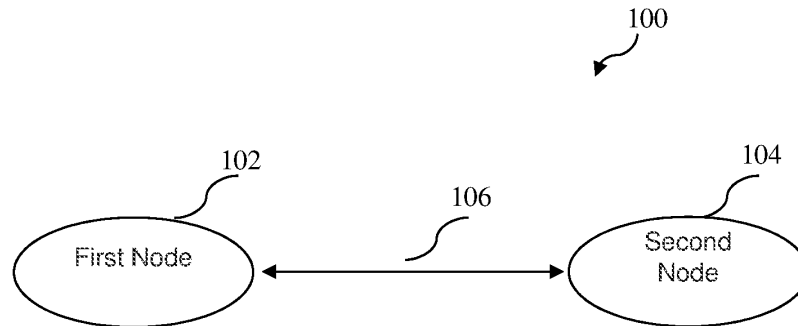
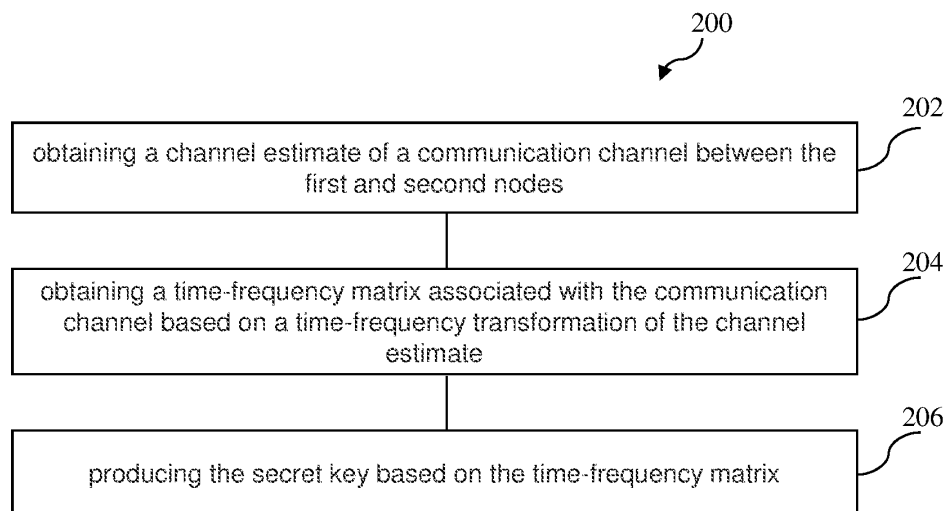
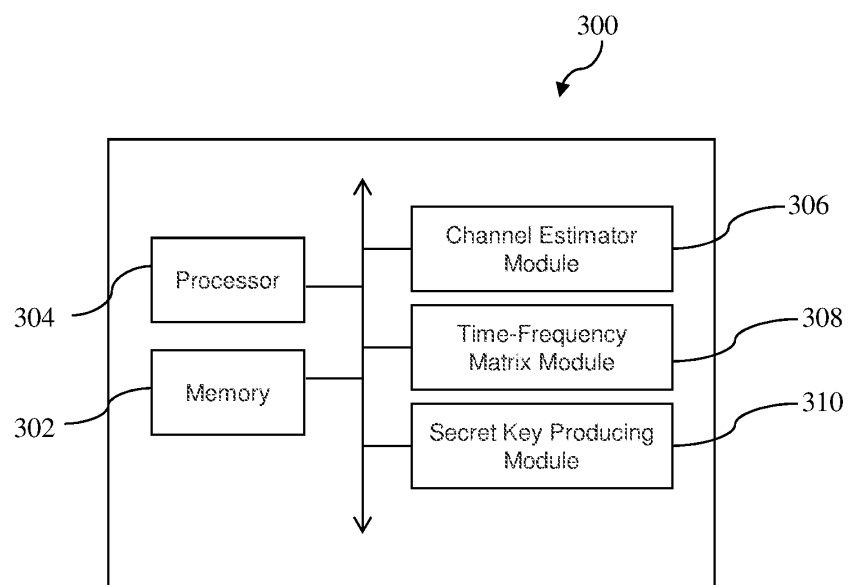
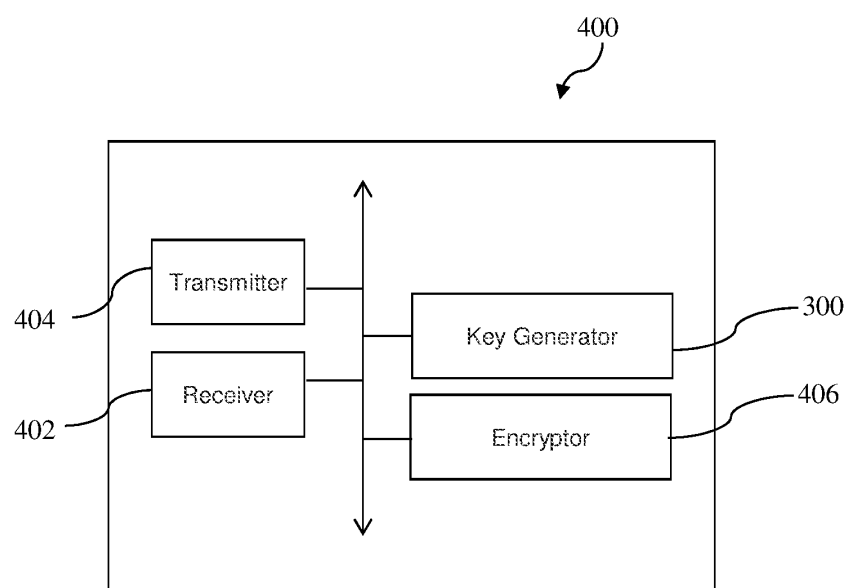


