LANG ELECTRONICS Inc.

507 FIFTH AVENUE NEW YORK, N. Y. 10017
TEL. 212-682-7147

INSTRUCTION MANUAL
FOR
LANG PROGRAM EQUALIZER
MODEL PEQ-2

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PEQ-2 PROGRAM EQUALIZER

FEATURES

NON-DRIFT STABLE EQUALIZER COMPONENTS

HIGH Q TOROIDAL EQUALIZER COILS

PRECISION BRIDGE - SELECTED CAPACITORS

LOW HUM AND NOISE

LOW POWER CONSUMPTION

HERMETICALLY SEALED EQUALIZER COMPONENTS

STAINLESS STEEL ENGRAVED CONTROL PANEL

STANDARD 19 INCH RACK PANEL MOUNTING

EQUALIZATION AND POWER ON INDICATOR

EQUALIZATION IN - OUT KEY

BROADCAST QUALITY POTTED TRANSFORMERS

SCREW TERMINAL AUDIO CONNECTING STRIP

HIGH OUTPUT, LOW DISTORTION CAPABILITY

OVERRATED COMPONENTS

CONTINUOUS DUTY OPERATION

STABLE AMPLIFIER GAIN

ZERO INSERTION LOSS

BALANCED, UNBALANCED OR UNGROUNDED OPERATION

MULTI-POSITION EQUALIZATION FREQUENCY SELECTORS

EQUALIZATION CURVE SHAPING

SILICON TRANSISTOR AMPLIFIER

PLUG-IN SOLID STATE REGULATED POWER SUPPLY

PLUG-IN AMPLIFIER AND POWER SUPPLY BOARDS

MODEL PEQ-2 PROGRAM EQUALIZER

SPECIFICATIONS

EQUALIZATION:	HIGH FREQUENCY PEAK BOOST 0 to plus 18db at 2500, 3750, 5000, 7500, 10,000, 12,000, 15,000, or 20,000 cycles per second.
	High FREQUENCY SHELF DROOP 0 to minus 16db at 2500, 5000, 7500, 10,000, 15,000 or 20,000 cycles per second.
	LOW FREQUENCY SHELF BOOST 0 to plus 12db at 20, 30, 40, 60, 80, 120, 160 or 240 cycles per second.
	LOW FREQUENCY SHELF DROOP 0 to minus 18db at 25, 50, 100 or 200 cycles per second.
INPUT IMPEDANCE:	150/600 ohms Terminating, Transformer, Primary, BALANCED or UNBALANCED.
OUTPUT LOAD IMPEDANCE:	150/600 ohms, Transformer Secondary, BALANCED or UNBALANCED
FREQUENCY RESPONSE: (in flat position)	Plus or minus 1/2db 20 to 20,000 CPS.
NORMAL OPERATING RANGE:	Minus 20dbm to plus 14dbm
MAXIMUM OUTPUT LEVEL:	Plus 30dbm into 600 ohms
DISTORTION:	Less than 1/2% from 20 HZ to 20 KHZ at plus 24dbm.
NEGATIVE FEEDBACK:	40db
INSERTION LOSS:	ZERO
NOISE AND HUM: (unweighted)	Minus 80dbm absolute value - measuring all noise components over a bondwidth of 20 to 20000 HZ
	Equivalent input noise - 105dbm

MODEL PEQ-2 PROGRAM EQUALIZER

SPECIFICATIONS

PAGE-2

TRANSISTORS:	1-2N3054 1-40319 2-1N2859A 4-2N3053
INDICATORS:	POWER ON Lamp (Red) EQUALIZATION ON Lamp (Amber)
POWER:	117 Volts 50-60 CPS 10 Watts
MOUNTING:	Standard EIA Rack Mounting
PANEL SIZE:	5-1/4" X 19"
PANEL FINISH:	Stainless Steel, Engraved Black Lettering
OVERALL DIMENSIONS:	3-1/2" X 19" X 9"
NET WEIGHT:	14 lbs.

LIST OF CONTROLS AND INDICATORS

NAME	FUNCTION	AMPLITUDE
LOW FREQUENCY BOOST SELECTOR SWITCH	SELECTS FREQUENCY AT WHICH MAXIMUM BOOST OCCURS	20, 30, 40, 60, 80. 120, 160, 240, HZ
LOW FREQUENCY DROOP SELECTOR SWITCH	SELECTS FREQUENCY AT WHICH MAXIMUM DROOP OCCURS	25, 50, 100, 200 HZ
LOW FREQUENCY BOOST CONTROL	ADJUSTS DEGREE OF LOW FREQUENCY BOOST	0 -to +12db
LOW FREQUENCY DROOP CONTROL	ADJUSTS DEGREE OF LOW FREQUENCY DROOP	0 -to -18db
HIGH FREQUENCY BOOST SELECTOR SWITCH	SELECTS FREQUENCY AT WHICH MAXIMUM BOOST OCCURS	25, 3.75, 5.0, 7.5, 10, 12, 15, 20 HZ
HIGH FREQUENCY DROOP SELECTOR SWITCH	SELECTS FREQUENCY AT WHICH MAXIMUM DROOP OCCURS	2.5, 5.0, 7.5, 10, 15, 20 HZ
HIGH FREQUENCY BOOST CONTROL	ADJUSTS DEGREE OF HIGH FREQUENCY BOOST	0 -to+18db
HIGH FREQUENCY DROOP CONTROL	ADJUSTS DEGREE OF HIGH FREQUENCY DROOP	0 to minus 16db
HIGH FREQUENCY BAND-WIDTH CONTROL	ADJUSTS SHAPE OF PEAK BOOST CURVE	BROAD TO SHARP
POWER SWITCH	CONTROLS AC POWER TO EQUALIZER	--------

LIST OF CONTROLS AND INDICATORS PAGE-2

NAME	FUNCTION	FREQUENCY OR AMPLITUDE
EQUALIZATION -IN/OUT KEY SWITCH	CUTS OFF ALL EQUALIZATION PERMITTING CONTROLS TO REMAIN AT NORMAL SETTINGS	--------
EQUALIZATION LAMP (AMBER)	LIGHTS WHEN -IN OUT KEY IS IN "ON" POSITION	--------
POWER LAMP (RED)	LIGHTS WHEN AC POWER IS APPLIED	--------

INSTALLATION

MECHANICAL: The PEQ-2 mounts into a standard 19" EIA rack cabinet. A panel space of 3 1/2 inches is required. Mount the equalizer into a rack by using four rack screws, unually 10-32 X 1/2", through slots in panel edges.

ELECTRICAL: The PEQ-2 utilizes 115 volt, 60 cycle single phase power, and is provided with a six foot power cord equipped with a standard two prong plug. Plug the cord directly into a standard 115 Volt AC outlet.

AUDIO: The PEQ-2 input and output connections are Made on a single terminal strip. Six screw terminals are used: two input, two output and two chassis ground. Refer to rear view parts location drawing.

The PEQ-2 is generally inserted into a line level (plus 4dbm) circuit. However, due to its low noise and hum, it may be operated at mixer level of 20 dbm with a 60 db s/n ratio. Conversely, the PEQ-2 may be inserted into a high level line (plus 14 dbm) since the output capabilities of the amplifierpermit operation with low distortion, up to plus 24 dbm. When inserted into high level lines, keep in mind that program peaks cause operation from 6 to 15 decibels above average level and that at least a 10 decibel reserve should be allowed.

FOR BALANCED OPERATION on either or both input and output connections, connect the input signal to input terminals, and output leads to output terminals. Shield drain wires connect to either ground terminal.

FOR UNBALANCED OPERATION on either or both input and output connections, it is necessary to strap one input terminal and/or one output terminal to chassis ground terminals.

The equalizer input and output windings are fully isolated from ground. Center taps are available on 150 and 600 ohm windings, and may be grounded to achieve an actual balanced-to-ground termination. This requires a strap from center tap to ground on either or both input or output transformers. Refer to impedance chart and diagrams for actual connections.

The PEQ-2 equalizer terminates its source into 600 ohms. Do not feed the equalizer with a source unable to drive a 600 ohm termination. Two indications of too high driving source impedance are poor low frequency and distorted output. A roll-off in low frequencies may be due to a too small value of coupling capacitor when using cathode follower or emitter follower drive circuits. High distortion may be due to the sources inability to deliver adequate undistorted output level when attempting to feed a 600 obm load.

Therefore, when connecting the PEQ-2 into an existing circuit, verify the ability of preceding equipment to deliver at least 10db higher signal level into a 600 ohm termination.

OPERATION

Flip POWER toggle switch to ON position. The red neon power indicator will light. Allow five seconds for transistor regulator to stabilize.

Operate EQUALIZATION key switch to IN. The amber neon indicator will light. Equalizer is now in the circuit.

The EQUALIZATION key switch cuts off all equalization without the necessity of rotating controls to zero. This permits the equalizer to be preset and instantly be available by flipping key switch to IN.

Select the frequencies at which maximum boost or droop is desired by means of four rotary switches on the front panel. Refer to list of controls and indicators for function and frequency range of each control.

Front panel calibrations indicate frequencies at which maximum boost and droop occurs. Low frequency boost and droop are shelf equalizations, as is high frequency droop. High frequency boost is a peak equalization. The spread or range of the peak may be adjusted by means of the BAND WIDTH control. Refer to the complete set of curves provided at the rear of this manual for actual measurements of equalization.

The degree or amount of equalization is continuously adjustable by four separate vernier controls, each located above its corresponding equalization frequency selector switch. See control taper drawings for decibel vs. rotational positions. All controls may be operated independently and simultaneously.

A special feature of the PEQ-2 Program Equalizer is low frequency peak boost. When the low frequency boost and droop selector switches are properly set and their respective controls correctly adjusted, a low frequency peak boost occurs in place of shelf boost. To demonstrate peak boost, set the low frequency boost switch to 40 cycles and the low frequency droop switch to 100 cycles. Rotate the low frequency boost control to maximum position and listen to program material containing low frequencies. Then slowly advance the low frequency droop control; the effect of peak boost is heard as a dropping out of middle low frequency. The frequency of the peak is determined by the positions of the individual low frequency selector switches.

INPUT AND OUTPUT IMPEDANCES

The PEQ-2 Program Equalizer is shipped strapped for use in 600 ohm circuits. Circuits may be operated balanced or unbalanced due to isolated transformer windings on input and output transformers. If it is desired to operate from 150 ohm circuits, the equalizer transformers may be restrapped as shown on chart.

INPUT TRANSFORMER

Impedance	Strap	Connect to	CT
600	3 & 4	1 & 5	3 & 4
150	1 & 4 3 & 5	1 & 5	2

OUTPUT TRANSFORMER

Impedance	Strap	Connect to	CT
600	7 & 8	5 & 9	7 & 8
150	5 & 8 7 & 9	5 & 9	6

VOLTAGE MEASUREMENTS

AMPLIFIER

CARD TERMINAL	READING
A	+33.0 VDC
B	+33.0 VDC
C	0
D	0
E	0
F	0
H	-
J	-
K	0
L	-
M	0
N	0

POWER SUPPLY

CARD TERMINAL	
A	50 V AC
B	50 V AC
C	+62 V DC
D	0
E	+33.5V DC
F	+33.0V DC

Line Voltage 115 Volts
All voltages measured to chassis
DC voltages measured with 20,000 ohm per volt meter
AC voltages measured with 5,000 ohm per volt meter
Readings taken with NO SIGNAL and equalization controls set at zero position.

MODEL PEQ-2

PROGRAM EQUALIZER PARTS LIST

REF.	LANG PART NO.	DESCRIPTION
T1	20-02024	Transformer; Freed 38165
T2	20-02025	Transformer; Freed 38166
T3	20-02026	Transformer; Freed 38167
EQ1	03-01001	Network; Freed 38831
EQ2	03-01002	Network; Freed 38832
R1	16-04017	Control, LF Boost; CTS RR8921
R2	16-04007	Control, LF Droop; CTS RR8922
R3	16-04006	Control, HF Boost; CTS RR8920
R4	16-04019	Control, HF Droop; CTS RR8923
R5	16-04008	Control, Bandwidth; CTS RR8924
R6	16-04015	Control, Gain Trim; CTS RW1003
R7	18-02049	Resistor; 10 K 1/2W 5%
R8	18-02038	Resistor; 1 K 1/2W 5%
R9	18-02027	Resistor; 47 1/2W 5%
R10	18-02056	Resistor; 100 K 1/2W 5%
R11	18-02093	Resistor; 620 1W 5%
R12	18-02050	Resistor; 22 K 1/2W 5%
R13	18-02050	Resistor; 22 K 1/2W 5%
C1	03-02061	Capacitor; 500 uf 75V
C2	03-02018	Capacitor; .01 uf 1KV
P1	03-06005	Connector, Amp Card; 143-012-01
P2	03-06003	Connector, P.S. Card; 143-006-01
F1	06-03002S	Fuse; SB 1/4A 3AG
F2	06-03001	Fuse; 1/8A 3AG
XF1	06-04001	Fuse Holder; Littlefuse 342012

MODEL PEQ-2

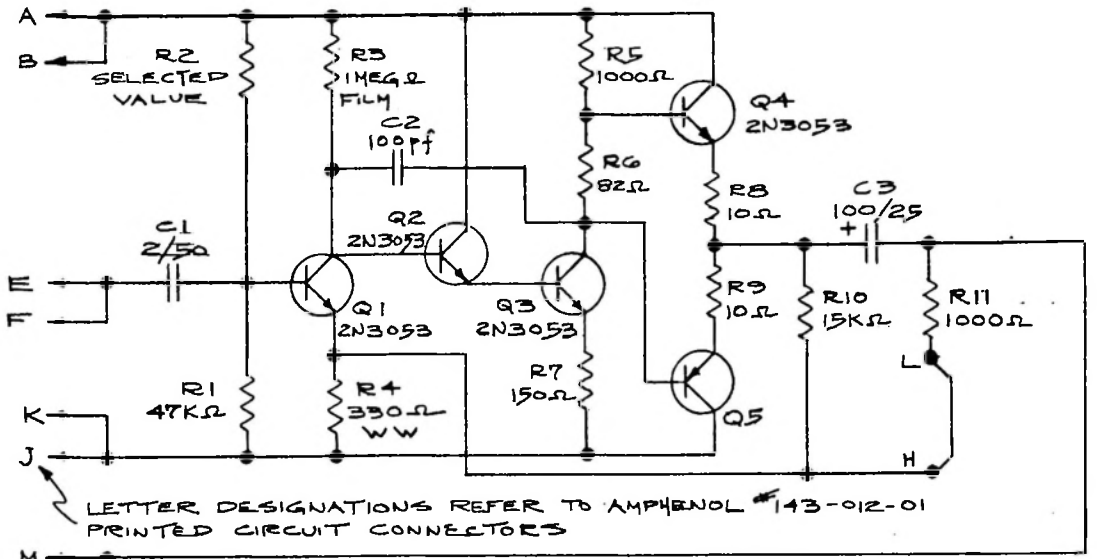
PROGRAM EQUALIZER PARTS LIST

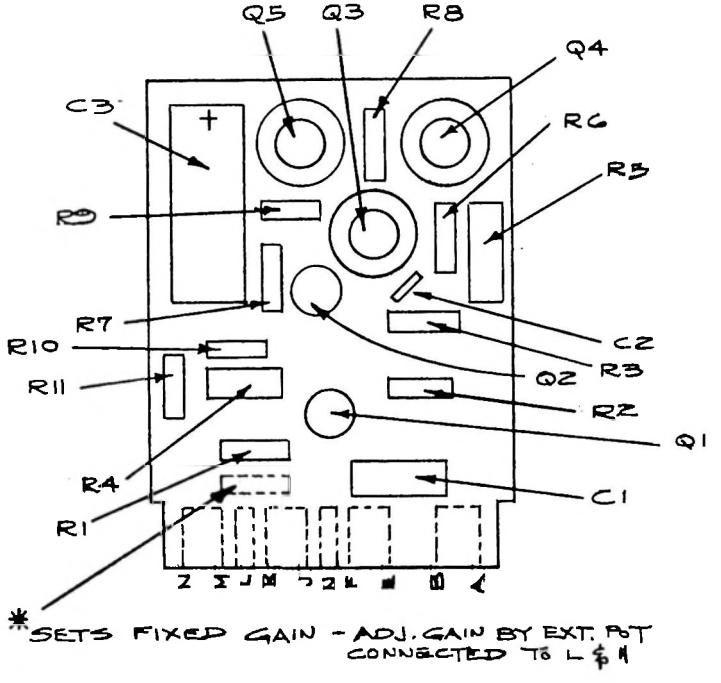
REF.	LANG PART NO.	DESCRIPTION
XF2	06-04001	Fuse Holder; Littlefuse 342012
	03-07001	Power Cord & Plug; Cornish 3519
	18-03002	Cord Stress Retainer; Heyco 6P1
	19-07002	Terminal Strip; C.J. 6-140-Y
	19-05002	Switch Toggle; H.H.S. 510
	19-05018	Switch, Key; Switchcraft XA-40037
	12-01006	Lamp, Red; Drake H 116-603
	12-01005	Lamp, Amber; Drake H 116-603
	08-01001	Handle; H.H.Smith 1623
	19-05028	Switch, LF Boost Select; CTS 21218-316-1
	19-05028	Switch, LF Droop Select; CTS 21218-316-1
	19-05028	Switch, HF Boost Select; CTS 21218-316-1
	19-05028	Switch, HF Droop Select; CTS 21218-316-1
	LPS-2	Lang Power Supply Card
	LLA-4	Lang Amplifier Card
	11-02003	Knob, LF Boost Select; Raytheon 70-4-2
	11-02003	Knob, LF Boost Control; Raytheon 70-4-2
	11-02003	Knob, HF Boost Select; Raytheon 70-4-2
	11-02003	Knob, HF Boost Control; Raytheon 70-4-2
	11-02003	Knob, LF Droop Select; Raytheon 70-4-2
	11-02003	Knob, LF Droop Control; Raytheon 70-4-2
	11-02003	Knob, HF Droop Select; Raytheon 70-4-2

MODEL PEQ-2

PROGRAM EQUALIZER PARTS LIST

LANG PART NO.	DESCRIPTION
11-02003	Knob, HF Droop Control; Raytheon 70-4-2
11-02003	Knob, Bandwidth; Raytheon 70-4-2
19-06010	Socket, Transistor; MOT. MK-25
20-03003	Transistor; RCA 2N3054
03-08002	Lang Power Supply Card Cover
03-08003	Lang Amplifier Card Cover
03-08001	Lang Power Transistor Cover





*SETS FIXED GAIN - ADJ. GAIN BY EXT. POT CONNECTED TO L & H

AB	+33 VOLTS
EF	INPUT
JK	COMMON
MN	OUTPUT
LH	FEEDBACK

PROJECT TITLE
LINE AMPLIFIER LLA-4

SUBJECT
SCHEMATIC & COMPONENT LOCATIONS

ENG. A.F. MARKO | CKD.
DWN. STEVEN 4-10-69 | APR.

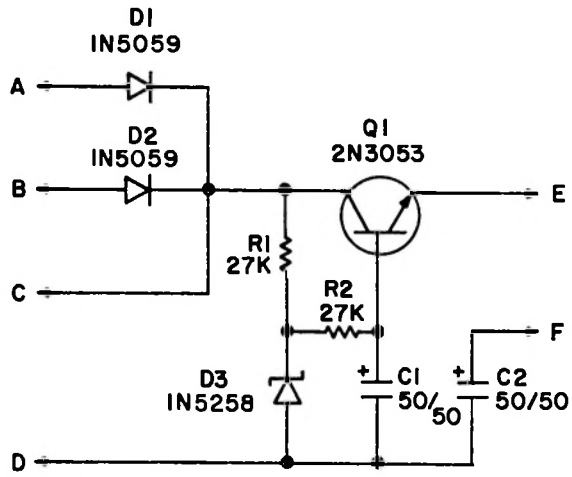
LANG ELECTRONICS INC.
307 FIFTH AVENUE
NEW YORK, N.Y. 10017

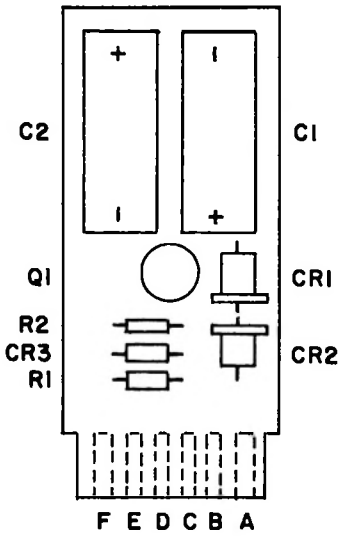
SCALE 1 | PROJ. NO. | DWG. NO.
ES1419

AMPLIFIER BOARD LLA-4

REF	LANG NO.	DESCRIPTION
R1	18-02052	Resistor; 47 K 1/2W 5%
R2	16-04021	Resistor, Variable; Nominal 1 Meg 1/2W 20%
R3	18-02007	Resistor; 1 Meg 1/4W 1%
R4	18-02002	Resistor; -340 ohm 1/4W 1%
R5	18-02094	Resistor; 1K, 1W, 10%
R6	18-02029	Resistor; 82 ohm 1/2W 5%
R7	18-02031	Resistor; 150 ohm 1/2W 5%
R8	18-02021	Resistor; 10 ohm 1/2W 5%
R9	18-02021	Resistor; 10 ohm 1/2W 5%
R10	18-02049-1	Resistor; 15K 1/2W 5%
R11	18-02038	Resistor; 1K 1/2W 5%
C1	03-02032	Capacitor; 2ufd, 50 WVDC, Elect.
C2	03-02001	Capacitor; 18pfd 200 WVDC,Disc.
C3	03-02047	Capacitor; 100 ufd 25 WVDC, Elect.
Q1	20-03002	Transistor; 2N 3053
Q2	20-03002	Transistor; 2N 3053
Q3	20-03002	Transistor; 2N 3053
Q4	20-03002	Transistor; 2N 3053
Q5	20-03011	Transistor; 2N 4037
Heat Sink	08-02005	3 Ea.; Therm Alloy 2211

