

Measurement of Analog Filter Rack Sampler/Filter Module Gains

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On October 28, 2003 gain measurements of the sampler/filter modules were made in the GBT Equipment Room. Figure 1 shows and describes the test setup. Table 1 gives the Sampler/Filter module serial numbers in place at the time of measurement.

Table 1
Sampler/Filter Module
Serial Numbers

Module	Serial Number
1	4
2	2
3	3
4	7
5	8
6	6
7	1
8	5

Four plots were made for each module: With 0.5dB/ and 5dB/ vertical resolution for both the 200 and 800MHz filters selected. The measurements were made from the Converter Rack A module outputs, to the end of the cables which connect at the top of the Spectrometer Rack.

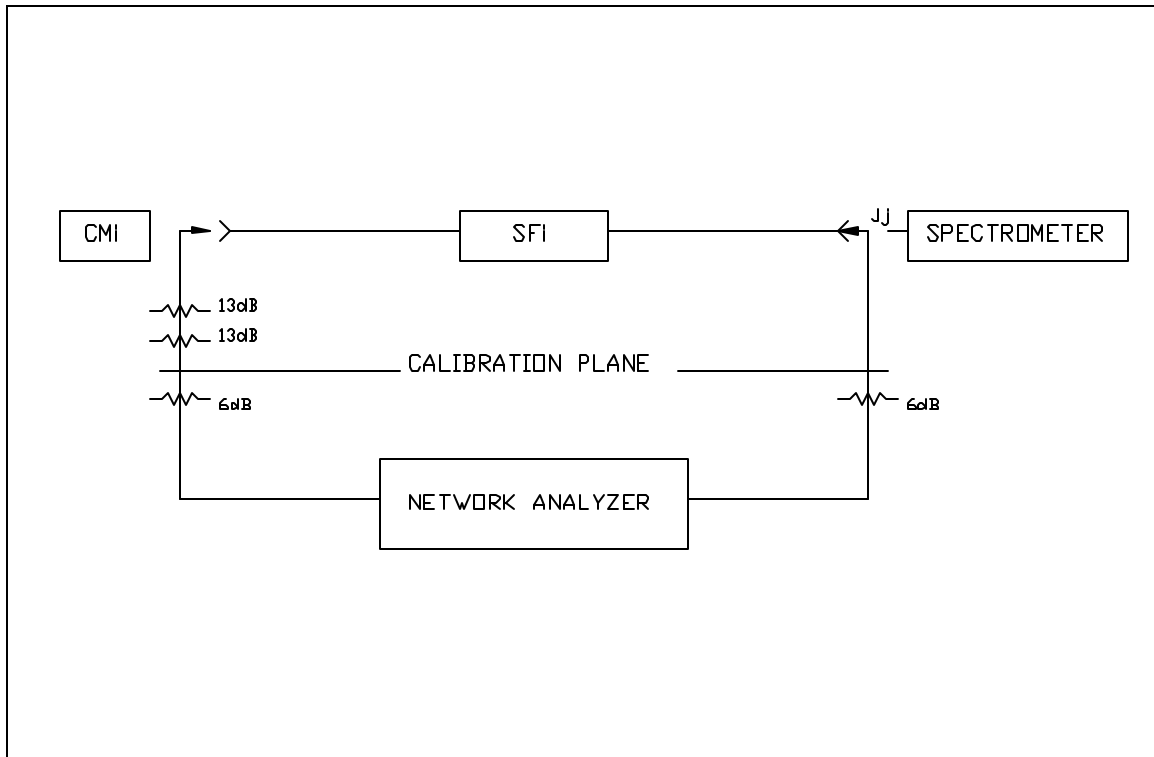
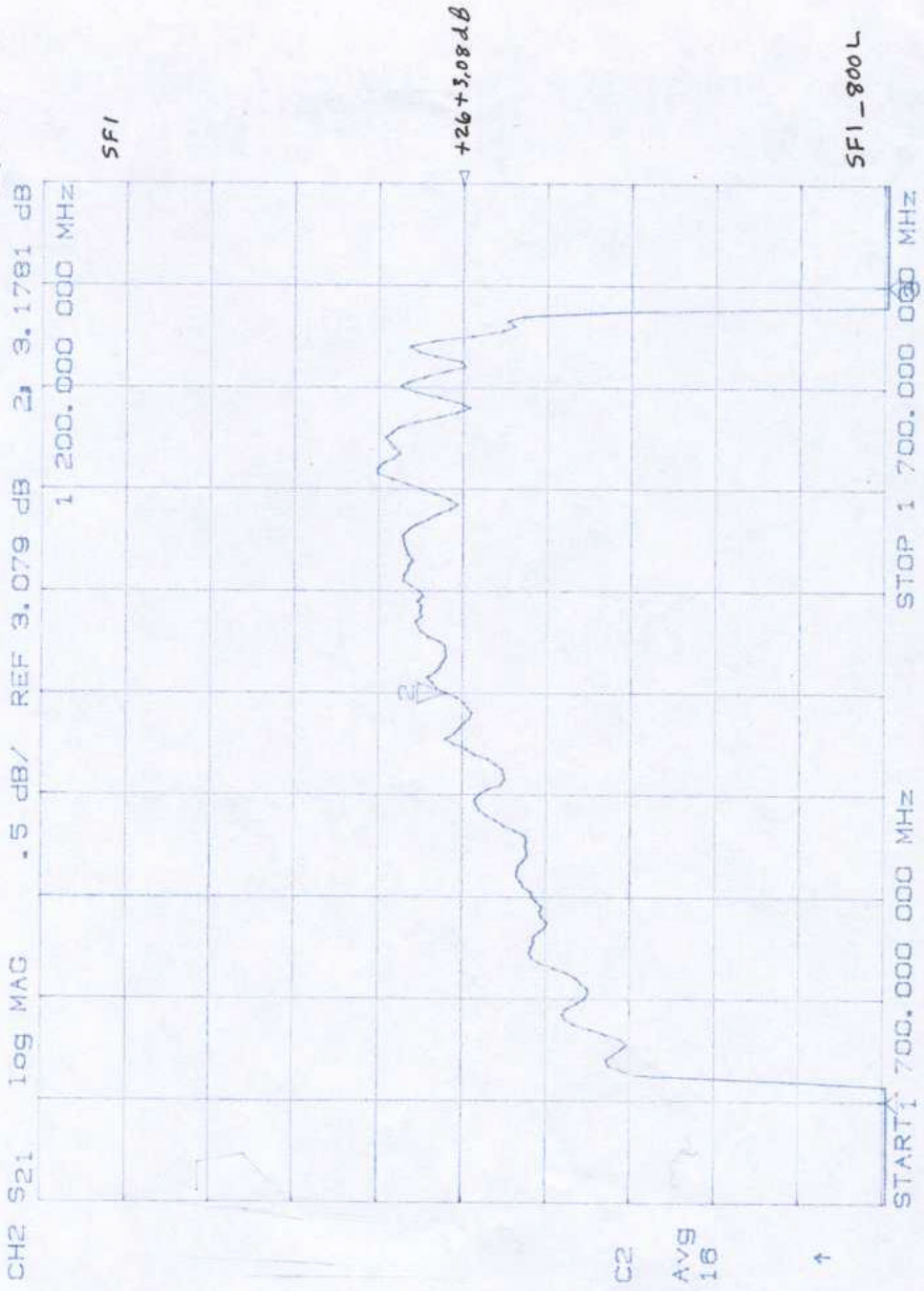


Figure 1: The test setup consists of a HP8753A network analyzer. A two-port calibration was done at the end of long cables necessary to reach the desired connection points. 6dB pads were included with the test cables to improve the match at these points. The system cables which connect the Converter Modules to the Sampler/Filter Modules, and the Sampler/Filter Modules to the Spectrometer inputs are included in the gain measurement. Two 13dB pads are connected to the SF input port so that the SF total power meter read near 1V at midband. Therefore, 26dB must be added to the measured gains. For example, on the SF1_800H plot, the gain at marker 2 is $26 + 3.1989 = 29.1989$ dB. (The marker 2 reading is printed at the top right corner of the plots.)

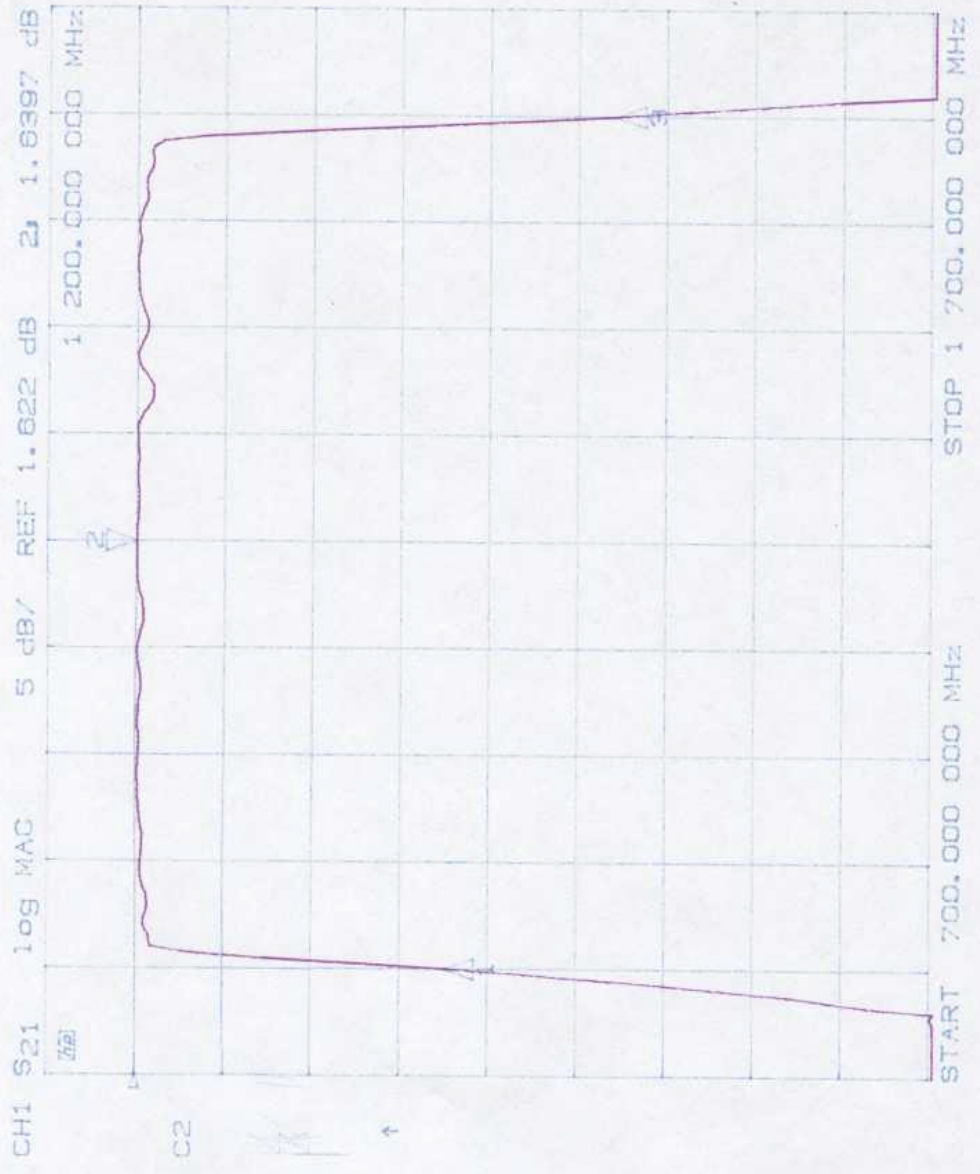


10/27/03



10/27/03
SF 2
(CH2 → HSS3)