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**FIG. 1****FIG. 2**

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**FIG. 3****FIG. 4**

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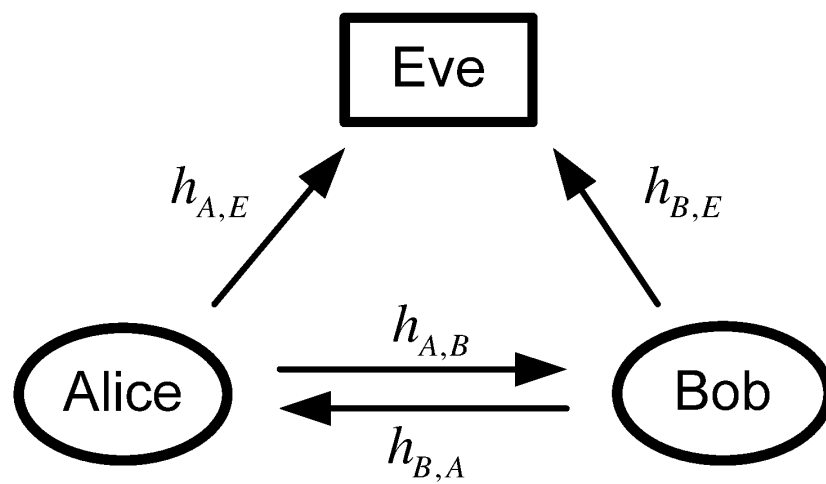


FIG. 5

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Input: G_A , G_B , $w_{x,e}$, and $w_{y,e}$

