

1/41

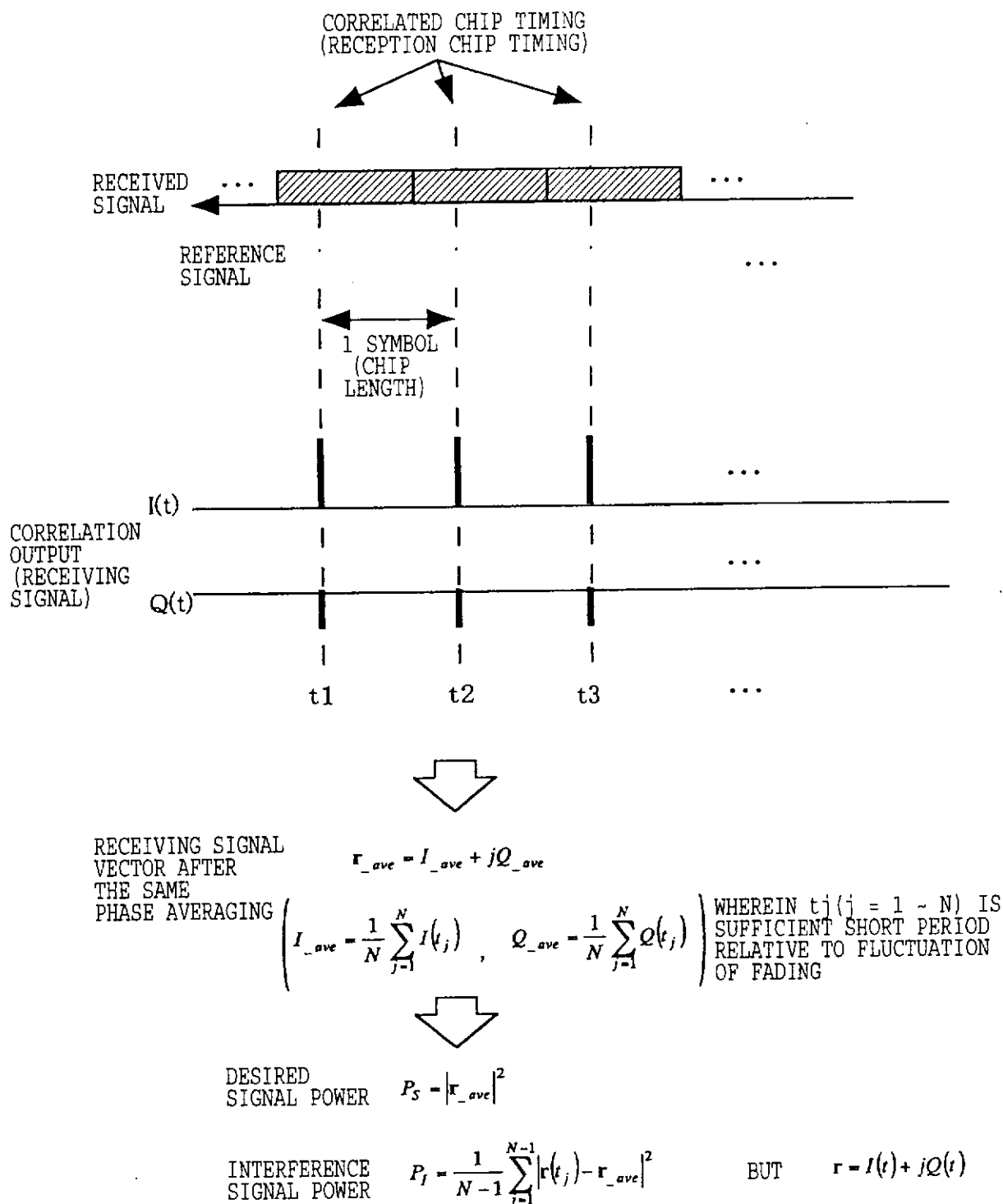


FIG.1

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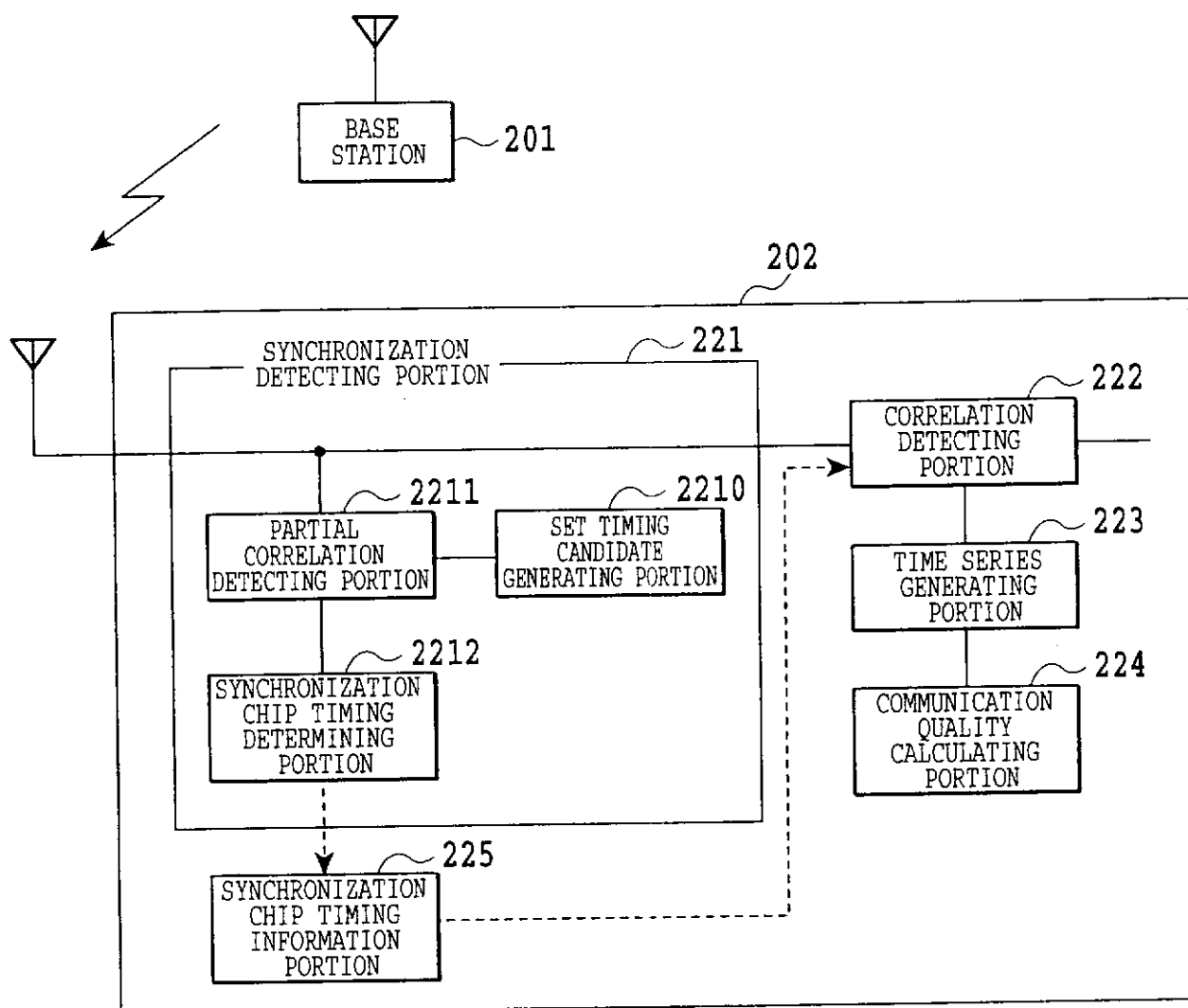


FIG.2

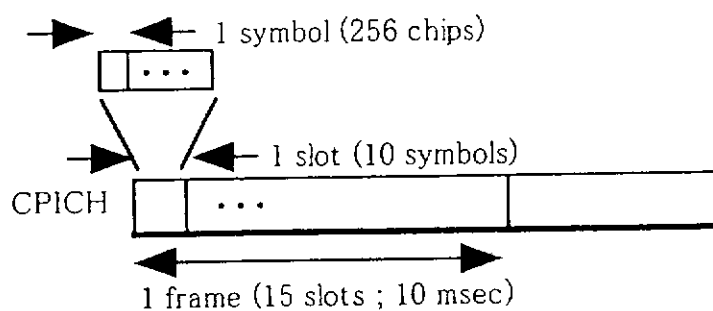


FIG.3

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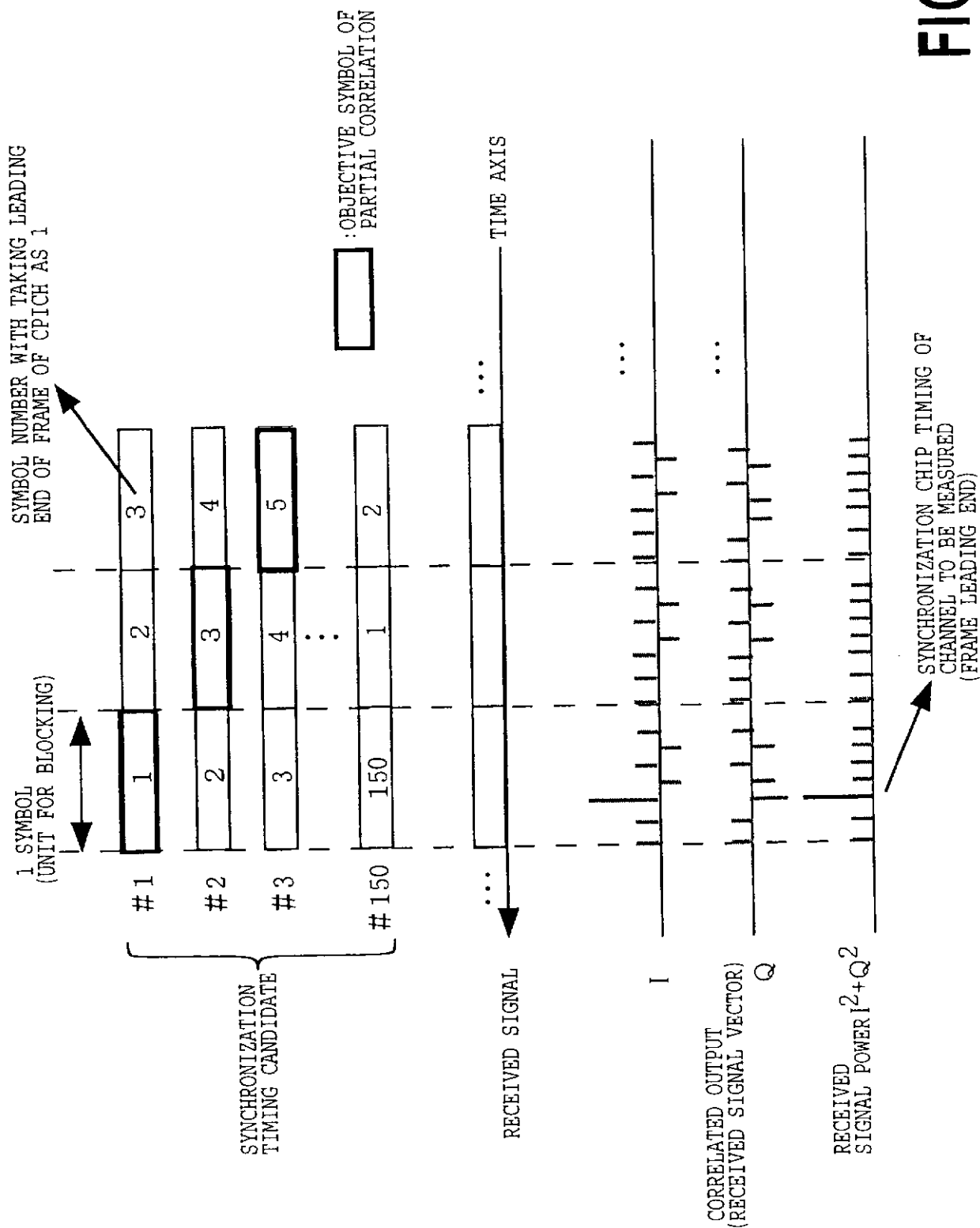


FIG.4

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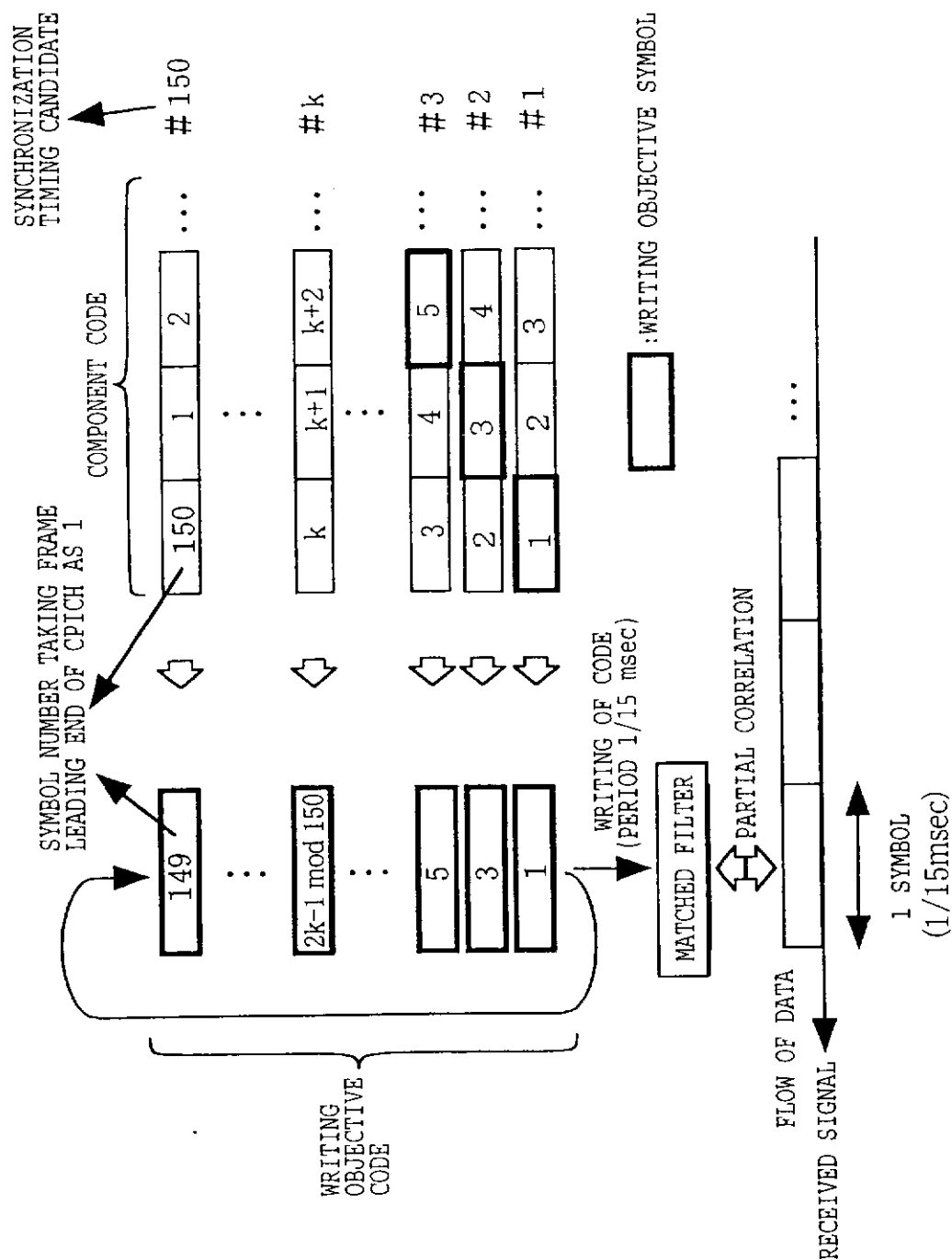