LETTERS REFER TO AMPHENOL 143-006-01 P.C CARD CONTACTS





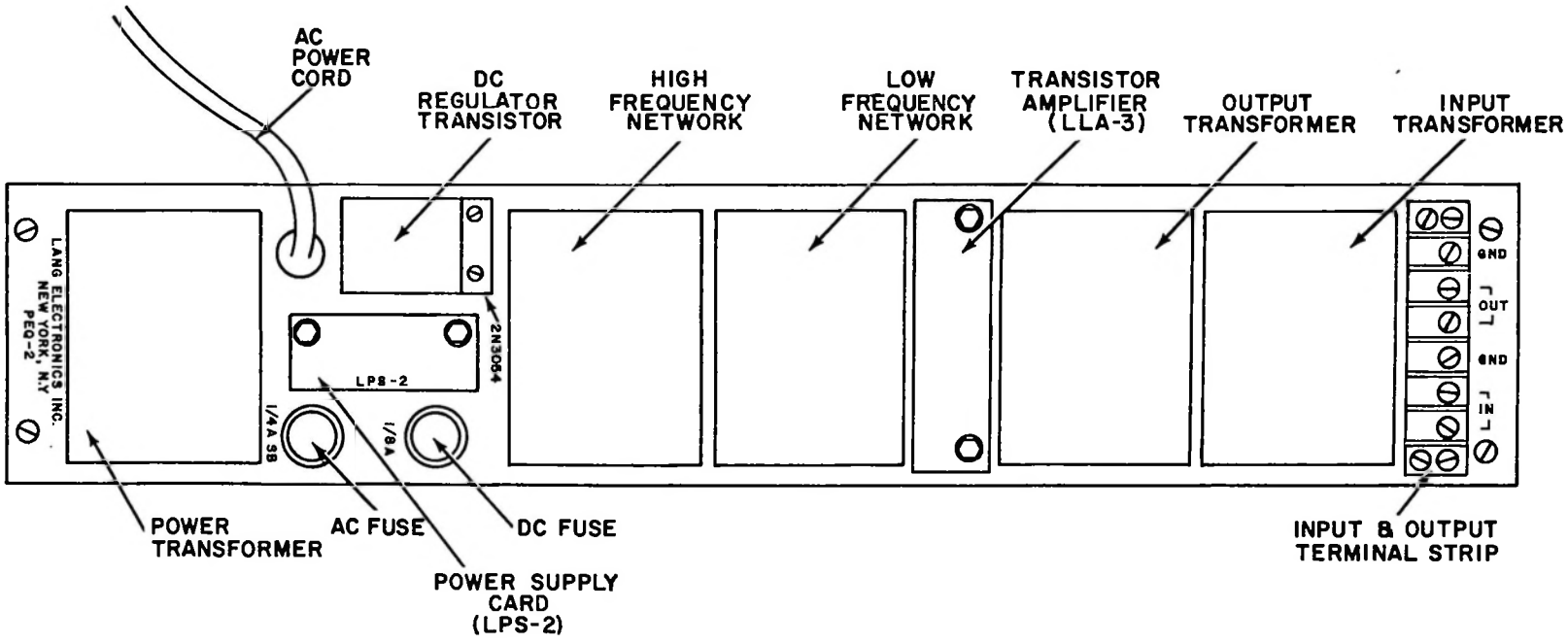
A	AC 50V
B	AC 50V
C	DC +62V
D	AC and-COM.
E	REG DC + 33V
F	OUTPUT FILTER

RESISTORS IN OHMS
1/2 W ± 10%
CAPACITOR IN UFD

POWER SUPPLY - PS-2
SCHEMATIC & PARTS LAYOUT

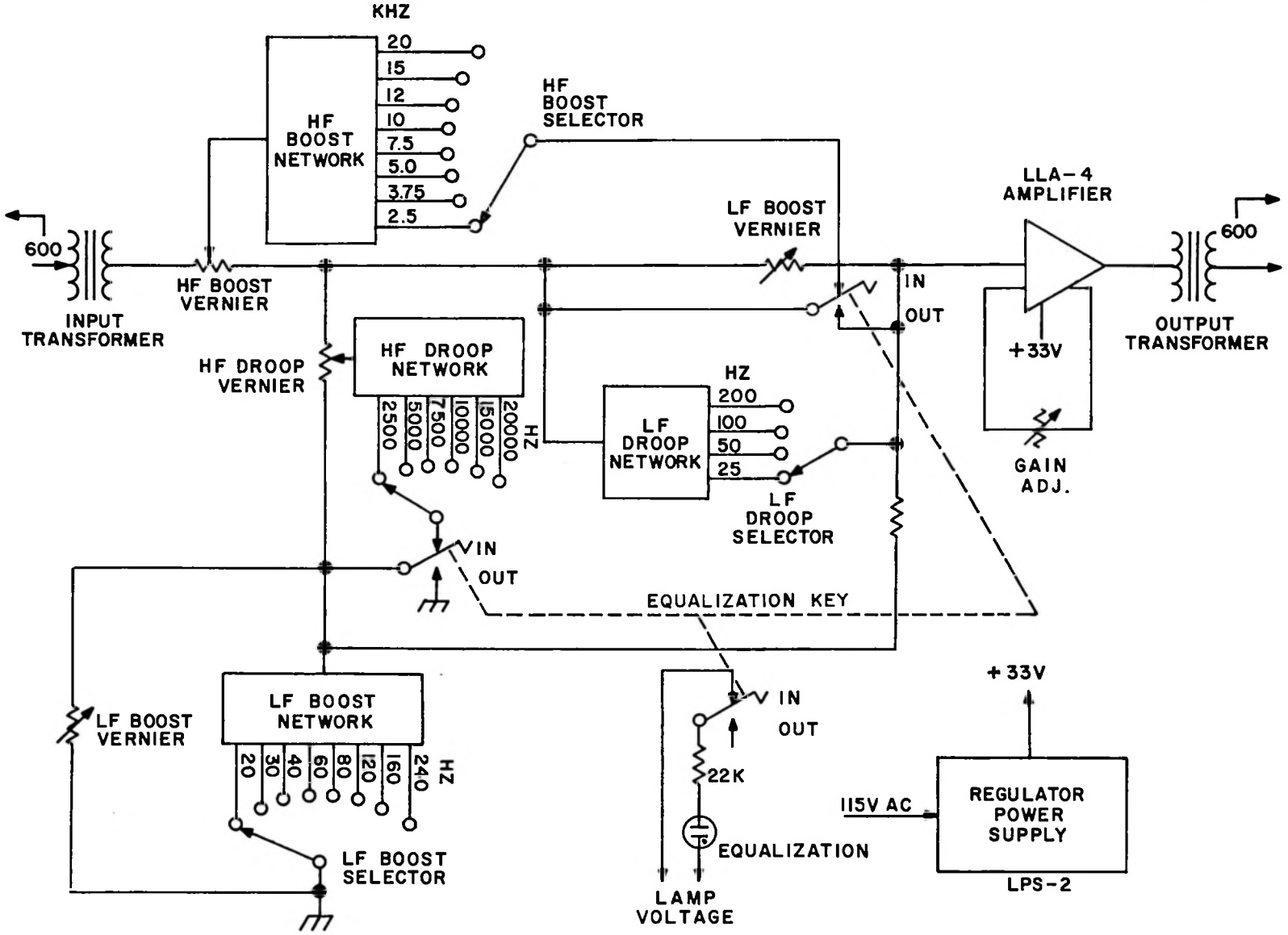
POWER SUPPLY BOARD LPS-2

REF	LANG NO.	DESCRIPTION
D1	04-01008	Diode; GE 1N5059
D2	04-01008	Diode; GE 1N5059
D3	04-01010	Zener Diode; Motorola 1N5258
Q1	20-03002	Transistor; RCA 2N3053
R1	18-02001	Resistor; 27 K 1/2W 5%
R2	18-02001	Resistor; 27 K 1/2W 5%
C1	03-02042	Capacitor; 50uf 50V
C2	03-02042	Capacitor; 50uf 50V



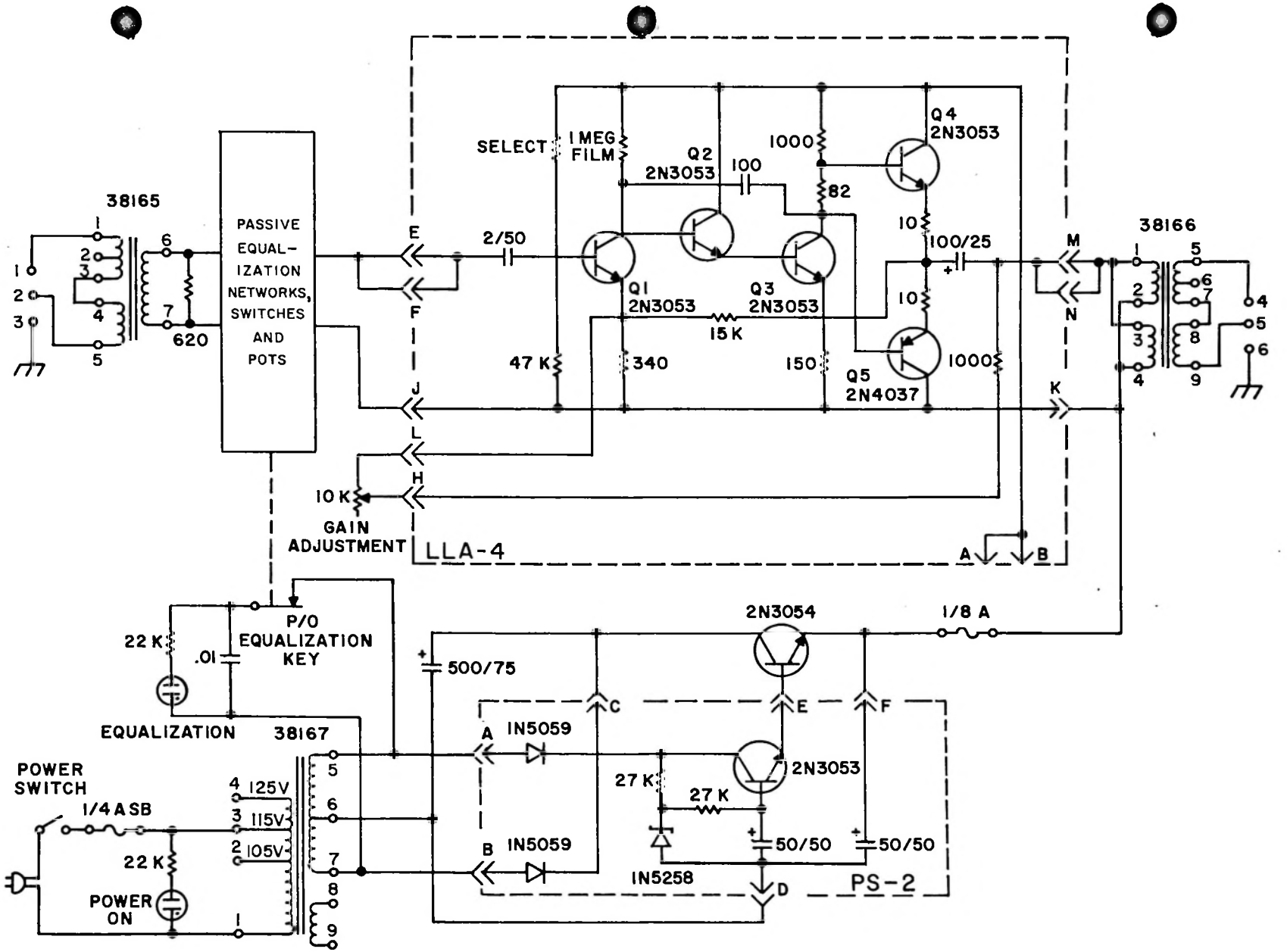
PEQ-2A PROGRAM EQUALIZER
REAR VIEW

ES1421



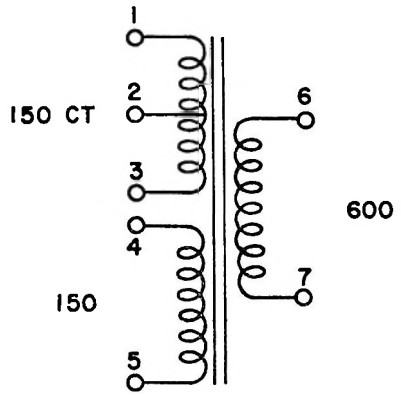
PEQ-2A PROGRAM EQUALIZER
BLOCK DIAGRAM

ES1422



PROGRAM EQUALIZER PEQ-2A
SCHEMATIC DIAGRAM

38165



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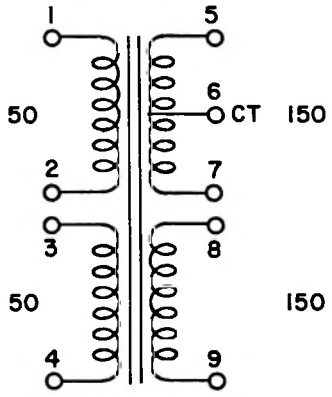

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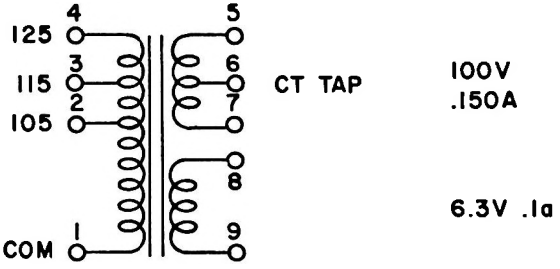
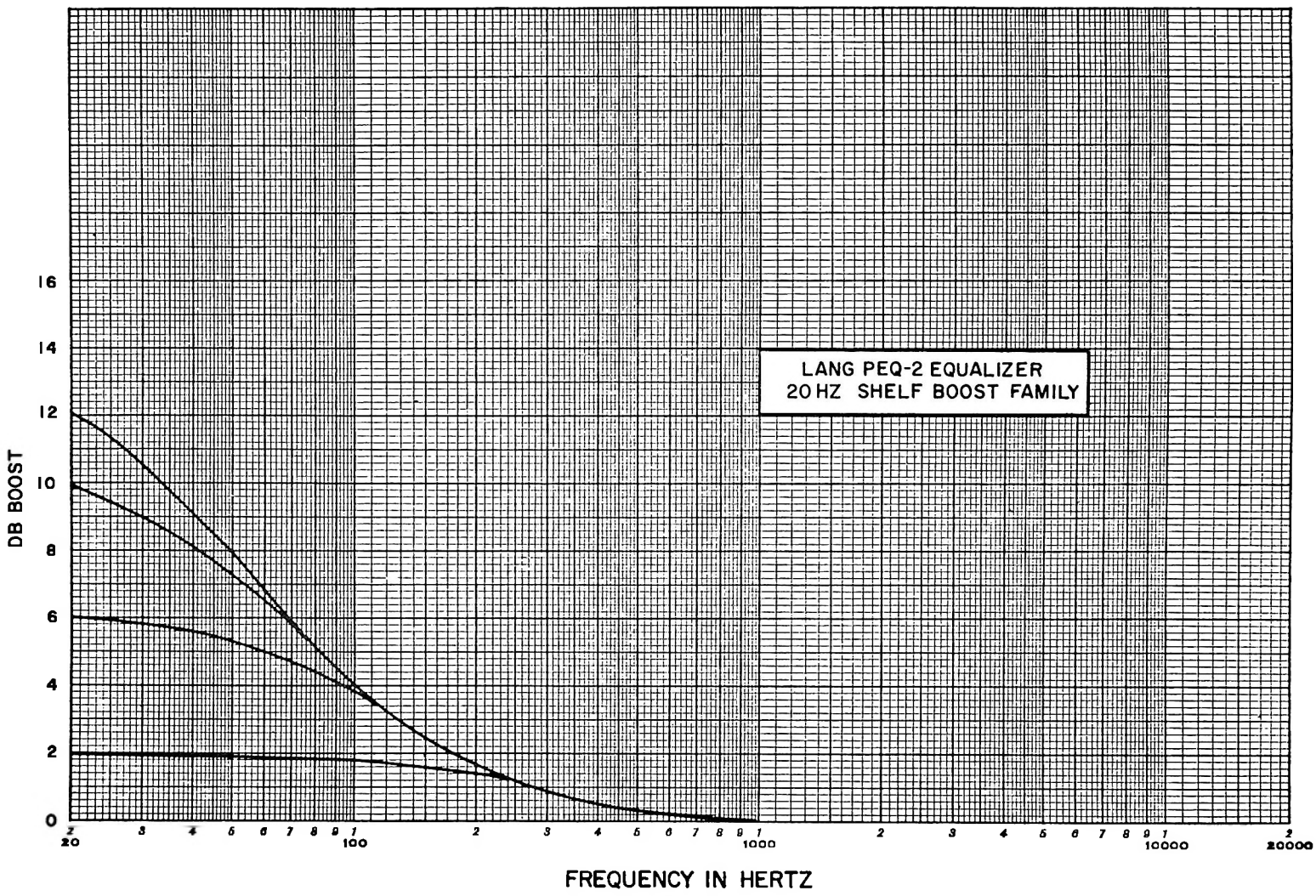