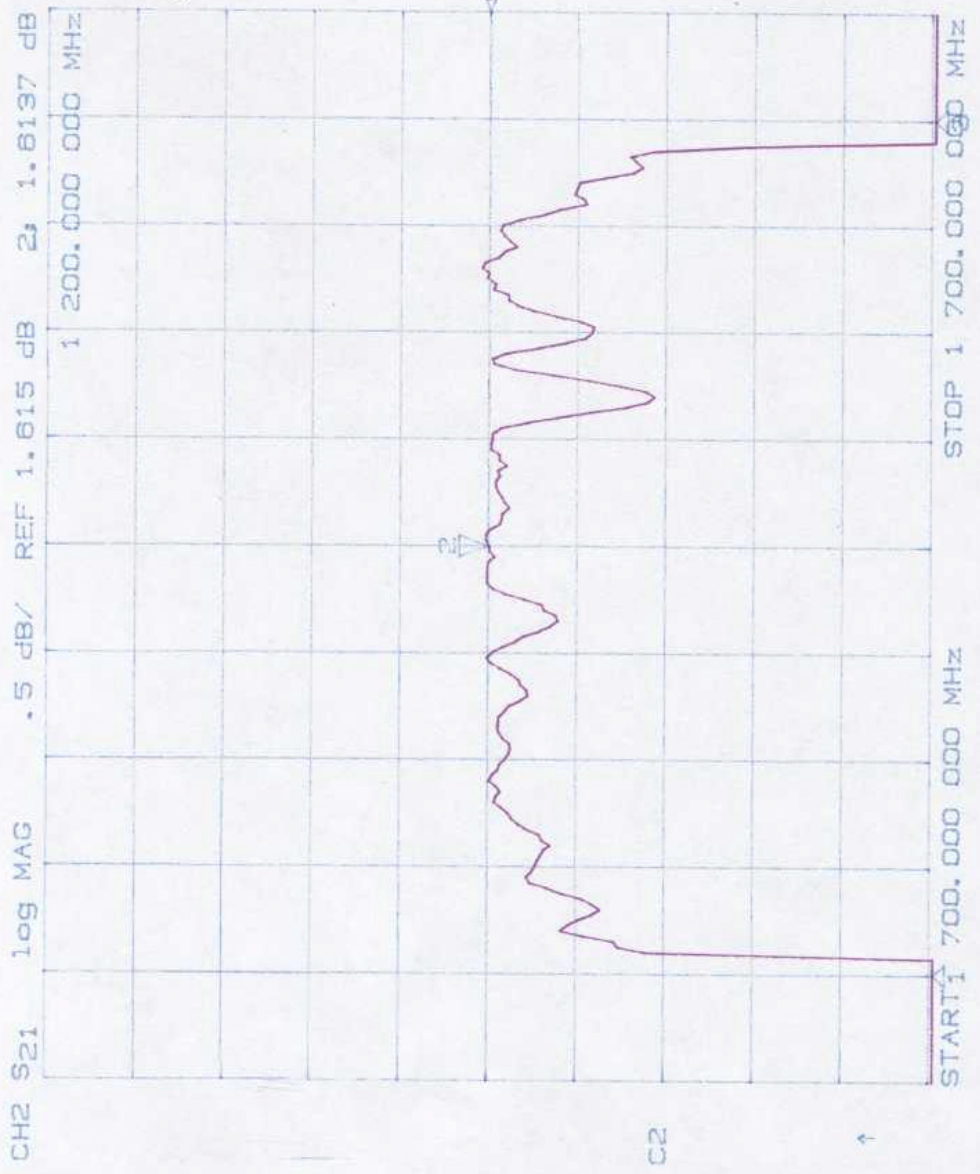
SF2_800 H

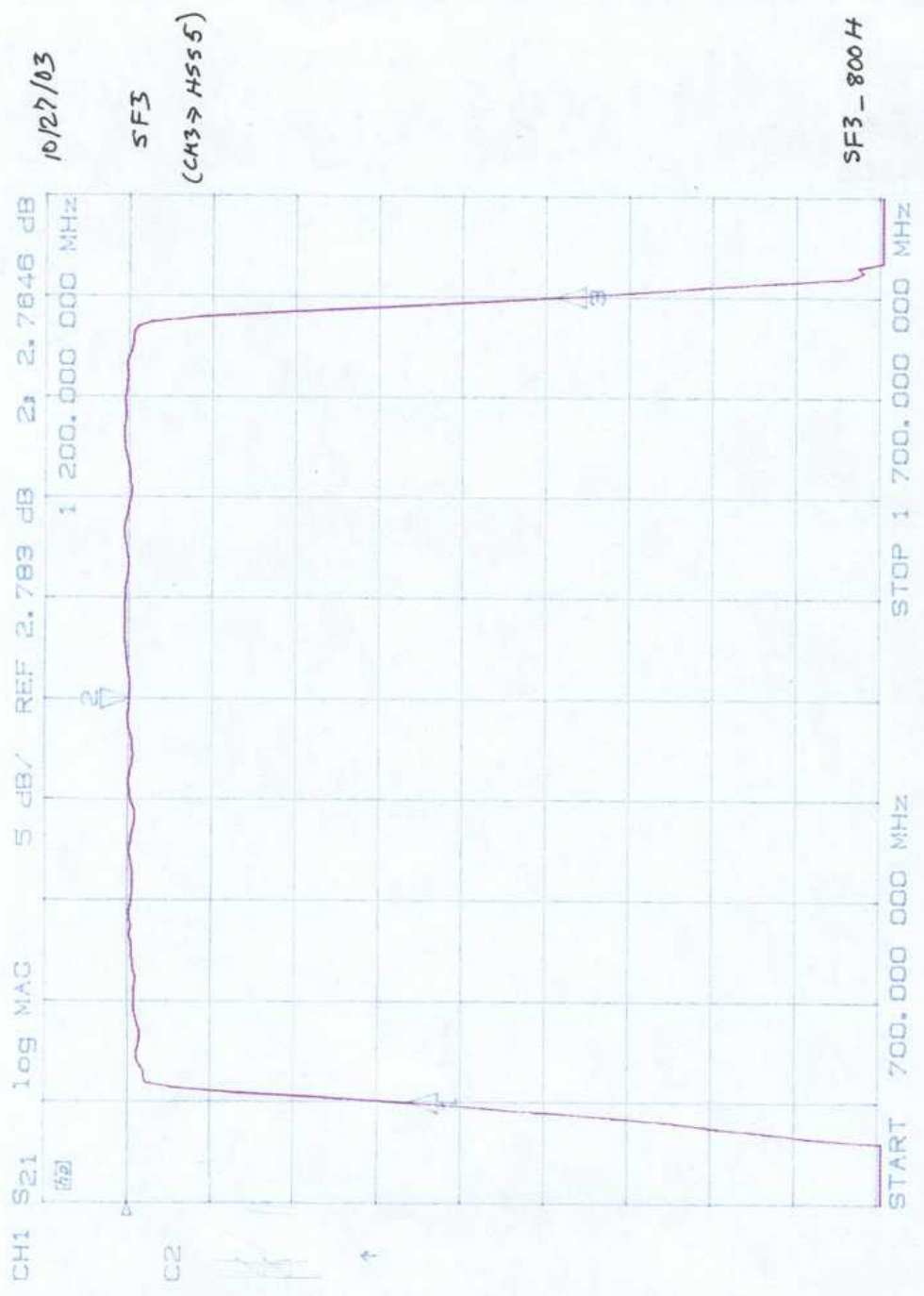


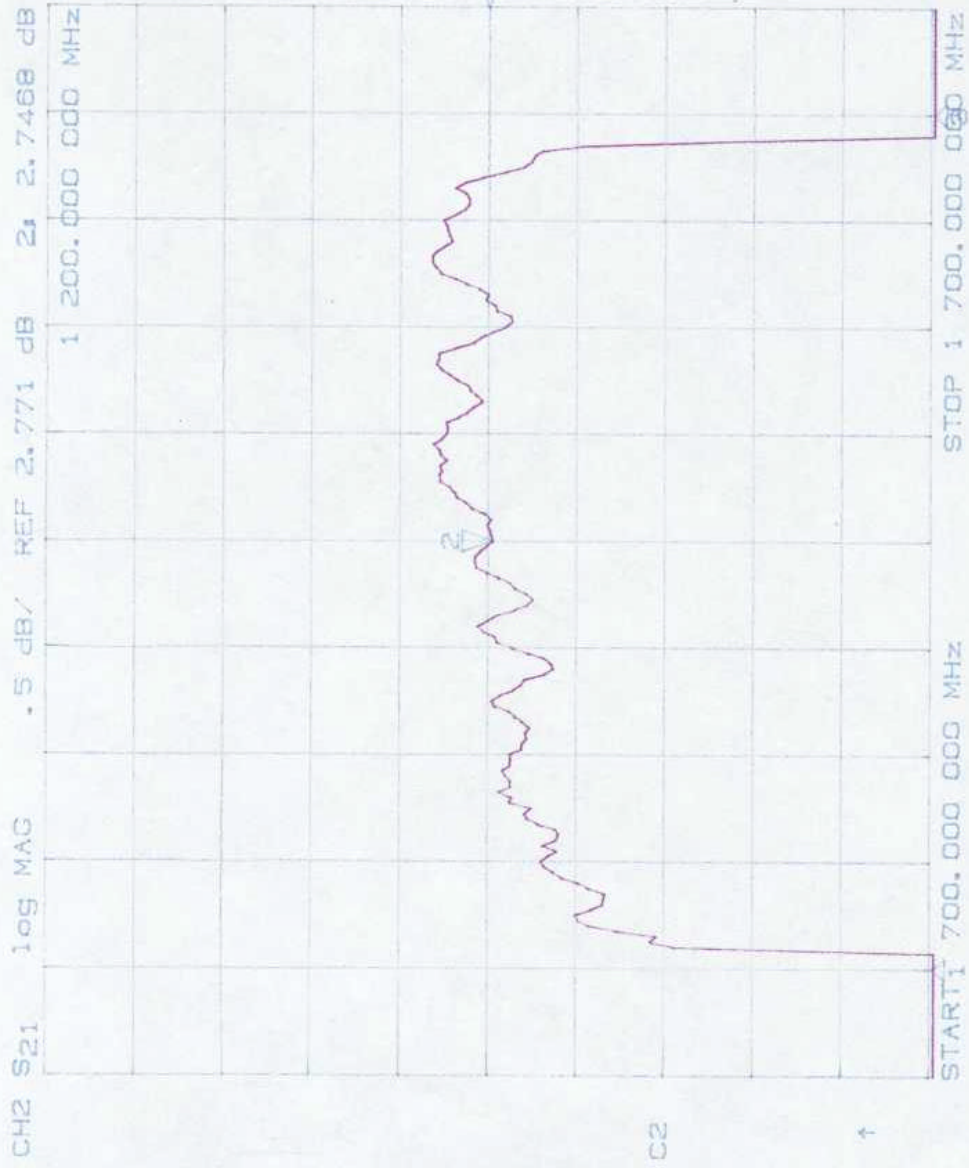
10/27/03

SF2
(CH2 → HSS3)

