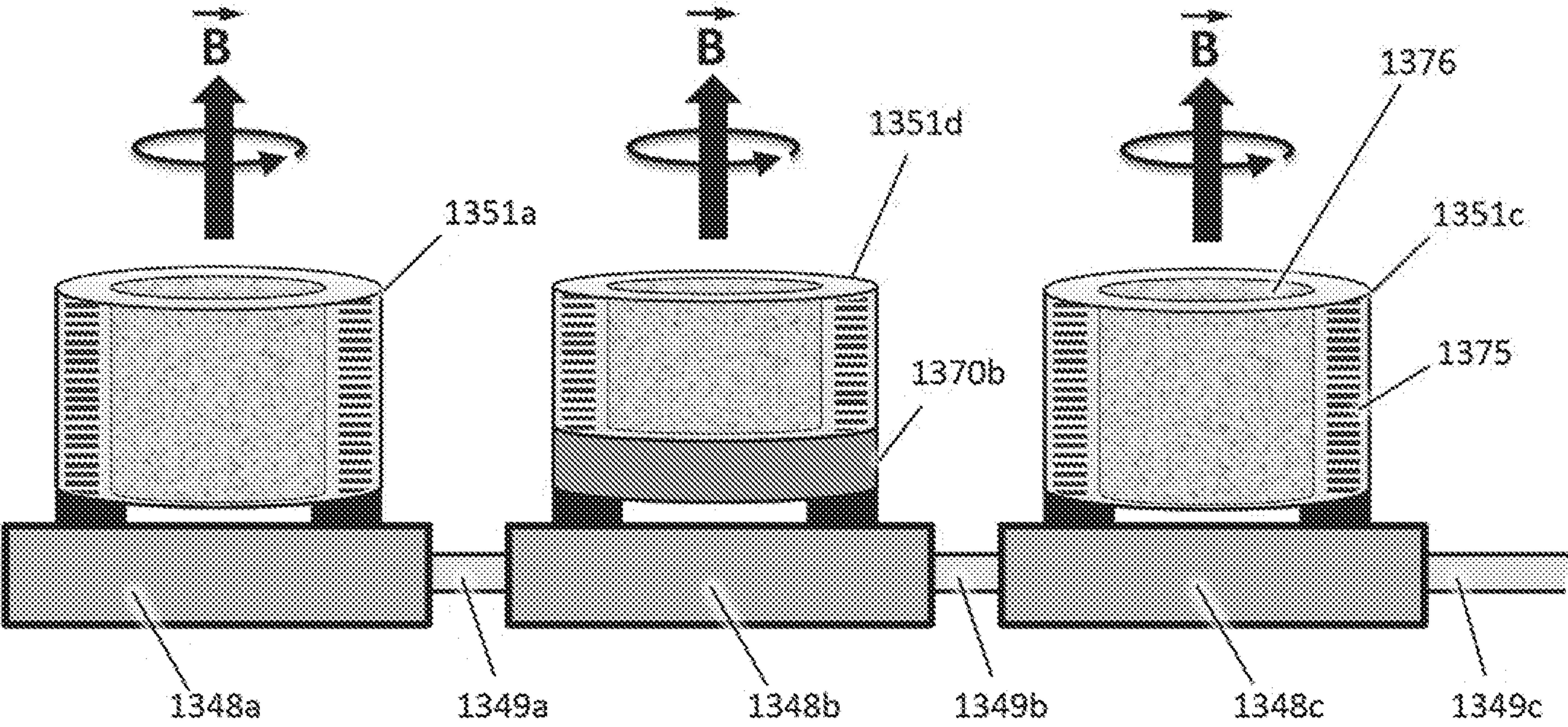


Figure 88C