TRANSFORMER CONNECTIONS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20 HZ SHELF BOOST FAMILY
DB BOOST
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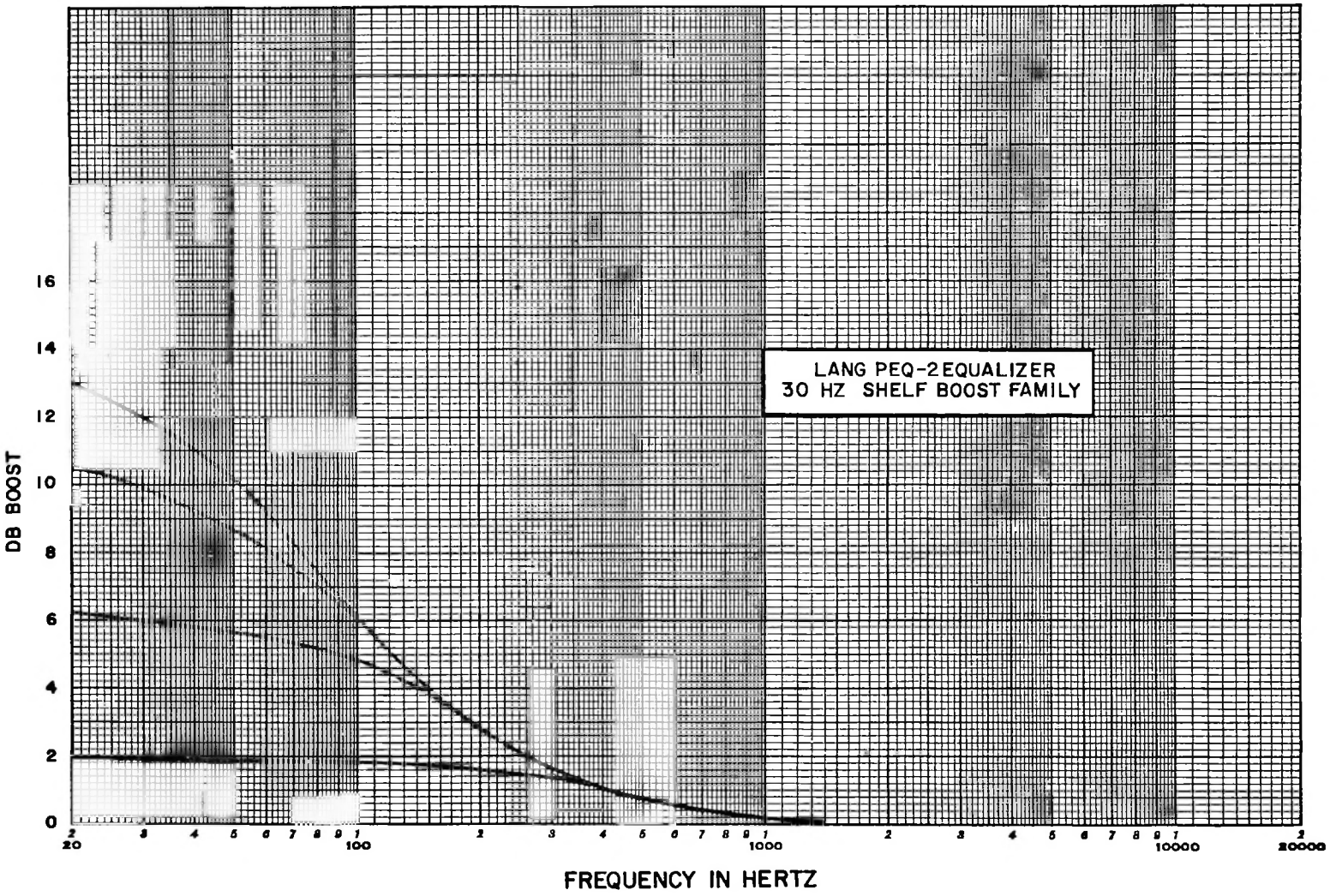
20000
FREQUENCY IN HERTZ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30 HZ SHELF BOOST FAMILY
DB BOOST
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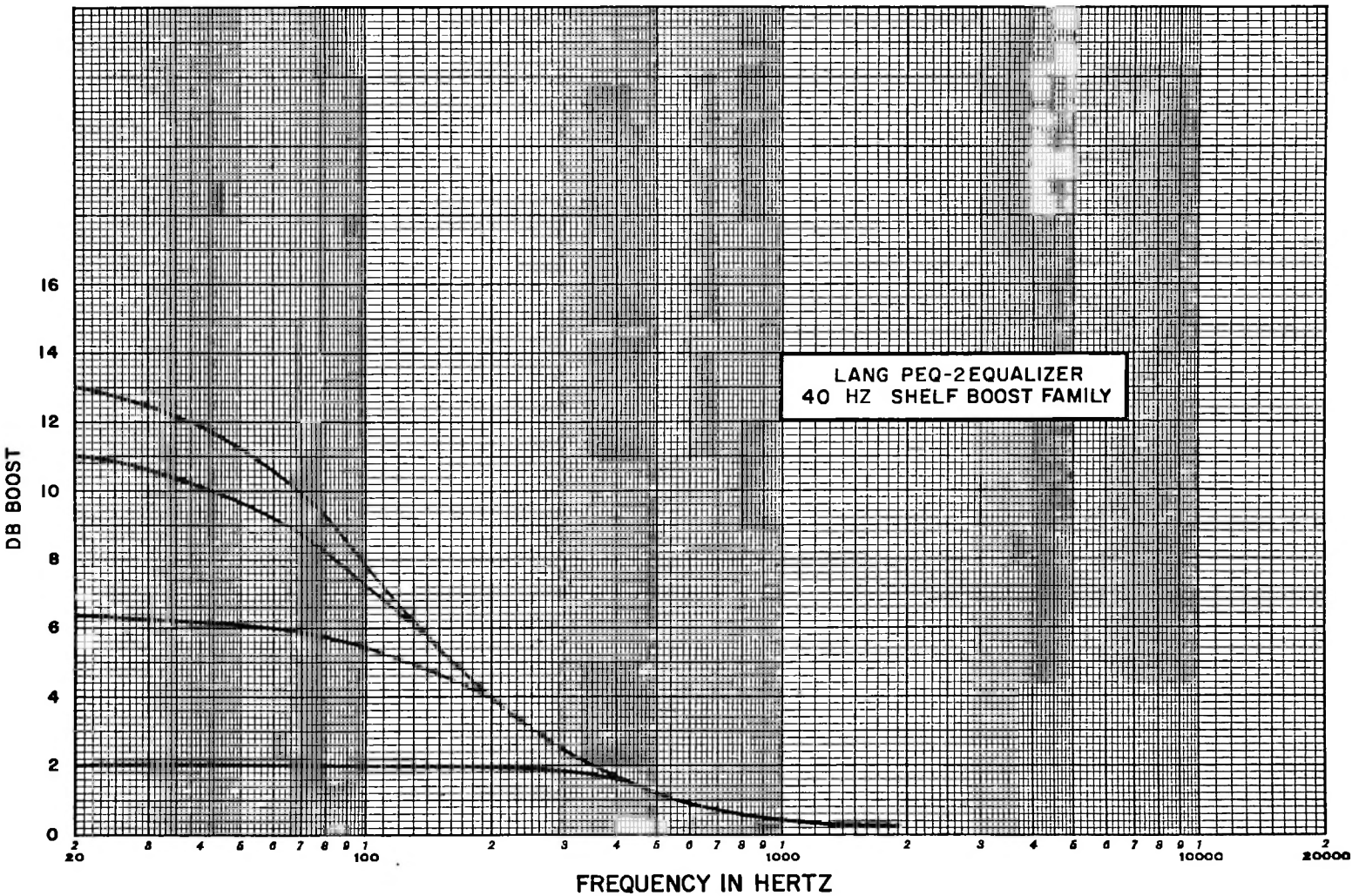
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40 HZ SHELF BOOST FAMILY
DB BOOST
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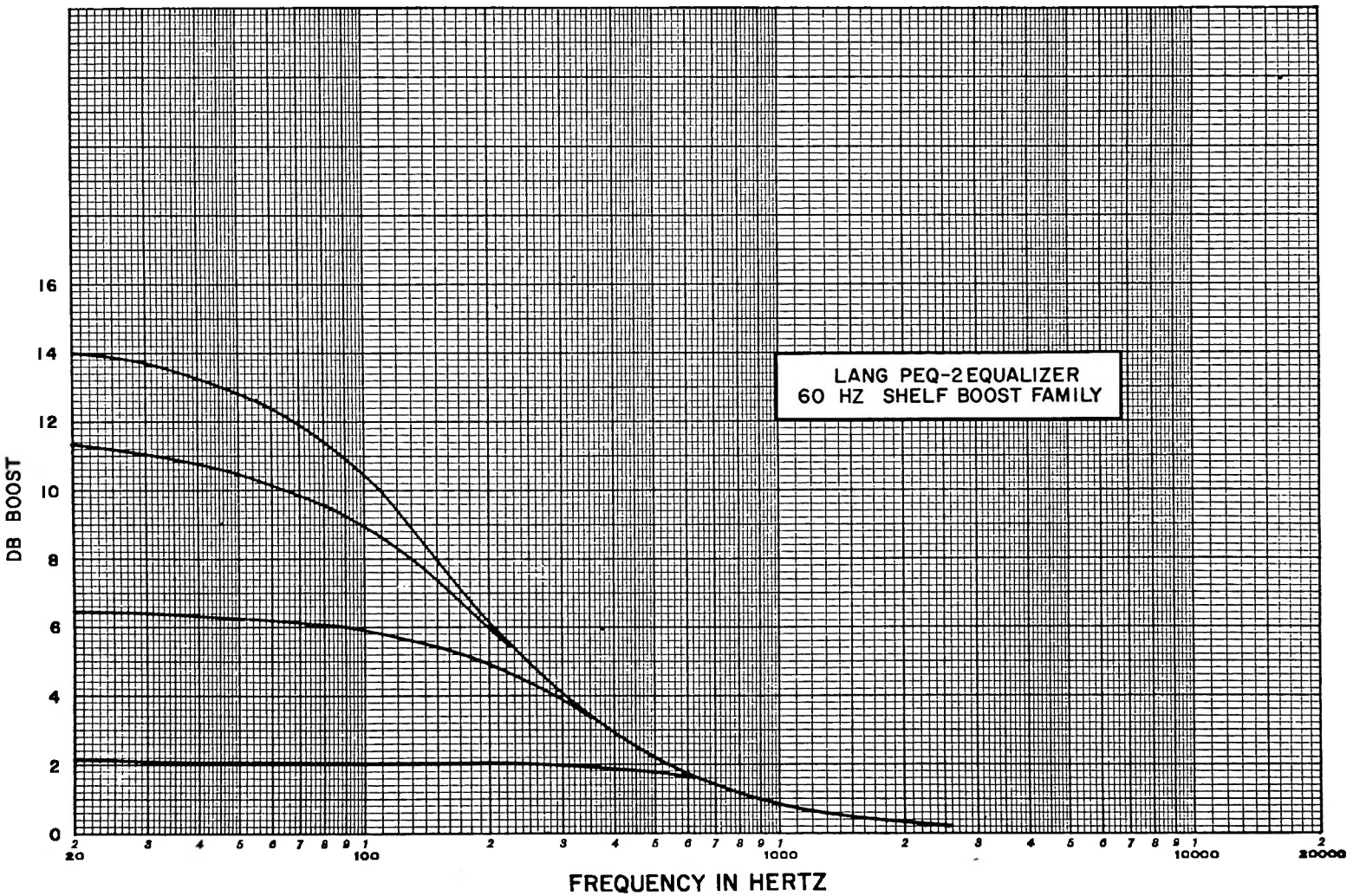
FREQUENCY IN HERTZ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60 HZ SHELF BOOST FAMILY
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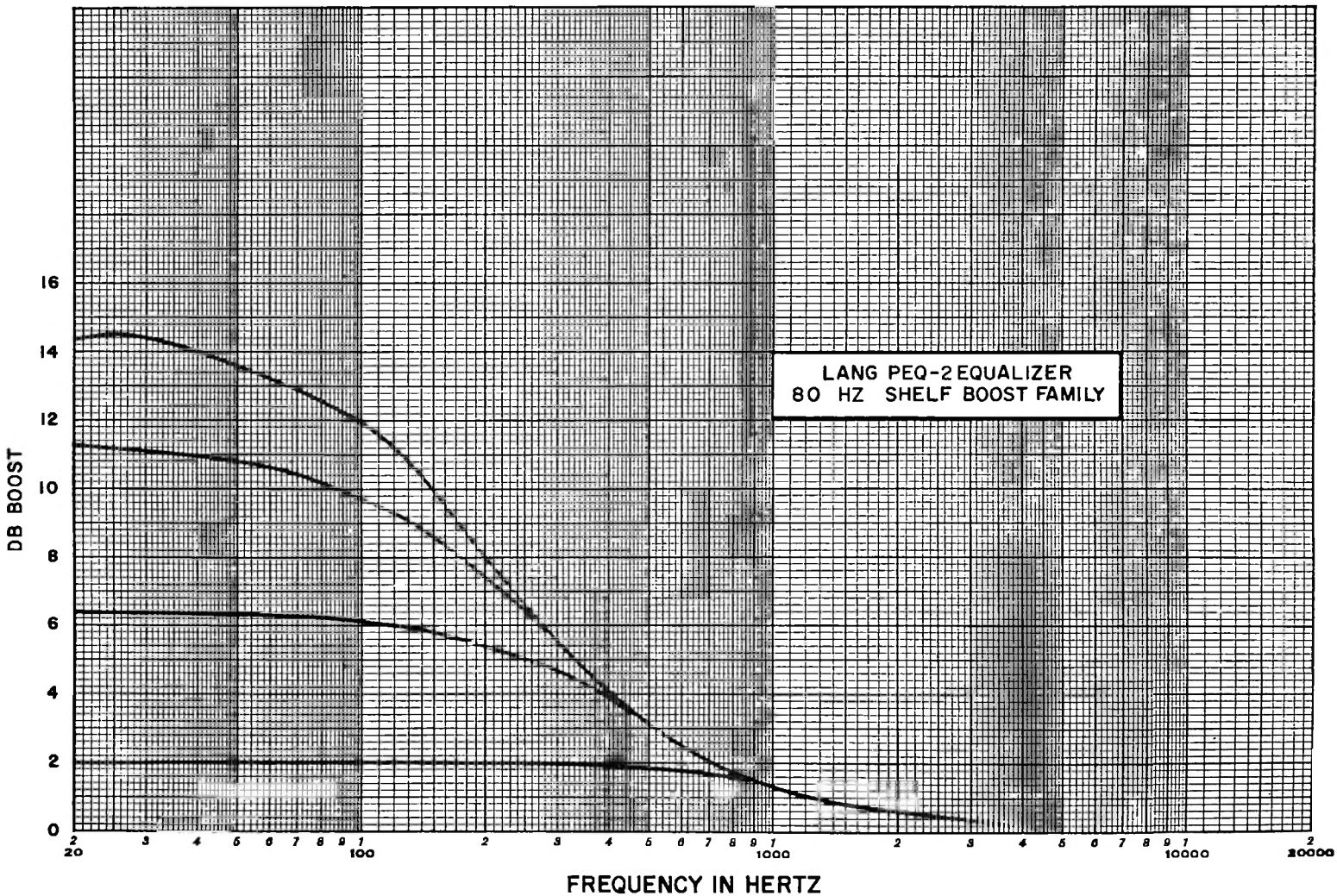
FREQUENCY IN HERTZ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80 HZ SHELF BOOST FAMILY
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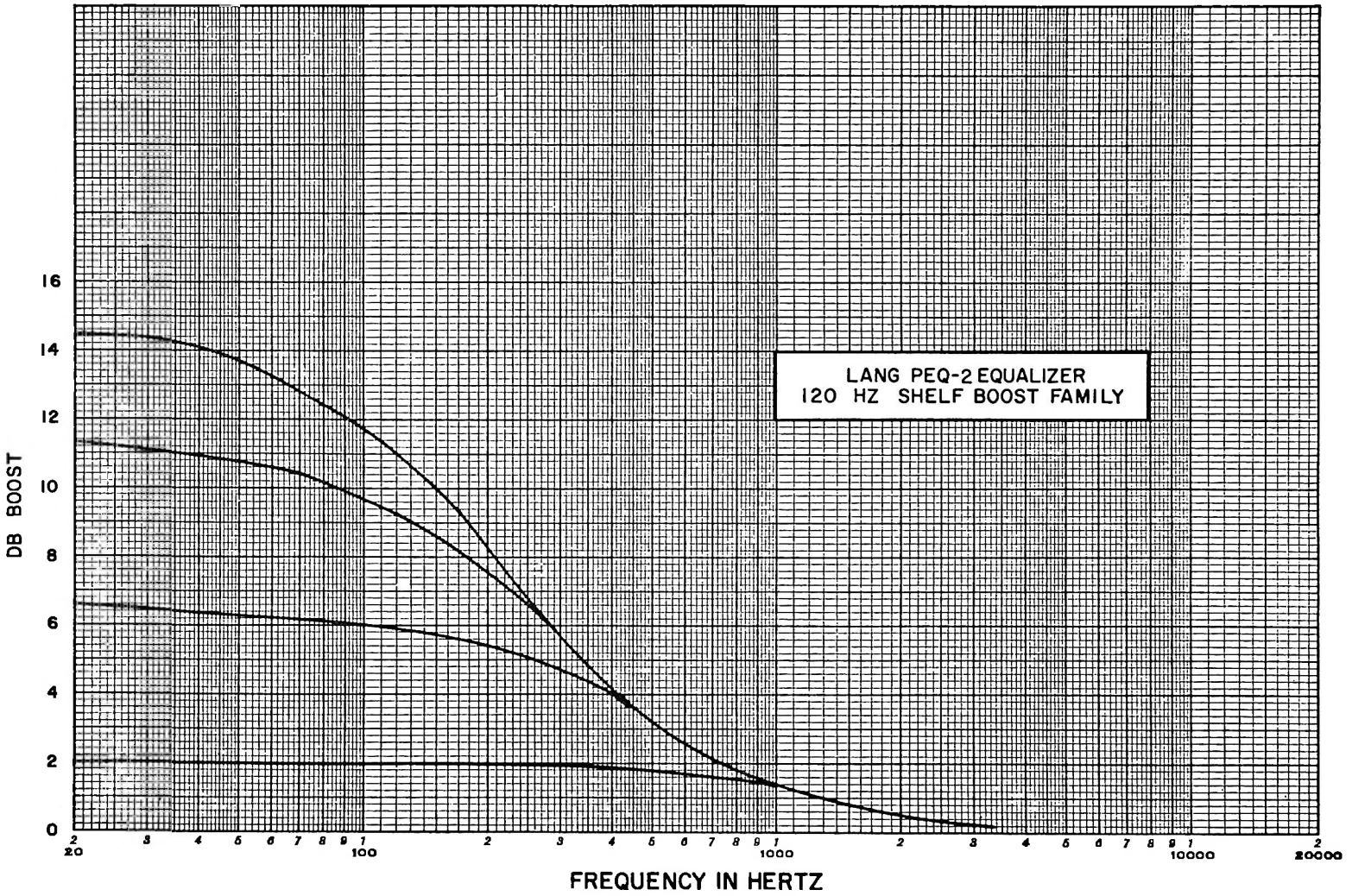
FREQUENCY IN HERTZ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120 HZ SHELF BOOST FAMILY
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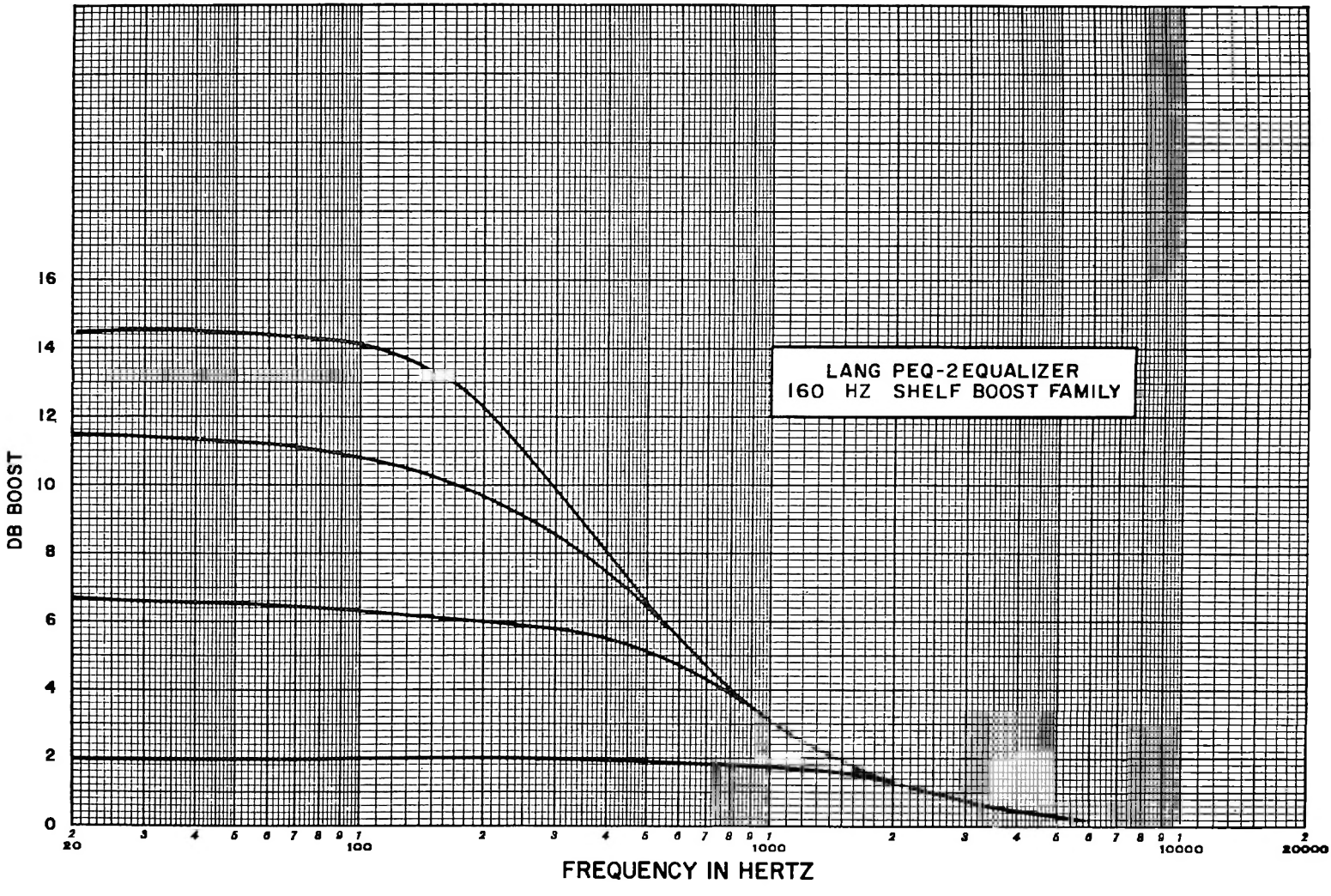
FREQUENCY IN HERTZ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160 HZ SHELF BOOST FAMILY
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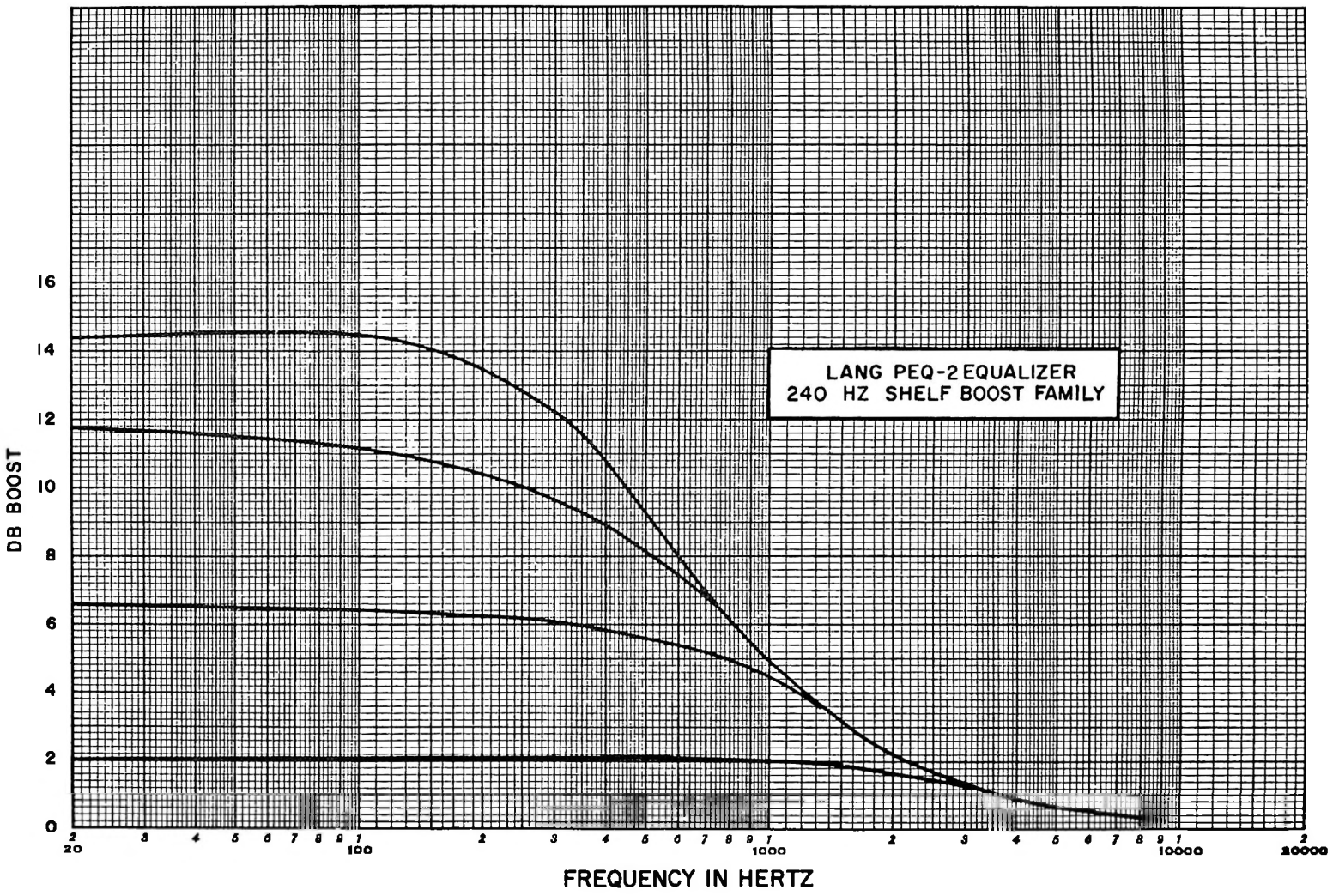
FREQUENCY IN HERTZ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240 HZ SHELF BOOST FAMILY
DB BOOST
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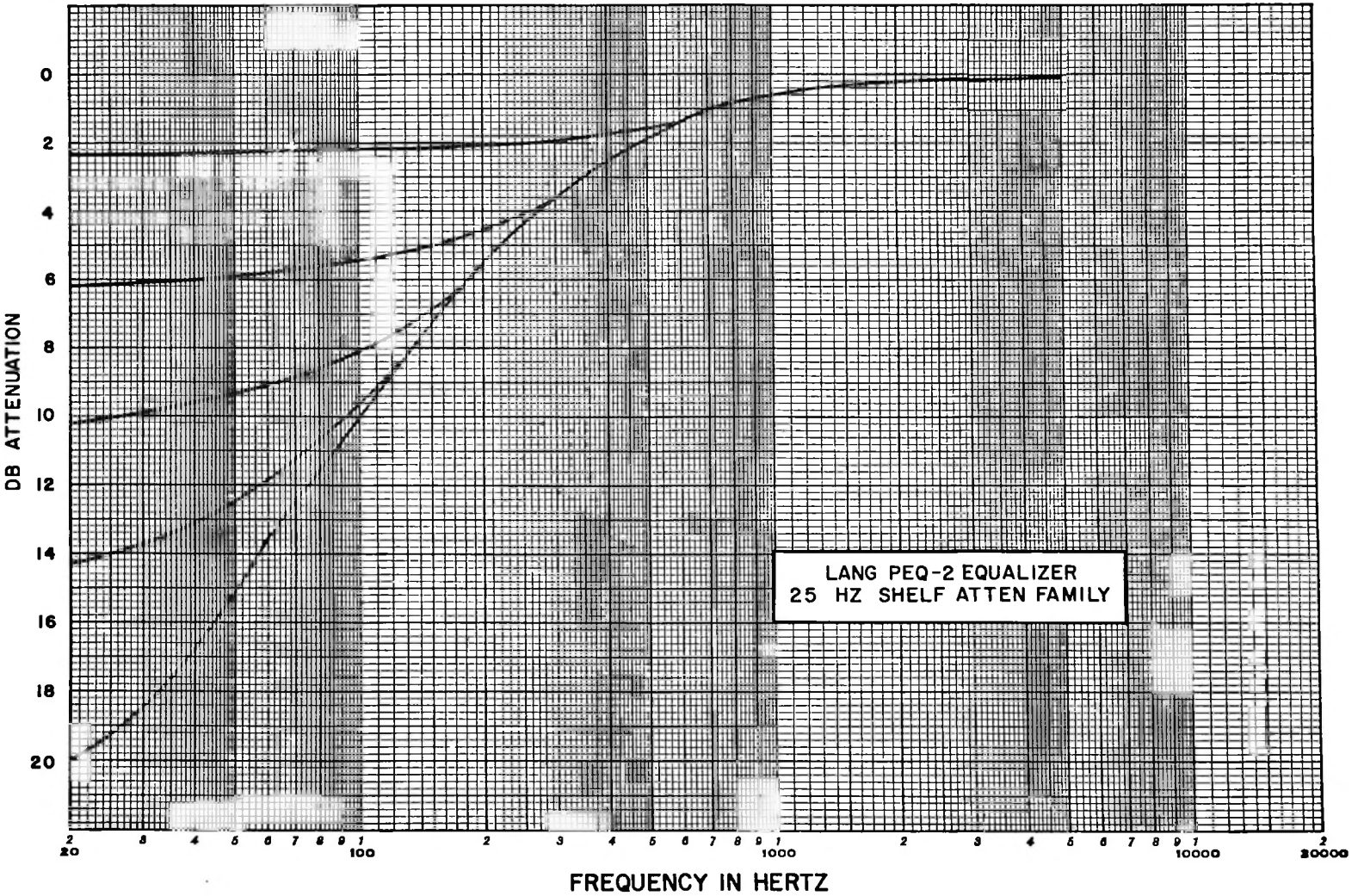
20000
FREQUENCY IN HERTZ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25 HZ SHELF ATTEN FAMILY
DB ATTENUATION
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18
20
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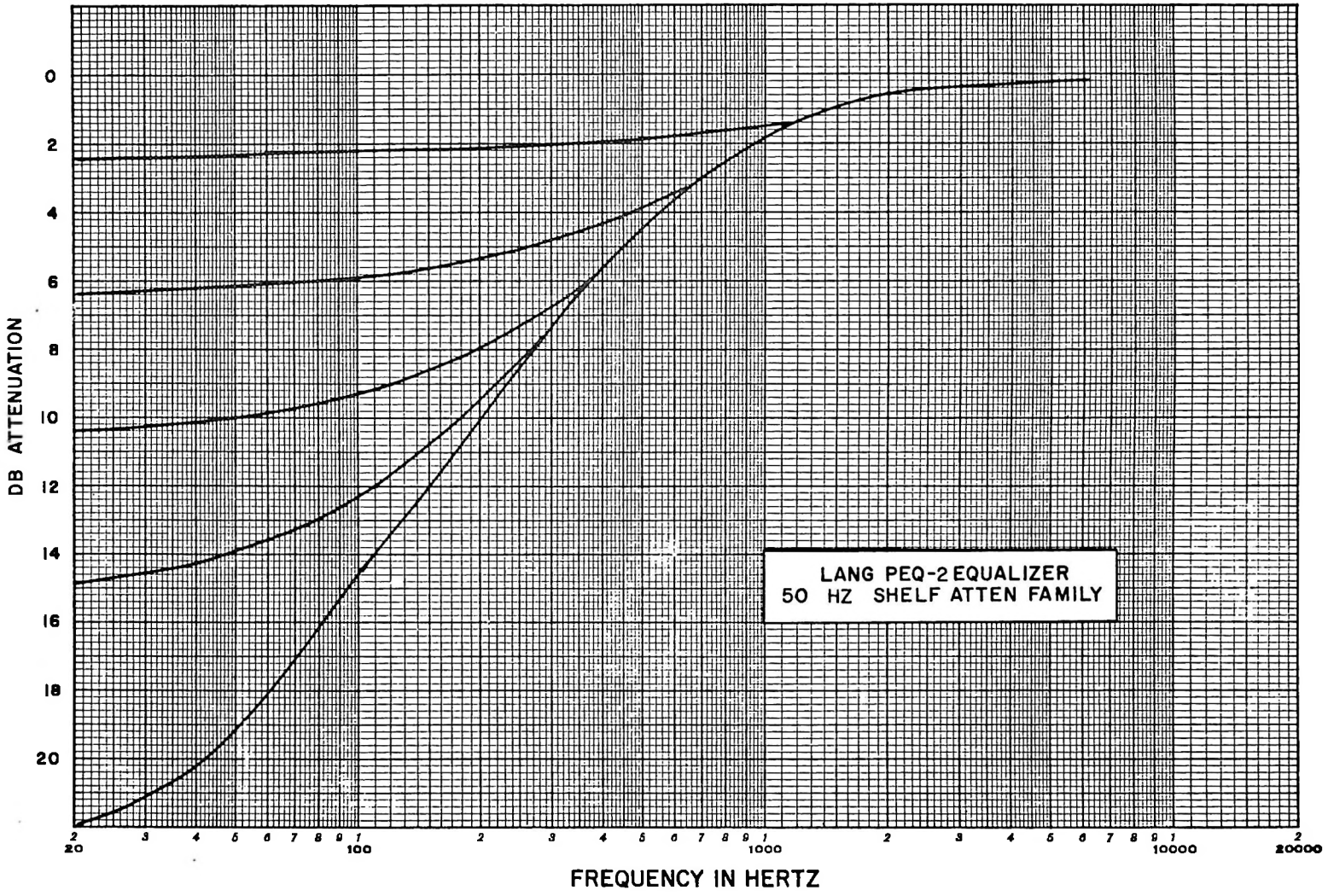
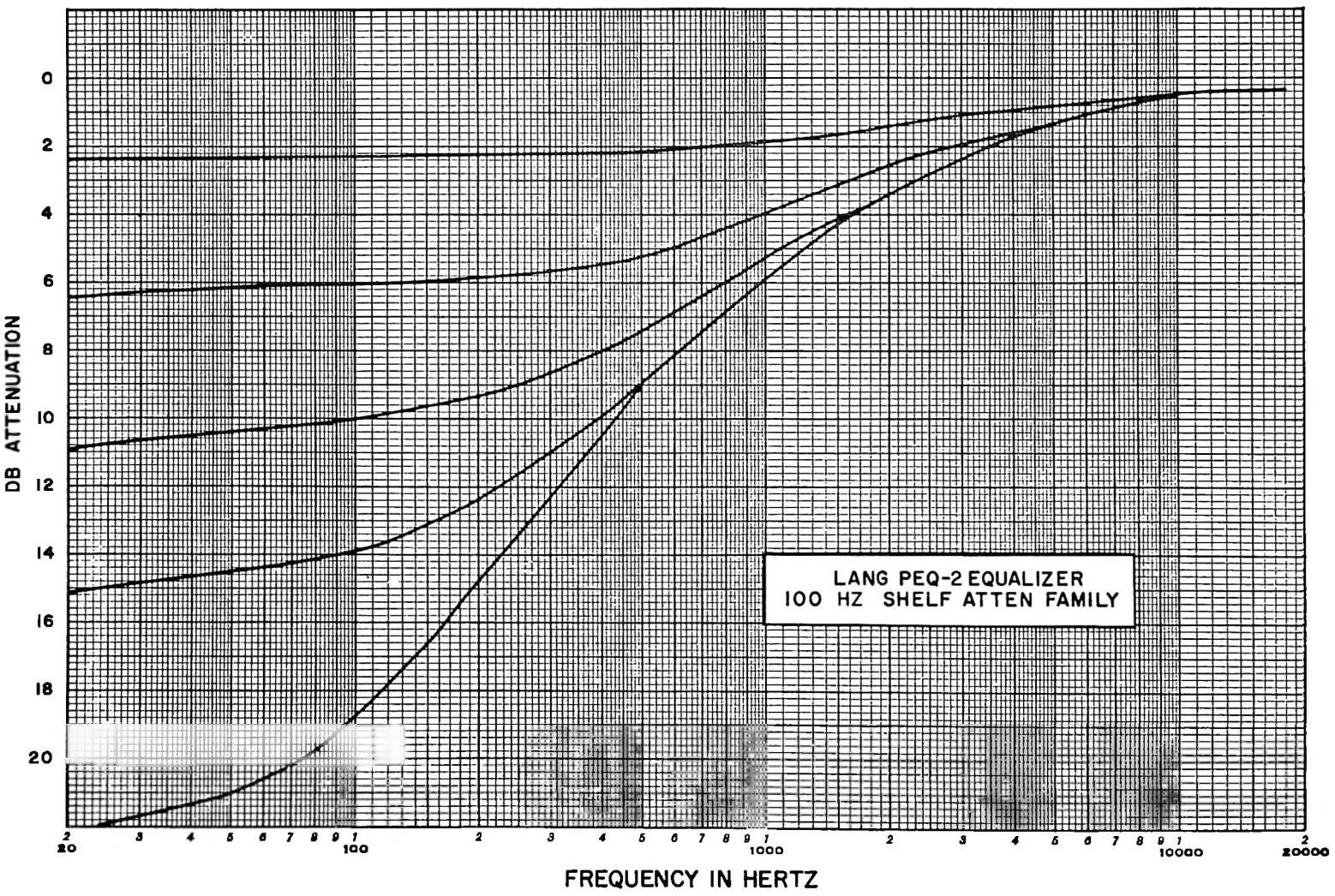
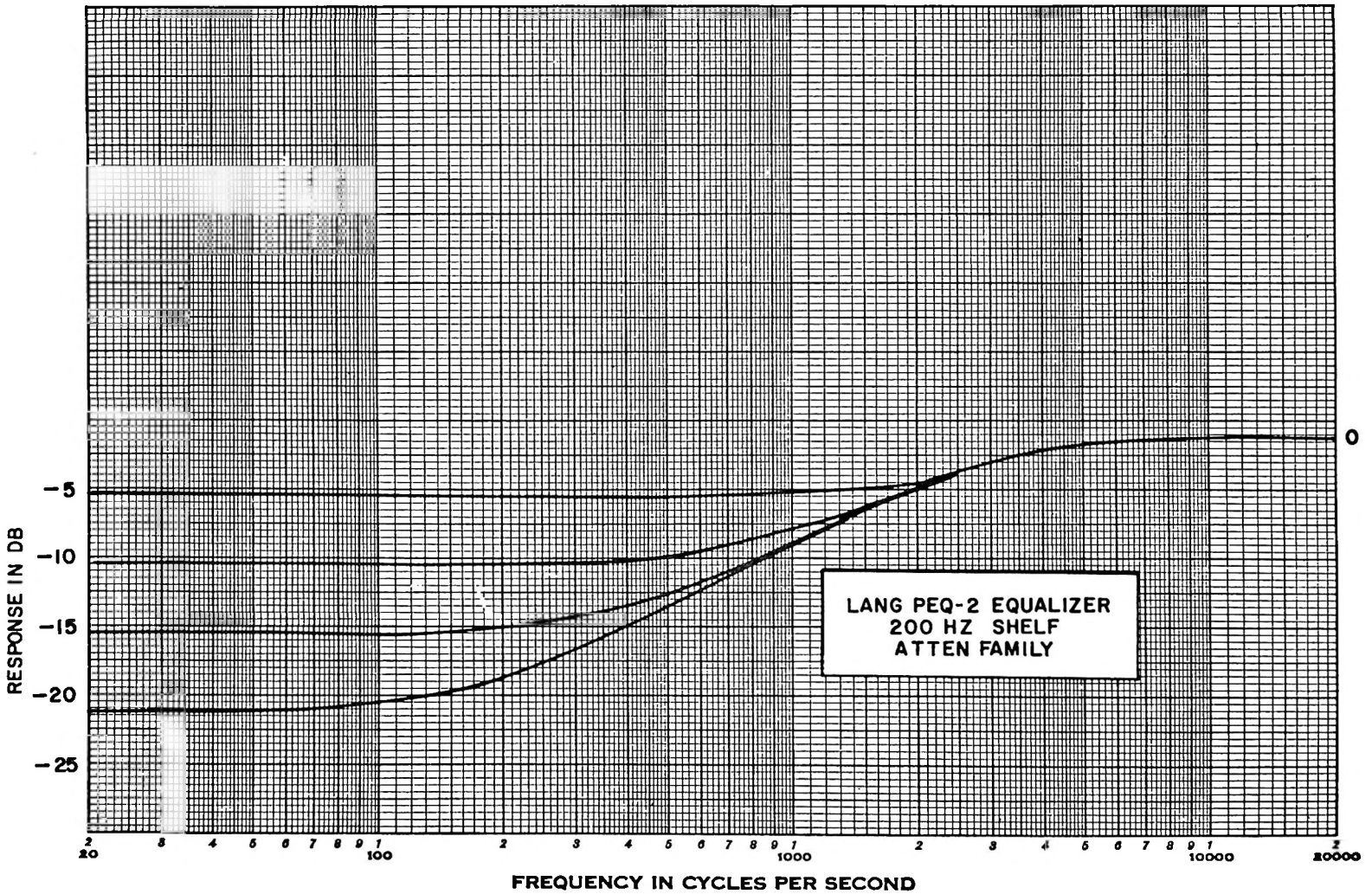
10000
20000
FREQUENCY IN HERTZ