SF2 - 800 L





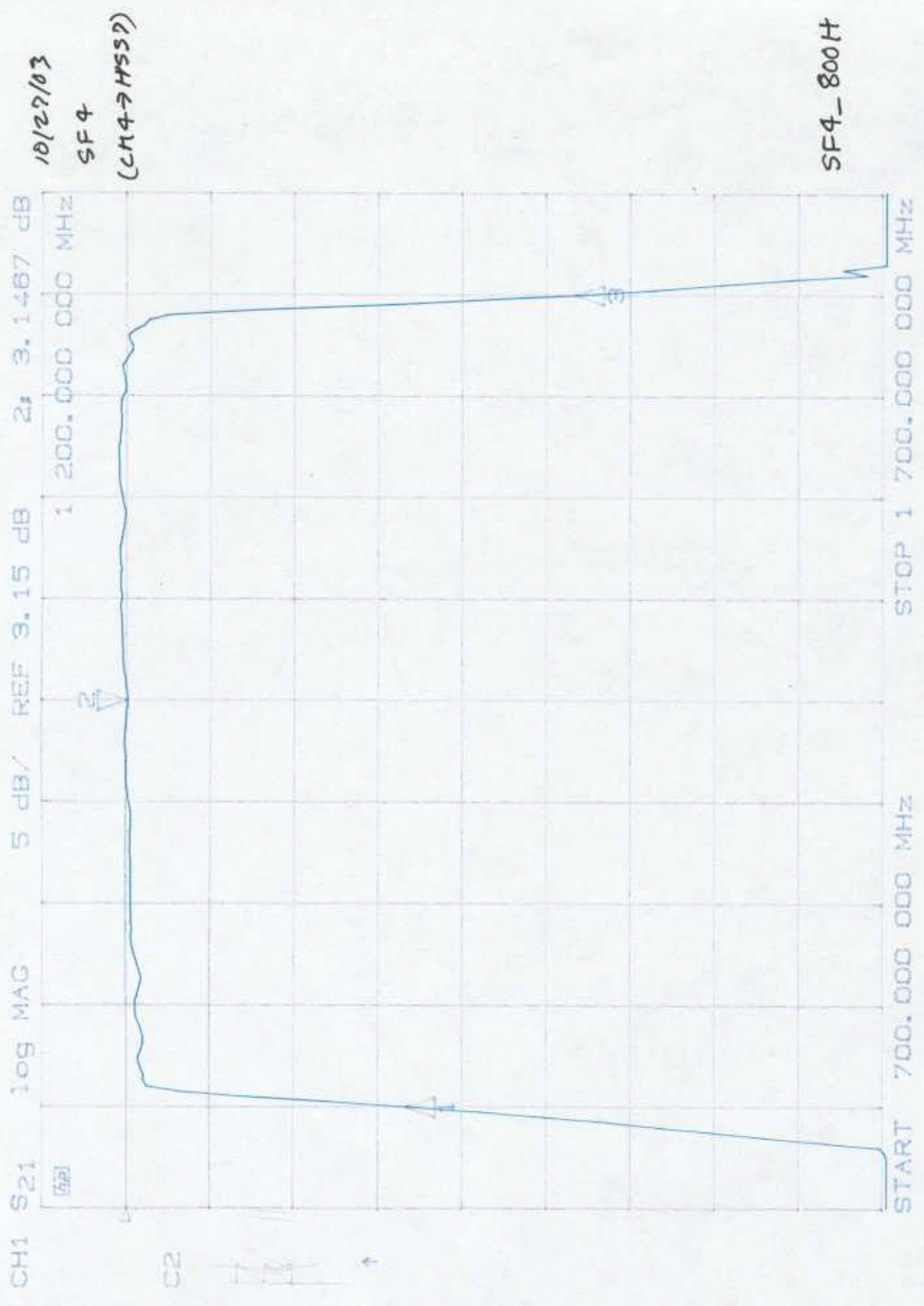


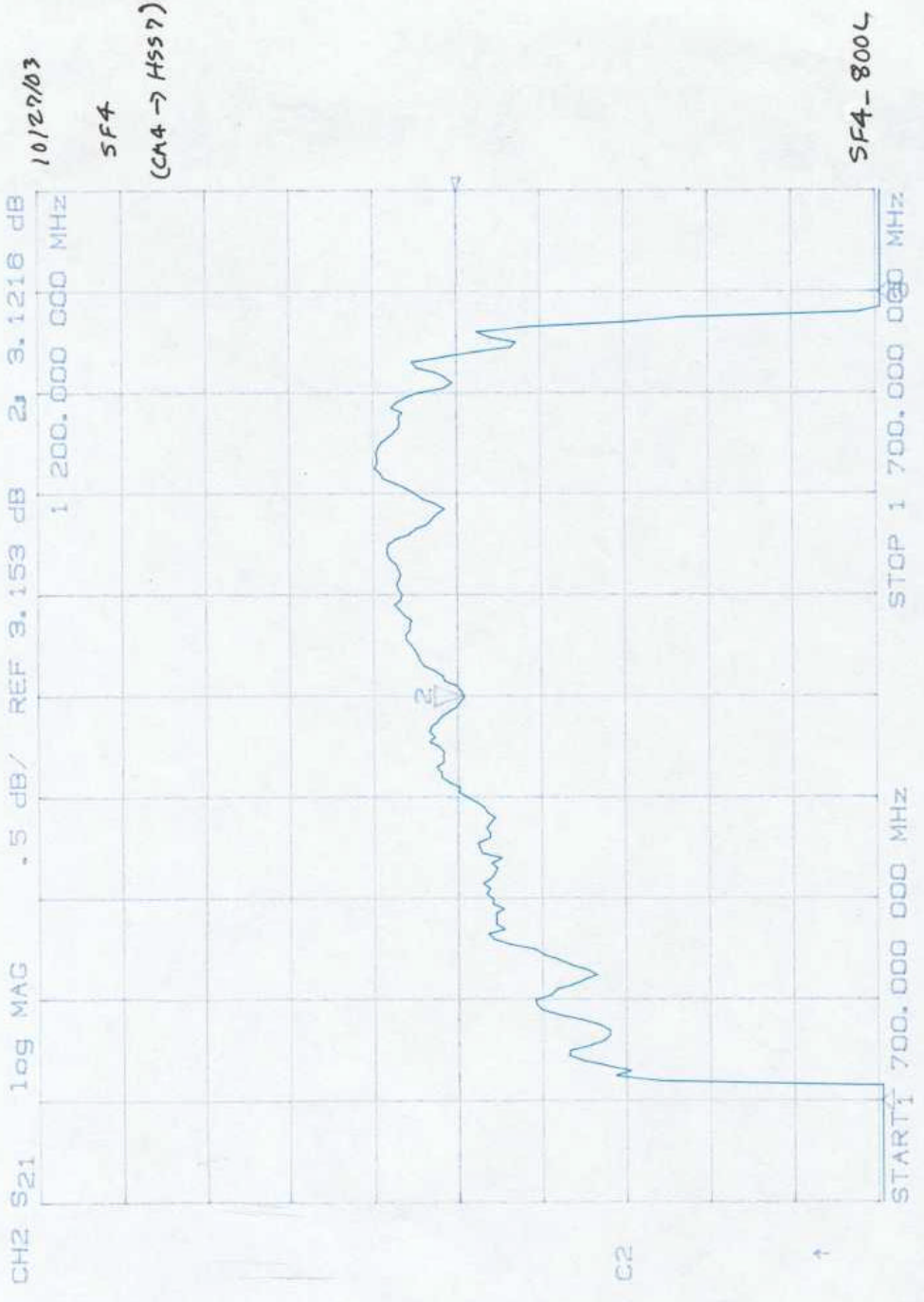
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SF3

(CH3 → H555)

