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IONOSPHERIC DATA IN JAPAN

FOR DECEMBER 1949

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(DENPAGHO)

TOKYO, JAPAN

RADIO REGULATORY AGENCY

(DENPACHO)

TOKYO, JAPAN

IONOSPHERIC DATA IN JAPAN FOR DECEMBER 1949

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FOREWORD

Since November 1949, the observation of ionosphere and most part of the research related to the propagation of radio wave excepting those parts directly connected with the Telecommunication Service were transferred to the jurisdiction of the Radio Regulatory Agency from that of the Electrical Communication Laboratory.

Considering the role played by the reports related to the results of the ionospheric observations hitherto prepared by the Laboratory to the world scientific circles, we would like to continue the issue of this pamphlet.

Taking this happy occasion when Japan has resumed the membership in the International Telecommunication Conference, we wish to make every efforts in contributing to the improvement and development of radiocommunications.

We shall be very much obliged to receive the similar publications from the organizations concerned with radio propagation in the world.

December 1949

Tsuyoshi Amishima
Radio Regulatory Commissioner

SITE OF THE IONOSPHERIC STATIONS

Ionospheric observation is carried out at four stations in Japan.

The stations are situated as follows:

	longitude	latitude	site
Wakkanai	141° 41.1' E	45° 23.6' N	Wakkanai-machi, Soya-gun, Hokkaido
Akita	140° 08.2' E	39° 43.5' N	Tegata-cho, Akita-shi, Akita-ken
Kokubunji	139° 29.3' E	35° 42.4' N	Koganei-machi, Kitatama-gun, Tokyo-to
Yamagawa	130° 37.7' E	31° 12.5' N	Yamagawa-machi, Ibusuki-gun, Kagoshima-ken

REMARKS ON SYMBOLS

Except both $f_{\min} E$ and $f_{\min} F$, other symbols are used in accordance with recommendation of C.C.I.R. $f_{\min} E$ and $f_{\min} F$ in the table are defined as follows:

- Zd. Half breadth of the layer, calculated by the method of Booker.
- $f_{\min} E$ Minimum frequency, on which echo reflected from E-layer begins to appear by use of the observation equipment on routine work.
- $f_{\min} F$ Minimum frequency, on which echo reflected from F-layer begins to appear by use of the observation equipment on routine work.

NOTICE

Fukaura station was transferred to Akita since December 1st 1949. The situation of the new station is as above mentioned.

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 45° 23.8' N
Long. 141° 41.1' E

Wakkanai

135° E Mean Time

foF2

Dec. 1949

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.6	3.7	3.6	3.6	3.6	3.6	4.2	6.8	10.1	B	(13.0) ^P	(13.0) ^B	(12.9) ^P	(12.3) ^P	(10.3)	6.8	(8.8) ^S	5.7	3.7	4.1	4.1	4.0	4.0	4.0
2	3.5	3.4	3.7	(4.3)	3.4	3.0	6.3	9.9	12.0	(12.4)	12.8	10.6	12.3	(11.0) ^C	9.7	(7.5) ^S	6.2	6.0	4.2	3.4	3.4	3.4	3.4	3.4
3	3.5	3.5	3.7	3.6	4.0	4.1	3.6	6.3	B	B	B	11.4	(10.4) ^C	9.2	6.8	6.1	4.4	3.1	3.1	3.1	3.1	3.1	3.2	3.2
4	3.3	3.4	3.7	4.2	3.5	2.2	2.6	6.4	S	C	C	C	C	C	C	C	5	6.3	4.6	4.2	3.9	3.9	3.9	4.5
5	3.6	3.8	4.1	3.2	3.6	3.4	2.8	7.0	11.8	13.0	13.8	12.6	13.3	11.8	12.9	11.5	8.9	7.9	6.6	5.7	(5.0) ^S	4.3	3.9	4.5
6	4.3	4.1	3.2	C	C	C	4.3	7.4	9.8	12.3	12.4	12.5	11.1	(11.6) ^C	9.5	(9.0) ^P	7.5	6.4	(5.2) ^S	3.3	3.6	3.7	(3.3)	(3.3)
7	3.1	3.5	3.6	C	3.6	3.6	4.2	6.2	10.5	(11.8)	12.4	12.4	0.6	12.2	11.6	10.0	8.9	7.6	4.9	4.7	3.4	3.6	3.6	3.8
8	3.4	3.2	3.5	(3.6)	3.7	3.7	3.6	7.1	11.1	11.7	12.3	(12.5)	(12.7)	11.6	(11.9)	11.1	8.3	6.0	5.5	A	6.4	3.0	3.4	3.3
9	3.3	2.3	3.8	3.6	3.5	3.3	3.5	6.9	9.5	13.3	(12.7)	(12.1)	(12.1)	10.6	10.8	10.8	(7.7)	6	5.7	3.8	3.8	3.9	3.8	3.8
10	3.3	3.4	3.5	3.5	3.3	3.5	4.5	β	B	11.8	(12.8)	13.0	13.3	12.2	11.0	(10.3) ^P	9.3	(7.8)	6.4	4.3	3.0	3.0	3.3	3.3
11	3.5	C	C	C	C	C	C	C	C	C	S	11.6	10.5	11.1	11.0	9.9	B	6.0	5.4	3.7	2.5	3.1	3.1	3.1
12	3.2	3.2	3.4	3.1	3.1	3.2	3.0	6.5	9.9	(12.0)	(12.4)	12.7	11.0	11.4	11.3	10.4	8.0	6.5	6.2	4.5	4.2	(3.2)	3.3	3.4
13	3.4	3.7	3.7	3.4	3.4	3.4	3.8	6.4	7.6	12.6	(13.6)	11.6	11.5	11.8	11.6	10.2	S	6.8	S	B	3.2	A	A	A
14	3.5	3.4	3.4	3.3	3.3	3.3	2.5	4.9	B	(12.0)	(12.6)	11.8	10.6	11.8	11.3	9.9	S	7.1	6.3	4.5	4.1	3.4	3.0	3.4
15	3.2	3.7	3.7	3.9	3.7	4.0	4.2	C	7.4	C	S	12.6	12.2	11.6	11.6	11.6	S	7.0	5.6	4.4	3.2	3.6	3.7	3.8
16	3.5	3.0	3.3	4.0	4.9	3.3	2.7	4.3	(7.7)	C	C	C	S	(11.7)	S	S	8.1	6.6	5.1	4.3	4.0	4.1	3.4	3.8
17	4.7	4.5	3.9	3.9	4.4	4.2	4.4	6.5	11.5	S	B	11.1	11.5	10.6	10.0	9.1	7.8	S	4.8	3.7	3.8	3.2	3.6	3.8
18	3.5	3.8	3.8	4.1	3.2	3.0	3.0	5.7	C	C	C	C	C	C	C	C	7.9	7.2	5.6	3.8	3.5	3.7	3.6	2.9
19	3.2	3.2	3.4	3.6	3.6	3.8	3.3	5.2	B	11.1	11.4	11.0	10.7	10.1	B	C	8.0	B	7.0	(6.5)	3.4	3.7	4.1	3.5
20	3.5	3.5	3.7	3.6	3.7	4.1	4.7	5.4	10.1	11.3	12.7	(13.3)	12.7	(10.9)	10.3	9.8	5	8.0	6.2	4.7	4.6	4.1	4.0	A
21	A	A	3.3	C	C	2.7	2.6	4.8	(8.2)	11.0	13.0	11.9	11.8	11.0	9.2	9.1	9.6	B	4.4	2.6	3.4	2.7	2.8	2.7
22	3.3	3.5	3.4	3.1	2.9	2.5	2.6	5.3	S	(11.9)	(11.9)	(12.6)	(11.3)	(12.2)	(11.4)	10.2	S	5.9	4.4	3.3	3.0	2.9	3.3	3.7
23	3.4	3.5	3.3	2.8	3.2	3.5	3.0	4.7	7.8	B	B	12.0	10.8	10.5	C	B	B	6.2	4.0	2.7	2.8	3.2	3.3	3.1
24	3.0	3.6	3.2	3.1	2.9	2.3	2.3	5.9	10.1	13.9	C	C	11.6	B	12.2	B	B	6.9	5.0	3.4	3.2	A	A	3.9
25	3.3	3.4	3.2	2.9	3.0	3.5	3.8	4.5	B	13.6	13.5	12.3	9.2	9.6	10.9	B	7.8	5.9	4.5	3.4	3.6	3.1	3.0	3.2
26	3.6	3.8	3.1	3.1	2.8	2.2	2.2	5.0	B	B	13.7	S	10.5	10.1	9.4	8.7	(8.5)	6.9	4.1	3.6	2.8	3.1	3.1	3.0
27	3.2	3.0	3.1	3.2	3.0	1.9	1.8	4.8	9.0	13.0	C	8.5	9.8	11.0	B	7.2	(7.0)	5.8	4.4	3.3	3.4	2.8	3.0	(3.0)
28	(3.0)	3.1	3.4	3.5	3.4	2.6	2.4	5.1	10.0	S	11.1	10.9	11.0	10.7	S	(7.8)	(7.7)	6.9	4.7	3.0	2.9	2.9	3.0	3.0
29	3.0	3.7	3.5	3.5	3.8	3.6	2.9	7.2	(10.5)	9.5	(12.4)	10.9	9.9	9.2	8.7	9.3	6.2	5.3	3.7	S	2.8	5	3.5	
30	3.3	2.8	3.5	3.4	3.0	2.7	A	4.7	9.5	10.8	11.5	10.8	10.7	9.2	8.4	7.4	7.2	6.2	4.0	3.1	2.8	3.0	3.0	3.0
31	3.1	3.0	3.1	3.1	3.0	6.2	3.8	6.0	7.9	10.3	12.6	10.3	9.7	10.0	9.4	9.7	S	6.8	5.4	4.0	3.7	3.8	3.9	4.1
Median Value	3.4	3.5	3.5	3.4	3.4	3.0	2.9	2.8	2.1	12.0	12.5	12.1	11.1	11.4	11.0	9.8	8.2	6.9	5.4	3.9	3.4	3.2	3.4	3.4
Count	30	29	29	28	28	29	29	28	21	20	20	23	27	27	24	25	20	28	29	28	30	27	27	29

Swampy Note: (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16) (17) (18) (19) (20) (21) (22) (23) (24) (25) (26) (27) (28) (29) (30) (31)

W 1

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat 15° 23.6' N
Long. 141° 41.1' E

