

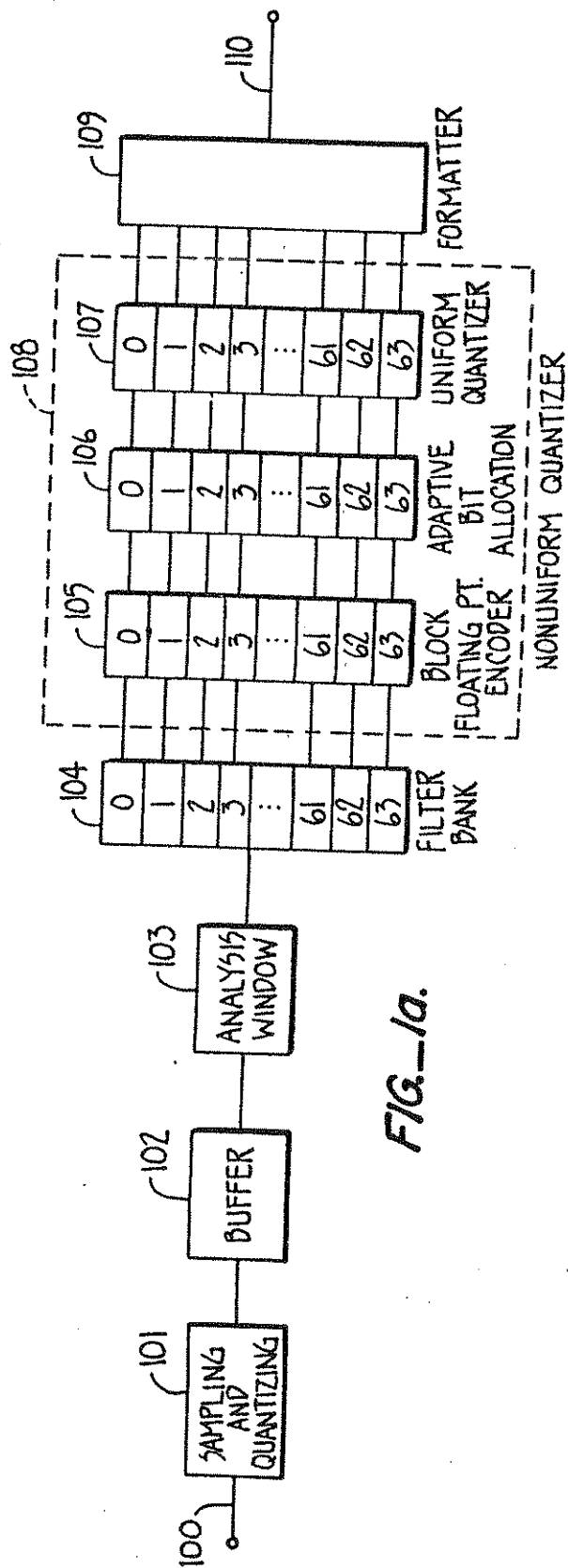


FIG. 1a.

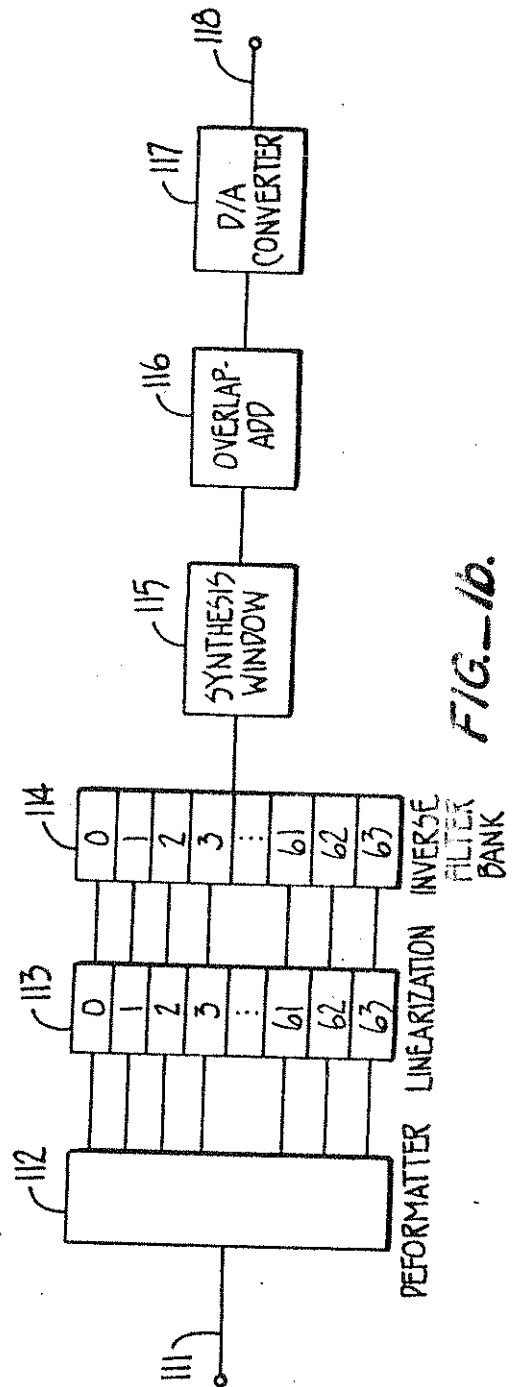


FIG. 1b.



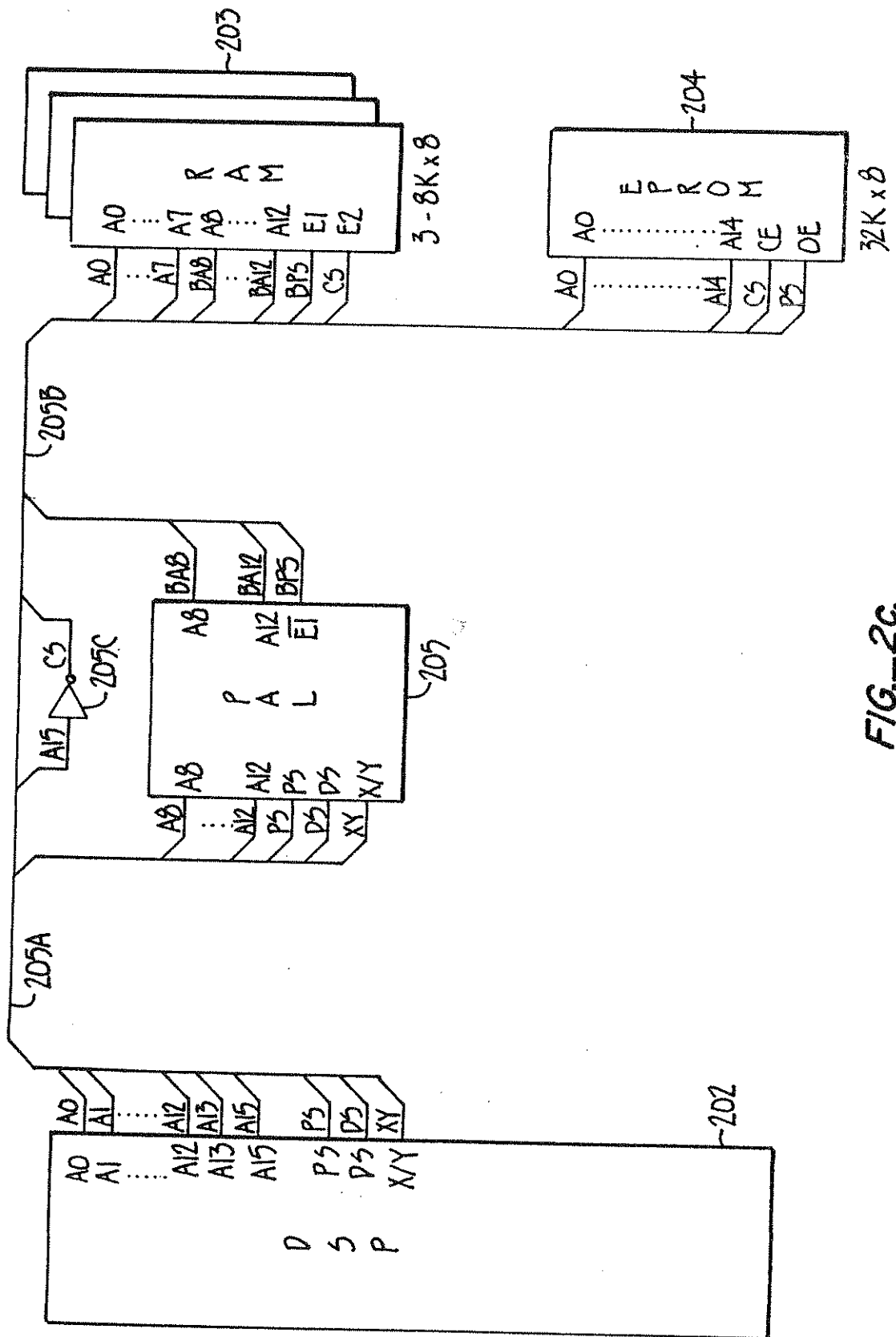


FIG. 2c.

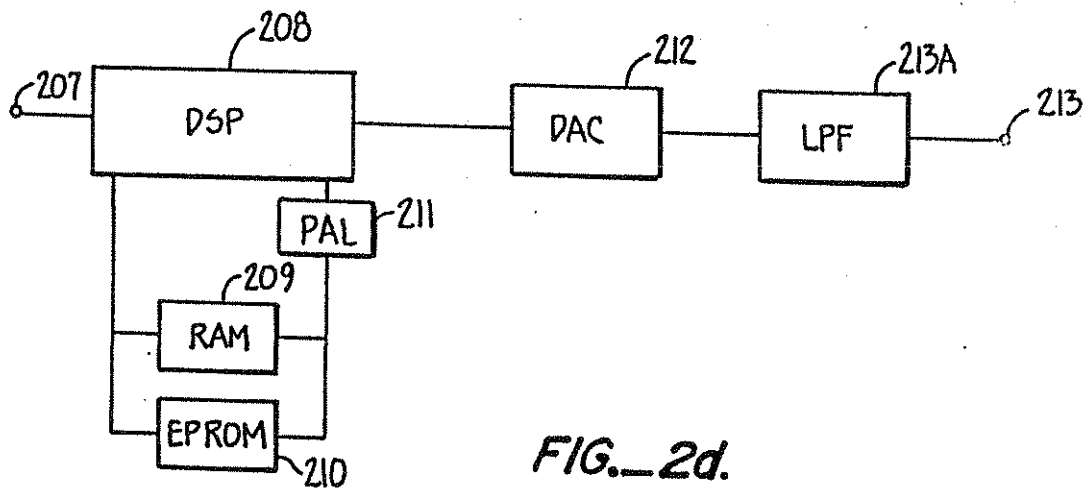


FIG. 2d.

