Is a critical problem

-> if VR1=∞
    if A≒0V or B≒0V
    log is become extreme value ±Vcc(∞).

Circuit schematic (top left)

Components labeled: U3B, U4B, U5B, U6B, U7B, U8B, D1–D16, R1–R12, VR1 50K, VR2 100K, VR3 200K, C1 47u/25V, C2 0.1u, C3 0.033u, C4 0.1u, C5 47u/25V, R3 10K, R7 10K, R4 1.3K, R5 10K, R9 1.3K, R10 10K, A, B, Z, offset, +Log, -Log, 2.2K

SEE NEXT PAGE
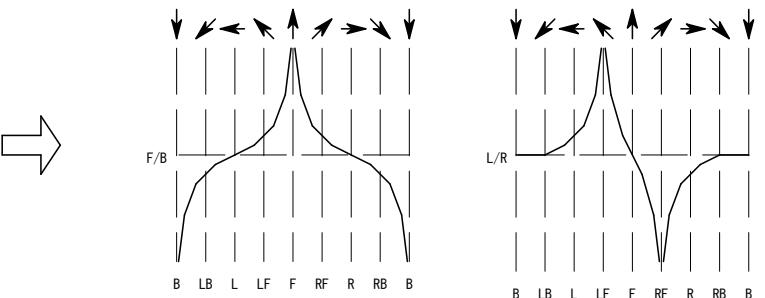
Z : small noize
if A≒0V and B≒0V
    log is become Indefinite (unstable)
    -> Z optimum value, VR2 optimum Balance,
        to log is become 0V (stable)
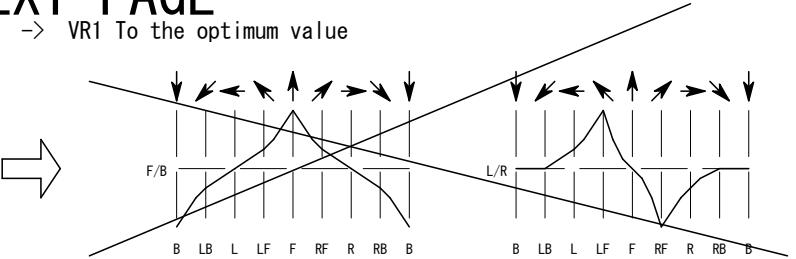
-> VR1 To the optimum value

(F/B and L/R graphs: B LB L LF F RF R RB B)

how do you scale the output of DET to control the phase shifting (0〜90°)?

L/R   +DET -> +DET   phase   90° Lead / 0°

U/D

−DET is the reverse phase. In addition, the same U/D.

how do you scale (0〜0.5) the MIX?