FIG.5

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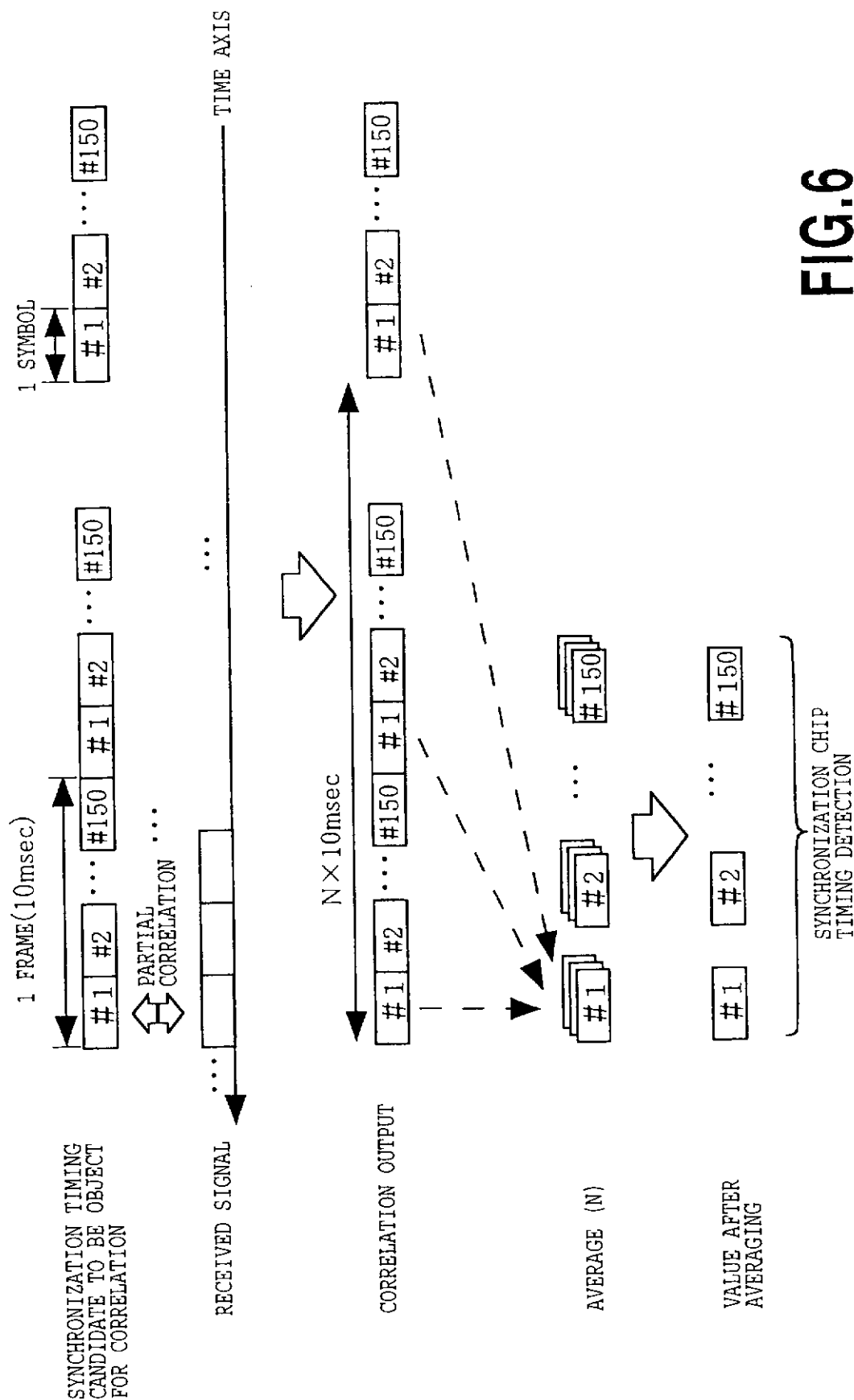


FIG.6

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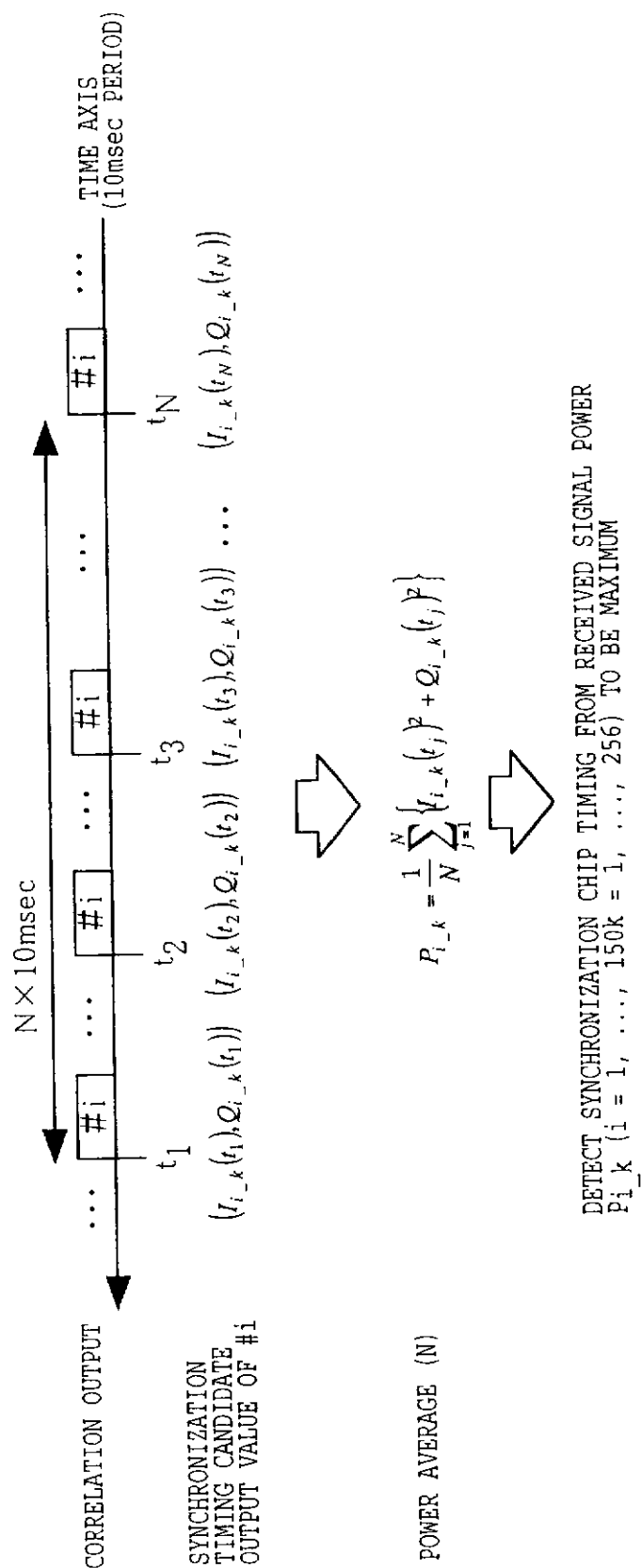


FIG.7

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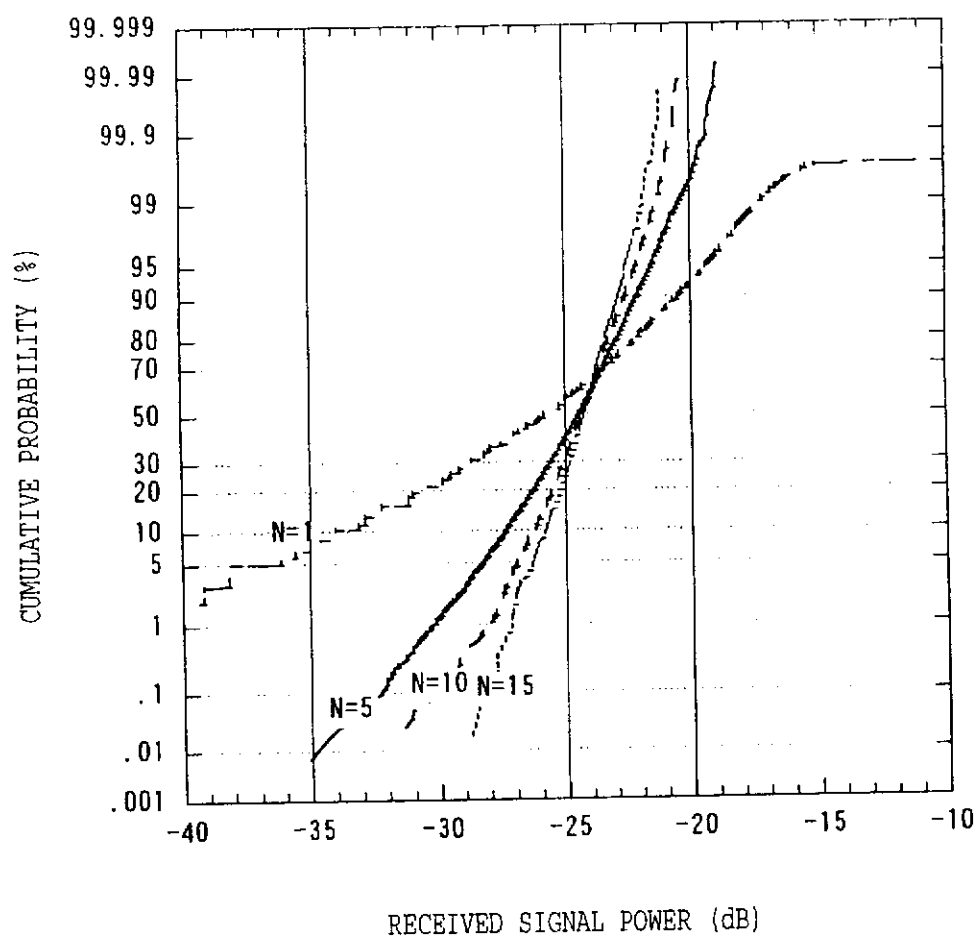


FIG.8

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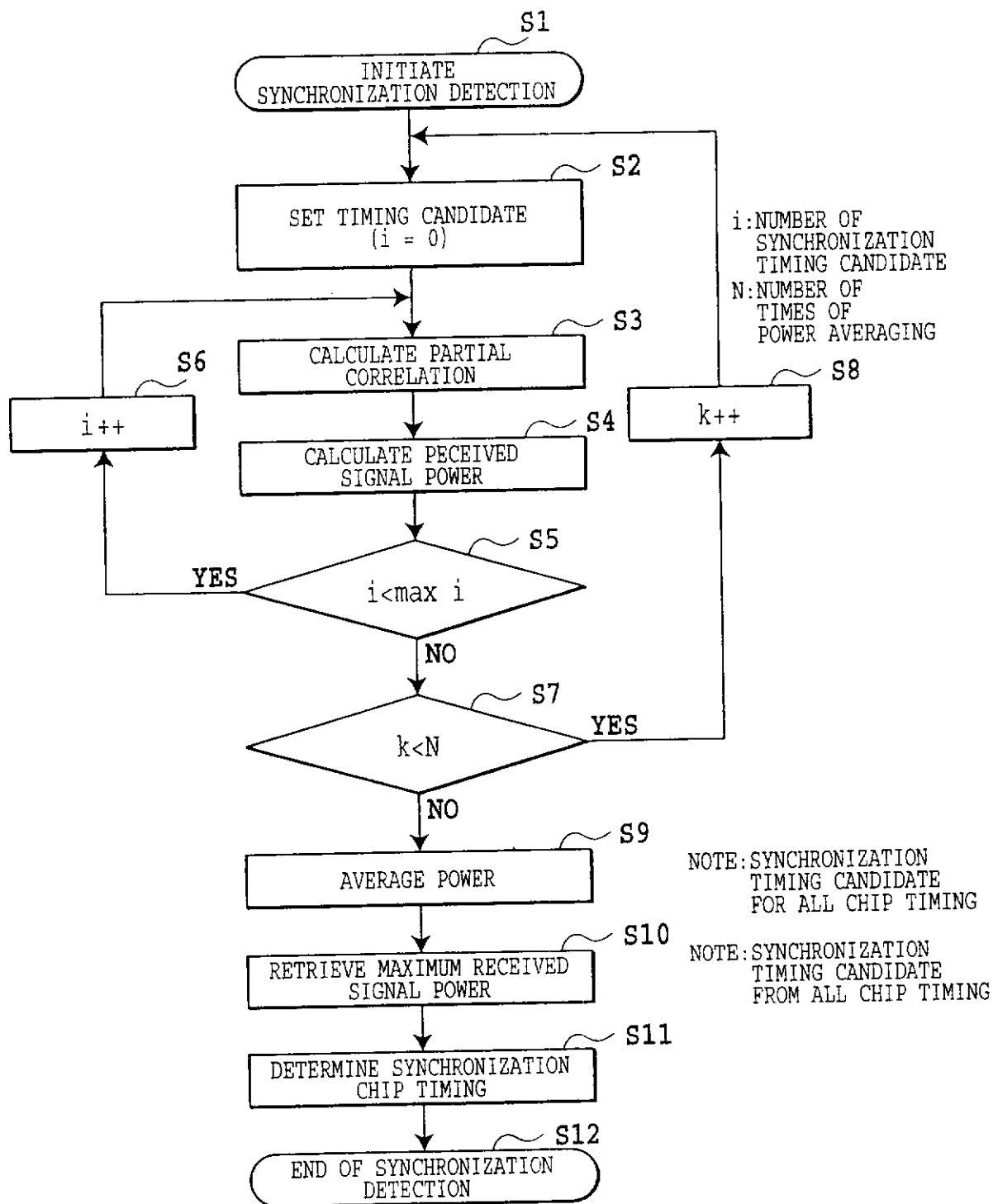


FIG.9

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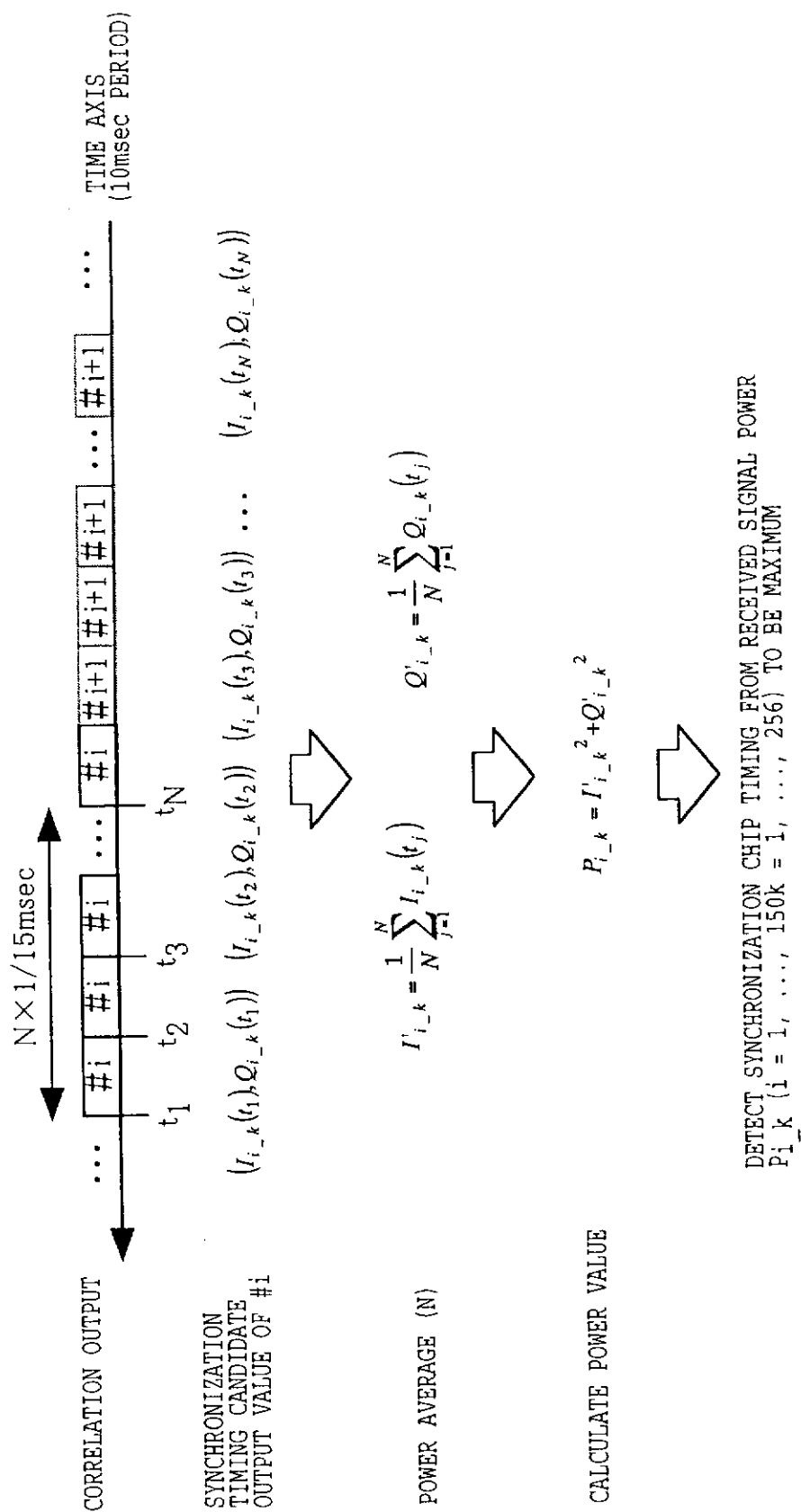