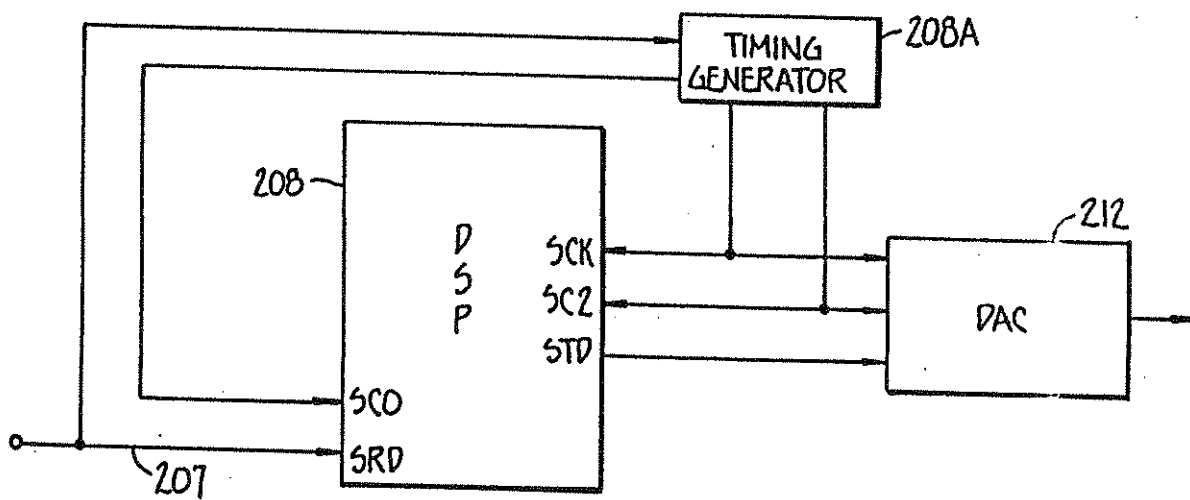


FIG. 2e.

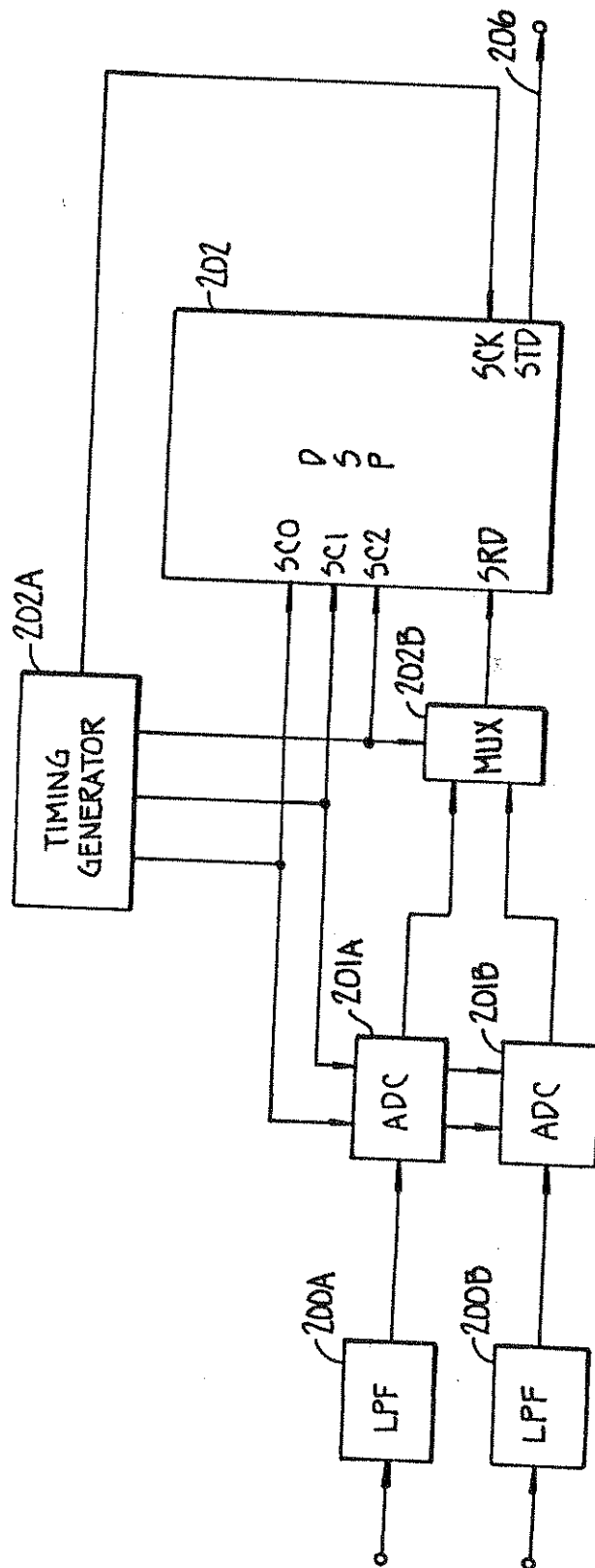


FIG.-3a.

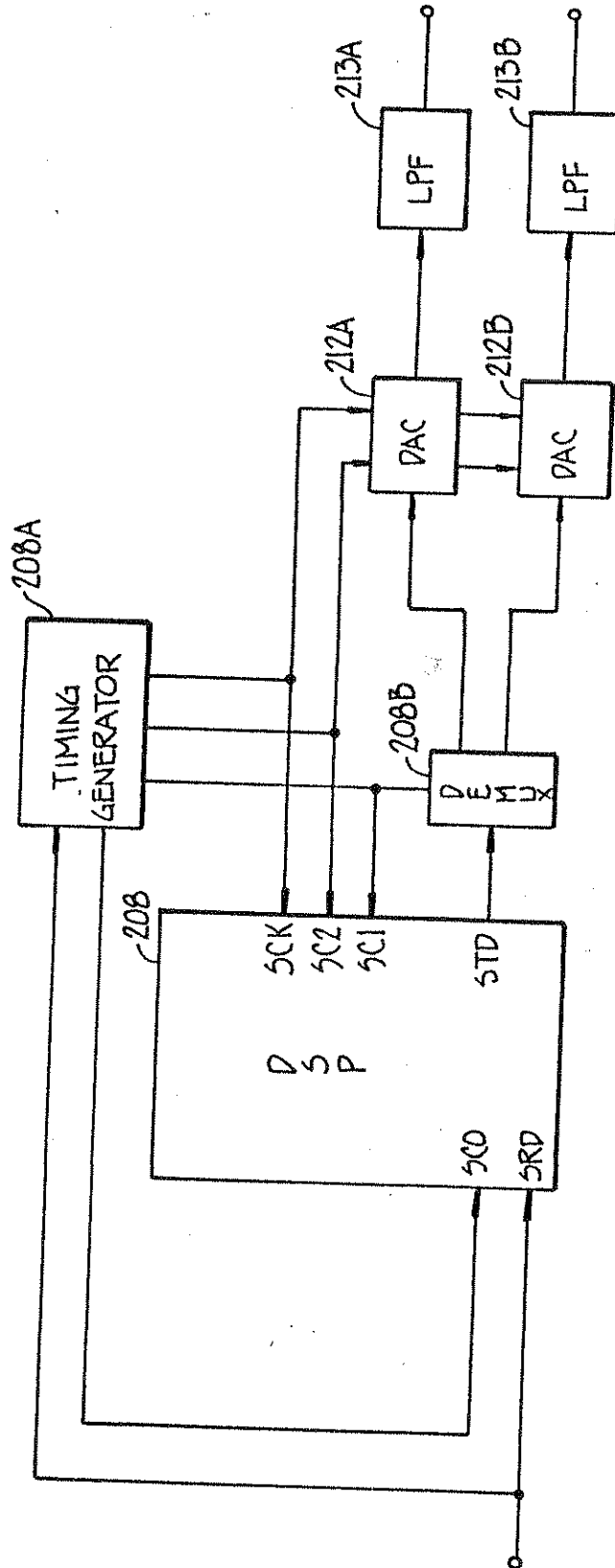


FIG. 3b.

7/24

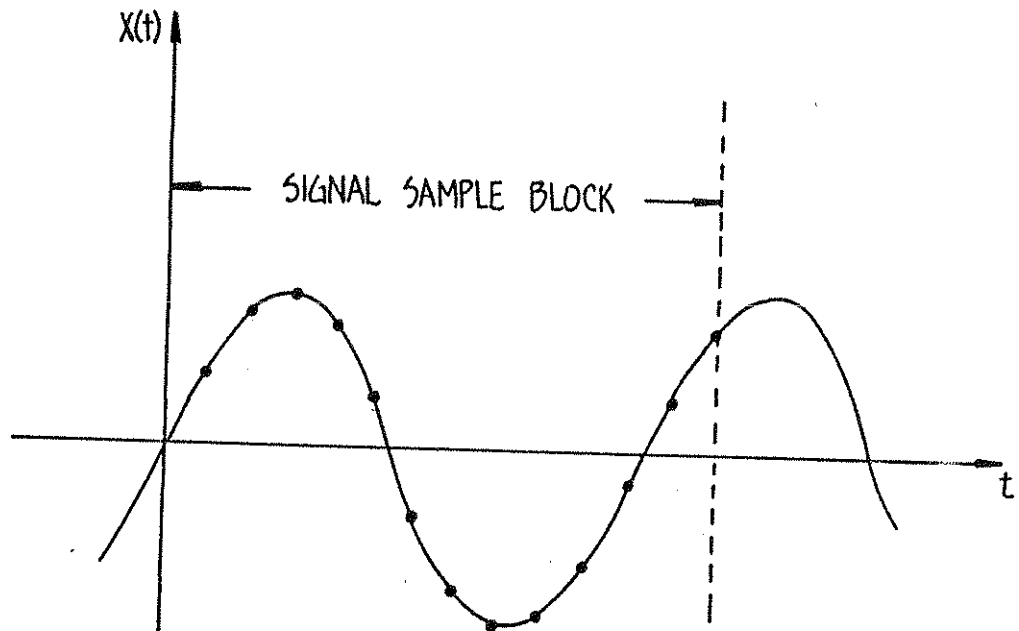


FIG.-4.

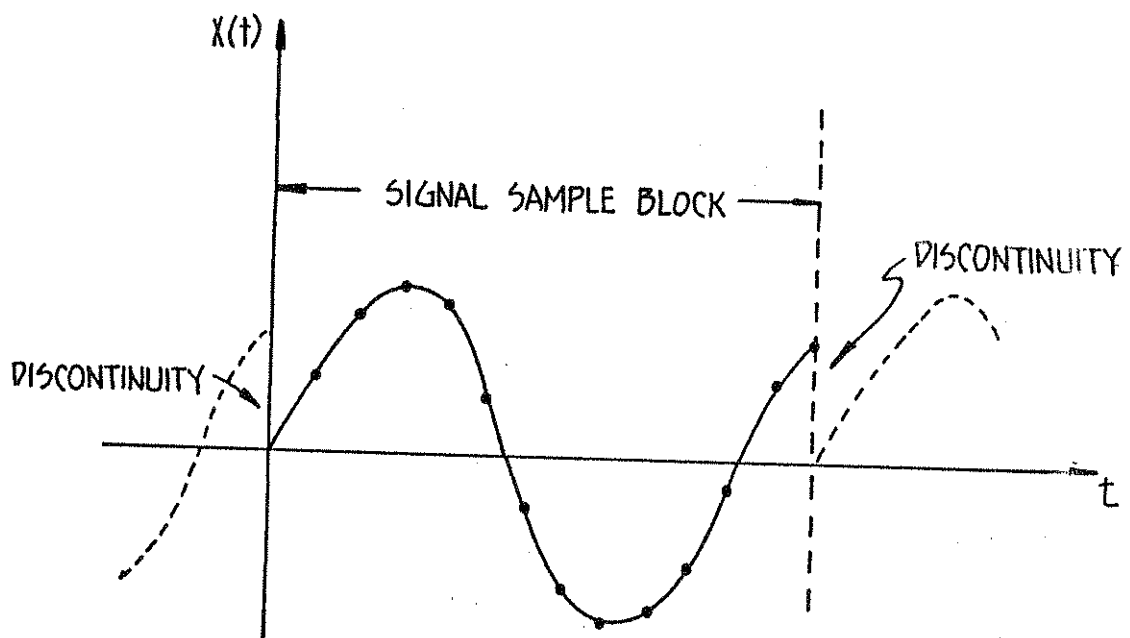


FIG.-5.