SF3 - 800 L



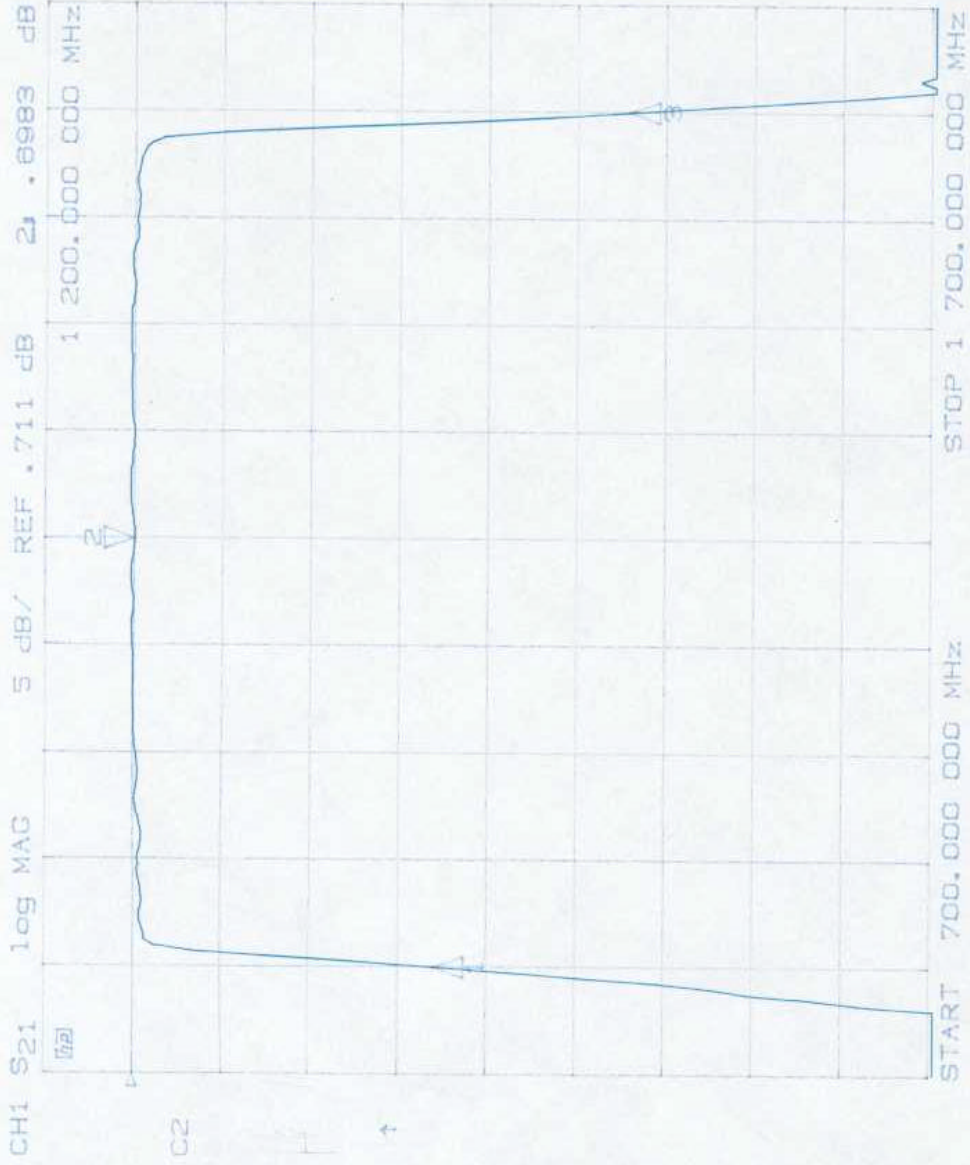


10/25/03

SFS

CH5 → H552

SF 5_800 H

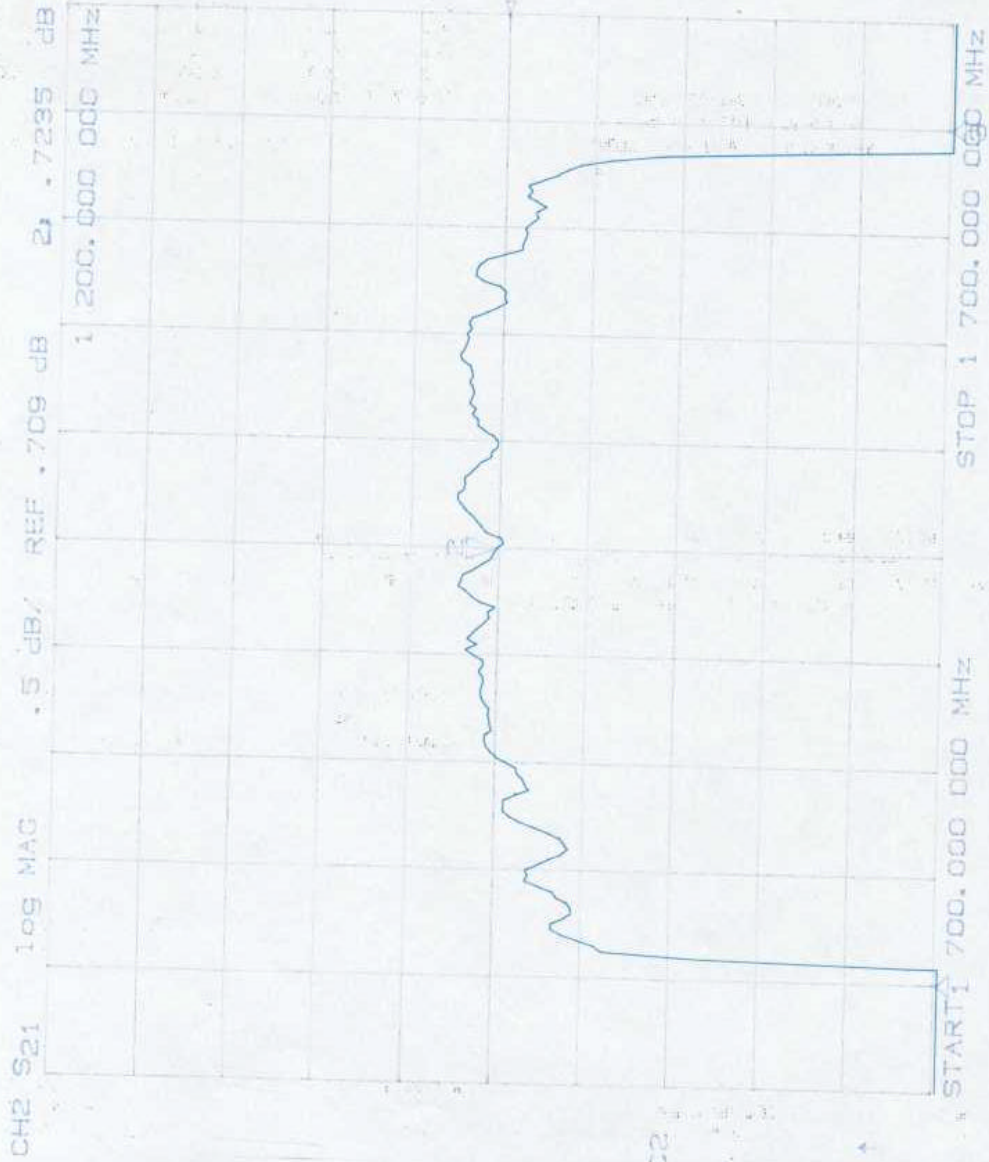


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SFS

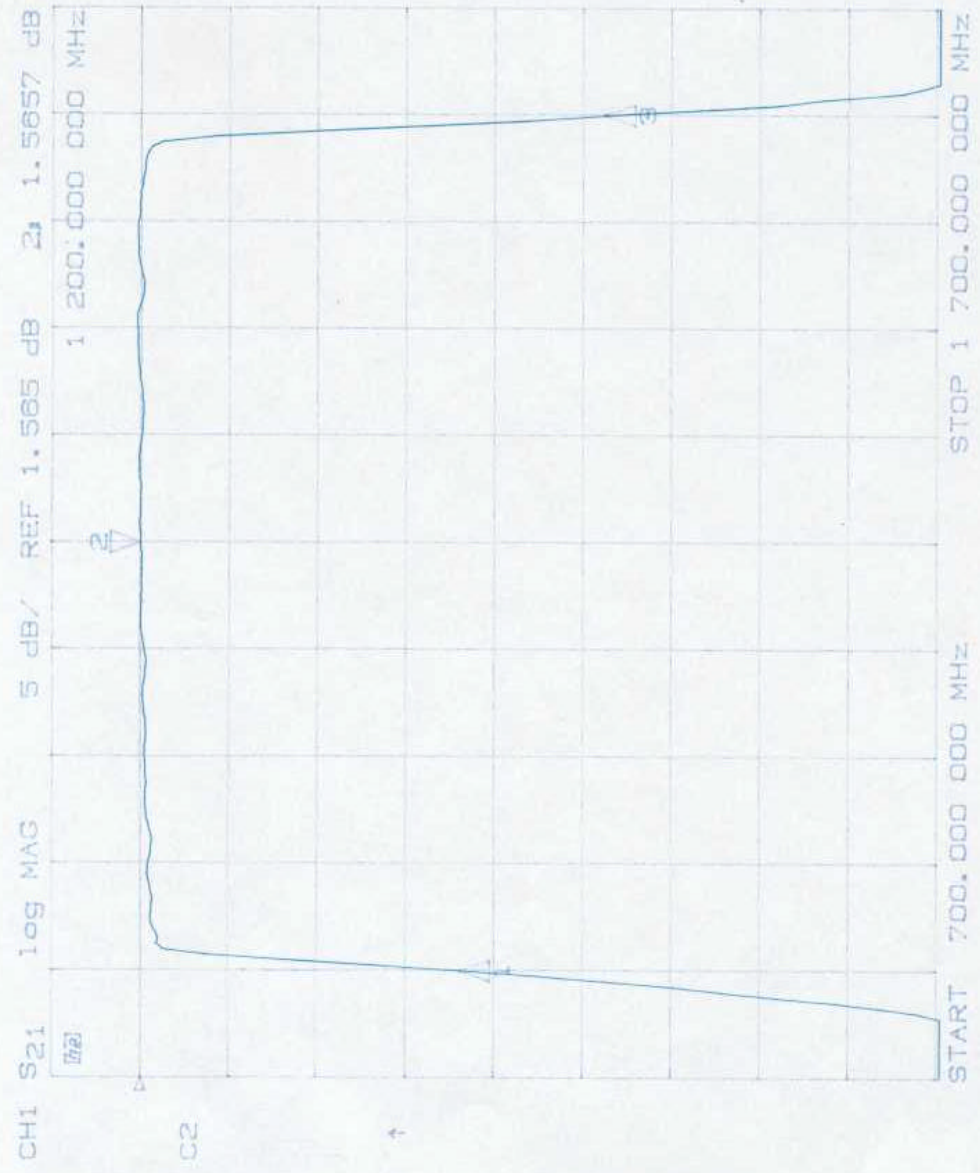
CM5 → HSS2

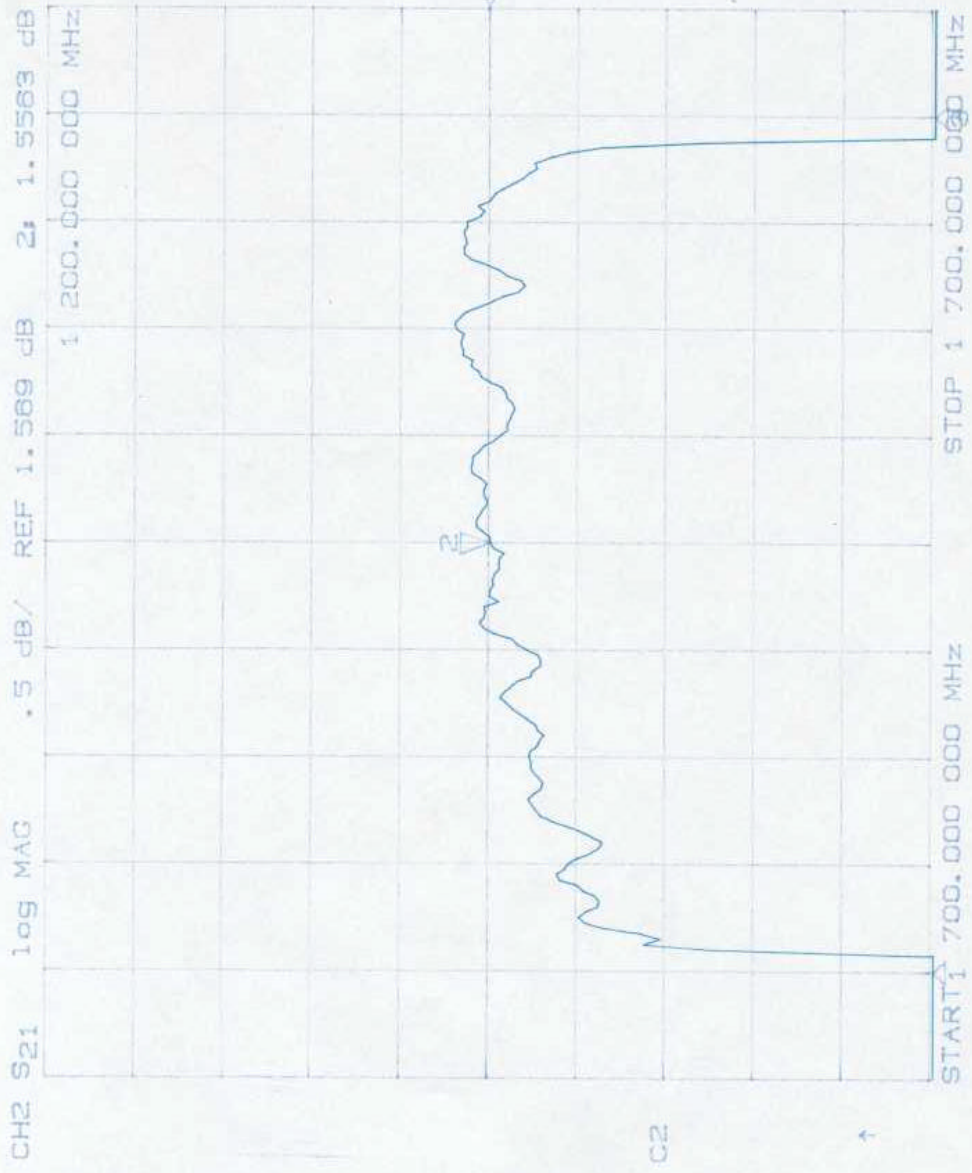
SF5_800L



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SF6