FIG.10

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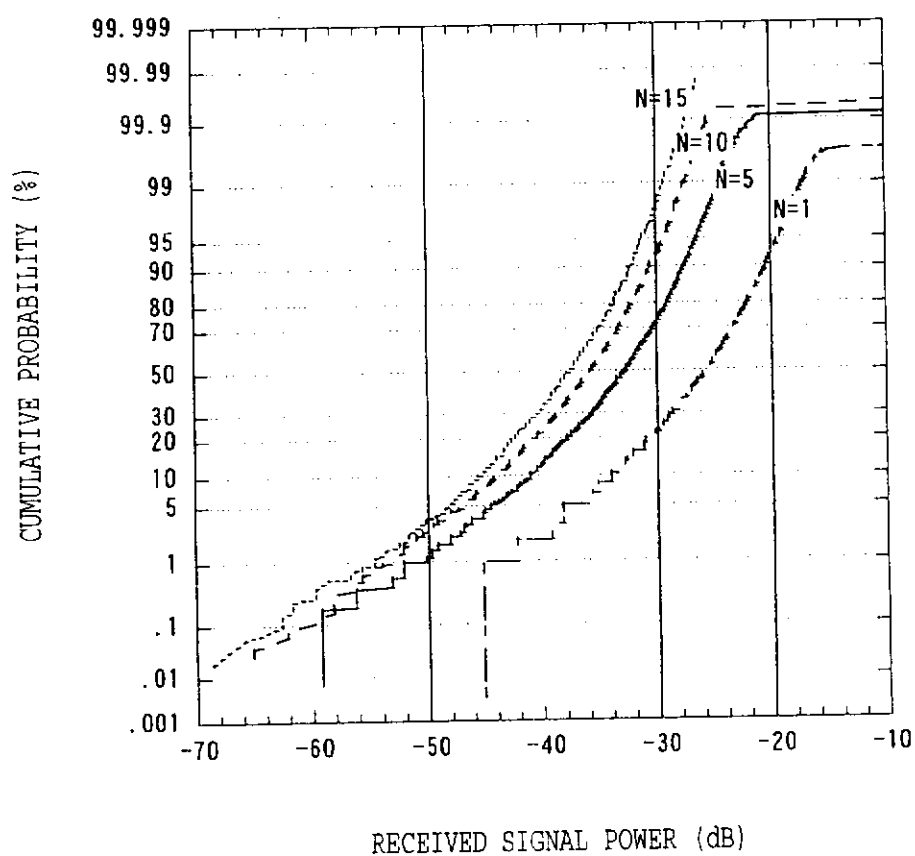


FIG.11

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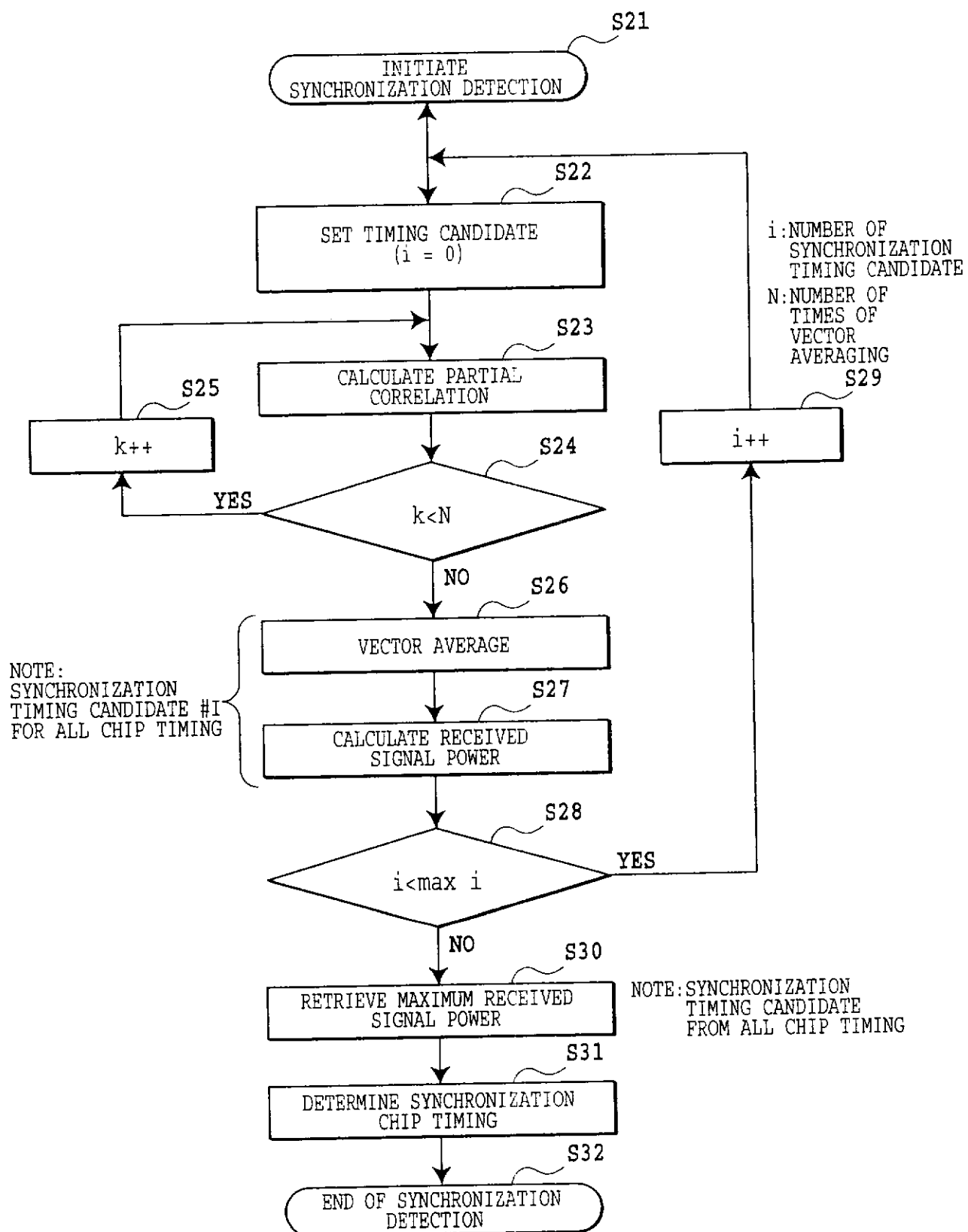


FIG.12

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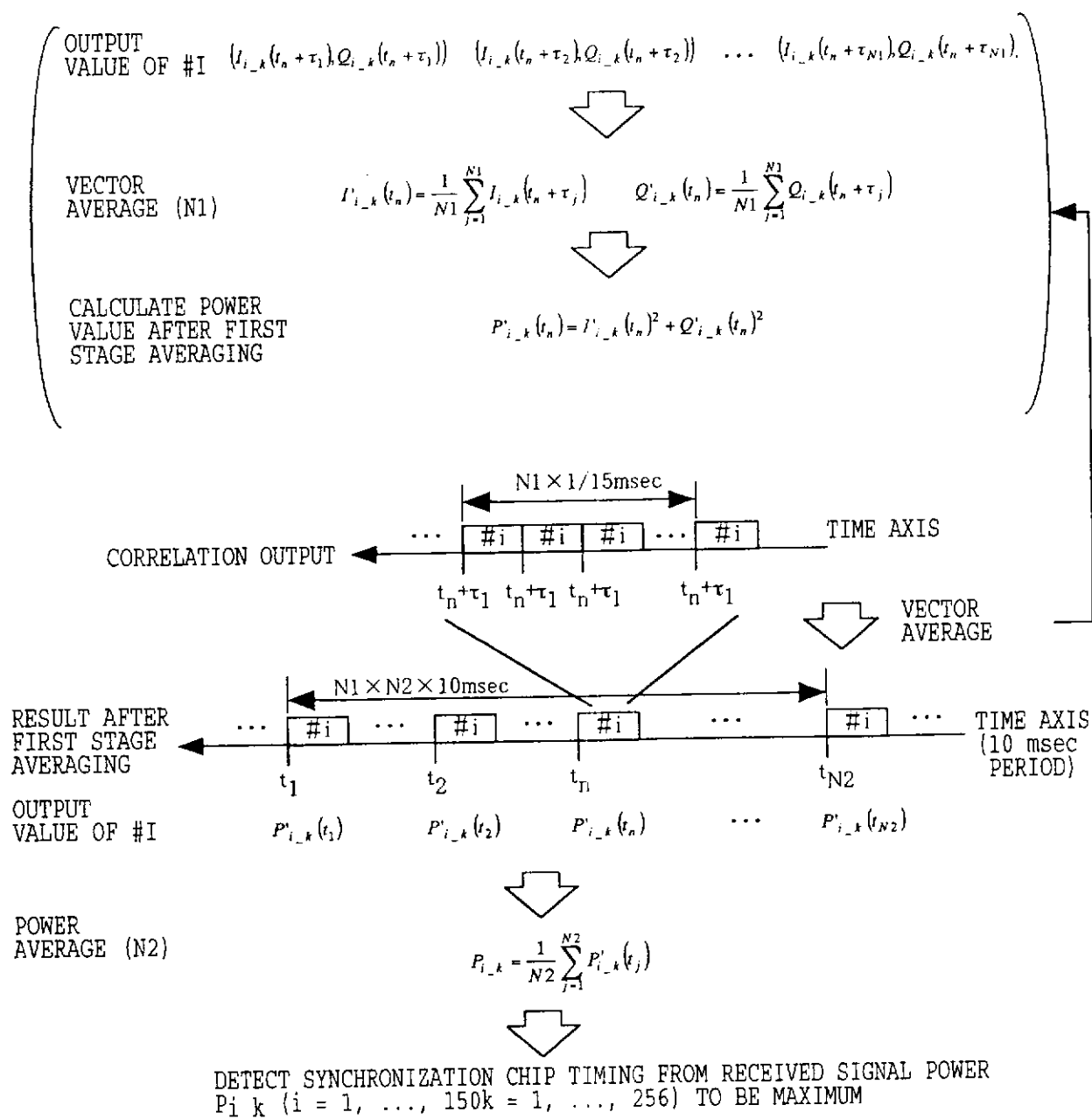


FIG.13

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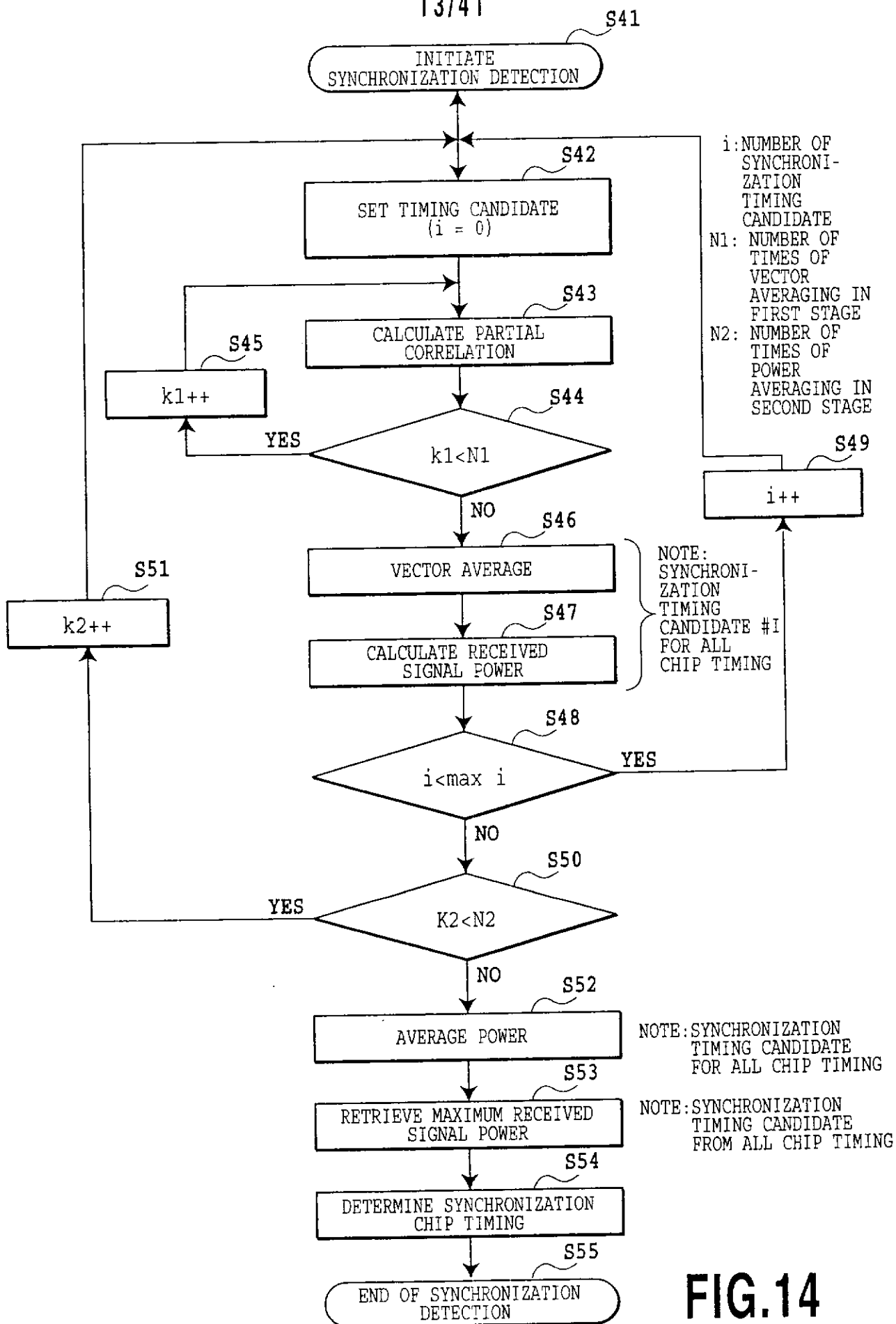
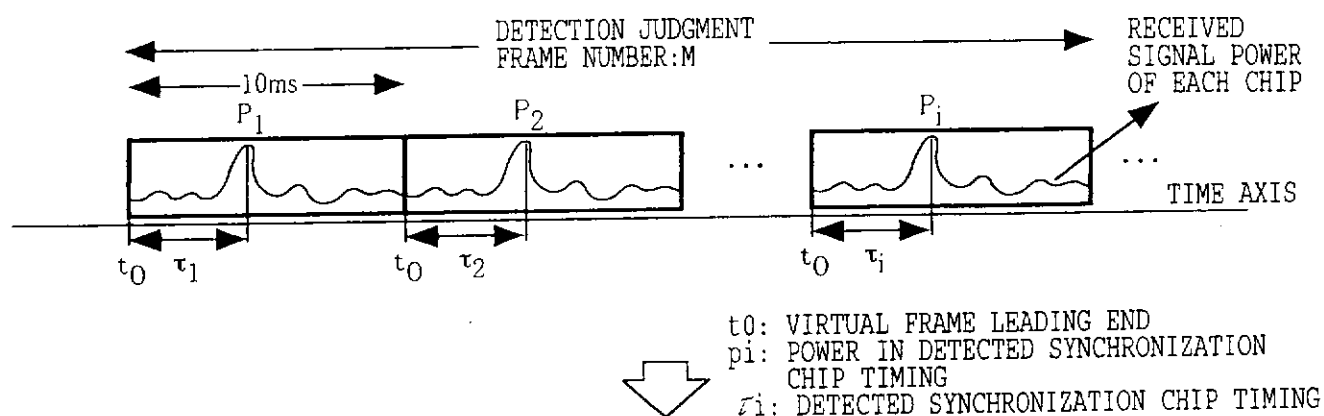


FIG.14

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CALCULATE FOR JUDGMENT

AVERAGE VALUE OF SYNCHRONIZATION CHIP TIMING	STANDARD DEVIATION OF SYNCHRONIZATION CHIP TIMING
$T_m = \frac{\sum_{i=1}^M P_i \cdot \tau_i}{\sum_{i=1}^M P_i}$	$T_s = \sqrt{\frac{\sum_{i=1}^M P_i \cdot (\tau_i - T_m)^2}{\sum_{i=1}^M P_i}}$

