

PCTEST Engineering Lab., Inc.

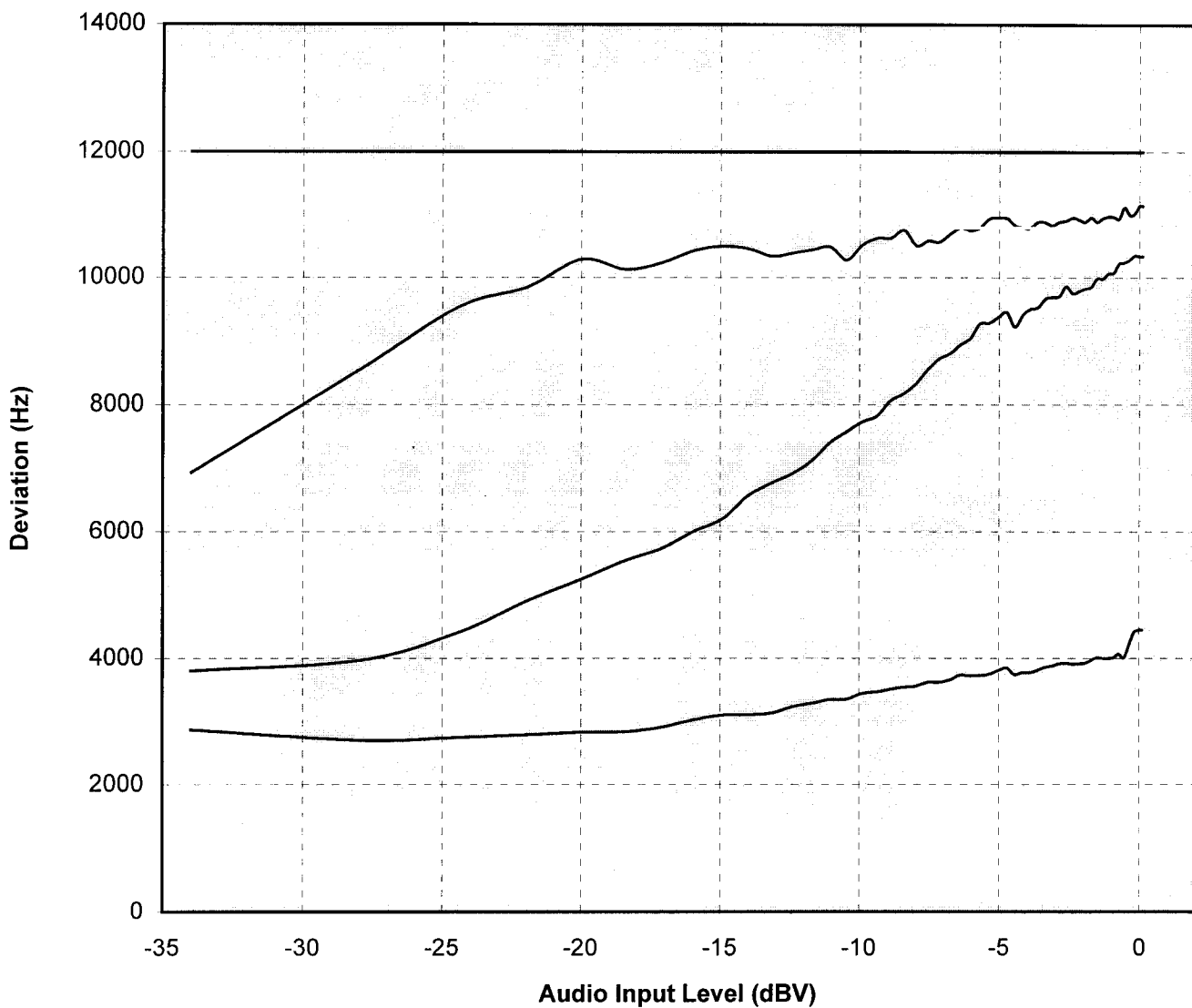
Subject: Modulation Characteristics
FCC Part 24/22

Test Report No.: 22.990406223.CKL
Test Date: 04.06.1999

EUT: HYUNDAI Dual-Mode Cellular Phone (AMPS/CDMA)
Model: HGC-130E
FCC ID: CKLHGC-130E

MODE: Audio 1V = 0dB @ 2.5 kHz

Modulation Limiting



HYUNDAI Dual-Mode Cellular Phone (AMPS/CDMA)
FCC ID: CKLHGC-130E

PCTEST Engineering Lab., Inc.

SUBJECT: Modulation Characteristics
FCC Part 22

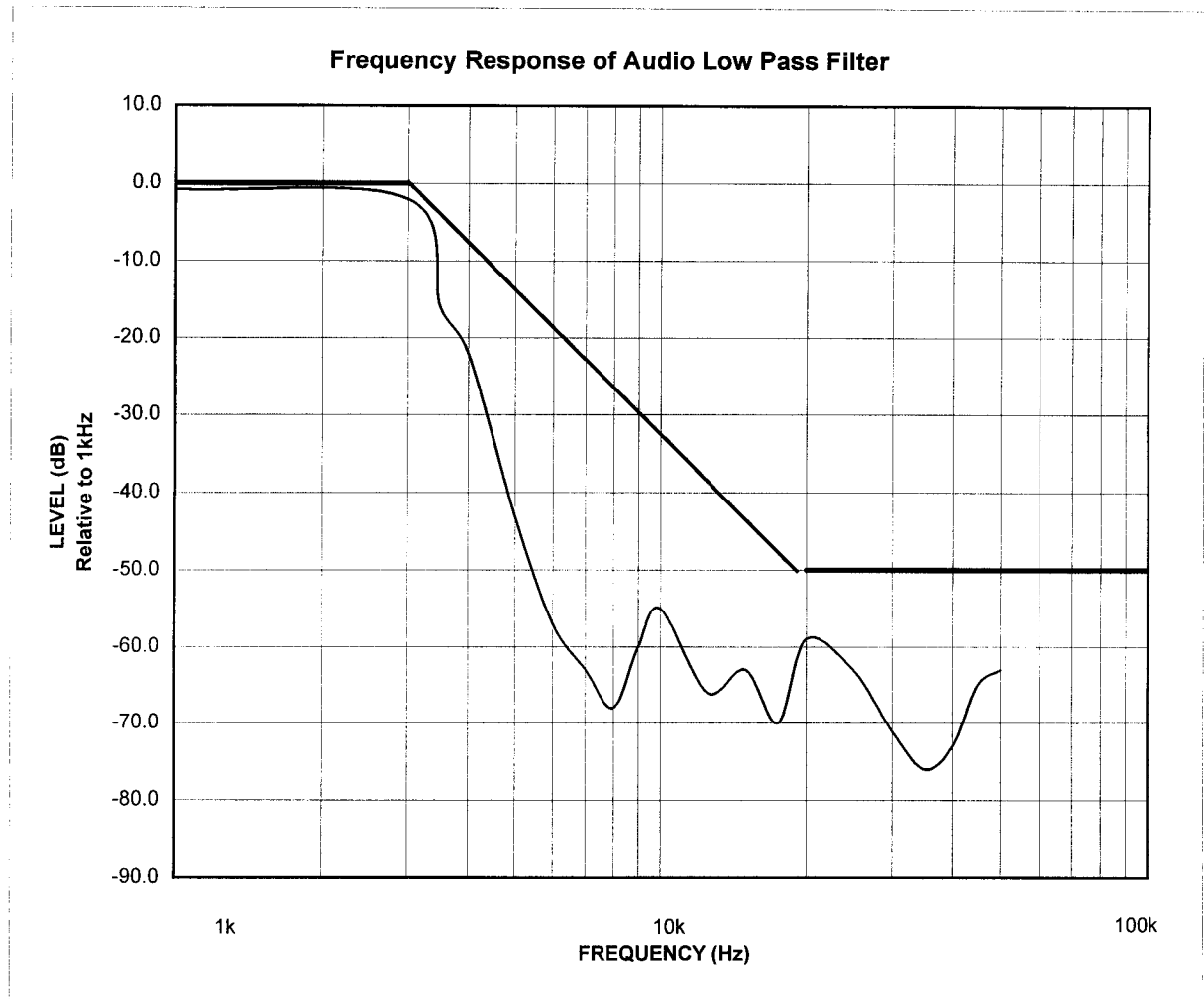
Test Report No.: 22.990406223.CKL
Test Date: 04.06.1999

EUT: HYUNDAI Dual Mode Cellular Phone (AMPS/CDMA)

Model(s): HGC-130E

FCC ID: CKLHGC-130E

REFERENCE: 1 kHz = 0 dB



HYUNDAI Dual Mode Cellular Phone (AMPS/CDMA)
FCC ID: CKLHGC-130E

PCTEST Engineering Lab., Inc.

SUBJECT: Modulation Characteristics
FCC Part 22

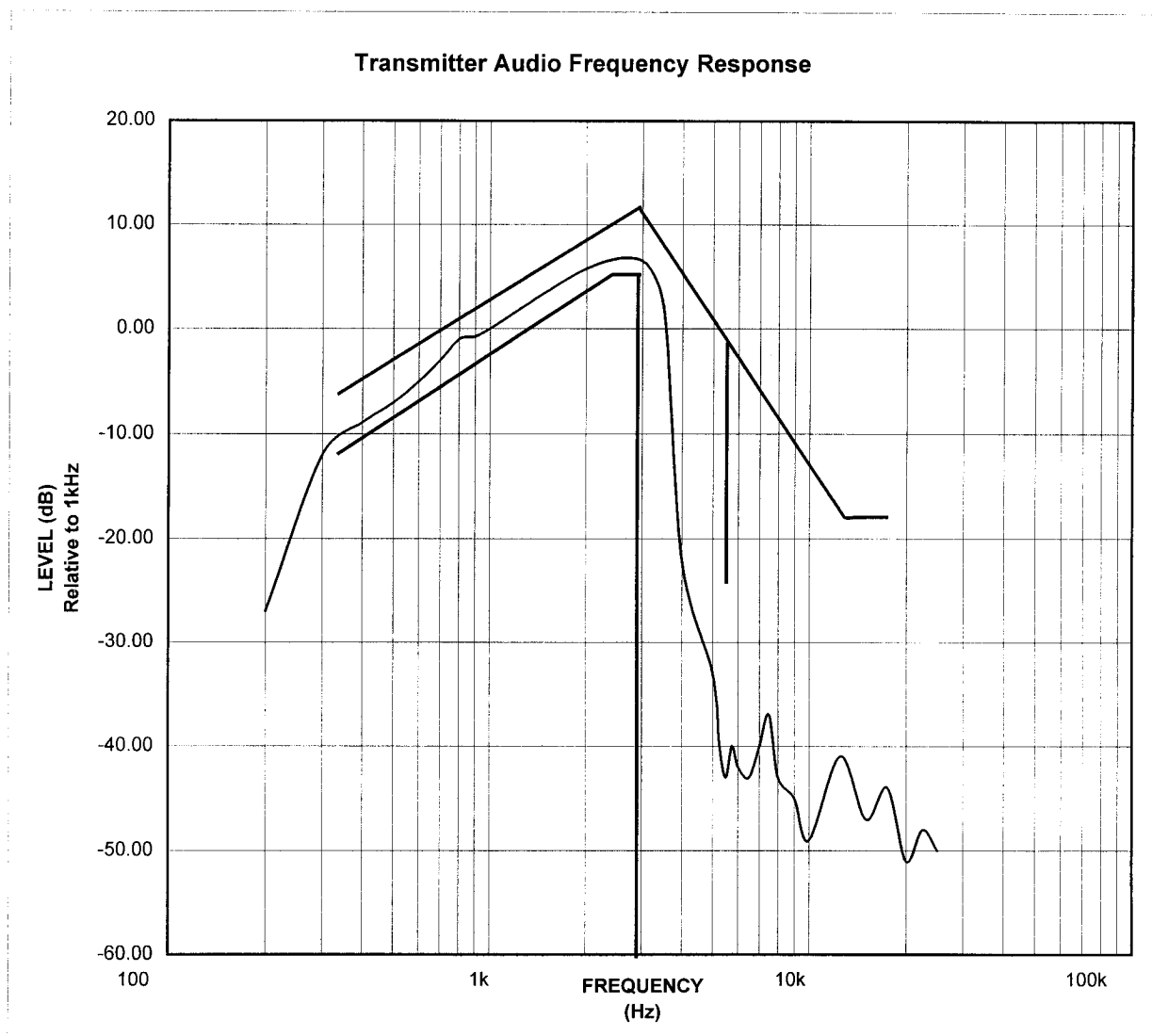
Test Report No.: 22.990406223.CKL
Test Date: 04.06.1999

EUT: HYUNDAI Dual Mode Cellular Phone (AMPS/CDMA)