h_pF₂

135° E Mean Time

Dec 1949

Wakanai

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	500 ^F	530	520	510	500	450	420 ^E	350 ^B	320 ^F	310	300 ^B	290	270	270	270	270	270	270	270	270	330	440 ^P	360	340	
2	440	430	450	410	320 ^F	270	320 ^F	320 ^F	290	310	300 ^B	290	310	310	300 ^C	300 ^C	300 ^C	360 ^F	360 ^F	340	340	430	450	450	
3	440	480	440 ^F	400	350 ^F	300 ^K	300	270	B	B	B	B	B	(270) ^F	(240) ^B	(310) ^B	320	300	290	390 ^F	430	500	470		
4	510	(460) ^F	440 ^F	380 ^F	330 ^F	A	330 ^K	290	C	C	C	C	C	C	C	C	C	C	C	310	320	370	420		
5	440	440	440	340	340	340 ^F	330	310	290	310	330	290	320	330	320	350	310	280	340	(300) ^S	390 ^F	430	430		
6	430 ^C	430 ^F	C	C	C	C	C	360	320	340 ^P	330 ^P	400 ^P	300	(320) ^F	(320) ^C	(320) ^C	(410) ^F	270 ^S	330	(310) ^K	360	380	430	(500) ^F	
7	420	500	480	470	450	380	370	320	320	260	(280) ^C	290	300	310	300	300	300	300	290	320	400	330	320		
8	410	410	360	(380) ^C	410	340	320	300	300	310	330	(320) ^P	(290) ^K	330	(310) ^F	300	310	340	(340) ^R	A	360 ^A	530 ^A	440	(360) ^F	
9	470	410	430	400	390	450	430	330	(300) ^F	310	(330) ^F	(400) ^K	(430) ^F	(400) ^F	(430) ^F	(270) ^F	(300) ^F	(310) ^F	B	B	380	390	330 ^F	330	
10	430	410	420	400	350	(380) ^B	310	B	B	320 ^P	(320) ^F	290	370	320	260	(320) ^P	340 ^F	(330) ^C	320	270	340	420	430	380	
11	450	C	C	C	C	C	C	C	C	C	S	280	280	300	290	280	B	300	(320) ^B	370	430	400	400	400	
12	380	380	340	300	340	330	270	320	300	(350) ^S	(320) ^B	300 ^S	260	290	300	270	320 ^S	300 ^F	300 ^F	300	330	(330) ^V	310	A	
13	A	350 ^F	300 ^F	A	400 ^F	370 ^F	330	220	(250) ^F	330	(310) ^F	300	310	340	320	300	S	290	S	B	348	A	A	A	
14	440	430	320	310	370	330	310	290	B	(300) ^F	(280) ^F	280	270	(300) ^F	280	260	S	290	S	270	320	410	(350) ^F	A	
15	A	460	470	440	430	370	370	C	360	C	S	S	300	320 ^F	300	S	S	290	S	270	320	360	400	380 ^F	
16	380 ^F	390 ^F	410 ^F	420 ^F	430 ^F	(300) ^F	370	(350) ^B	C	C	C	C	S	(300) ^S	S	S	240	(270) ^B	270 ^B	270 ^B	270	270	340	320	
17	400 ^V	430 ^F	(350) ^K	(380) ^A	380	360	390	320	300	S	B	300	310	300	290	300	(300) ^F	S	S	260	260	370	340	390	410
18	410	410	360	330	320	410 ^F	330	300	300	C	C	C	C	C	C	C	C	C	C	310	290	340	320	370	
19	370	350	370	340	330	330	300	310	B	230	230	200	270	B	C	C	C	310	290	330	280	340	320	370	
20	420 ^F	450 ^F	410 ^F	410 ^F	400 ^F	390 ^F	400 ^F	320 ^F	320	340	330 ^P	(310) ^F	320	(320) ^P	290	310	S	270 ^P	280	310	(330) ^F	310	320	370	
21	A	A	430	C	C	350	240 ^F	370	(260) ^S	320 ^S	300	290	300	290	280	B	310	B	B	270	280	330	320	A	
22	420 ^P	380	360 ^F	320	360	300	320	310	310	(310) ^F	(310) ^F	(300) ^F	(300) ^F	(300) ^F	(240) ^P	300	S	280	S	290	340	360	480	480	
23	450	420	390 ^F	400	390	360	350	340	330 ^F	B	B	310	310	310	C	B	B	B	B	290	320	350	400	380	410
24	520 ^P	440 ^F	(510) ^F	(450) ^F	(300) ^F	(320) ^B	B	340	300	340	C	C	340	B	290	B	B	B	B	320	(310) ^S	360	A	370 ^F	
25	360	360	340	340	350	410	A	300	B	330 ^P	300 ^P	310	360	300	360	(260) ^B	340	320	320	350 ^F	400	(440) ^F	(450) ^F	470 ^F	
26	430 ^F	460 ^F	420	340	280	260 ^F	B	410	B	B	(300) ^F	S	270 ^Z	(320) ^F	(310) ^S	270	(390) ^K	330	340	340	390	370	330	(440) ^F	
27	470 ^F	430	410 ^P	340	320	390	400	360 ^F	320	310	C	(300) ^S	350	360	B	300	290	330 ^F	340	300	400	510	410	(440) ^C	
28	(470) ^S	(490) ^F	400 ^F	340	340	(310) ^F	400	360 ^F	320	S	(300) ^S	330	340	320 ^S	S	(300) ^S	(320) ^S	320	340	400	450	440	420	440	
29	380	500 ^F	440 ^F	440	370	(310) ^F	440	370	(310) ^F	(310) ^F	(310) ^F	(310) ^F	320	320	300	310	360	300	310	(290) ^F	S	350	S	(320) ^F	
30	380	330	380	320	300	370	A	340	310	310	(300) ^F	310	320	320	300	310	360	300	310	(290) ^F	S	350	S	(320) ^F	
31	400 ^F	450 ^F	420 ^F	440	410	400 ^F	490 ^F	340	280	310	310 ^S	310	(310) ^F	320	310	310 ^P	S	290	300	420	410	440	420	360	
Median Value	425	430	410	380	370	360	345	320	300	310	(310)	300	310	310	300	300	315	300	320	320	360	370	400	400	
Count	28	29	24	27	28	28	26	28	21	19	20	23	27	27	24	24	20	28	24	28	30	24	25	27	

Sweep 1.0 Mc in 1.5 min Manual

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Dec. 1949

N.F.Z

Wakkanai

Lat. 45° 52.6' N
Long. 141° 41.1' E

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	19	20	21	22	23
1	370	380	380	420	410	400	320	280	250	300	300	300	290	300	250	350	260	200	200	260	270	300	350
2	380	380	300	300	250	220	240 ^A	240 ^A	200	280	260	260	210	240	220	210	220	240	200	200	270	290	350
3	370	380	380	240	260	210 ^B	210	210	210	200	200	200	200	200	1200 ^H	200	200	220	210	230	310	400	400
4	400	340	340	270	260	270 ^A	280	230	210	210	210	210	210	210	210	210	210	210	210	260	280	300	320
5	320	310	300	280	270	210	240	270	210	230	210	260	300	230	260	230	220	270	260	240	200	300	320
6	330	320	300	280	270	210	240	250	230	230	260	210	230	260	1260 ^H	260	260	260	260	240	240	350	320
7	340	380	380	360	360	290	270	270	220	220	240	240	240	230	220	220	220	240	230	250	280	280	290
8	300	300	280	260	250	300	270	280	250	240	260	240	230	270	260	230	250	220	240	240	340	470	250
9	310	310	360	320	310	330	320	280	210	230	300	300 ^H	290	300	280	260	280	250	270	270	300	300	220
10	320	330	320	310	300	310	280	220 ^A	200	300	280	270	210	210	210	220	220	220	220	260	270	360	340
11	370	340	370	370	300	250	300 ^A	300	200	220	210	200	210	200	210	210	200	300	300	430	550 ^A	350 ^A	380 ^C
12	320	300	290	250	300	290	200	210	200	200	200	200	200	200	200	200	200	210	220	240	240	310 ^A	300
13	350 ^A	310 ^A	250	250	280 ^A	290	250	200 ^A	240 ^A	280	280	250	290	270	250	240	220	220	220	230	300	320	300
14	400 ^A	320 ^A	300	280	340	300	300	250	200	200	210	210	210	210	210	220	210	210	210	240	360	320	300
15	A	440 ^A	420 ^A	340	300	260	270	C	270	230	220	250	270	280	250	260	280	250	280	280	240	300	300
16	320 ^F	340	370	300 ^A	300	250	300 ^A	300	200	200	200	200	200	200	260	220	220	260	220	220	280	300	400 ^A
17	300	310	300	A	300	300	300	210	210	200	300	240	300	210	240	300	230	200	220	220	280	300	350 ^A
18	370	380 ^A	310	270	300	260	240	270	C	C	C	C	C	C	C	C	280	250	250	240	270	250	240
19	340	280	300	280	250	230	230	220	200	200	200	200	210	200	220	210	210	210	200	200	300	240	200
20	300	380	340	320	310	250	250	250	220	260	300	300	270	270	270	270	260	260	220	220	260	270	270
21	A	A	370 ^A	C	C	310 ^F	200	240 ^A	200	210	210	210	230	240	240	210	210	210	200	210	210	300	340
22	350	310	300	260	300	240	300	240	300	250	270	240	240	240	250	230	240	300	300	300	300	360	340
23	380	350	300	320 ^A	320 ^A	280	240	280	220	250	300	280	280	300	250	270	250	240	260	240	350	330	310
24	360 ^F	300	320	350	300	400	300	300	280	280	C	C	300	280	240	240	220	250	230	290	350	300	300
25	290	290	290	300	300	290	A	250	220	280	280	280	360	240	280	220	240	220	300	300	300	400	370
26	370	310	350	290	220	220	400	330	220	300	280	240	240	270	270	230	210 ^F	260	240	290	300	280	400 ^F
27	380 ^F	350	340	240	210	360	370	340	310	240	C	280	300	310	300	290	260	300	300	300	400	300	340
28	340	350	350	240	270	280	310	250	260	250	270	250	260	270	250	260	260	260	270	350	380	330	360
29	330	320	350	240	280	290	300	300	240	230	260	220	280	300	290	270	270	280	270	260	220	320	280
30	310	310	300	240	280	340	A	280	200	250	270	240	300	240	260	240	240	250	270	280	410 ^F	560 ^F	
31	330	370	380	360	340	320	300	270	260	240	290	280	300	250	280	290	290	210	270	270	300	340	350
Mean Value	340	330	320	275	300	290	290	270	220	250	265	260	260	260	250	230	240	230	260	260	240	300	330
Minimum	29	29	29	26	26	24	28	24	24	27	26	27	24	24	24	24	30	31	260	240	240	24	27

Scop. 1.0 Mc to 4.0 Mc in 15 min

Mean

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

f_oF1

Dec. 1949

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1							A	Q	L	Q	Q	Q	Q	Q	Q	Q	L	Q							
2							A	A	Q	L	Q	L	Q	Q	L	C	Q	Q							
3							Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	J							
4							A	Q	C	C	C	C	C	C	C	C	C	A							
5							A	3.0	3.6	Q	Q	Q	L	Q	Q	Q	Q	Q							
6							Q	A	A	Q	Q	Q	Q	Q	Q	Q	A	Q							
7							Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q							
8							Q	L	Q	Q	Q	Q	Q	Q	Q	Q	Q	L							
9							A	A	Q	Q	Q	Q	L	L	L	L	L	Q							
10							A	A	Q	L	6.1 ^P	L	Q	Q	Q	Q	L	Q							
11							C	C	C	C	Q	Q	Q	Q	Q	Q	Q	A							
12							Q	Q	A	A	Q	Q	Q	Q	Q	Q	Q	Q							
13							A	A	A	A	A	A	L	Q	Q	Q	A	Q							
14							A	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	A							
15							A	C	Q	C	Q	Q	L	Q	Q	Q	Q	Q							
16							A	Q	Q	C	C	C	Q	Q	Q	Q	Q	Q							
17							A	Q	Q	Q	Q	Q	Q	Q	L	L	L	A							
18							Q	L	C	C	C	C	C	C	C	C	C	Q							
19							Q	Q	Q	Q	Q	Q	Q	A	Q	A	Q	L							
20							Q	Q	Q	L	L	L	Q	Q	Q	Q	L	Q							
21							A	A	Q	Q	Q	Q	Q	Q	Q	Q	A	A							
22							Q	A	L	Q	Q	Q	Q	Q	Q	Q	Q	Q							
23							A	Q	L	L	Q	Q	Q	A	Q	Q	Q	Q							
24							A	A	Q	Q	C	C	Q	Q	Q	Q	Q	Q							
25							A	A	Q	L	Q	L	L	Q	L	Q	Q	Q							
26							B	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q							
27							Q	L	L	Q	C	L	4.9	L	4.4	L	L	L							
28							Q	A	Q	Q	L	Q	Q	L	L	L	Q	Q							
29							Q	Q	3.9	B	Q	Q	L	L	L	L	Q	Q							
30							A	Q	Q	Q	L	L	L	A	A	Q	Q	Q							
31							Q	Q	Q	Q	Q	L	L	Q	Q	Q	Q	Q							
Median Value							-	-	-	-	-	-	-	-	-	-	-	-							
Count							0	1	2	0	1	0	1	0	1	0	0	0							

Sweep: 1.0 Mc to 6.5 Mc in 1.5 min

Manual

Radio Regulatory Agency (Denpacho)
 Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 45° 23.6' N
 Long. 141° 41.1' E

Wakkanai

h'F1

Dec. 1949

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	Q	220	Q	Q	Q	Q	Q	Q	Q	Q	Q						
2							A	A	Q	220	Q	200	Q	Q	200	C	Q	Q	Q					
3							Q	Q	Q	Q	Q	Q	Q	Q	C	Q	Q	250	Q					
4							A	Q	C	C	C	C	C	C	C	C	C	A	A					
5							A	250	210	Q	Q	Q	250	Q	Q	Q	Q	Q	Q					
6							Q	A	A	Q	Q	Q	Q	Q	C	Q	A	Q	Q					
7							Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q					
8							Q	240	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q					
9							A	A	Q	Q	Q	Q	270	250	250	240	250	Q	A					
10							A	A	Q	230	210	Q	Q	Q	Q	Q	Q	Q	Q					
11							C	C	C	C	Q	Q	Q	Q	210	Q	Q	A	A					
12							Q	Q	A	A	Q	Q	Q	Q	Q	Q	Q	Q	Q					
13							A	A	A	A	A	A	230	Q	Q	Q	A	Q	Q					
14							A	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	A	A					
15							Q	C	Q	C	Q	Q	230	Q	Q	Q	Q	Q	Q					
16							A	Q	Q	C	C	Q	Q	Q	Q	Q	Q	Q	Q					
17							A	Q	Q	Q	Q	Q	Q	Q	Q	240	250	200	A					
18							Q	220	C	C	C	C	C	C	C	C	C	Q	Q					
19							Q	Q	Q	Q	Q	Q	Q	A	Q	A	Q	Q	200					
20							Q	Q	Q	240	240	240	Q	Q	Q	Q	Q	250	Q					
21							A	A	Q	Q	Q	Q	Q	Q	230	Q	A	A	A					
22							Q	A	260	Q	Q	Q	Q	Q	Q	Q	Q	Q	270					
23							A	Q	(200)	250	Q	Q	Q	A	Q	Q	Q	Q	Q					
24							A	A	Q	Q	C	C	C	C	C	C	Q	Q	Q					
25							A	A	Q	270	Q	260	300	Q	Q	250	Q	Q	Q					
26							B	Q	Q	Q	Q	Q	Q	210	Q	Q	Q	Q	Q					
27							Q	300	310	Q	C	270	200	300	240	270	250	250						
28							Q	A	Q	Q	250	Q	Q	Q	260	240	Q	Q	Q					
29							Q	Q	200	B	Q	Q	200	270	260	Q	Q	Q	Q					
30							A	Q	Q	Q	230	240	A	A	Q	Q	Q	Q	Q					
31							G	Q	Q	Q	Q	270	280	Q	Q	Q	Q	Q	Q					
Median Value							-	-	215	240	-	240	240	255	245	-	250	250						
Count							0	4	5	4	7	9	6	8	4	4	5	5						