L/R   ABS ->   ABS
        & 1/2

F/B   +DET ->   +DET

U/D   ABS ->   ABS
        & 1/2

F/B   Revres   +DET
        & +DET

SUM ->   Bmx   Mix   0.5 / 0
& level
 shift
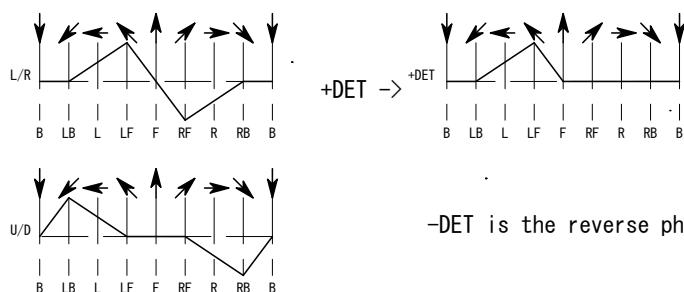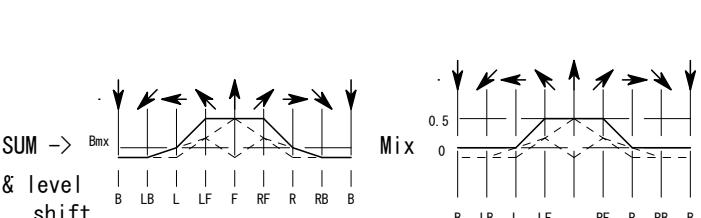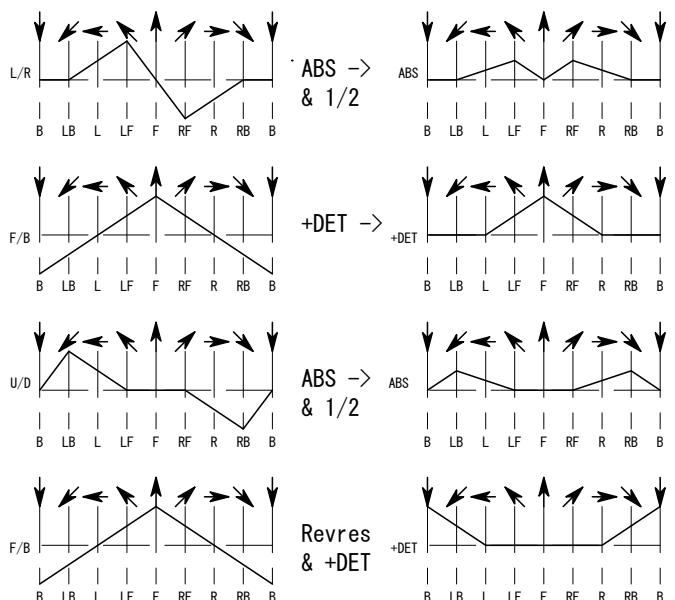
In addition, the same Fmx.

Supplemental
    Actually,   In fact, because it is asymmetrical, will not be able to detect it correctly.

Shaping circuit

Z : small noize
if A≒0V and B≒0V
    log is become Indefinite (unstable)
    -> Z optimum value, VR4 optimum Balance,
       to log is become 0V (stable)

Is a critical problem

if A≒0V and ±B≫0 or B≒0V and ±A≫0
    log is become extreme value ±Vcc(∞).

-> if Shaping circuit not exist
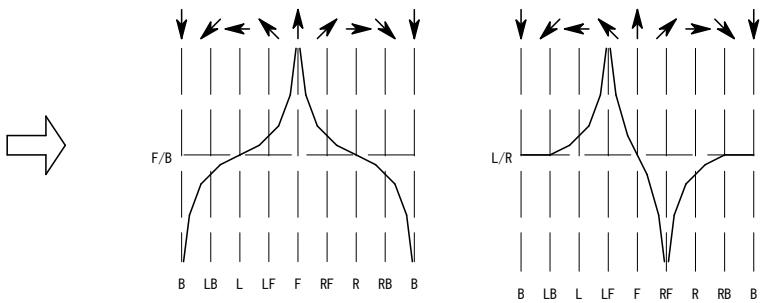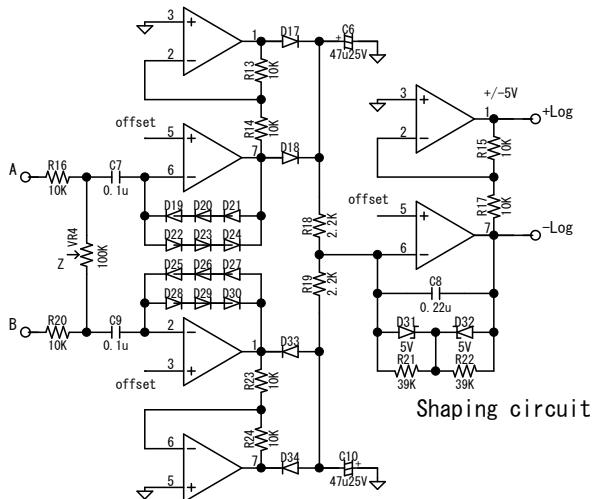
-> if Shaping circuit exist
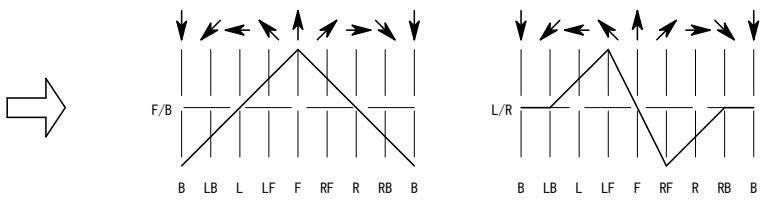
how do you scale the output of DET to control the phase shifting (0〜90°)?