Model(s): HGC-130E

FCC ID: CKLHGC-130E

REFERENCE: 1 kHz = 0 dB



HYUNDAI Dual Mode Cellular Phone (AMPS/CDMA)
FCC ID: CKLHGC-130E

PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:CKLHGC-130E

FM MODE

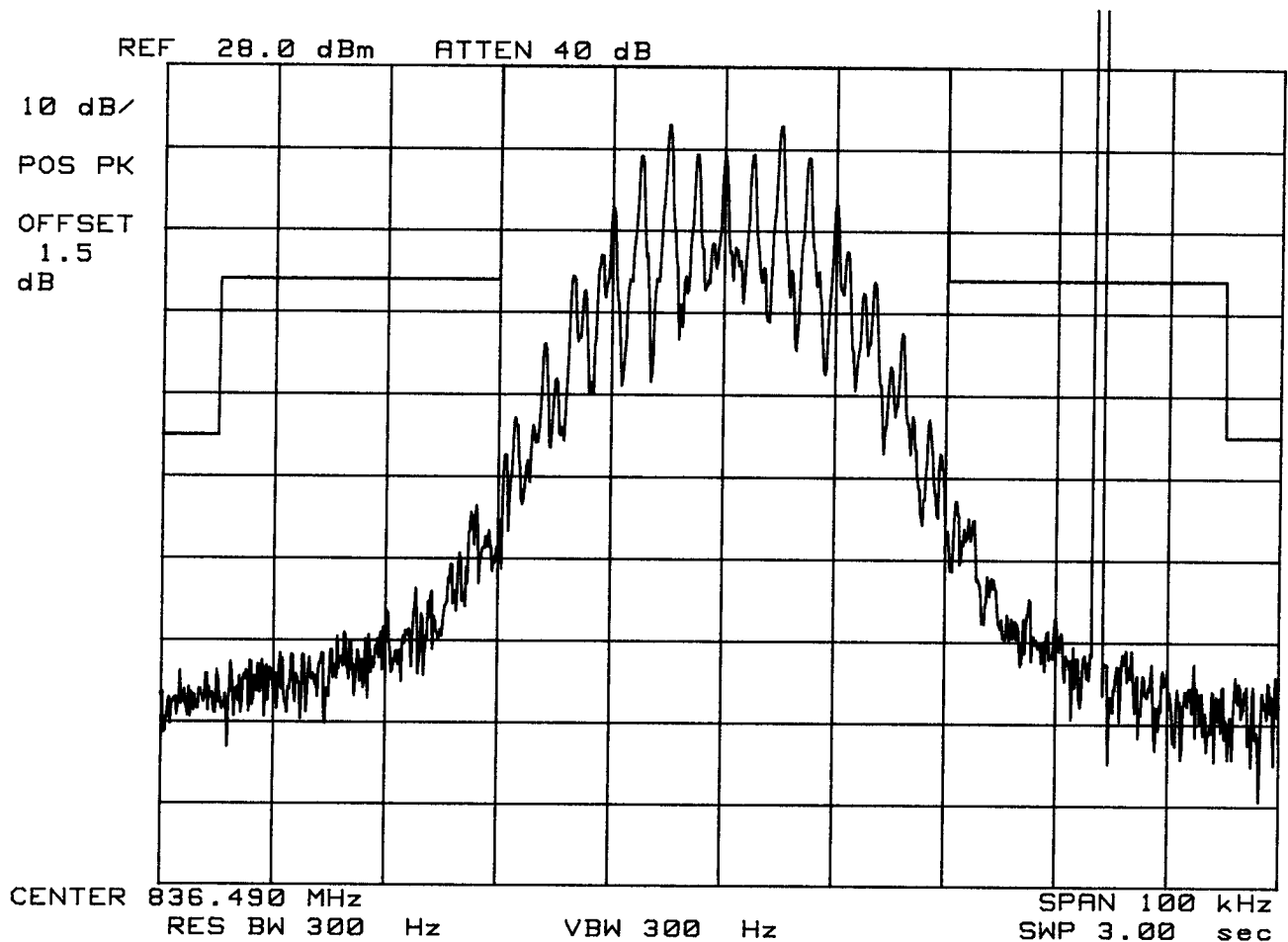
CH.383

DUAL MODE

Operating Frequency: 836.490 MHz

Output Power : 28.0 dBm

Test Mode:SAT + Voice



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:CKLHGC-130E

FM MODE

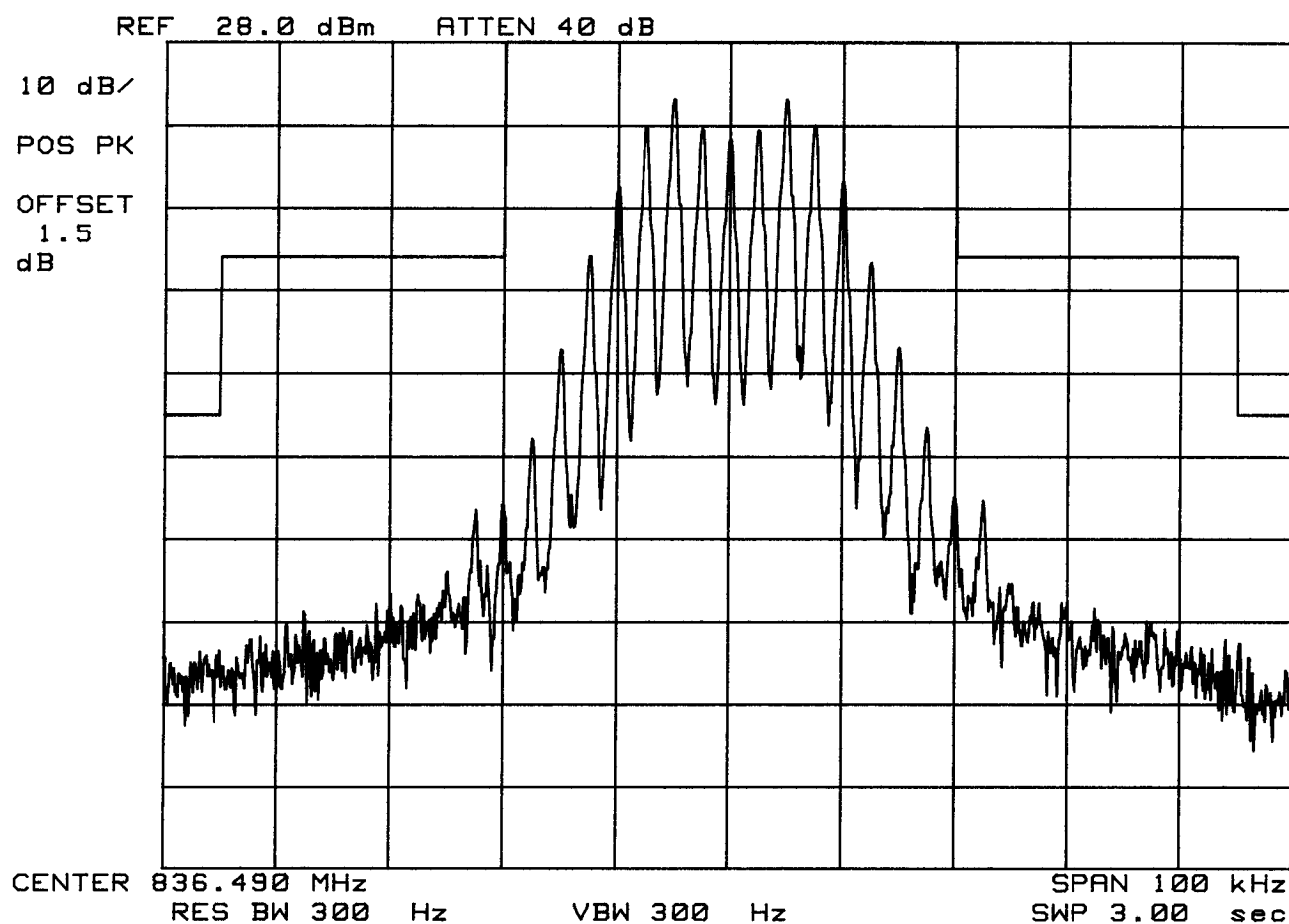
CH.383

DUAL MODE

Operating Frequency: 836.490 MHz

Output Power : 28.0 dBm

Test Mode:Voice



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:CKLHGC-130E

FM MODE

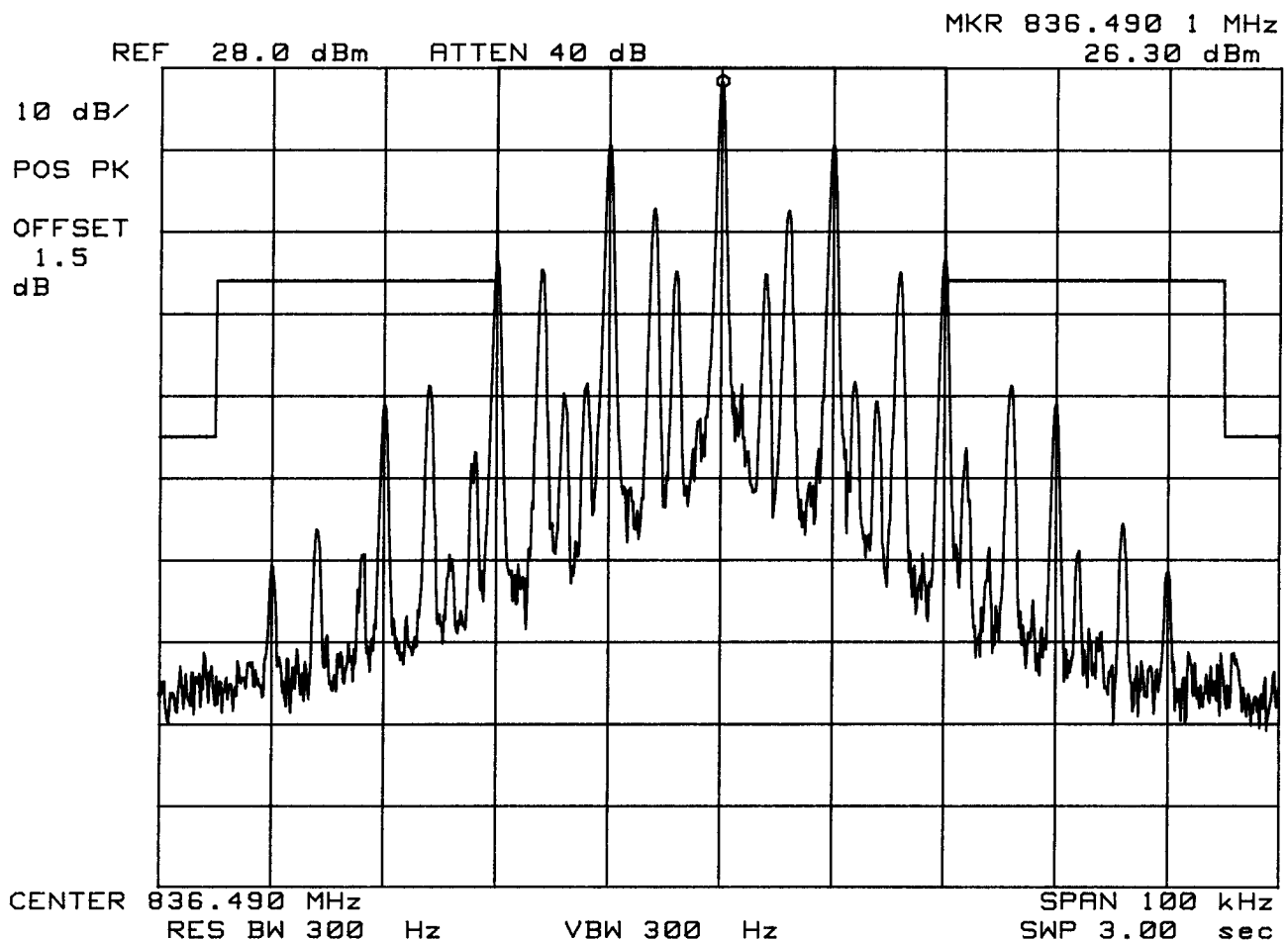
CH.383

DUAL MODE

Operating Frequency: 836.490 MHz

Output Power : 28.0 dBm

Test Mode:SAT + ST



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:CKLHGC-130E

FM MODE

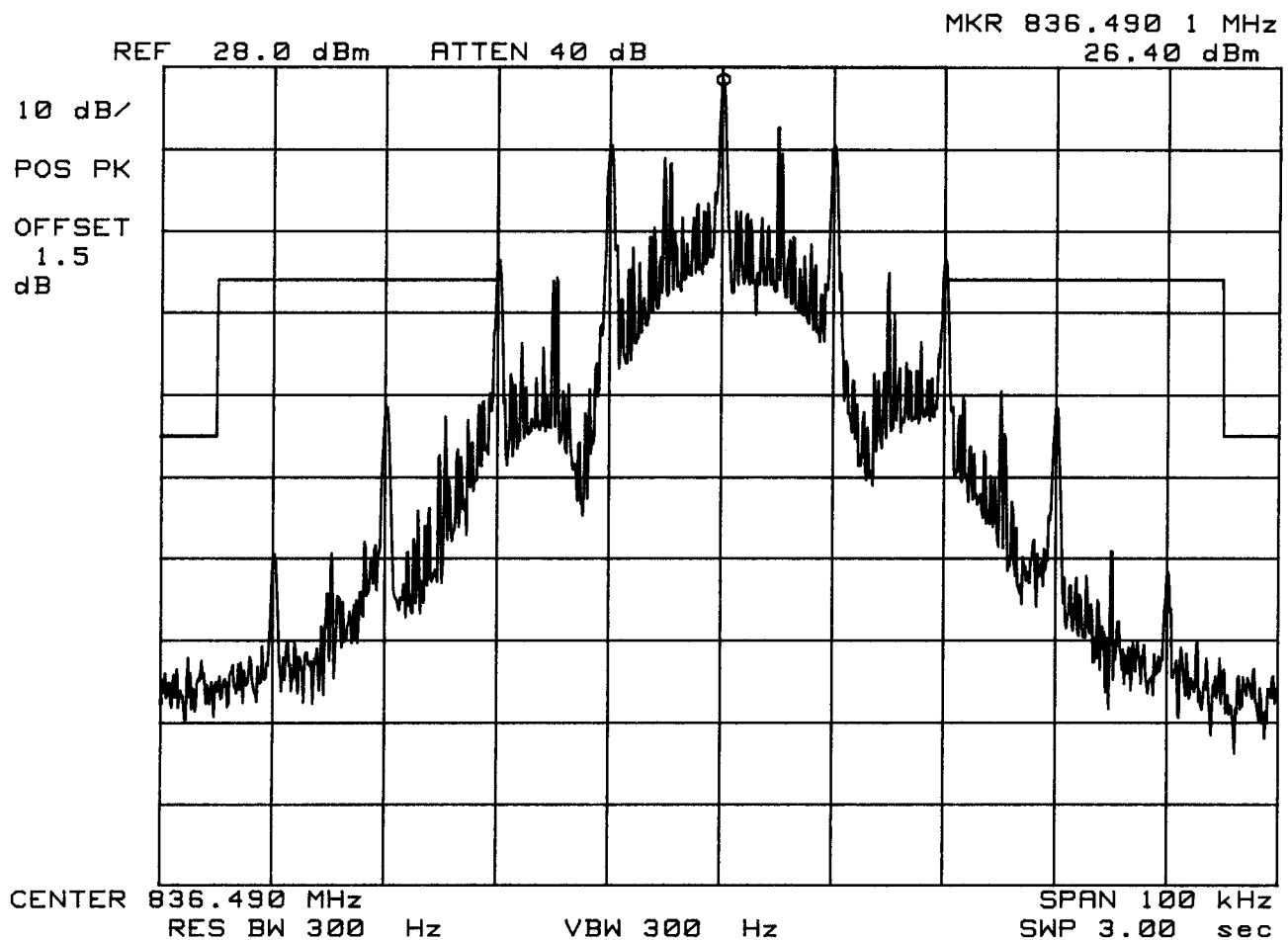
CH.383

DUAL MODE

Operating Frequency: 836.490 MHz

Output Power : 28.0 dBm

Test Mode:Wide Band Data



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SPECTRUM ANALYZER PRESENTATION