Scrap 3.0 Mc to 14.0 Mc in 15-min Manual

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

Lat. 46° 23.6' N
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

f_oE

Dec. 1949

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	A	2.0 ^T	B	B	B	B	B	B	2.2	1.8	B						
2							A	A	2.6	A	3.3	3.4	3.2	2.6	B	B	1.8	A						
3							B	A	A	R	B	A	3.1	B	C	B	B	A						
4							A	A	A	C	C	C	C	C	C	C	C	A						
5							A	1.6	2.4	2.6	B	B	3.0	B	B	B	B	B						
6							E	A	2.8 ^T	2.8 ^T	A	A	A	B	C	A	A	B						
7							E	1.5	B	B	3.2	3.2	B	A	A	A	A	B	E					
8							E	B	2.3	B	B	B	B	B	B	2.2	B	B	A					
9							A	A	A	2.2	2.4	B	2.8	B	B	2.3	1.7 ^J	1.2						
10							B	A	A	B	3.0	B	B	B	B	2.6	B	C						
11							C	C	C	C	3	3	3	3	3	B	1.7 ^B	B						
12							E	A	2.4	A	R	2.8	B	B	B	2.2	B	A						
13							B	A	A	A	B	A	A	B	B	B	B	B						
14							C	1.5	2.4	A	A	B	B	B	A	A	A	A						
15							E	A	1.7	2.1	3.0	3.1	2.8 ^T	A	A	A	A	B						
16							A	B	2.2 ^F	C	C	C	B	B	B	2.2 ^T	B	A						
17							A	1.5	A	R	B	B	B	B	B	B	A	B						
18							E	1.5	D	C	C	C	C	C	C	C	2.0	B						
19							B	B	2.3	2.2	B	B	B	A	A	A	A	A						
20							E	B	2.2	2.4	2.7	A	A	B	A	2.4	A	A						
21							A	A	2.0	(2.6) ^B	B	B	3.0 ^B	B	B	B	B	A						
22							E	A	2.2	2.8	3.1	A	B	B	A	A	A	A						
23							E	(1.6)	1.8	2.3	3.0	R	3.3	B	B	B	B	E						
24							B	1.6 ^T	C	A	C	C	3.1	B	B	A	B	A						
25							A	A	3	2.6	2.6	S	2.8 ^J	2.5	B	A	B	A						
26							B	B	3	2.6	3.2	3.1 ^F	A	3.0 ^F	2.6 ^F	2.4 ^F	1.7 ^F	B						
27							E	1.5	2.4	2.7	C	AF	A	2.7	2.5 ^J	2.0	B	A						
28							E	A	2.3	2.8	B	B	2.9	2.6	2.5	B	B	B						
29							B	1.6	1.8	2.7	3.0	3.0	3.2	B	A	B	B	B						
30							A	1.7	2	2.2	B	A	2.3	A	A	A	A	A						
31							A	B	B	3	3.0	3.0	3.1	A	A	B	B	E						
Mean Value							E	1.6	2.2	2.9	3.0	3.0	3.1	2.8	2.5	2.2	1.8	E						
Count							12	10	16	18	17	18	16	6	5	9	6	5						

Swamp 1.0 Mc to 4.0 Mc in 1.5 min

Manual

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

135° E Mean Time

h E

Dec 1949

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	A	100	B	100	B	B	B	100	100	110	B						
2							A	A	100	A	110	100	100	110	100	B	100	A						
3							B	A	100	100	A	100	100	100	100	100	100	A						
4							A	A	100	C	C	C	C	C	C	C	C	C						
5							A	20	100	100	100	100	100	100	100	B	100	B						
6							E	A	110	A	A	A	100	C	A	A	A	B						
7							E	100	B	120	120	110	A	A	A	A	B	E						
8							E	B	100	B	B	B	B	B	B	110	120	A						
9							A	A	110	100	100	100	100	100	100	100	100	100						
10							B	A	A	B	B	100	100	B	B	100	B	C						
11							C	C	C	100	A	B	B	B	B	B	100	B						
12							E	A	100	A	B	100	100	B	B	100	B	A						
13							B	A	A	A	B	A	A	100	B	B	B	B						
14							E	100	100	A	A	100	100	100	100	100	A	A						
15							E	A	100	100	100	100	100	100	A	A	A	B						
16							A	100	100	C	C	C	100	B	B	100	H	A						
17							A	100	A	100	B	B	B	B	B	100	A	B						
18							E	(100)	C	C	C	C	C	C	C	C	C	C						
19							B	B	100	100	100	100	A	A	A	A	A	A						
20							E	B	100	100	100	A	A	100	A	100	A	A						
21							A	A	100	110	100	100	100	100	100	100	100	F	A					
22							E	A	100	100	100	A	100	100	A	A	A	A						
23							E	120	120	100	110	100	100	100	100	100	B	B						
24							B	100	100	100	C	C	100	100	120	A	A	A						
25							A	A	100	110	100	100	40	110	100	100	A	F						
26							B	B	170	130	130	A	110	100	100	100	100	B						
27							E	180	120	120	C	AF	120	110	120	140	B	A						
28							E	A	150	110	100	100	100	100	100	100	B	B						
29							B	100	100	100	100	110	120	110	A	B	B	B						
30							A	100	5	110	100	A	100	A	A	A	A	A						
31							A	B	180	100	100	100	100	A	A	100	B	E						
Median Value							100	100	100	100	100	100	100	100	100	100	100	100						
Count							11	14	20	18	16	21	18	13	16	16	16	16						

Sweep rate: 1 Mc to 15 Mc in 15 min Manual

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 15° 23.6' N
Long. 141° 41.1' E

Wakkanai

135° E Mean Time

(M3000)F2

Dec 1949

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.2	2.2	2.2	2.2	2.3	2.5	2.5 ^F	2.8 ^B	(3.1) ^F	B	A	B	(2.8) ^F	(3.0) ^B	(3.2) ^P	(2.6) ^F	(3.2) ^S	(3.1) ^S	3.2	3.2	2.9	2.4 ^P	2.9	2.8
2	2.6	2.5	2.4	2.5	(3.0) ^F	3.2	3.0 ^F	3.0 ^F	3.2	3.2	(3.2) ^B	3.1	3.1	3.3	(3.1) ^B	(3.2) ^C	(3.2) ^C	(2.9) ^S	2.8	2.9	2.7	2.5	2.5	2.4
3	2.5	2.3	2.4	2.6	2.8	3.1	3.0	3.2	B	B	B	B	B	B	(3.2) ^C	3.0	3.0	3.2	3.2	2.7	2.5	2.5	2.5	2.4
4	2.4	(2.5) ^F	2.4	2.7	3.0 ^F	3.5 ^K	3.0 ^K	3.2	C	C	C	C	C	C	C	C	C	C	3.0	2.8	(2.6) ^B	2.7	2.5	F
5	2.4	2.5	2.4	2.4	2.6	2.8	2.8	3.0	3.2	3.0	2.9	3.1	3.1	3.1	2.9	2.7	3.0	3.2	2.8	(3.2) ^S	2.5	2.6	2.4	F
6	2.4	2.5	C	C	C	C	2.7	2.7 ^S	2.9	2.8 ^P	2.9 ^P	3.0 ^P	(3.0) ^B	(2.9) ^F	(2.9) ^F	(2.9) ^F	(2.5) ^B	3.2 ^S	3.0	(3.0) ^S	2.7	2.7	2.5	(2.2) ^P
7	2.5	2.3	2.2	2.4	2.5	2.7	3.0	3.0	2.9	3.3	(3.2) ^C	3.2	3.0	3.0	3.1	3.1	(2.9) ^B	3.1	3.1	2.9	2.9	2.6	2.9	2.6
8	2.6	2.6	2.8	(2.8) ^C	2.7	3.0	2.8	2.9	3.1	3.0	2.9	(2.9) ^P	(2.9) ^P	2.4	(3.1) ^F	3.0	3.0	2.9	2.8	F	A	2.8	2.4	(2.8) ^F
9	2.4	2.6 ^A	2.5	2.6	2.6	2.4	2.4 ^P	2.9	(3.1) ^F	(3.0) ^B	(2.9) ^F	(2.7) ^F	(2.7) ^F	(2.7) ^F	(3.3) ^F	2.9	(3.5) ^F	(3.2) ^F	S	B	2.7	2.7	2.5	2.8
10	2.5	2.6	2.5	2.6	2.8	2.7	3.1	B	B	3.0 ^P	(3.1) ^F	3.3	(2.7) ^B	3.1	3.2	(3.0) ^F	2.8 ^F	(3.0) ^C	3.1	3.2	2.8	2.6	2.6	2.7
11	2.5	C	C	C	C	C	C	C	C	C	S	3.3	3.3	3.1	3.2	3.3	B	3.2	3.0	2.7	2.6	2.6	2.7	2.6
12	2.7	2.8	2.8	3.1	2.4	2.9	3.2	3.0	3.1	(2.8) ^F	(3.0) ^F	3.3	3.3	3.1	3.1	3.4	2.9 ^S	3.1	(3.0) ^B	3.0	2.9	(3.0) ^F	3.0	A
13	2.8	2.7	3.1	3.2	2.6 ^Z	2.7	2.9	3.5	(3.5) ^F	2.9	(3.0) ^P	3.2	3.1	2.9	3.0	3.1	S	3.1	S	B	2.8	A	A	A
14	2.5	2.6	3.0	3.2	2.8	2.9	3.0	3.2	B	(3.1) ^F	(3.1) ^F	(3.2) ^B	(3.4) ^F	(3.1) ^F	3.2	3.3	S	3.1	2.9	3.1	2.8	(2.8) ^F	A	2.6
15	A	2.4	2.4	2.5	2.4	2.7	2.7	C	2.7	C	S	S	3.0	2.9	3.2	S	S	3.2	3.0	3.0	2.8	2.6	2.7	2.8
16	2.0 ^F	2.8 ^F	2.7 ^F	2.5 ^F	2.5 ^F	(3.3) ^F	2.7	(2.7) ^B	(3.6) ^F	C	C	C	C	S	(3.1) ^F	S	3.4	3.2	3.3	3.3	3.3	2.8	A	2.9
17	2.5	2.4	2.8	2.7	2.7	2.8	2.8	3.0	3.2	S	B	3.3	3.1	3.1	3.1	3.1	(3.1) ^F	S	3.3	3.4	2.7	2.9	2.6	2.6
18	2.6	2.5	2.8	3.0	3.0	2.5	3.0	3.1	C	C	C	C	C	C	C	C	C	3.0	3.1	2.9	2.8	3.0	3.0	2.7
19	2.7	2.8	2.7	2.8	2.9	2.8	3.1	3.0	B	3.6	(3.5) ^B	4.0	3.2	C	C	3.3	B	3.4	(3.2) ^F	3.0	(2.8) ^F	3.0	2.9	2.9
20	2.5	2.4	2.6	2.5	2.6	2.6	2.7	3.0	2.9	2.9	2.9	(3.2) ^F	3.0	(3.0) ^F	3.1	3.1	S	3.2	3.2	2.9	3.0	3.1	A	2.9
21	A	A	2.5	C	C	C	2.8	3.4	(3.3) ^S	3.1 ^Z	3.2	3.1	3.1	3.2	(3.3) ^B	B	3.1	B	3.4	2.7	2.9	2.5	2.5	2.5
22	2.7	2.8	2.7	3.0 ^F	2.7	3.0	3.0	3.0	S	(3.1) ^F	(3.1) ^F	(3.1) ^F	(3.1) ^F	(3.1) ^F	(3.1) ^F	3.0	S	2.9	2.9	2.9	2.8	2.5	2.3	2.2
23	2.4	2.5	2.7	2.6	2.6	2.8	2.8	2.7	2.4	B	B	3.1	3.2	3.0	B	B	B	3.1	3.0	2.8	2.7	2.5	2.5	2.6
24	2.3	2.5	2.3	(2.4) ^F	(3.2) ^F	2.9	(2.6) ^F	2.9	3.1	2.9	C	C	2.8	B	3.1	B	B	B	2.9	3.0 ^B	2.7	3.2	A	2.7
25	2.7	2.7	2.8	2.4	2.8	2.5	(2.4) ^F	3.0	B	3.0	3.1 ^P	3.1	3.1	3.2	2.9	(3.3) ^S	2.9	3.0	3.0	2.8 ^F	2.5 ^F	(2.4) ^F	(2.5) ^F	2.4 ^F
26	2.5	2.3	2.5	2.4	3.2	3.3	2.7	2.6	B	B	(3.2) ^F	S	(3.2) ^Z	(2.9) ^S	(2.9) ^S	(3.2) ^B	(2.6) ^S	3.0	2.9	2.7	2.6	2.9	(2.3) ^F	2.6
27	2.4	2.5	2.6	2.9	3.0	2.7	2.7	2.6	2.6	3.1	C	(3.2) ^S	2.8	2.8	B	3.1 ^P	3.3	2.8 ^F	2.9	3.2	2.6	2.4	2.6	(2.4) ^C
28	(2.3)	(2.3)	2.7	2.8	3.0	2.6	2.5	2.7	(2.9) ^B	S	2.9	2.7	2.7	3.0 ^S	S	(3.0) ^S	(2.9) ^S	3.0	2.9	2.6	2.4	2.5	2.5	2.4
29	2.7	2.1 ^Z	2.5	2.4	2.7	2.5	2.4	2.7	(3.0) ^F	B	(2.9) ^F	(3.0) ^P	3.0	3.0	3.1	3.1	2.7	3.2	3.2	3.2	3.0	3.0	S	(3.0)
30	2.8	3.1	2.7	3.0	3.2	2.8	A	2.8	3.0	3.1	(3.3) ^F	4.1 ^P	2.9 ^P	(3.1) ^F	3.0	3.1	3.0 ^P	3.1	3.3	3.0	2.6 ^F	2.8 ^F	2.5 ^F	2.4
31	2.6	2.4	2.5	2.4	2.6	2.6	2.3 ^F	2.9	3.2	3.0	3.0 ^S	(3.2) ^F	2.9	3.0	3.0 ^F	S	3.2	3.1	2.5	2.6	2.5	2.6	2.6	2.7
Mean Value	2.5	2.5	2.6	2.7	2.8	2.8	2.7	3.0	3.1	3.0	(3.0)	3.1	3.1	3.0	3.1	3.1	3.0	3.1	3.0	3.0	2.8	2.6	2.6	2.6
Count	29	29	29	28	28	29	29	28	21	19	20	23	27	24	24	24	20	28	29	28	30	29	26	28