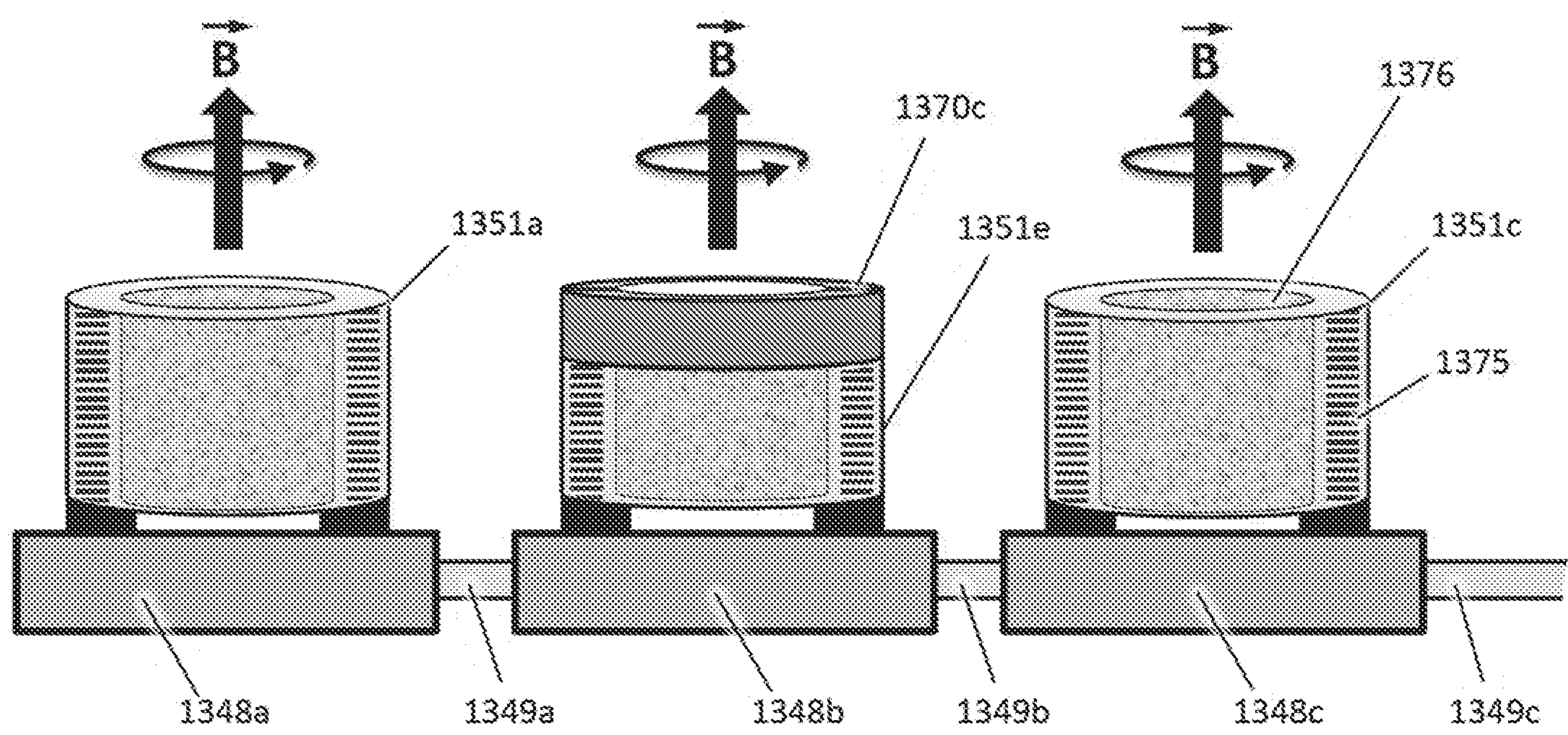
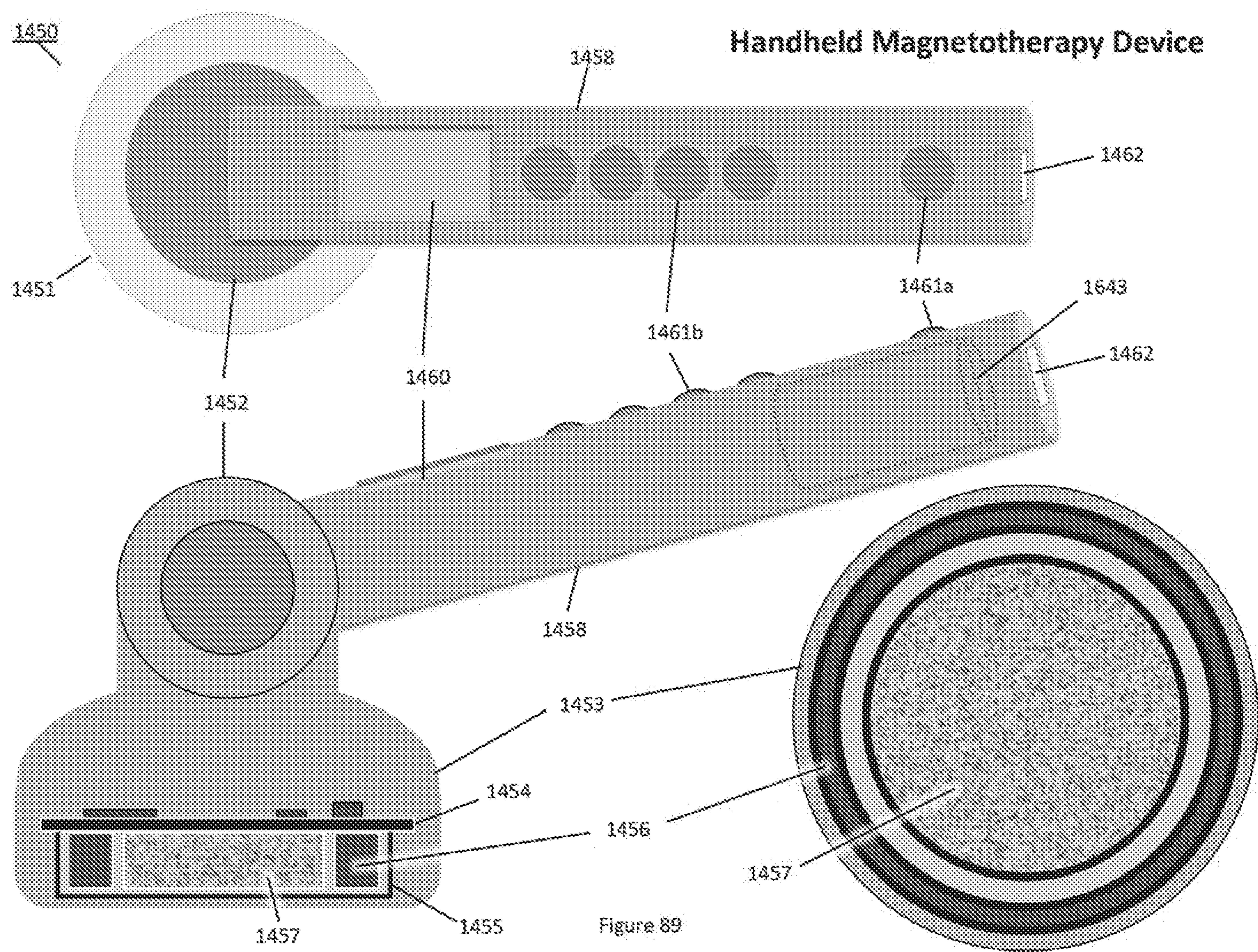