FCC ID:CKLHGC-130E

FM MODE

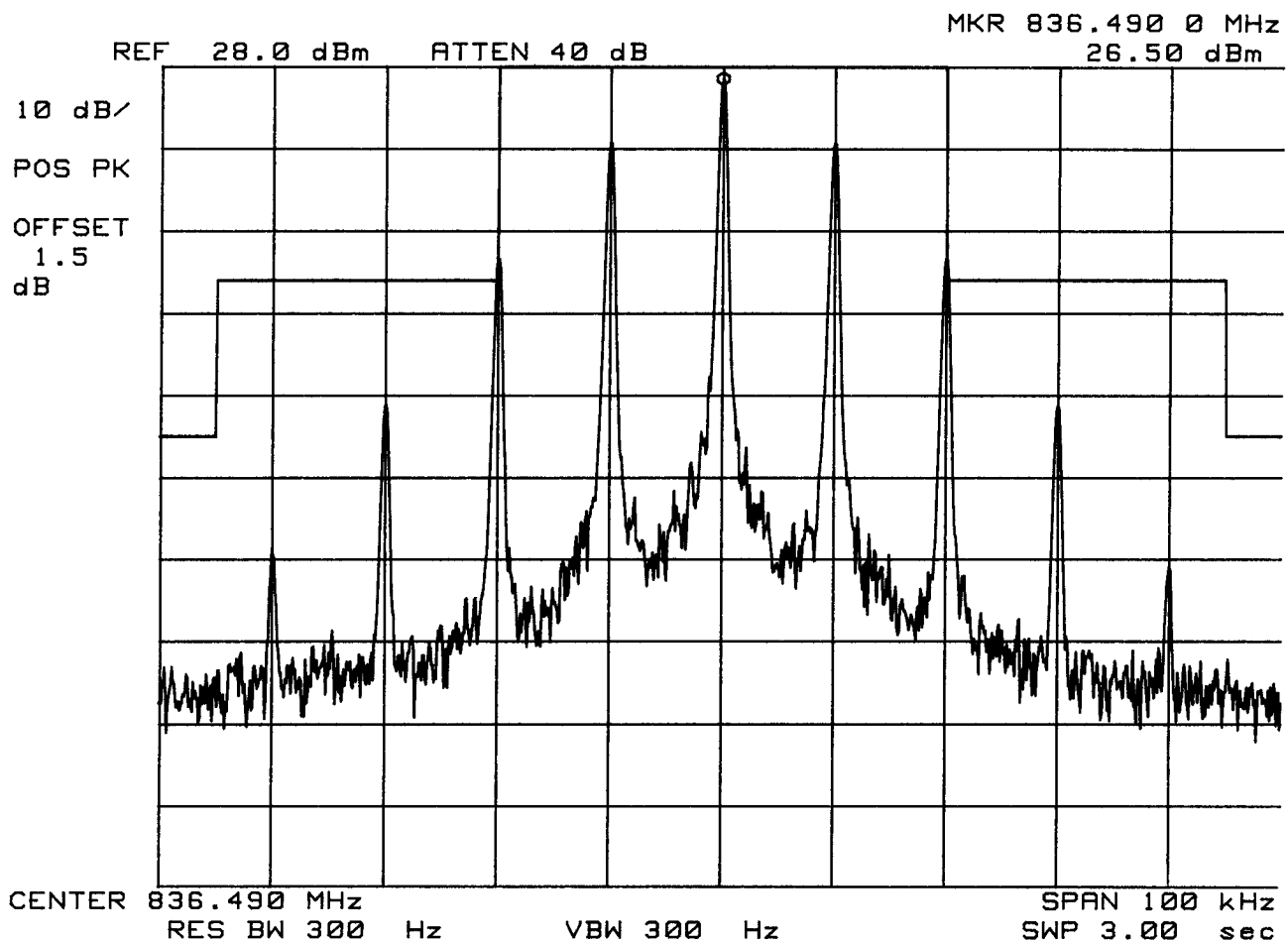
CH.383

DUAL MODE

Operating Frequency: 836.490 MHz

Output Power : 28.0 dBm

Test Mode:ST



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:CKLHGC-130E

FM MODE

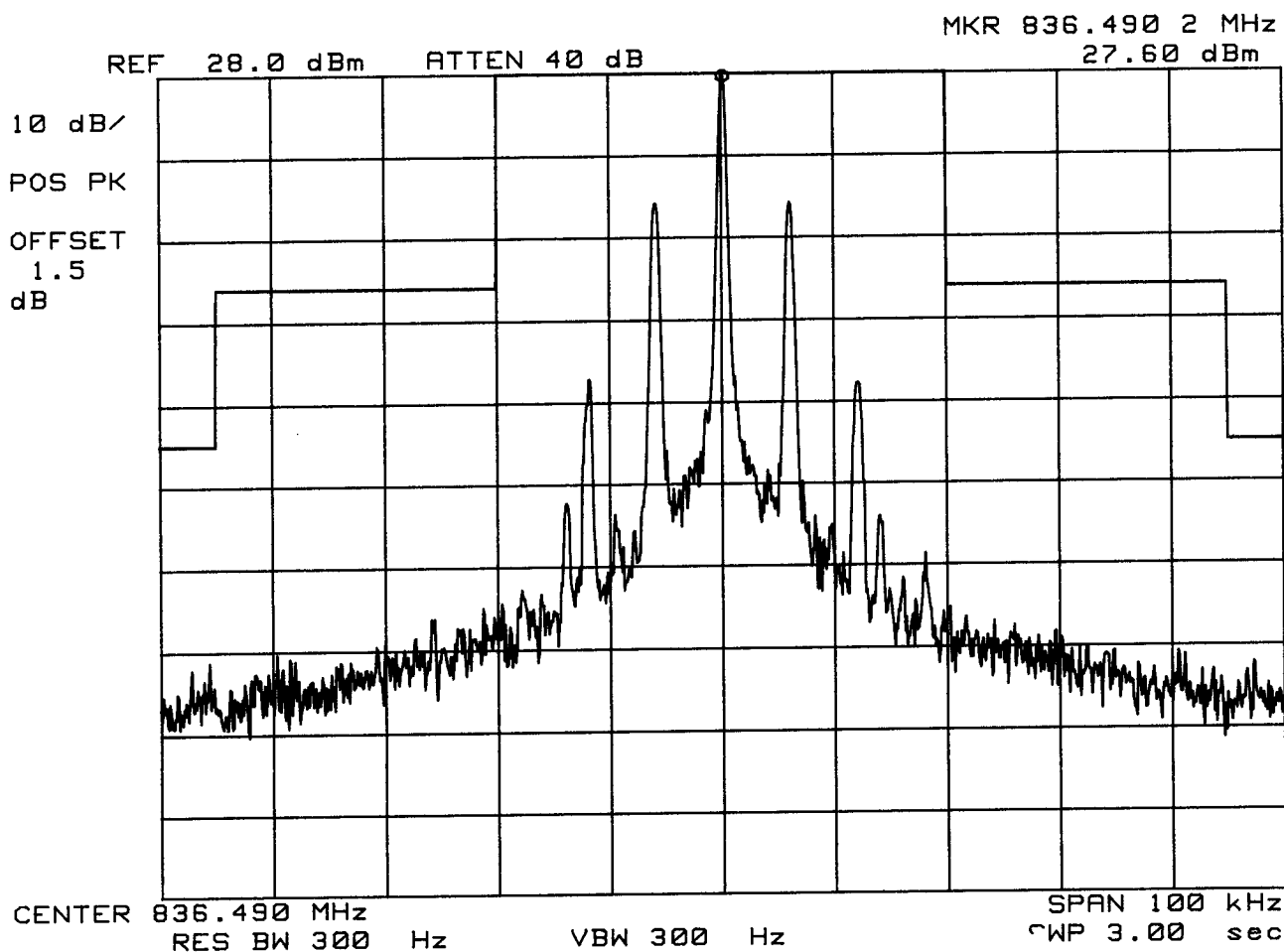
CH.383

DUAL MODE

Operating Frequency: 836.490 MHz

Output Power : 28.0 dBm

Test Mode:SAT



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:CKLHGC-130E

FM MODE

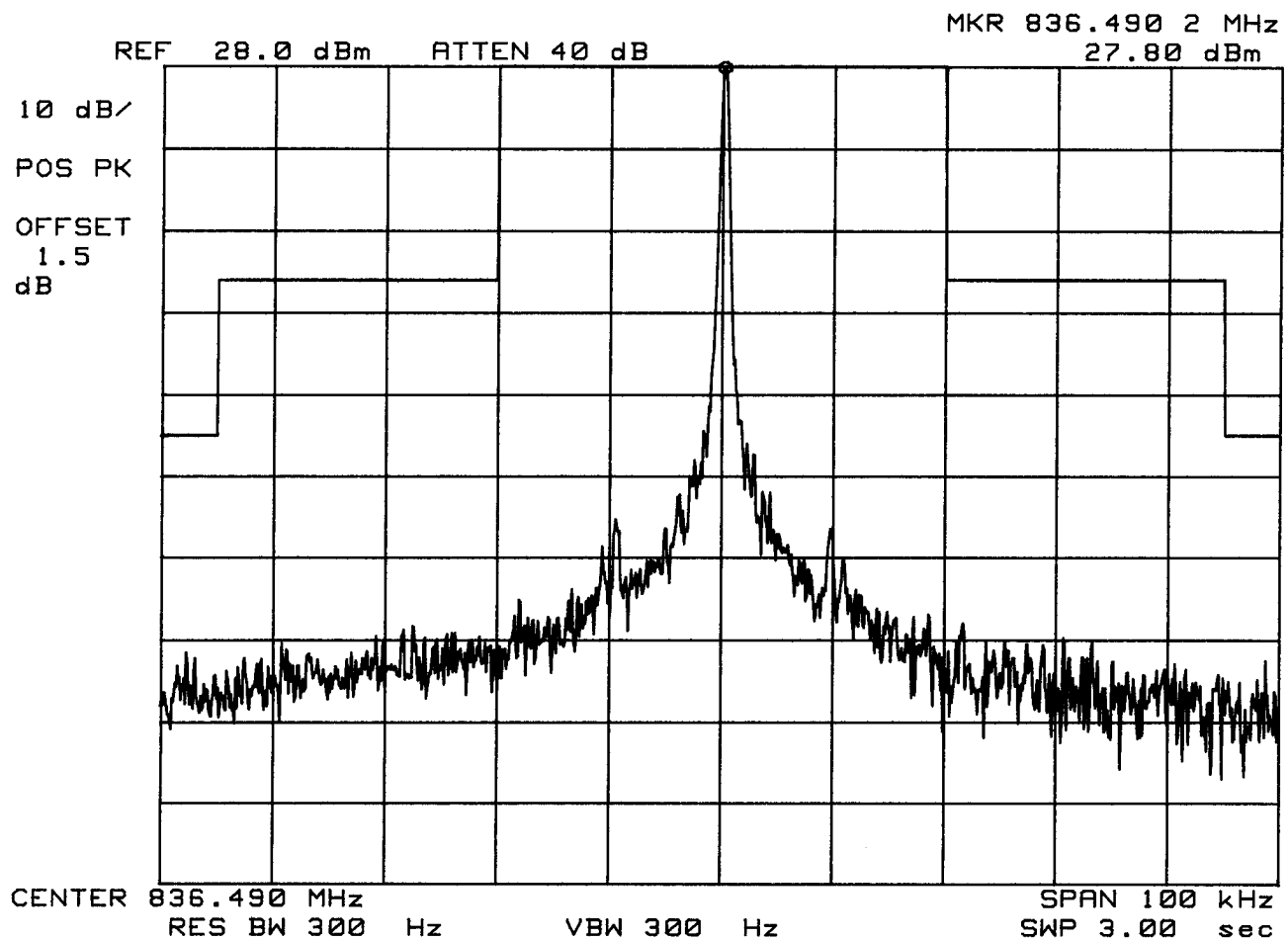
CH.383

DUAL MODE

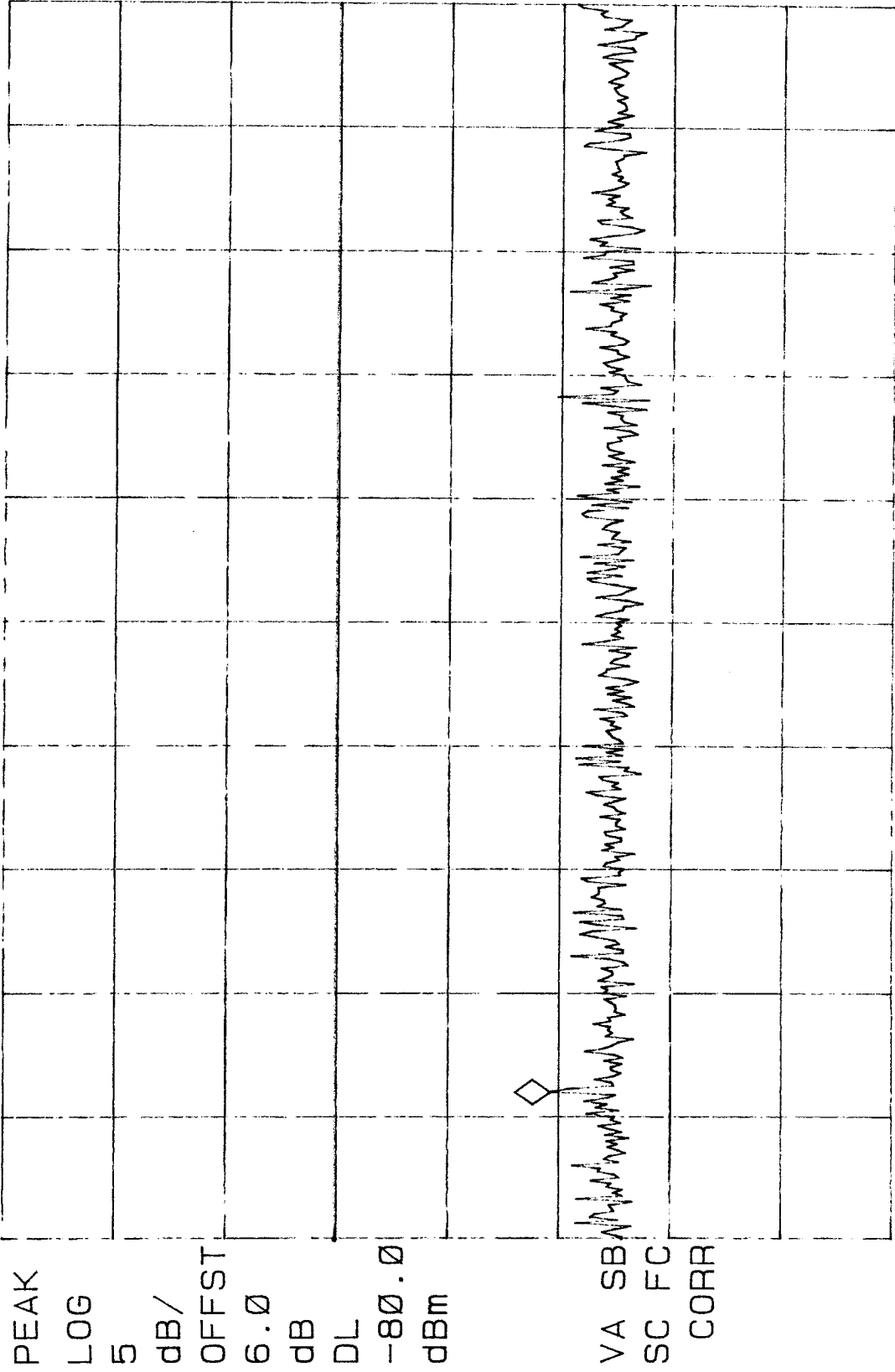
Operating Frequency: 836.490 MHz

Output Power : 28.0 dBm

Test Mode:Unmodulated Signal



~~70~~ FCC ID: CKLHGC-130E Rx Spurious MKR 872.03 MHz
REF -65.0 dBm ATTN 10 dB PG 26.0 dB -89.63 dBm



START 869.04 MHz STOP 893.97 MHz
#RES BW 1.0 MHz #VBW 1 MHz #SWP 100 msec

FCC ID-CKLHGC-130E CDMA Ch.Low
REF 25.0 dBm ATTN 40 dB MKR 824.040 MHz
22.00 dBm

hp

10 dB/

POS PK

OFFSET

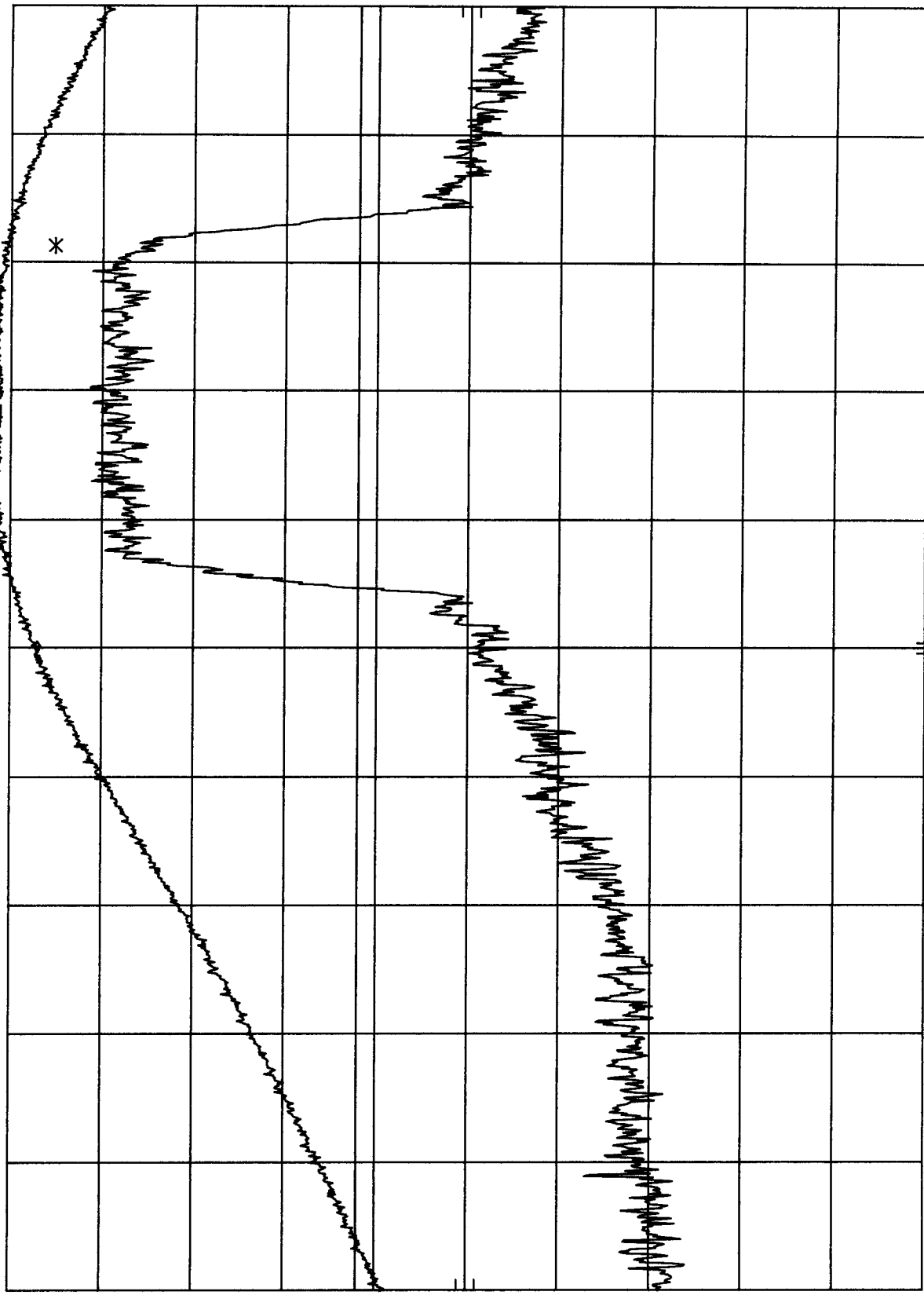
1.5

dB

DL

-13.0

dBm



CENTER 824.040 MHz
RES BW 30 KHZ
SPAN 5.00 MHz
SWP 20.0 msec

FCC ID-CKLHGC-130E CDMA Ch. Med MKR 835.890 MHz
REF 25.0 dBm ATTN 40 dB 25.70 dBm

hp

10 dB/

POS PK

OFFSET

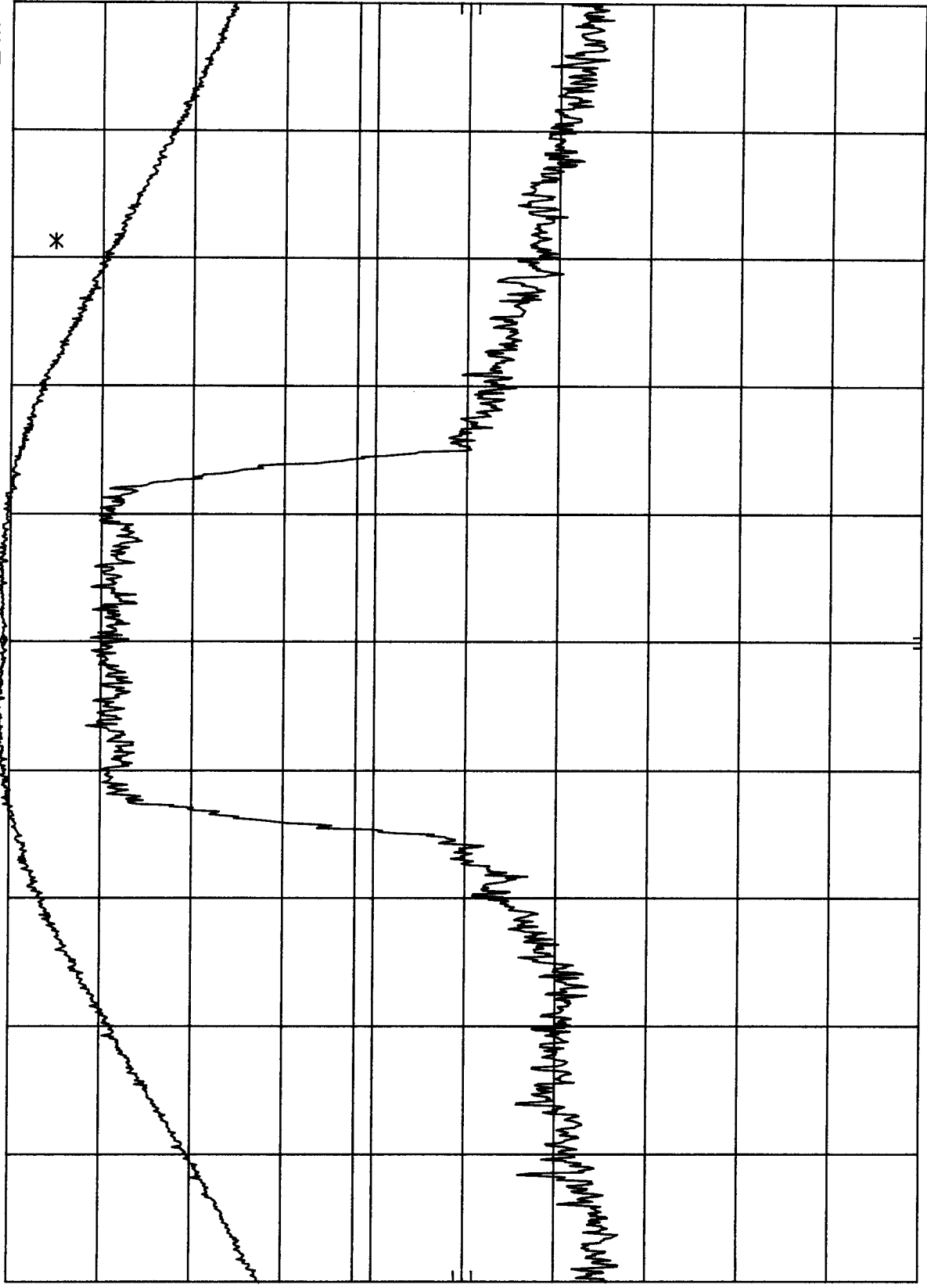
1.5

dB

DL

-13.0

dBm



CENTER 835.89 MHz SPAN 5.00 MHz
RES BW 30 KHZ VBW 30 KHZ SWP 20.0 msec

FCC ID-CKLHGC-130E CDMA Ch.High
REF 25.0 dBm ATTN 40 dB MKR 848.970 MHz
17.50 dBm

hp

10 dB/

POS PK

OFFSET

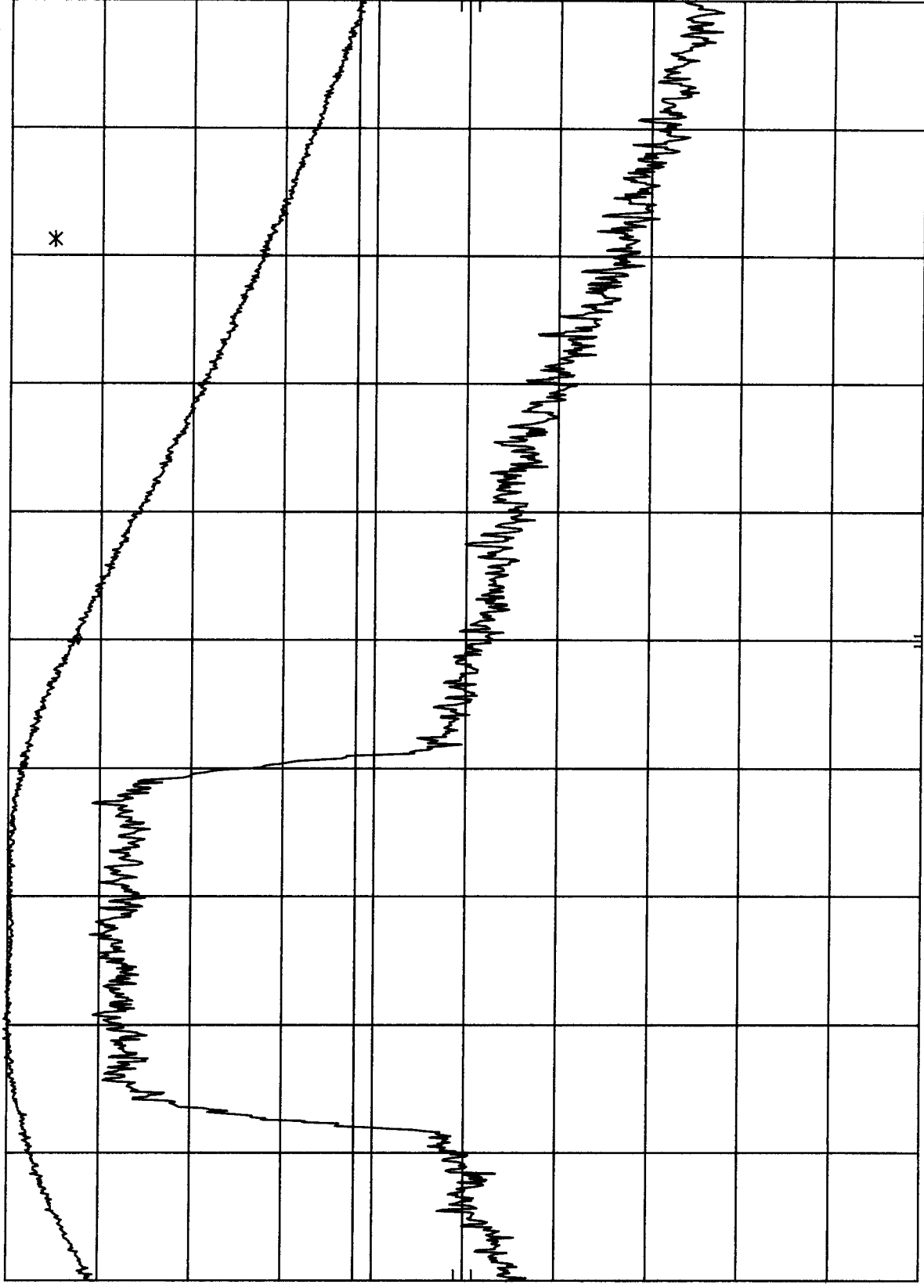
1.5

dB

DL

-13.0

dBm



CENTER 848.97 MHz SPAN 5.00 MHz
RES BW 30 KHZ VBW 30 KHZ SWP 20.0 msec

FCC ID-CKLHGC-130E Ch.Low Cond.Spurs.