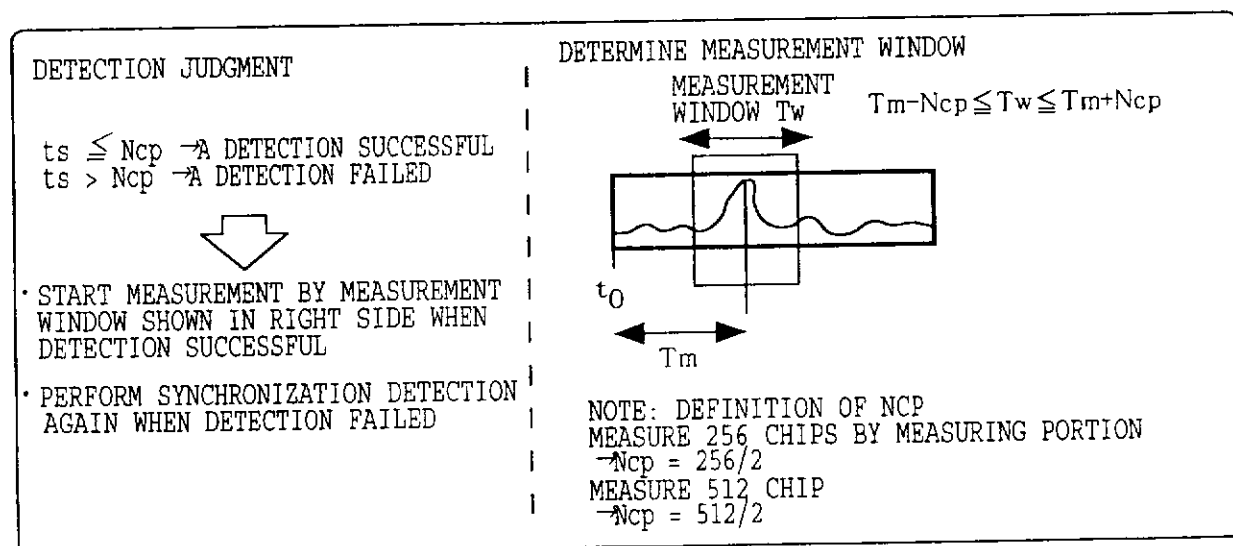


FIG.15

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FRAME CONFIGURATION OF CPICH UPON USE OF TRANSMIT DIVERSITY

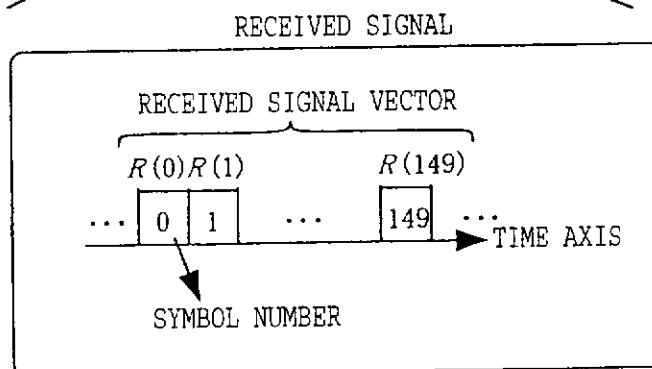
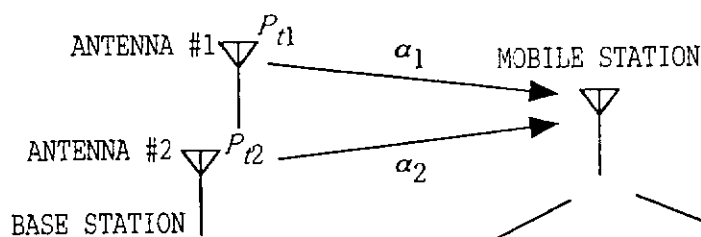
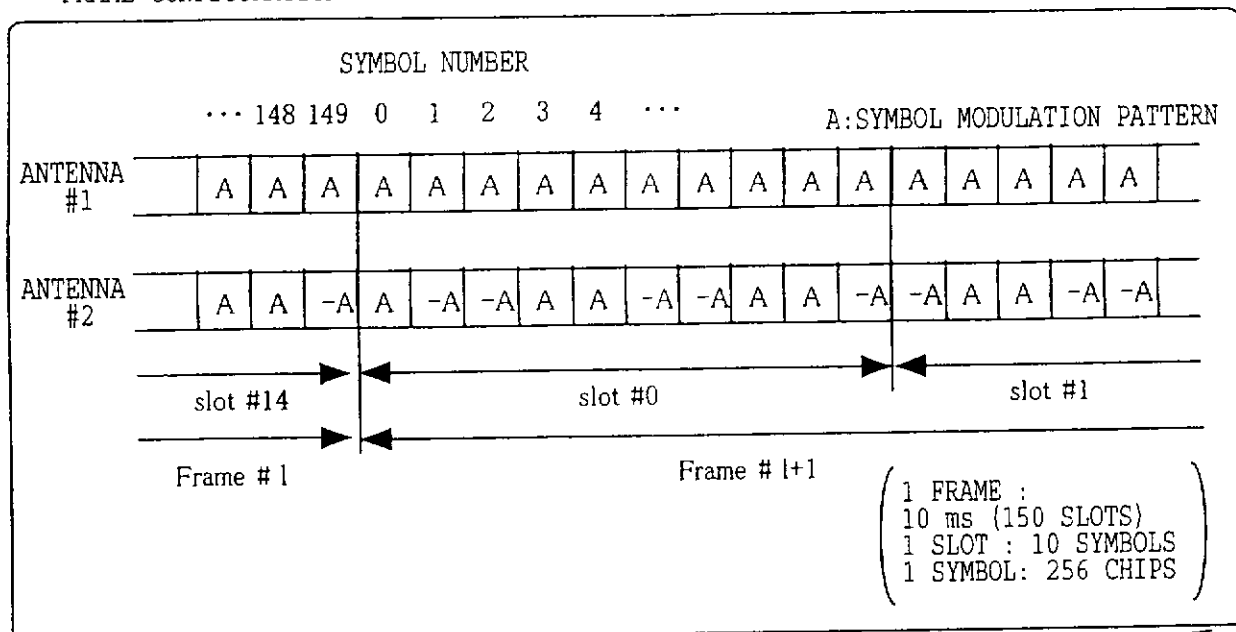


FIG.16

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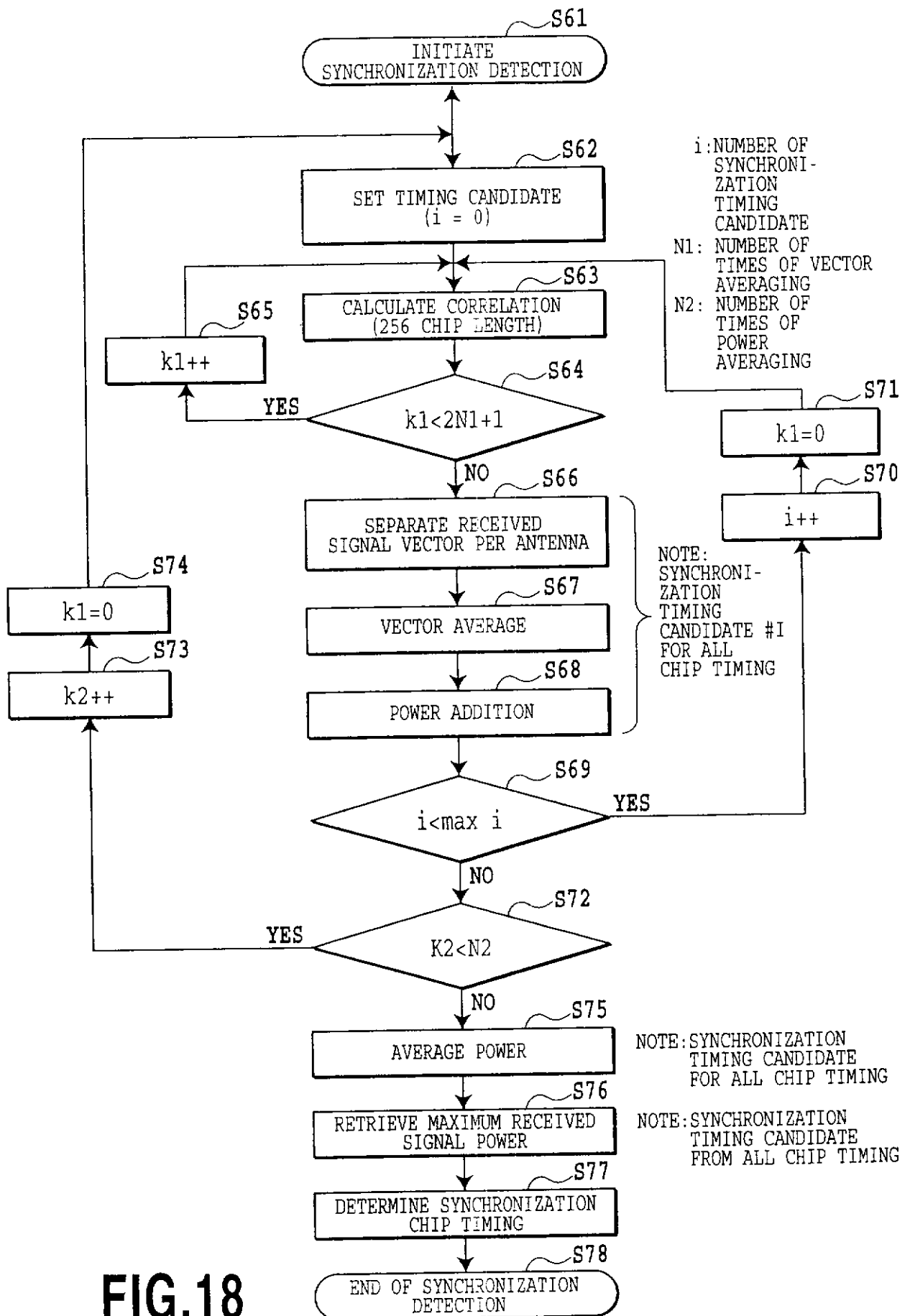


FIG.18

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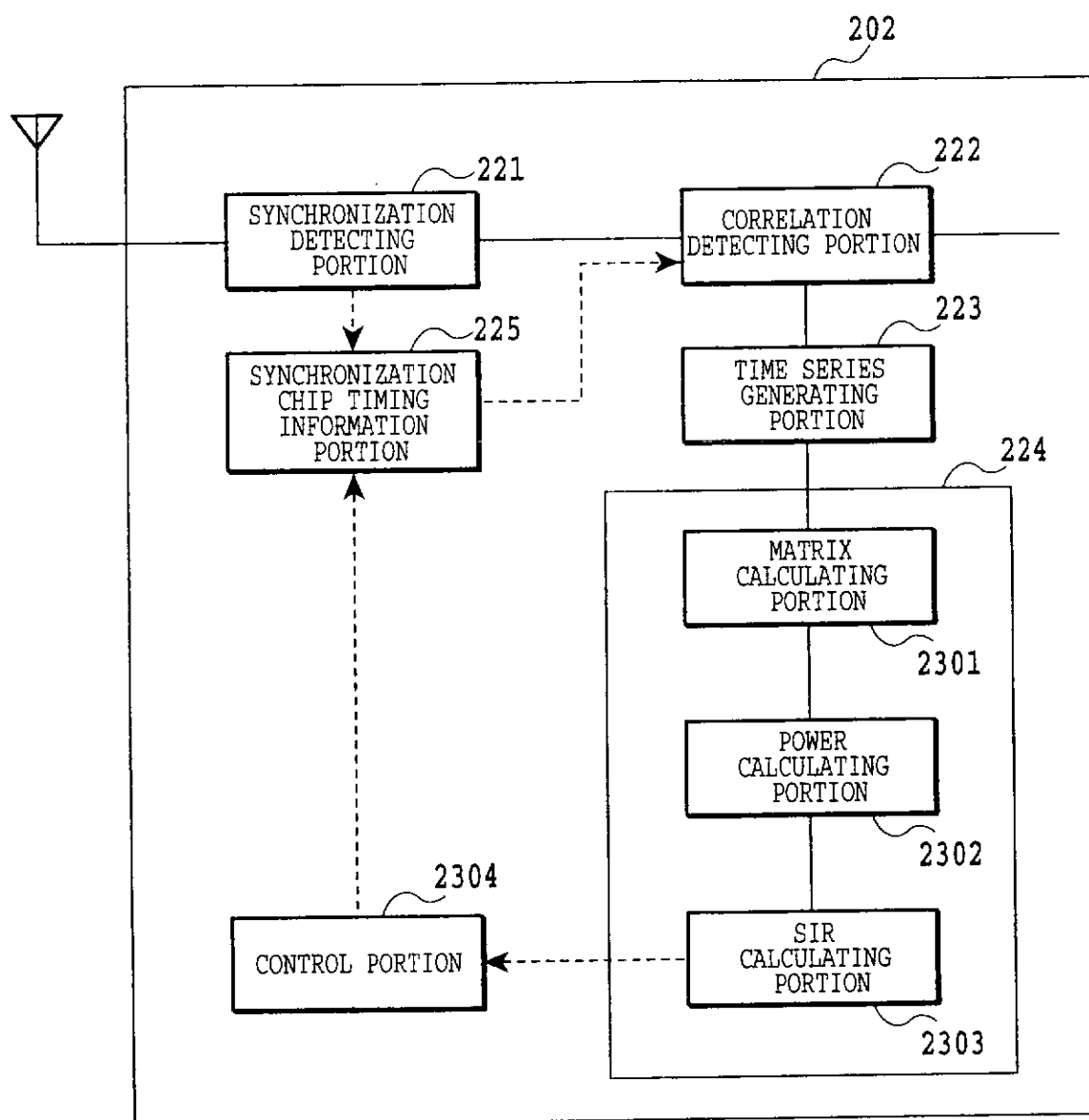
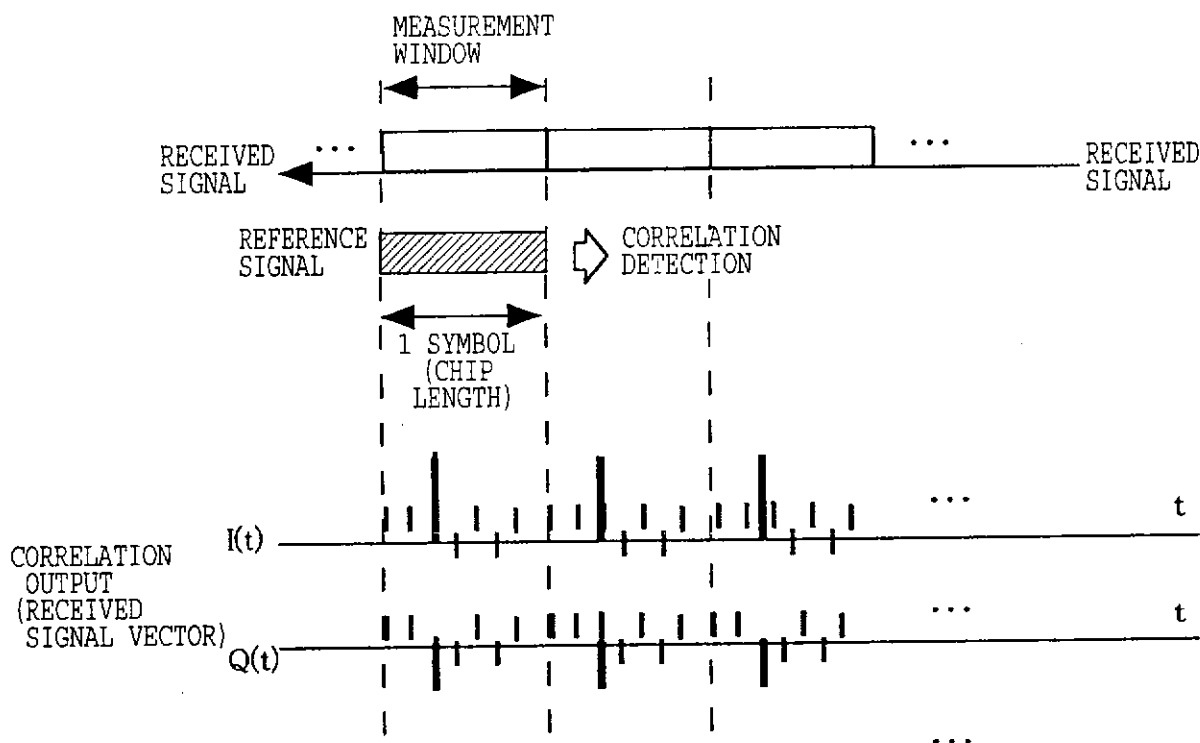