DB ATTENUATION
0
2
4
6
8
10
12
14
16
18
20
LANG PEQ-2 EQUALIZER
50 HZ SHELF ATTEN FAMILY
20
100
1000
10000
20000
FREQUENCY IN HERTZ


LANG PEQ-2 EQUALIZER
100 HZ SHELF ATTEN FAMILY
DB ATTENUATION
0
2
4
6
8
10
12
14
16
18
20
20
100
1000
10000
20000
FREQUENCY IN HERTZ


LANG PEQ-2 EQUALIZER
200 HZ SHELF
ATTEN FAMILY
RESPONSE IN DB
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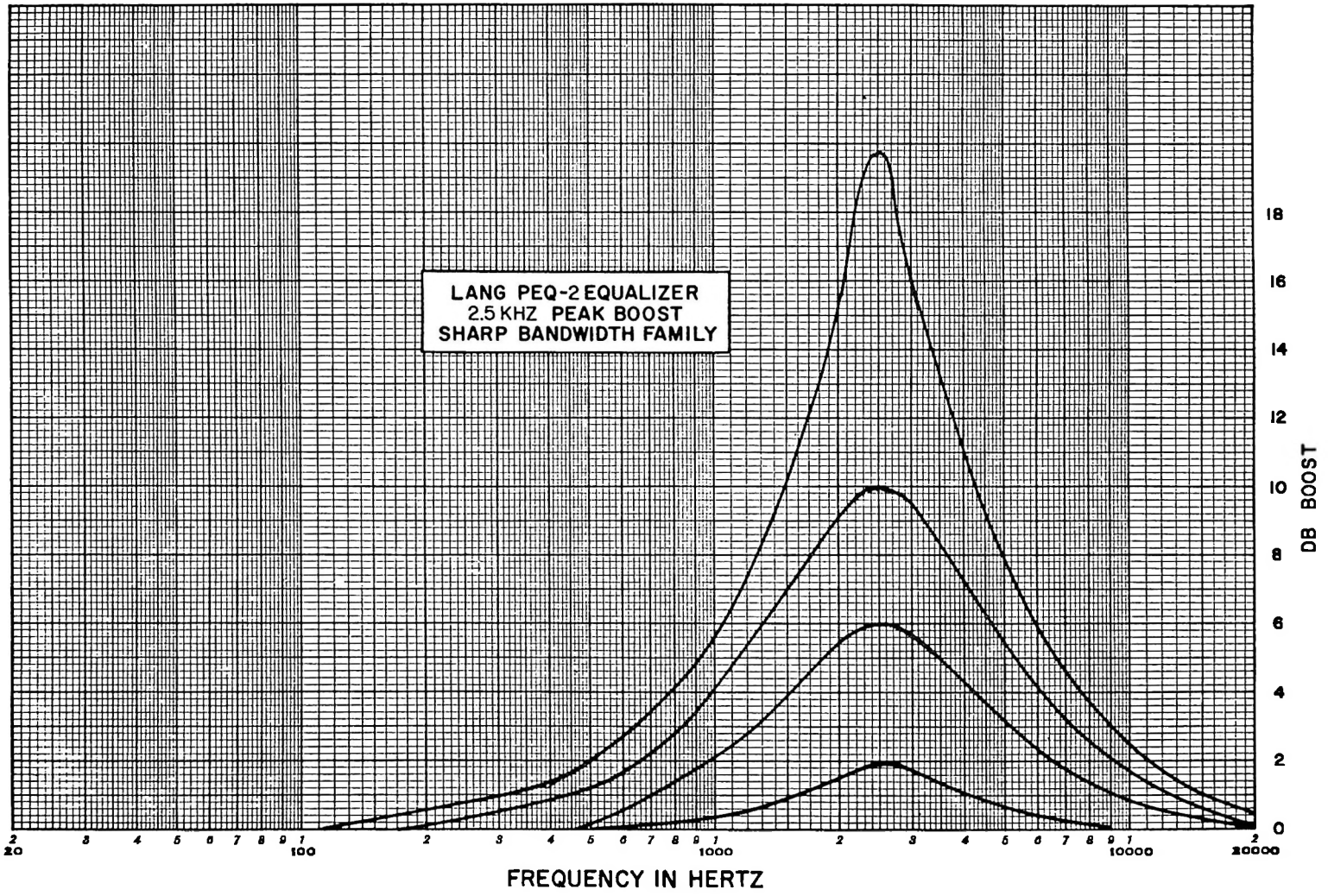
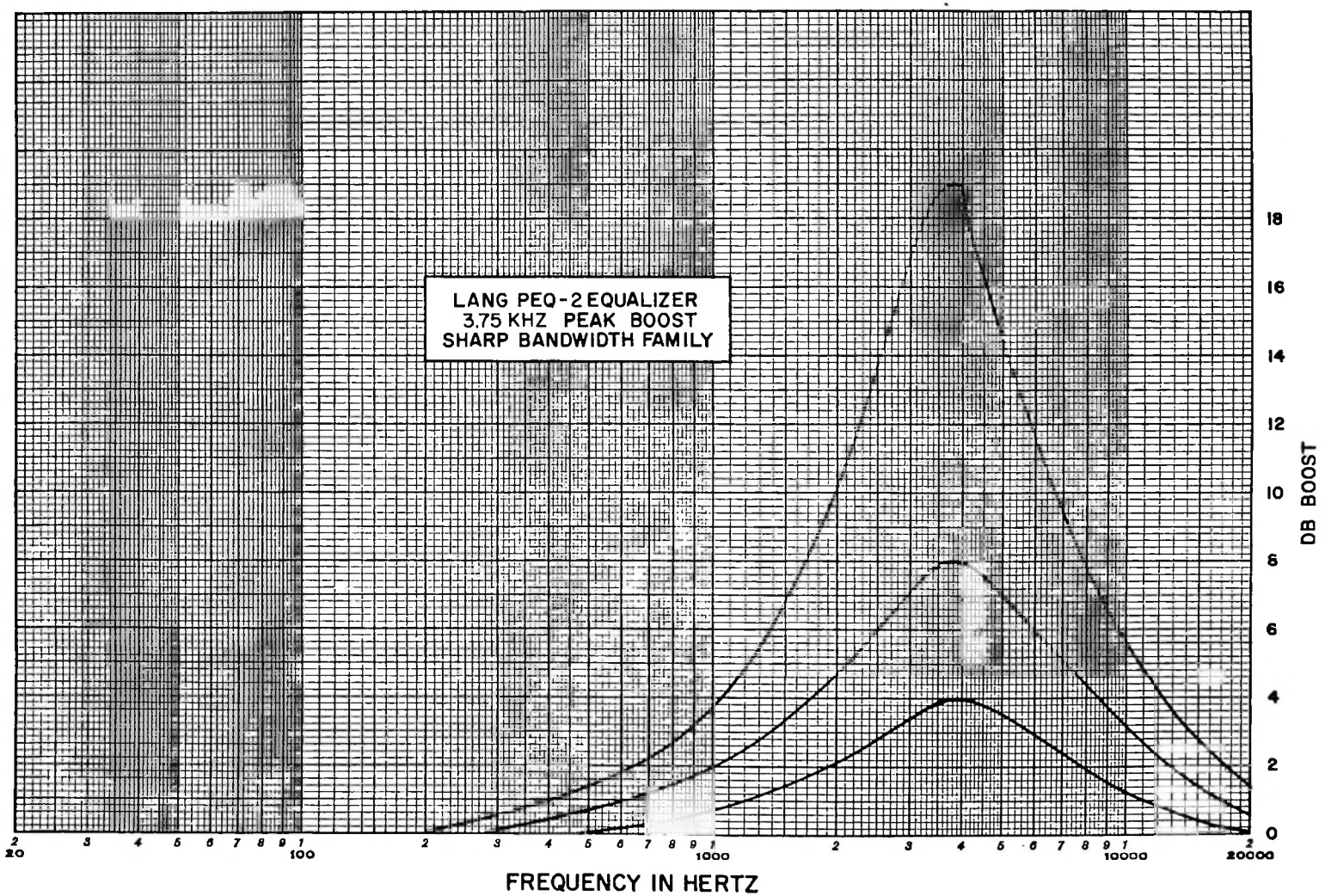
-5
-10
-15
-20
-25
20
100
1000
10000
20000
FREQUENCY IN CYCLES PER SECOND