Output: two lists l_x and l_y

At A side:

```

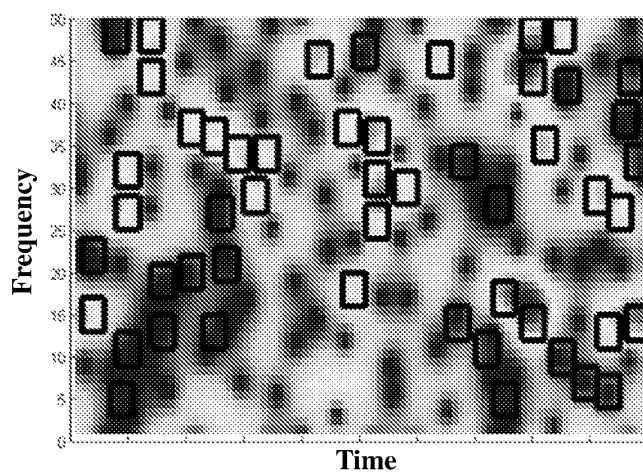
Initialize a blacklist  $\Phi_A \in \mathbb{R}^{M \times K} = 0$ ;
for  $m = 1$  to  $M - w_{x,e} + 1$ 
    for  $k = 1$  to  $K - w_{y,e} + 1$ 
        if  $G_A(m, k) \geq q_{A,+}$  (or  $G_A(m, k) \leq q_{A,-}$ ) and  $\Phi_A(m, k) = 0$ ,  $\forall m \in \{m_s, m_s + 1, \dots, m_s + w_{x,e} - 1\}$  and  $k \in \{k_s, k_s + 1, \dots, k_s + w_{y,e} - 1\}$  then
             $m_e := m_s + w_{x,e} - 1$  and  $k_e := k_s + w_{y,e} - 1$ ;
            do
                 $m_e := m_e + 1$  and  $k_e := k_e + 1$ ;
            while  $G_A(m, k) \geq q_{A,+}$  (or  $G_A(m, k) \leq q_{A,-}$ ) and  $\Phi_A(m, k) = 0$ ,  $\forall m \in \{m_s, \dots, m_e + 1\}$  and  $k \in \{k_s, \dots, k_e + 1\}$ ;
            end
             $l_{A,x} := [l_{A,x}; \lfloor \frac{m_s + m_e}{2} \rfloor]$ ;
             $l_{A,y} := [l_{A,y}; \lfloor \frac{k_s + k_e}{2} \rfloor]$ ;
             $\Phi_A(m, k) := 1$ ,  $\forall m \in \{m_s, \dots, m_e\}$  and  $k \in \{k_s, \dots, k_e\}$ ;
        end;
    end;
end;
A sends  $\{l_{A,x}, l_{A,y}\}$  to B via a public channel;
end;

At B side:
for  $i = 1$  to  $\text{length}[l_{A,x}]$ 
    if  $G_B(m, k) \geq q_{B,+}$  or  $\leq q_{B,-}$ ,  $\forall m \in \{l_{A,x}(i) - \lfloor \frac{w_{x,e}-2}{2} \rfloor, \dots, l_{A,x}(i) + \lfloor \frac{w_{x,e}+2}{2} \rfloor\}$ 
    and  $k \in \{l_{A,y}(i) - \lfloor \frac{w_{y,e}-2}{2} \rfloor, \dots, l_{A,y}(i) + \lfloor \frac{w_{y,e}+2}{2} \rfloor\}$  then
         $l_x := [l_x; l_{A,x}(i)]$ ;
         $l_y := [l_y; l_{A,y}(i)]$ ;
    end
end;
B sends  $\{l_x, l_y\}$  to A via a public channel;
end;

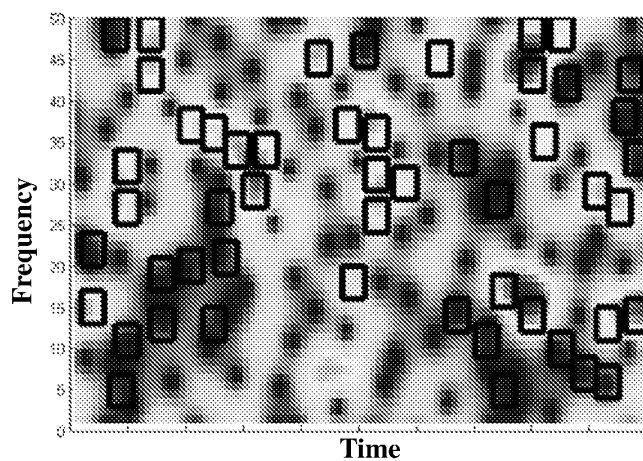
```

FIG. 6

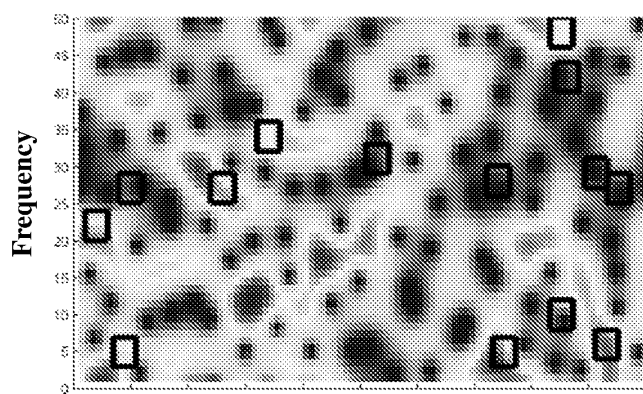
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Time
FIG. 7A