Figure 88D



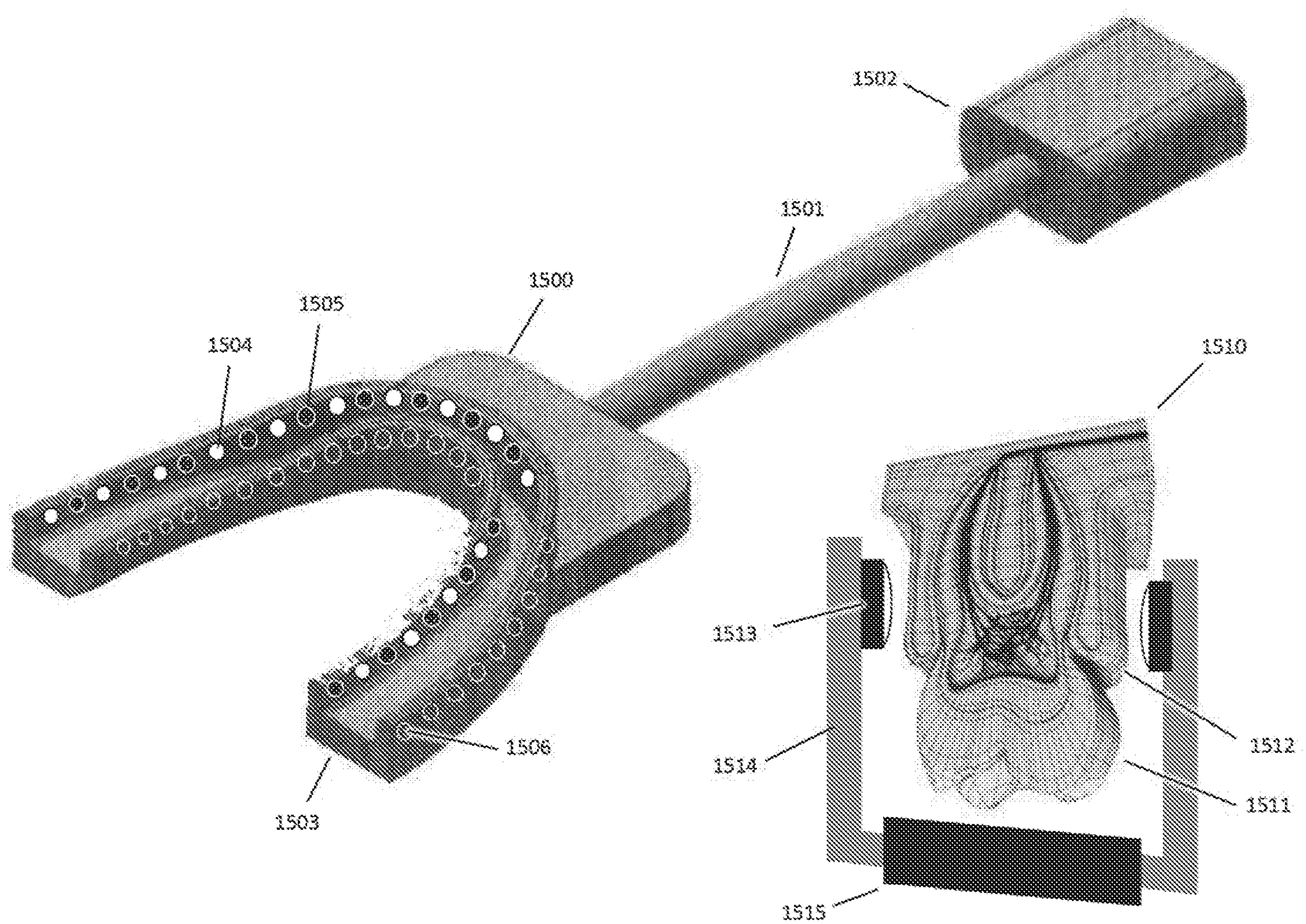


Figure 90