REF 25.0 dBm ATTN 40 dB

hp

10 dB/

POS PK

OFFSET

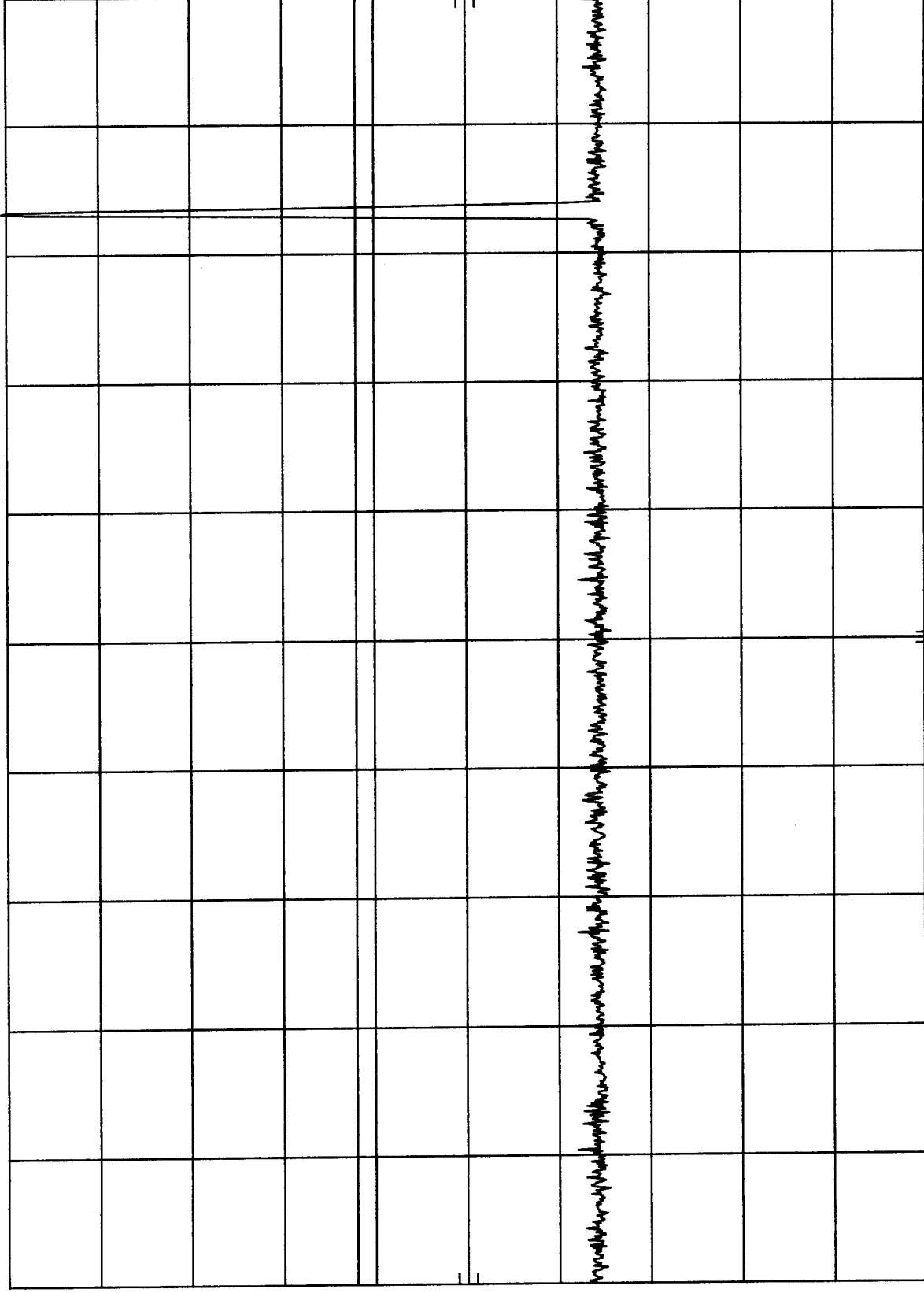
1.5

dB

DL

-13.0

dBm



START 10 MHz

RES BW 1 MHz

VBW 1 MHz

STOP 1.000 GHz

SWP 24.8 msec

FCC ID-CKLHGC-130E Ch.Low Cond.Spurs.
REF 25.0 dBm ATTN 40 dB MKR 1.669 GHz
-29.70 dBm

hp

10 dB/

POS PK

OFFSET

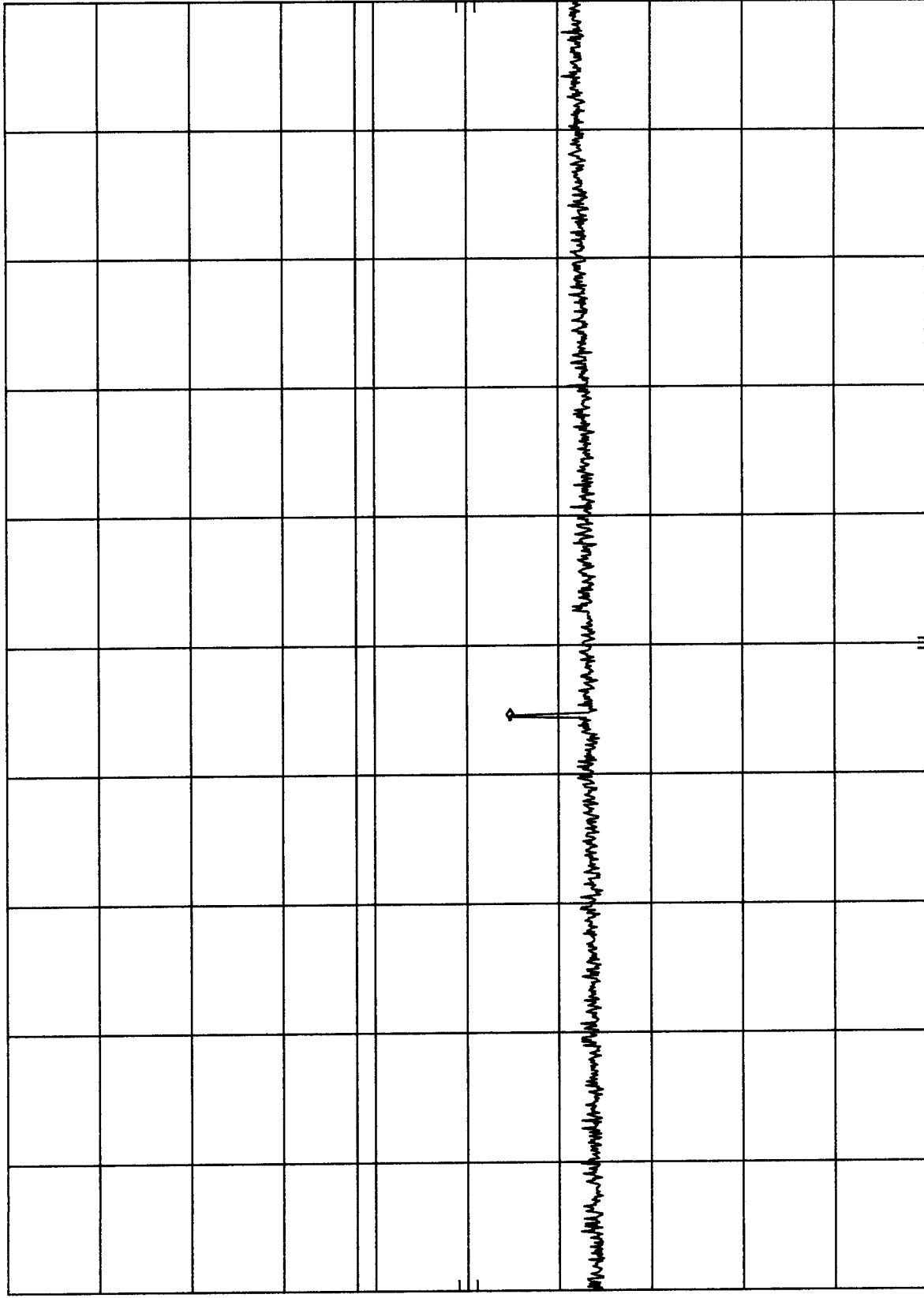
1.5

dB

DL

-13.0

dBm



START 1.00 GHz

RES BW 1 MHz

VBW 1 MHz

STOP 2.50 GHz

SWP 37.5 msec

FCC ID-CKLHGC-130E Ch.Low Cond.Spurs. MKR 6.648 GHz
REF 25.0 dBm ATTN 40 dB -29.80 dBm

hp

10 dB/

POS PK

OFFSET

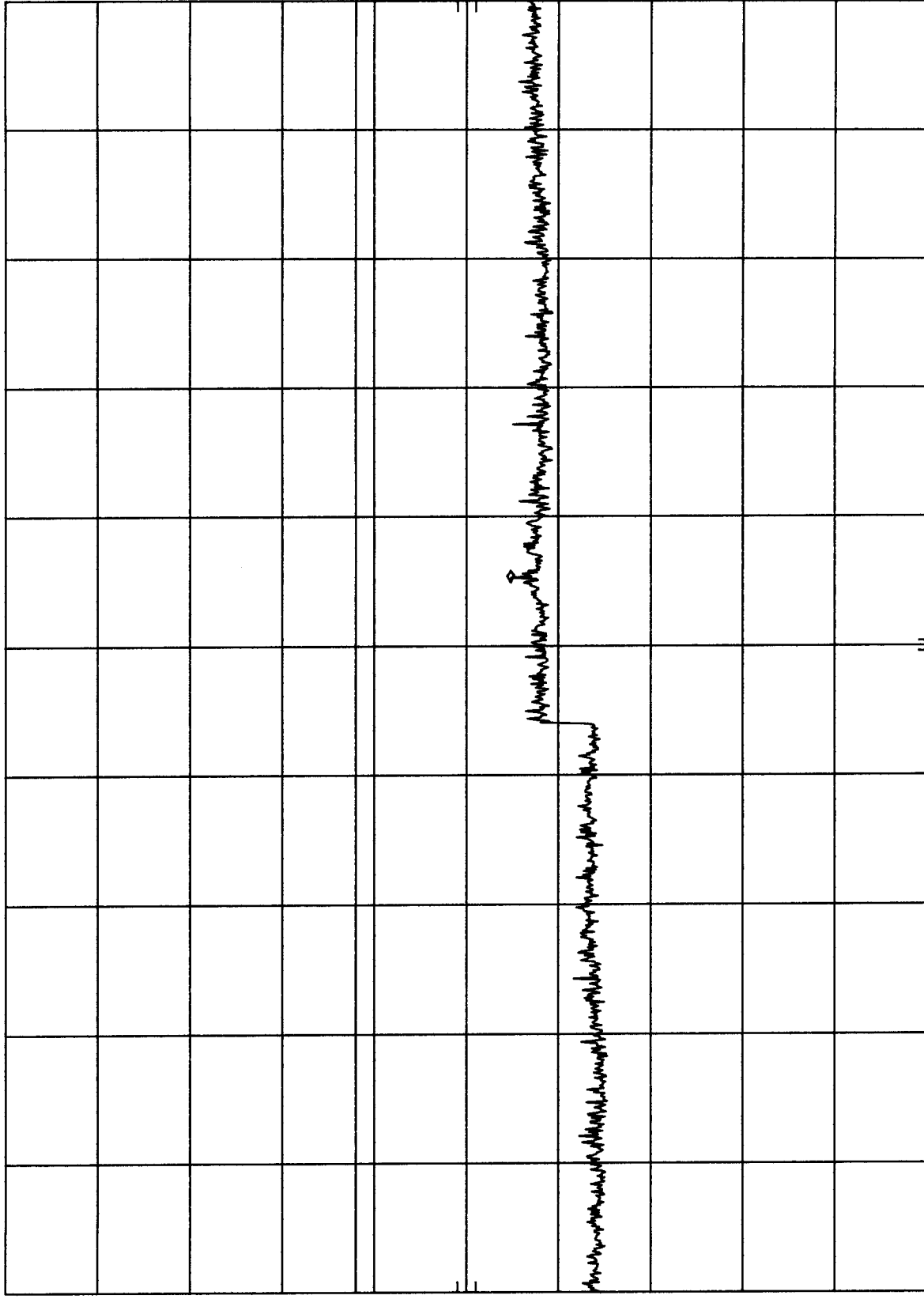
1.5

dB

DL

-13.0

dBm



FCC ID-CKLHGC-130E Ch.Low Cond.Spurs.
h/p REF 25.0 dBm ATTN 40 dB MKR 19.94 GHz
-17.40 dBm

10 dB/

POS PK

OFFSET

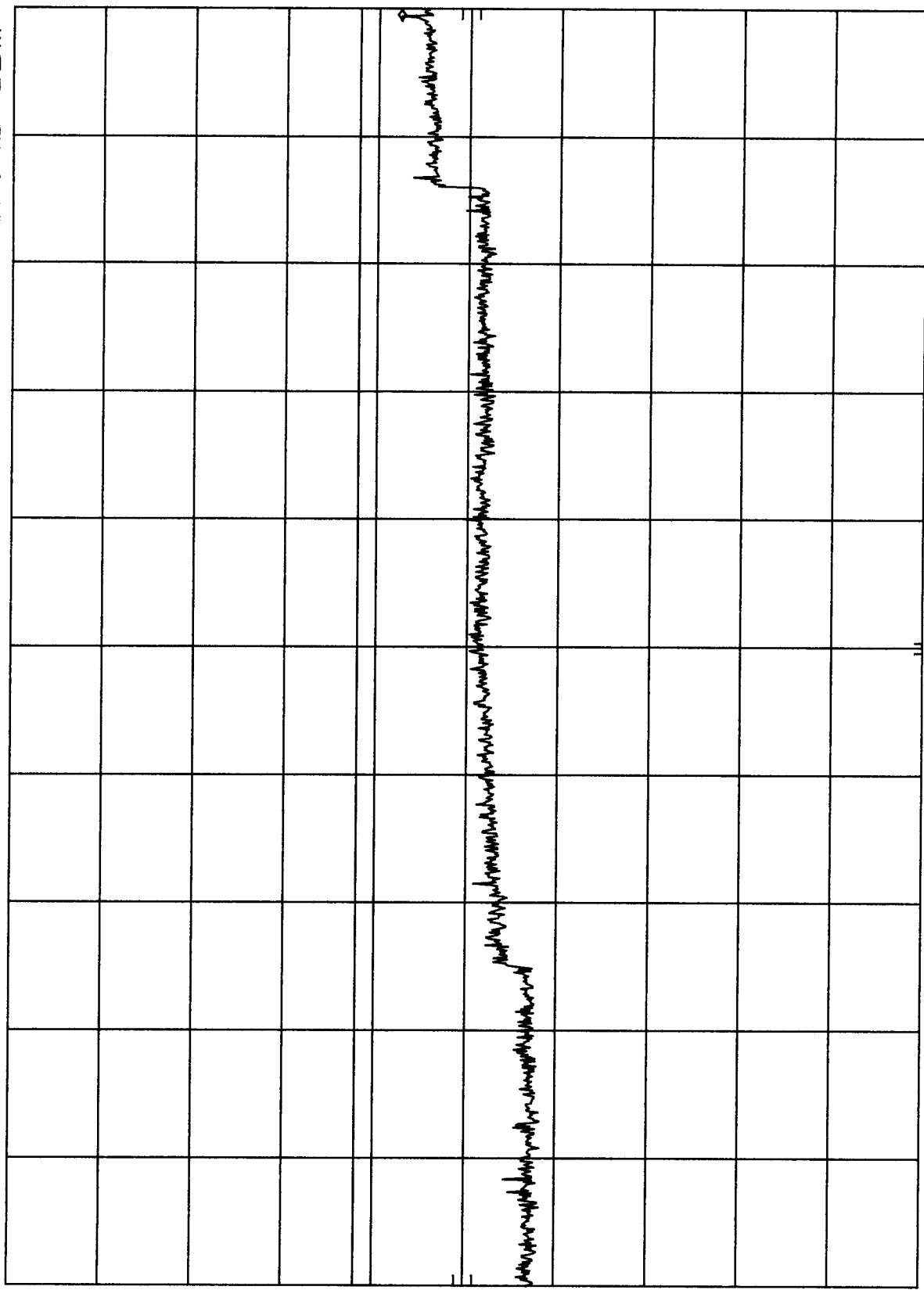
1.5

dB

DL

-13.0

dBm



START 10.0 GHz RES BW 1 MHz STOP 20.0 GHz
VBW 1 MHz SWP 250 msec

FCC ID-CKLHGC-130E Ch.Med Cond.Spurs.