FIG.19

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THE SAME RECEPTION CHIP TIMING

RECEIVED SIGNAL VECTOR OF CHIP TIMING k

$$\begin{cases} \text{SERIES 1 } r_{-k}(t) = I_{-k}(t) + jQ_{-k}(t) \\ \text{SERIES 2 } r_{-k}(t + n\Delta\tau) = I_{-k}(t + n\Delta\tau) + jQ_{-k}(t + n\Delta\tau) \end{cases} \text{ WHEREIN } \Delta\tau \text{ IS } 1 \text{ SYMBOL PERIOD}$$

COVARIANT MATRIX OF SERIES 1 AND 2

$$R_{rr} = \begin{bmatrix} \langle r_{-k}(t) \cdot r_{-k}^H(t) \rangle & \langle r_{-k}(t) \cdot r_{-k}^H(t + n\Delta\tau) \rangle \\ \langle r_{-k}(t + n\Delta\tau) \cdot r_{-k}^H(t) \rangle & \langle r_{-k}(t + n\Delta\tau) \cdot r_{-k}^H(t + n\Delta\tau) \rangle \end{bmatrix} \Rightarrow \text{EIGENVALUE } \lambda_1, \lambda_2 \quad (\lambda_1 > \lambda_2)$$

CHIP TIMING k

DESIRED SIGNAL POWER

INTERFERENCE SIGNAL POWER

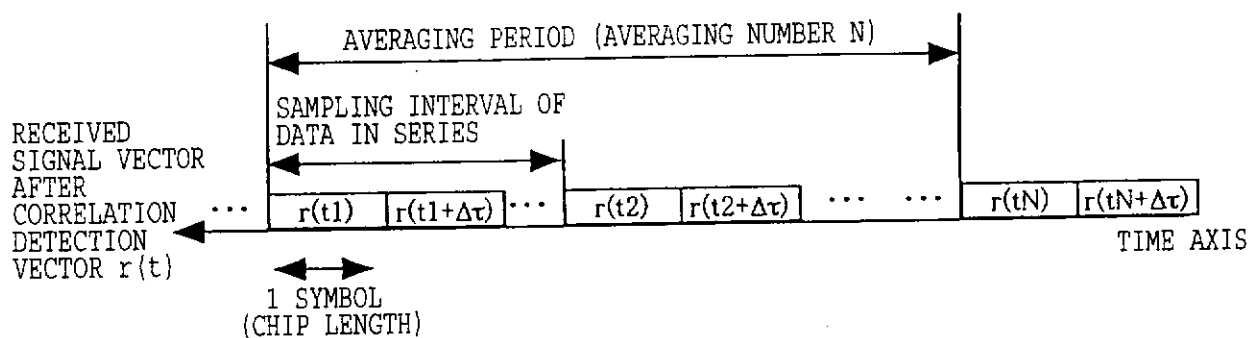
$$P_{S-k} = \frac{\lambda_1 - \lambda_2}{2}$$

$$P_{I-k} = \lambda_2$$

(WHEREIN $N\Delta\tau$ IS SUFFICIENTLY SHORT PERIOD FOR FLUCTUA)

FIG.20

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RECEIVED SIGNAL VECTOR OF CHIP TIMING $r_k(t1)$

{	SERIES 1	$r_k(t1)$	$r_k(t2)$	...	$r_k(tN)$
	SERIES 2	$r_k(t1+\Delta\tau)$	$r_k(t2+\Delta\tau)$	...	$r_k(tN+\Delta\tau)$



ADD VECTOR : $\alpha_k(t) = r_k(t) + r_k(t+\Delta\tau)$
 DIFFERENCE VECTOR: $\beta_k(t) = r_k(t) - r_k(t+\Delta\tau)$



CHIP TIMING k
 DESIRED SIGNAL POWER
 INTERFERENCE SIGNAL POWER

$$P_{s_k} = \frac{|P'_{s_k} - P_{i_k}|}{2}$$

$$P_{i_k} = \frac{1}{N} \sum_{j=1}^N \frac{|\beta(t_j)|^2}{2}$$

WHEREIN

$$P'_{s_k} = \frac{1}{N} \sum_{j=1}^N \frac{|\alpha(t_j)|^2}{2}$$

FIG.21

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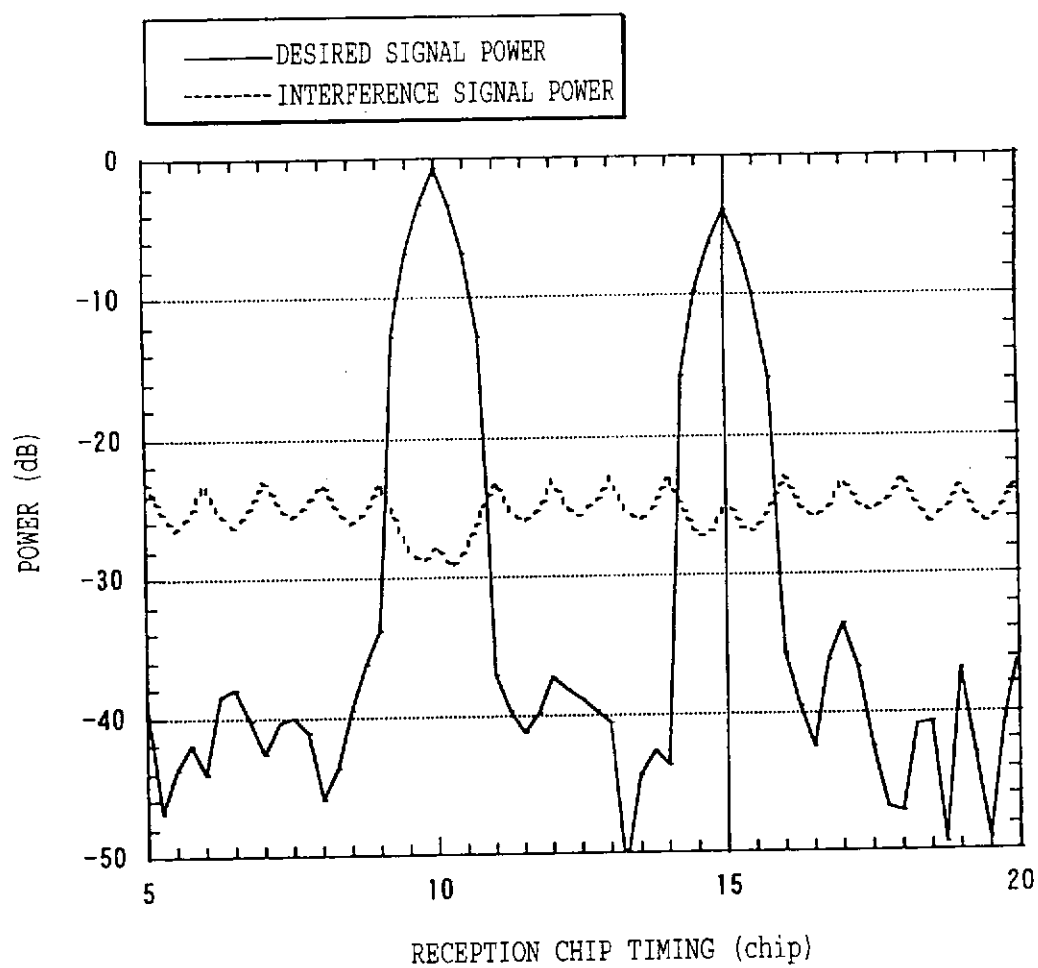


FIG.22

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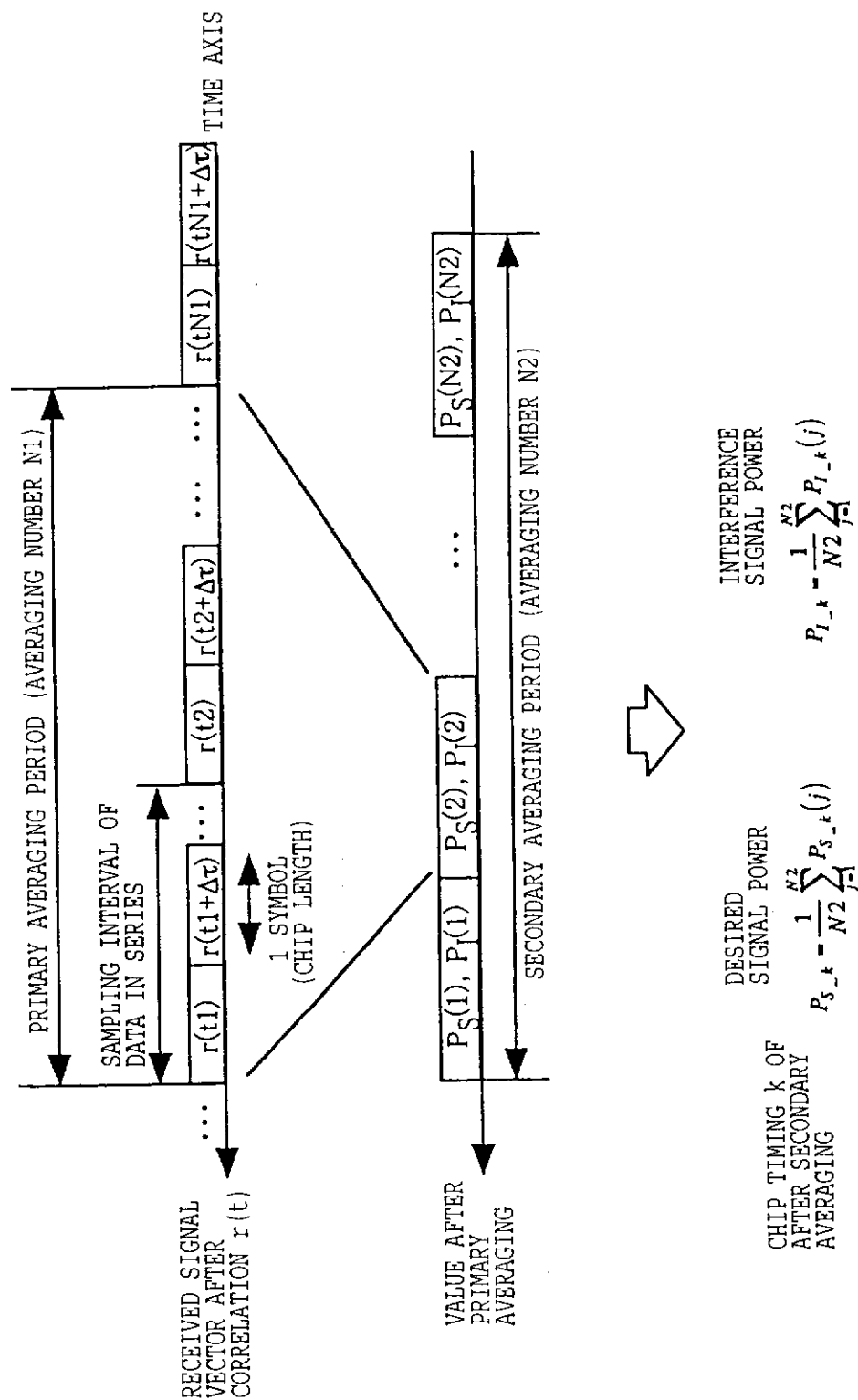


FIG.23

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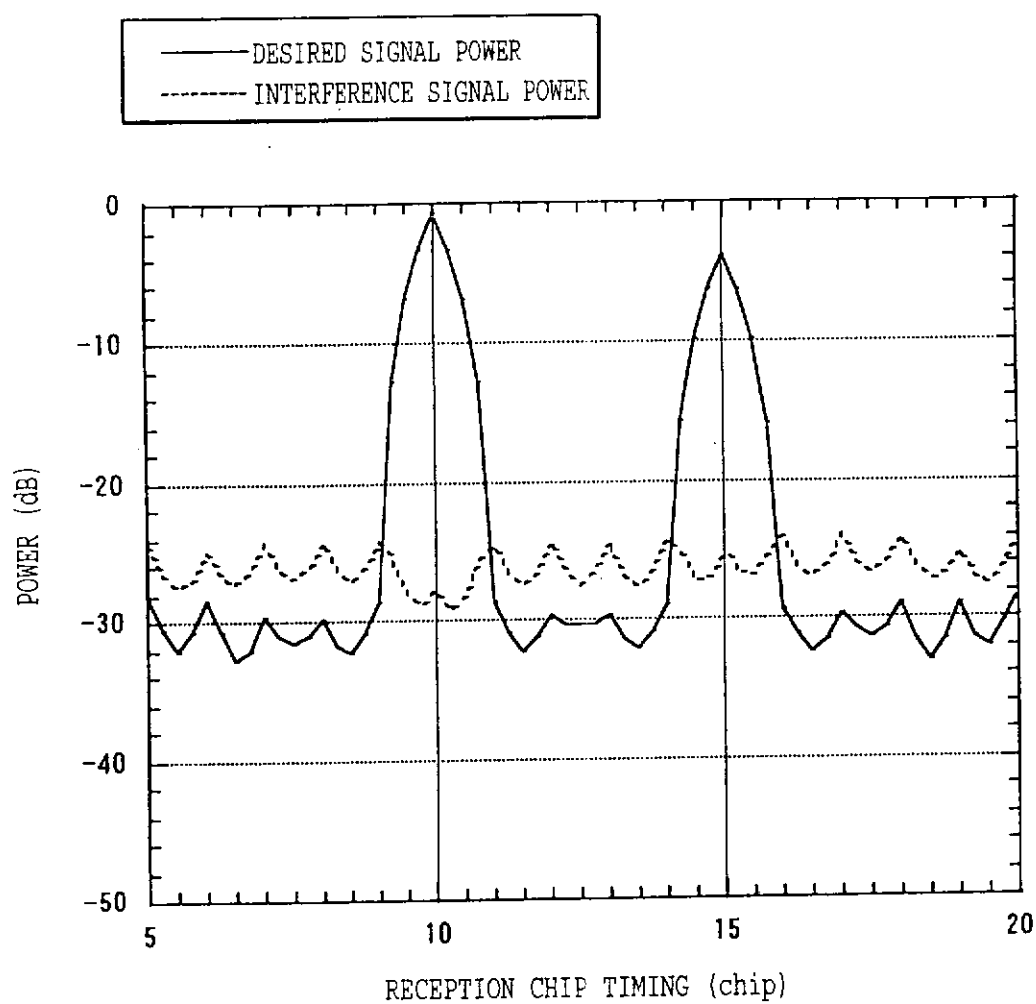


FIG.24

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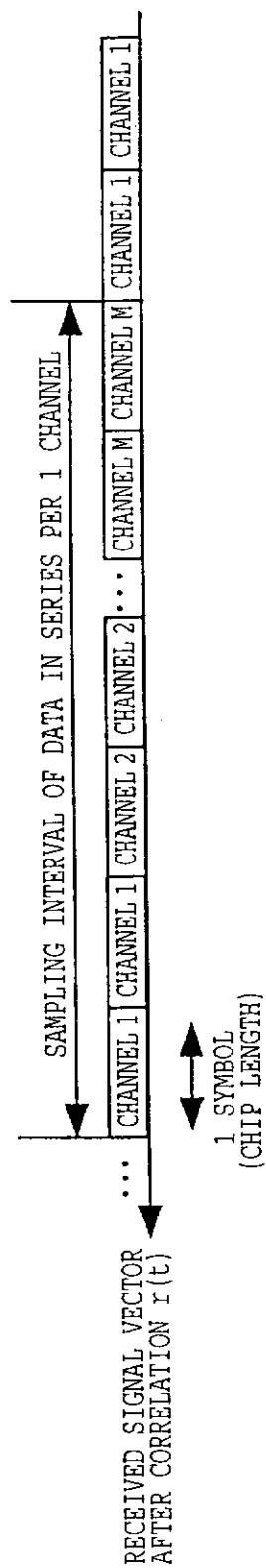