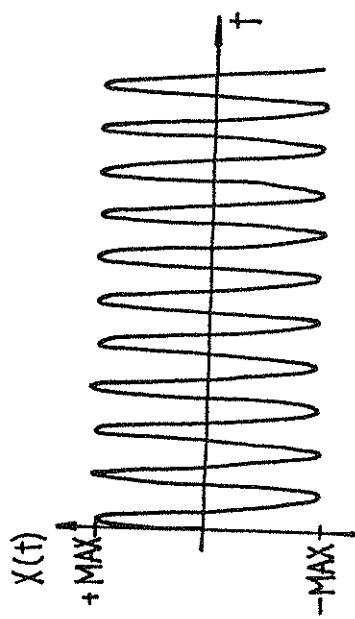


FIG. 6b.

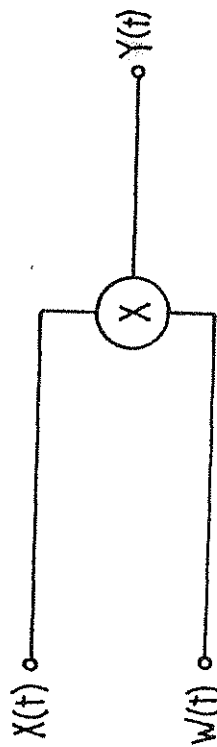


FIG. 6a.

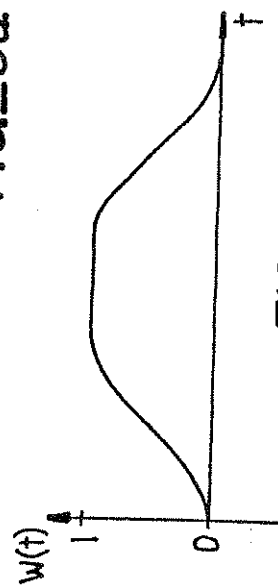


FIG. 6c.

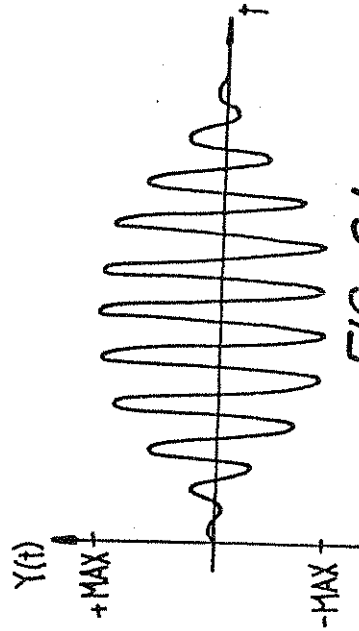
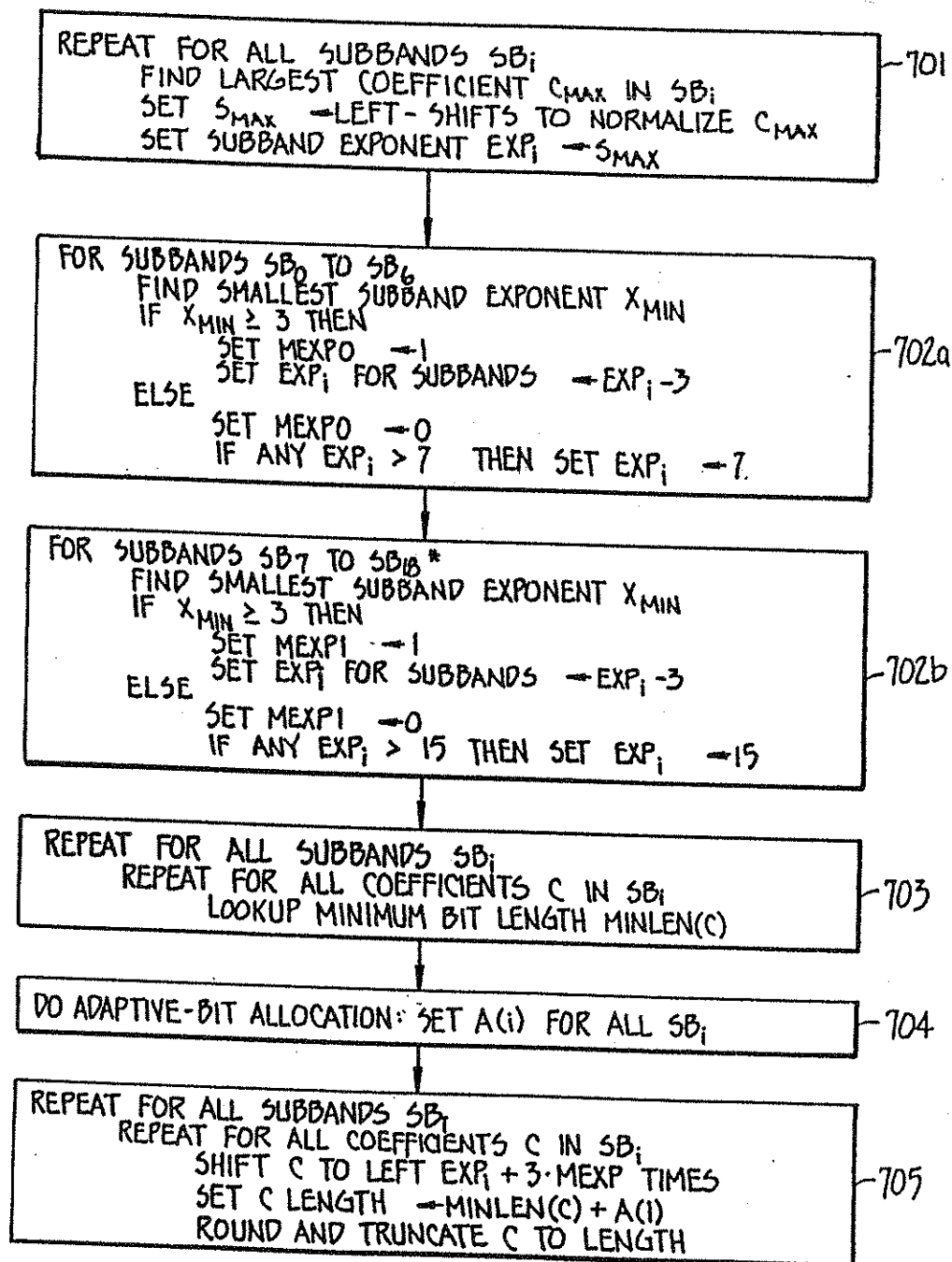


FIG. 6d.



*THE 20 KHz CODER USES SUBBANDS SB_7 TO SB_{20} .

FIG. 7.

10/24

SET ALL ELEMENTS OF $A(i) \leftarrow 0$
 FIND SMALLEST SUBBAND EXPONENT X_{MIN}
 REPEAT FOR ALL SUBBANDS SB_i
 SET $M(i) \leftarrow X_{MIN} - EXP_i$
 SET $M(i) \leftarrow M(i) + 4$
 IF $M(i) < 0$ THEN SET $M(i) \leftarrow 0$

800

STOP WHEN ALL ALLOCABLE BITS ARE ALLOCATED
 REPEAT FOR ALL SUBBANDS SB_i
 IF $M(i) = 4$ THEN SET $A(i) \leftarrow A(i) + 1$
 REPEAT FOR ALL SUBBANDS SB_i
 IF $M(i) \geq 3$ THEN SET $A(i) \leftarrow A(i) + 1$
 REPEAT FOR ALL SUBBANDS SB_i
 IF $M(i) \geq 2$ THEN SET $A(i) \leftarrow A(i) + 1$
 REPEAT FOR ALL SUBBANDS SB_i
 IF $M(i) \geq 1$ THEN SET $A(i) \leftarrow A(i) + 1$

801

STOP WHEN ALL ALLOCABLE BITS ARE ALLOCATED
 REPEAT FOR ALL SUBBANDS SB_i
 IF $1 \leq A(i) \leq 3$ THEN SET $A(i) \leftarrow A(i) + 1$
 REPEAT FOR ALL SUBBANDS SB_i
 IF $2 \leq A(i) \leq 3$ THEN SET $A(i) \leftarrow A(i) + 1$
 REPEAT FOR ALL SUBBANDS SB_i
 IF $A(i) = 3$ THEN SET $A(i) \leftarrow A(i) + 1$

802

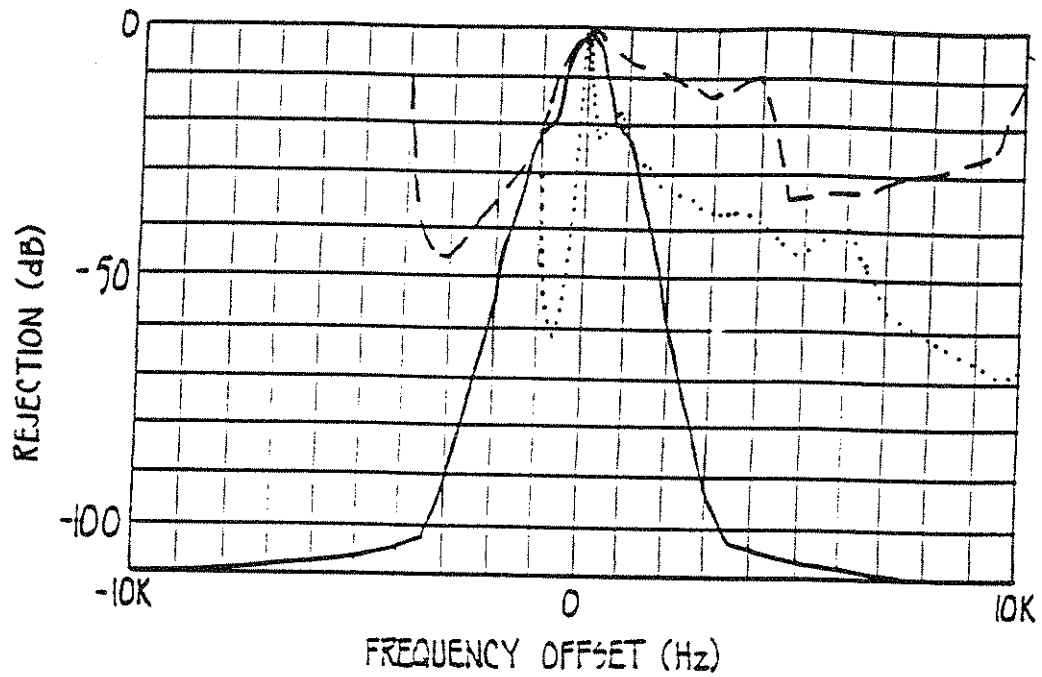
REPEAT UNTIL ALL ALLOCABLE BITS ARE ALLOCATED
 STEP 1 REPEAT FOR SUBBANDS SB_{17} TO SB_1 *
 IF $\{A(i-1), A(i), A(i+1)\} = \{0, 0, 4\}$ THEN SET $A(i) \leftarrow 1$
 STEP 2 IF $\{A(0), A(1)\} = \{0, 4\}$ THEN SET $A(0)++ \leftarrow 1$
 IF $\{A(17), A(18)\} = \{4, 0\}$ THEN SET $A(18) \leftarrow 1$
 STEP 3 REPEAT FOR SUBBANDS SB_{17} TO SB_1 **
 IF $\{A(i-1), A(i), A(i+1)\} = \{4, 0, 0\}$ THEN SET $A(i) \leftarrow 1$
 STEP 4 REPEAT 4 TIMES
 REPEAT FOR ALL SUBBANDS SET IN STEP 1
 SET $A(i) \leftarrow A(i) + 1$
 REPEAT FOR ALL SUBBANDS SET IN STEP 2
 SET $A(i) \leftarrow A(i) + 1$
 REPEAT FOR ALL SUBBANDS SET IN STEP 3
 SET $A(i) \leftarrow A(i) + 1$