CM6 → H559

SF6 - 800 H





10/27/03

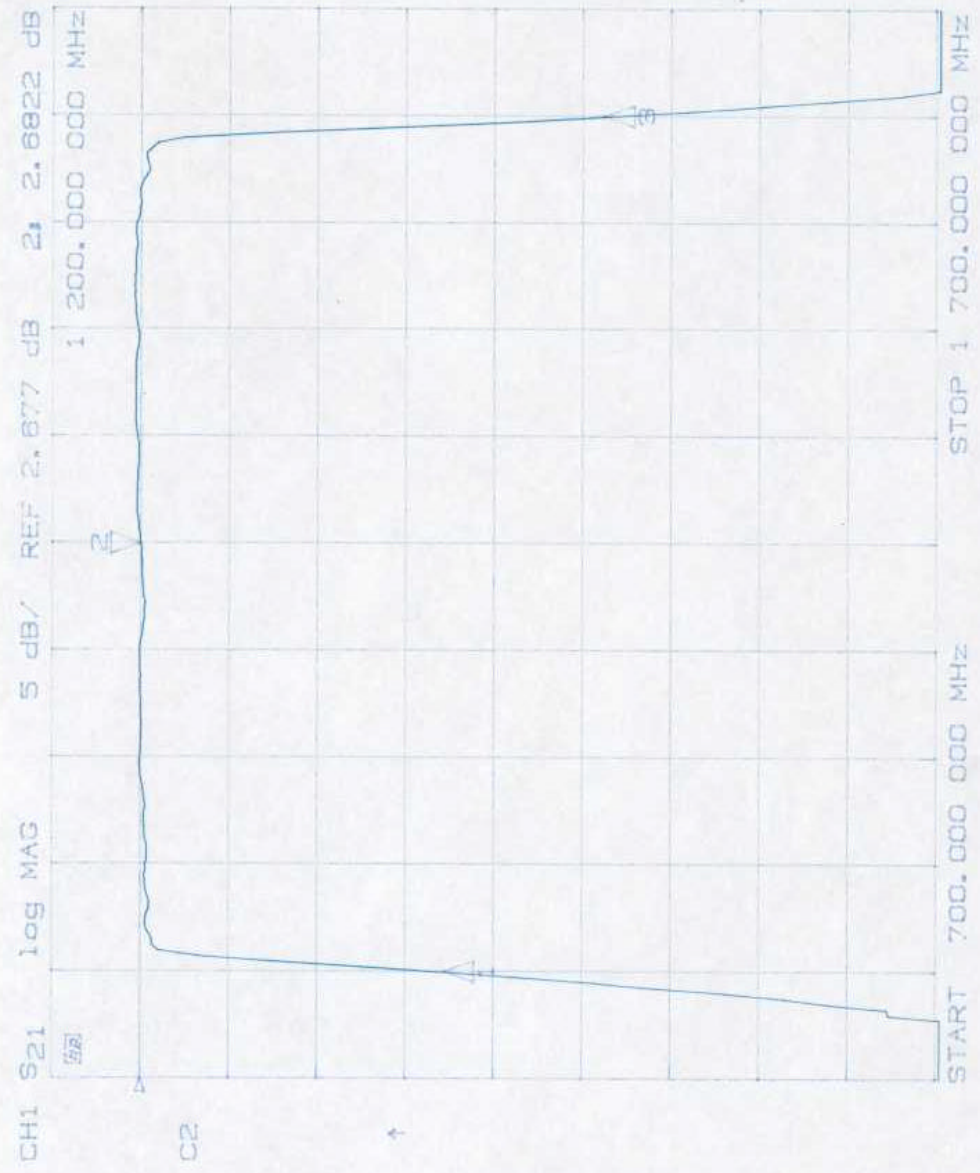
SF 6

CM6 → HSS 4

SF6 - 800 L

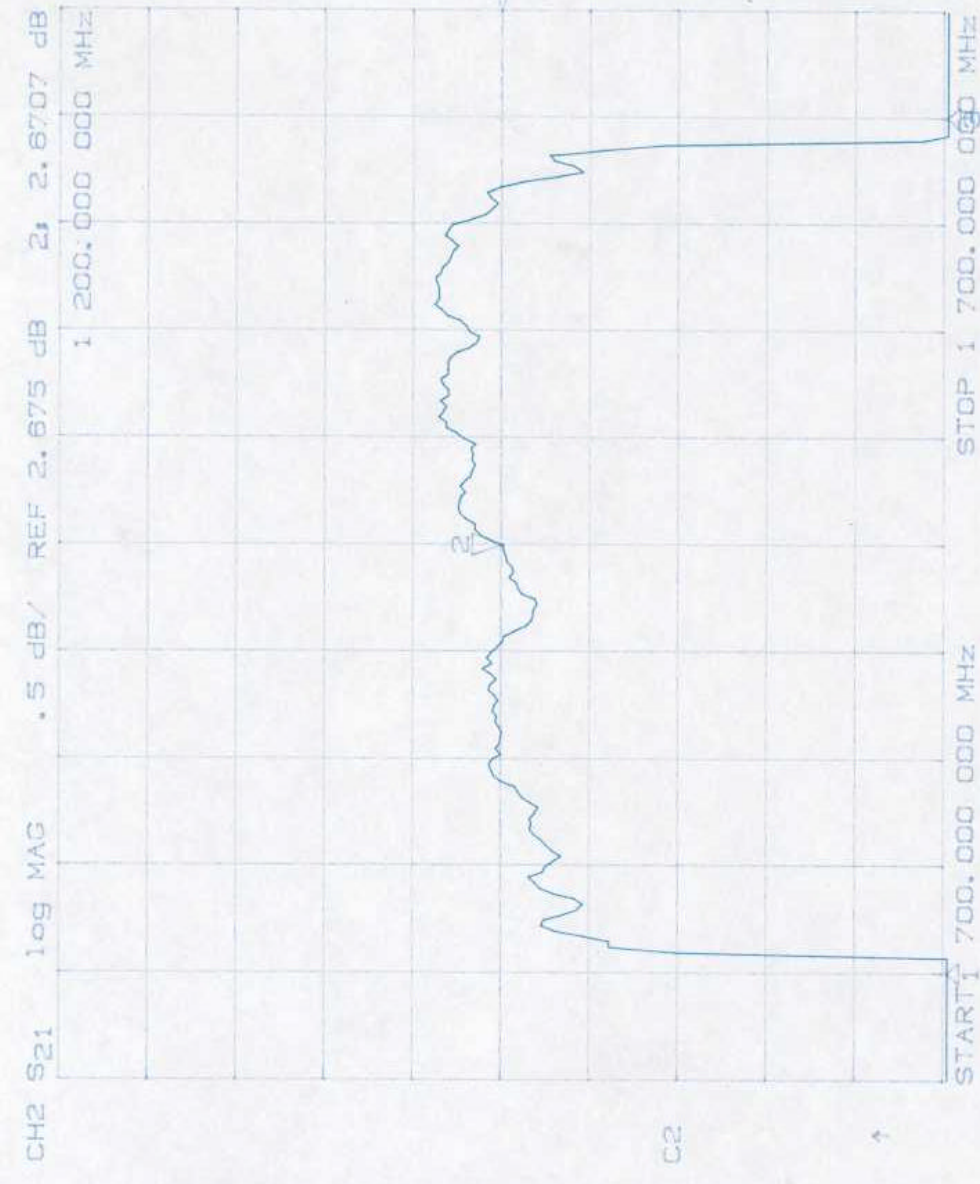
10/27/03
SF 7
CM7 - HSS G

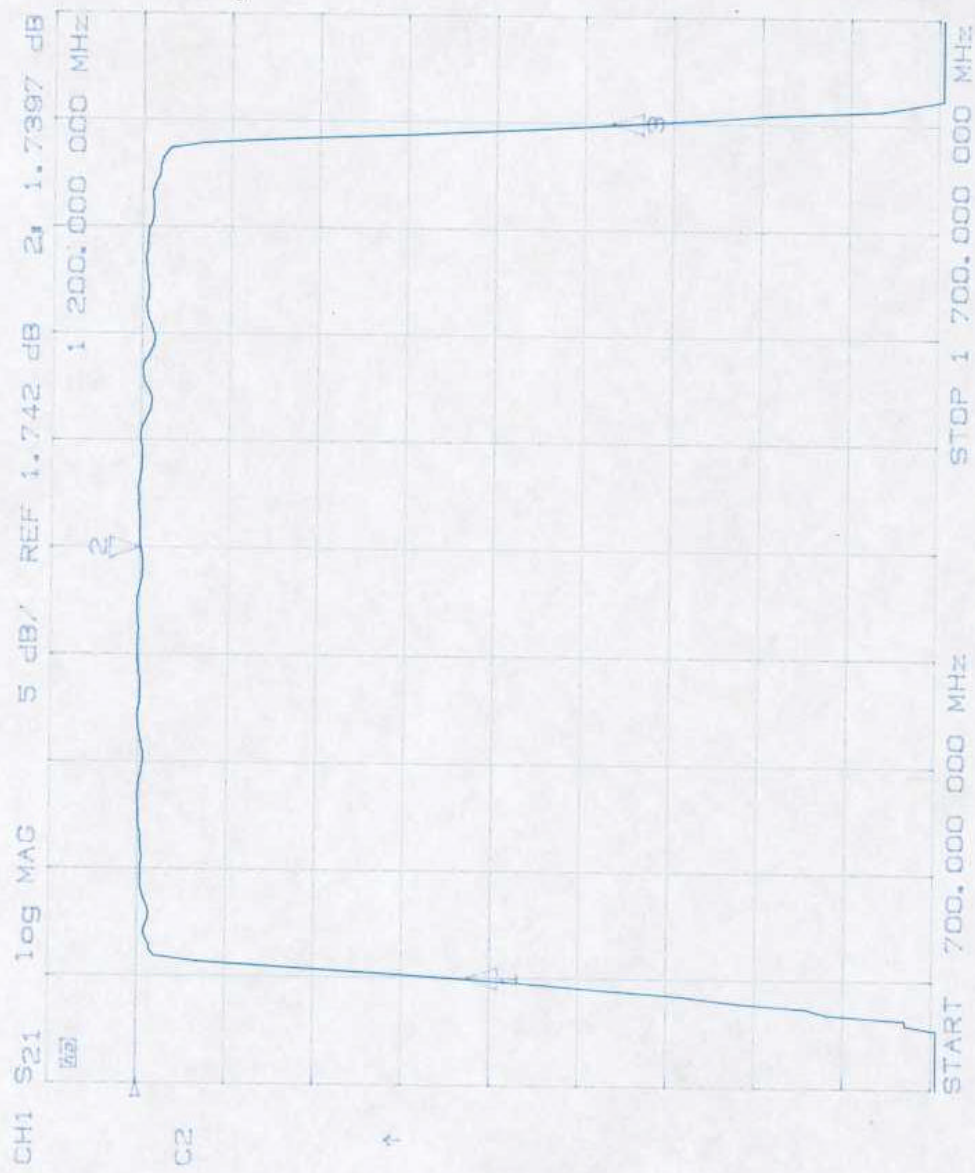
SF7_800 H



10/27/03
SF7
CM7-H556

SF7-800L



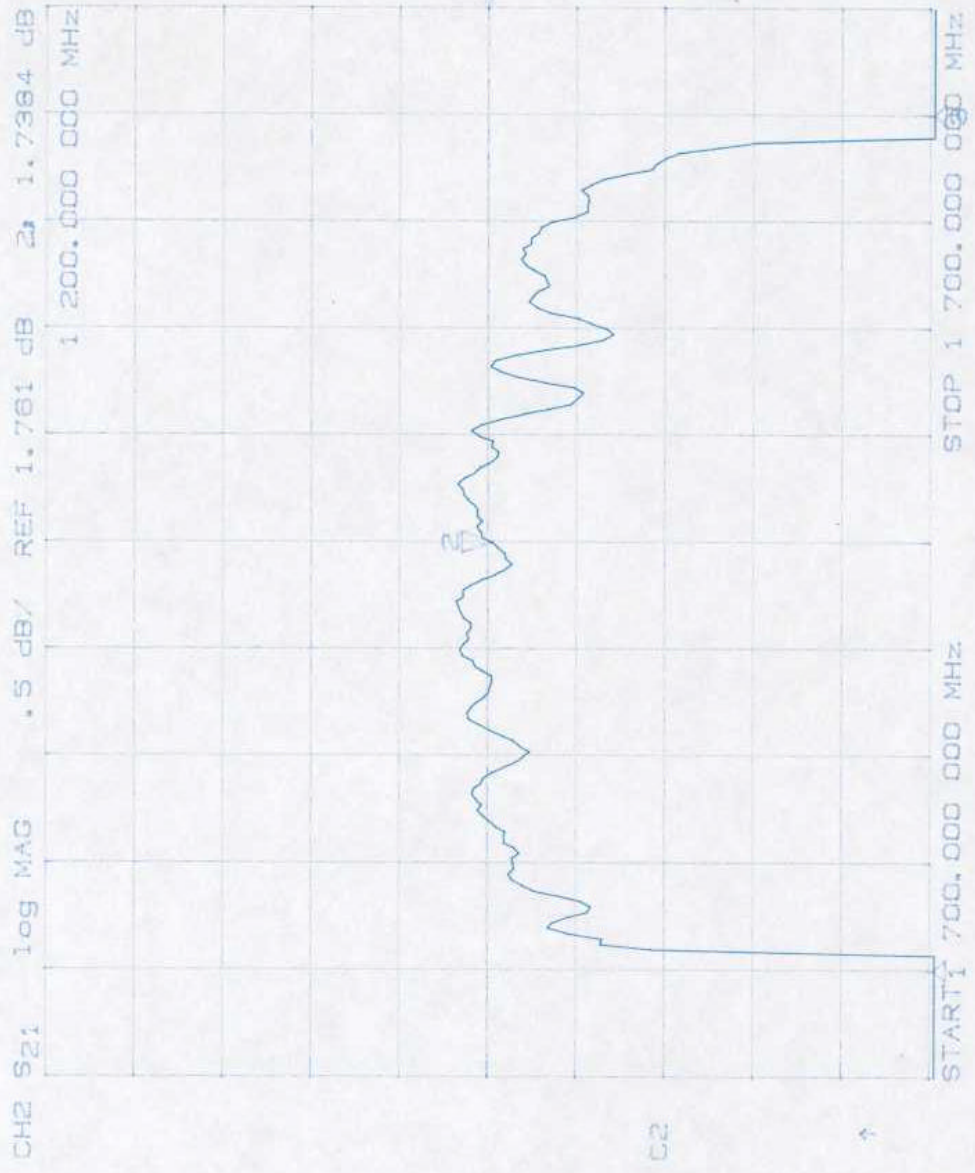