Time
FIG. 7B



Time
FIG. 7C

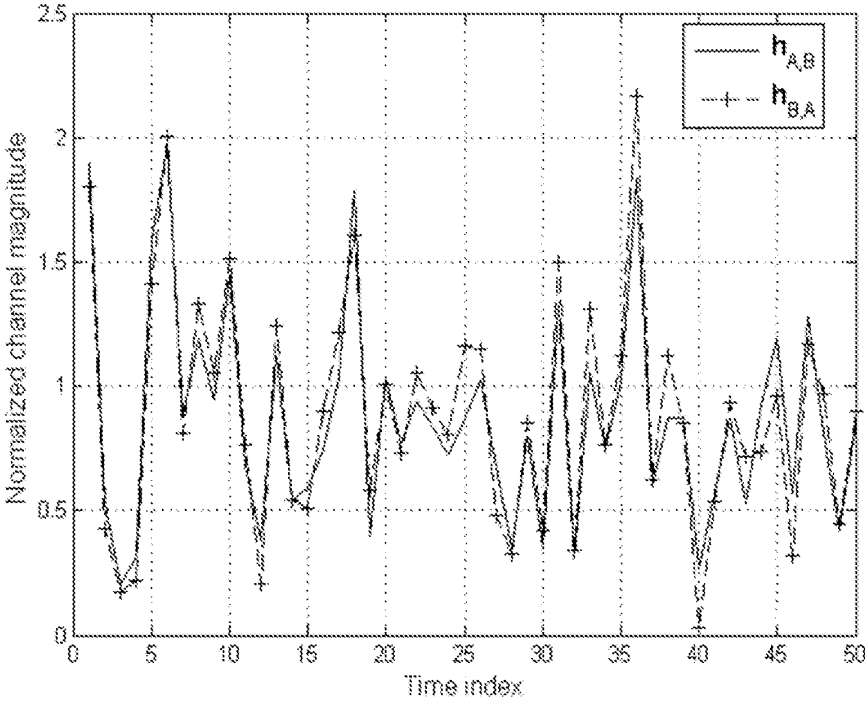


FIG. 8A

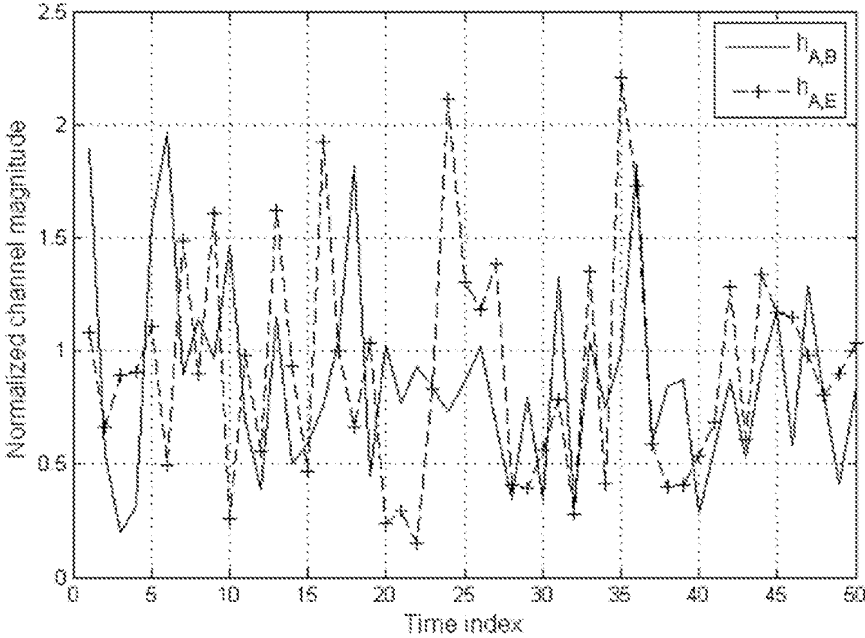


FIG. 8B

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