LANG PEQ-2 EQUALIZER
2.5 KHZ PEAK BOOST
SHARP BANDWIDTH FAMILY
18
16
14
12
10
8
6
4
2
0
DB BOOST
20
100
1000
10000
20000
FREQUENCY IN HERTZ


LANG PEQ-2 EQUALIZER
3.75 KHZ PEAK BOOST
SHARP BANDWIDTH FAMILY
18
16
14
12
10
8
6
4
2
0
DB BOOST
2
20
3
4
5
6
7
8
9
1
100
2
3
4
5
6
7
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9
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2
3
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6
7
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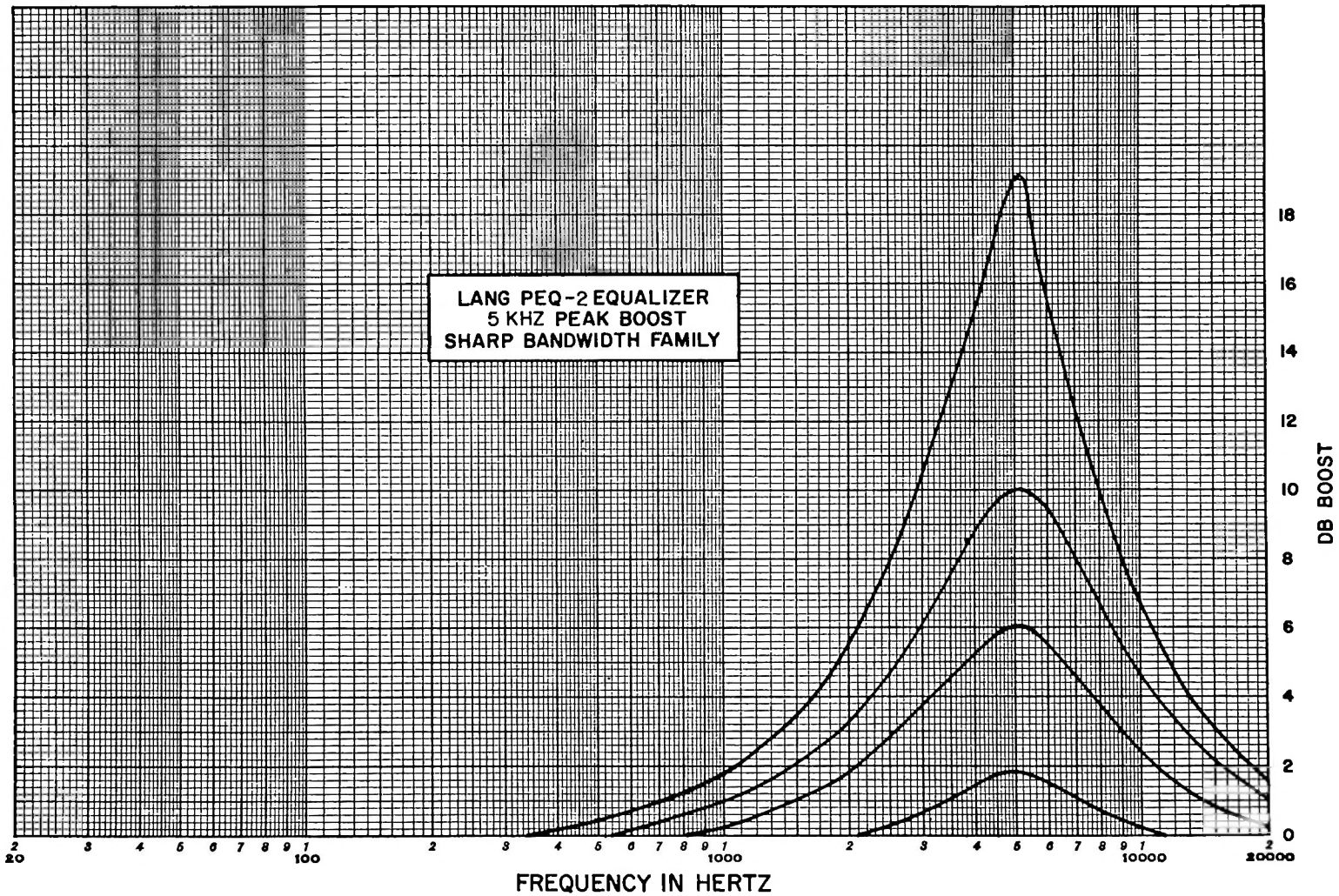
1
10000
2
20000
FREQUENCY IN HERTZ


LANG PEQ-2 EQUALIZER
5 KHZ PEAK BOOST
SHARP BANDWIDTH FAMILY
18
16
14
12
10
8
6
4
2
0
DB BOOST
2
20
3
4
5
6
7
8
9
1
100
2
3
4
5
6
7
8
9
1
1000
2
3
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5
6
7
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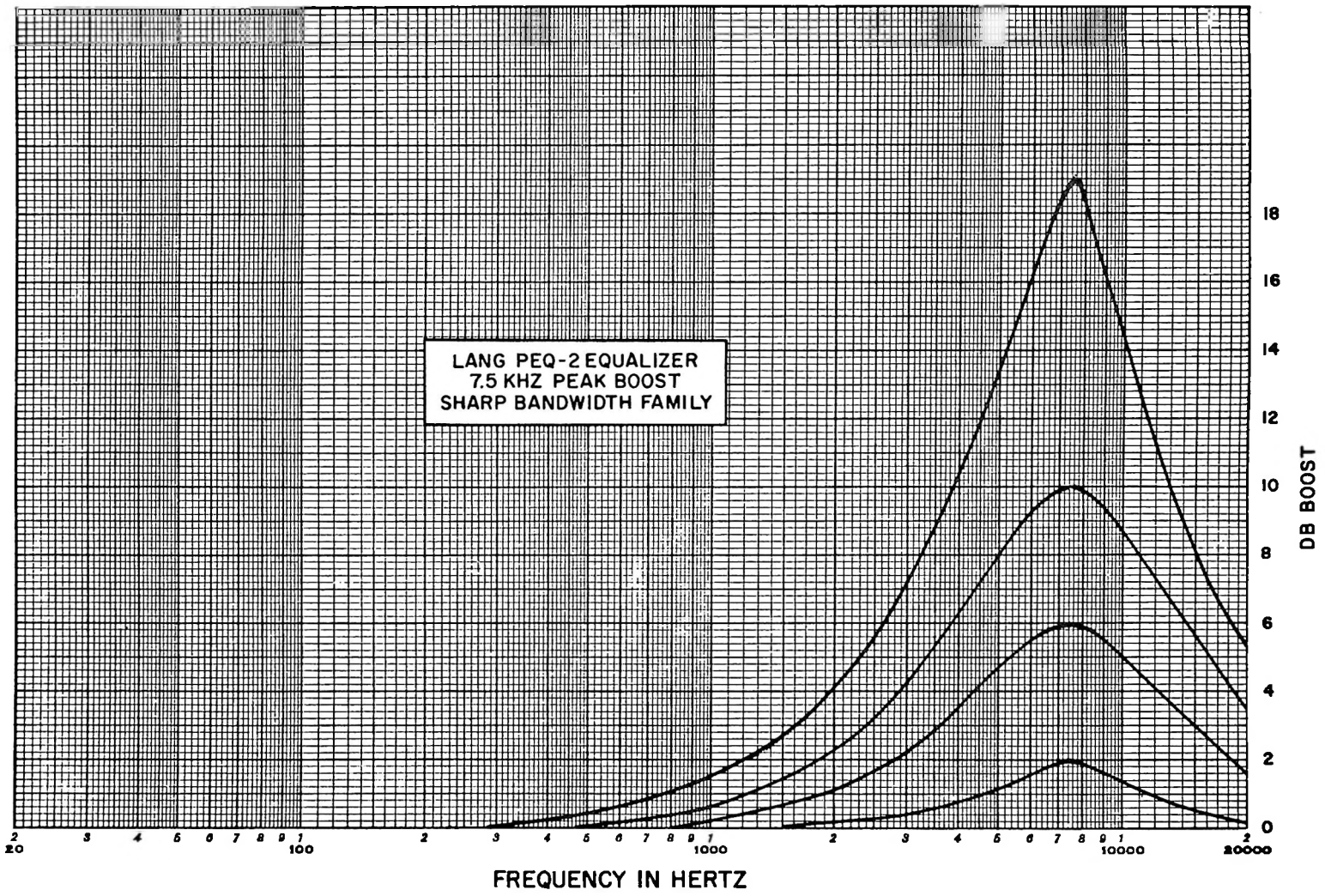
9
1
10000
2
20000
FREQUENCY IN HERTZ


LANG PEQ-2 EQUALIZER
7.5 KHZ PEAK BOOST
SHARP BANDWIDTH FAMILY
18
16
14
12
10
8
6
4
2
0
DB BOOST
2
20
3
4
5
6
7
8
9
1
100
2
3
4
5
6
7
8
9
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1000
2
3
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5
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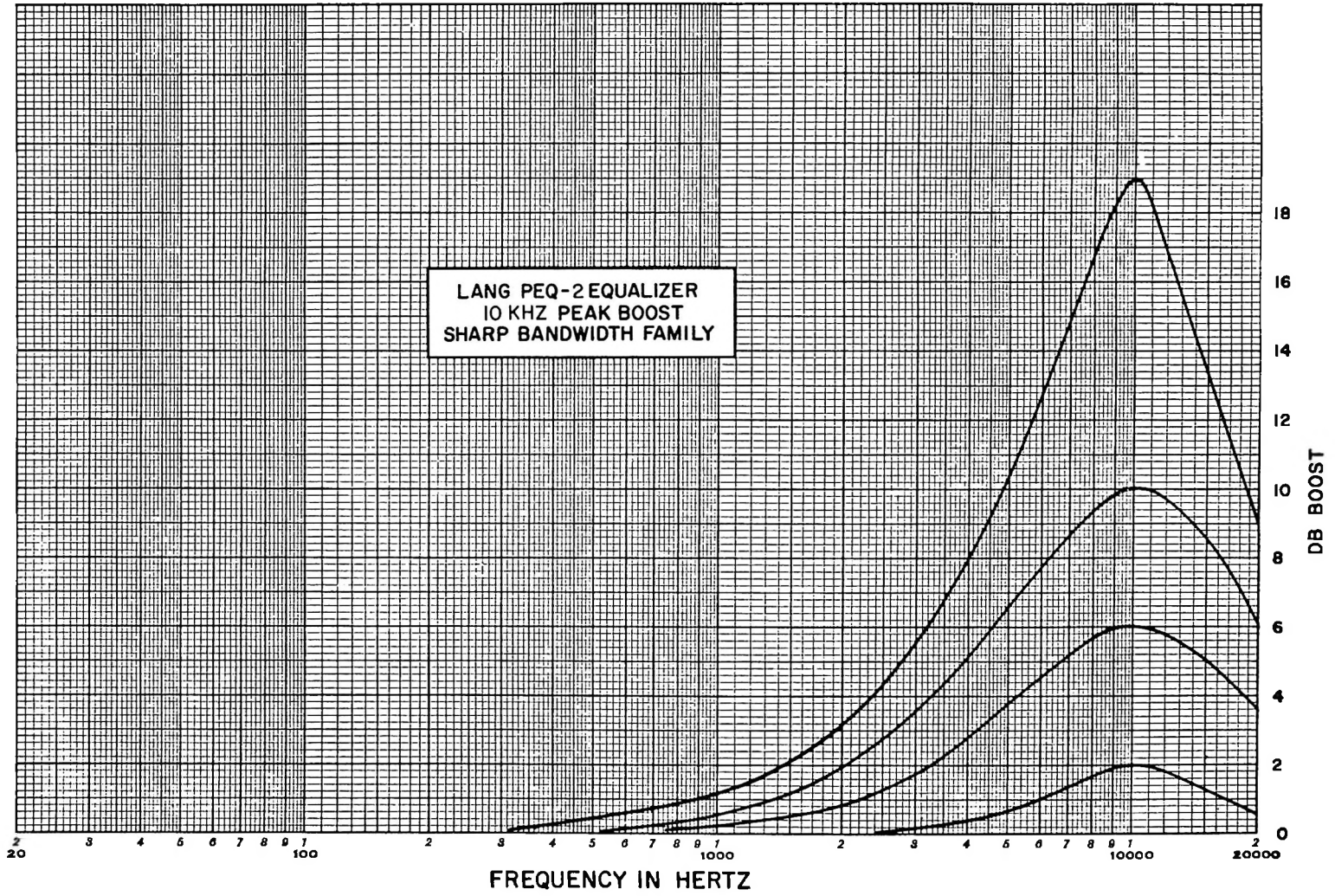
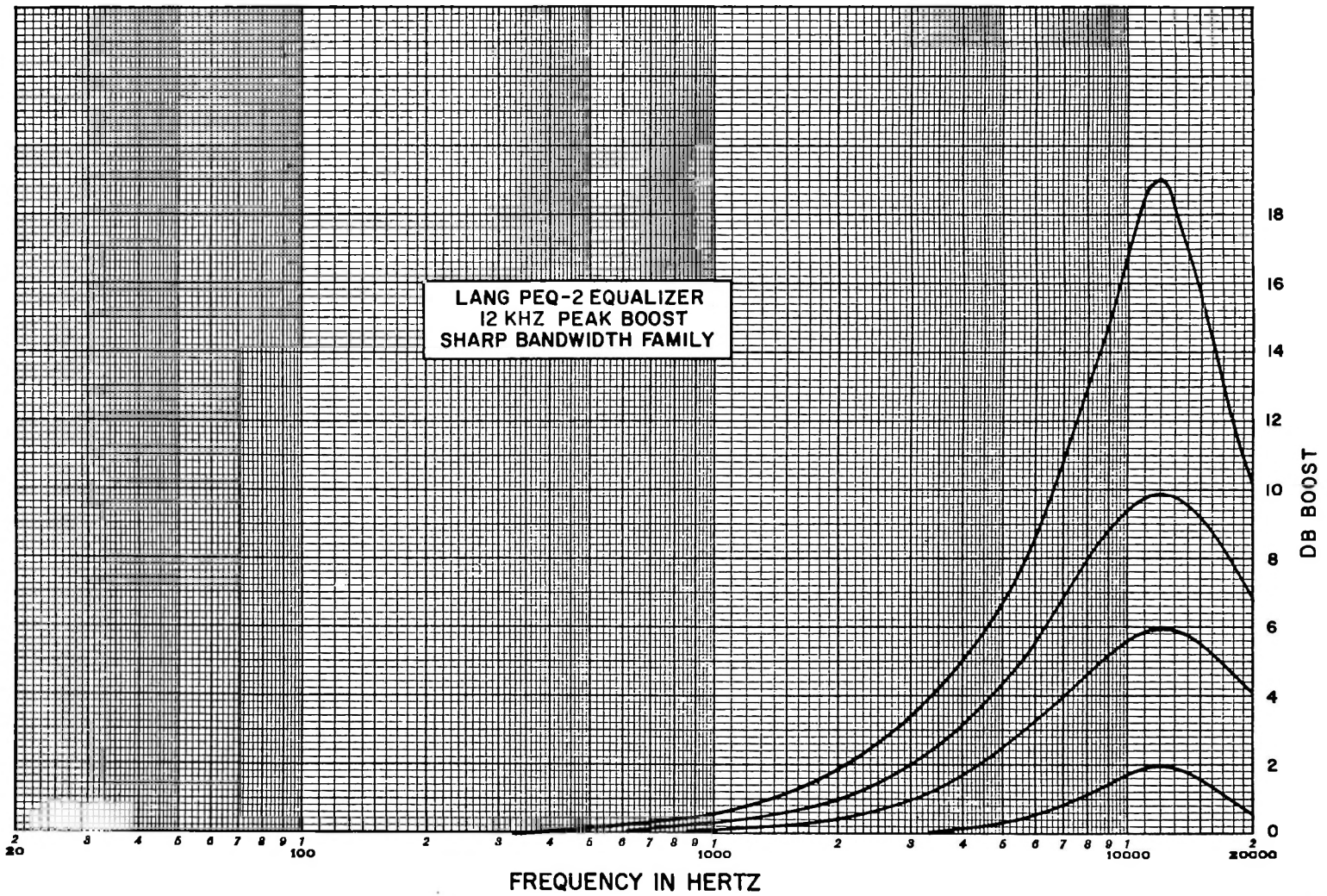
1
10000
2
20000
FREQUENCY IN HERTZ


LANG PEQ-2 EQUALIZER
10 KHZ PEAK BOOST
SHARP BANDWIDTH FAMILY
18
16
14
12
10
8
6
4
2
0
DB BOOST
2 3 4 5 6 7 8 9 1
20
100
1000
10000
20000
FREQUENCY IN HERTZ


LANG PEQ-2 EQUALIZER
12 KHZ PEAK BOOST
SHARP BANDWIDTH FAMILY
18
16
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12
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8
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4
2
0
DB BOOST
2
20
3
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9
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100
2
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4
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1000
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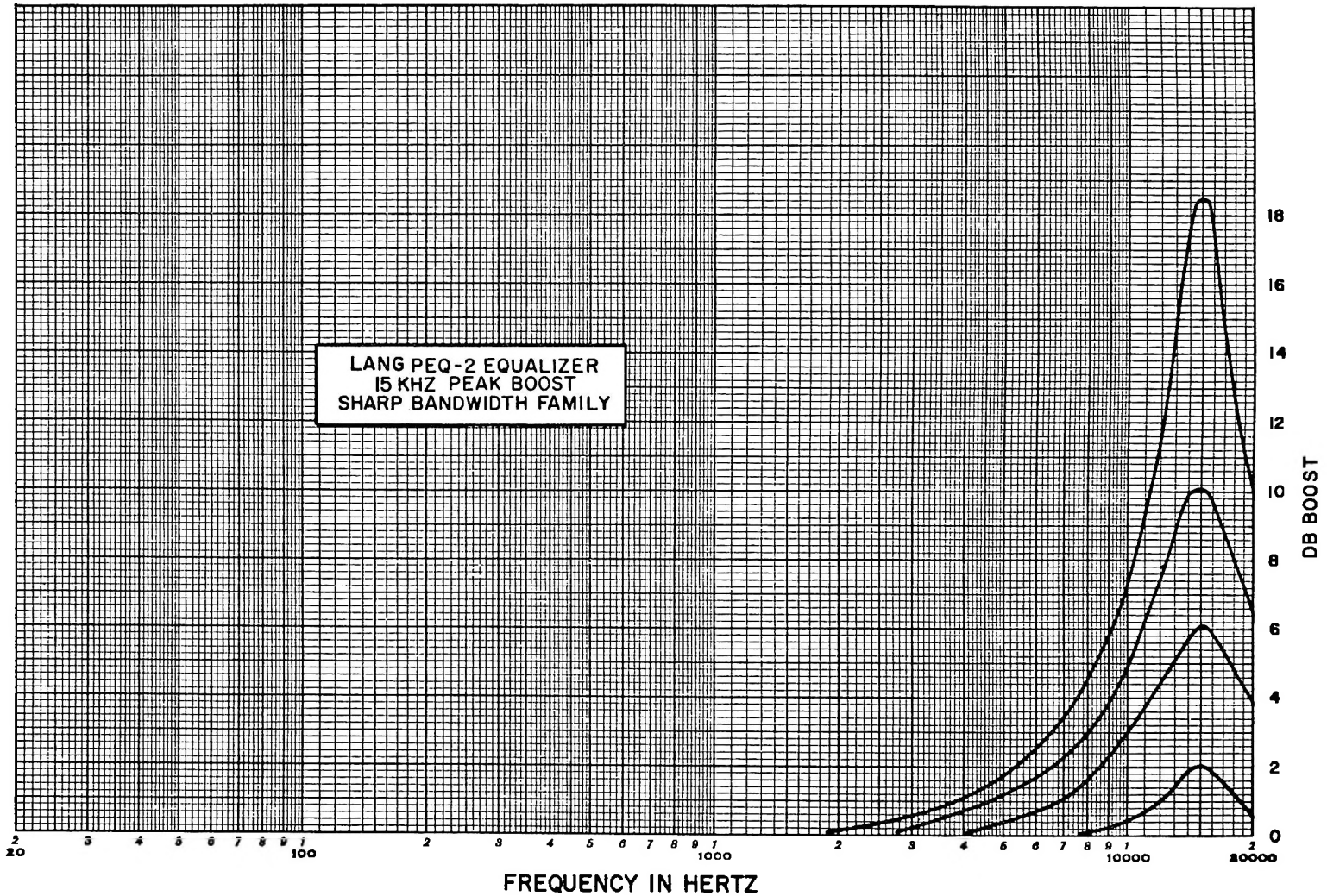
10000
2
20000
FREQUENCY IN HERTZ