REF 25.0 dBm ATTN 40 dB

h_p

10 dB/

POS PK

OFFSET

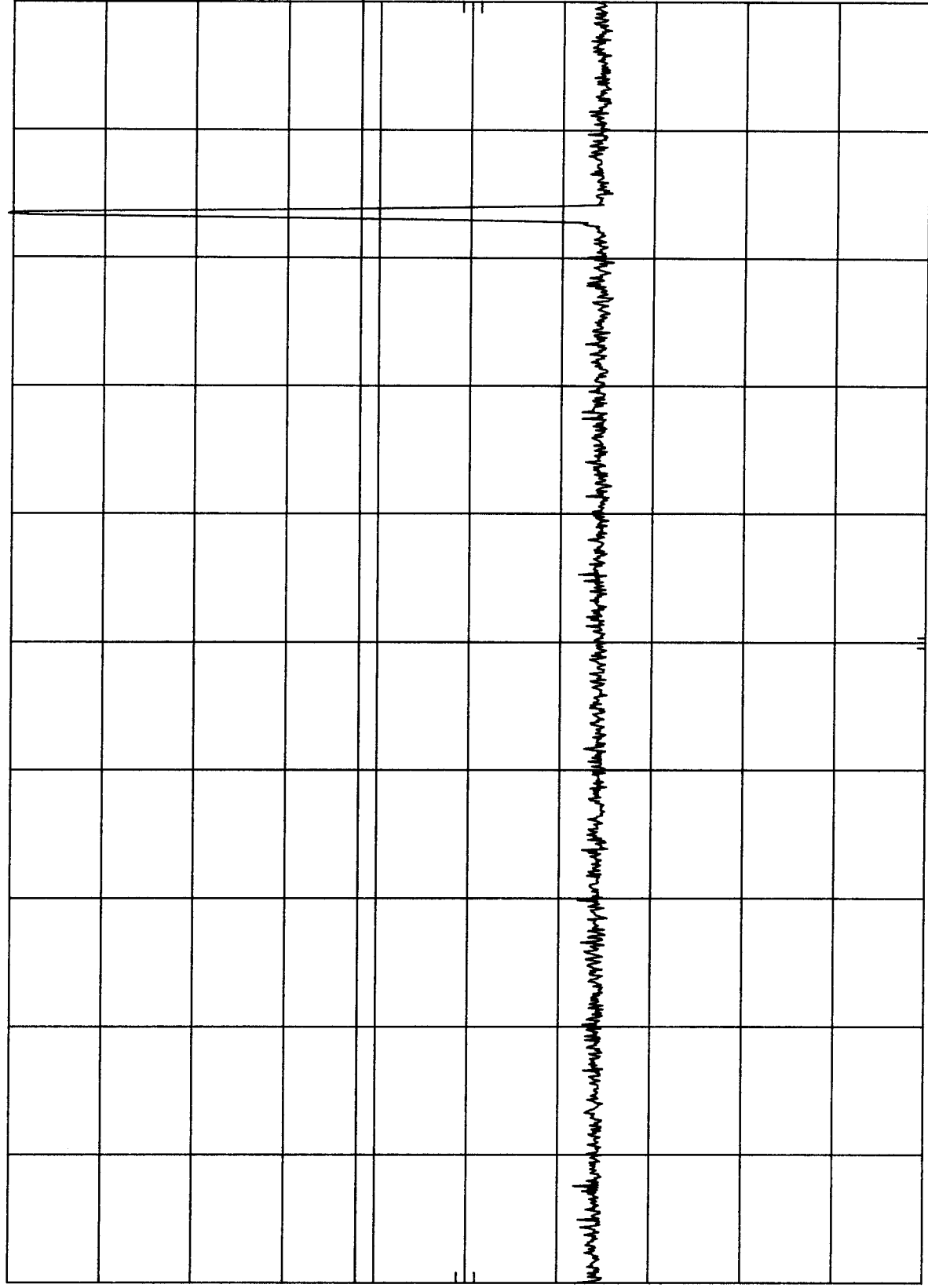
1.5

dB

DL

-13.0

dBm



START 10 MHz

RES BW 1 MHz

VBW 1 MHz

STOP 1.000 GHz

SWP 24.8 msec

FCC ID-CKLHGC-130E Ch.Med Cond.Spurs.
h_p REF 25.0 dBm ATTN 40 dB MKR 1.672 GHz
-29.10 dBm

10 dB/

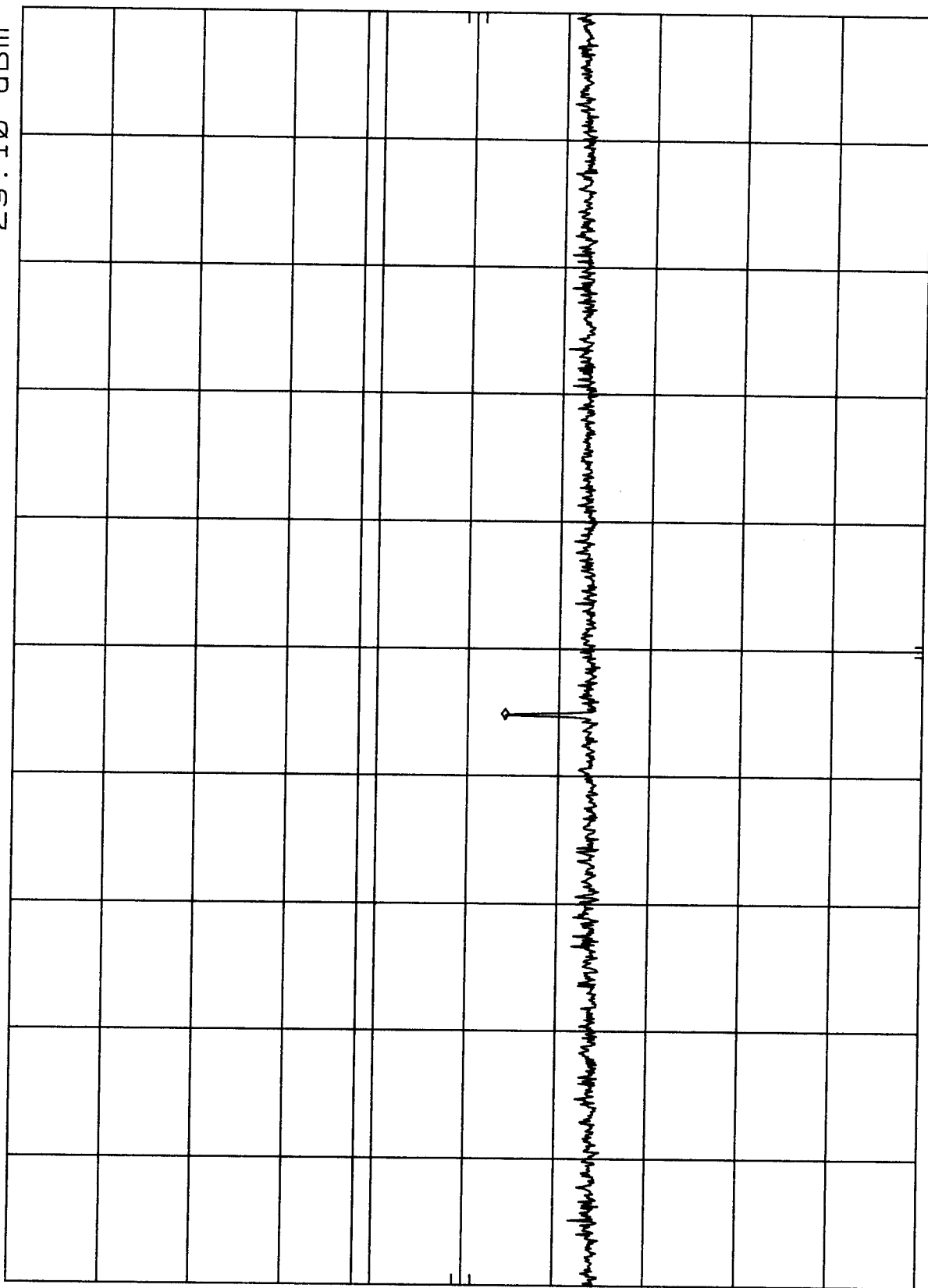
POS PK

OFFSET

1.5
dB

DL

-13.0
dBm



START 1.00 GHz

RES BW 1 MHz

VBW 1 MHz

STOP 2.50 GHz
SWP 37.5 msec

FCC ID-CKLHGC-130E Ch.Med Cond.Spurs.
h/p REF 25.0 dBm ATTEN 40 dB MKR 9.085 GHz
-29.40 dBm

10 dB/

POS PK

OFFSET

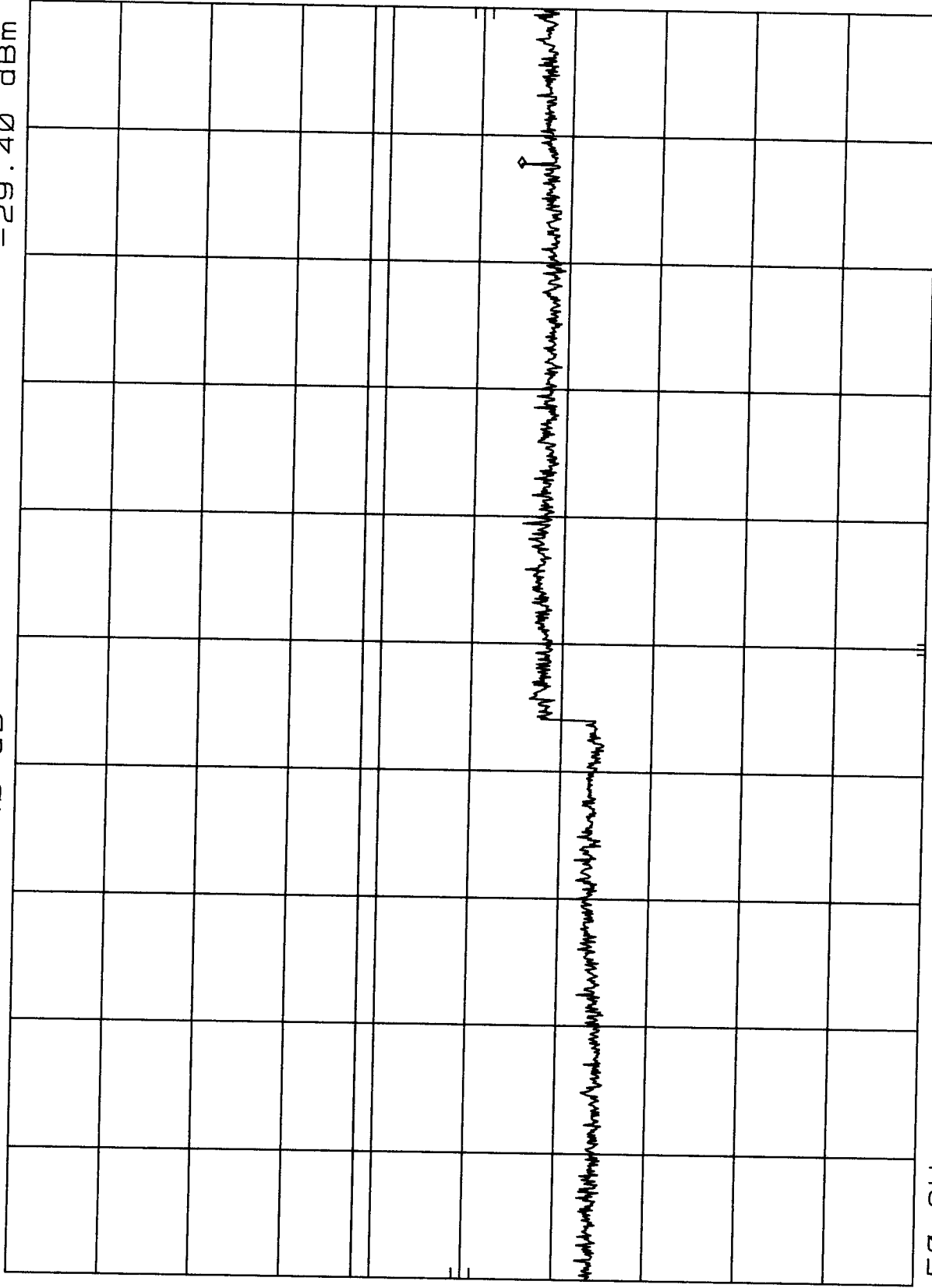
1.5

dB

DL

-13.0

dBm



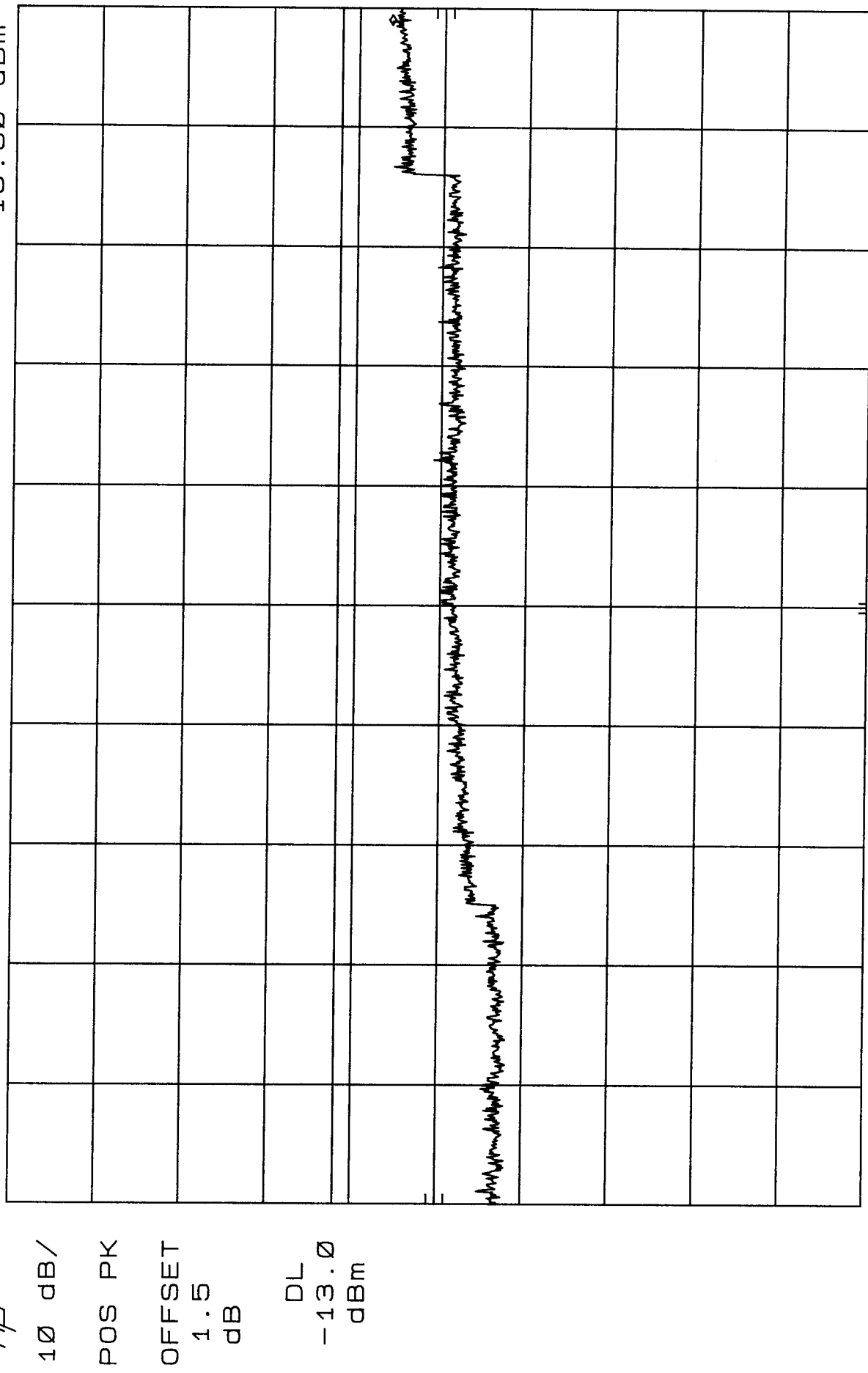
START 2.50 GHz

RES BW 1 MHz

VBW 1 MHz

STOP 10.00 GHz
SWP 188 msec

FCC ID-CKLHGC-130E Ch.Med Cond.Spurs. MKR 19.89 GHz
hP REF 25.0 dBm ATTN 40 dB -18.80 dBm



START 10.0 GHz RES BW 1 MHz STOP 20.0 GHz
VBW 1 MHz SWP 250 msec

FCC ID-CKLHGC-130E Ch.High Cond.Spurs.

REF 25.0 dBm ATTN 40 dB

hp

10 dB/

POS PK

OFFSET

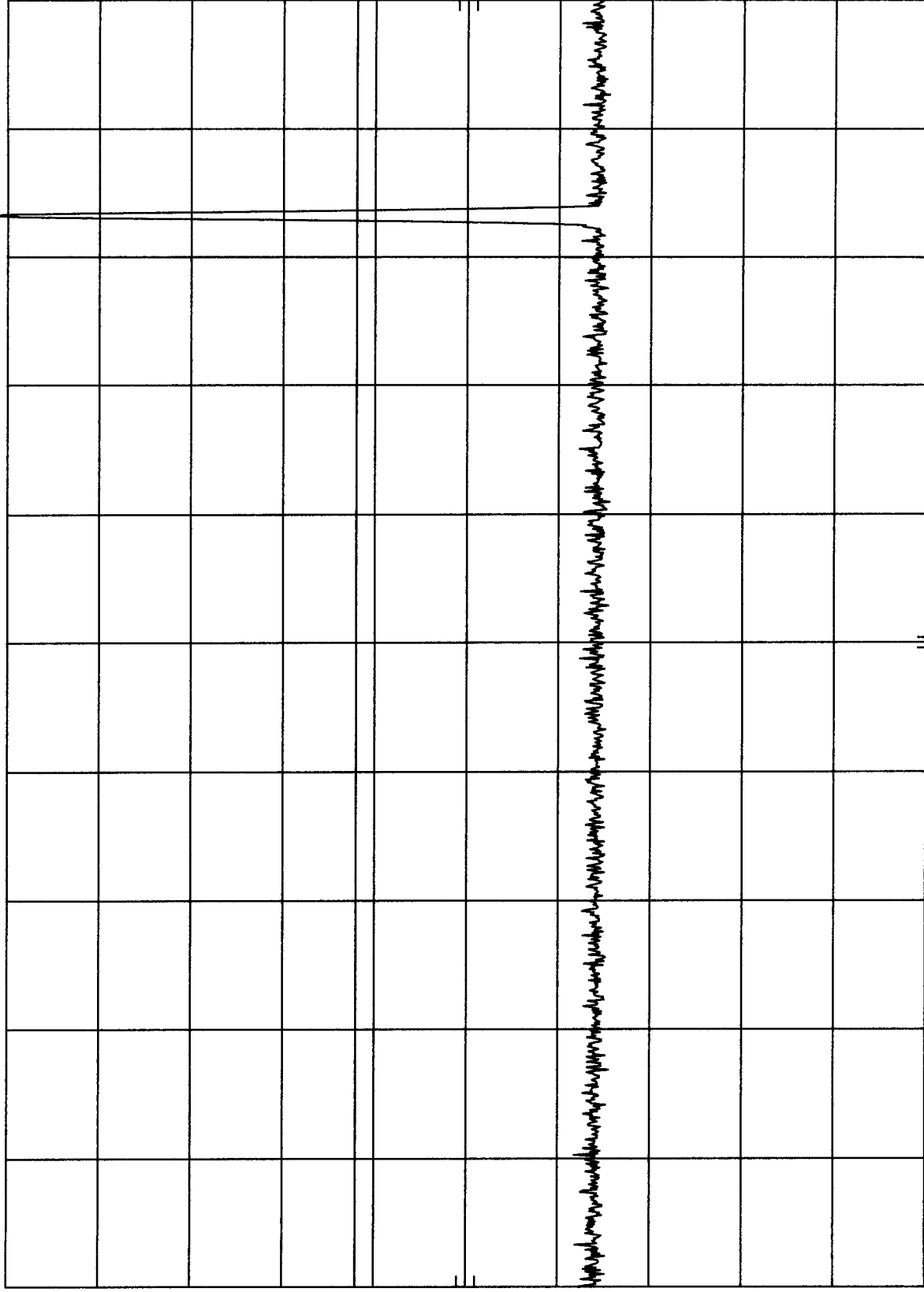
1.5

dB

DL

-13.0

dBm



START 10 MHz

RES BW 1 MHz

VBW 1 MHz

STOP 1.000 GHz

SWP 24.8 msec

FCC ID-CKLHGC-130E Ch.High Cond.Spurs. MKR 1.669 GHz
 REF 25.0 dBm ATTEN 40 dB -28.80 dBm

