

National Radio Astronomy Observatory
Tucson, Arizona

November 16, 1987

MEMORANDUM

TO: Darrel, Andy
FROM: John *John mt*
SUBJECT: Sideband Smear

Attached is what I think we want to do for sideband smear tests. Could we get together sometime today and firm things up and correct any mistakes?

/mt

Attachments

SIDEBAND SHEAR (ROUGH IDEAS)

JP

TEST 1

DRIVE FLUKE 1
LEAVE FLUKE 2 AT 100 MHz
DRIVE FLUKE 3

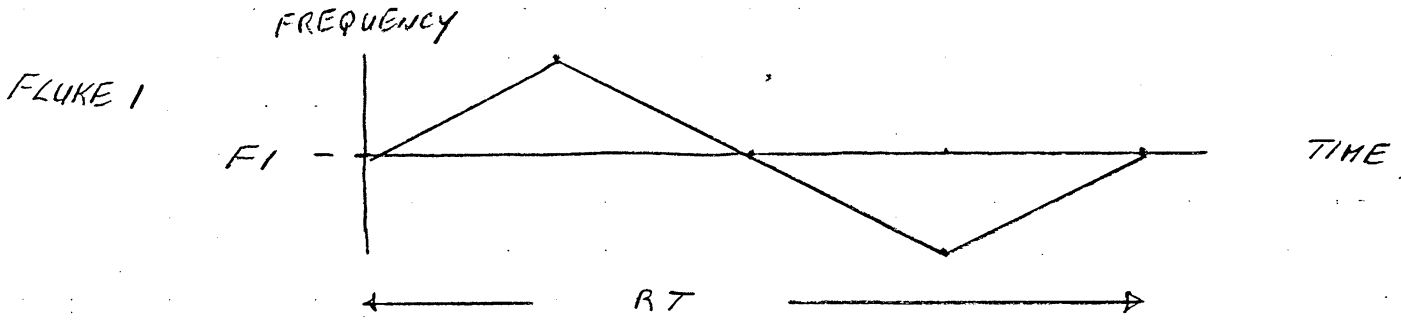
ACCEPT THE FACT WE WILL HAVE NO DOPPLER CORRECTION FOR THIS TEST. MANUALLY CALCULATE FREQUENCY OF FLUKE 1. (F1)

ENTER

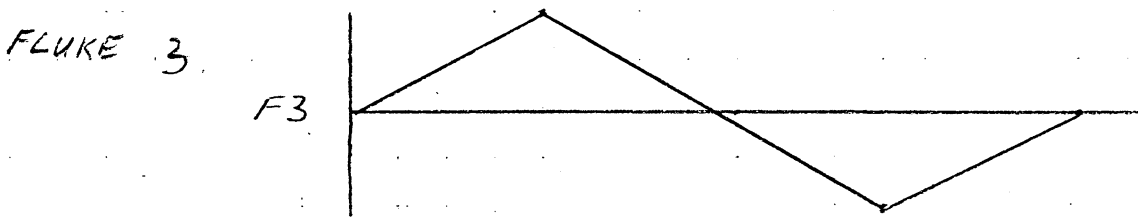
N = MULTIPLIER# (+ OR -)
F₁ = CENTER FREQUENCY
F_s = STEP SIZE
T = STEP TIME
R = NO OF STEPS / CYCLE
n = HARMONIC #

TYPICAL VALUES

3
100 MHz
1 MHz
100 ms
100
45



FREQUENCY CHANGE AT EACH STEP FOR FLUKE 1 = $\frac{F_s}{N \times n \times 20}$ AS ABOVE



FREQUENCY CHANGE AT EACH STEP FOR FLUKE 3 = $\frac{F_s}{36}$

TEST 2

LEAVE FLUKE 1 TO BE DRIVEN BY FORTH.
DRIVE FLUKE 2
DRIVE FLUKE 3

CHANGE FREQUENCY AS TEST 1
NOW EACH STEP AT FLUKE 2 IS

$\frac{F_s}{N}$ AND EACH STEP AT FLUKE 3

IS $\frac{F_s}{36}$ (MAYBE A MINUS SIGN)