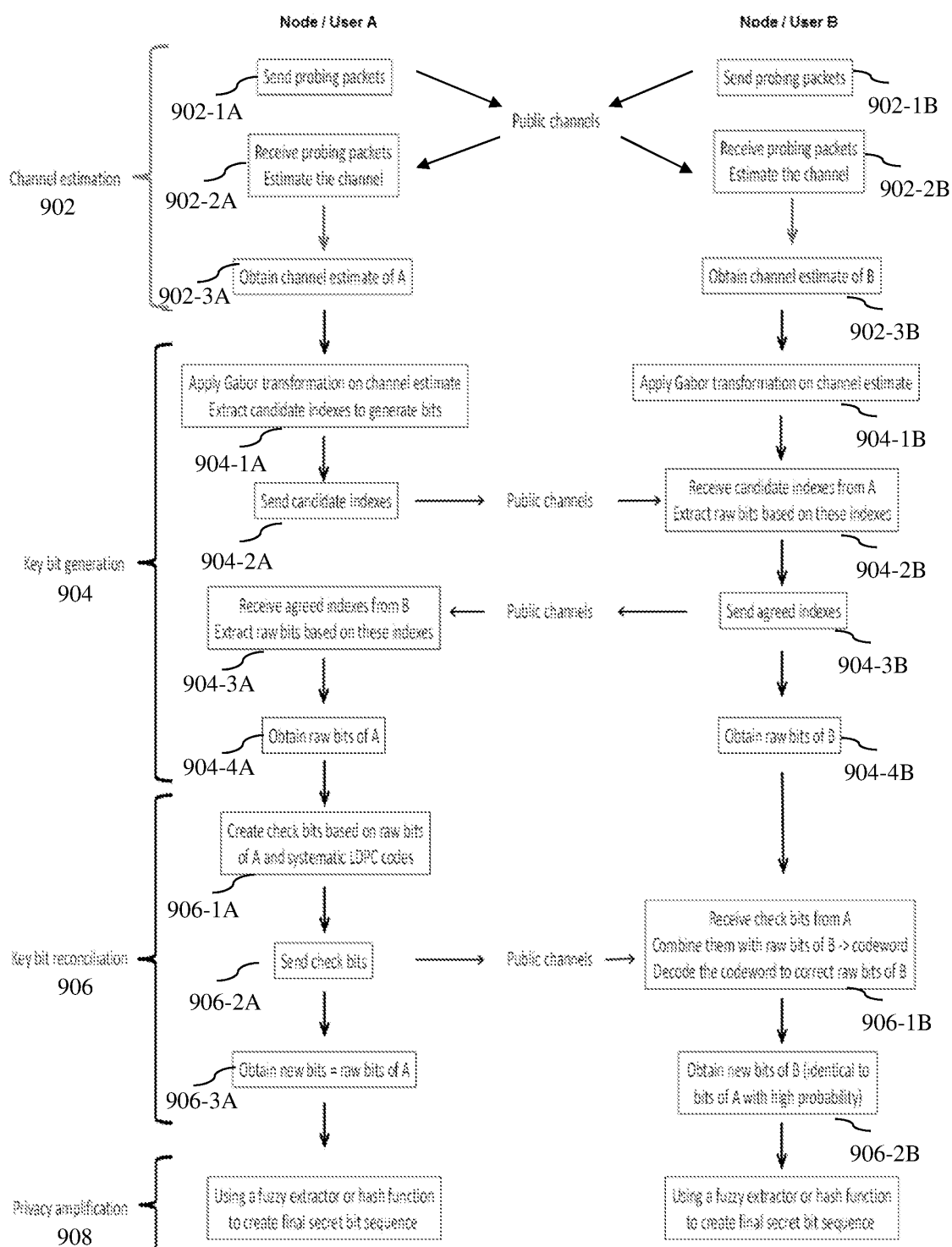


FIG. 9

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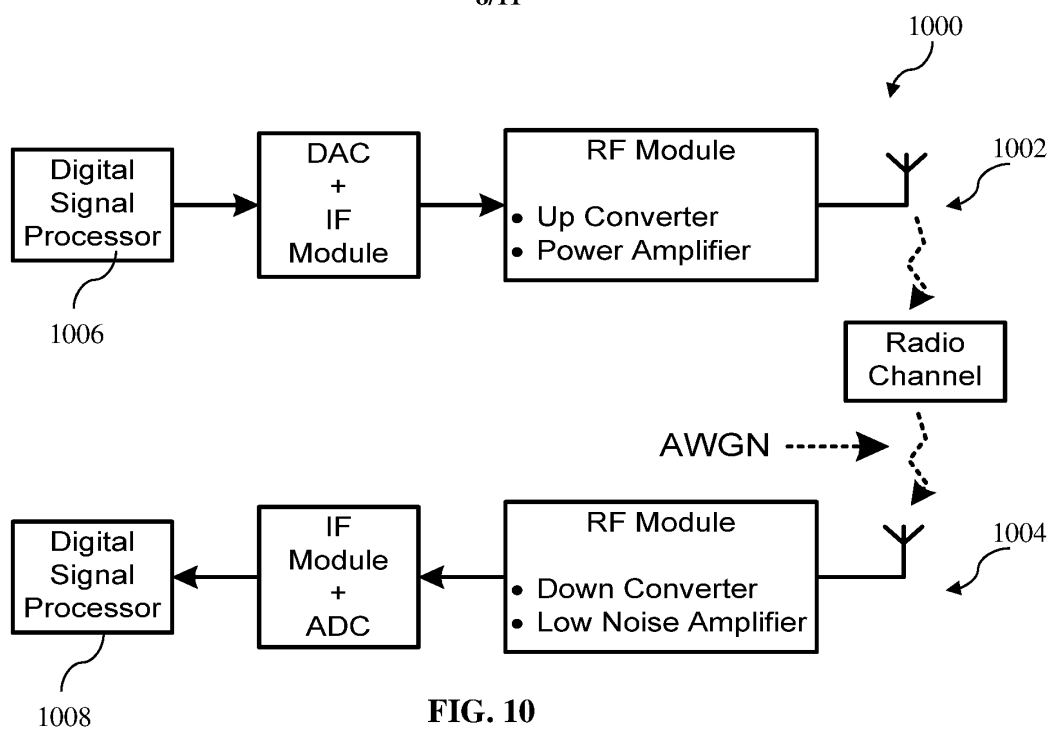