803

- * THE 20 KHz CODER USES SUBBANDS SB_{19} TO SB_1 .
- **FOR DST BLOCKS, THE LOWER LIMIT IS SUBBAND SB_2 .
- + THE 20 KHz CODER TESTS $\{A(19), A(20)\}$, AND SETS $A(20) \leftarrow 1$.
- ++ FOR DST BLOCKS, TEST $\{A(1), A(2)\}$, AND SET $A(1) \leftarrow 1$.

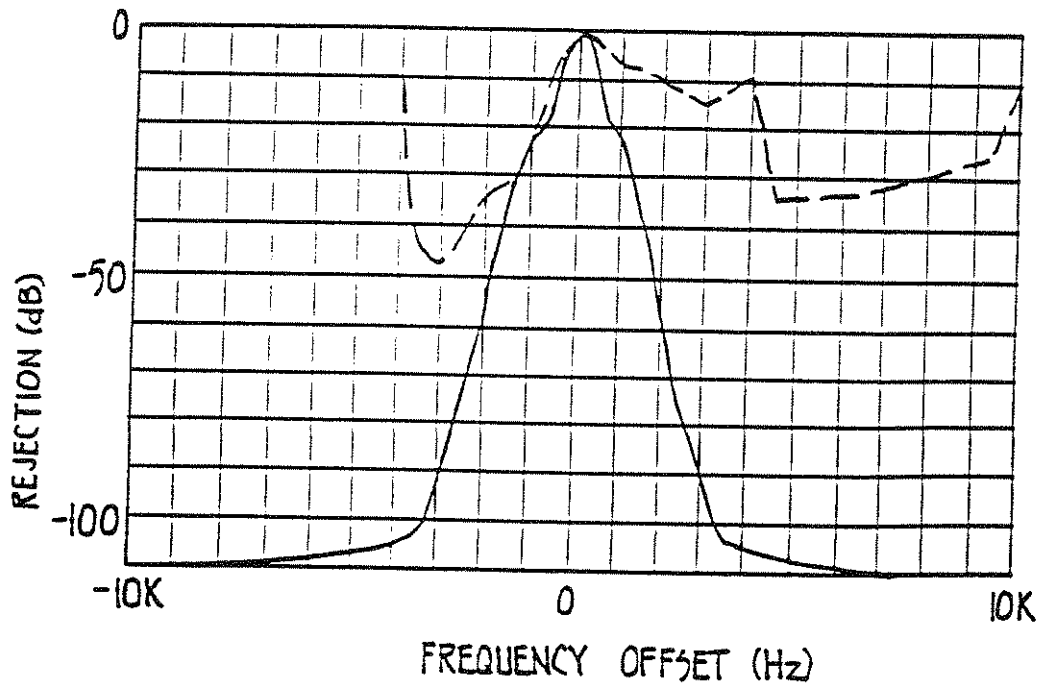
FIG. 8.

11/24



— FILTER RESPONSE
--- MASKING AT 4 kHz
..... MASKING AT 1 kHz

FIG. 9.



— FILTER RESPONSE
--- MASKING AT 4 kHz

FIG. 10.

12/24
12/24

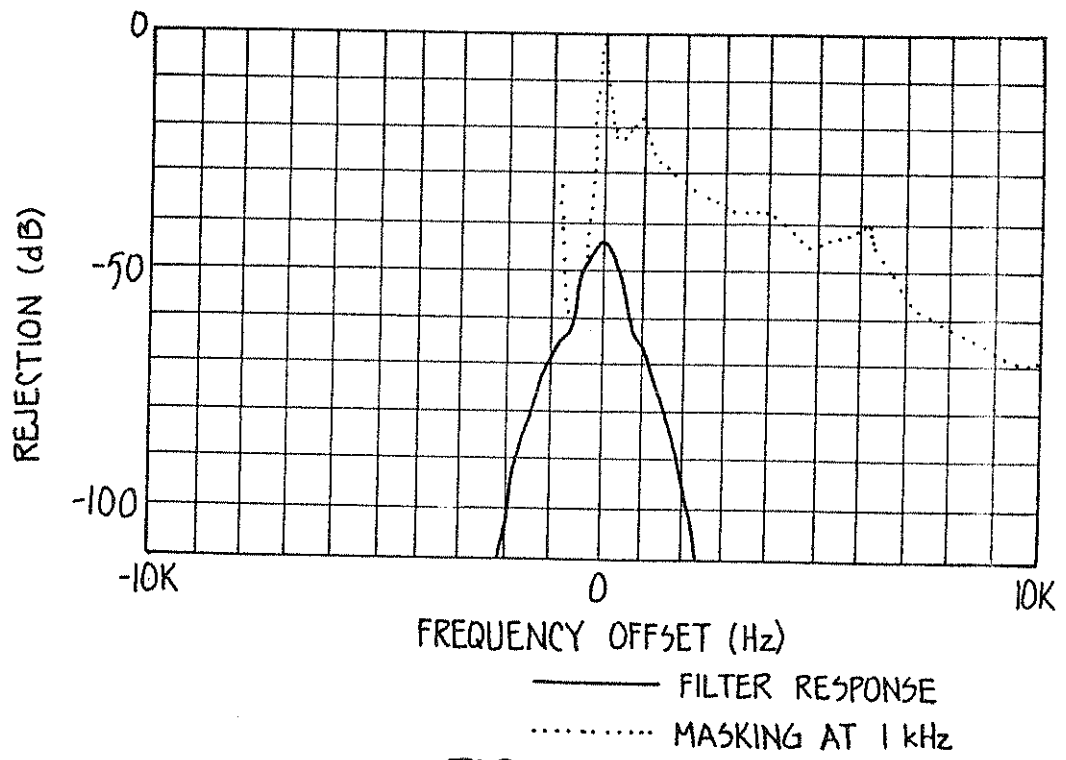
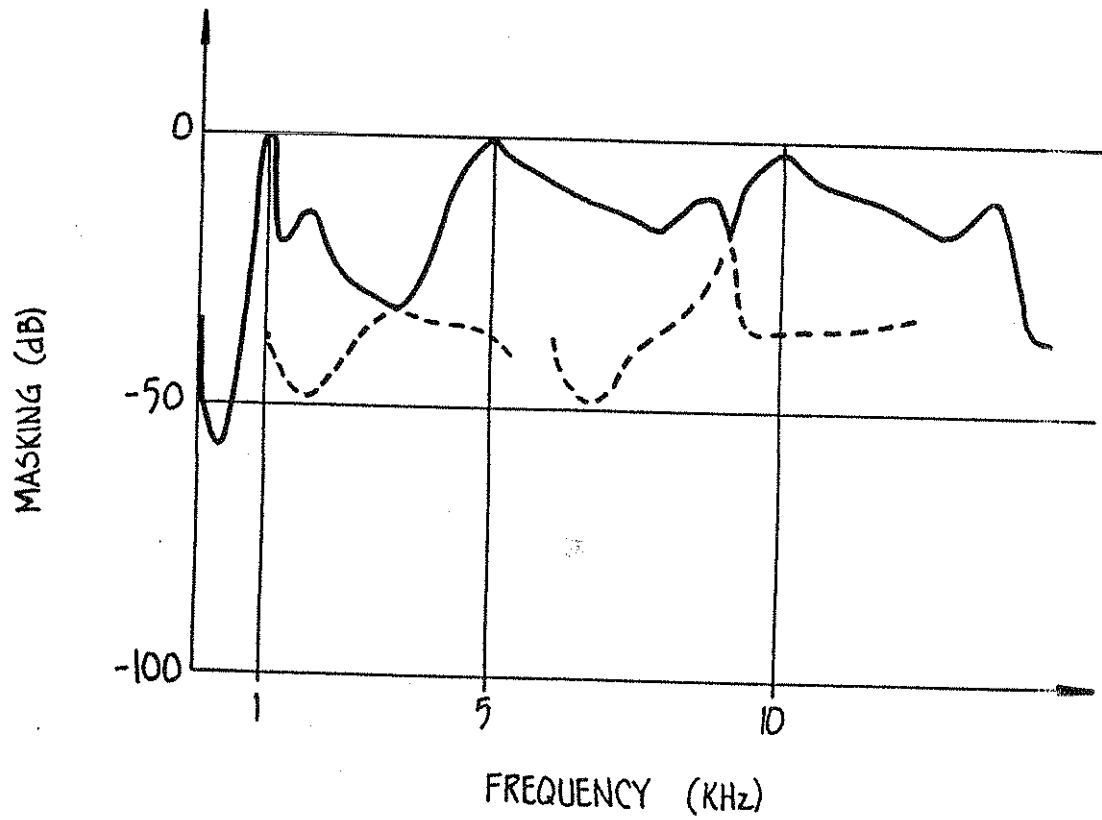


FIG. II.