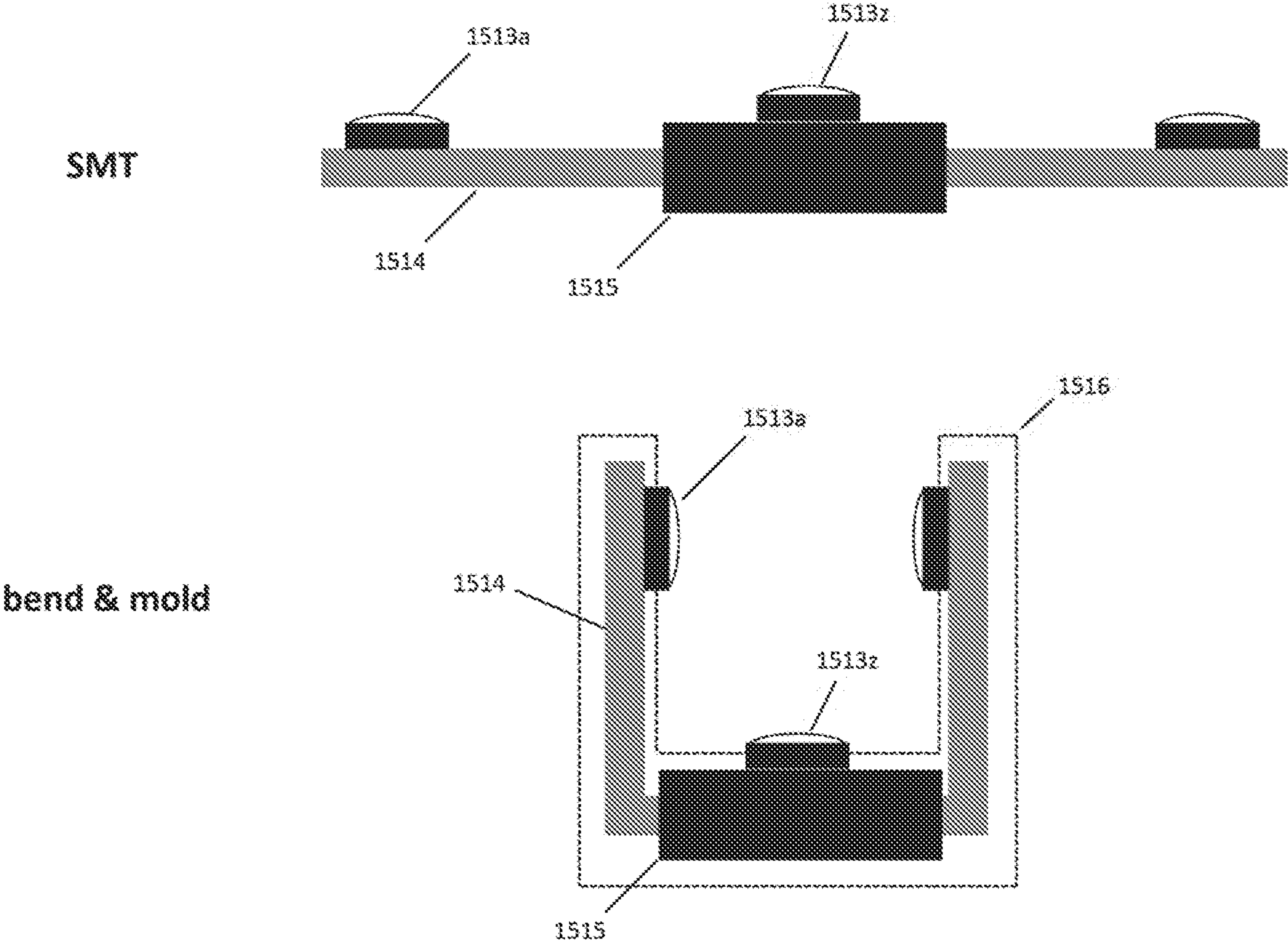


Figure 91

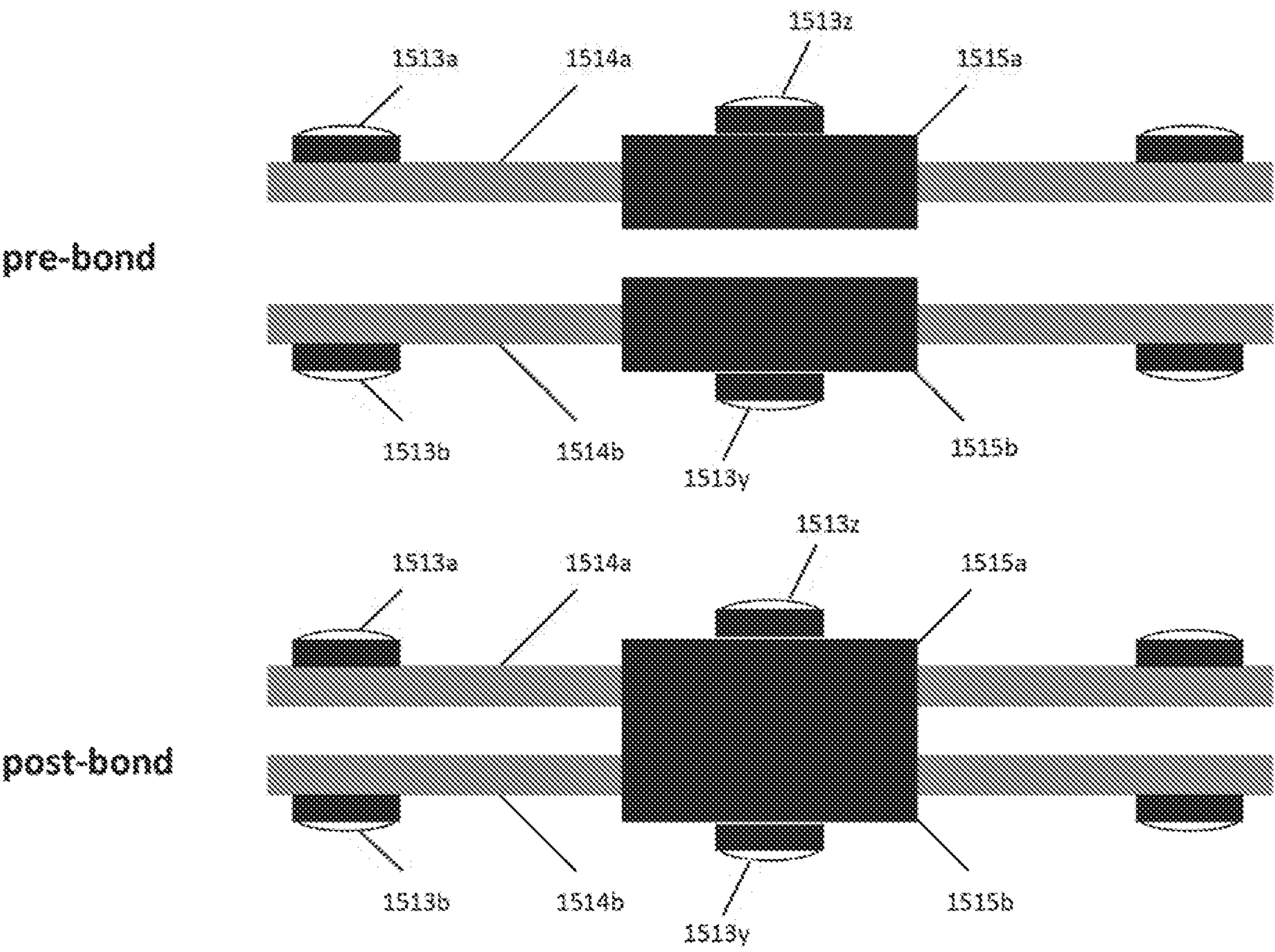