FIG.25

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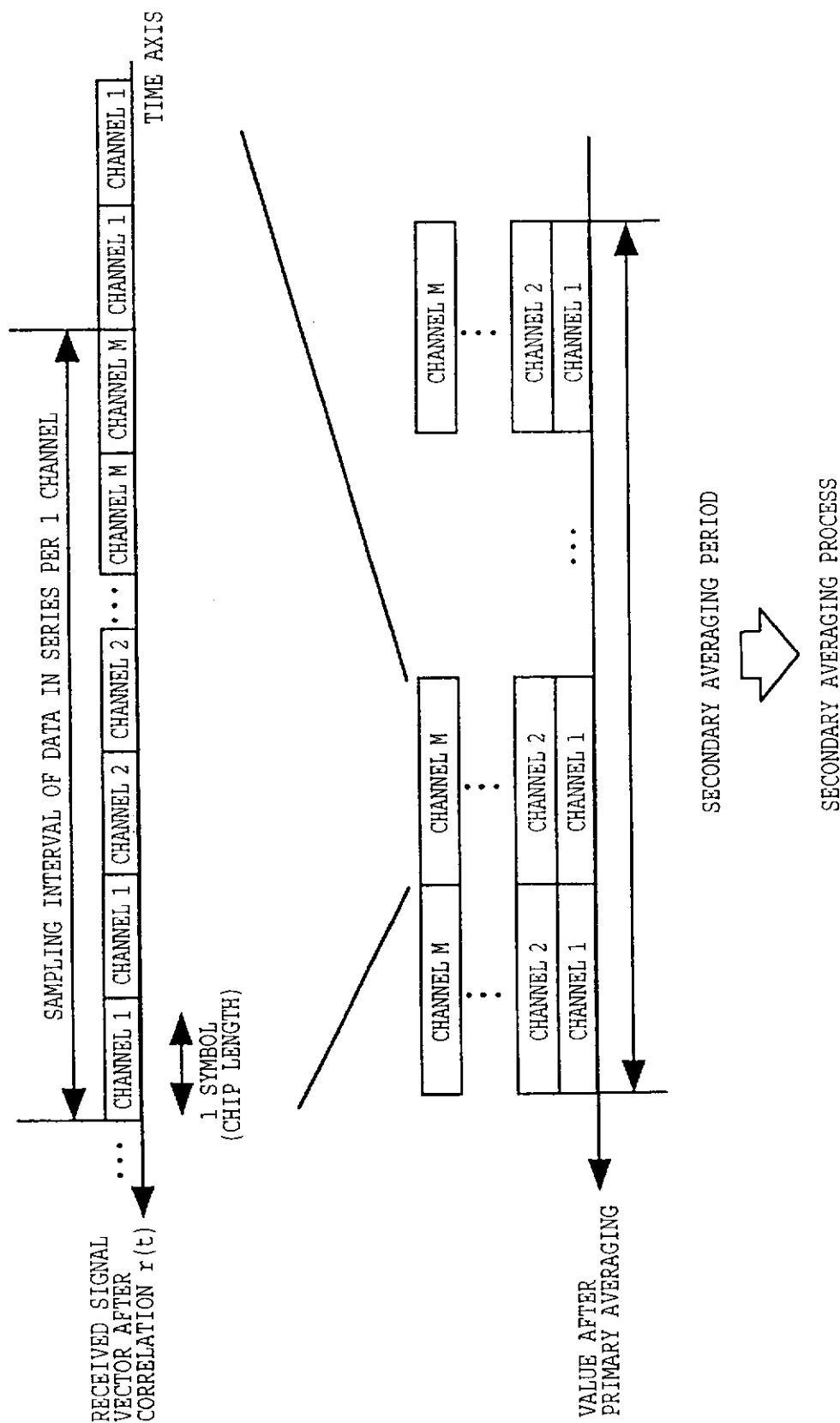


FIG.26

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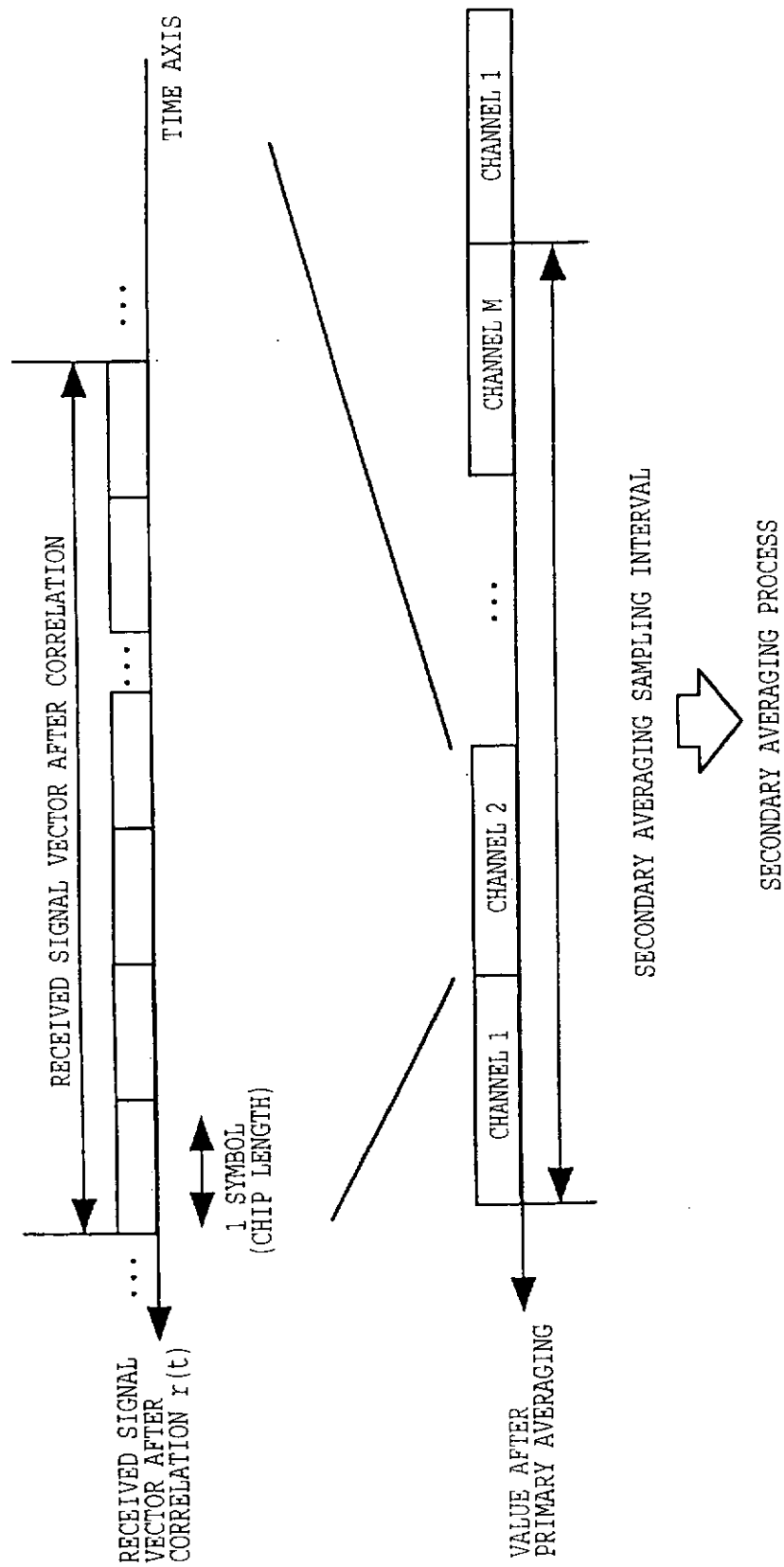


FIG.27

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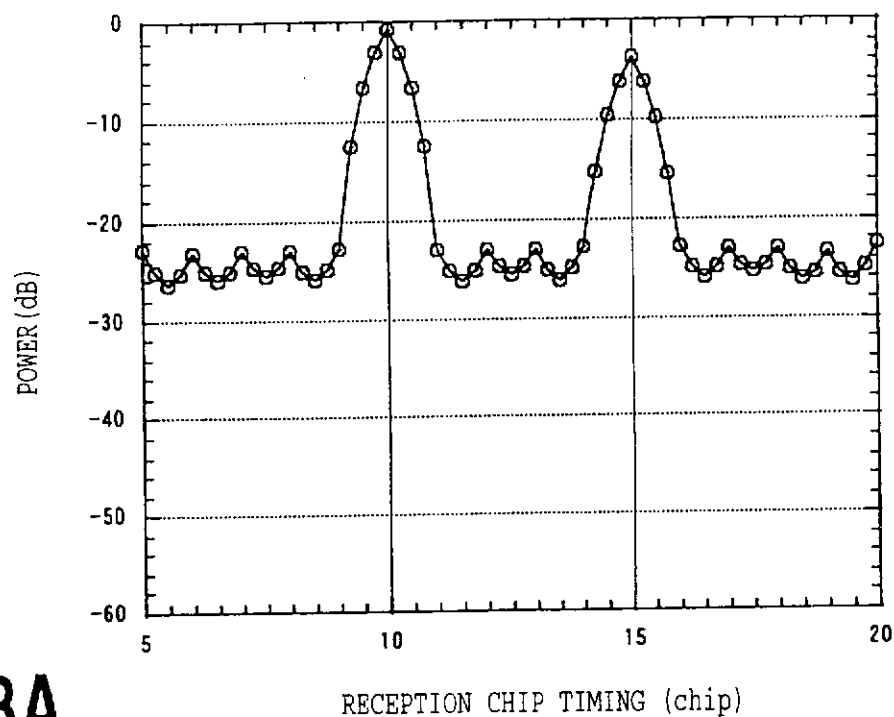


FIG.28A

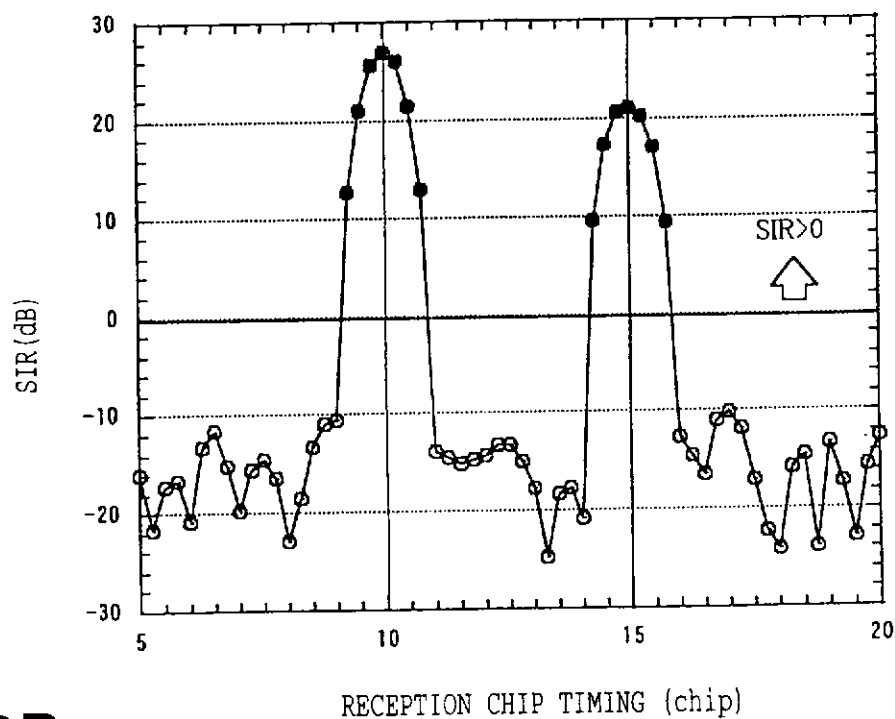


FIG.28B

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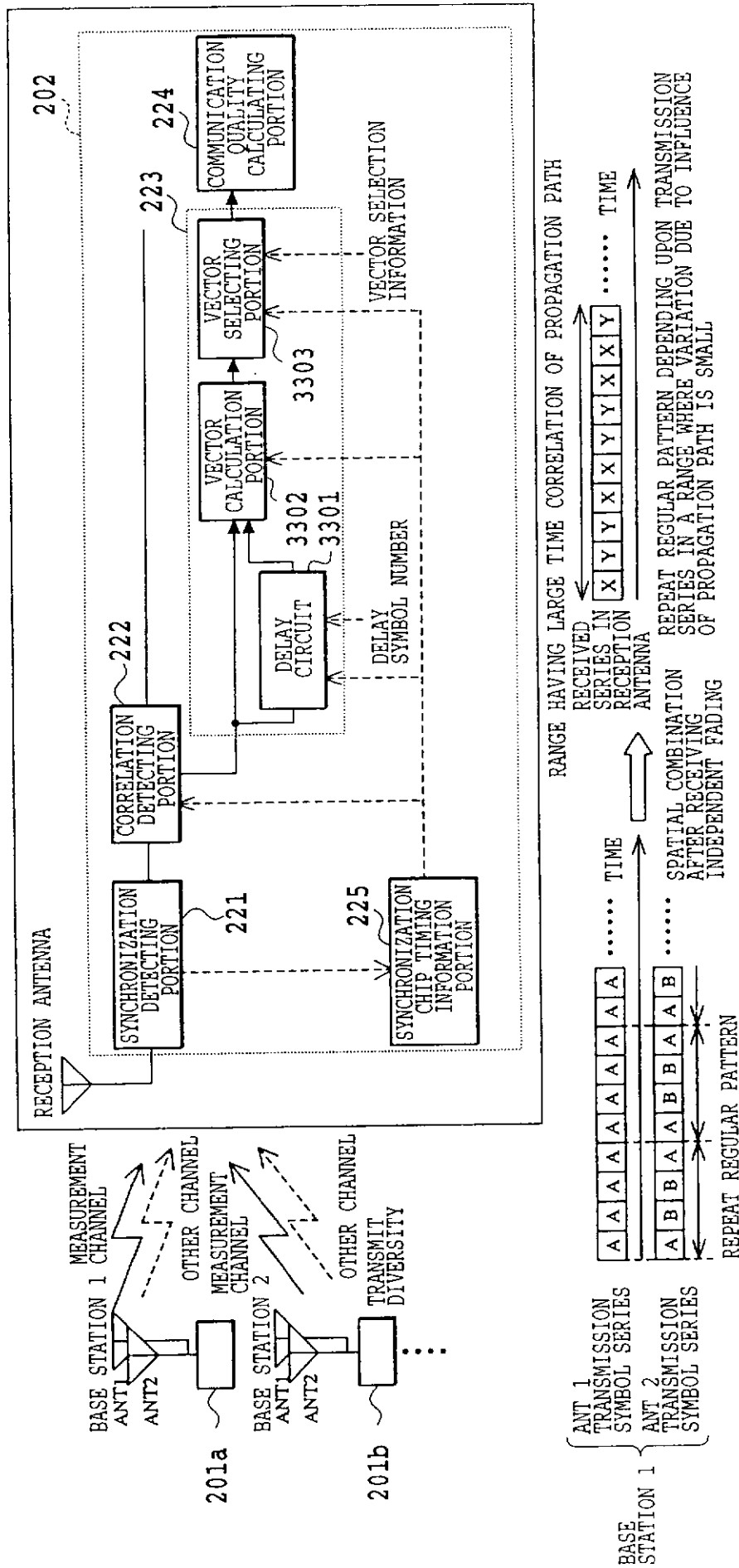