*FIG. 12.*

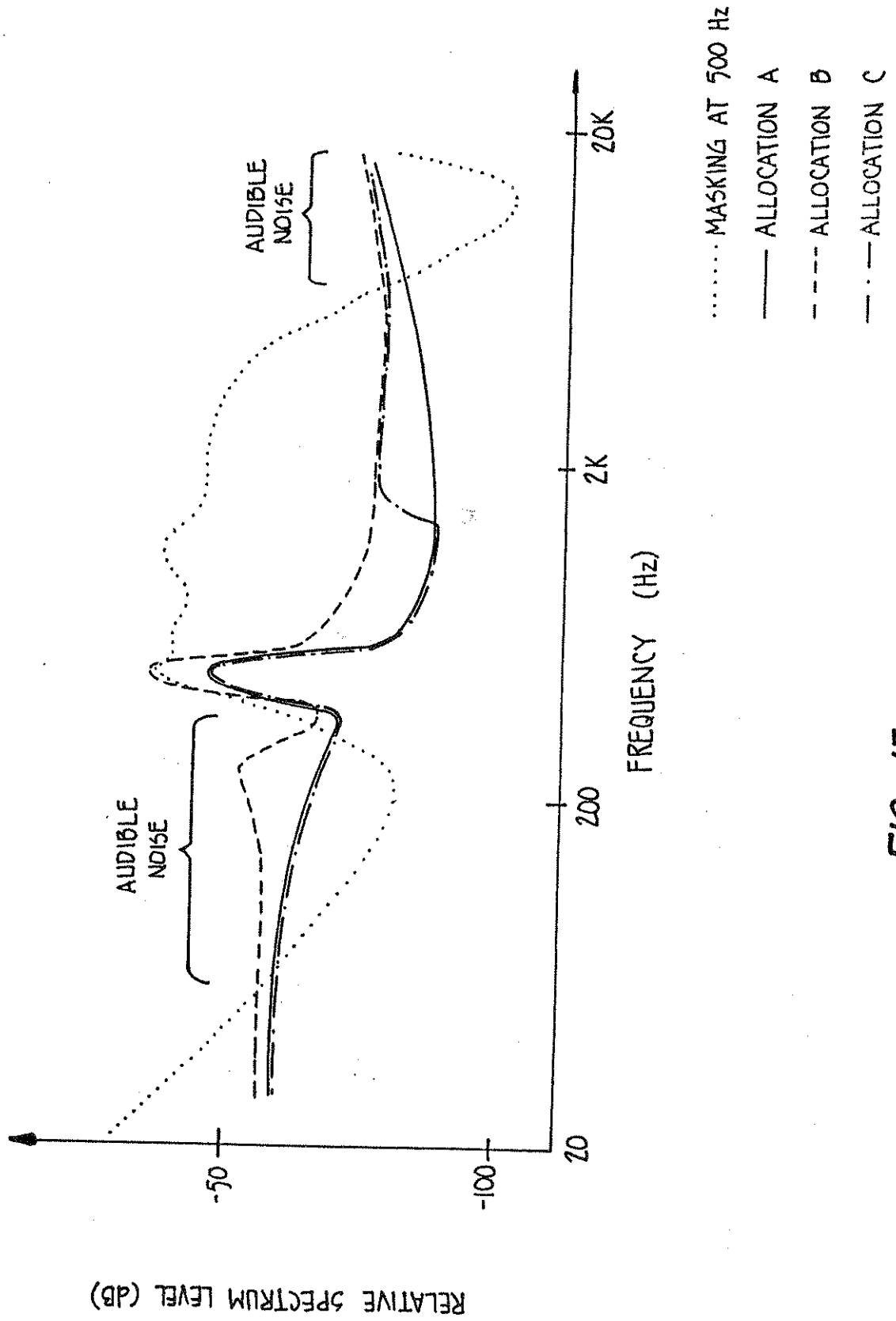


FIG. 13.

FIG._14a.

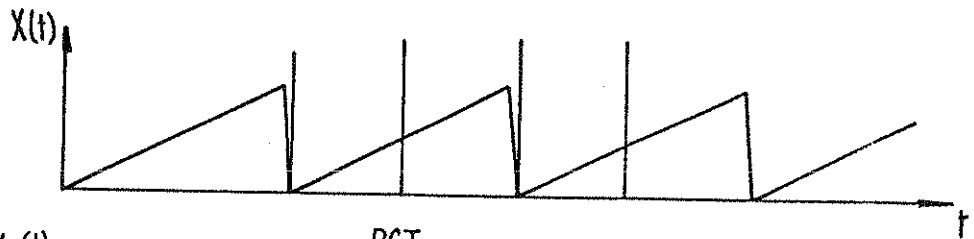


FIG._14b.

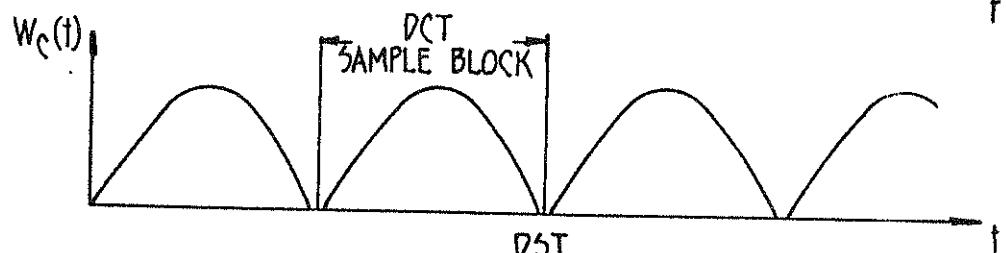


FIG._14c.

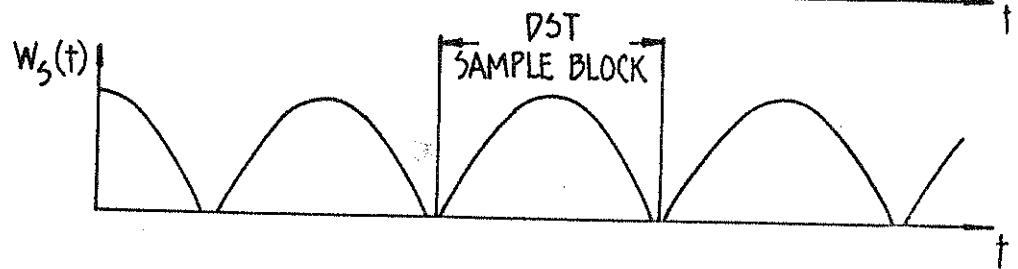


FIG._14d.

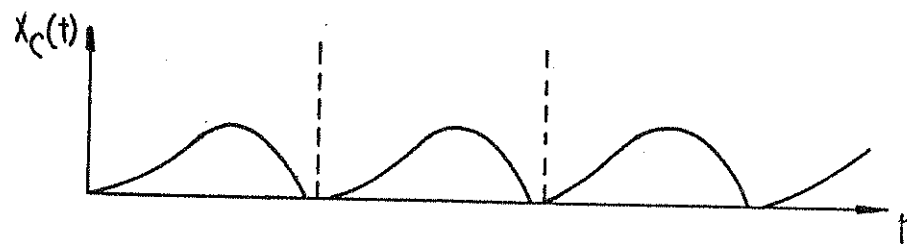
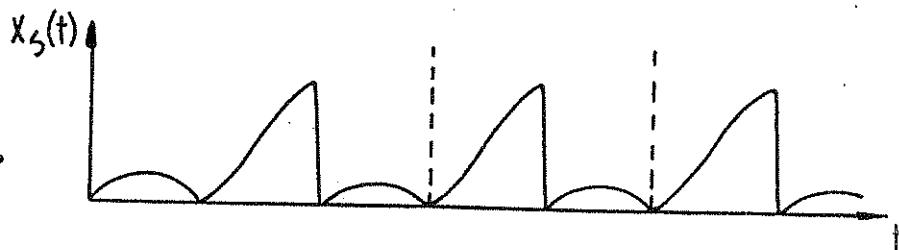


FIG._14e.



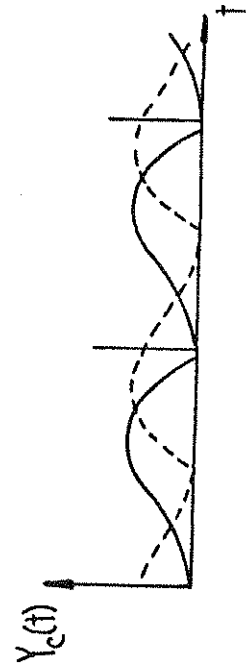
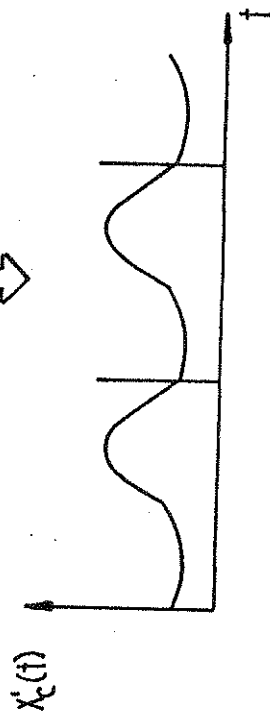
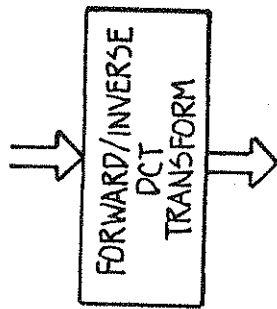
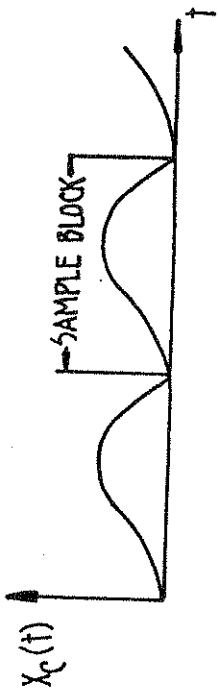


FIG. 15b.

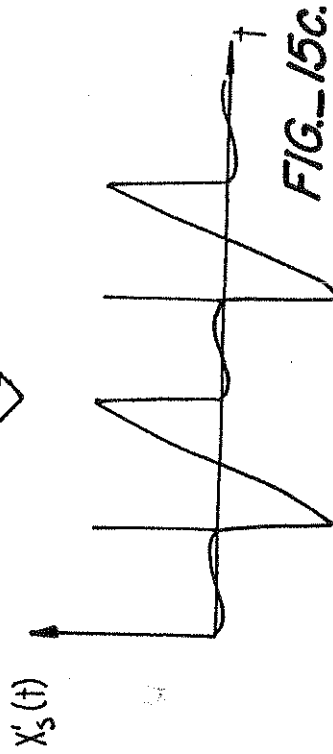
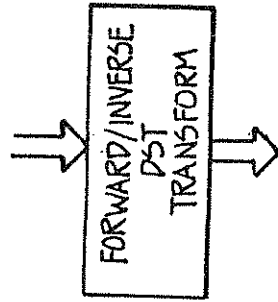
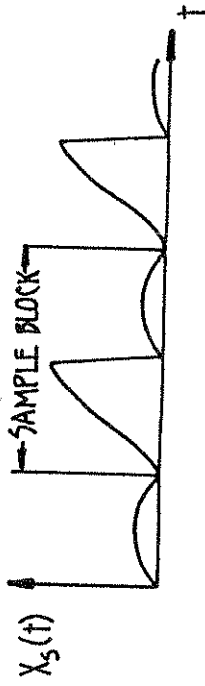


FIG. 15c.

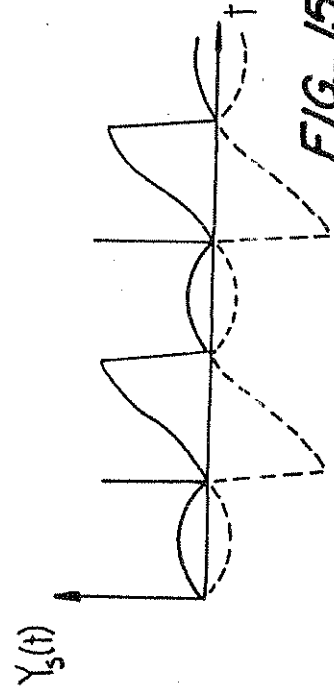


FIG. 15d.