LANG PEQ-2 EQUALIZER
15 KHZ PEAK BOOST
SHARP BANDWIDTH FAMILY
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16
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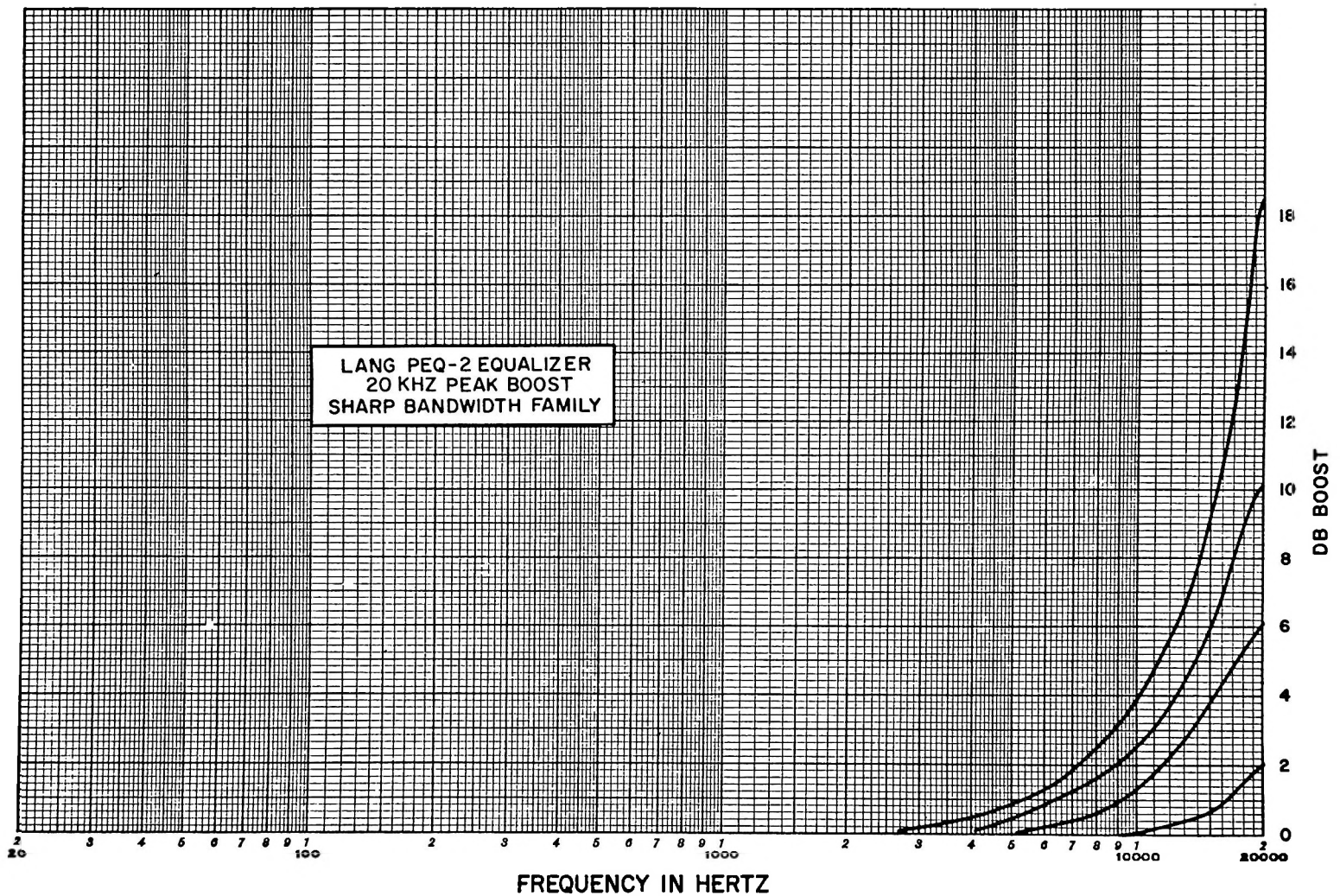
10
8
6
4
2
0
DB BOOST
20
100
1000
10000
20000
FREQUENCY IN HERTZ


LANG PEQ-2 EQUALIZER
20 KHZ PEAK BOOST
SHARP BANDWIDTH FAMILY
18
16
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12
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8
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4
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0
DB BOOST
2
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100
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10000
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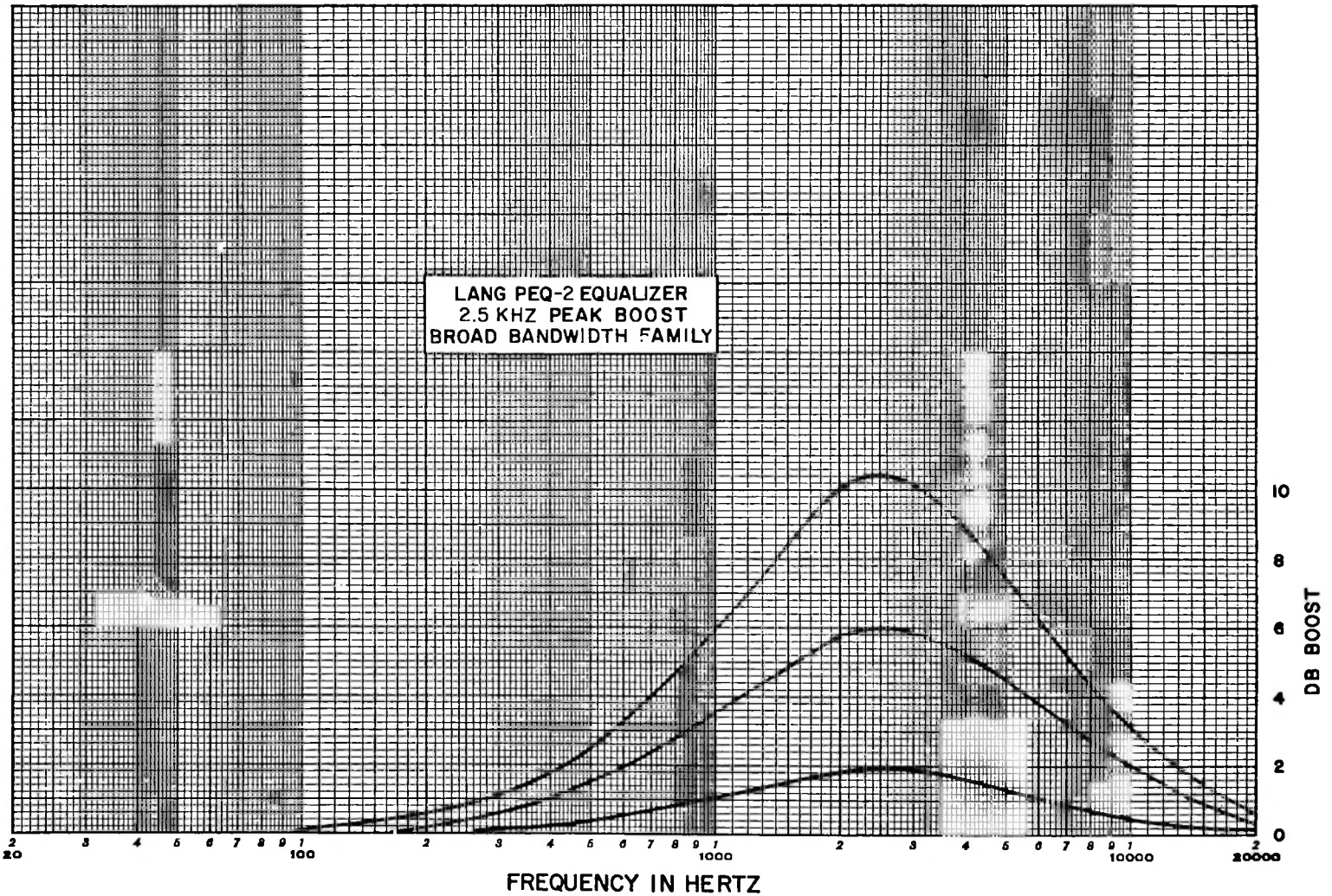
20000
FREQUENCY IN HERTZ


LANG PEQ-2 EQUALIZER
2.5 KHZ PEAK BOOST
BROAD BANDWIDTH FAMILY
10
8
6
4
2
0
DB BOOST
2
20
3
4
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1
100
2
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7
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1
1000
2
3
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7
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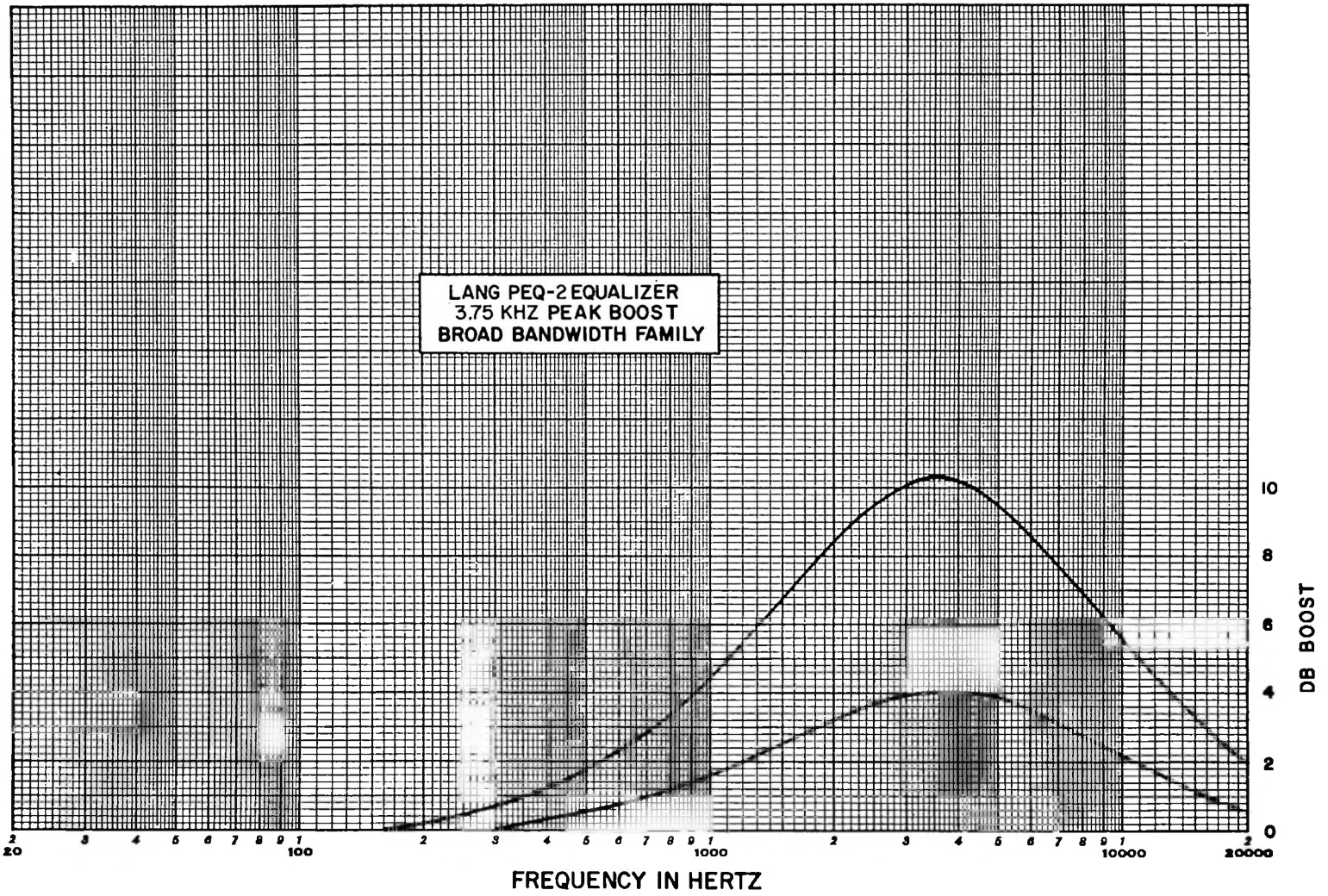
1
10000
2
20000
FREQUENCY IN HERTZ


LANG PEQ-2 EQUALIZER
3.75 KHZ PEAK BOOST
BROAD BANDWIDTH FAMILY
10
8
6
4
2
0
DB BOOST
2
20
3
4
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1
100
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10000
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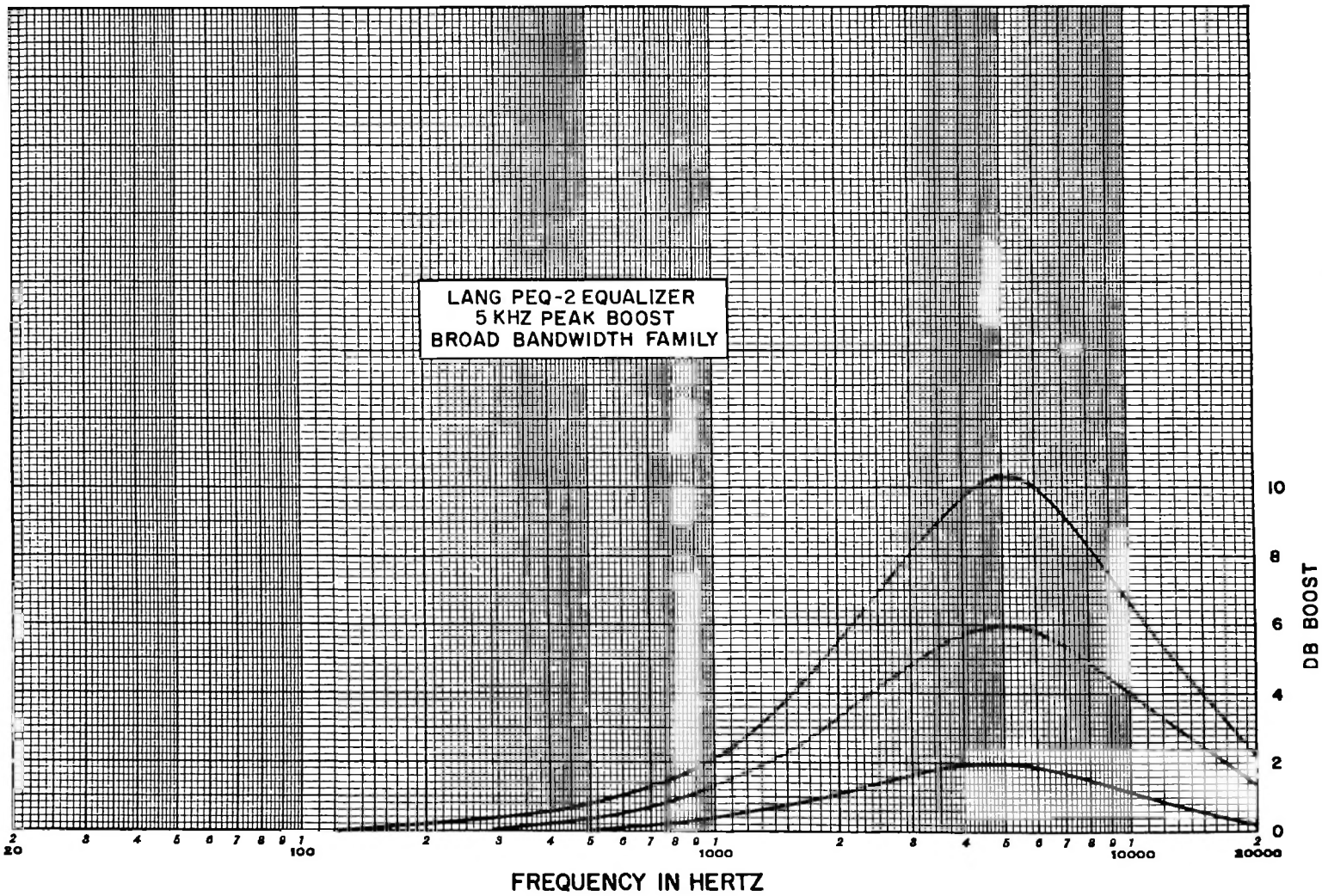
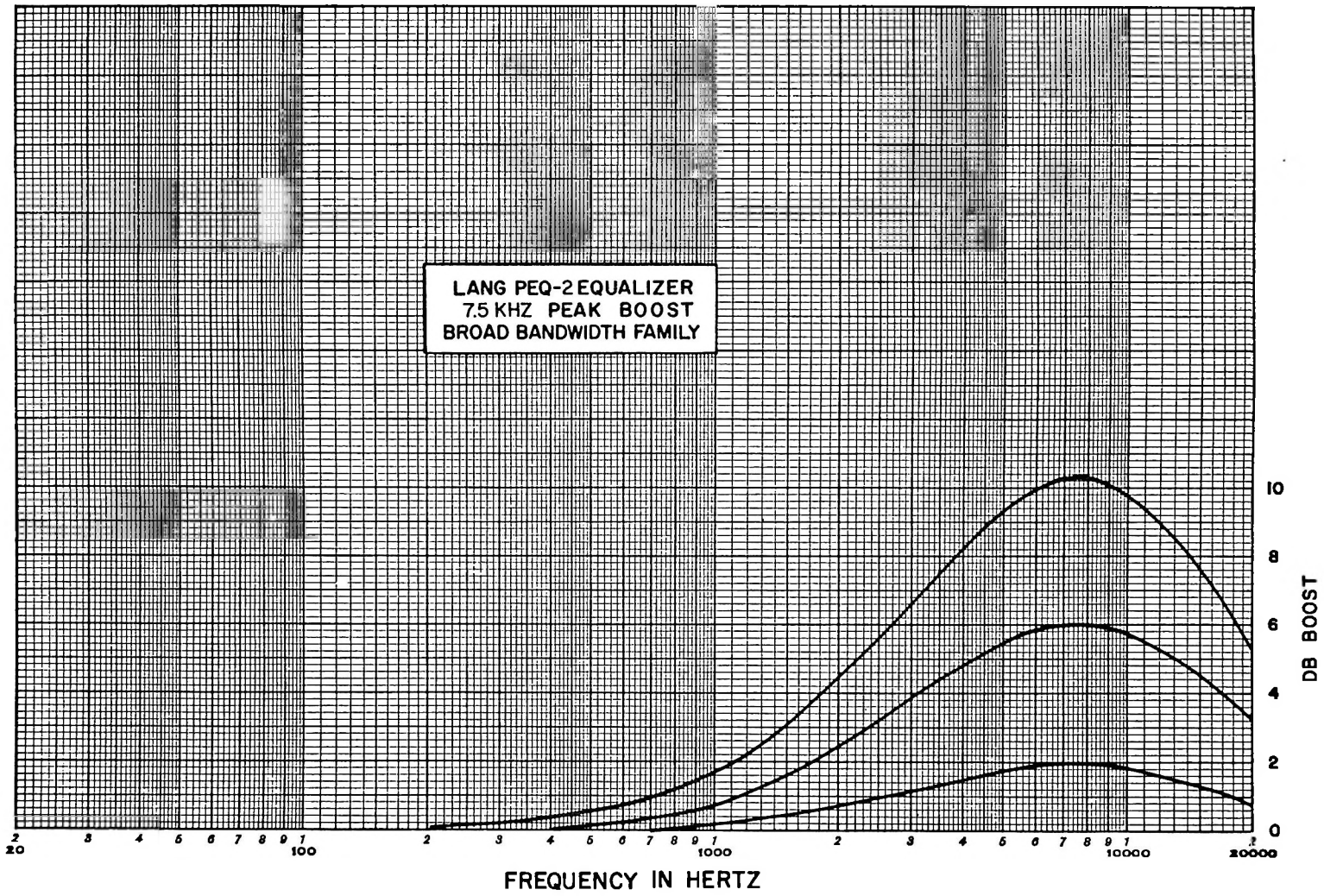
20000
FREQUENCY IN HERTZ


LANG PEQ-2 EQUALIZER
5 KHZ PEAK BOOST
BROAD BANDWIDTH FAMILY
10
8
6
4
2
0
DB BOOST
20
100
1000
10000
20000
FREQUENCY IN HERTZ


LANG PEQ-2 EQUALIZER
7.5 KHZ PEAK BOOST
BROAD BANDWIDTH FAMILY
10
8
6
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0
DB BOOST
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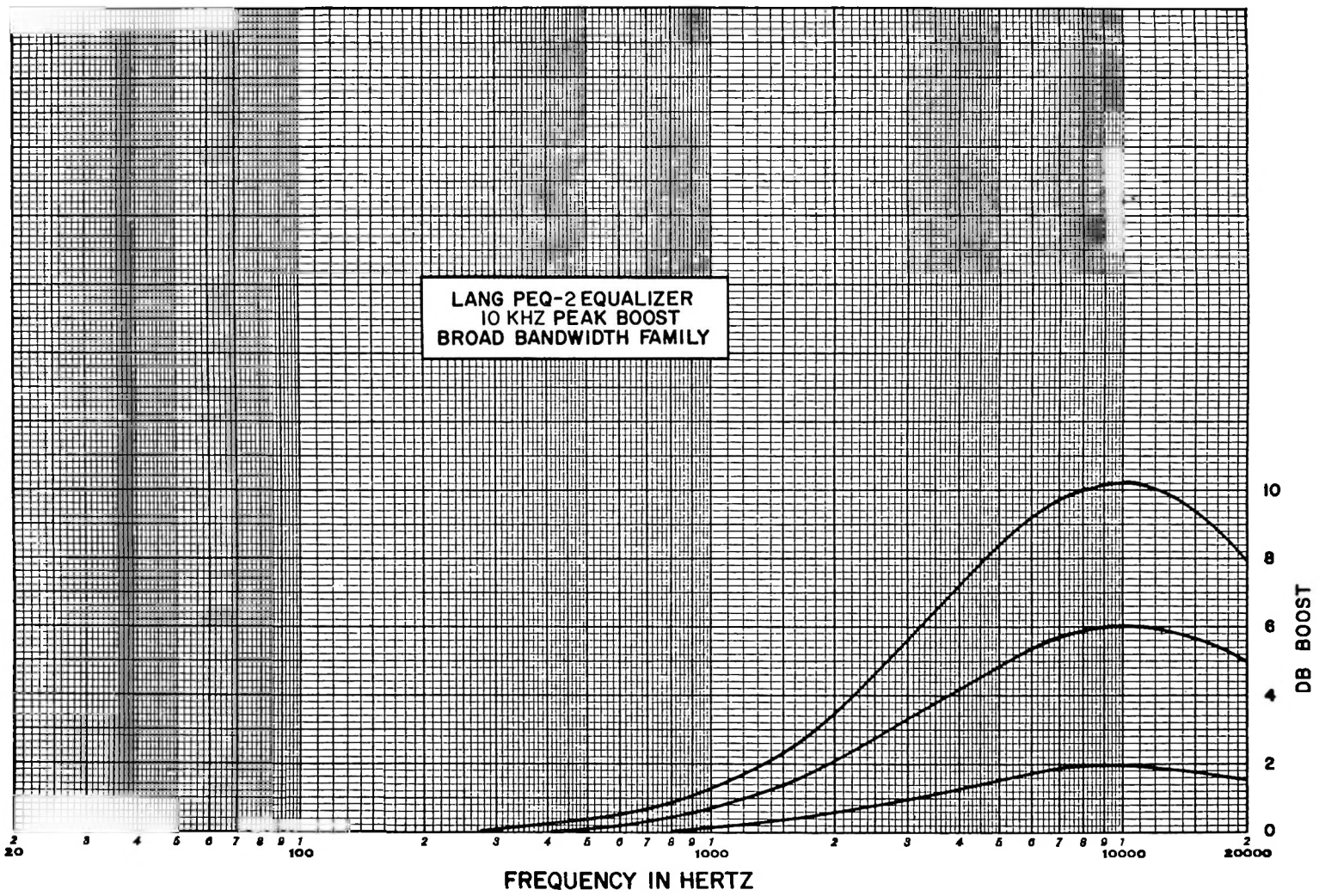
1000
10000
20000
FREQUENCY IN HERTZ