Figure 92A

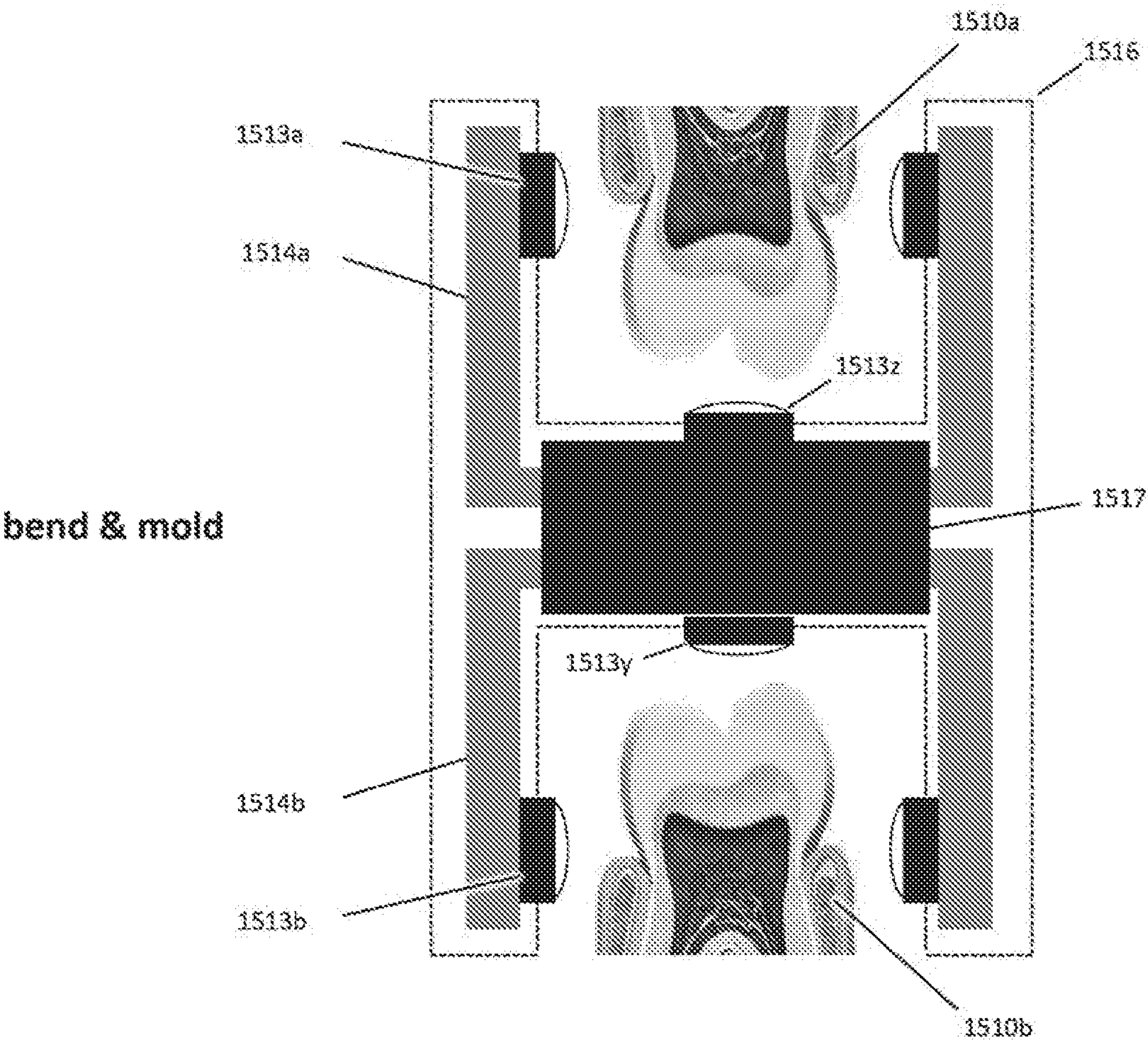