FORWARD/INVERSE
DCT
TRANSFORM

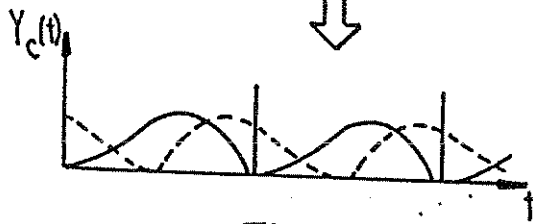


FIG. 16a.

FORWARD/INVERSE
DST
TRANSFORM

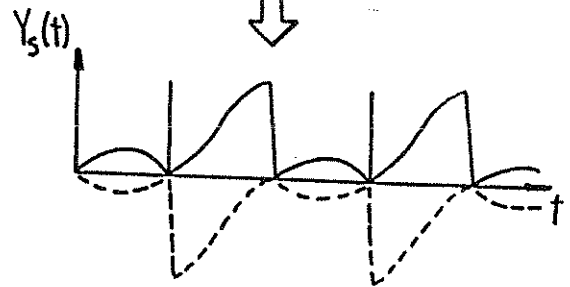


FIG. 16d.

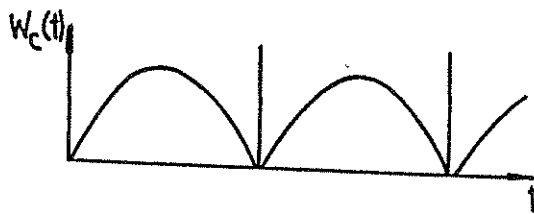


FIG. 16b.

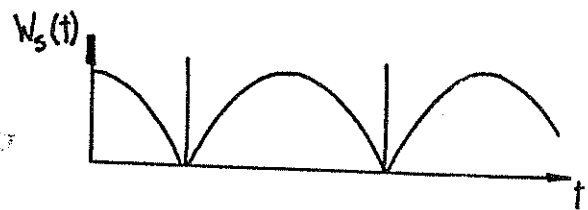


FIG. 16e.

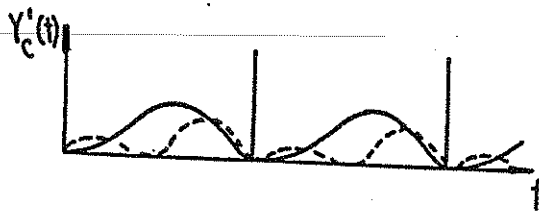


FIG. 16c.

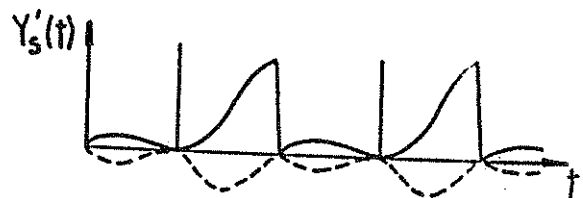


FIG. 16f.

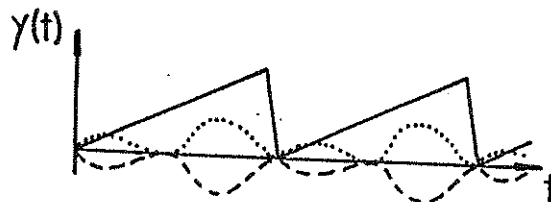
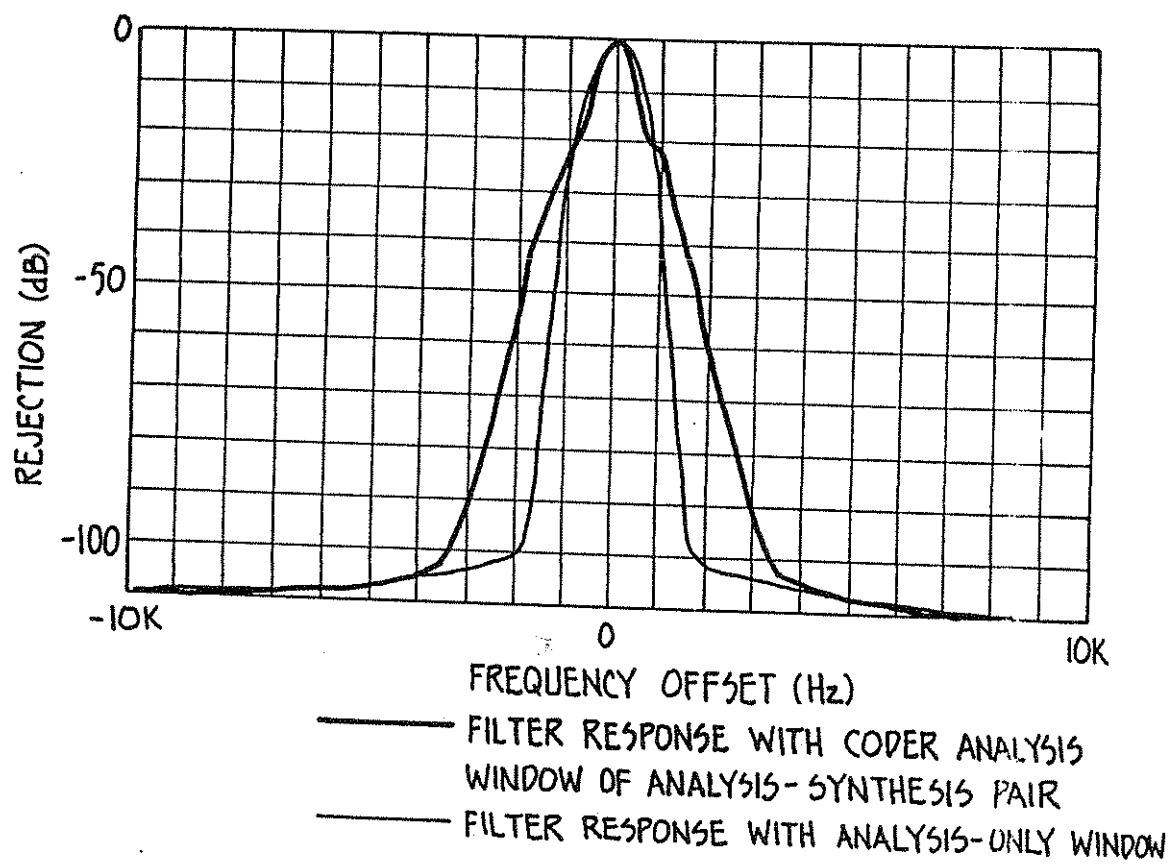


FIG. 16g.

**FIG. 17.**

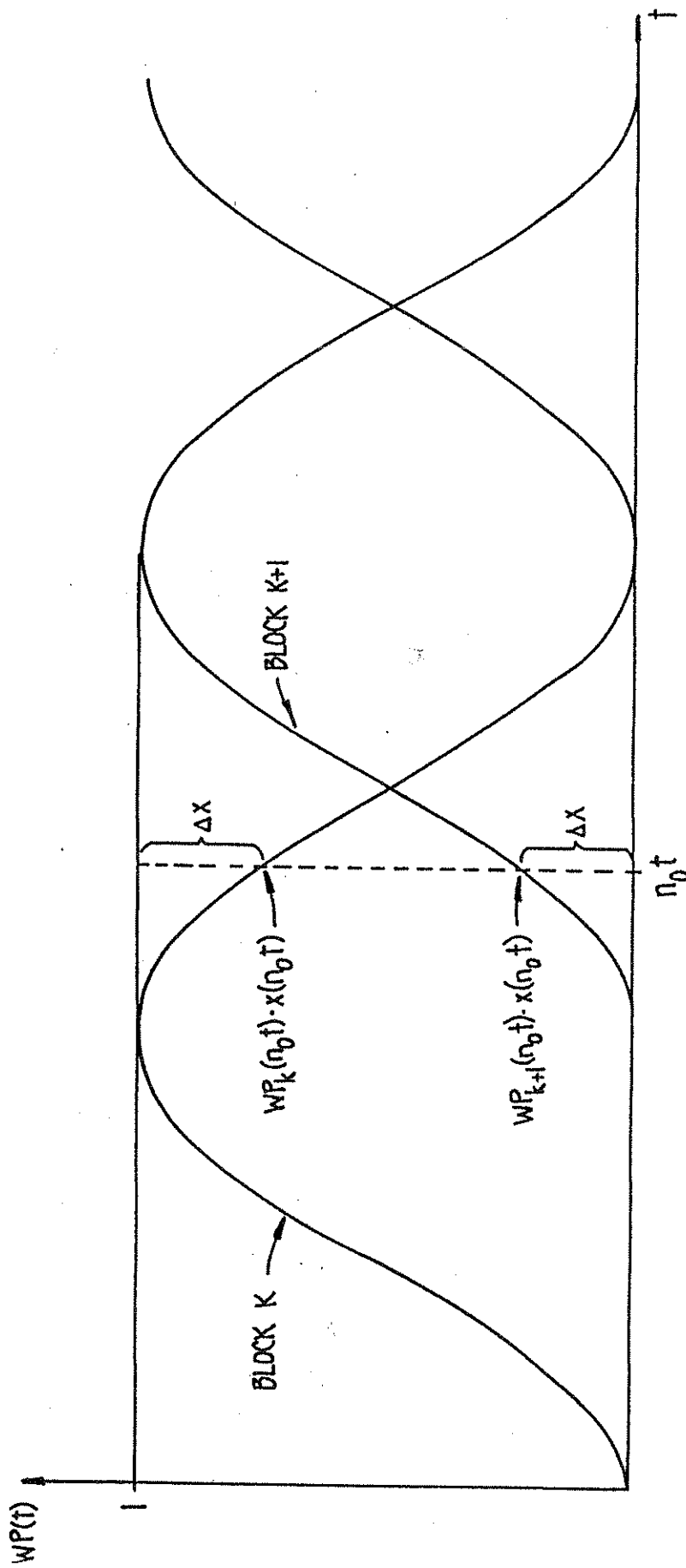


FIG. 18.