h/p

10 dB/

POS PK

OFFSET

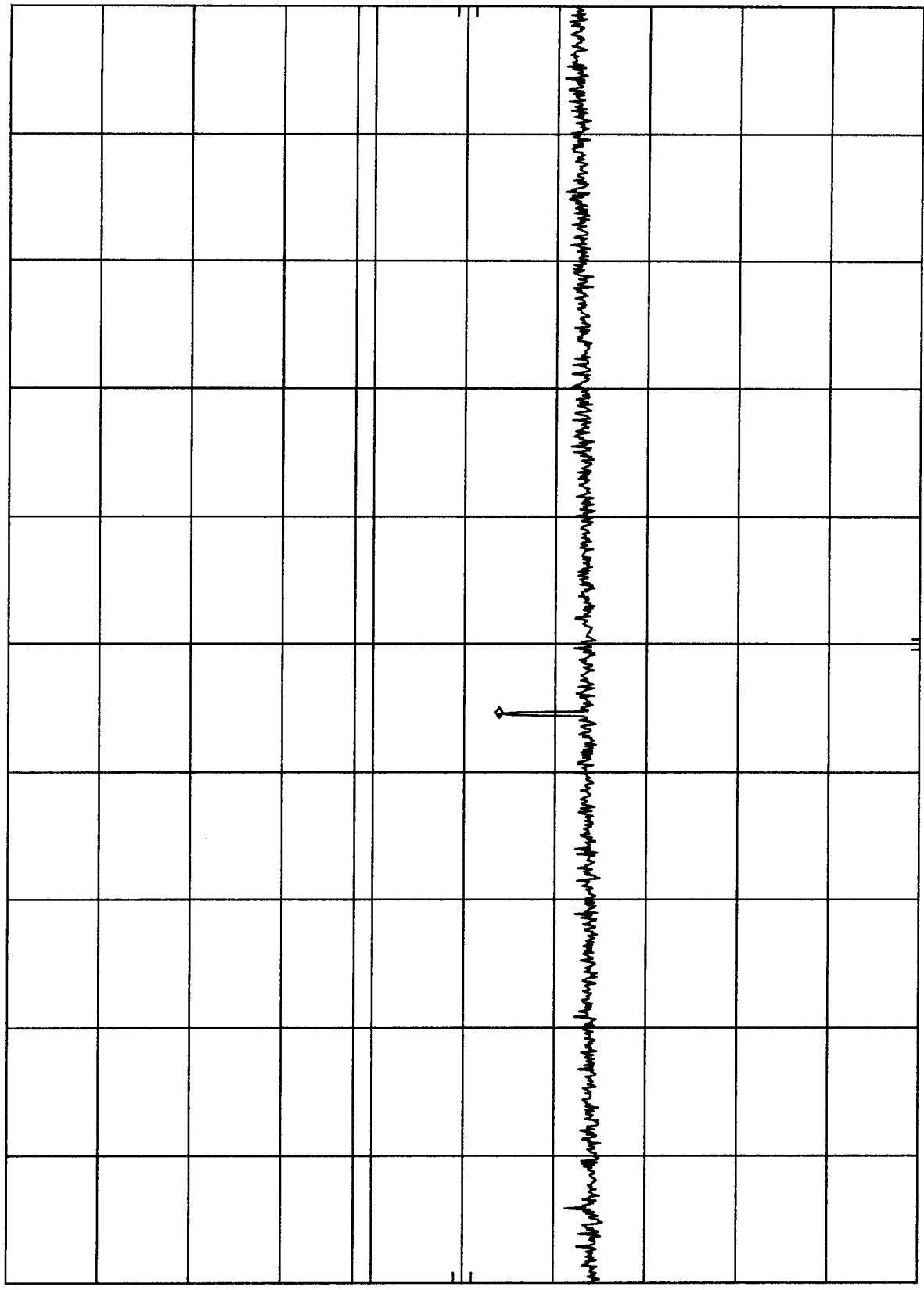
1.5

dB

DL

-13.0

dBm



START 1.00 GHz RES BW 1 MHz VBW 1 MHz STOP 2.50 GHz
 SWP 37.5 msec

FCC ID-CKLHGC-130E Ch.High Cond.Spurs. MKR 9.310 GHz
REF 25.0 dBm ATTN 40 dB -29.90 dBm

HP

10 dB/

POS PK

OFFSET

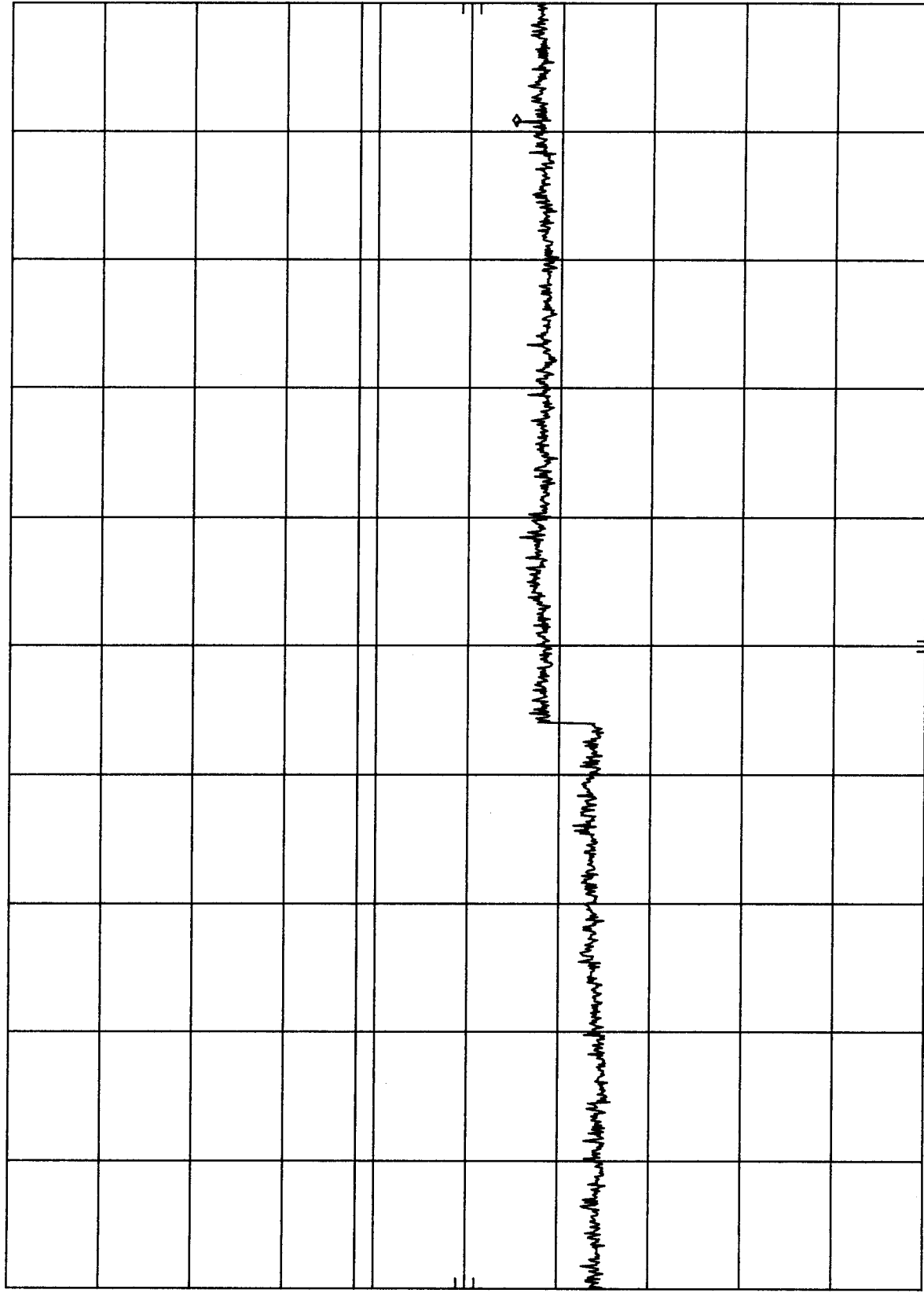
1.5

dB

DL

-13.0

dBm



START 2.50 GHz

RES BW 1 MHz

VBW 1 MHz

STOP 10.00 GHz

SWP 188 msec

HYUNDAI Ch.Low Cond.Spurs.
REF 28.0 dBm ATTN 40 dB

HP

10 dB/

POS PK

OFFSET

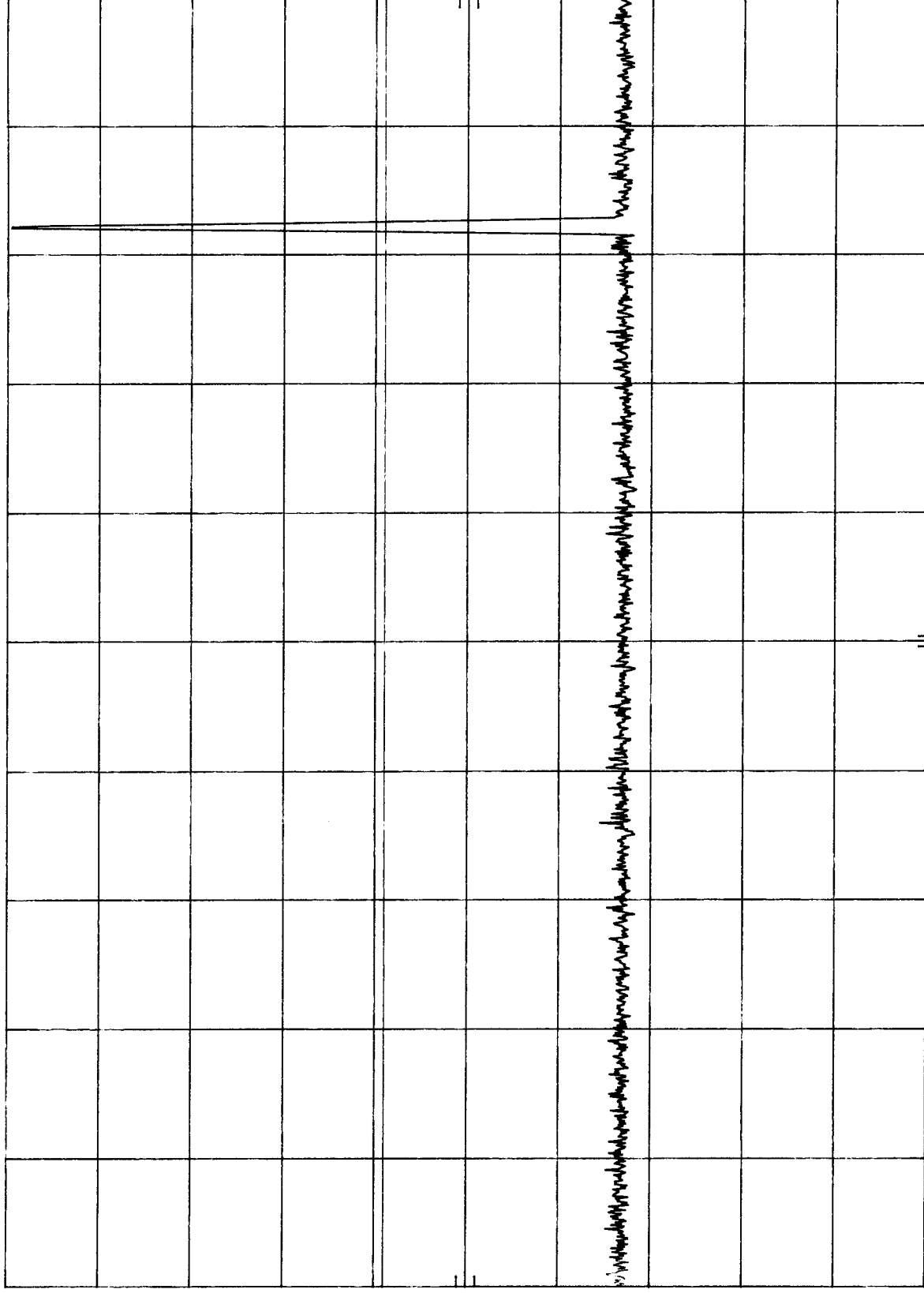
1.5

dB

DL

-13.0

dBm



START 10 MHz

RES BW 1 MHz

VBW 1 MHz

STOP 1.000 GHz

SWP 24.8 msec

HYUNDAI Ch.Low Cond.Spurs.
REF 28.0 dBm ATTN 40 dB

MKR 2.475 GHz
-26.70 dBm

h_p

10 dB/

POS PK

OFFSET

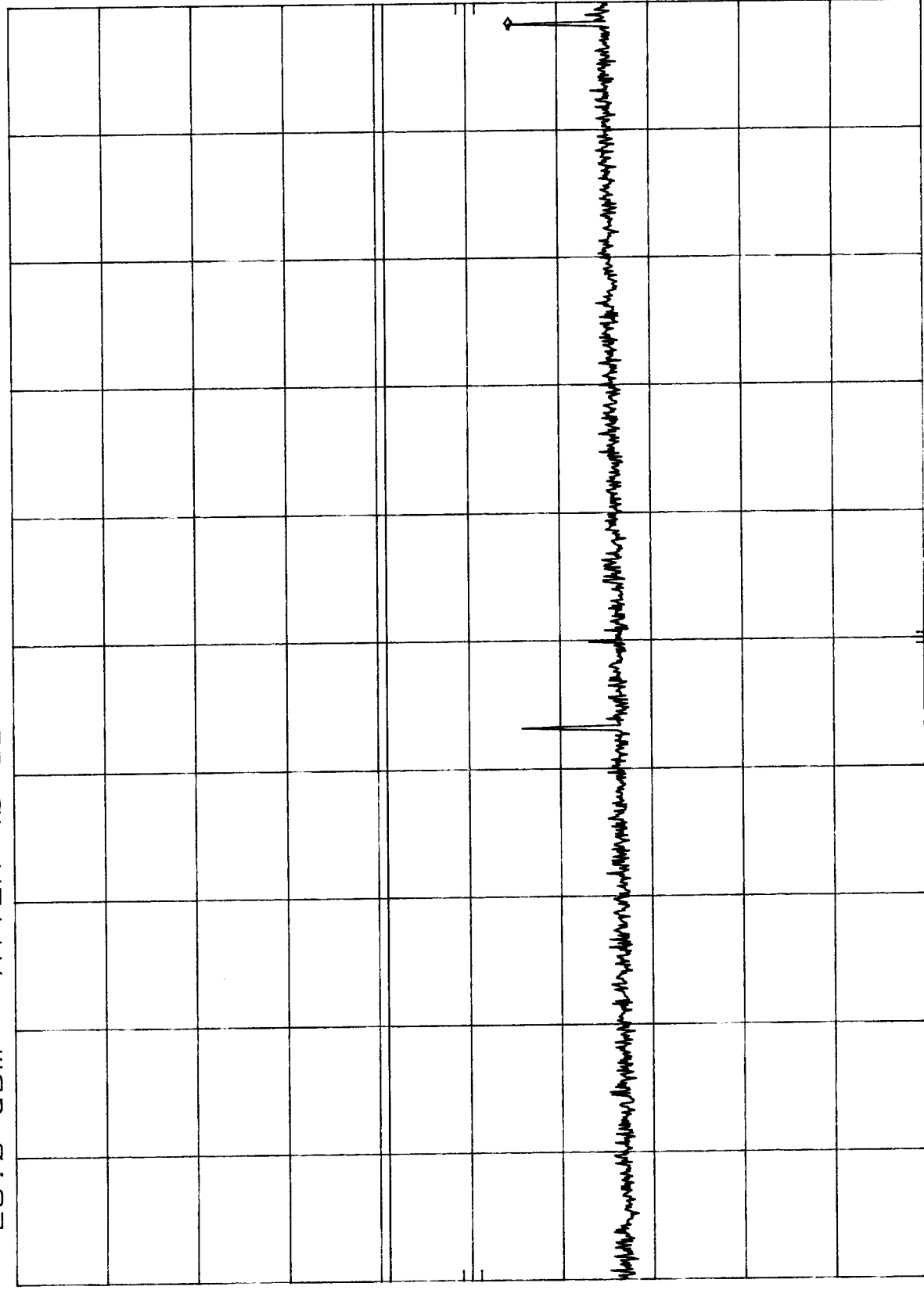
1.5

dB

DL

-13.0

dBm



START 1.00 GHz RES BW 1 MHz VBW 1 MHz STOP 2.50 GHz SWP 37.5 msec

HYUNDAI Ch.Low Cond.Spurs.