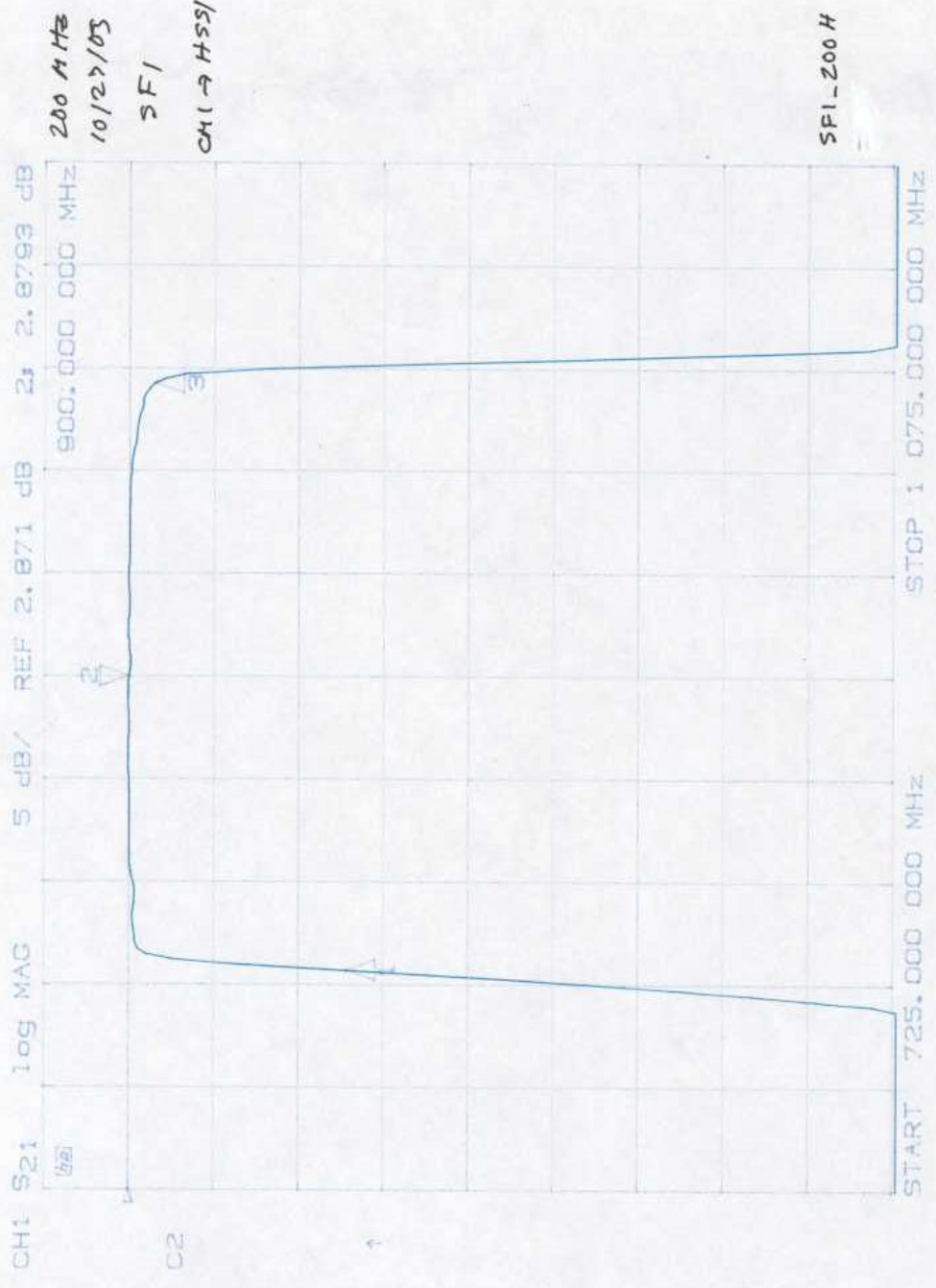
10/27/03

SF 8

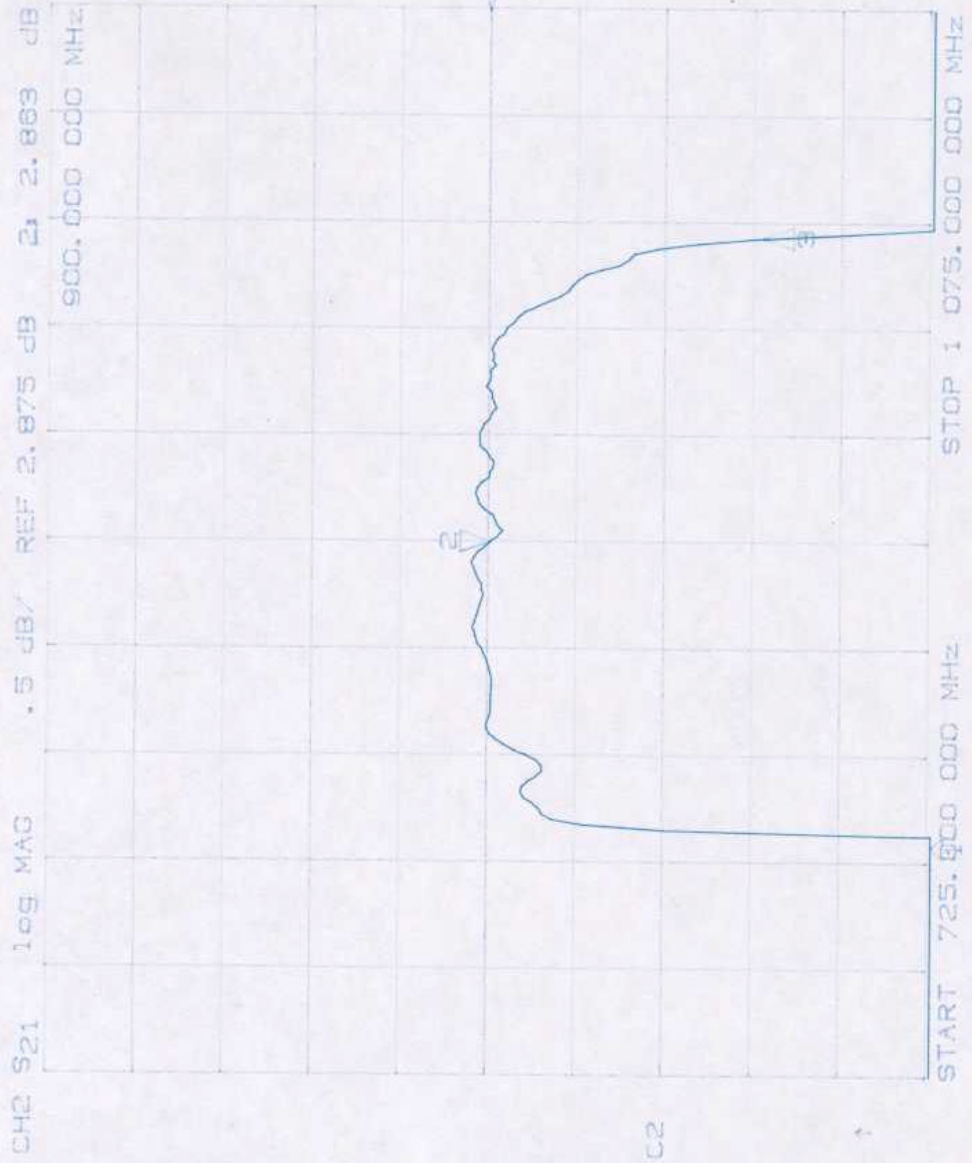
CA8 → H558

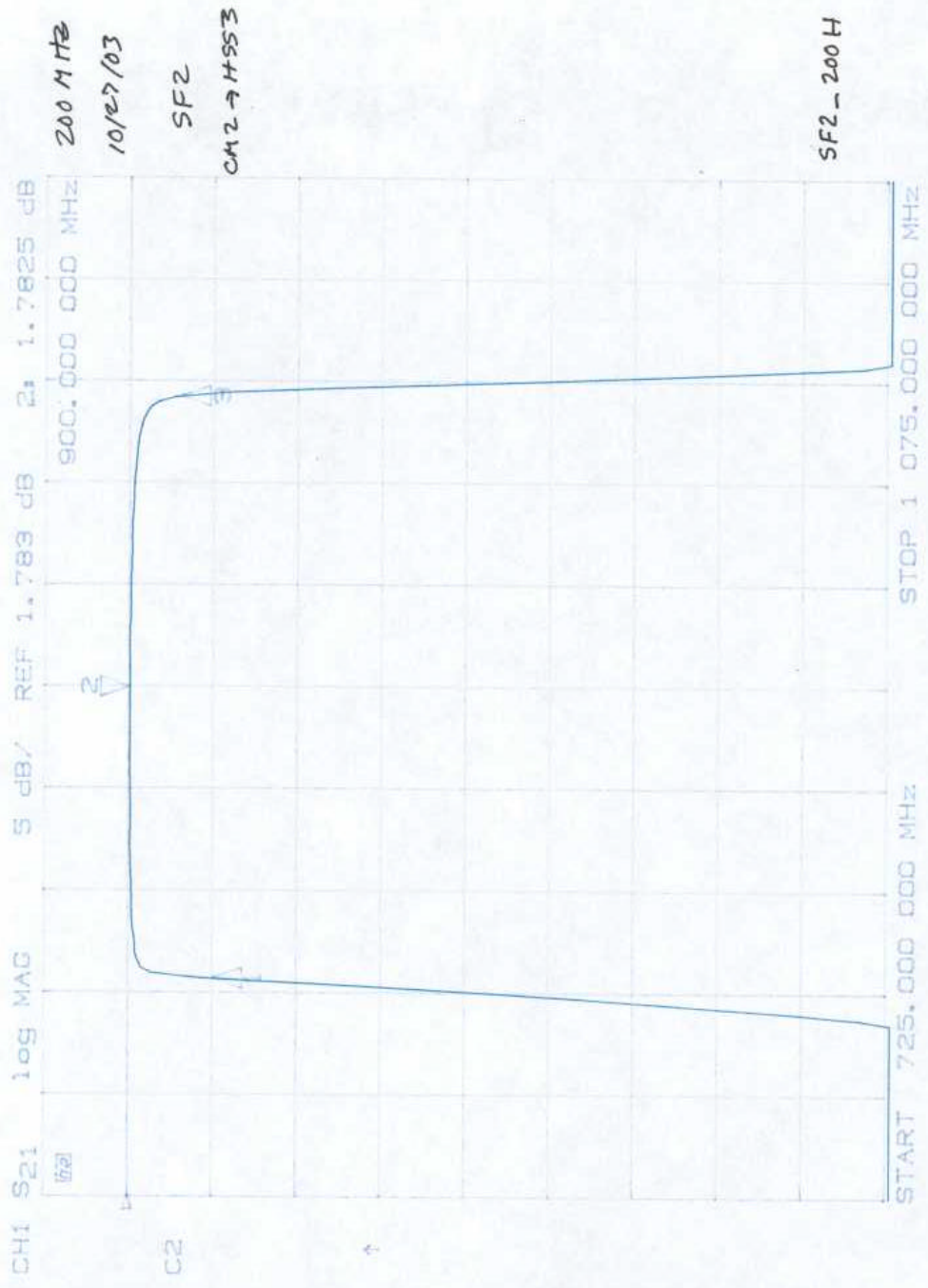
SF 8 - 800 L





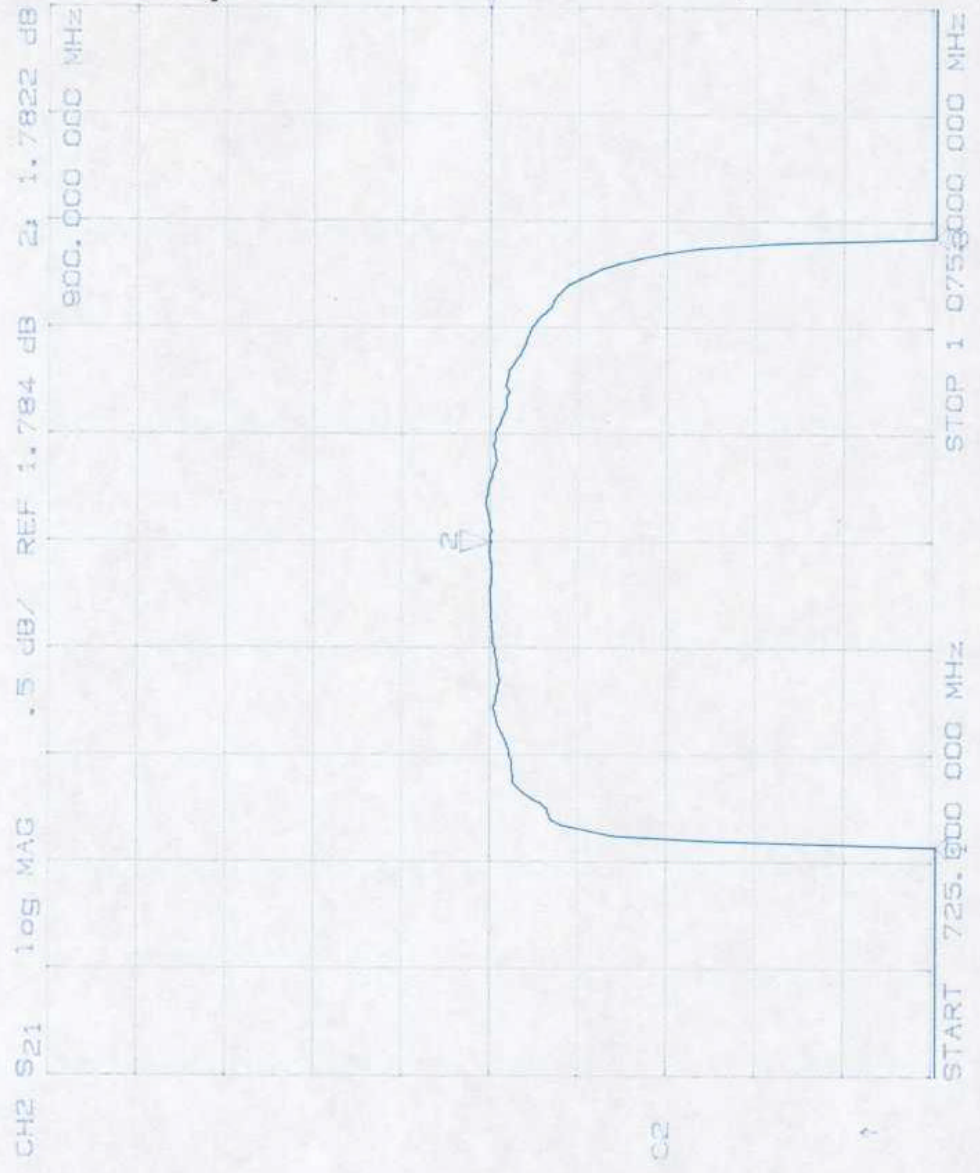
200 MHz
10/27/03
SF1
CH1 → HSSI

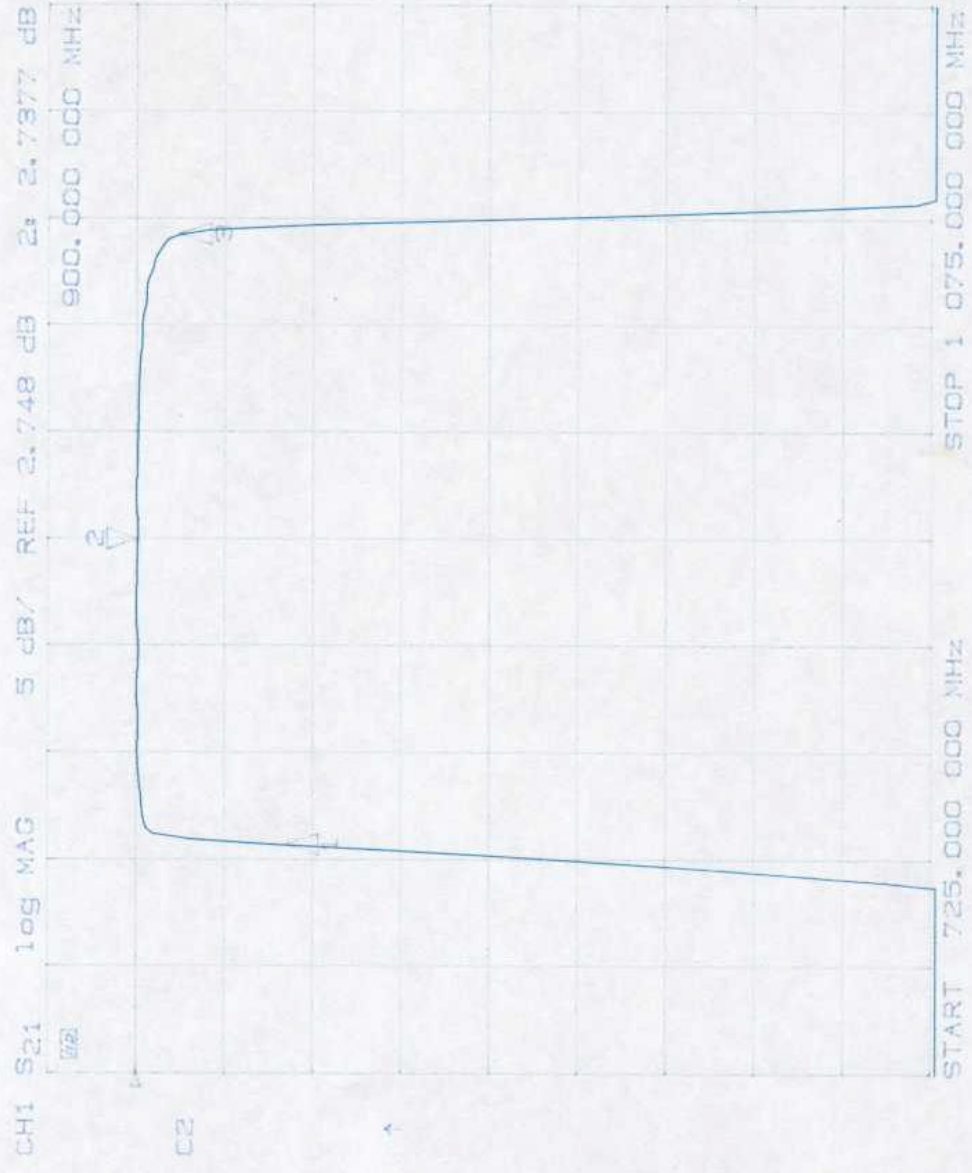




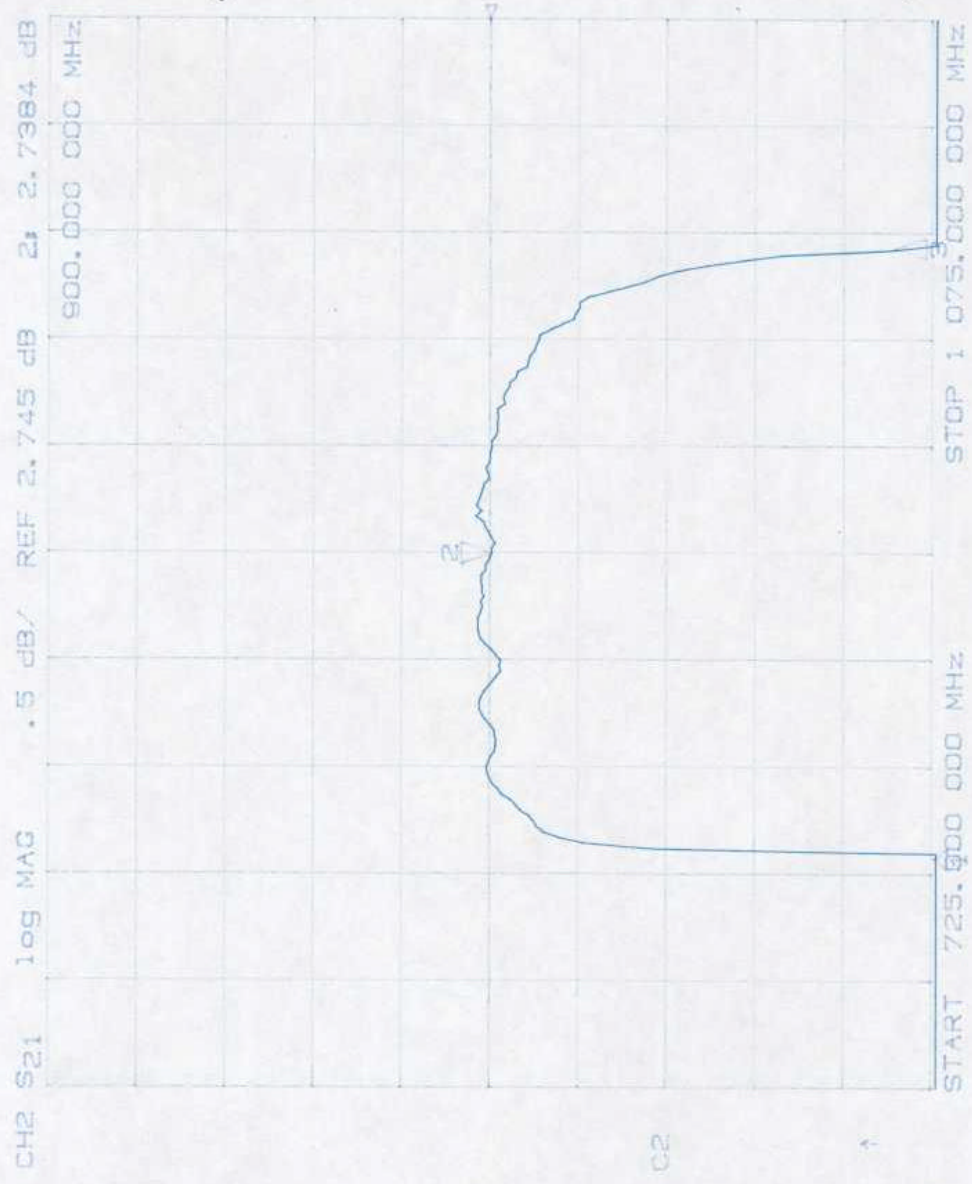