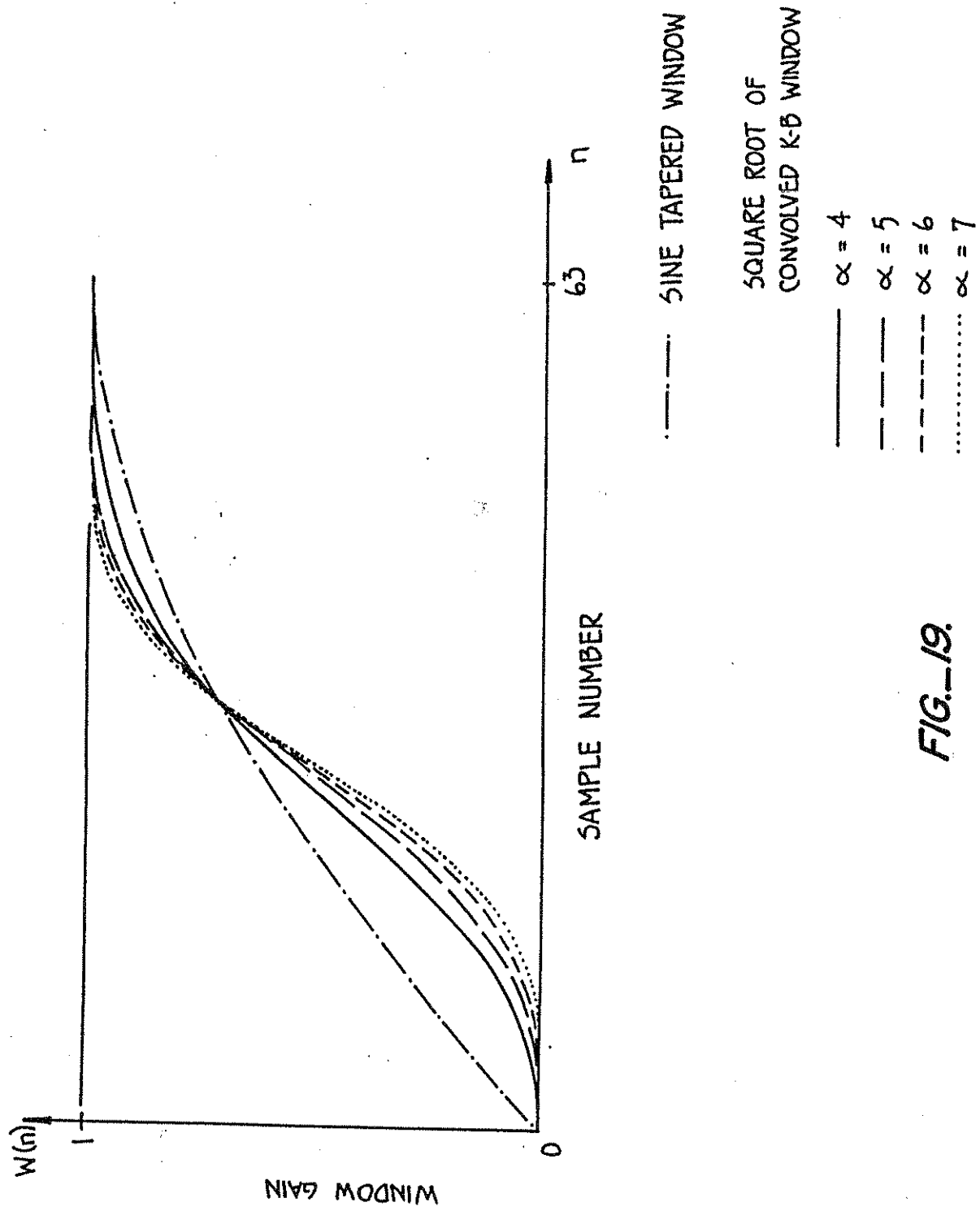
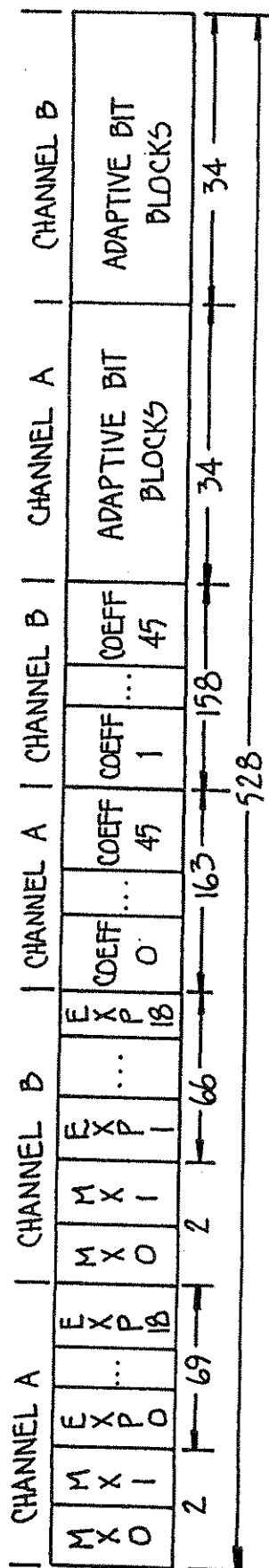
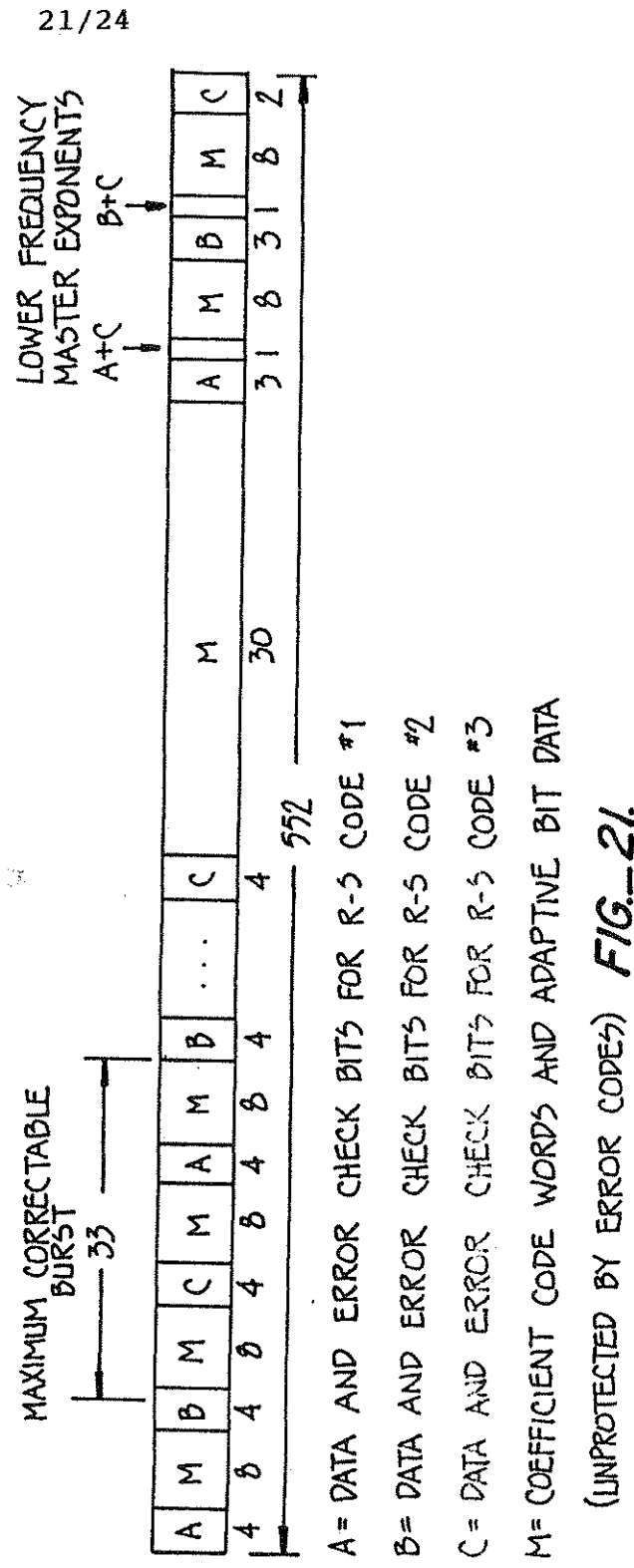


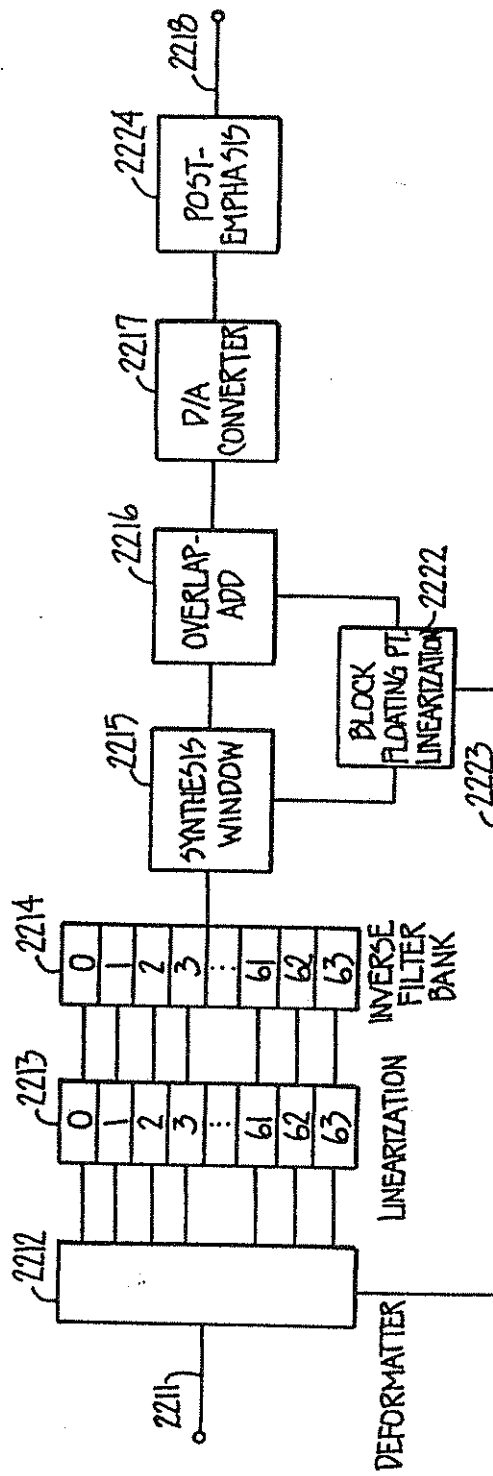
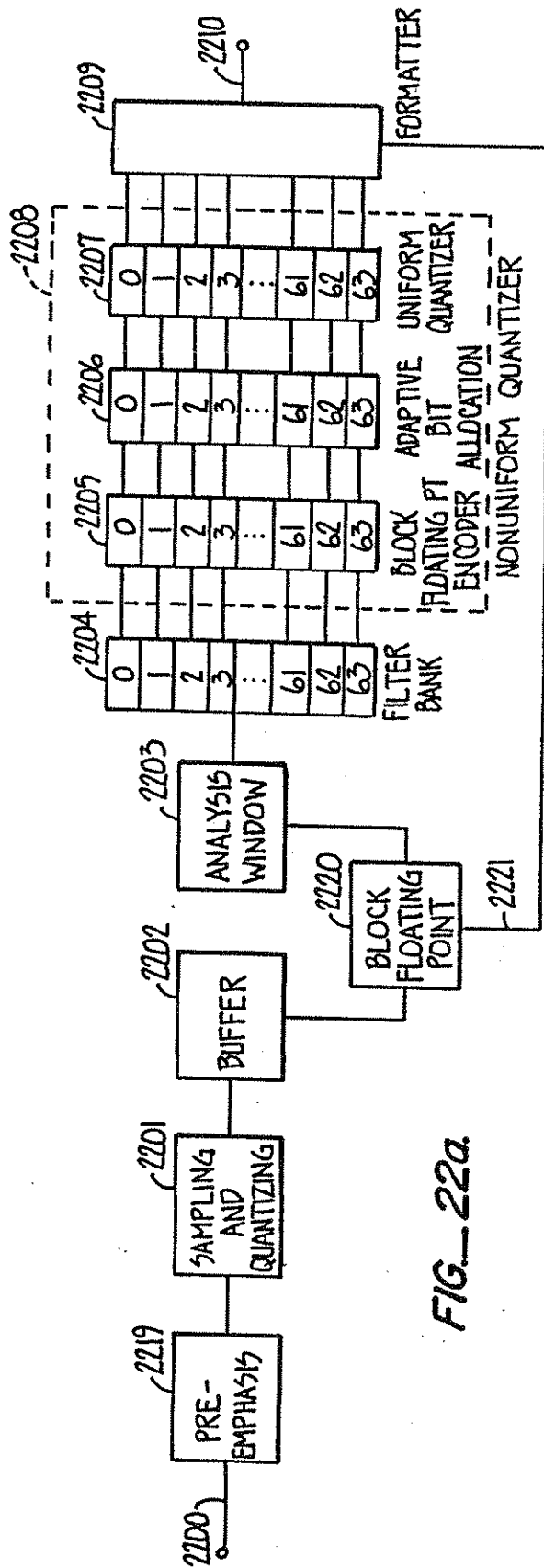
FIG. 19.