Figure 92B

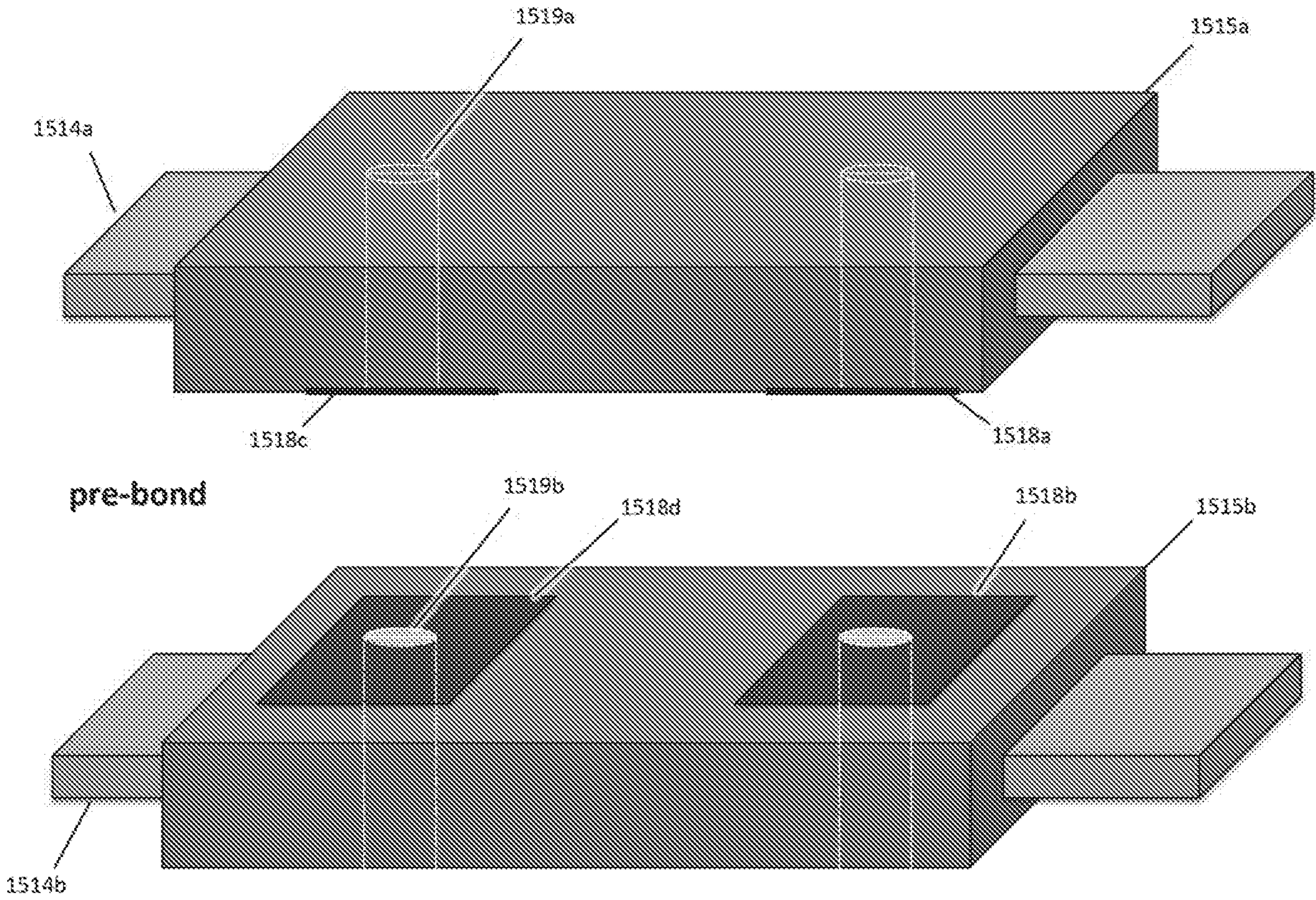


Figure 93