FIG. 10

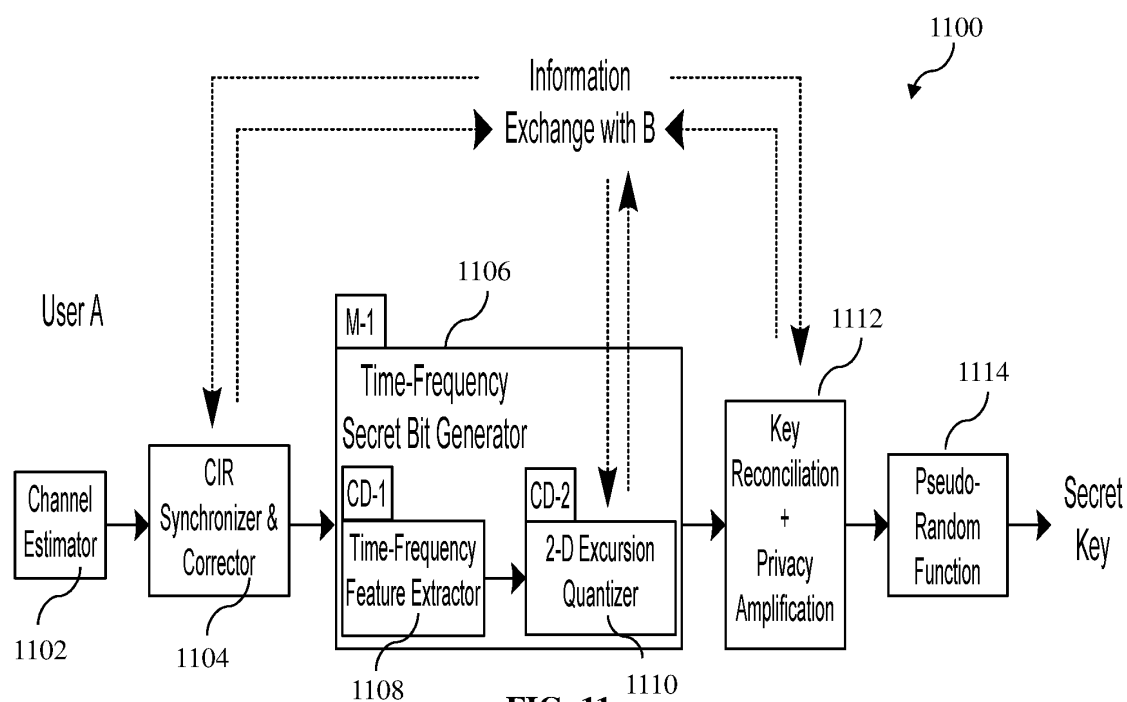