CHANNEL A: DCT BLOCK
CHANNEL B: DST BLOCK

FIG.-20.





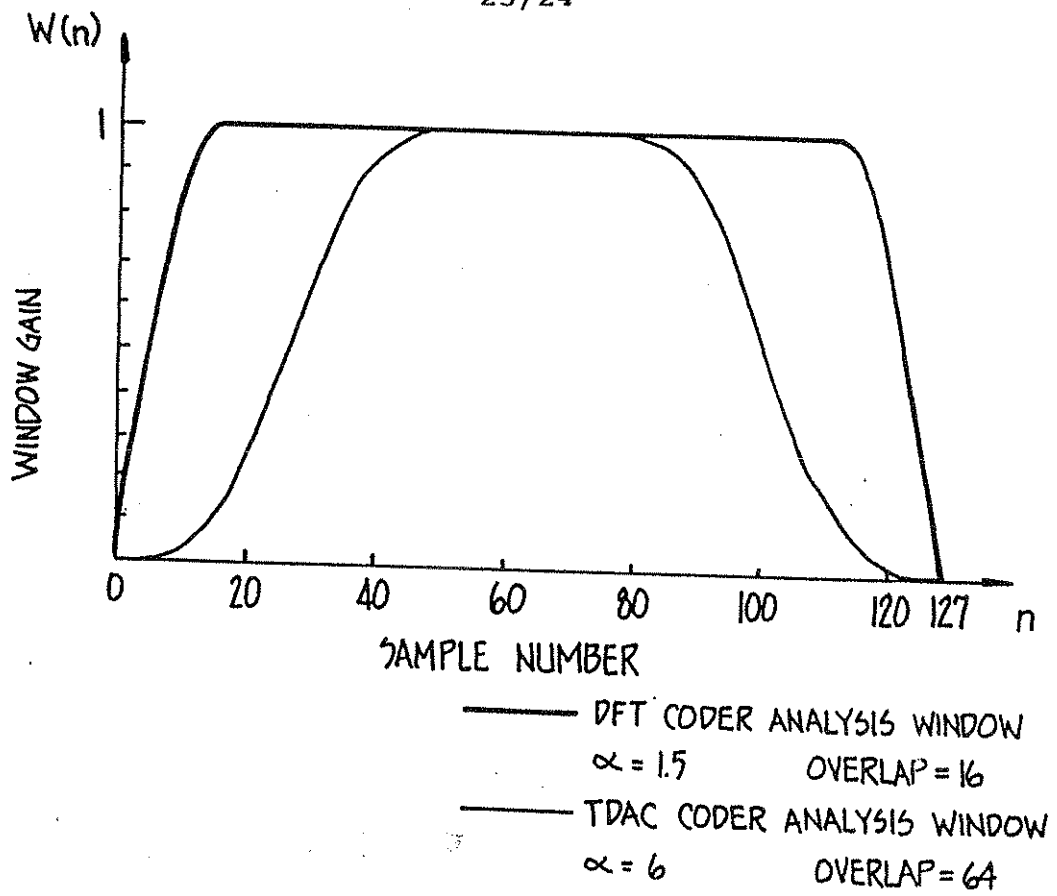


FIG. 23.

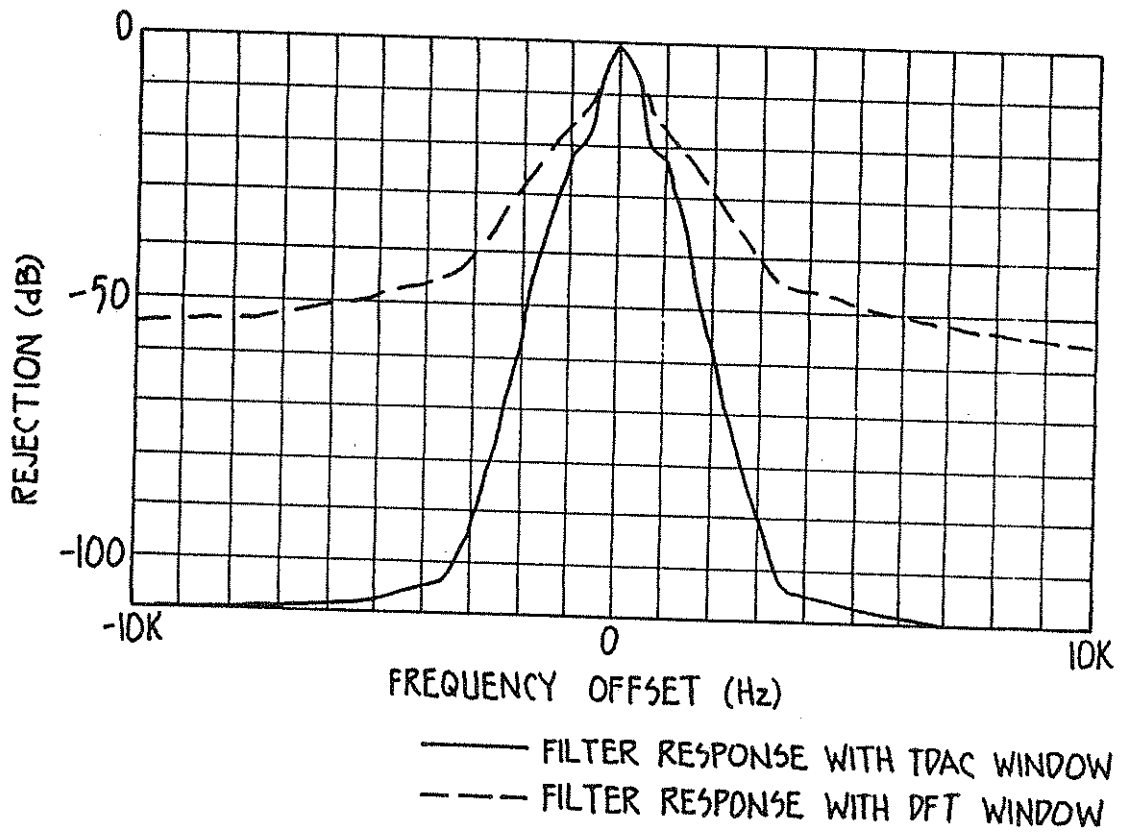


FIG. 24.

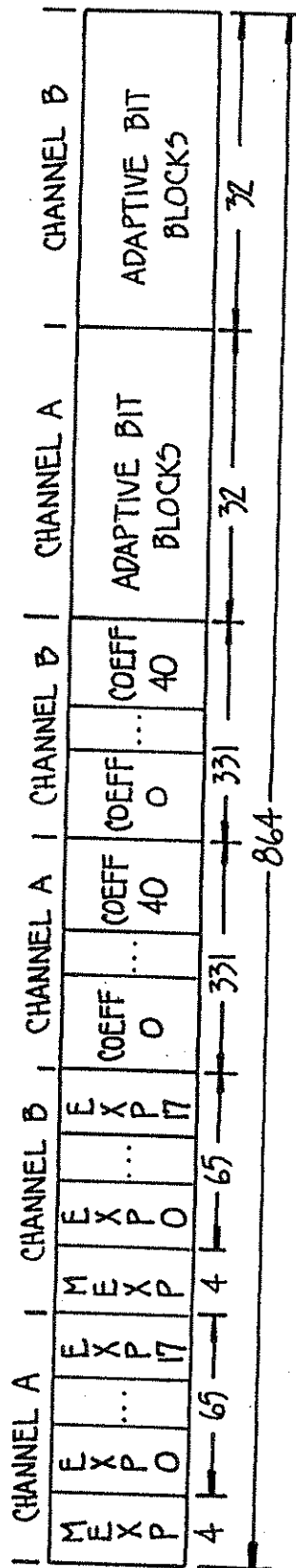
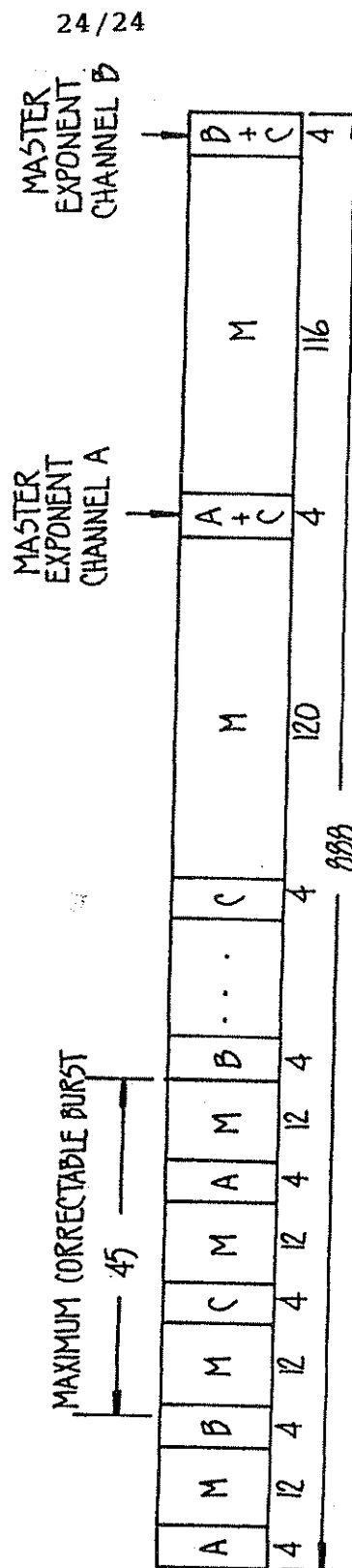


FIG. 25.



A = DATA AND ERROR CHECK BITS FOR R-5 CODE #1

B = DATA AND ERROR CHECK BITS FOR R-5 CODE #2

C = DATA AND ERROR CHECK BITS FOR R-5 CODE #3

M = UNPROTECTED PARTS OF TRANSFORM COEFFICIENT CODE WORDS AND ADAPTIVE BIT BLOCKS

FIG. 26.