200 MHz
10/27/03
SF2
CH2 → H553

SF2 - 200L





200 MHz
10/27/03
SF3
CH3 → HSS5



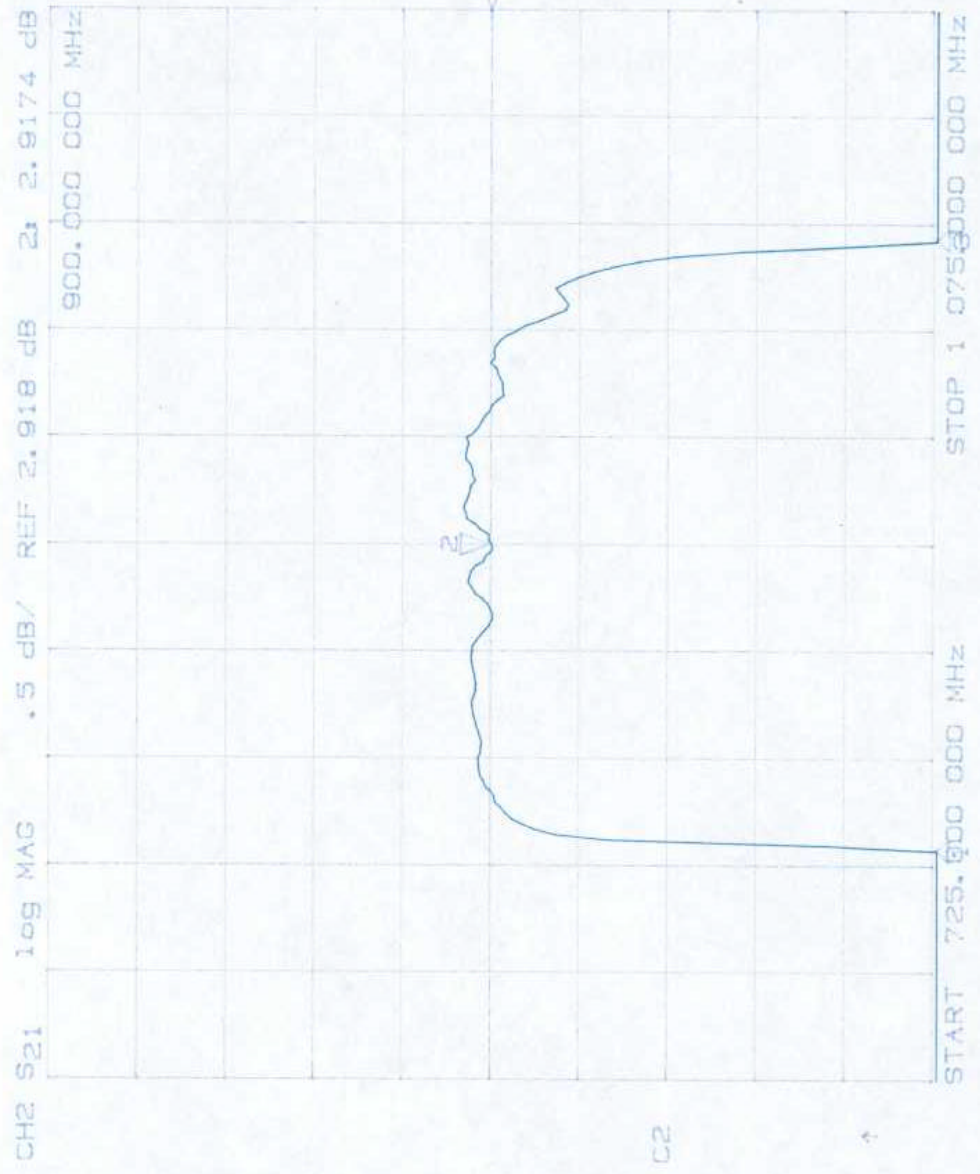
SF3 - 200 C

10/27/03
200 MHz
SF4
CM4 → HSSD

SF4 - 200 H

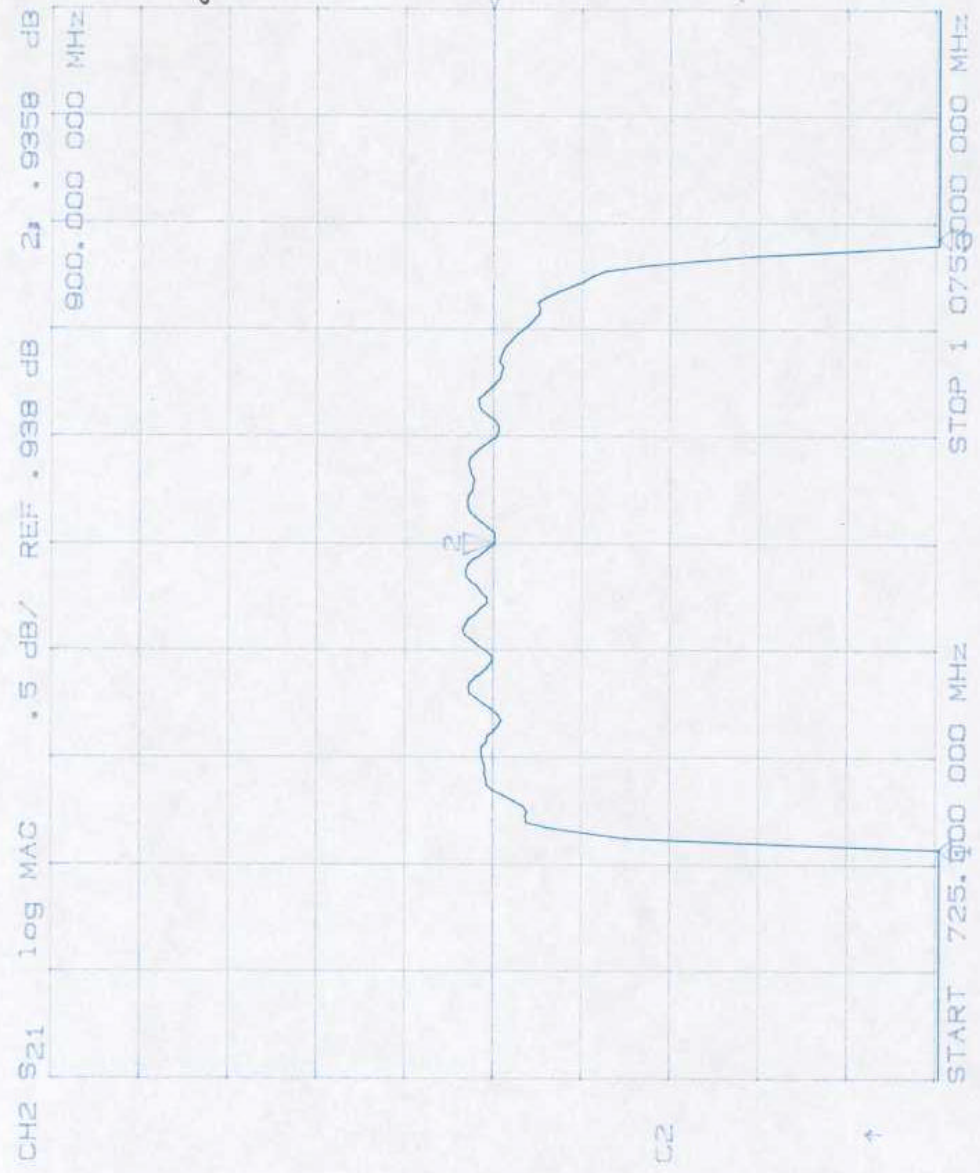


200 MHz
10/27/03
SF4
CM4 → HSS7

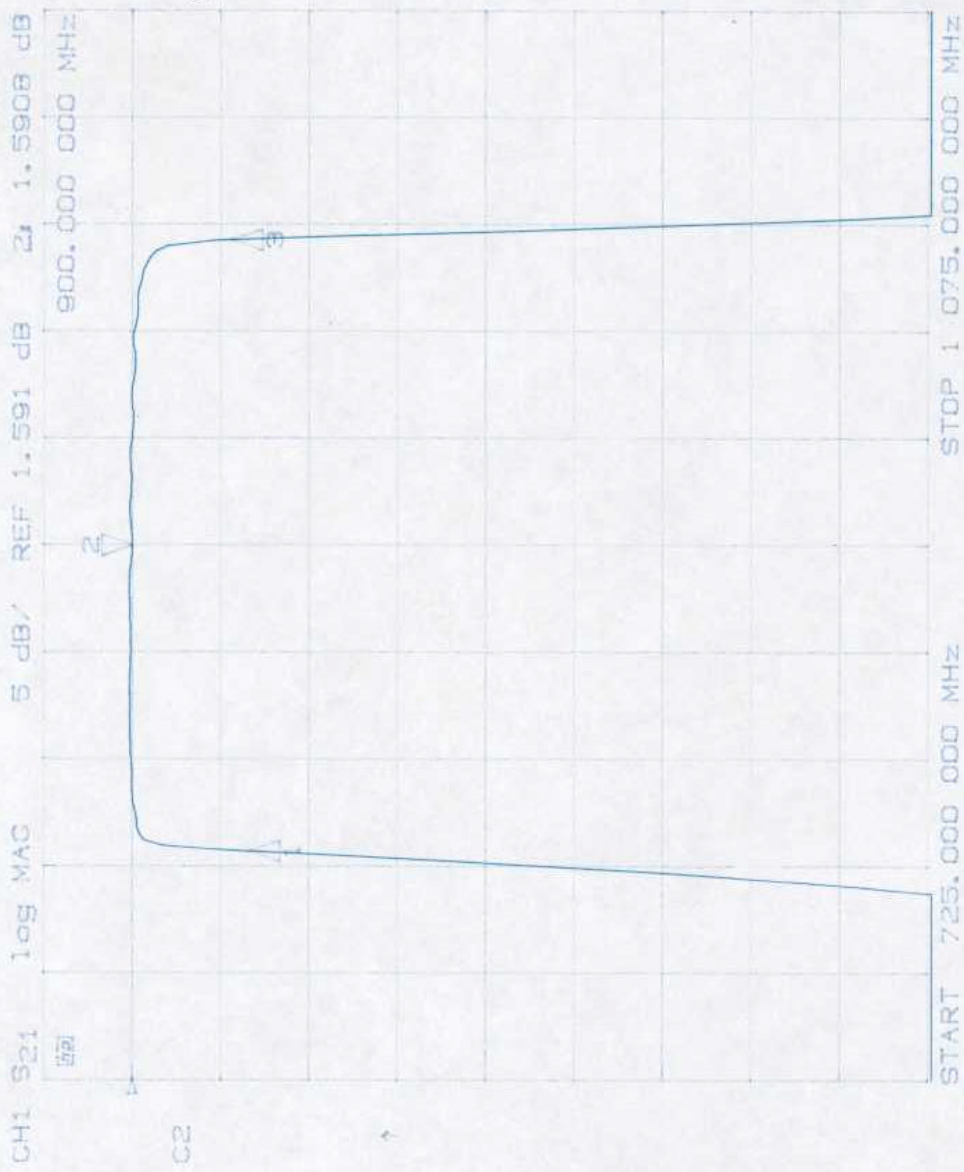


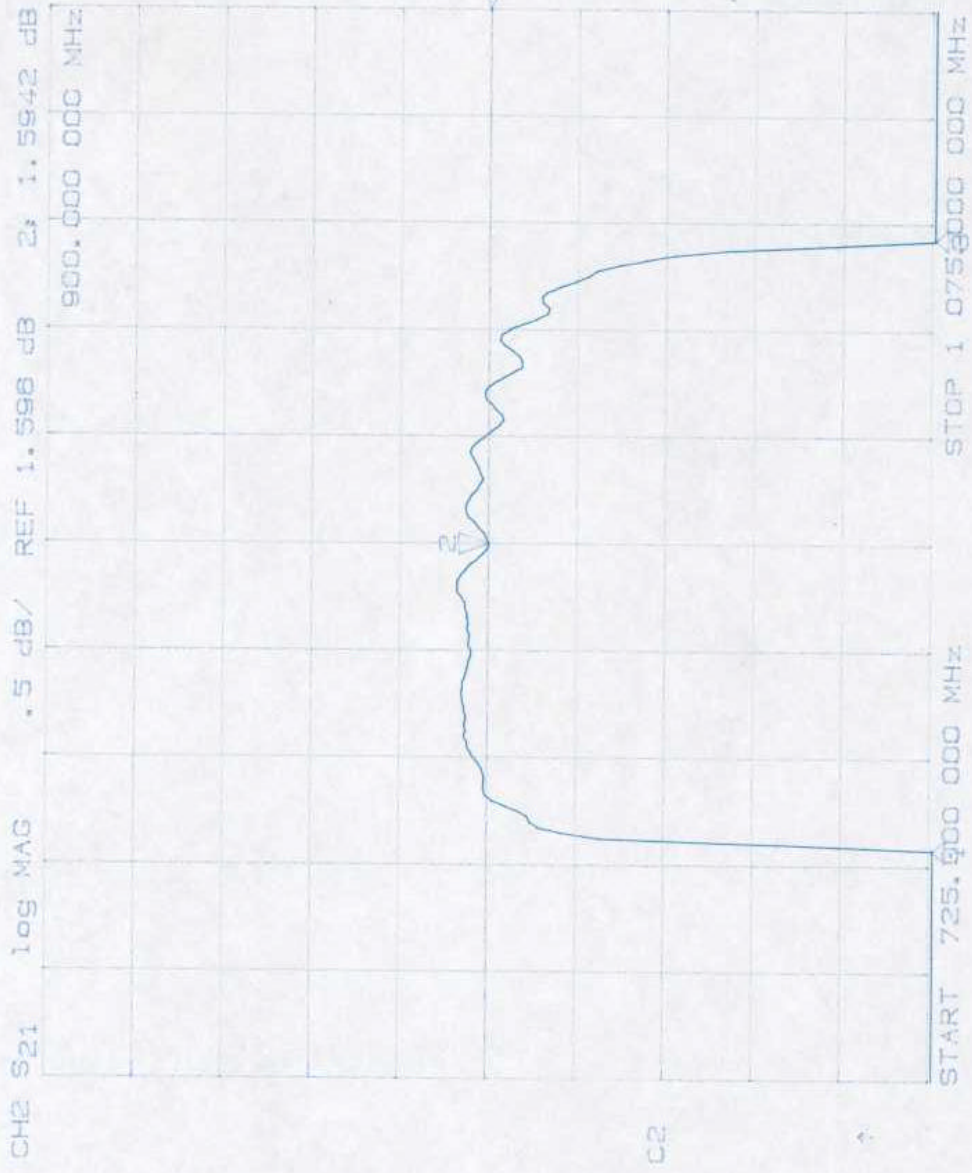