MKR 9.708 GHz
-30.70 dBm

h₁₀ REF 28.0 dBm ATTN 40 dB

10 dB/

POS PK

OFFSET

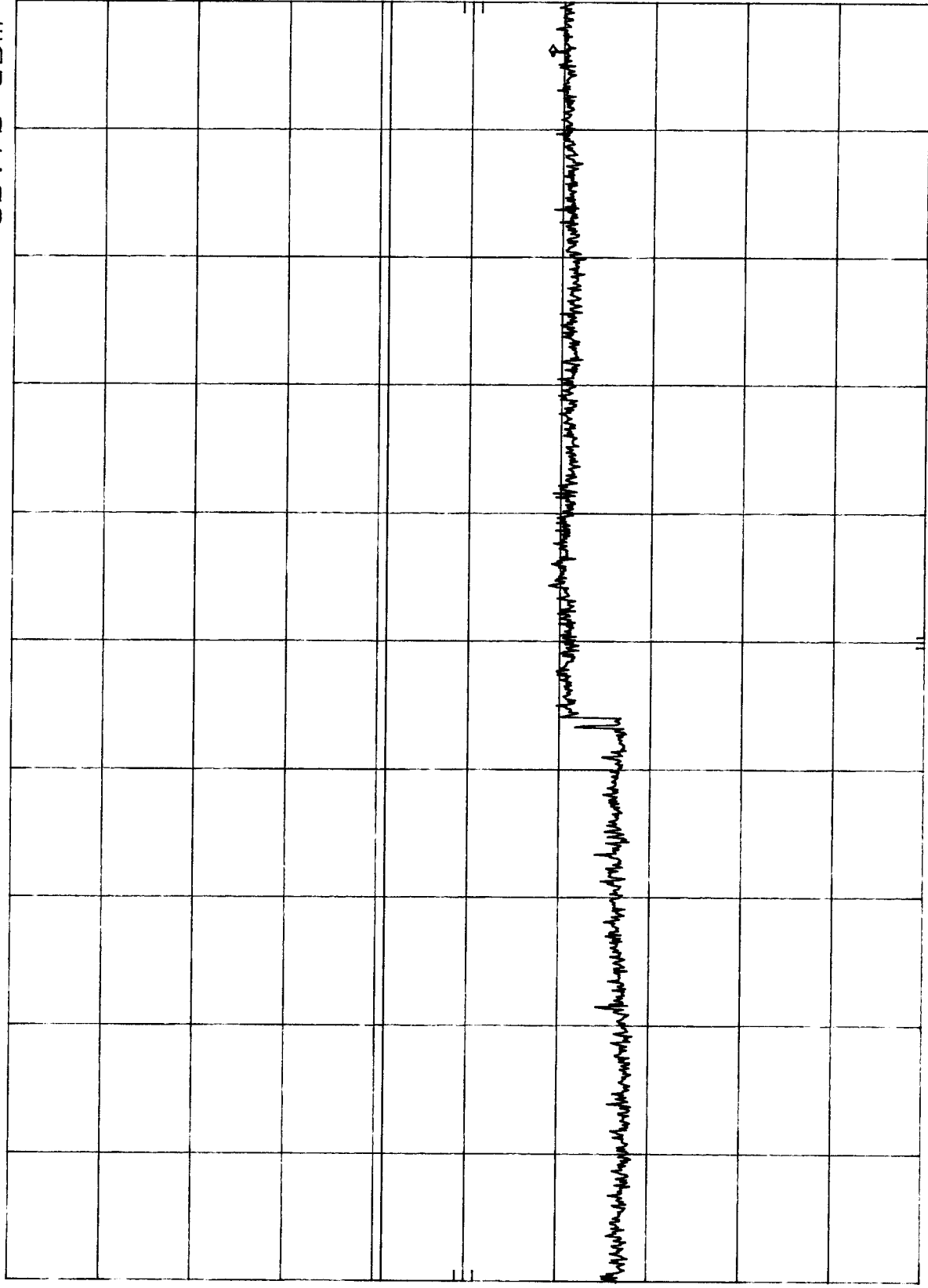
1.5

dB

DL

-13.0

dBm



START 2.50 GHz

RES BW 1 MHz

VBW 1 MHz

STOP 10.00 GHz

SWP 188 msec

HYUNDAI Ch.Low Cond.Spurs.
REF 28.0 dBm ATTN 40 dB

MKR 19.46 GHz
-18.10 dBm

hpo

10 dB/

POS PK

OFFSET

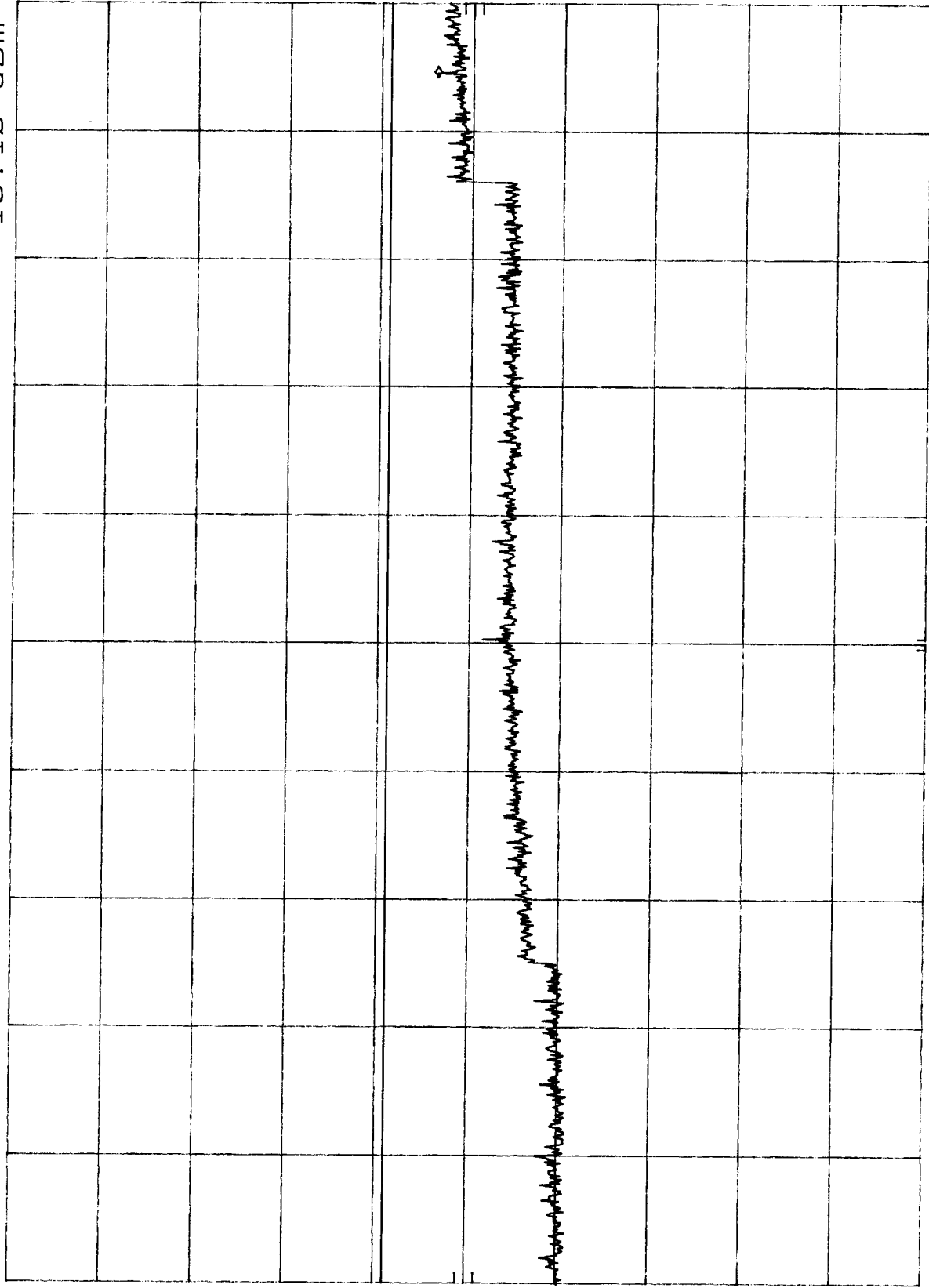
1.5

dB

DL

-13.0

dBm



START 10.0 GHz

RES BW 1 MHz

VBW 1 MHz

STOP 20.0 GHz

SWP 250 msec

HYUNDAI Ch.Med Cond.Spurs.
h_p REF 28.0 dBm ATEN 40 dB

10 dB/

POS PK

OFFSET

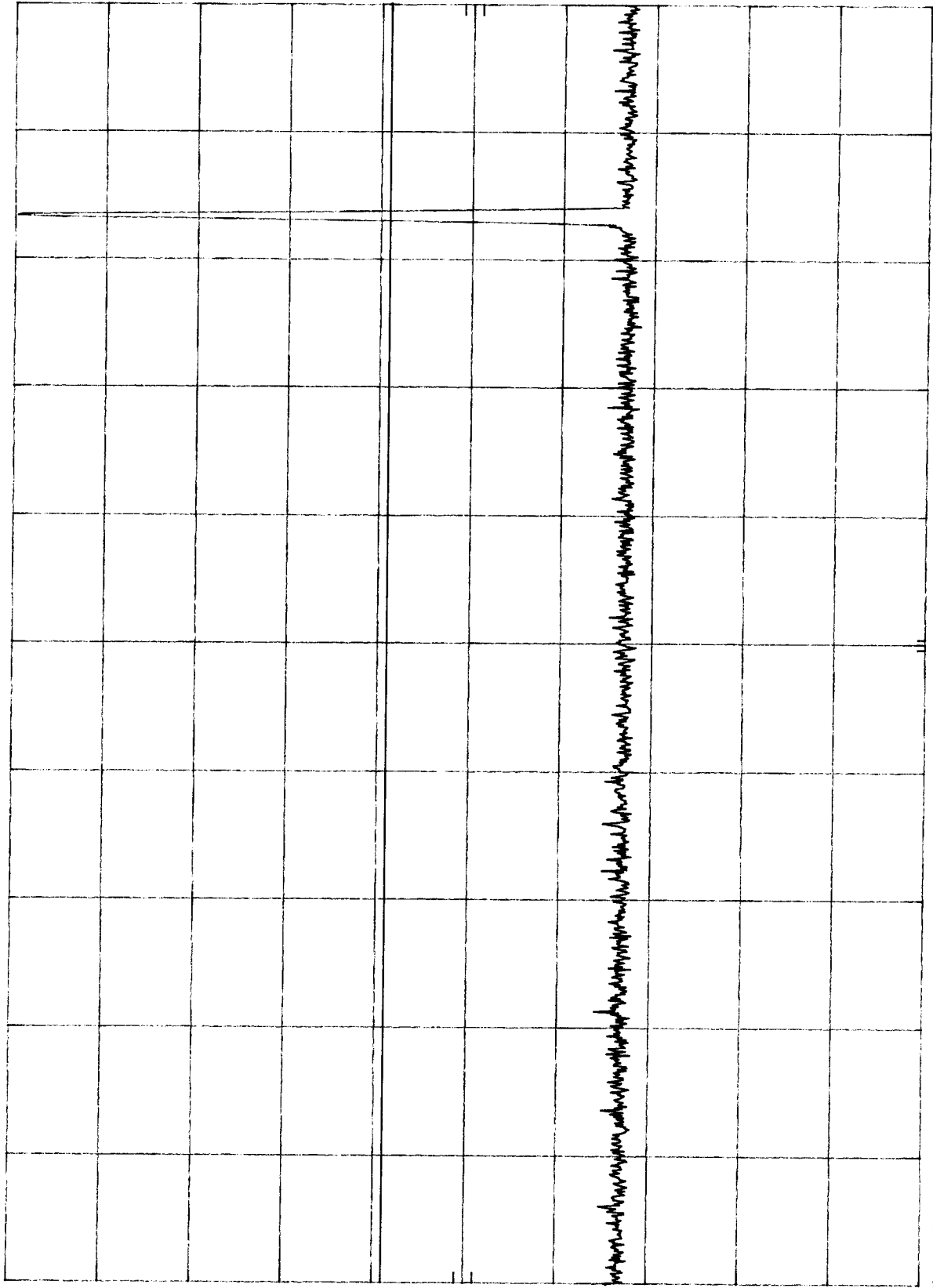
1.5

dB

DL

-13.0

dBm



START 10 MHz

RES BW 1 MHz

VBW 1 MHz

STOP 1.000 GHz

SWP 24.8 msec

HYUNDAI Ch.Med Cond.Spurs.
REF 28.0 dBm ATTN 40 dB

MKR 1.674 GHz
-26.10 dBm

h/p

10 dB/

POS PK

OFFSET

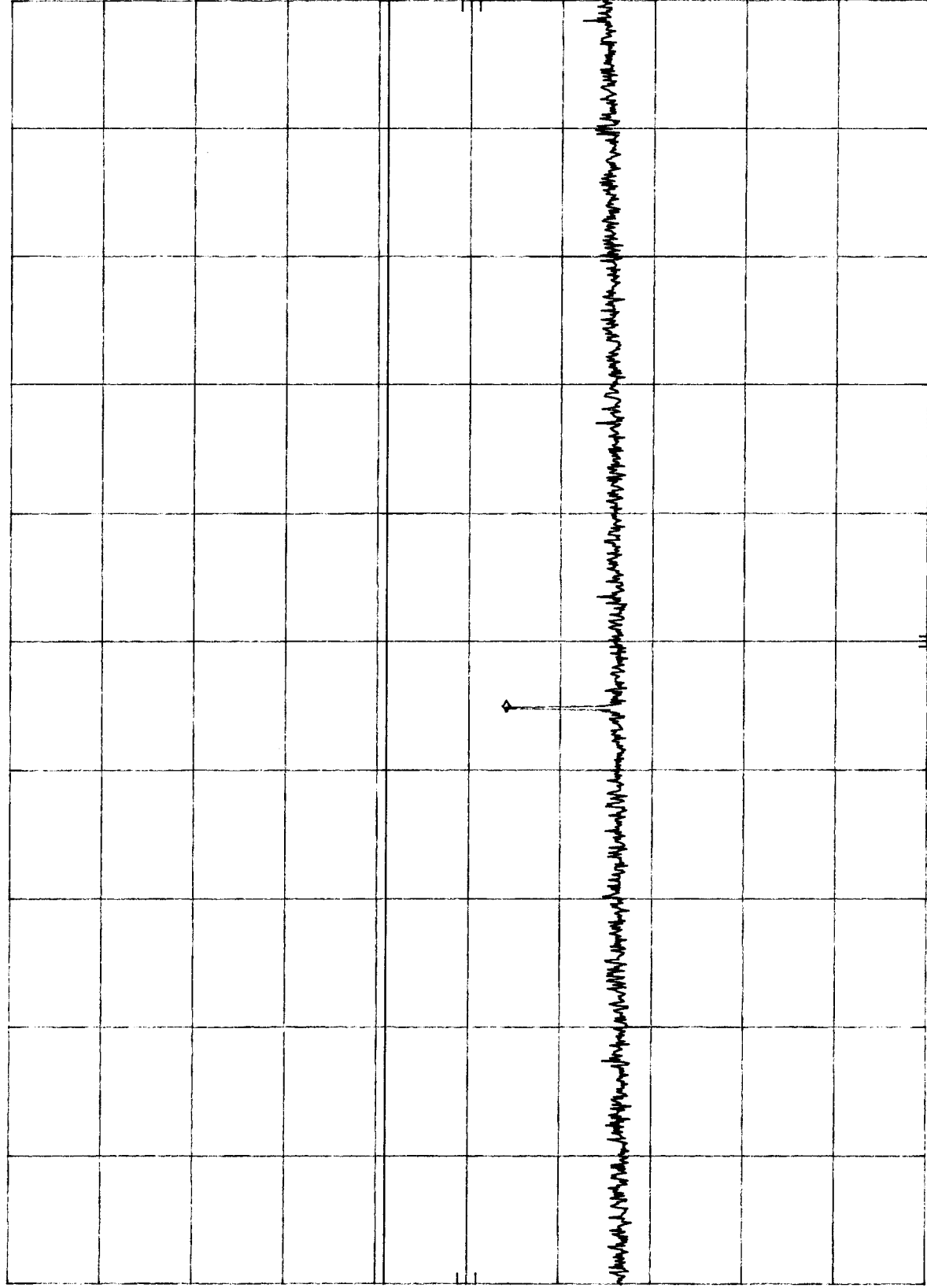
1.5

dB

DL

-13.0

dBm



START 1.00 GHz

RES BW 1 MHz

VBW 1 MHz

STOP 2.50 GHz

SWP 37.5 msec

HYUNDAI Ch.Med Cond.Spurs.
REF 28.0 dBm ATTN 40 dB

MKR 8.965 GHz
-30.20 dBm

hp

10 dB/

POS PK

OFFSET

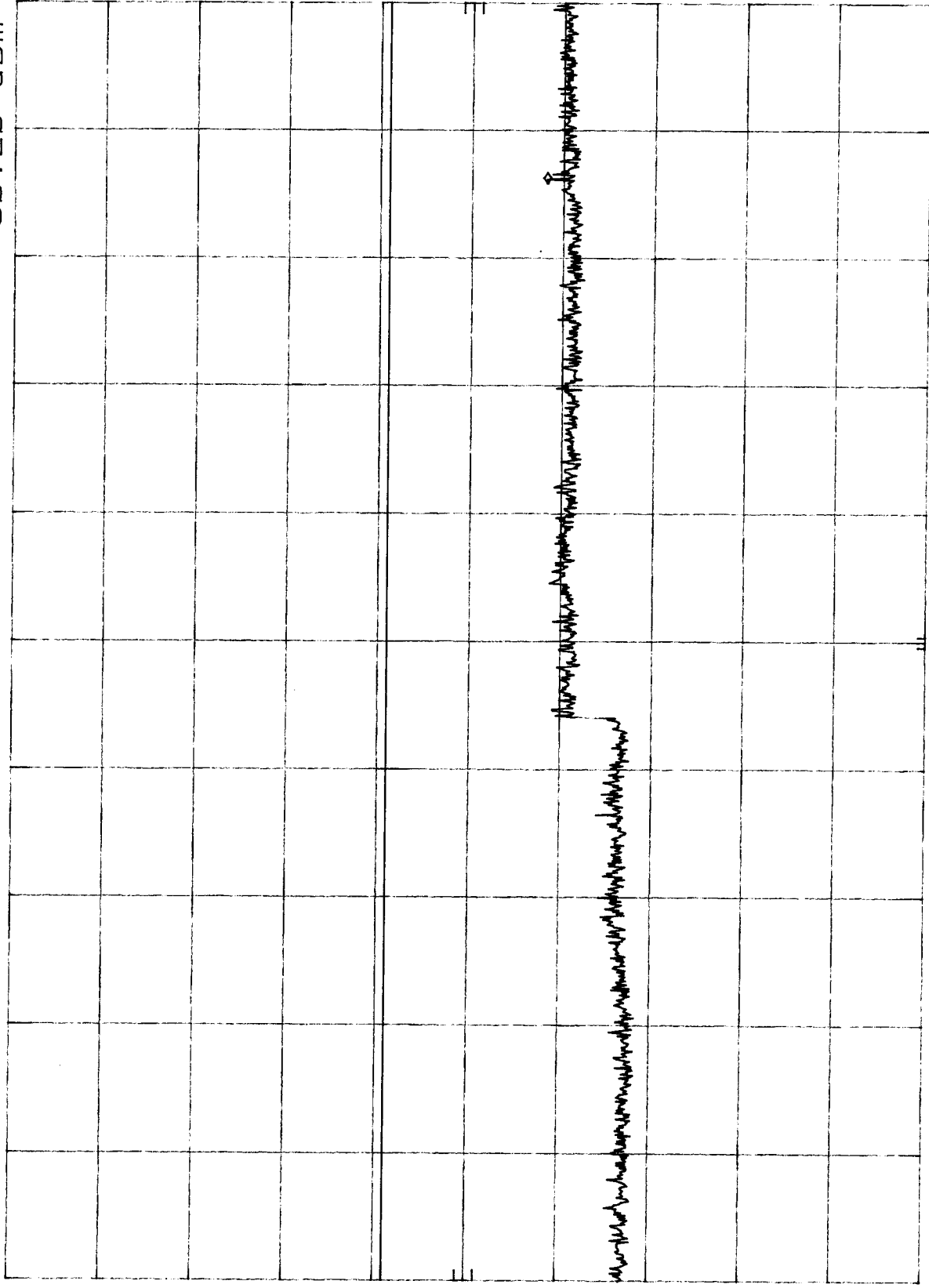
1.5

dB

DL

-13.0

dBm



START 2.50 GHz

RES BW 1 MHz

VBW 1 MHz

STOP 10.00 GHz

SWP 188 msec

HYUNDAI Ch.Med Cond.Spurs.
REF 28.0 dBm ATTEN 40 dB

MKR 19.79 GHz
-18.50 dBm

h₁₀

10 dB/

POS PK

OFFSET

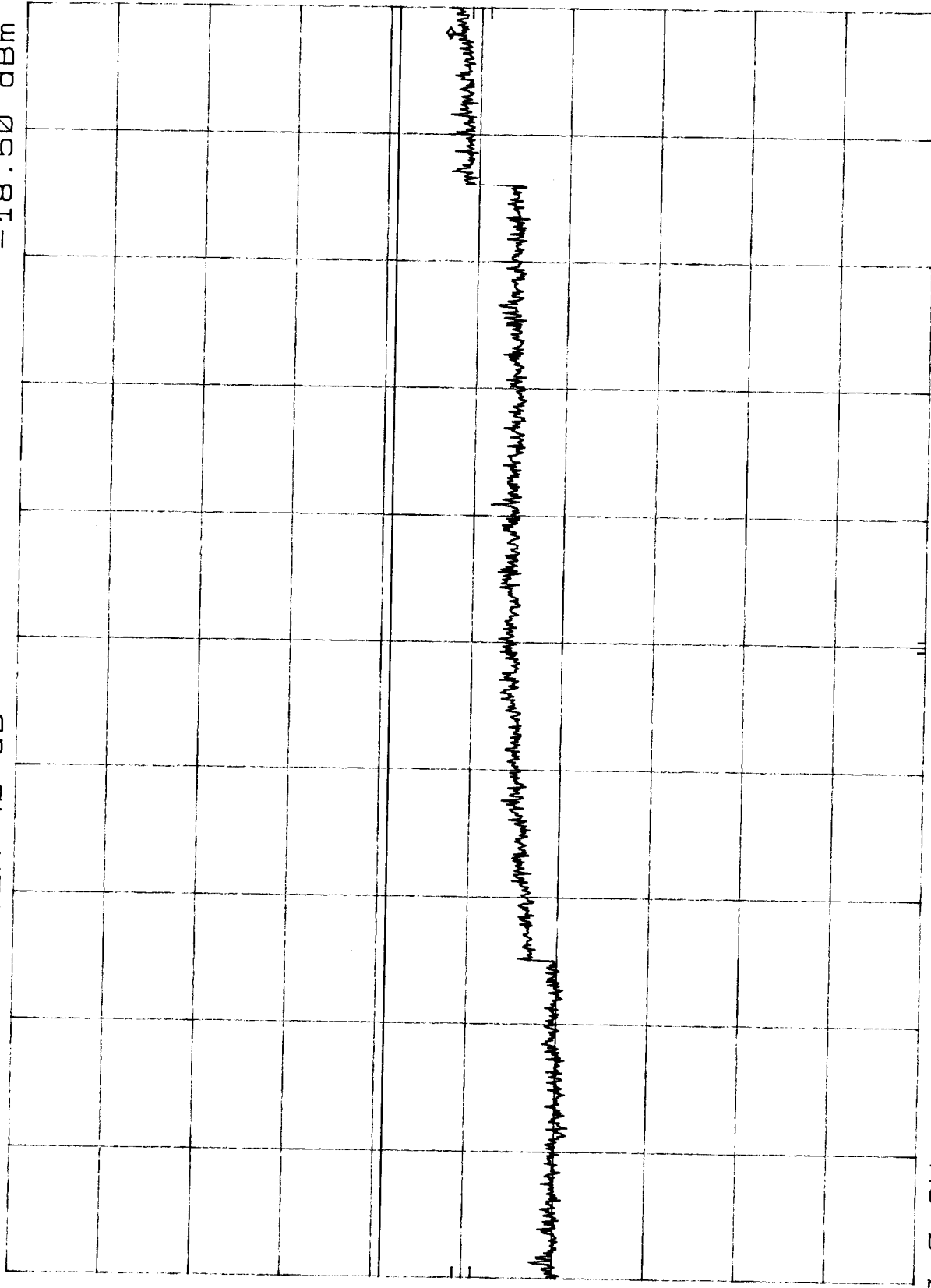
1.5

dB

DL

-13.0

dBm



START 10.0 GHz

RES BW 1 MHz

VBW 1 MHz

STOP 20.0 GHz
SWP 250 msec

FCC ID-CKLHGC-130E Ch.High Cond.Spurs.