LANG PEQ-2 EQUALIZER
10 KHZ PEAK BOOST
BROAD BANDWIDTH FAMILY
10
8
6
4
2
0
DB BOOST
2
20
3
4
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1
100
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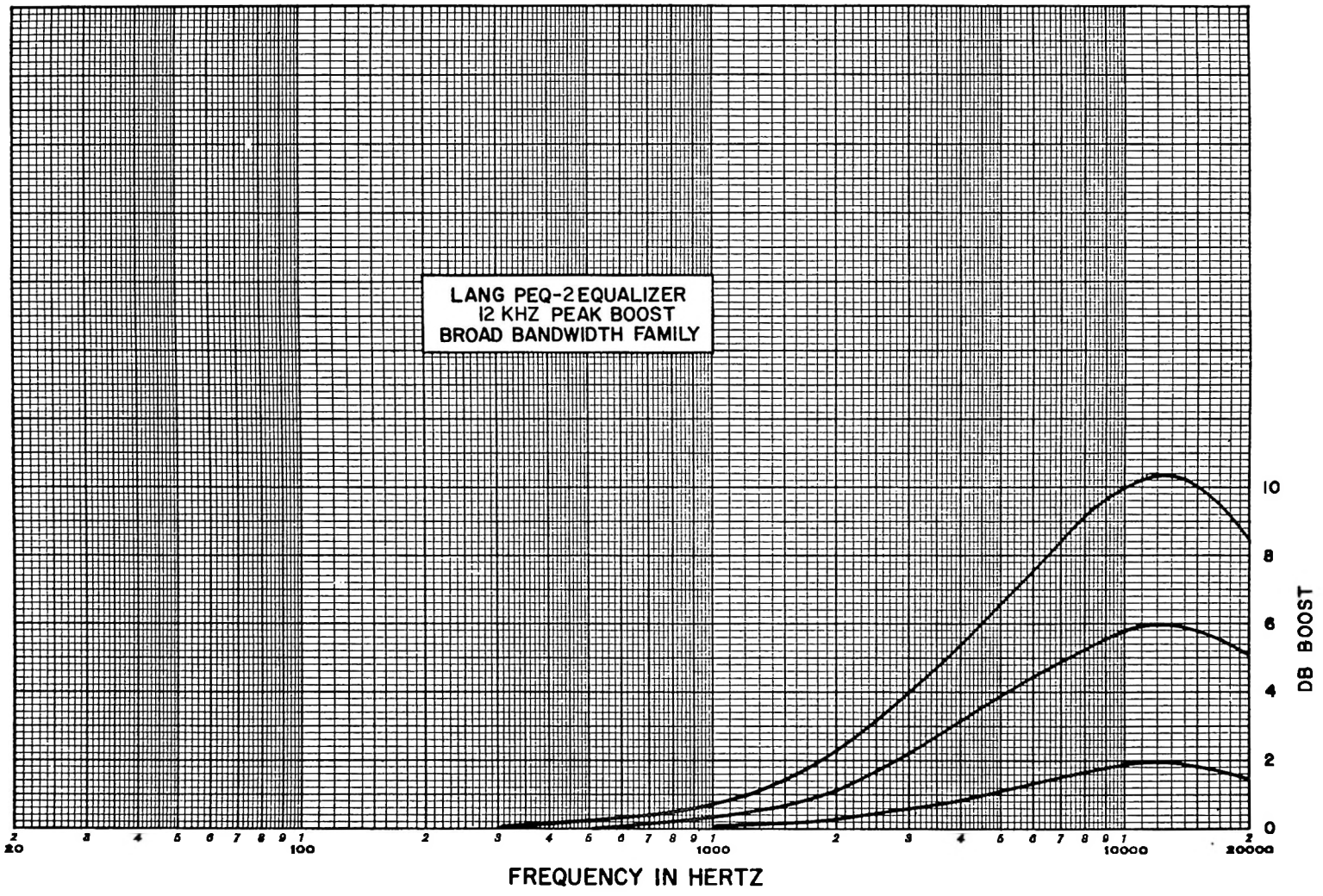
2
20000
FREQUENCY IN HERTZ


LANG PEQ-2 EQUALIZER
12 KHZ PEAK BOOST
BROAD BANDWIDTH FAMILY
10
8
6
4
2
0
DB BOOST
2
20
3
4
5
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8
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1
100
2
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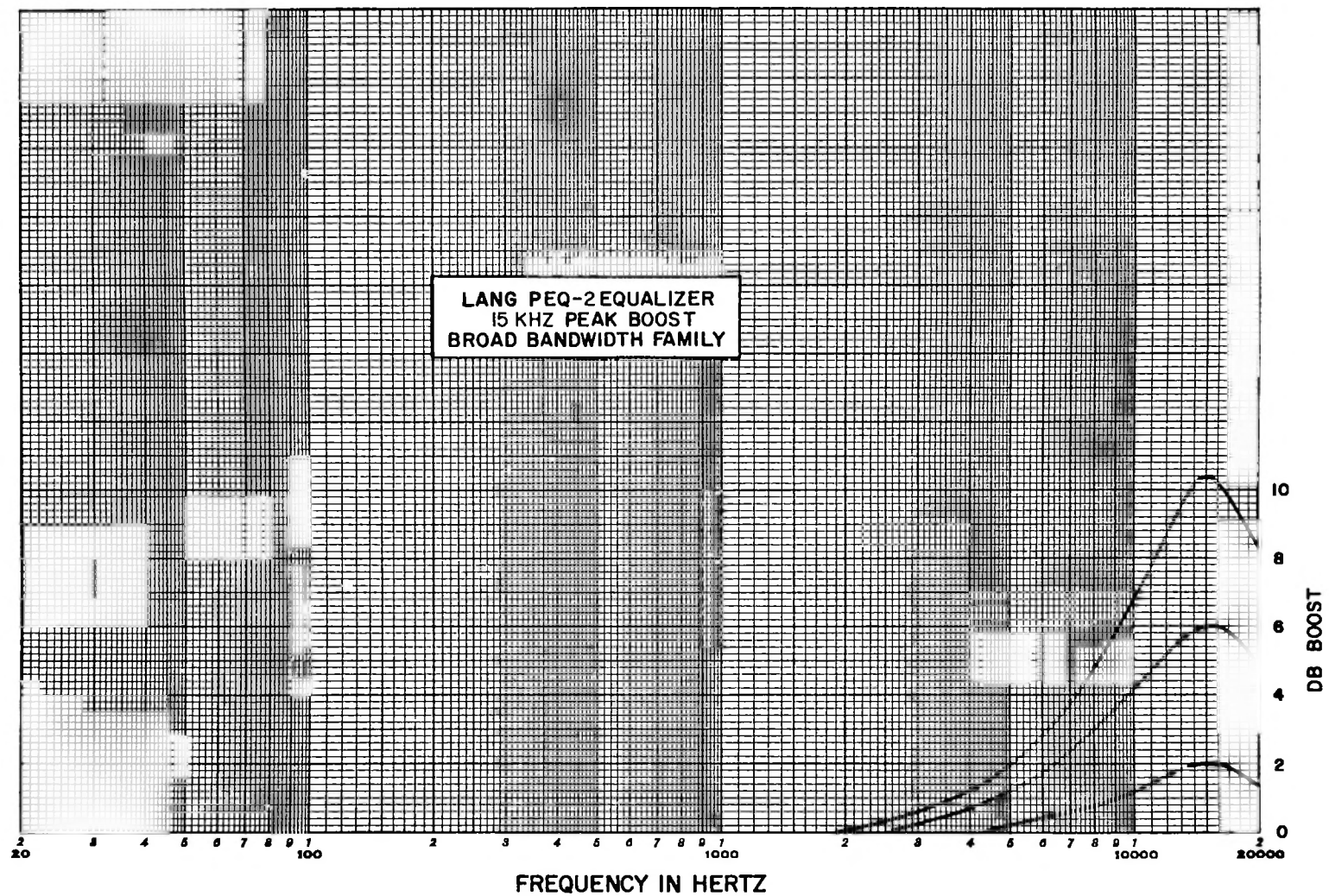
10000
2
20000
FREQUENCY IN HERTZ


LANG PEQ-2 EQUALIZER
15 KHZ PEAK BOOST
BROAD BANDWIDTH FAMILY
10
8
6
4
2
0
DB BOOST
2
20
3
4
5
6
7
8
9
1
100
2
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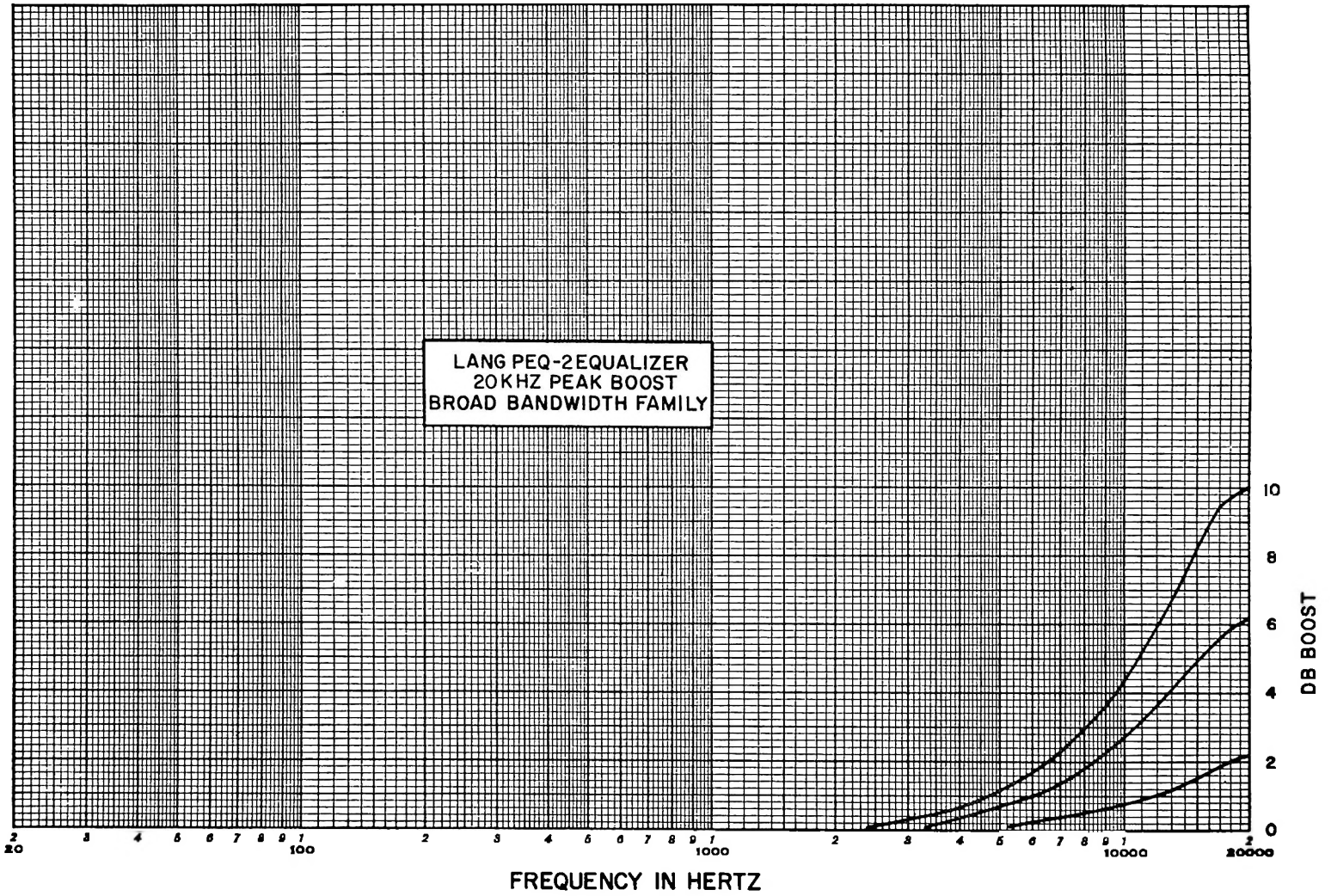
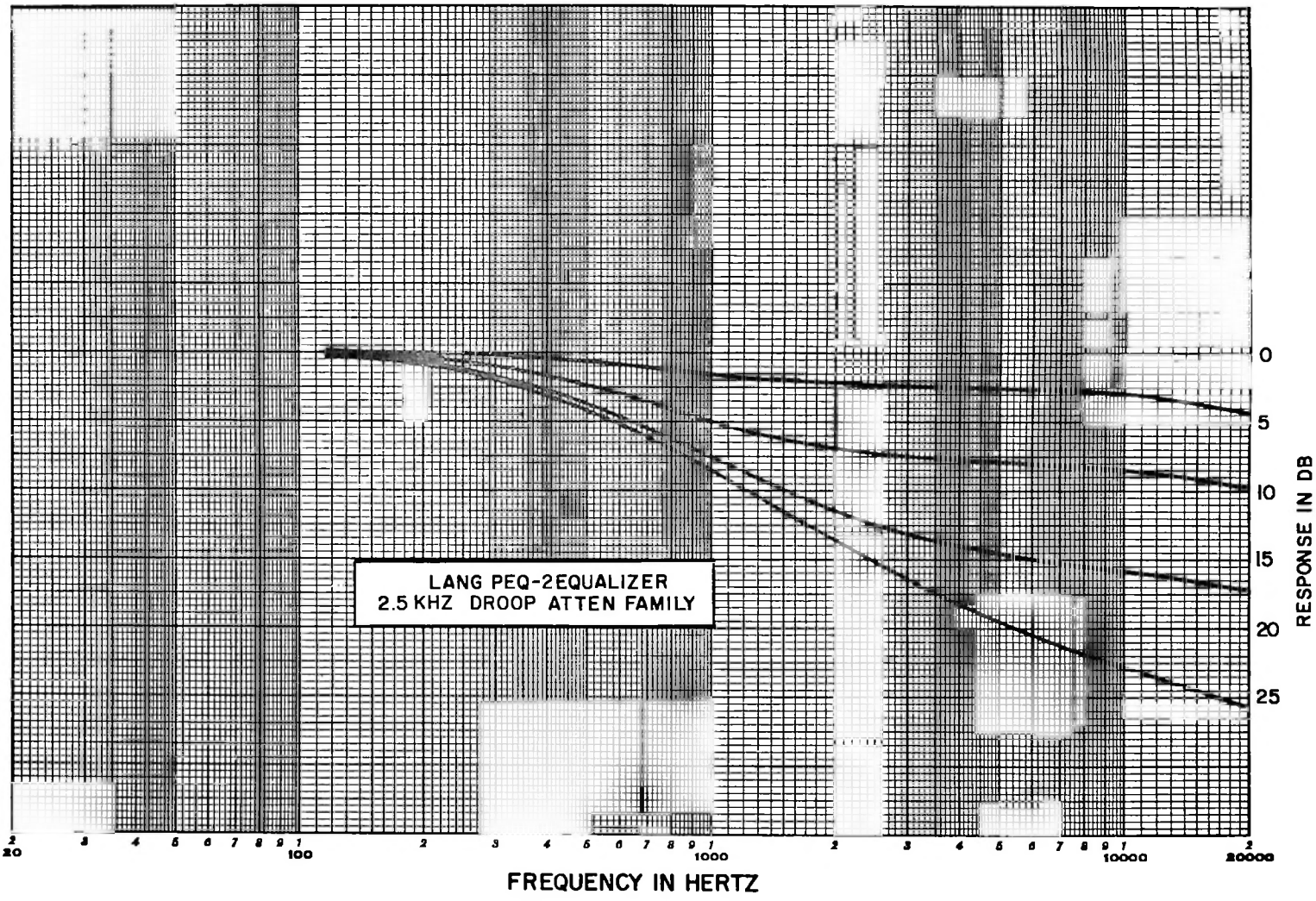
10000
2
20000
FREQUENCY IN HERTZ


LANG PEQ-2 EQUALIZER
20 KHZ PEAK BOOST
BROAD BANDWIDTH FAMILY
10
8
6
4
2
0
DB BOOST
20
100
1000
10000
20000
FREQUENCY IN HERTZ


LANG PEQ-2EQUALIZER
2.5 KHZ DROOP ATTEN FAMILY
0
5
10
15
20
25
RESPONSE IN DB
2
20
3
4
5
6
7
8
9
1
100
2
3
4
5
6
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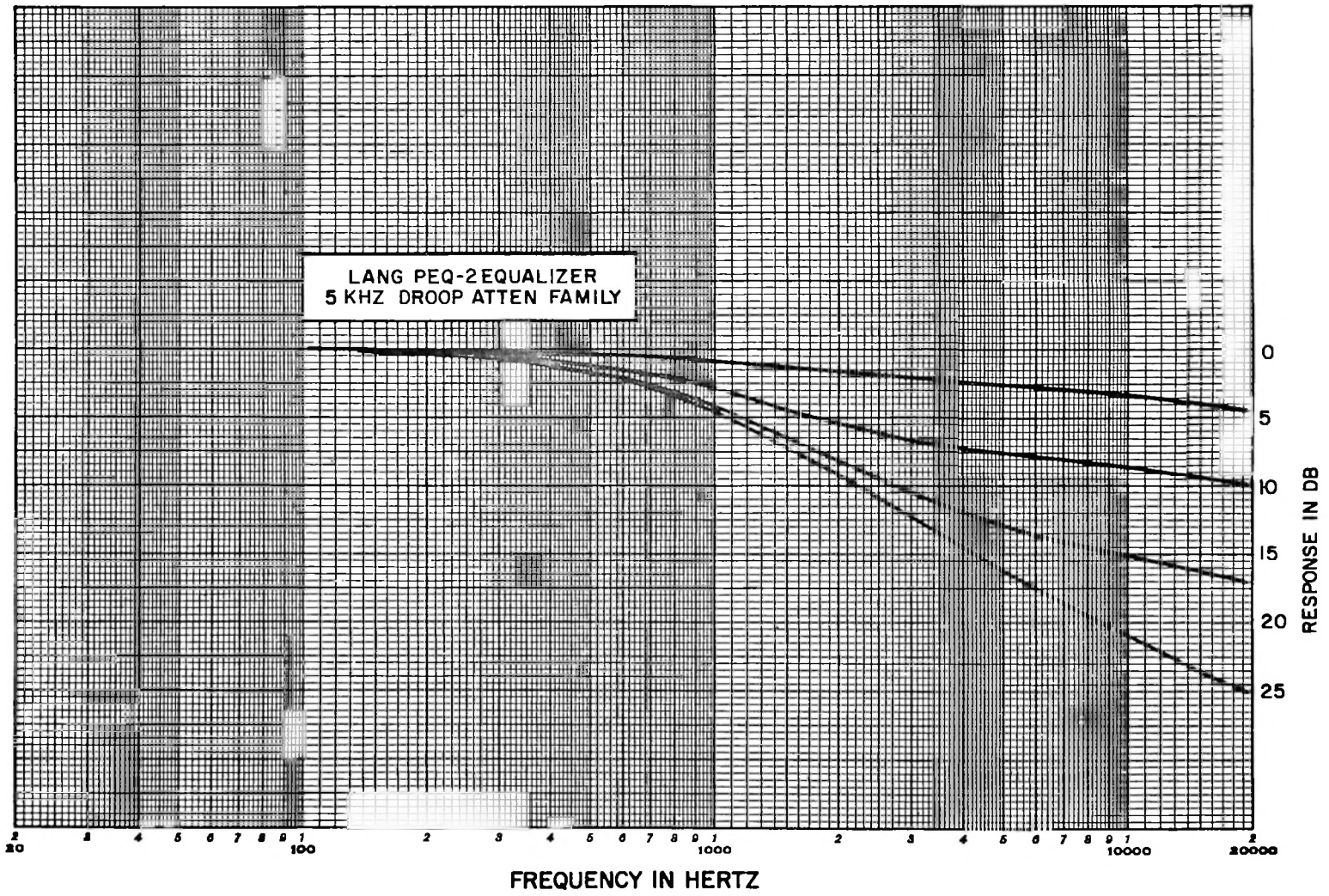
10000
2
20000
FREQUENCY IN HERTZ