FIG.29

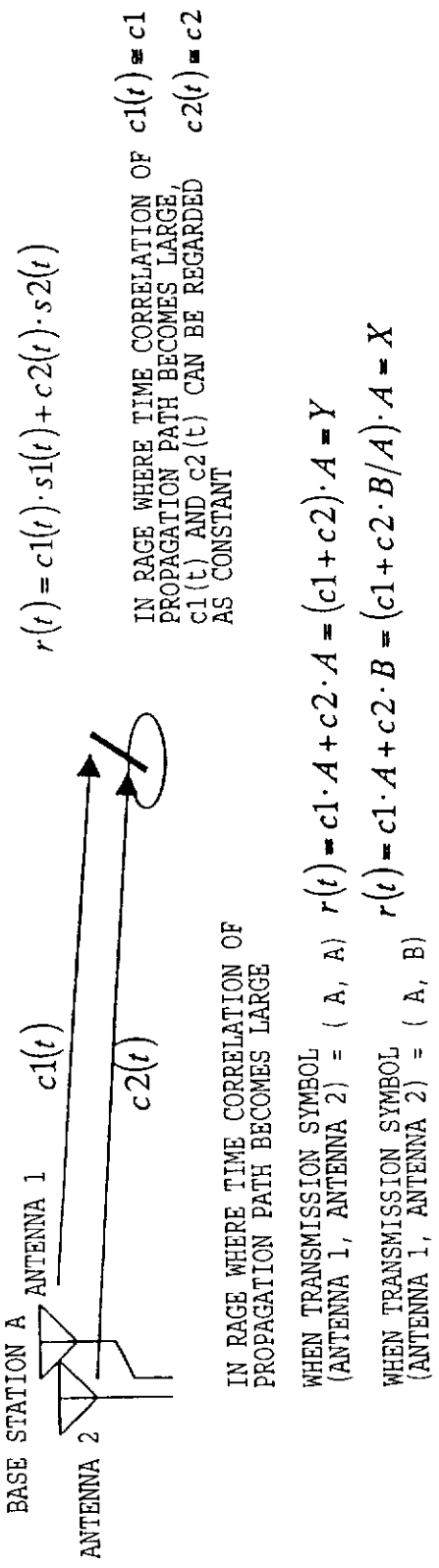
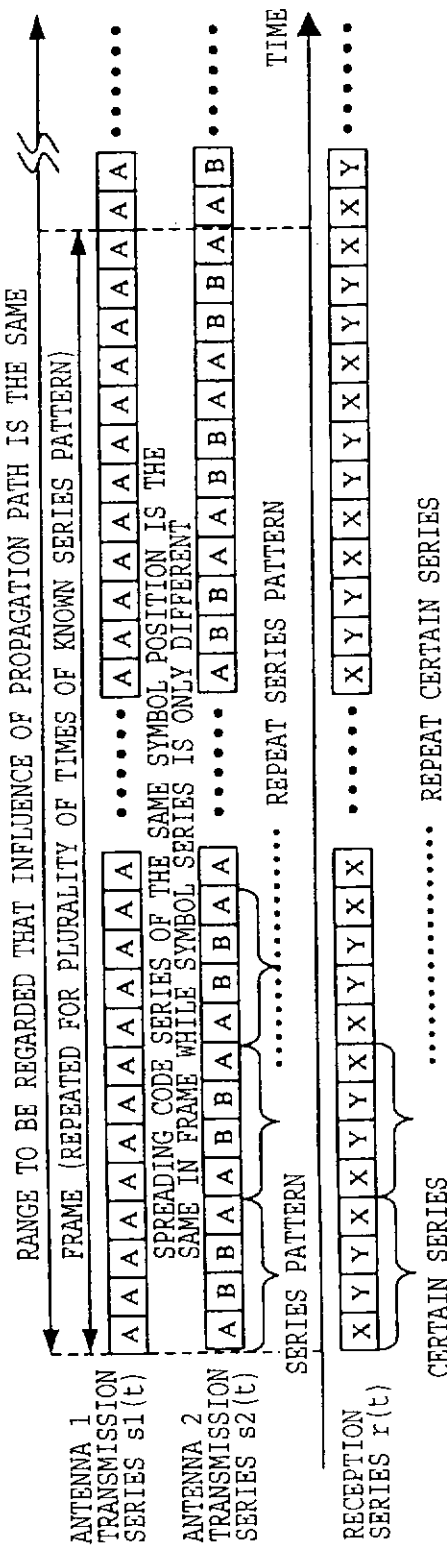


FIG.30

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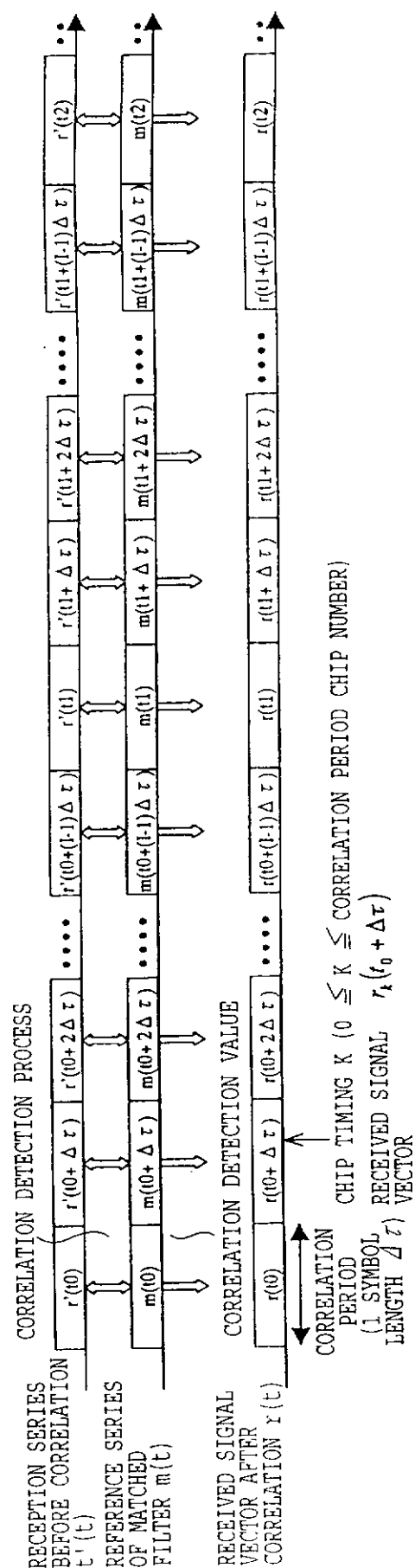


FIG.31

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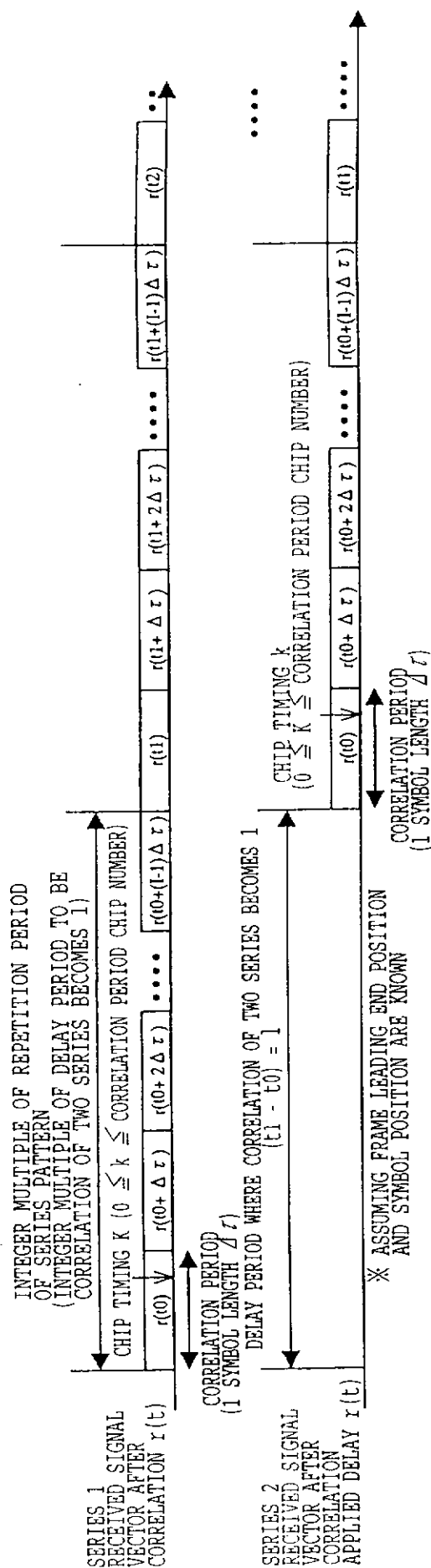


FIG.32

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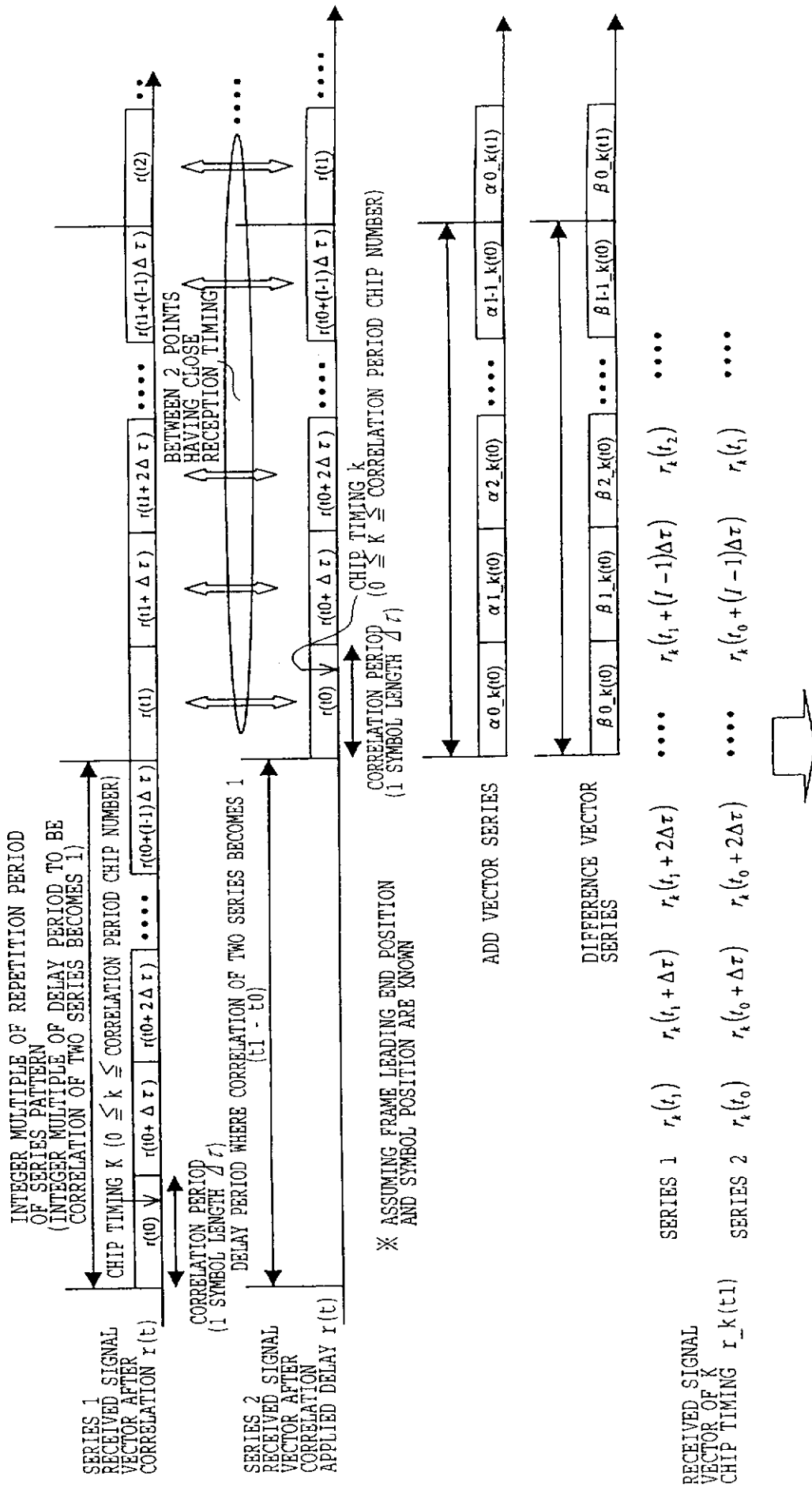
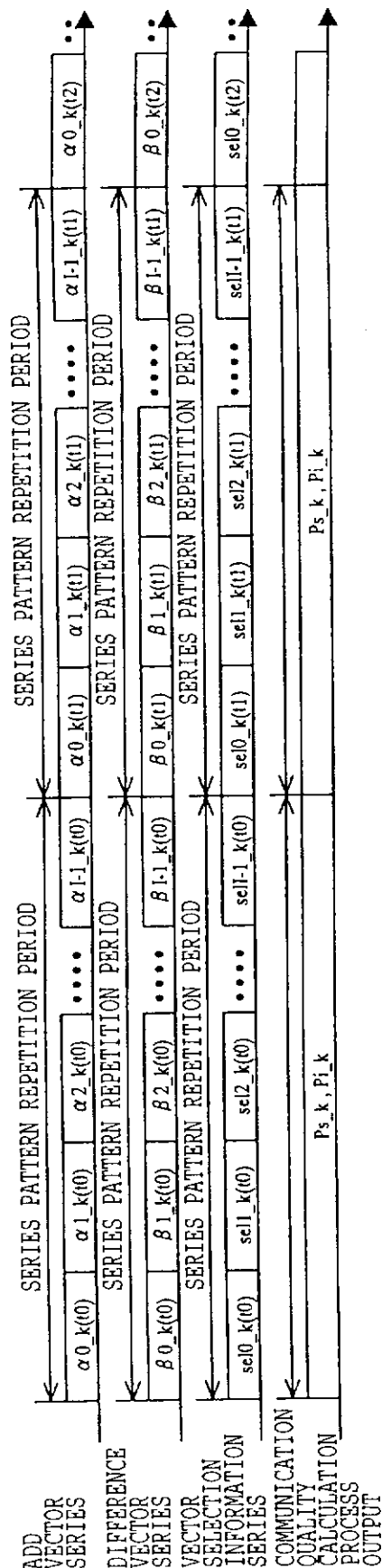


FIG.33

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ADD VECTOR AFTER SELECTION $\alpha'_{i,k}(t_j) = sel_{i,k}(t_j) \cdot \alpha_{i,k}(t_j)$
 DIFFERENCE VECTOR AFTER SELECTION $\beta'_{i,k}(t_j) = sel_{i,k}(t_j) \cdot \beta_{i,k}(t_j)$

VECTOR SELECTION INFORMATION $\begin{cases} sel_{i,k}(t_j) = 1 & \text{SELECTION ON} \\ sel_{i,k}(t_j) = 0 & \text{SELECTION OFF} \end{cases}$

DESIRED SIGNAL POWER $P_{s,k} = \frac{|P'_{s,k} - P_{i,k}|}{2}$ WHEREIN $P'_{s,k} = \frac{1}{N} \sum_{j=0}^{J-1} \sum_{i=0}^{I-1} |\alpha'_{i,k}(t_j)|^2$

INTERFERENCE SIGNAL POWER $P_{i,k} = \frac{1}{N} \sum_{j=0}^{J-1} \sum_{i=0}^{I-1} |\beta'_{i,k}(t_j)|^2$

I IS DELAY SYMBOL NUMBER
 J IS SERIES PATTERN REPETITION NUMBER OF AVERAGING RANGE
 N IS SELECT ON NUMBER IN AVERAGING RANGE