Sweep 1.0 Mc 10-4 Mc in 15 min

Mean

W 9

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

Lat. 15° 23.6' N
Long. 141° 41.1' E

Wakkanai

135° E Mean Time

f min F

Dec. 1949

IONOSPHERIC DATA

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	E	E	E	E	E	E	E	E	2.9	3.2	3.7	3.7	3.0	3.0	3.0	2.3	1.8	1.3	A	E	F	E	E	E	
2	A	1.8	E	E	E	1.1	A	A	2.7	3.2	3.6	3.4	3.6	3.3	3.0	2.7	1.8	1.2	1.5	E	F	E	F	1.2	
3	1.1	1.2	1.2	1.2	1.2	1.2	1.4	1.8	2.3	2.7	3.1	3.4	3.2	3.5	3.2	2.9	1.6	A	1.2	2.1	1.4	1.5	E	1.5	
4	E	E	E	E	E	A	1.4	2.0	2.8	3.0	C	C	C	C	C	C	C	1.7	1.2	E	1.3	E	E	E	
5	E	E	E	E	E	1.4	1.6	1.9	2.7	3.1	3.0	4.0	3.0	3.0	3.2	3.0	1.7	1.5	1.5	E	1.3	1.3	1.4	1.4	
6	1.5	1.5	C	C	C	C	E	1.6	3.5	3.6	3.7	3.4	3.7	3.7	3.2	2.8	1.3	1.4	1.6	1.6	1.4	1.4	1.2	E	
7	E	1.2	1.2	1.3	1.4	1.4	1.3	1.5	2.4	3.0	3.2	3.4	3.2	3.2	A	3.0	1.5	1.2	A	2.0	2.0	1.4	1.4	1.2	
8	E	E	E	1.5	1.4	1.5	1.4	1.5	3.1	3.2	3.4	3.0	3.0	3.0	3.0	2.2	1.6	1.2	A	A	2.0	1.4	1.5	1.2	
9	E	1.5	1.5	1.2	1.3	1.2	E	A	2.7	3.0	3.0	3.0	3.6	3.0	2.4	2.4	2.0	1.3	E	A	1.3	A	A	E	
10	E	E	E	1.2	E	2.0	A	A	2.6	3.1	3.2	3.6	3.0	3.0	4.2	3.2	2.0	1.8	1.8	1.4	1.5	1.4	1.5	A	
11	1.4	C	C	C	C	C	C	C	C	C	3.2	3.5	3.3	3.1	3.1	3.1	1.7	2.3	2.3	2.0	2.0	2.1	2.0	1.4	
12	2.1	1.5	1.5	1.3	1.3	1.1	1.3	1.7	2.9	2.8	2.8	3.3	3.6	3.2	3.0	2.3	2.0	1.7	1.2	E	1.5	A	A	A	
13	A	A	A	1.4	1.4	A	1.8	A	4.2	A	4.0	3.6	3.2	3.4	3.2	3.4	A	A	2.2	A	4.0	A	A	A	A
14	A	1.7	1.4	1.4	E	E	1.7	2.4	2.9	3.4	3.4	3.4	3.3	2.7	2.7	2.7	2.4	A	A	2.0	A	A	A	A	
15	A	A	1.5	1.5	1.6	1.6	1.2	A	1.7	3.3	3.1	3.2	3.3	3.2	3.0	3.0	2.0	2.0	2.0	1.3	1.2	1.2	1.3	A	
16	A	A	1.2	1.3	1.5	1.5	A	2.0	2.3	C	C	2.5	2.7	3.3	2.8	2.8	A	2.1	2.0	1.8	1.6	A	A	A	
17	A	A	A	1.0	1.0	1.0	1.0	1.0	2.0	2.9	3.6	3.7	3.7	3.7	3.7	2.9	2.2	1.6	1.4	E	1.4	E	1.2	1.2	
18	1.5	A	1.7	1.7	E	E	E	1.8	C	C	C	C	C	C	C	C	2.1	2.0	1.4	1.4	1.4	1.4	1.2	1.2	
19	A	A	1.4	1.4	1.3	1.4	1.3	1.4	2.3	2.8	3.0	3.7	3.4	2.1	4.3	3.0	1.7	1.4	1.4	1.3	1.5	1.5	1.7	1.4	
20	1.2	1.2	1.1	1.1	1.1	1.2	1.2	1.4	2.2	2.9	3.2	3.7	3.4	3.3	3.0	2.6	2.2	1.2	1.2	1.1	E	E	E	A	
21	A	A	A	E	C	1.8	1.8	A	2.2	3.3	3.6	3.8	3.3	3.5	3.2	3.0	A	A	1.2	1.6	1.6	A	1.5	1.4	
22	1.4	1.1	E	E	E	E	E	E	2.0	2.0	2.4	3.1	3.4	3.0	3.0	2.3	2.3	1.8	1.5	1.6	1.6	1.6	1.3	1.2	
23	E	1.2	E	1.7	1.6	1.1	1.6	1.8	2.1	2.5	3.2	3.8	3.5	2.9	3.3	2.8	2.0	1.1	1.3	1.2	1.3	1.3	E	1.1	
24	1.5	1.1	E	4	E	1.5	A	2.1	2.5	3.0	C	3.6	3.0	3.2	2.4	2.4	2.0	1.8	1.6	1.4	1.6	A	1.2	A	
25	E	E	E	E	E	E	A	A	1.8	3.0	3.1	3.5	3.0	3.0	3.6	3.1	2.1	1.1	E	E	E	E	E	E	
26	E	E	E	E	E	E	E	1.9	1.9	3.0	3.7	3.2	4.0	3.2	2.8	3.0	1.8	1.5	1.5	1.6	1.6	1.6	1.2	1.2	
27	1.2	1.3	1.3	1.2	1.2	1.2	1.2	1.5	2.6	2.8	C	4.0	3.0	3.2	2.9	2.1	1.9	1.1	1.4	1.2	A	1.2	1.5	C	
28	E	E	E	E	E	E	E	1.2	1.8	2.8	3.2	3.1	3.1	2.9	2.8	2.6	1.8	1.8	1.5	1.3	E	E	F	E	
29	E	E	E	1.6	1.6	1.2	1.4	2.3	2.4	3.0	3.2	3.3	3.2	3.0	3.0	3.0	3.2	1.8	1.9	1.4	1.3	1.2	1.1	1.2	
30	1.2	1.2	1.6	1.3	1.3	1.3	A	2.2	1.8	2.6	3.0	3.0	3.2	2.9	2.8	2.3	2.0	1.6	1.3	1.4	1.7	2.2	2.6	F	
31	1.3	E	E	E	E	E	1.1	1.3	2.7	2.5	3.2	3.4	3.5	3.3	3.2	3.0	1.8	1.2	1.2	1.4	1.2	1.2	1.4	1.2	

Median Value
Count

Scrap 1.0 Mc to 4.0 Mc in 1.5 min

Manual

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

135° E Mean Time

f min E

Dec 1949

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	G	G	G	G	E	E	E	E	B	2.2	B	B	2.1	2.1	2.0	1.6	B	E	G	G	G	E	
2	E	E	E	1.4	1.4	1.1	E	E	1.6	1.8	2.0	2.9	2.4	2.4	2.2	B	E	1.1	1.2	1.1	G	G	G	
3	G	G	G	1.2	G	1.4	B	1.2	E	1.4	1.9	2.0	1.7	1.4	[1.4] ^C	1.3	1.1	E	E	E	E	E	E	
4	1.2	E	E	E	E	E	E	E	1.4	C	C	C	C	C	C	C	C	E	E	E	E	E	E	
5	E	E	E	G	G	E	E	1.5 ^B	1.2	1.4	1.5	1.6	2.1	2.0	B	2.0	B	1.2	G	G	G	E	E	
6	E	E	C	C	C	C	E	E	E	E	1.2	1.3	1.3	1.2	[1.2] ^C	1.2	E	B	1.4	G	G	G	G	
7	G	G	G	G	G	G	E	1.2	B	B	2.0	2.0	2.4	2.0	2.0	B	B	E	1.3	1.2	1.3	E	1.6	
8	G	G	E	C	G	G	E	B	1.6	B	B	B	B	B	B	1.8	1.3	1.2	1.6 ^F	1.5	1.2	E	1.5 ^F	
9	E	E	E	E	E	E	E	E	E	1.8	2.0	1.9	1.7	1.9	1.8	1.9	1.3	E	E	1.2	E	E	E	
10	G	G	E	B	E	B	1.6 ^B	1.2	1.5	B	2.9 ^B	2.2	1.7	B	B	1.9	1.8 ^B	C	G	G	G	E	E	
11	1.7	G	C	C	C	C	C	C	C	C	1.3	2.8	1.7	B	B	B	B	1.3	B	1.2	E	2.1	1.4	
12	1.2	E	E	E	E	E	E	1.4	1.8	1.7	B	2.4	2.2	B	B	1.8	1.8	E	E	G	E	E	E	
13	E	E	E	E	E	E	E	1.8	1.6	1.4	1.5	3.0	2.7	2.8	B	B	2.6	1.6	1.2	1.6	1.2	E	E	
14	E	E	E	E	E	E	E	E	E	E	1.3	1.3	1.2	1.2	1.2	1.1	1.1	1.2	1.4	1.2	1.4	1.2	1.2	
15	1.2	1.2	1.2	E	E	E	E	1.3	1.2	1.2	1.5	1.5	1.7	1.5	1.4	1.4	1.2	B	1.6	1.3	1.3	G	1.4	
16	1.4 ^F	E	G	E	E	E	E	E	1.4	C	C	C	1.4	B	2.1	2.1	E	E	1.5	1.4	1.2	1.6	1.2	
17	E	E	E	E	E	E	E	E	E	1.5	B	B	B	B	B	1.9	1.4	B	E	G	E	G	E	
18	E	E	E	E	E	E	E	E	C	C	C	C	C	C	C	C	1.3	1.1	1.2	G	G	G	G	
19	1.1	1.1	1.1	1.2	1.2	1.2	B	B	1.5	1.7	1.5	1.8	1.9	1.5	1.6	1.5	E	E	E	1.1	1.5	1.5	G	
20	G	G	G	G	G	1.2	E	B	1.3	1.4	1.6	1.6	1.4	1.6	1.4	1.2	E	E	E	E	E	E	E	
21	E	E	E	C	C	E	E	E	E	1.5	1.7	1.6	1.6	1.7	1.8	1.8	2.0	E	E	E	E	E	E	
22	E	E	E	E	E	E	E	E	E	E	1.2	1.2	1.1	1.1	E	E	E	E	E	E	E	E	E	
23	G	G	G	1.4	1.2	1.1	1.1	1.2	1.6	1.2	1.4	1.8	2.0	1.5	1.4	B	B	E	G	G	G	G	G	
24	G	G	E	E	E	E	1.6	1.2	1.4	1.2	C	C	1.8	1.6	2.0	2.1	B	E	E	E	E	E	E	
25	G	G	G	E	E	G	E	E	E	1.8	E	2.1	E	1.9	1.4	1.8	1.3	E	E	E	E	E	E	
26	1.6	G	G	E	E	E	B	B	B	1.6	2.0	2.2	1.6	2.0	1.6	E	B	B	B	B	B	B	G	
27	G	G	G	1.3	G	G	E	E	1.1	1.2	C	1.4 ^F	1.9	1.7	1.9	1.6	B	1.1	1.4	E	1.1	2.1	1.7	
28	E	G	G	G	G	G	E	1.2	1.9	1.8	1.8	2.0	1.8	2.0	1.8	B	B	1.2	E	E	G	1.7	1.4	
29	G	G	E	E	E	E	B	E	E	E	2.0	1.9	2.3	2.6	1.6	2.1	2.0	B	B	1.3	1.2	1.2	1.8	
30	E	G	E	E	E	E	E	E	S	1.8	1.7	1.7	1.6	1.6	1.5	1.2	1.2	E	G	G	B	1.4	1.4	
31	G	G	G	G	G	G	E	B	1.8	1.5	1.8	1.8	2.0	1.8	1.9	1.9	B	E	G	G	1.2	1.2	1.6	
Median Value	E	E	E	E	E	E	E	E	1.2	1.5	1.7	1.8	1.7	1.7	1.6	1.8	1.3	E	E	E	E	E	E	E
Count	31	30	24	26	28	28	26	24	26	23	23	24	25	22	22	25	23	22	29	30	29	30	31	30