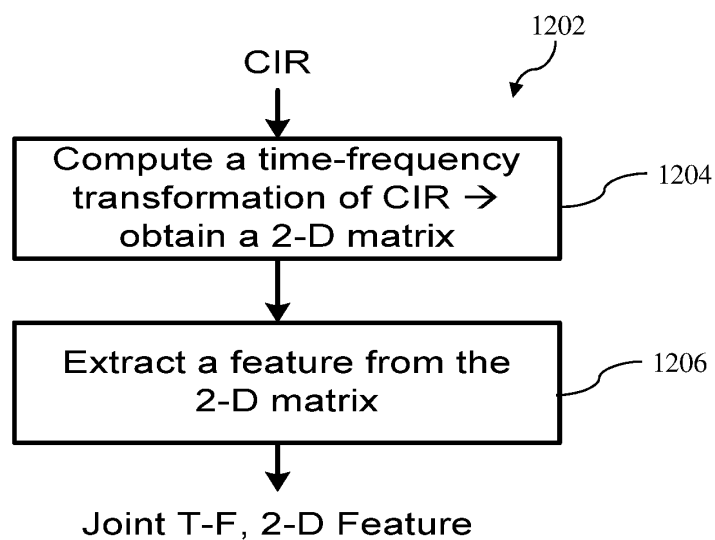
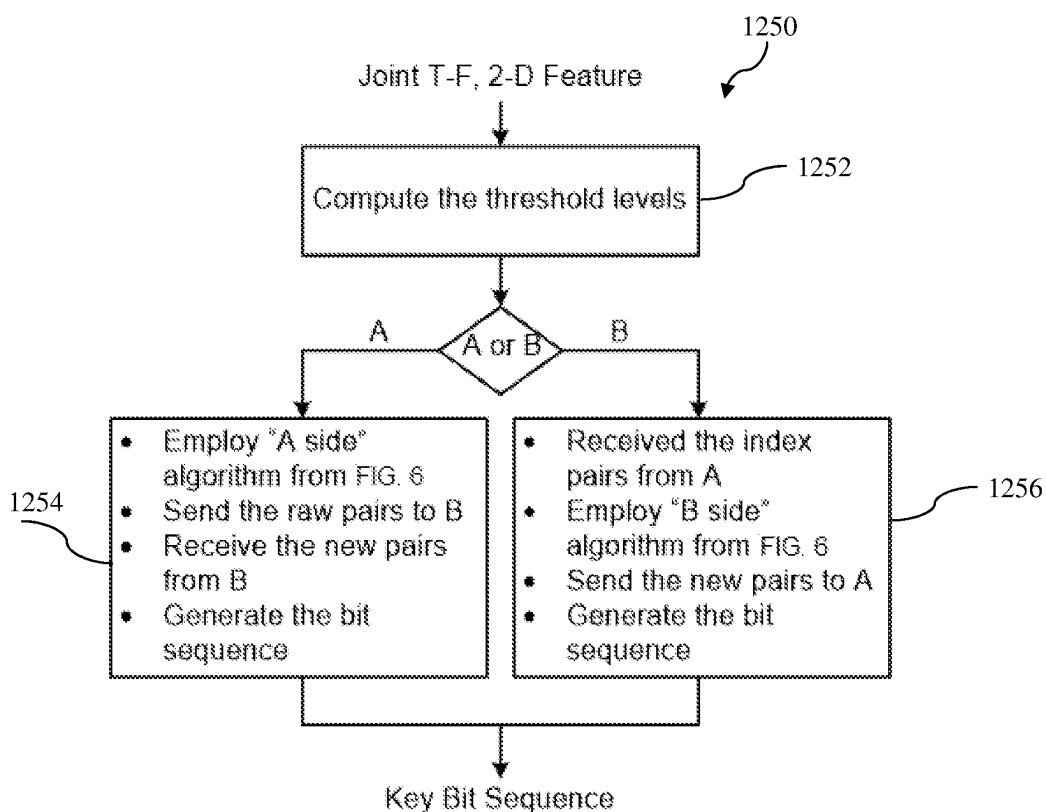