※ WHEN AVERAGING PERIOD IN COMMUNICATION QUALITY CALCULATION PROCESS IS SERIES PATTERN REPETITION PERIOD

FIG.34

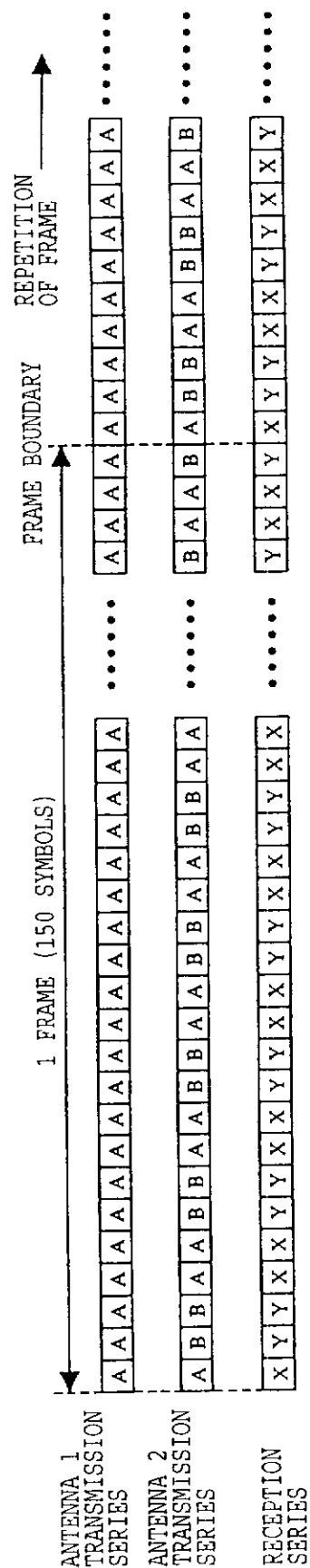


FIG. 35

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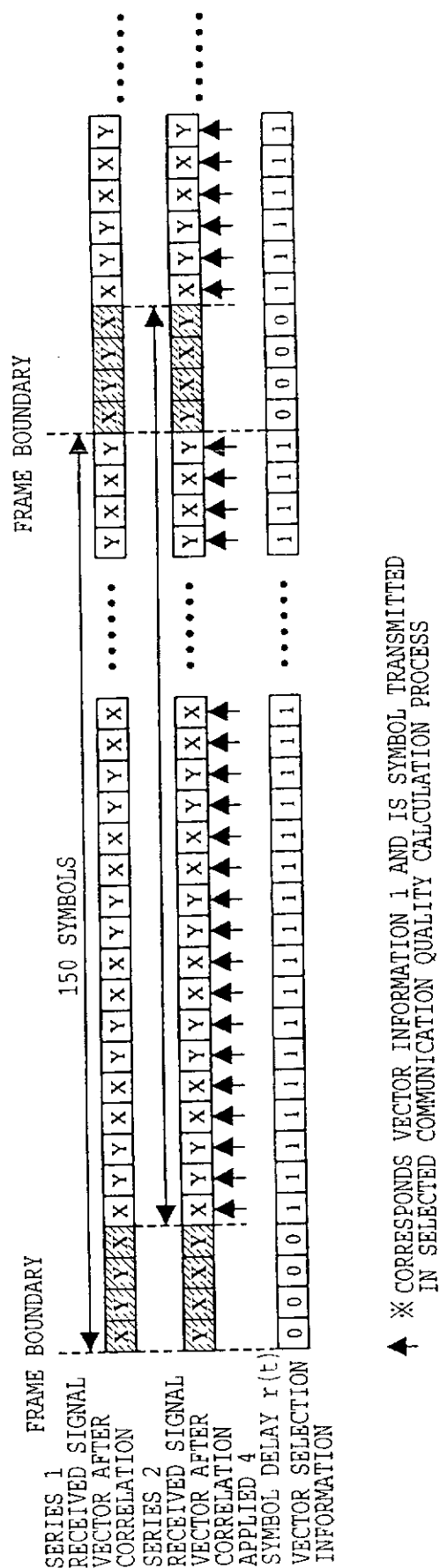


FIG.36

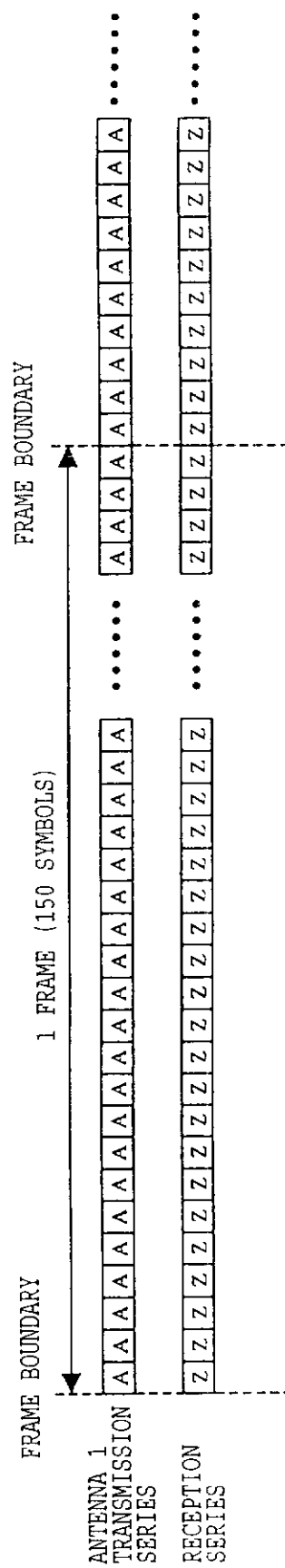
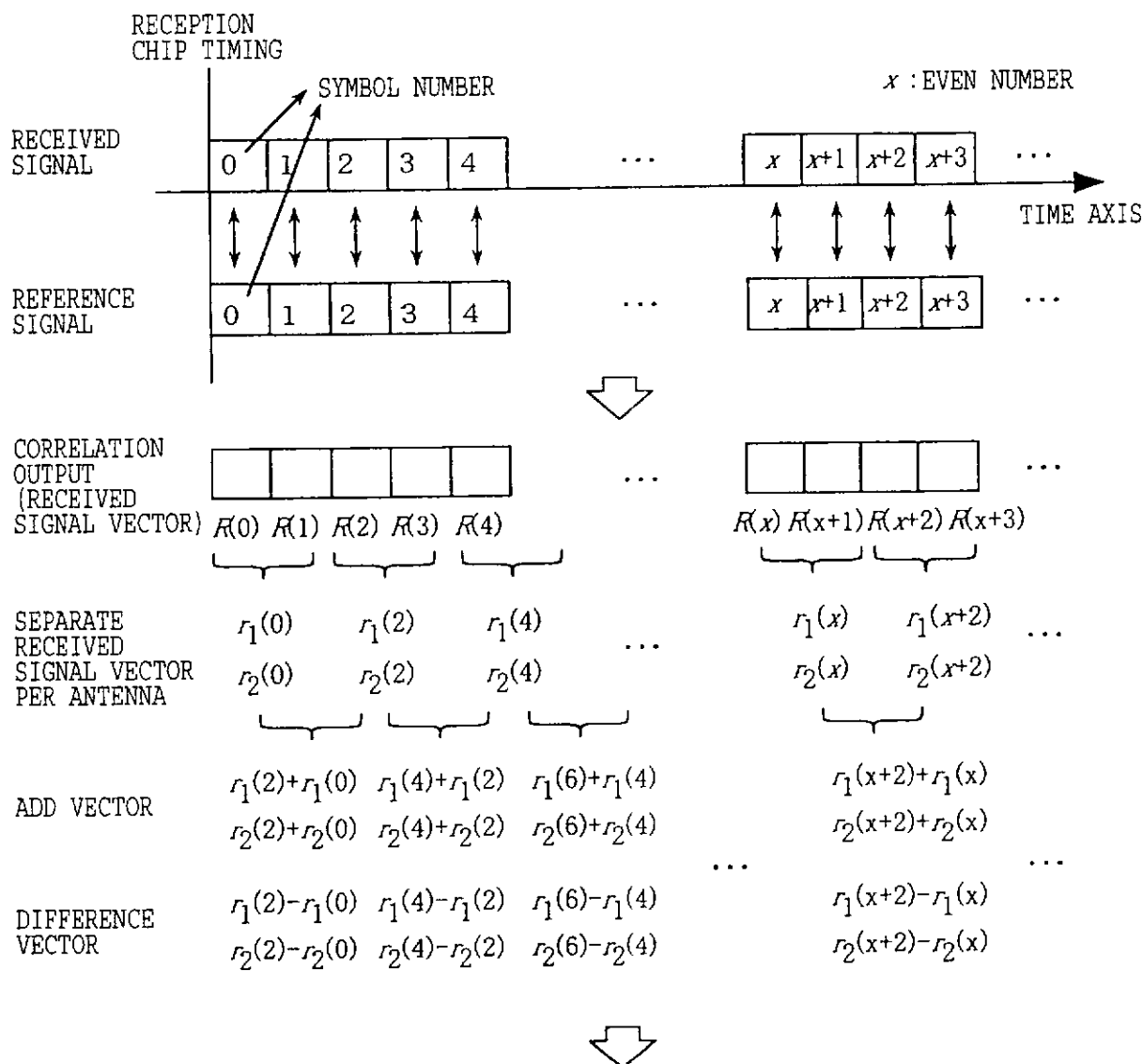


FIG. 38

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DESIRED SIGNAL POWER

$$P_s = \frac{|P_s' - P_I|}{2}$$

BUT,

$$P_s' = \frac{1}{N} \sum_{j=0}^{N-1} \frac{|r_1(2j+2) + r_1(2j)|^2 + |r_2(2j+2) + r_2(2j)|^2}{2}$$

INTERFERENCE SIGNAL POWER

$$P_I = \frac{1}{N} \sum_{j=0}^{N-1} \frac{|r_1(2j+2) - r_1(2j)|^2 + |r_2(2j+2) - r_2(2j)|^2}{2}$$

FIG.39

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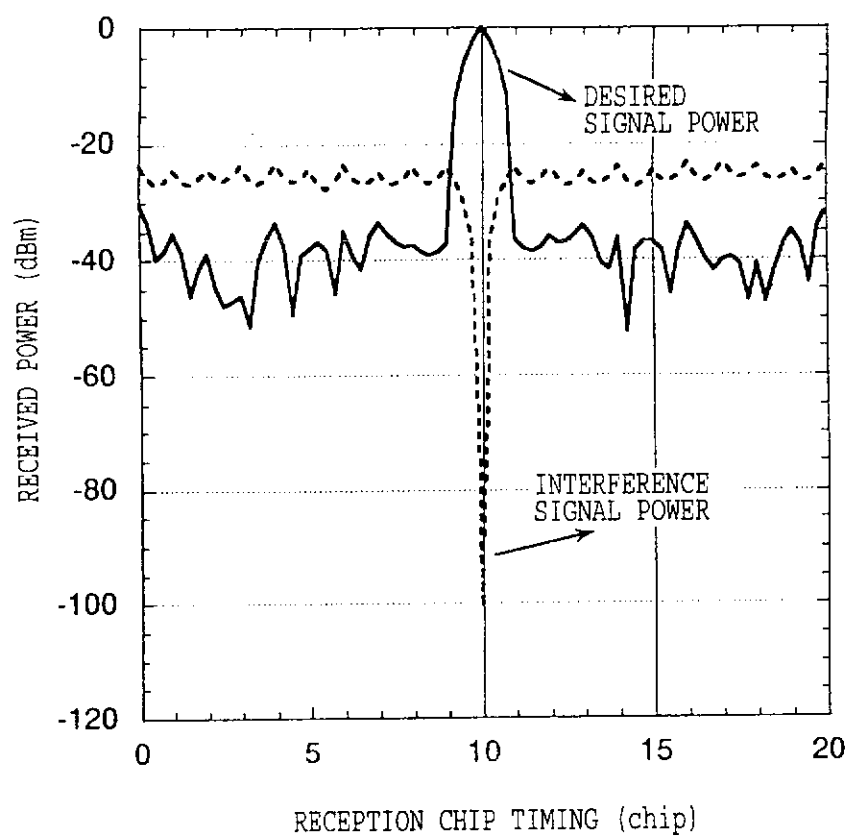


FIG.40

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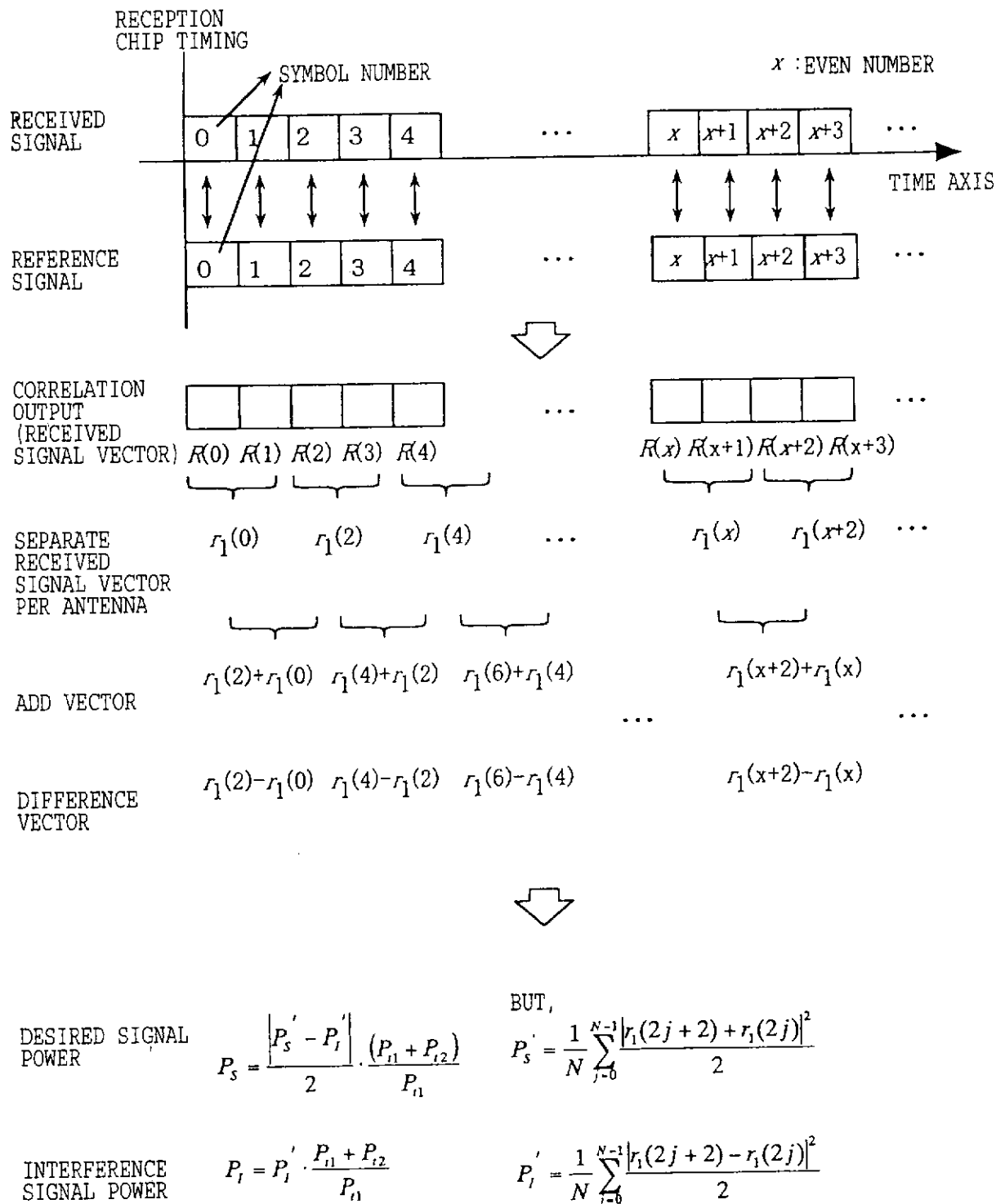


FIG.41

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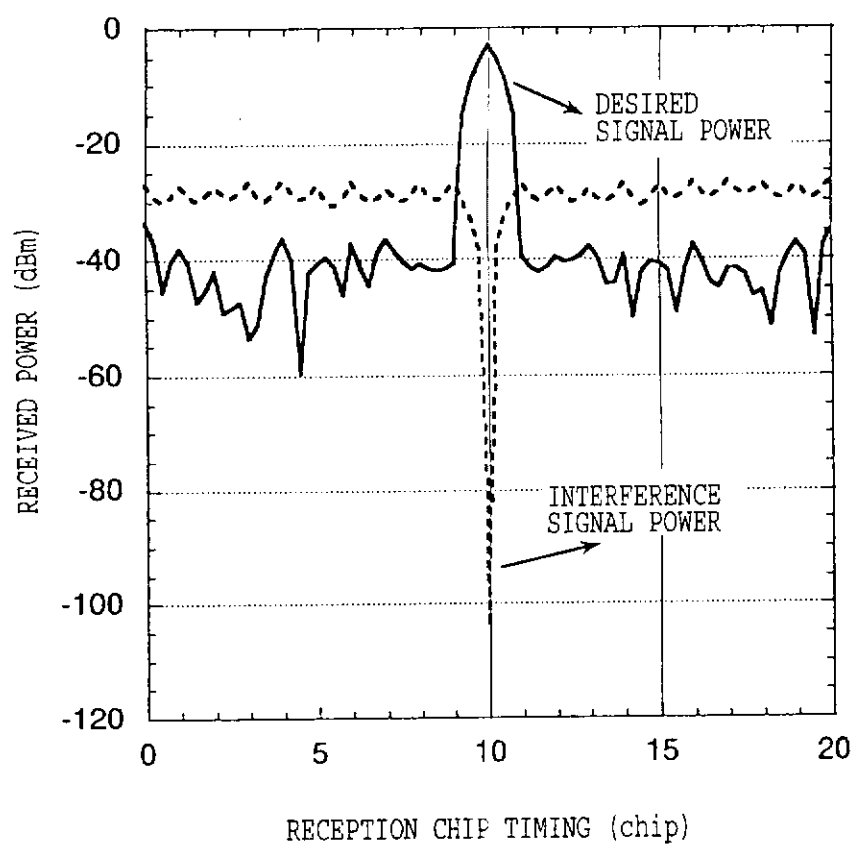


FIG.42