Sweep 10 Mc to 6 Mc in 1.5 min

Manual

W 11

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

Lat. 35° 43.5' N
Long. 140° 02' E

foF2

Dec. 1949

Akita

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.8	4.2	3.9	4.0	4.0	4.5	5.1	8.6	B, S	C	B	(1.42)P	12.9	12.9	C	C	1.0, 1.7	9.2	8.2	5.5	4.3	3.6	4.6	4.4
2	4.0	4.2	4.1	4.2	4.2	3.3	3.3	8.4	9.5	(1.02)P	(1.26)P	12.3	(1.26)P	S	C	(1.02)P	8.8	7.3	5.6	5.1	3.0	3.0	3.5	3.5
3	3.6	3.7	4.2	4.2	4.3	4.6	5.1	8.2	(1.23)P	(1.23)P	(1.24)P	12.4	12.2	11.3	11.2	11.5	9.6	5.4	(4.9)P	(4.2)P	3.6	4.1	3.5	3.5
4	(3.8)	(4.8)P	(4.5)	(4.5)	(3.8)	(2.4)	2.7	6.7	C	C	(1.46)P	(1.42)P	12.4	(1.26)P	(1.17)P	10.2	10.3	(8.2)P	6.3	5.5	4.1	3.7	3.6	3.4
5	3.9	4.0	4.0	3.7	3.6	3.5	3.6	(7.3)	(2.0)P	12.7	(2.3)P	12.3	11.9	(1.38)P	(1.17)P	11.4	11.4	8.3	7.1	6.2	4.4	3.6	3.7	3.9
6	4.1	4.1	(4.2)	4.1	4.1	4.0	4.6	6.8	9.1	10.7	13.5	(1.33)P	12.5	11.1	12.2	T	9.2	9.0	8.2	5.2	3.9	3.7	3.5	3.4
7	3.3	3.2	3.2	3.3	3.5	3.5	4.0	7.4	10.4	11.8	12.6	(1.17)P	11.2	11.4	11.0	10.6	8.3	7.6	6.3	5.9	5.9	4.0	3.7	4.3
8	3.6	4.0	3.3	3.3	3.3	3.5	4.1	7.3	10.0	12.4	12.4	11.5	11.3	10.7	(1.27)P	11.7	9.4	5.8	4.2	4.5	3.4	3.3	3.7	3.5
9	3.4	3.5	3.7	3.8	3.5	3.3	4.0	7.3	(9.8)P	(1.21)P	B	B	(1.20)P	11.6	10.3	11.2	9.9	10.2	9.2	5.6	4.6	4.9	4.6	3.9
10	3.2	3.9	3.6	3.7	3.7	3.7	4.3	9.6	(1.14)P	B	B	(1.25)P	(1.17)P	10.9	(1.17)P	B	9.0	7.7	S	A	C	A	A	(3.6)P
11	3.2	3.5	3.2	A	3.1	2.5	3.7	5.1	10.1	11.4	13.6	(1.40)P	12.2	11.4	11.8	(1.07)P	(1.40)P	5.6	5.8	5.9	A	A	A	A
12	3.4	3.2	3.5	3.1	2.8	2.9	3.2	C	B	C	C	C	C	C	C	C	C	C	C	6.3	4.8	3.2	3.3	3.1
13	2.8	3.5	3.4	3.1	3.2	3.4	3.6	7.0	8.9	11.3	14.0	(1.32)P	11.2	11.7	11.6	10.8	9.4	6.6	5.2	5.2	3.3	3.0	3.2	A
14	A	A	A	A	3.8	3.2	2.9	5.9	7.8	11.1	13.3	C	C	12.2	12.2	11.6	9.5	7.9	6.5	5.3	4.2	4.1	3.8	3.4
15	C	A	3.7	3.8	3.8	4.1	4.3	5.6	9.4	11.7	14.2	(1.30)P	(1.28)P	(1.25)P	12.0	11.4	9.4	7.9	6.3	5.2	4.2	3.3	4.1	4.0
16	3.4	3.2	3.2	3.1	3.6	3.0	2.9	6.4	9.0	12.7	14.5	12.4	11.5	11.5	11.1	10.4	8.8	7.3	6.3	5.1	3.9	3.7	4.4	4.1
17	4.0	3.9	4.1	3.8	3.8	3.6	3.9	7.0	9.5	11.5	12.1	12.0	10.8	11.1	11.0	10.8	8.9	8.0	6.5	5.6	3.2	3.4	3.6	3.5
18	3.6	3.8	4.4	4.5	3.6	3.7	3.7	7.2	8.8	10.9	12.1	12.0	10.8	11.0	10.6	9.9	8.1	6.4	6.9	4.2	3.3	3.7	3.3	3.4
19	3.2	3.6	3.5	3.5	3.4	3.8	3.9	6.2	7.5	10.4	13.0	11.5	10.7	10.0	10.0	9.3	8.4	7.0	6.3	4.3	3.5	(4.0)P	4.4	2.9
20	3.1	3.3	3.5	3.3	3.6	3.8	4.5	5.3	9.6	8	C	C	12.3	12.3	10.7	9.0	10.4	8.3	7.5	4.5	4.0	3.8	4.7	3.7
21	3.4	3.6	3.2	3.3	3.4	2.9	3.2	5.7	9.8	12.5	13.3	12.7	10.7	11.3	10.8	8.5	9.3	10.0	4.8	A	3.0	A	A	3.1
22	F	F	3.6	3.0	2.6	2.6	2.9	5.9	9.0	10.8	12.3	13.1	(1.35)P	B	B	10.9	9.3	7.6	5.2	3.3	3.8	3.1	3.5	3.6
23	3.7	3.7	3.6	3.6	3.3	2.8	2.8	6.0	9.3	11.9	B	R	11.6	10.3	10.5	8.3	8.7	6.4	4.4	2.9	2.8	3.5	3.6	3.8
24	(3.6)P	3.6	3.8	3.0	3.1	3.0	2.6	5.7	9.0	B	B	12.5	12.4	(1.13)P	13.0	12.5	PH	9.6	5.5	3.4	3.2	3.3	3.4	2.7
25	3.2	2.3	(4.0)P	(2.7)	(3.3)P	3.1	A	5.5	(10.0)P	13.3	14.4	12.4	9.8	10.5	C	C	C	C	C	C	4.0	3.0	(3.2)P	3.8
26	3.5	3.6	3.5	3.0	2.2	3.1	2.5	5.6	9.6	(1.24)P	(1.33)P	B	9.1	9.7	9.4	8.7	7.1	7.6	5.3	3.2	2.6	3.7	2.9	2.4
27	3.2	3.1	3.1	3.2	2.6	2.4	2.1	5.4	8.1	B	B	11.8	9.5	9.6	10.7	7.8	8.0	6.3	4.4	3.0	3.2	3.0	3.0	3.2
28	3.2	3.3	4.1	3.2	2.6	2.6	2.6	5	9.7	B	B	10.6	(9.7)P	11.4	C	8.6	7.9	8.0	6.2	2.7	2.9	3.5	4.2	4.3
29	3.9	3.1	2.8	3.2	3.5	2.9	2.7	5.4	10.3	10.1	10.5	C	C	C	C	C	C	7.1	5.5	4.2	4.0	3.3	4.3	5.0
30	4.8	4.9	4.8	3.7	(3.0)P	A	4.8	5.4	7.8	12.7	13.5	11.4	9.7	9.9	8.3	8.3	7.9	6.7	5.3	A	A	A	4.4	4.0
31	(3.3)P	3.1	3.0	2.7	2.9	2.0	3.0	6.2	8.4	9.8	12.7	10.6	10.2	10.8	10.0	8.9	9.1	5.9	5.6	3.8	4.2	4.1	3.7	4.0
Mean	3.4	3.6	3.6	3.3	3.5	3.2	3.6	6.4	9.5	11.7	13.3	12.4	11.6	11.3	11.0	10.4	9.3	7.7	6.3	4.6	3.8	3.6	3.7	3.6
Max	2.8	2.3	3.0	2.9	3.1	3.0	3.0	2.9	2.8	2.3	2.2	2.4	2.8	2.7	2.4	2.5	2.6	2.9	2.9	2.8	2.8	2.7	2.8	2.9

Recept.No. rd14Mc in 15-min Manual

A I

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 39° 43.5' N
Long. 140° 08.2' E

Aki ta

195° E Mean Time

R p F Z

Dec 1949

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	4.60	4.40	4.20	4.00	3.80	3.30	2.80	2.40	B	C	R	(2.60) ^F	2.90	3.00	C	C	2.90	2.50	2.50	2.40	2.40	2.10	2.20	2.30
2	3.00	3.90	4.10	3.50	2.70	3.20	2.50	2.20	2.30	(2.30) ^C	2.30	2.40	(2.70) ^F	5	C	(2.40) ^F	(2.10) ^F	2.40	2.90	2.90	2.70	3.50	3.90	2.60
3	3.40	3.40	3.90	3.30	4.30	3.10	3.80	2.50	(2.70) ^F	(2.70) ^F	(2.70) ^F	2.80	2.80	2.60	2.60	2.60	(2.20) ^F	2.30	(2.30) ^C	C	4.00	3.80	3.90	3.90
4	(4.20) ^F	(4.00) ^F	(3.00) ^F	(2.70) ^F	(2.30) ^F	(3.40) ^F	3.40	2.60	C	C	(2.70) ^F	(2.90) ^F	3.00	(2.70) ^F	(2.70) ^F	2.50	(2.10) ^F	2.90	2.70	2.70	2.60	3.40	3.40	3.60
5	4.00	3.60	2.70	3.00	3.10	3.00	(2.60) ^F	(2.40) ^F	C	C	(2.60) ^F	2.90	3.20	(3.00) ^F	(3.10) ^F	(2.60) ^F	(2.70) ^F	3.00	2.70	2.40	2.30	3.10	3.10	3.10
6	3.10	3.40	(3.20)	3.00	3.70	3.40	(2.30) ^F	2.40	2.40	(2.20) ^F	3.20	(2.40) ^F	2.70	2.40	3.10	(2.80) ^F	2.50	2.80	2.60	2.70	2.90	3.30	3.00	3.20
7	3.70	3.60	3.70	3.40	3.60	3.40	2.60	2.40	2.40	(2.20) ^F	2.30	(2.30) ^F	(2.40) ^F	2.70	2.70	2.60	2.50	2.80	2.70	3.00	3.10	2.60	2.70	3.20
8	4.00	3.80	3.40	3.30	3.60	3.40	2.60	2.20	2.40	(2.80) ^F	2.60	2.40	2.80	2.90	(3.00) ^F	3.00	2.60	3.00	2.70	(2.40) ^F	3.20	3.10	3.40	3.00
9	3.20	3.60	T	3.10	2.70	3.10	3.50	2.30	(2.40) ^F	(2.80) ^F	B	B	(3.30) ^F	3.00	2.70	2.90	2.90	3.00	(2.50) ^F	2.10	3.60	3.70	3.20	2.90
10	3.70	4.20	3.90	3.40	3.30	3.20	3.10	2.60	(3.00) ^F	B	B	(2.30) ^F	B	(3.00) ^F	B	B	2.60	5	A	A	A	A	A	4.30
11	4.40	3.20	3.00	A	(2.80) ^F	3.20	F	2.60	2.50	2.60	3.00	(2.60) ^F	2.70	2.70	2.90	(2.80) ^F	(2.80) ^F	2.70	2.50	2.30	B	A	A	A
12	3.50	3.90	(3.00) ^F	3.10	3.30	3.10	2.90	C	B	C	C	C	C	C	C	C	C	C	3.00	2.50	3.60	3.60	4.00	3.70
13	3.50	3.90	3.60	4.00	4.10	3.80	3.10	3.10	2.60	2.80	3.00	(2.80) ^F	2.90	(3.20) ^F	2.80	2.90	2.80	3.10	2.80	2.50	3.40	3.50	3.10	A
14	A	A	A	A	2.60	3.60	2.60	2.60	2.50	2.70	(3.00) ^F	C	C	3.20	3.00	2.80	2.60	3.10	3.40	3.00	3.50	3.50	3.70	3.60
15	C	A	(4.80) ^F	4.30	3.60	3.90	2.90	3.20	3.20	(2.90) ^F	2.80	(3.00) ^F	(3.20) ^F	3.50	3.00	3.00	3.00	3.20	2.90	2.80	3.40	3.70	3.50	2.90
16	3.20	4.10	5.70	4.40	3.30	3.20	3.70	3.10	3.00	2.80	2.90	2.80	3.00	3.10	2.80	2.90	2.80	3.00	2.60	3.00	3.20	3.20	4.30	3.00
17	3.30	3.80	4.10	3.40	3.60	3.80	3.70	2.80	3.00	2.80	2.80	3.10	2.70	3.10	3.00	2.80	2.70	3.10	2.30	2.80	3.40	4.30	4.00	3.70
18	3.70	3.80	3.20	3.70	3.80	3.70	3.00	2.50	2.60	2.60	(2.80) ^F	2.90	2.90	3.00	2.80	2.80	2.80	2.40	2.90	2.80	3.10	4.20	3.30	3.50
19	3.90	4.00	2.80	3.60	3.30	3.30	3.10	2.80	2.90	3.00	2.90	(2.80) ^F	2.80	2.70	2.70	2.70	2.70	2.80	2.70	2.60	3.90	(3.60) ^F	3.20	3.10
20	3.80	2.80	4.20	4.00	4.00	3.90	3.00	2.50	3.00	B	C	C	3.10	2.80	2.90	2.80	2.80	3.00	2.70	2.90	4.30	4.10	3.40	3.20
21	3.70	4.00	3.90	3.20	3.60	3.40	A	3.00	2.80	2.80	2.80	2.60	3.00	3.00	2.90	2.60	2.90	2.80	A	A	A	A	A	4.30
22	F	F	(3.70) ^F	2.60	4.50	3.40	2.80	3.20	2.40	3.00	2.60	2.50	(3.10) ^F	B	B	2.80	3.10	2.70	2.60	2.70	4.30	3.10	4.00	4.30
23	3.80	3.80	3.70	3.60	3.20	3.40	3.70	3.20	3.00	2.90	B	B	2.80	3.30	2.80	2.40	2.80	2.60	2.50	2.50	3.70	4.40	3.70	3.20
24	(4.10) ^F	4.10	3.50	4.00	3.40	3.50	3.10	3.00	2.60	B	B	2.60	3.50	(3.20) ^F	3.10	3.00	B	3.00	2.50	2.50	3.00	3.40	3.40	3.80
25	3.20	3.40	F	(4.20) ^F	(3.80) ^F	3.20	A	3.30	(2.80) ^F	3.00	2.70	2.90	3.00	3.00	C	C	C	C	C	2.60	2.50	3.30	(3.60) ^F	4.00
26	3.60	3.20	3.30	3.20	2.90	3.50	3.50	3.20	2.80	(2.80) ^F	B	2.90	2.90	2.90	2.80	2.50	2.80	2.70	2.60	2.60	3.50	3.20	3.40	3.20
27	(4.30) ^F	3.80	3.60	3.30	3.30	2.90	3.30	2.80	2.80	B	B	3.00	3.20	2.90	2.80	2.80	2.70	2.80	2.60	2.70	2.90	3.30	3.60	3.90
28	4.10	4.00	3.30	2.60	F	F	B	5	3.20	B	B	2.80	(3.20) ^F	3.40	C	2.90	2.60	2.80	2.50	3.40	4.00	4.30	3.40	3.60
29	3.50	3.50	3.40	3.40	4.00	3.70	3.40	3.40	2.70	2.90	3.30	C	C	C	C	C	C	C	2.60	2.70	2.90	3.80	3.70	3.40
30	3.50	3.40	2.70	3.20	(3.60) ^F	A	2.80	3.20	2.90	3.10	2.90	2.70	2.80	2.80	2.70	2.90	3.00	2.70	3.10	A	A	A	(4.10) ^F	4.00
31	(3.80) ^F	4.50	4.00	3.70	4.00	4.00	3.60	2.90	2.60	3.10	2.80	2.60	3.00	(3.10) ^F	3.00	2.60	3.00	2.90	2.50	3.30	3.50	3.40	4.10	3.60
Median Value	3.70	3.60	3.40	3.40	3.60	3.40	3.10	2.80	2.50	2.80	2.80	2.90	3.00	3.00	2.85	2.80	2.80	2.70	2.70	2.70	2.40	3.50	3.55	3.60
Count	28	28	28	29	30	29	27	29	28	28	22	24	27	27	24	26	26	29	29	28	26	27	28	29