h/p

REF 28.0 dBm ATTN 40 dB

10 dB/

POS PK

OFFSET

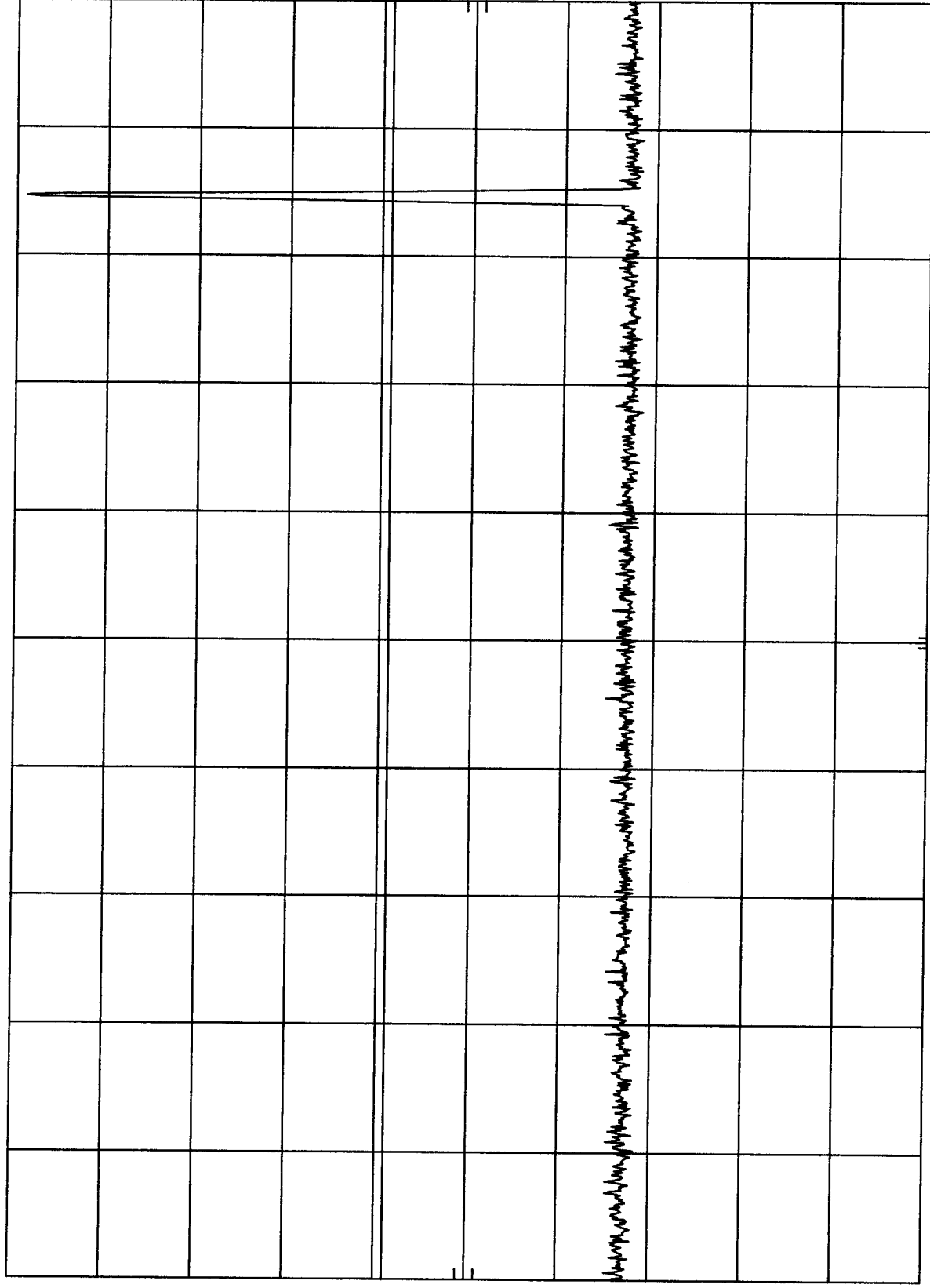
1.5

dB

DL

-13.0

dBm



START 10 MHz

RES BW 1 MHz

VBW 1 MHz

STOP 1.000 GHz
SWP 24.8 msec

FCC ID-CKLHGC-130E Ch.High Cond.Spurs. MKR 1.698 GHz
h7p REF 28.0 dBm ATTN 40 dB -28.10 dBm

10 dB/

POS PK

OFFSET

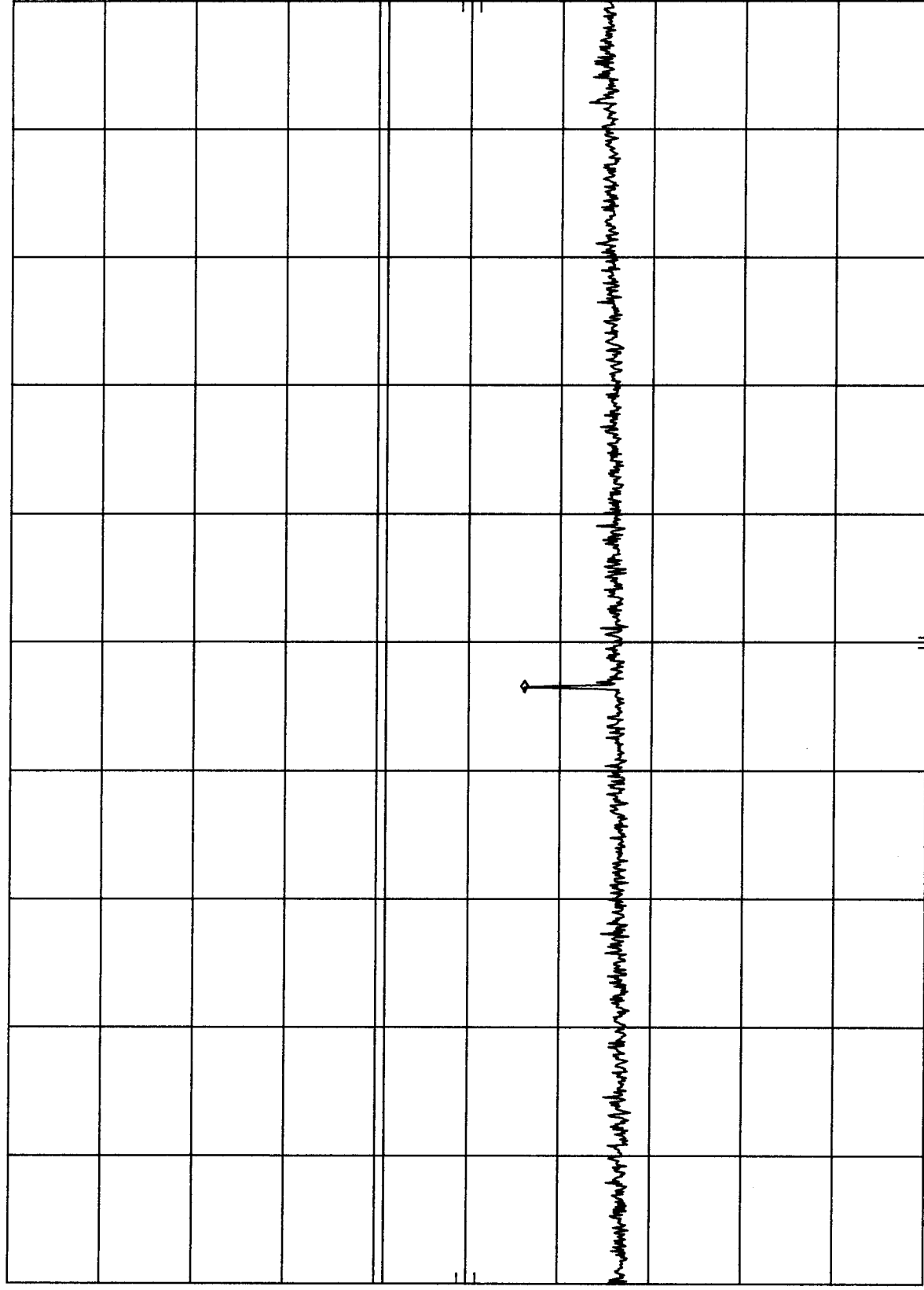
1.5

dB

DL

-13.0

dBm



START 1.00 GHz RES BW 1 MHz STOP 2.50 GHz
VBW 1 MHz SWP 37.5 msec

FCC ID-CKLHGC-130E Ch.High Cond.Spurs. MKR 6.310 GHz
hp REF 28.0 dBm ATTN 40 dB -30.70 dBm

10 dB/

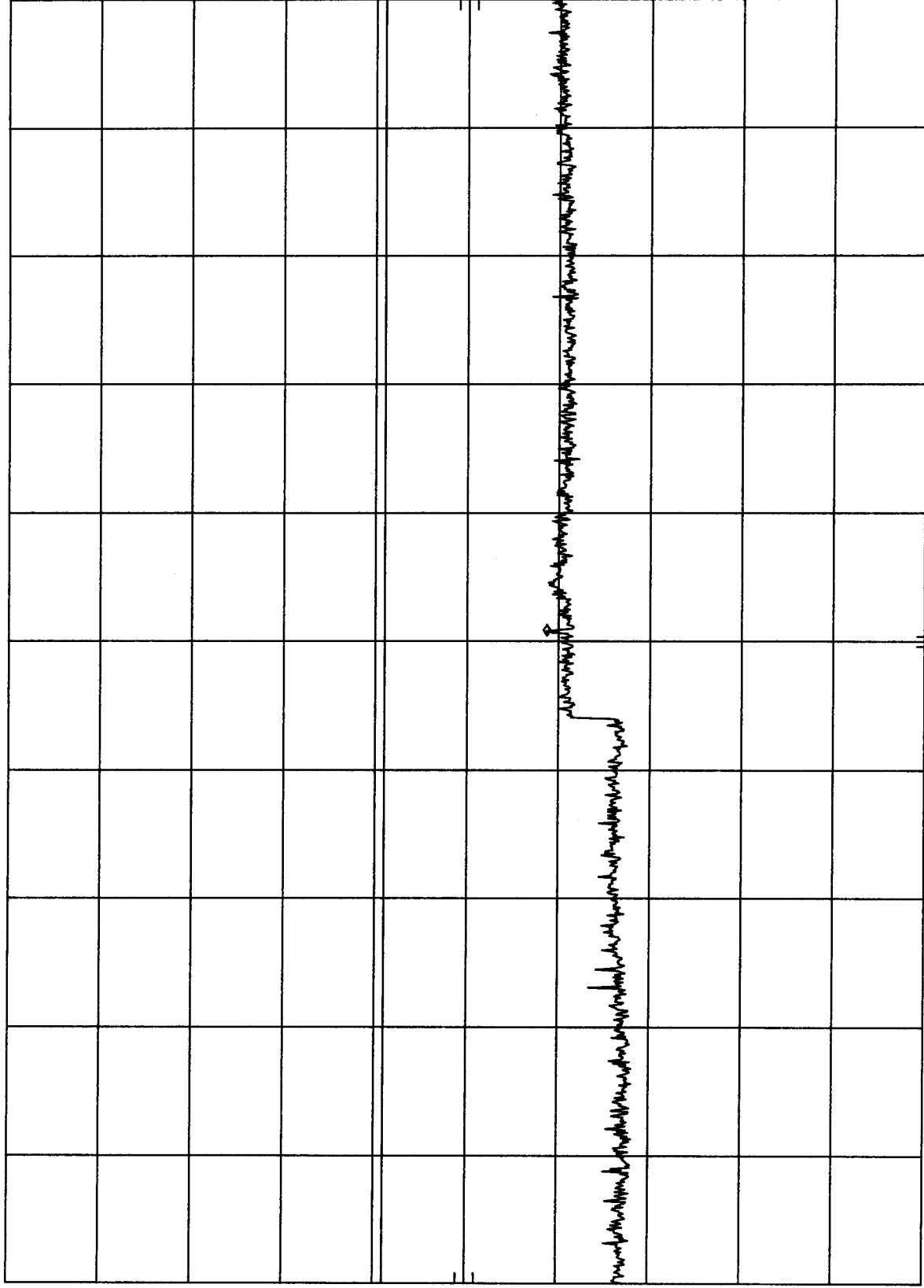
POS PK

OFFSET

1.5
dB

DL

-13.0
dBm



START 2.50 GHz RES BW 1 MHz VBW 1 MHz STOP 10.00 GHz SWP 188 msec

FCC ID-CKLHGC-130E Ch.High Cond.Spurs. MKR 19.96 GHz
REF 28.0 dBm ATTN 40 dB -18.60 dBm

hp

10 dB/

POS PK

OFFSET

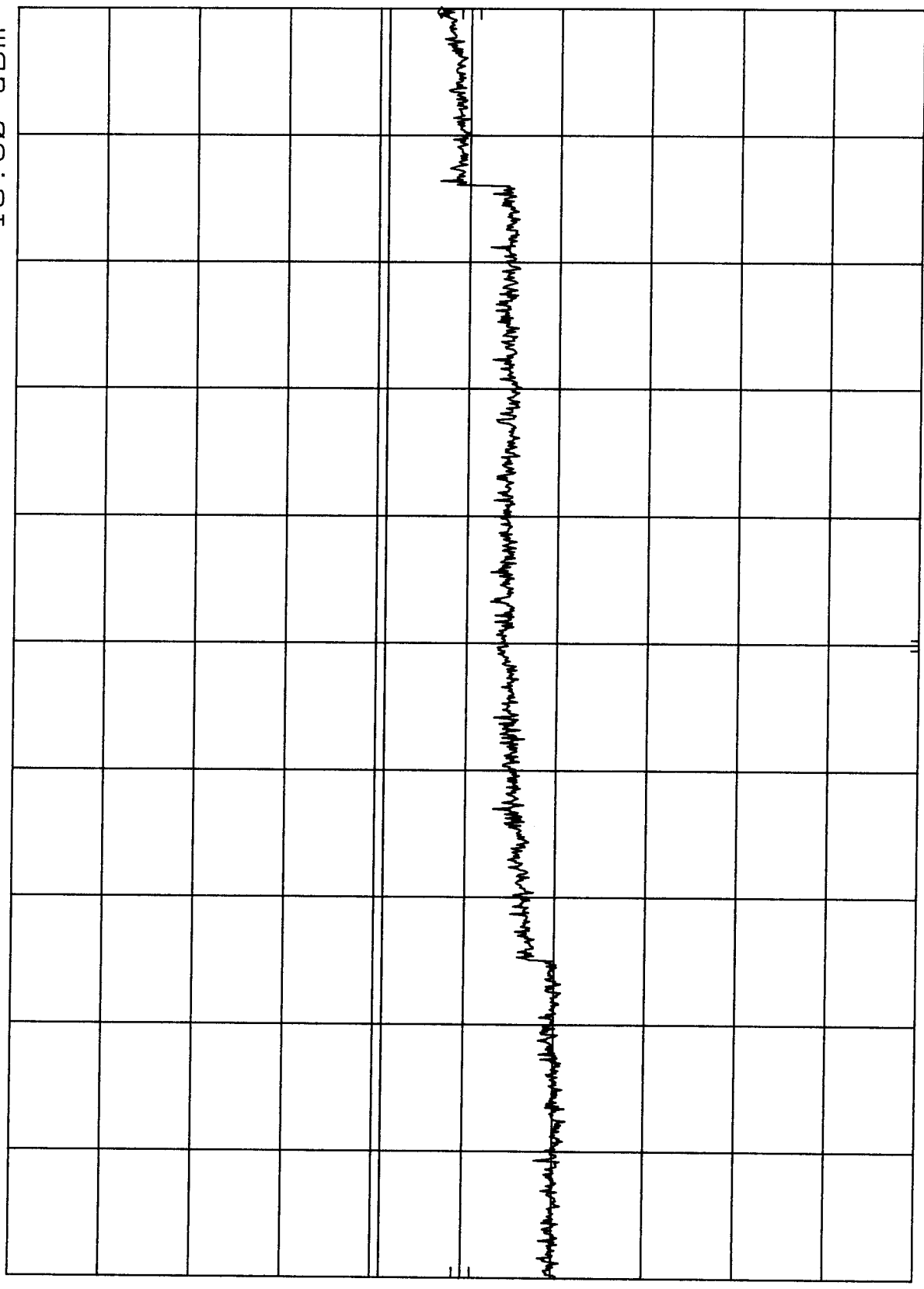
1.5

dB

DL

-13.0

dBm



START 10.0 GHz RES BW 1 MHz STOP 20.0 GHz SWP 250 msec
VBW 1 MHz