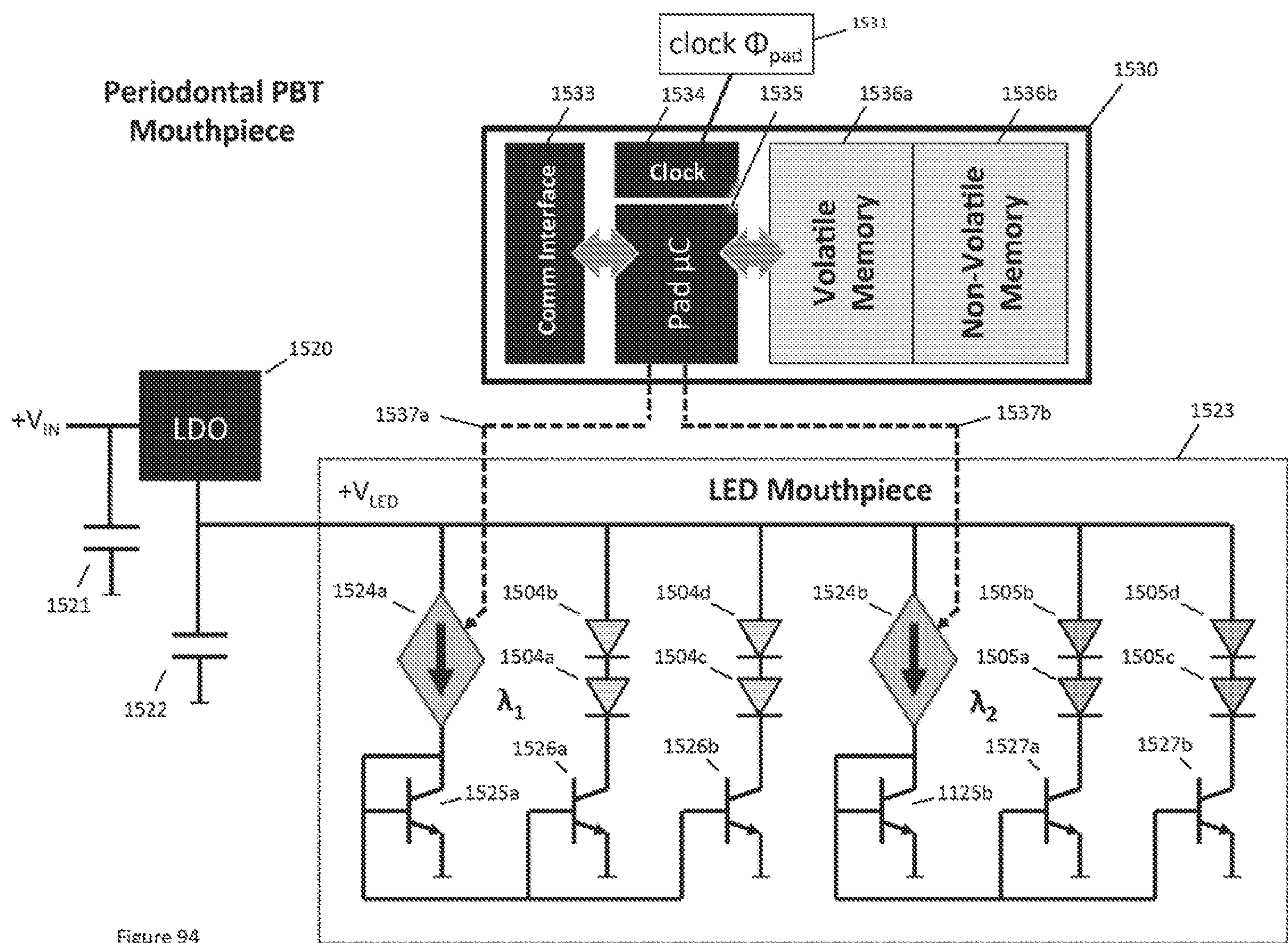
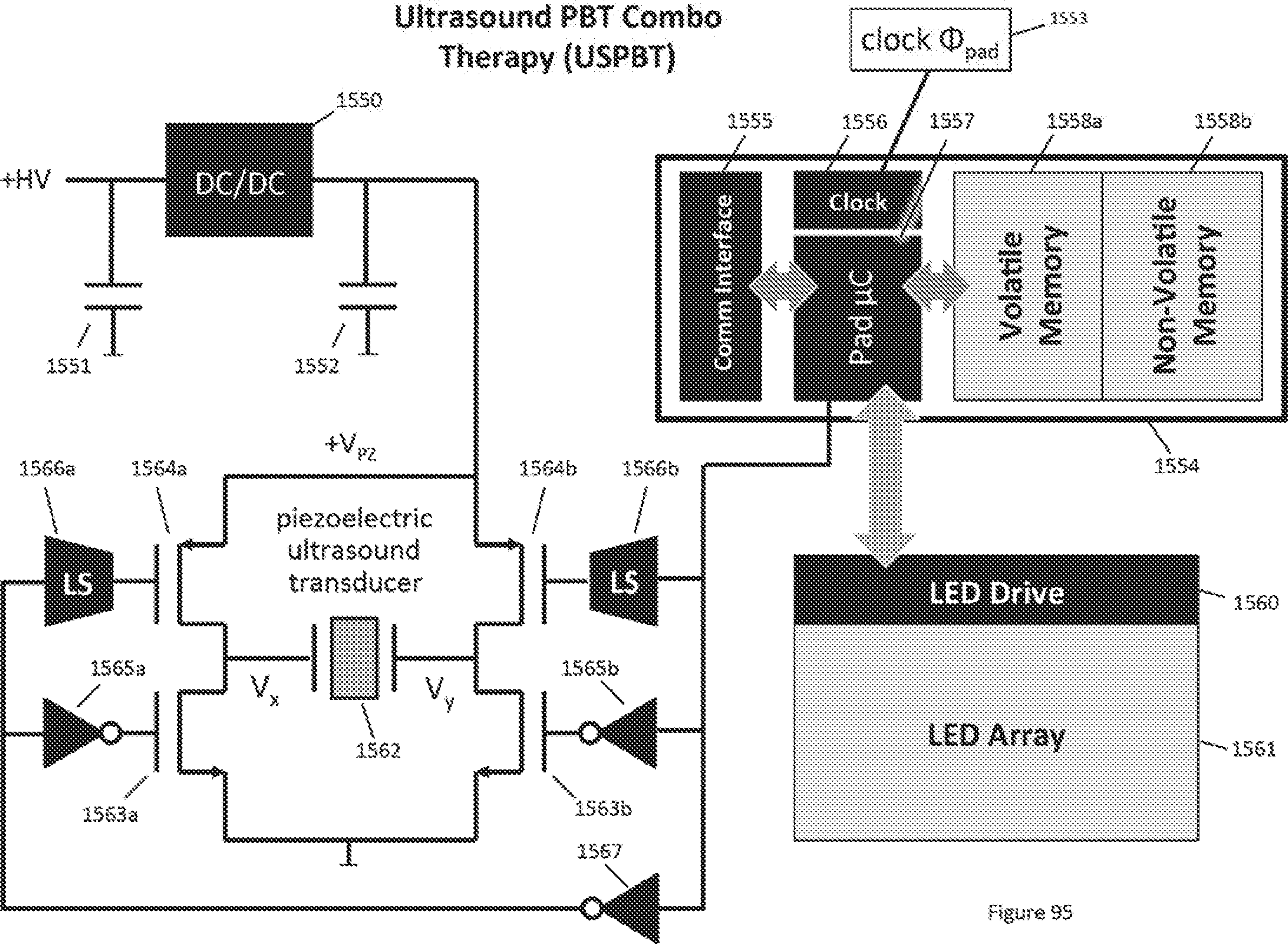