Group 1.5-Mc to 1.5-Mc in 15-min Manual

A 2

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 34° 43.5' N
Long. 140° 08.2' E

h F2

Dec 1949

Akita

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	3.0	3.6	3.0	3.0	2.7	3.0	2.3	2.2	2.1	(2.1) ^C	2.0	2.0	2.0	2.0	C	C	1.9	1.9	2.0	1.8	2.0	2.0	2.7	2.8	2.4
2	2.5	3.1	2.8	2.7	2.3	1.9	2.3	2.0	(2.0) ^A	(2.0) ^C	2.0	2.0	2.2	2.1	(2.1) ^C	2.1	1.9	2.0	2.0	1.9	2.1	2.1	3.1	3.1	2.9
3	2.8	2.6	2.6	2.6	2.8	2.4	2.2	2.2	2.1	2.0	2.0	2.1	2.1	1.9	2.0	2.1	1.9	2.0	2.0	2.0	2.1	2.0	3.0	3.1	3.3
4	3.4	3.1	2.6	2.1	2.0	2.7	2.7	1.9	2.0	2.1	2.0	2.2	(2.0) ^A	(2.0) ^A	(2.0) ^A	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.7	3.0	3.3
5	3.1	3.0	2.6	2.5	2.8	2.2	2.4	2.4	2.1	2.0	2.2	2.1	2.1	2.1	2.2	2.1	2.1	2.0	2.0	1.9	1.9	2.2	2.4	2.6	
6	2.7	2.8	2.7	2.6	(2.6) ^A	2.7	(2.0) ^A	(2.0) ^A	2.0	2.1	2.3	2.1	2.2	(2.0) ^A	2.3	2.2	2.0	2.2	2.0	2.0	2.3	2.3	2.7	2.7	3.0
7	2.9	3.0	3.0	3.2	3.3	2.9	2.4	2.0	2.0	2.1	2.1	2.0	(2.0) ^A	2.0	2.2	2.2	2.0	2.2	2.0	3.0	(2.6) ^A	2.4	2.9	2.9	3.0
8	2.7	2.8	2.8	2.6	2.9	2.8	2.2	2.0	2.0	2.0	2.1	2.2	2.1	2.2	2.2	2.2	2.1	(1.8) ^{DH}	(2.3) ^A	(2.0) ^A	2.7	2.7	2.8	2.5	
9	2.7	2.9	T	2.2	2.1	2.3	2.7	2.0	2.1	2.1	2.0	(2.0) ^A	2.6	2.5	2.4	2.3	2.0	2.1	2.0	(2.0) ^A	3.2	3.1	2.9	2.5	
10	2.5	3.4	3.2	2.7	2.5	2.7	2.2	2.2	2.5	2.4	2.4	2.1	2.1	2.8	2.6	2.1	2.0	2.1	2.0	A	C	A	A	(2.8) ^O	
11	A	A	A	A	AF	2.5	AF	2.0	2.0	2.1	2.1	2.3	2.1	2.1	2.3	2.0	2.0	2.2	2.0	2.0	A	A	A	A	
12	(3.0) ^A	(3.0) ^A	(3.0) ^A	2.6	(3.0) ^A	2.8	2.4	2.0	2.0	C	C	C	C	C	C	C	C	C	C	2.1	2.2	2.9	3.2	3.4	
13	3.1	3.2	3.0	3.0	3.4	3.0	2.5	2.1	2.1	2.3	2.4	2.3	2.3	2.4	2.3	2.4	2.2	(2.3) ^O	2.3	2.2	2.4	2.9	3.1	2.7	
14	A	A	A	A	A	2.5	2.8	2.3	2.2	2.1	2.7	C	C	2.5	2.4	2.6	2.3	2.4	2.3	2.4	2.7	2.7	2.8	2.8	
15	C	A	A	A	A	3.0	3.0	2.5	2.2	2.3	2.2	2.1	2.5	2.8	2.5	2.4	2.3	2.2	2.3	2.5	2.5	2.9	2.9	2.6	
16	2.8	3.2	4.7	3.5	2.8	2.5	2.7	2.4	2.1	2.3	2.2	2.2	2.6	2.3	2.3	2.2	2.4	(2.7) ^A	2.3	2.3	2.3	2.3	A	2.6	
17	2.9	3.3	3.0	3.0	2.7	3.0	2.8	2.3	2.1	2.3	2.3	2.3	2.5	2.3	2.3	2.3	2.1	2.1	2.1	2.4	2.8	3.3	3.2	3.0	
18	3.0	3.0	2.8	2.8	2.9	2.9	2.5	2.3	2.3	2.2	2.4	2.6	2.3	2.7	2.4	2.3	2.4	2.3	2.4	2.2	2.5	3.0	2.9	2.8	
19	3.0	3.0	3.1	2.9	3.0	2.9	2.5	2.5	2.1	2.2	2.5	2.4	2.5	2.3	2.4	2.2	2.1	2.0	2.0	2.3	3.2	2.8	2.6	2.6	
20	3.0	3.0	3.0	2.9	2.9	2.9	2.5	2.2	2.4	2.3	C	C	2.2	2.3	2.2	2.2	2.3	2.2	2.2	2.3	3.4	3.3	2.9	2.9	
21	2.9	3.1	3.3	2.6	2.8	2.9	A	2.8	2.4	2.5	2.3	2.3	2.2	2.5	2.6	2.1	2.5	2.4	2.2	A	A	A	A	A	
22	3.0	2.8	2.8	2.2	3.1	2.9	2.5	2.5	2.4	2.7	2.4	2.3	2.5	2.5	2.4	2.3	2.1	2.2	2.0	2.0	2.0	2.9	2.6	3.0	
23	3.1	2.8	2.9	2.9	2.5	2.5	2.6	2.5	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.1	2.3	2.0	2.0	2.3	3.2	3.2	2.9	2.9	
24	3.0	3.3	2.8	3.3	2.9	2.8	2.8	2.2	2.2	2.6	2.3	2.3	3.0	2.2	2.6	2.2	2.8	2.2	2.1	2.1	2.4	2.9	3.0	2.8	
25	2.7	2.8	A	3.0	2.9	3.0	A	2.9	2.4	2.6	2.5	2.5	2.5	2.6	C	C	C	C	C	2.3	3.0	2.9	(3.1) ^O	3.3	
26	3.0	2.6	2.6	2.8	2.5	2.9	3.1	2.8	2.3	2.6	2.3	2.4	2.3	2.6	2.5	2.3	2.3	2.1	2.2	2.2	2.9	2.8	2.7	3.0	
27	3.3	3.0	2.9	2.5	2.8	2.5	2.9	2.5	2.3	2.2	2.4	2.2	2.2	2.3	2.4	2.2	2.2	2.2	2.4	2.3	2.3	2.9	3.0	3.0	
28	3.2	3.1	2.4	2.3	2.5	2.6	B	2.5	2.1	2.4	2.4	2.6	2.6	2.7	C	2.3	2.2	2.4	2.1	A	3.5	3.8	3.0	2.5	
29	2.9	2.9	(3.0) ^A	2.6	2.7	3.0	3.0	2.5	2.3	2.6	2.6	C	C	C	C	C	C	C	2.2	2.4	3.1	3.0	2.9	2.4	
30	2.3	2.4	2.3	2.4	A	2.4	2.5	2.4	2.4	2.5	2.4	2.4	2.5	2.4	2.2	2.2	2.4	2.3	2.5	A	A	A	3.0	2.8	
31	3.1	2.9	2.9	2.8	3.0	2.9	2.9	2.4	2.2	2.3	2.5	2.5	2.6	2.8	2.5	2.3	2.6	2.3	2.2	2.5	3.1	3.0	3.1	3.1	
Median Value	3.0	3.0	2.9	2.7	2.8	2.8	2.5	2.2	2.1	2.2	2.3	2.2	2.2	2.3	2.3	2.2	2.1	2.2	2.1	2.2	2.7	2.7	2.6	2.7	
Count	28	28	27	29	29	30	27	31	31	30	39	27	28	29	26	27	28	29	30	27	27	26	27	28	

Sweep 15 sec. 100 Hz. Me in 5 min. Manual

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 39° 43.5' N
Long. 140° 08.2' E

foF1

Dec 1949

Akita

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
2						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
3						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
4						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
5						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
6						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
7						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
8						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
9						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
10						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
11						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
12						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
13						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
14						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
15						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
16						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
17						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
18						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
19						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
20						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
21						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
22						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
23						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
24						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
25						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
26						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
27						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
28						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
29						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
30						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
31						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Median Value																								
Count																								