FIG. 11

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**FIG. 12A****FIG. 12B**

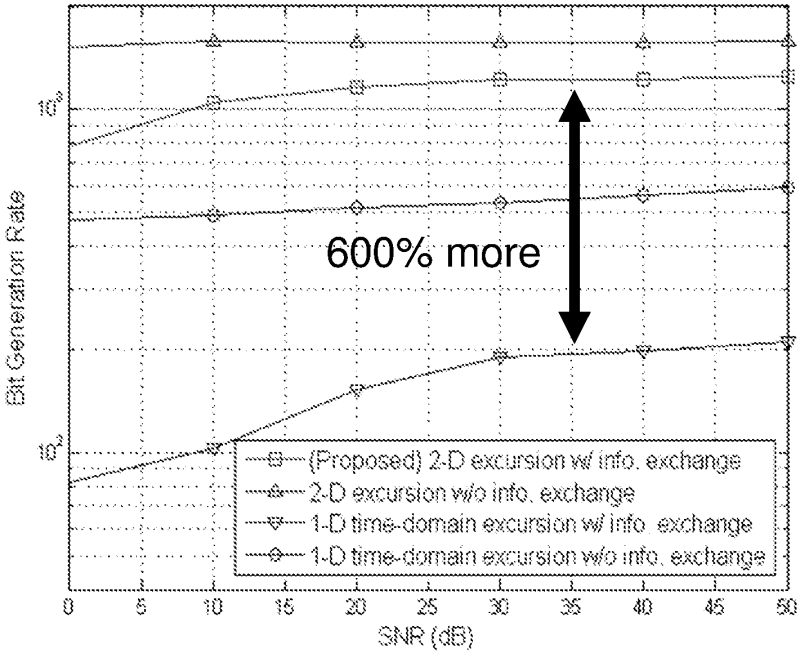


FIG. 13A

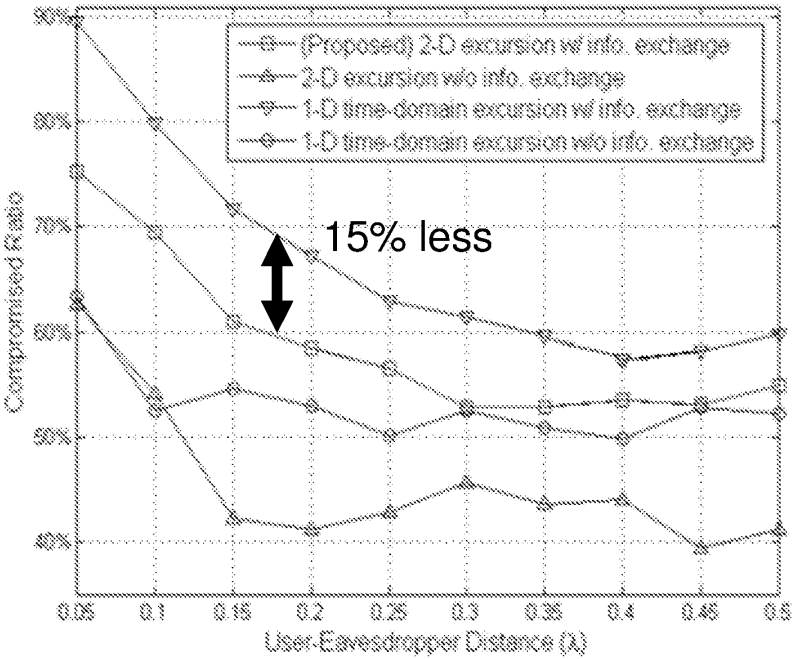
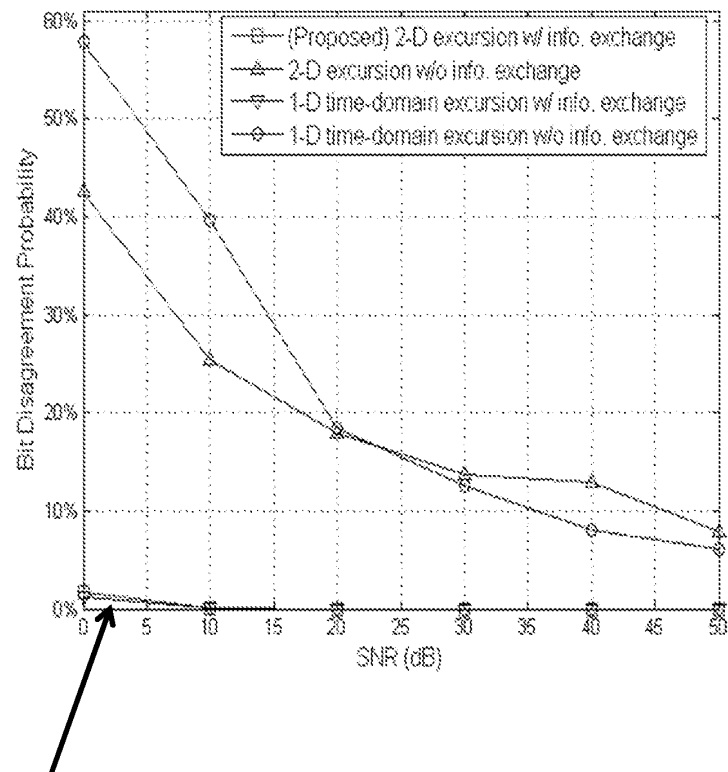


FIG. 13B

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Bit disagreement probability ~ 0%

FIG. 13C