Figure 94



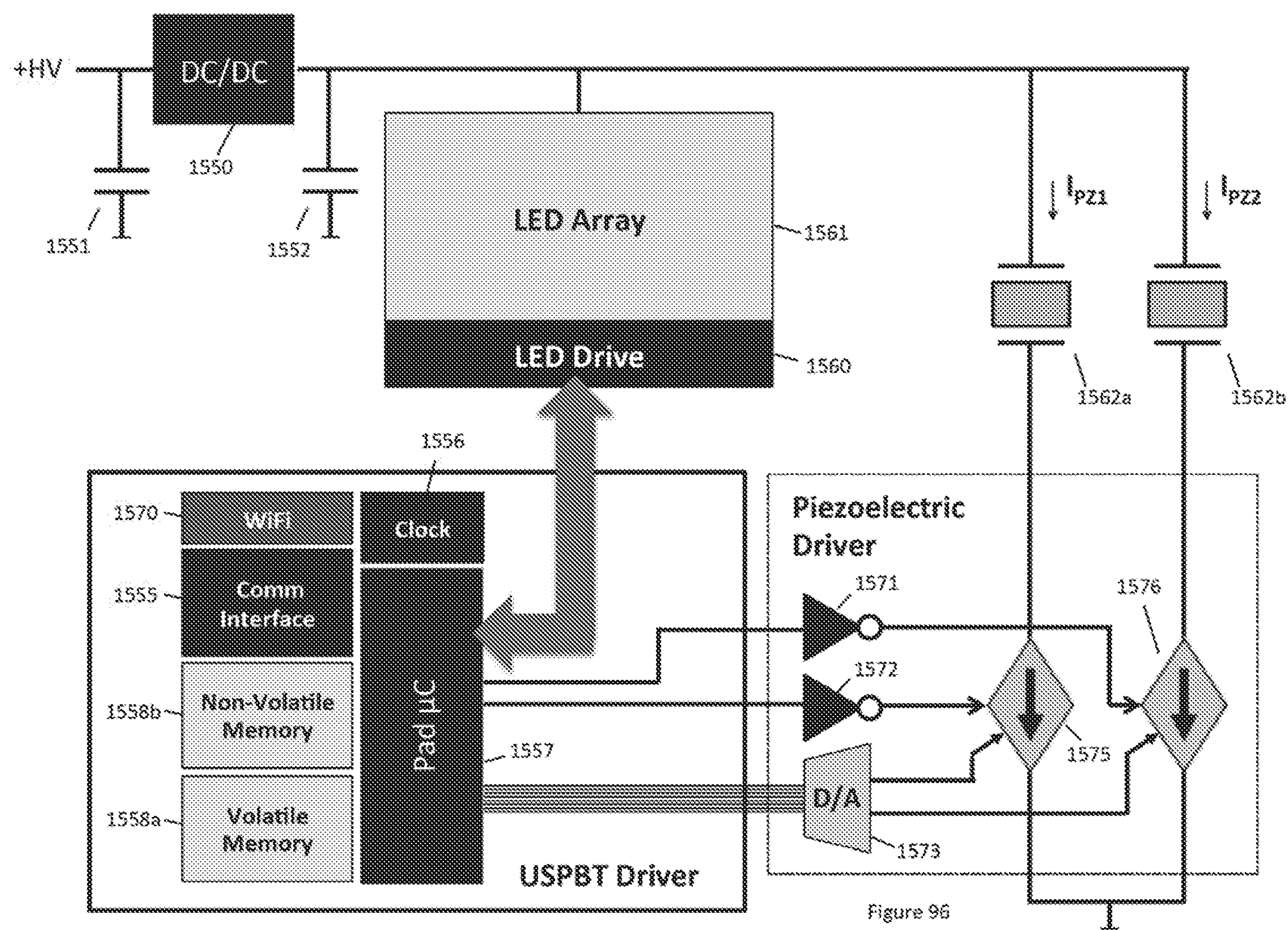


Figure 96

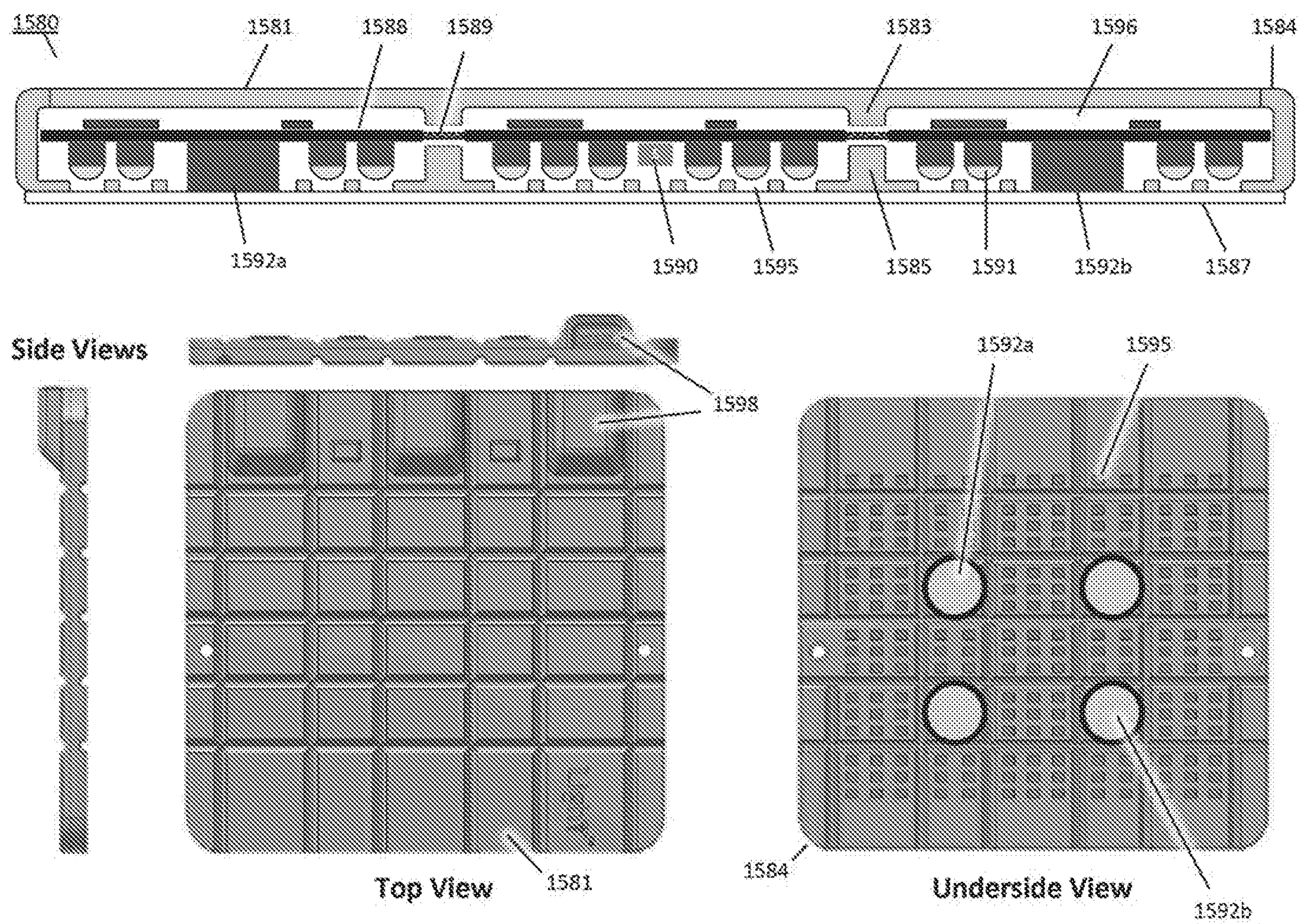


Figure 97