Sweep 0.1 Mc to 1.5 Mc in 1.5 min

Minutes

A 4

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

Lat. 34 43.5 N
Long. 140 08.2 E

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IONOSPHERIC DATA

135° E Mean Time

R F I

Dec. 1949

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							Q	Q	Q	C	Q	Q	Q	Q	C	C	Q	Q						
2							Q	Q	A	C	A	Q	Q	Q	C	Q	Q	Q						
3							Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q						
4							Q	Q	Q	Q	Q	Q	A	Q	Q	Q	Q	Q						
5							Q	210	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q						
6							Q	A	Q	Q	210	Q	Q	A	210	Q	Q	Q						
7							Q	Q	Q	Q	Q	Q	A	Q	Q	Q	Q	Q						
8							Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q						
9							Q	Q	Q	Q	Q	200	210	210	210	Q	Q	Q						
10							Q	Q	230	210	Q	Q	200	220	Q	Q	Q	Q						
11							A	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q						
12							Q	Q	Q	C	C	C	C	C	C	C	C	C						
13							Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q						
14							Q	Q	Q	230	230	C	C	C	Q	Q	240	210	210					
15							Q	Q	Q	Q	Q	Q	210	190	Q	Q	Q	Q	Q					
16							Q	Q	Q	Q	Q	Q	220	Q	Q	Q	Q	Q	Q					
17							Q	Q	Q	Q	Q	Q	Q	Q	Q	A	A	Q						
18							Q	220	200	Q	220	210	A	250	230	Q	Q	Q						
19							Q	220	Q	Q	220	240	210	220	220	Q	Q	Q						
20							Q	Q	Q	Q	C	C	Q	Q	Q	Q	Q	Q						
21							A	A	Q	240	Q	Q	Q	220	230	Q	A	A						
22							Q	Q	Q	260	Q	Q	Q	Q	220	Q	Q	Q						
23							Q	Q	Q	Q	Q	Q	Q	Q	220	Q	Q	Q						
24							Q	Q	Q	240	Q	Q	B	Q	220	Q	200	Q						
25							A	A	Q	240	Q	Q	Q	Q	C	C	C	C						
26							Q	Q	Q	Q	Q	230	Q	200	220	Q	Q	Q						
27							Q	Q	Q	Q	220	Q	Q	Q	220	Q	Q	Q						
28							B	Q	Q	230	Q	220	Q	240	C	Q	Q	Q						
29							Q	Q	Q	230	240	C	C	C	C	C	C	210						
30							Q	Q	Q	220	230	Q	210	Q	Q	Q	Q	Q						
31							Q	Q	Q	Q	210 ^A	230	230	Q	Q	Q	230	Q						
Median F ₂ Layer Count							0	3	2	8	8	5	6	9	11	2	3	2						
							-	-	-	235	220	230	210	220	220	-	-	-						

See p. 0. Mc. to 1.0 Mc. in 15 min. Manual

Radio Regulatory Agency (Deapacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 39° 43.5' N
Long. 140° 08.2' E

Akita

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Dec 1949

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							B (1.7) ^B	A	A	C	B	B	3.5	A	C	C	(2.1) ^A	B						
2							B (1.9) ^A	A	A	C	A	B	B	B	C	B	B	B	B					
3							A	A	A	2.9	3.4	3.5	(3.5) ^A	(3.3) ^A	A	2.7	B	B						
4							B (2.0) ^B	A	A	A	3.2	A	A	A	A	A	A	B	B					
5							B	A	A	B	3.4	A	B	B	(3.2) ^A	2.6 ^B	(2.1) ^E	E						
6							B	A	(2.8) ^A	A	3.2	B	B	A	A	(2.7) ^B	(1.9) ^B	B						
7							E	A	(2.3) ^A	3.0	3.3	(3.3) ^A	A	(3.4) ^A	3.3	3.3	(1.8) ^B	B						
8							B (1.8) ^A	A	(2.6) ^A	3.1	A	3.2	B	A	A	A	2.0	A						
9							B (1.8) ^B	B	3.0	B	A	A	A	3.1	2.5	A	A	B						
10							E (1.9) ^B	A	2.6	A	A	3.3	B	3.2	F	A	(2.1) ^A	A						
11							A	A	2.4	3.2	3.3	A	A	A	A	A	A	A						
12							B	A	2.7	C	C	C	C	C	C	C	C	C						
13							B	1.9	2.7	B	B	3.0	A	A	A	A	A	A						
14							B	1.8	(2.2) ^A	2.6	3.0	C	A	A	A	A	A	B	B					
15							B	1.6	2.5	2.8	3.2	(3.3) ^A	A	A	A	3.0	(2.0) ^B	B	2.0					
16							B	1.8	2.3	3.0	A	3.4	B	A	A	A	A	B	B					
17							B	(1.8) ^B	(2.2) ^A	2.8	B	B	B	B	B	A	A	A	B					
18							B	(1.9) ^B	A	3.0	(3.2) ^B	3.3	A	A	2.9	(2.4) ^A	(1.9) ^A	A						
19							B	B	2.1	2.8	3.2	3.2	B	3.2	3.0	(2.6) ^A	B	A						
20							B	B	(2.3) ^B	3.0	C	C	A	A	(3.0) ^A	A	2.1	B						
21							A	A	2.2	A	A	A	A	A	A	2.8	2.3	A	A					
22							B	B	A	2.8	B	B	B	B	B	B	B	2.3	B					
23							B	1.7	2.2	3.0	A	A	A	A	A	3.4	2.7	2.1	A					
24							B	1.7	2.3	2.8	3.3	B	B	B	B	B	B	2.1	B					
25							A	A	2.3	2.9	3.0	3.4	B	B	C	C	C	C						
26							B	B	2.3	2.8	3.2	3.1	3.2	3.2	3.4	B	1.8	B						
27							B	B	2.6	2.8	B	3.2	B	3.2	3.4	2.6	A	A						
28							B	B	A	2.9	A	B	B	3.3	C	B	1.8	B						
29							B	B	B	2.7	A	C	C	C	C	C	C	B						
30							A	A	A	3.0	3.3	3.0	3.1	3.2	2.9	(2.5) ^A	A	A						
31							B	1.7	2.2	A	3.2	3.1	3.5	3.1	3.0	2.4	A	A						
Median Value							(1.8)	2.3	2.9	3.2	3.2	3.4	3.2	3.0	2.6	2.1								
Count							2	15	21	21	15	14	6	10	13	13								

Summary of IONOSPHERIC DATA in 15-min Manual

Radio Regulatory Agency (Denpacho)

Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

Dec. 1949

R'E

Lat. 34° 43.5' N
Long. 140° 08.2' E

IONOSPHERIC DATA

Akita

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							B	B	A	C	100	100	100	A	C	C	A	B						
2							B	A	A	C	A	100	100	110	C	R	B	B						
3							A	A	A	100	100	100	100	110	A	110	R	B						
4							B	B	A	100	A	A	A	A	A	A	B	B						
5							B	A	A	110	A	100	110	100	100	100	(140)	E						
6							B	A	A	110	100	100	100	A	100	100	B	A						
7							E	A	110	100	100	A	100	100	100	100	B							
8							B	A	A	110	A	110	110	A	A	A	110	A						
9							B	B	(100)	100	100	A	A	100	100	100	A	B						
10							E	B	110	A	A	100	100	100	A	A	A	A						
11							A	A	100	100	110	A	A	B	A	A	A	A						
12							B	AE	100	C	C	C	C	C	C	C	C	C						
13							B	B	120	B	110	110	A	A	A	A	A	A						
14							B	110	120	120	110	C	C	A	A	A	A	B						
15							B	B	A	A	100	(100)	A	A	110	(110)	110	110						
16							B	B	110	130	A	120	110	120	A	A	B	B						
17							B	B	110	120	B	B	B	B	B	A	A	B						
18							B	B	A	120	110	100	A	A	100	A	A	A						
19							B	B	110	110	110	120	120	120	120	A	B	A						
20							B	B	B	110	C	C	A	A	A	A	120	B						
21							A	A	110	A	A	A	A	A	110	110	A	A						
22							B	B	A	120	B	B	B	B	B	130	A	B						
23							B	A	100	110	A	A	A	A	110	100	B	A						
24							B	B	120	110	B	B	B	B	B	B	B	B						
25							A	A	110	110	110	120	B	120	C	C	C	C						
26							B	B	130	120	110	110	110	110	110	120	130	B						
27							B	A	110	110	110	120	120	120	110	120	A	A						
28							B	B	A	120	120	120	120	120	C	110	B	B						
29							B	B	B	120	A	C	C	C	C	C	C	B						
30							A	A	110	110	110	100	110	110	110	A	A	A						
31							B	B	120	120	110	110	110	110	110	100	A	A						
Median Value									110	110	110	110	110	110	110	110	110	115						
Count								1	18	22	20	18	14	14	13	13	6	2						

Speed of Wave to 100 Mts in 1.5 min Manual

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 39° 43.5' N
Long. 140° 08.2' E

Akita

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Dec 1949

135° E Mean Time

Day	00	01	02	03	04	05	06	07	09	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.0	2.6	2.6	2.4	2.3	2.3	2.3	2.3	3.8	C	G	B	G	3.4	C	C	2.2	2.2	G	G	G	G	G	G
2	G	G	G	G	G	G	G	2.9	7.1	C	5.0	B	B	B	C	F	G	2.6	2.8	2.8	2.2	2.2	B	G
3	G	G	G	G	G	G	2.0	3.0	3.8	G	G	G	4.0	G	3.2	G	3.0	B	B	3.2	B	G	G	G
4	G	2.6	2.5	G	G	2.2	G	G	3.0	3.2	3.6	5.8	5.7	5.0	(3.0)	3.0	G	G	G	4.2	G	G	G	2.4
5	3.6	2.8	G	B	G	G	2.9	3.3	2.8	G	G	B	B	B	G	G	G	G	G	C	G	G	G	3.0
6	G	G	3.1	3.0	3.1	1.4	2.4	3.6	4.0	5.8	G	B	3.4	G	G	G	2.0	2.6	2.8	2.8	2.8	B	B	G
7	B	2.2	3.4	2.4	3.0	1.9	G	3.8	2.8	3.2	3.8	4.1	5.8	3.7	G	G	G	G	G	3.8	4.4	3.0	3.6	(2.6)
8	3.0	G	G	G	G	G	2.3	2.9	3.6	G	6.6	3.4	B	3.0	3.0	3.2	G	2.5	6.8	3.7	3.0	5.4	3.8	2.2
9	2.2	2.6	2.0	2.2	2.4	2.4	2.5	2.2	G	G	4.1	G	B	G	G	2.8	2.2	G	3.6	3.6	3.4	3.0	4.0	2.0
10	2.4	2.4	3.2	3.0	2.6	G	G	G	G	G	4.0	4.8	B	B	4.6	4.7	5.5	4.9	5.9	4.4	8.4	7.6	6.2	5.4
11	3.2	3.0	3.4	3.8	3.7	3.2	3.1	3.2	2.7	3.2	G	4.8	B	C	C	C	C	C	C	G	G	G	G	3.0
12	3.2	3.0	3.8	3.7	3.6	2.8	1.6	3.0	G	G	C	C	C	C	C	C	C	C	C	G	G	G	G	3.0
13	G	3.2	G	G	G	G	G	G	G	B	3.3	5.8	4.0	5.2	6.4	6.4	4.0	2.8	2.2	1.8	3.7	G	G	4.4
14	3.8	4.6	4.7	3.6	2.2	1.4	G	2.2	2.6	3.4	G	C	4.0	4.2	3.6	2.2	2.4	2.8	2.4	2.2	2.2	G	G	2.6
15	G	4.8	3.7	2.7	2.0	2.8	G	2.9	3.4	3.7	3.7	3.4	7.7	3.7	G	1.8	G	2.4	2.2	G	2.4	G	G	G
16	G	G	G	G	G	G	G	G	G	G	3.5	G	G	G	3.4	3.6	5.4	5.6	4.0	G	3.8	4.0	4.0	4.8
17	5.2	4.2	2.7	1.4	G	1.4	G	G	2.6	G	R	B	B	B	B	4.0	3.7	3.6	G	G	G	G	G	G
18	2.4	G	G	G	2.6	2.4	G	G	2.0	G	G	G	5.8	3.8	3.4	3.4	2.9	3.2	2.0	G	G	G	G	G
19	G	G	G	G	G	G	G	2.2	2.2	G	G	G	G	G	G	2.9	G	1.8	G	G	G	G	G	1.8
20	G	G	G	G	G	G	G	G	G	G	C	C	3.8	4.0	3.6	4.4	G	2.4	2.7	2.2	2.4	2.2	2.6	2.6
21	3.0	2.1	2.4	G	G	2.8	G	6.2	G	2.8	3.0	3.0	3.2	3.0	3.0	(3.4)	3.4	6.2	3.6	5.0	3.8	6.2	3.8	2.8
22	2.8	2.6	2.1	2.6	G	G	G	2.4	3.4	G	R	B	B	B	B	G	3.7	G	2.1	3.4	2.8	2.8	3.0	2.4
23	2.2	2.0	G	2.4	1.7	G	G	3.1	G	G	3.6	4.0	3.6	3.6	G	G	G	2.5	2.2	2.4	G	G	G	G
24	G	G	G	G	G	G	G	G	G	G	G	B	B	B	B	B	G	1.7	3.3	2.6	G	G	G	G
25	G	G	G	2.5	2.3	3.1	3.6	4.0	2.9	G	G	B	B	B	B	C	C	C	C	2.6	2.2	2.2	C	G
26	G	G	G	G	G	2.1	2.2	B	G	G	G	G	G	G	G	B	B	G	2.2	G	G	G	G	G
27	G	G	G	G	G	G	G	G	3.4	G	G	G	G	G	G	3.4	3.2	2.6	2.8	2.8	3.2	2.1	G	2.1
28	2.2	1.4	G	G	G	G	R	B	2.8	G	3.2	R	B	G	C	G	G	G	G	2.6	G	2.8	2.4	G
29	2.4	G	2.2	G	G	G	G	2.2	2.6	G	5.8	C	C	C	C	C	C	2.4	G	3.0	2.8	G	G	G
30	G	2.6	G	G	4.4	4.8	2.4	3.2	3.8	3.2	3.7	3.6	3.5	3.5	3.9	3.4	4.2	3.6	3.2	4.4	2.9	4.6	2.4	G
31	3.6	2.6	G	2.3	G	G	G	2.7	F	3.4	5.8	5.3	7.2	3.6	3.6	3.6	2.6	2.4	2.7	2.3	3.6	2.2	3.4	3.2
Median Value	2.2	2.1	2.0	1.6	G	1.4	G	2.7	2.6	G	G	3.4	3.7	3.4	3.0	3.1	2.2	2.4	2.2	2.6	2.4	G	2.4	G
Count	29	31	31	30	31	31	30	27	30	27	27	19	18	22	22	24	28	28	29	31	29	29	30	31