SF4-200 L

200 MHz
10/27/03
SF 5
CAS → HSS 2



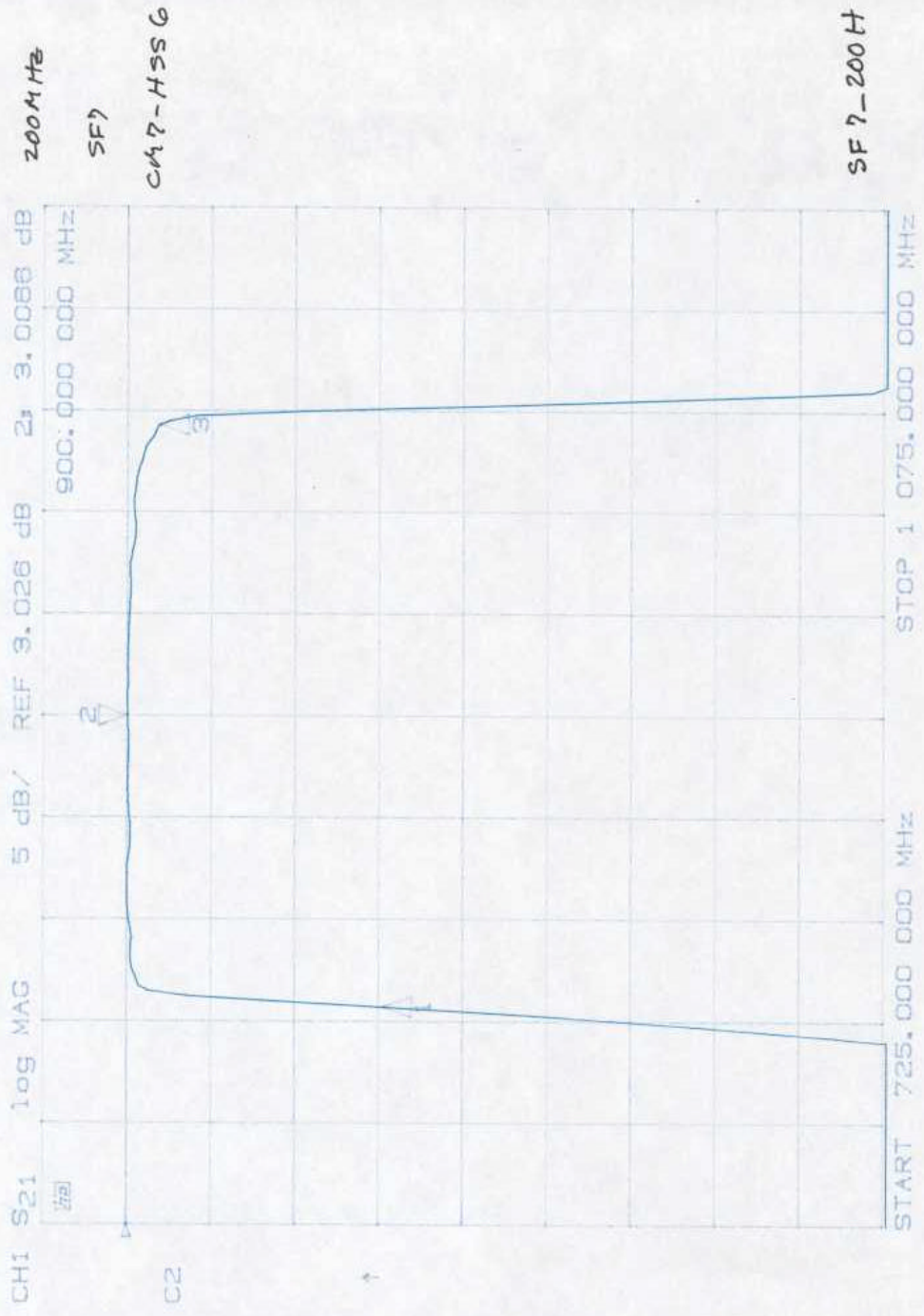
SF5-200 L





200 MHz
10/27/03
SFG
C96 → H554

SFG - 200 L

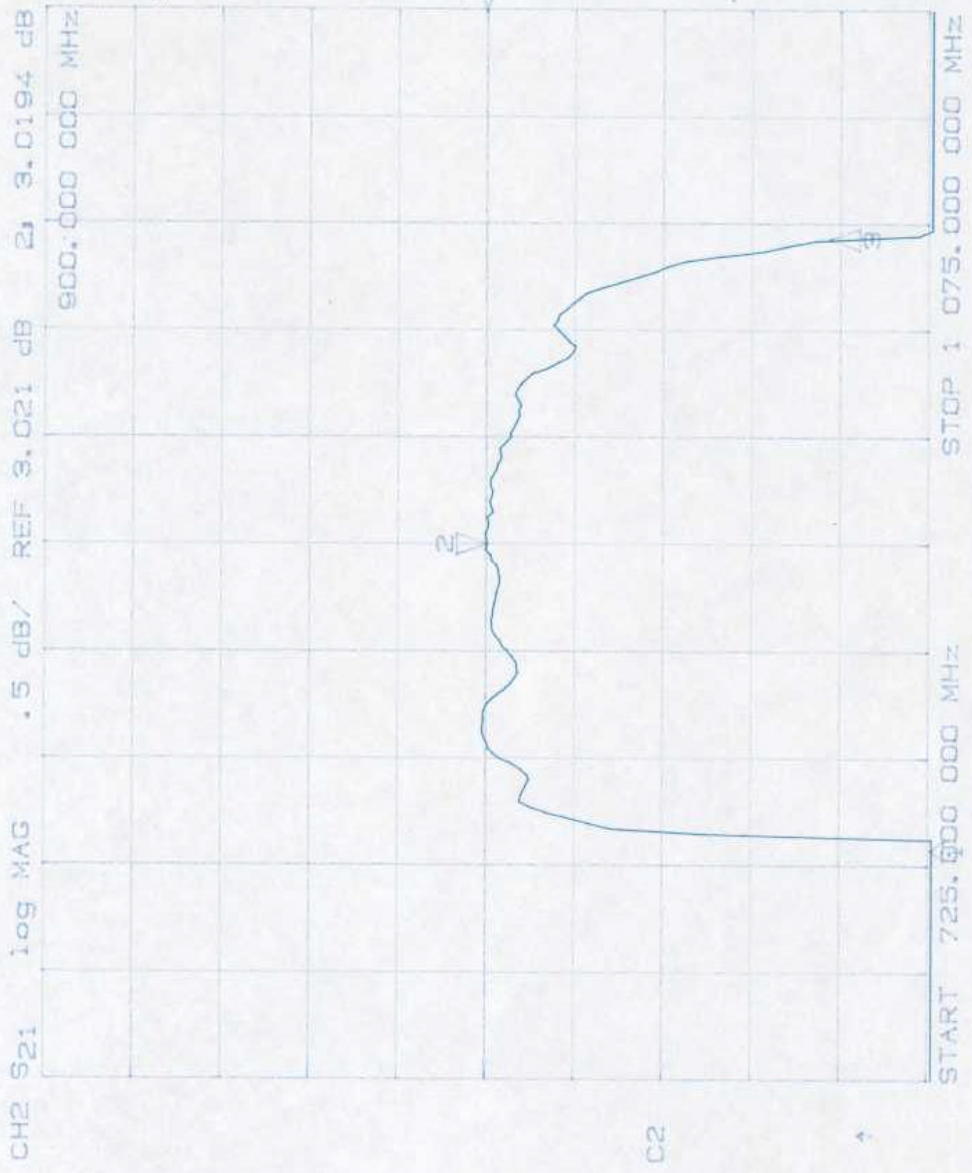


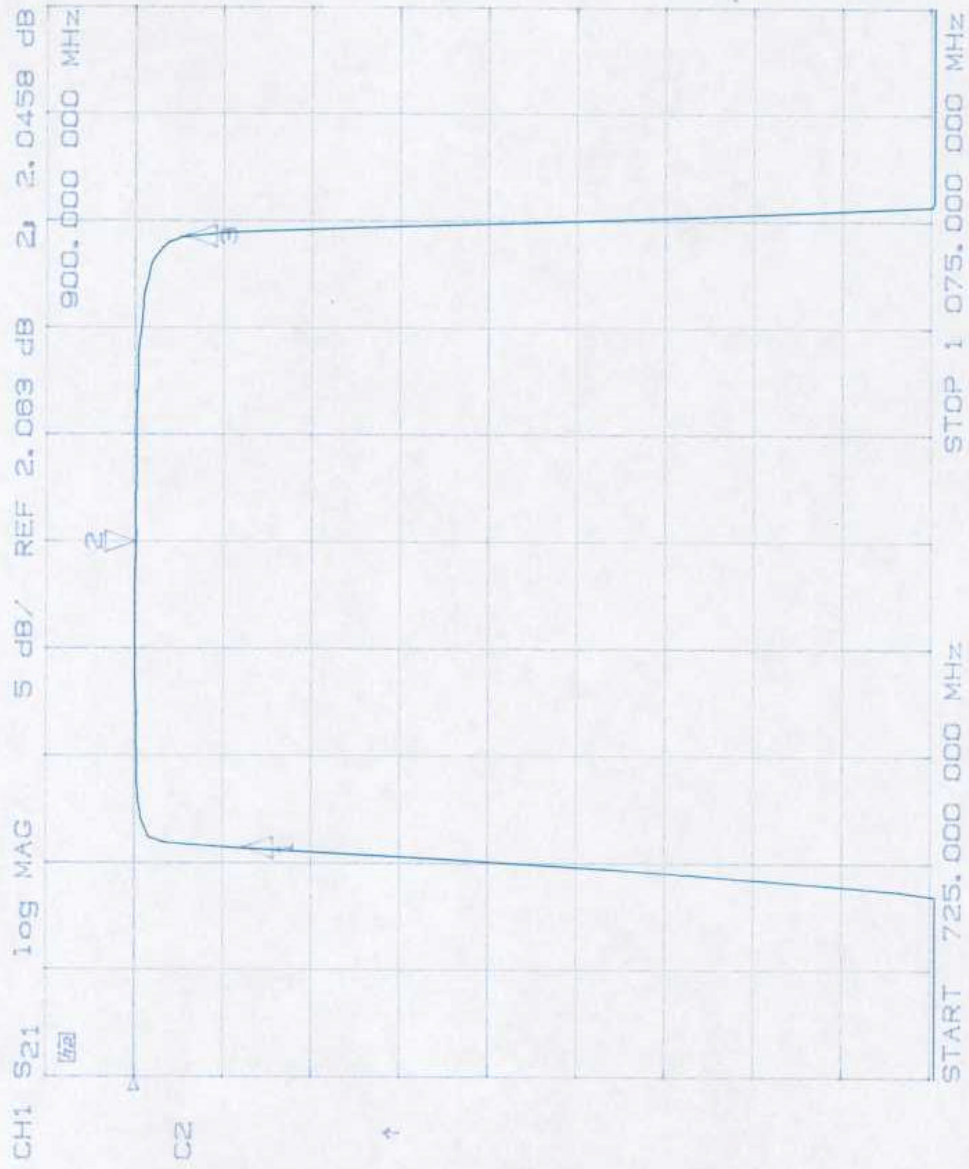
200 MHz

SF 7

CM7-HSS 0

SF7-200 L





200 MHz
10/27/03
SF8
CM8 → MS6

SF8-200L