LANG PEQ-2 EQUALIZER
5 KHZ DROOP ATTEN FAMILY
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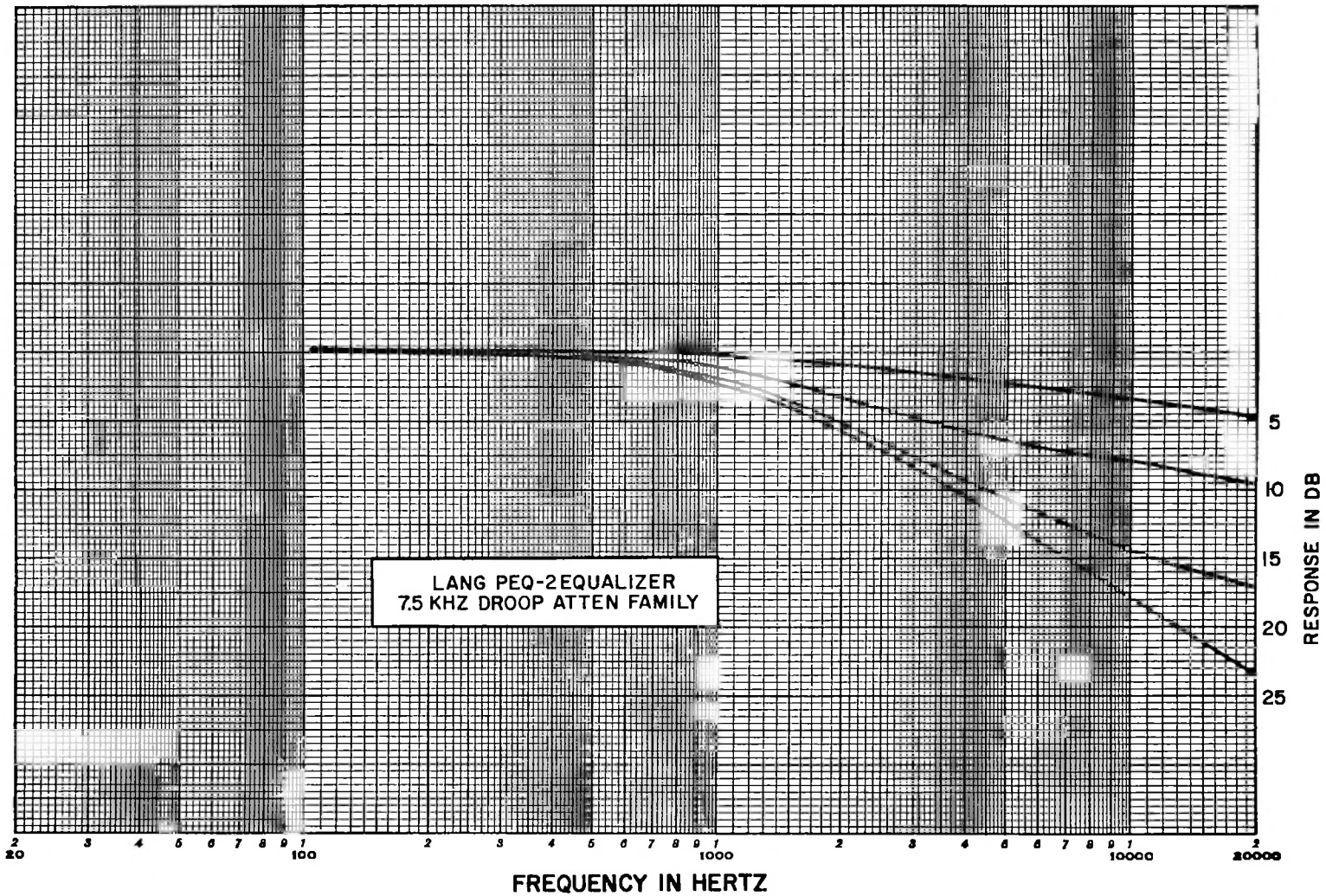
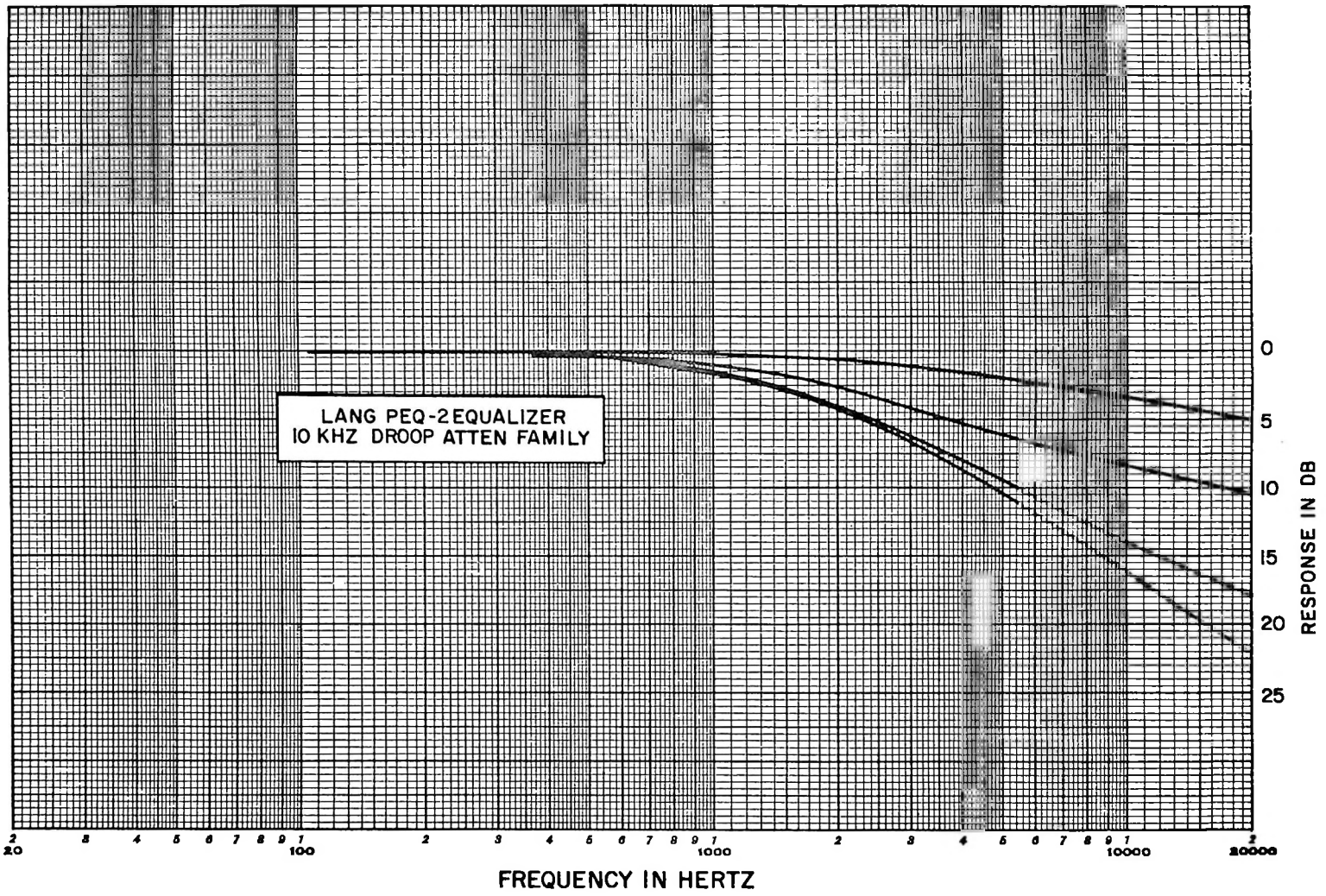
5
10
15
20
25
RESPONSE IN DB
20
100
1000
10000
20000
FREQUENCY IN HERTZ


LANG PEQ-2EQUALIZER
7.5 KHZ DROOP ATTEN FAMILY
5
10
15
20
25
RESPONSE IN DB
20
100
1000
10000
20000
FREQUENCY IN HERTZ


LANG PEQ-2 EQUALIZER
10 KHZ DROOP ATTEN FAMILY
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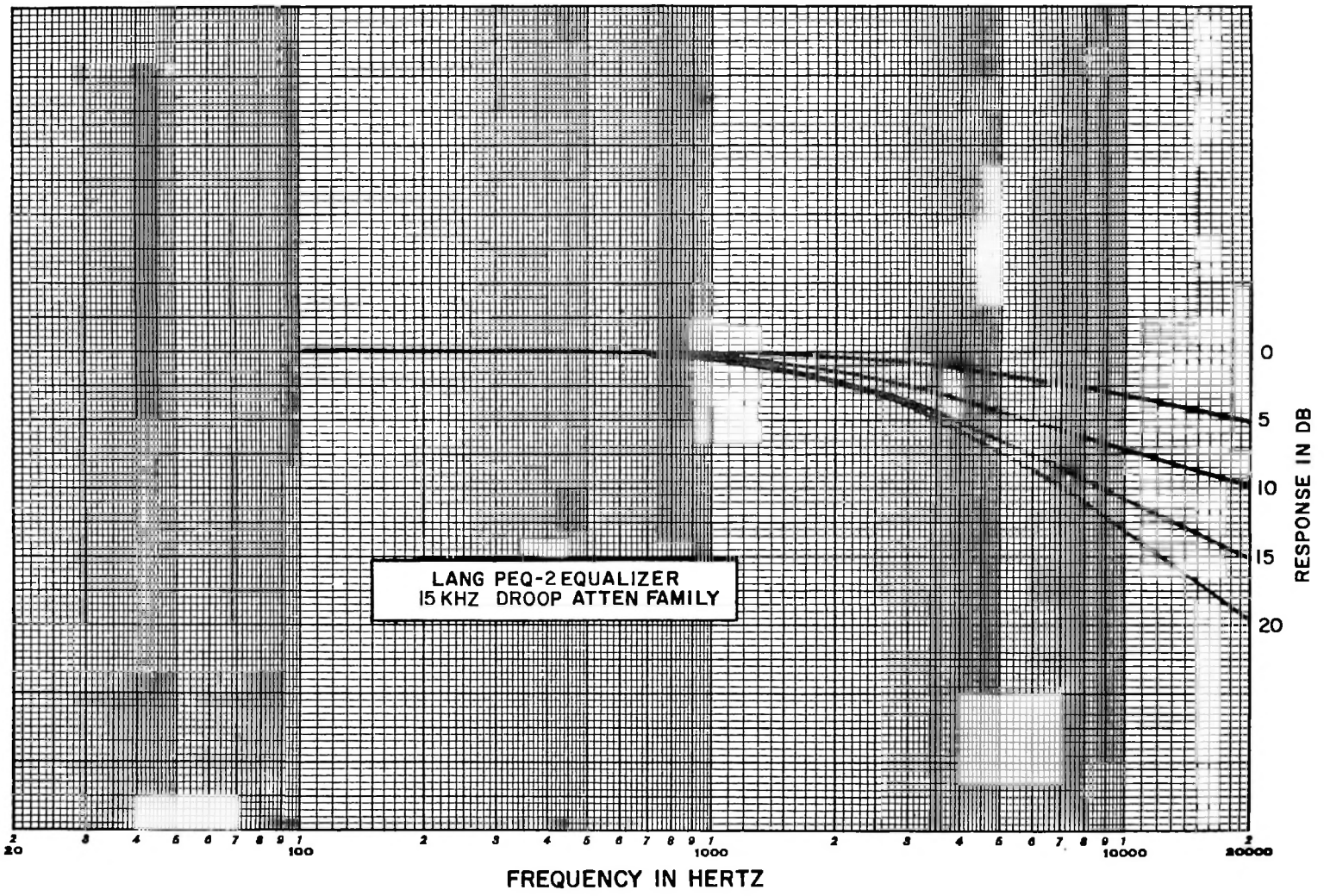
10
15
20
25
RESPONSE IN DB
20
100
1000
10000
20000
FREQUENCY IN HERTZ


LANG PEQ-2 EQUALIZER
15 KHZ DROOP ATTEN FAMILY
0
5
10
15
20
RESPONSE IN DB
2
20
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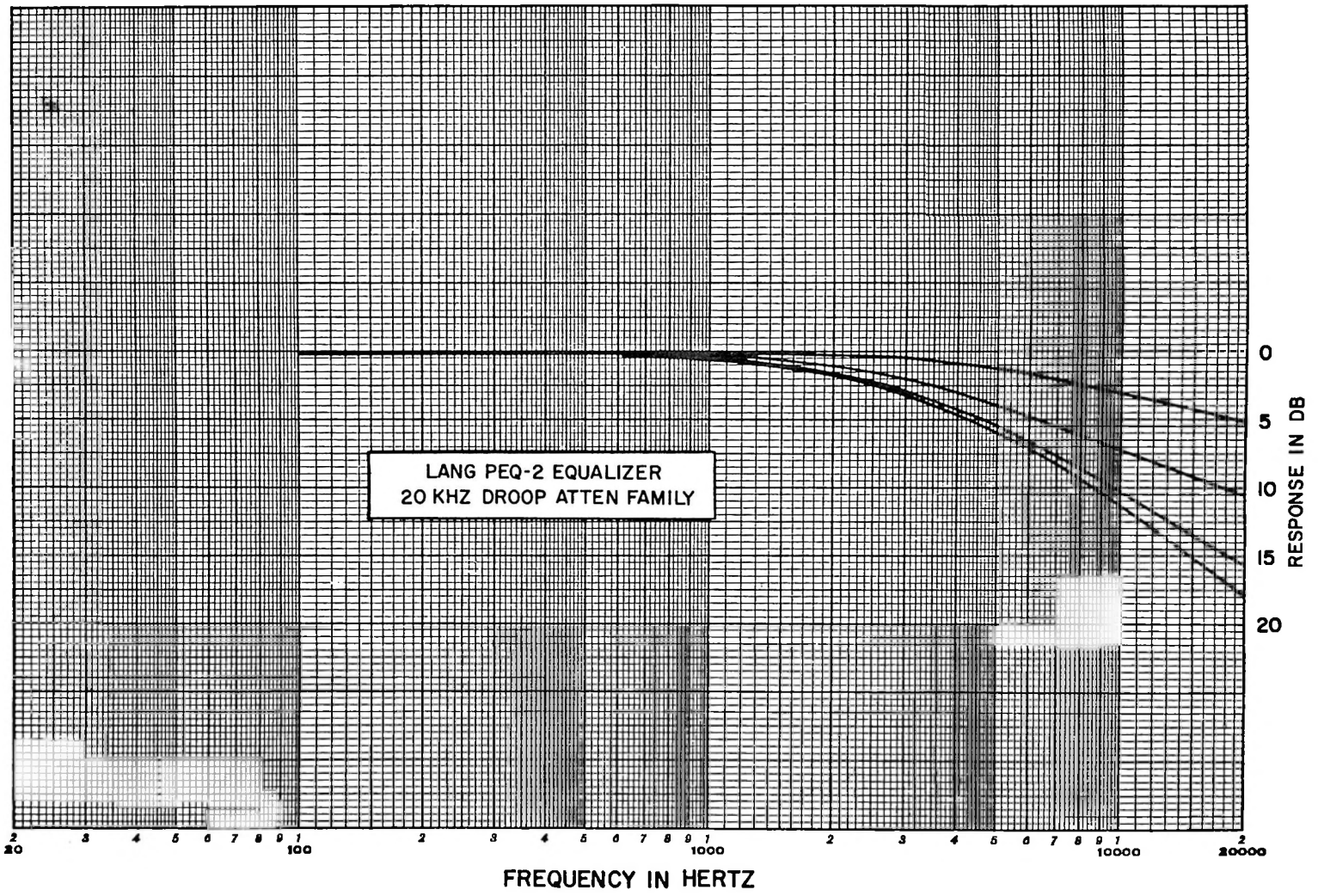
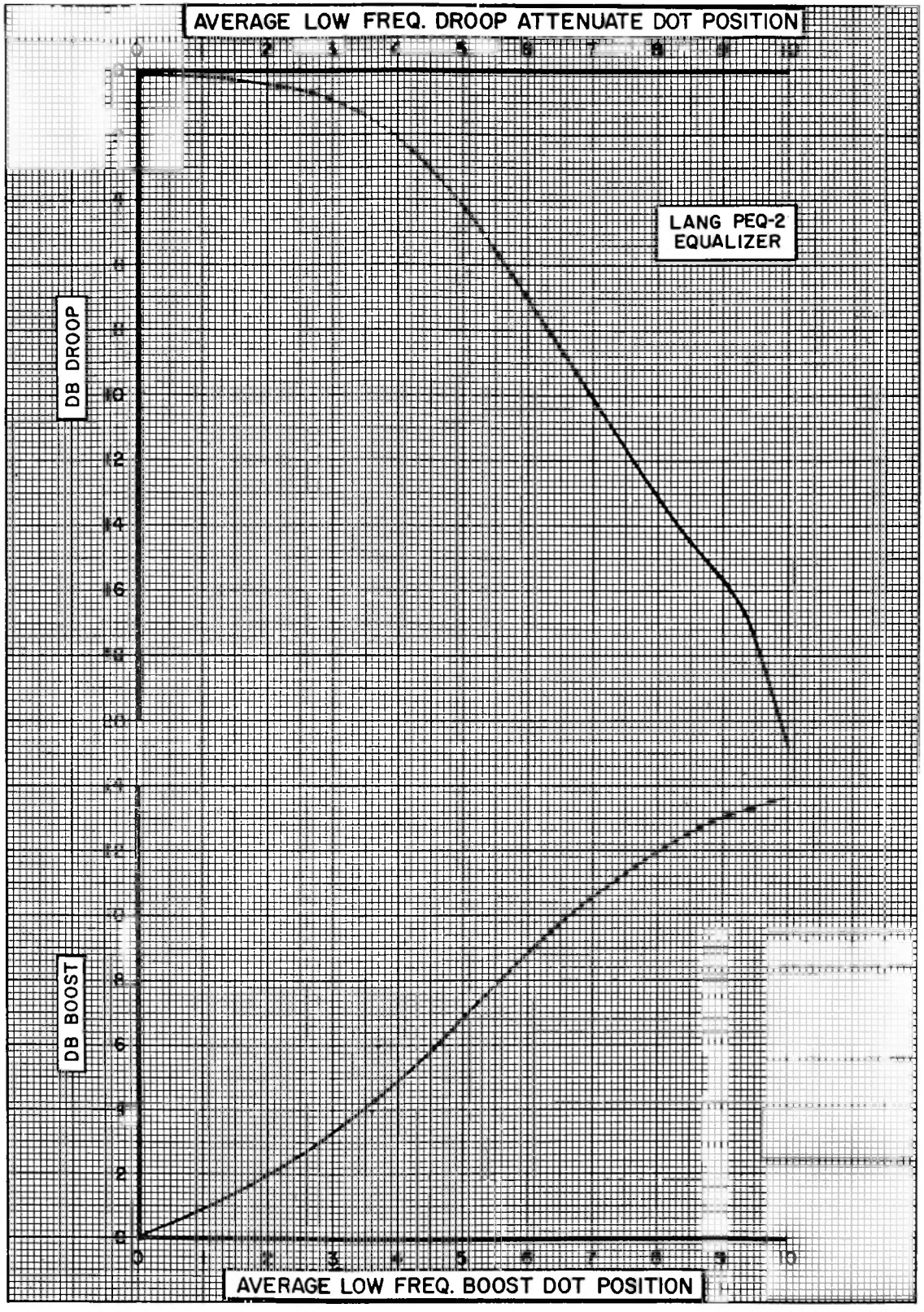
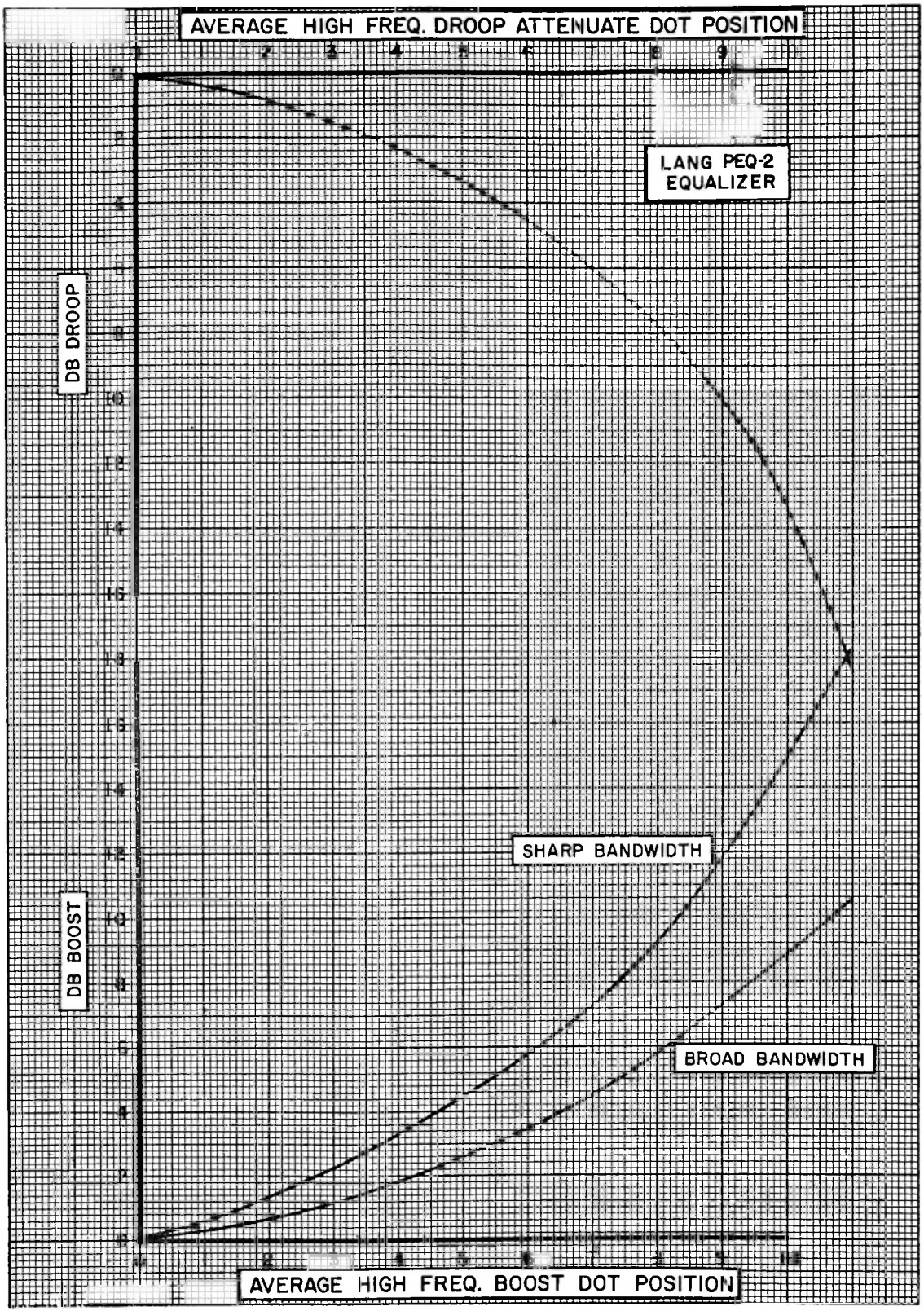
FREQUENCY IN HERTZ


LANG PEQ-2 EQUALIZER
20 KHZ DROOP ATTEN FAMILY
0
5
10
15
20
RESPONSE IN DB
20
100
1000
10000
20000
FREQUENCY IN HERTZ


AVERAGE LOW FREQ. DROOP ATTENUATE DOT POSITION
LANG PEQ-2
EQUALIZER
DB DROOP
DB BOOST
AVERAGE LOW FREQ. BOOST DOT POSITION


AVERAGE HIGH FREQ. DROOP ATTENUATE DOT POSITION
LANG PEQ-2
EQUALIZER
DB DROOP
DB BOOST
SHARP BANDWIDTH
BROAD BANDWIDTH
AVERAGE HIGH FREQ. BOOST DOT POSITION