+DET ->

phase

−DET is the reverse phase. In addition, the same U/D.

how do you scale (0〜0.5) the MIX?

ABS ->
& 1/2

+DET ->

ABS ->
& 1/2

Revres
& +DET

SUM ->
& level
shift
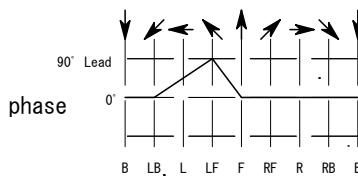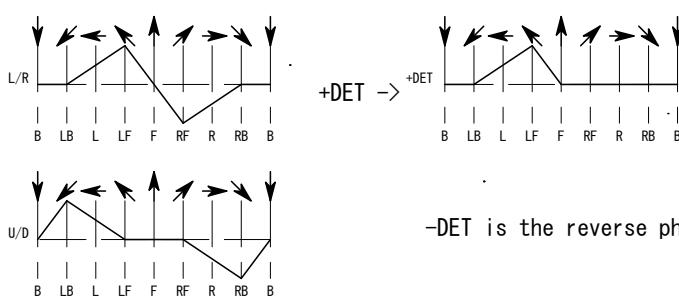
Mix
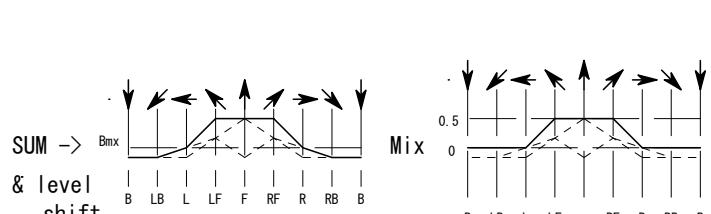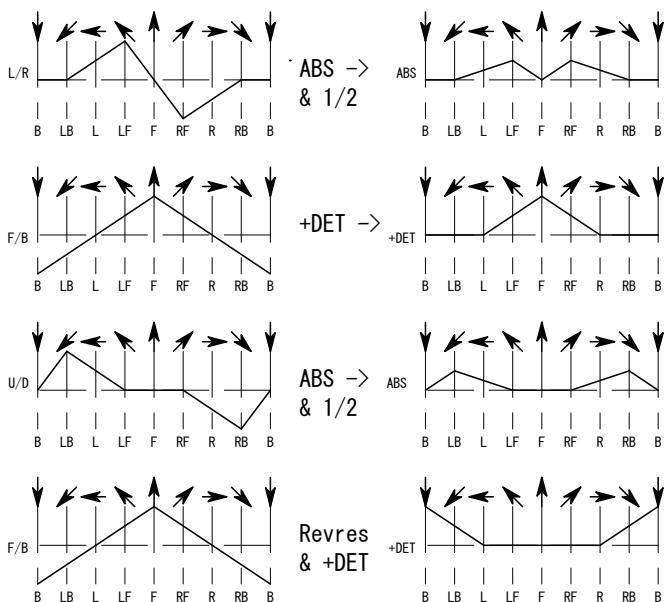
In addition, the same Fmx.

Supplemental
    Actually, In fact, because SQ system itself is asymmetrical, will not be able to detect it correctly.