Sweep 1.0-Mc 10°-15-min No-sweep

A 8

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

Lat. 39° 43.5' N
Long. 140° 09.2' E

Akita

(M3000)F

Dec. 1949

IONOSPHERIC DATA

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	2.4	2.4	2.5	2.6	2.8	3.0	3.2	3.4	H	C	B	(3.4) ^P	3.1	3.1	C	C	3.2	3.6	3.6	3.4	3.4	3.4	3.1	3.1	3.1
2	3.0	2.6	2.7	2.8	3.3	3.0	3.4	3.6	3.7	(3.7) ^P	(3.7) ^P	3.3	3.2	3.4	C	3.5	(3.2) ^P	3.1	3.2	3.2	3.3	2.8	2.6	2.8	
*3	2.9	2.9	2.7	2.9	2.5	3.0	2.6	3.4	(3.3) ^P	(3.3) ^P	(3.3) ^P	3.3	3.2	3.4	3.4	3.5	3.4	(3.5) ^P	3.5	(3.6) ^P	C	2.5	2.6	2.6	
4	(2.5) ^F	(2.6) ^P	(3.1) ^F	(3.3) ^F	(3.6) ^F	(2.9) ^F	2.8	3.4	C	(3.3) ^F	(3.3) ^F	(3.3) ^F	3.3	(3.2) ^F	(3.3) ^F	3.6	3.5	(3.3) ^F	3.1	3.2	3.6	2.9	2.8	2.8	
5	2.7	2.7	3.2	3.1	3.1	3.1	3.0	(3.2) ^P	(3.5) ^P	3.3	(2.2) ^B	3.1	2.9	(3.1) ^F	(3.1) ^F	(3.1) ^F	(3.2) ^F	3.2	3.2	3.7	3.5	3.0	3.0	3.0	
6	3.0	2.9	(2.0) ^F	3.0	2.6	3.0	(3.6) ^F	3.5	3.5	3.3	3.1	(3.3) ^P	3.3	3.2	3.4	3.1	(2.2) ^C	3.4	3.3	3.4	3.3	3.1	2.9	3.0	
7	2.7	2.8	2.8	3.0	2.8	3.2	3.6	3.6	3.6	(3.5) ^P	3.6	(3.5) ^P	3.2	3.4	3.4	3.4	3.4	3.1	3.3	3.0	3.0	2.7	3.0	2.9	
8	3.0	2.7	3.0	3.0	2.9	3.3	3.6	3.6	3.5	3.2	3.5	3.5	3.1	3.0	(3.2) ^P	3.3	3.3	2.9	3.3	3.4	3.0	3.0	2.9	3.2	
9	3.1	2.8	3.1	3.0	3.3	3.0	2.8	3.5	(3.6) ^F	(3.3) ^F	B	(2.9) ^F	3.1	3.3	3.1	3.2	3.3	(3.4) ^F	3.7	2.9	2.7	3.0	3.1	3.1	
10	2.6	2.5	2.7	2.9	2.9	3.1	3.0	3.4	(3.2) ^F	B	B	(3.5) ^F	(3.3) ^F	(3.1) ^F	(3.1) ^F	B	B	3.3	5	A	C	A	A	(2.5) ^F	
11	2.8	3.1	3.1	A	3.2	3.0	F	3.3	3.5	3.5	3.1	(3.0) ^F	3.2	3.3	3.2	(3.4) ^F	3.4	3.4	3.4	3.4	A	A	A	A	
12	2.5	3.0	3.2	2.1	2.9	3.1	3.1	C	B	C	C	C	C	C	C	C	C	C	3.0	3.3	2.8	2.7	2.6	2.7	
13	2.8	2.6	2.7	2.6	2.5	2.6	3.0	3.0	3.4	3.2	3.1	(3.2) ^F	3.2	(3.1) ^F	3.3	3.1	3.2	3.1	3.2	3.3	3.0	2.8	3.0	A	
14	A	A	A	A	3.4	3.5	3.4	3.4	3.4	3.3	(3.1) ^F	C	C	3.0	3.1	3.1	3.3	3.0	3.0	3.1	2.9	2.9	2.6	2.7	
15	C	A	2.4	2.5	2.8	2.6	3.2	2.9	3.0	(2.1) ^F	3.2	(3.2) ^F	(3.0) ^F	(2.8) ^F	3.1	3.2	3.0	2.9	3.0	3.2	2.8	2.8	2.9	3.2	
16	2.9	2.6	2.2	2.3	2.9	2.9	2.7	3.0	3.1	3.3	3.1	3.3	3.1	3.0	3.2	(3.4) ^F	3.1	3.0	3.3	3.1	2.8	2.9	2.8	3.1	
17	2.9	2.7	2.5	2.4	3.1	2.7	3.0	3.1	3.1	3.1	3.1	3.1	3.1	2.4	2.0	3.1	3.2	3.1	3.3	3.3	2.8	2.6	2.7	2.8	
18	2.7	2.6	2.9	2.9	2.6	2.7	3.1	3.4	3.6	3.3	(3.3) ^P	3.3	3.2	3.2	3.2	3.2	3.3	2.9	3.4	3.1	2.5	3.0	2.8	2.8	
19	2.7	2.5	2.7	2.8	2.7	2.9	3.0	3.3	3.2	3.2	3.3	3.3	3.3	3.2	3.3	3.2	3.4	3.1	3.4	3.4	2.9	2.9	3.0	3.1	
20	2.7	2.7	2.5	2.7	2.7	2.7	3.1	3.4	2.2	B	C	C	3.2	3.2	3.1	3.1	3.3	3.1	3.3	3.2	2.5	2.6	2.9	2.9	
21	2.7	2.6	2.7	3.0	2.8	2.9	(3.1) ^F	3.4	3.1	3.2	2.3	3.3	3.3	3.0	3.1	3.1	3.4	3.3	3.2	A	(2.6) ^F	A	A	2.5	
22	F	F	(2.0) ^F	3.4	2.4	3.0	3.2	3.0	3.2	3.1	3.5	3.5	(2.9) ^F	3.2	3.1	3.2	3.2	3.3	3.3	3.2	2.5	3.1	2.5	2.5	
23	2.7	2.7	2.8	2.8	2.9	2.8	2.7	3.0	3.0	3.1	B	B	3.1	3.0	3.0	3.2	3.4	3.2	3.4	3.4	2.7	2.5	2.7	3.0	
24	(2.6) ^P	2.7	2.8	2.6	2.9	2.7	2.8	2.9	3.2	H	B	B	2.7	2.7	(3.1) ^P	3.0	3.2	BH	3.3	3.4	3.1	2.9	2.9	2.6	
25	2.9	2.9	F	(2.5) ^F	(2.7) ^F	3.0	A	2.9	(3.4) ^F	3.1	3.4	3.3	3.1	3.2	C	C	C	C	C	C	2.8	3.0	(2.8) ^F	2.6	
26	2.9	3.1	2.8	3.0	3.1	2.9	2.8	3.0	3.2	B	(3.3) ^F	B	3.1	3.1	3.3	3.5	3.2	2.8	3.2	3.0	2.8	3.1	2.7	3.0	
27	(2.5) ^F	2.8	2.7	2.9	3.0	3.2	2.8	3.3	3.1	B	B	3.2	2.9	3.1	3.2	3.2	3.2	3.3	3.4	3.2	3.1	2.8	2.7	2.7	
28	2.5	2.5	3.0	3.4	3.0	3.0	2.4	5	2.9	B	B	3.0	(3.0) ^F	2.9	C	3.1	3.3	3.4	2.9	2.7	2.5	2.8	2.8	2.8	
29	2.8	2.9	2.9	2.9	2.6	2.7	2.9	2.9	3.2	3.1	C	C	3.1	3.1	C	C	C	3.3	3.2	3.2	2.7	2.8	2.8	2.8	
30	2.8	3.0	3.3	2.9	(2.8) ^A	A	3.2	3.0	3.1	3.1	3.2	3.3	3.3	3.3	3.3	3.1	3.1	3.4	3.0	A	A	A	(2.5) ^F	2.6	
31	(2.7) ^F	2.8	(2.6) ^F	2.8	2.7	2.6	2.8	3.1	3.3	3.4	3.3	3.3	3.2	3.1	(3.1) ^F	3.1	3.2	3.1	3.2	3.1	2.8	2.9	2.6	2.8	
Median Value	2.7	2.7	2.8	2.9	2.9	3.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.2	2.9	2.8	2.8	
Count	28	28	28	29	31	30	29	29	28	23	22	24	28	27	24	26	26	29	29	28	27	27	28	29	

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Dec. 1949

$f_{min} F$

Akita

Lat. 39° 43.5' N
Long. 140° 09.2' E

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.6	1.5	1.6	1.1	E	1.2	1.4	2.0	A	C	3.2	4.1	3.5	3.1	C	C	2.1	1.6	1.5	1.4	1.4	1.5	1.6	1.8
2	1.4	1.6	1.6	1.8	1.5	1.6	1.6	A	A	C	A	4.0	4.0	4.0	[4.0]	4.0	2.2	2.1	1.8	1.7	1.7	2.0	1.8	1.7
3	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	2.4	2.3	3.9	3.6	3.9	4.0	3.4	2.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
4	2.0	1.8	1.9	1.6	1.8	1.7	1.4	2.1	2.8	2.3	3.5	A	A	3.4	2.8	2.0	1.7	1.6	1.8	1.7	1.8	1.6	2.0	
5	2.0	1.9	1.7	1.7	1.7	1.7	1.7	2.2	3.0	3.0	3.4	4.0	3.8	4.0	3.5	2.8	2.1	1.2	1.4	1.4	1.5	1.6	1.6	
6	1.7	1.4	1.2	1.6	A	1.1	1.5	A	A	3.4	3.4	4.3	4.0	A	3.0	2.8	1.9	2.0	1.6	1.5	2.0	1.6	1.8	
7	1.2	1.2	1.3	1.6	1.5	1.6	1.5	2.2	2.4	3.2	3.3	3.4	A	3.8	3.4	1.8	1.4	1.4	A	A	1.6	1.6	A	
8	A	1.4	1.3	1.1	1.2	1.2	1.6	1.9	2.7	3.1	3.2	3.4	3.2	A	A	2.8	2.0	1.7	A	1.5	1.7	1.8	1.5	
9	1.2	1.2	1.2	1.2	1.3	1.3	1.8	1.8	2.4	3.0	3.2	3.0	3.3	3.3	2.4	2.8	2.0	1.6	1.6	1.6	1.6	1.6	1.6	
10	1.6	1.5	1.3	1.6	1.4	1.4	1.4	2.1	2.7	3.2	3.5	3.6	3.7	3.6	3.2	3.6	2.1	2.3	A	A	C	A	A	
11	A	2.0	A	A	A	E	A	2.7	2.5	3.2	3.3	4.0	4.3	4.6	3.9	3.4	3.4	3.0	2.2	1.5	A	A	A	
12	A	A	A	1.4	1.2	E	1.4	2.0	2.7	C	C	C	C	C	C	C	C	C	1.7	1.7	1.7	1.7	1.6	
13	1.6	A	A	1.8	1.8	1.9	1.8	1.9	2.7	3.2	3.3	3.3	A	A	A	A	A	A	1.8	1.7	1.6	2.0	1.8	
14	A	A	A	A	A	1.1	1.6	1.8	2.4	3.0	3.3	C	C	A	3.8	A	2.0	1.4	1.6	1.6	1.6	1.6	1.6	
15	C	A	A	2.4	A	1.6	1.7	1.6	2.5	2.9	3.2	3.3	A	A	3.0	2.6	2.3	2.0	1.7	1.6	1.6	1.6	1.6	
16	1.6	1.8	1.8	1.7	1.4	1.1	1.5	1.8	2.6	3.0	3.4	3.4	3.4	3.4	3.3	A	2.0	A	A	1.5	1.7	A	A	
17	2.0	A	1.4	1.7	E	1.3	1.8	1.8	2.6	3.0	3.3	4.2	4.8	4.8	4.8	A	2.6	1.6	1.6	1.6	1.6	1.6	1.6	
18	1.6	1.6	1.6	2.0	1.6	1.6	1.4	1.9	A	3.0	3.3	3.3	A	A	3.0	2.6	2.2	A	1.8	1.5	1.5	1.5	1.6	
19	E	1.2	1.6	1.6	1.6	1.5	1.6	1.6	2.8	2.9	3.3	3.4	3.4	3.2	2.1	2.6	1.6	1.4	1.7	1.6	A	1.4	1.4	
20	1.3	1.4	1.3	1.3	1.4	1.4	1.5	2.1	2.3	3.1	C	4.0	3.4	3.4	3.0	2.6	2.1	2.2	2.4	2.1	1.8	1.5	1.9	
21	2.0	A	1.4	E	E	A	A	A	2.5	2.0	2.4	A	A	A	2.8	3.0	2.9	A	A	A	A	A	A	
22	A	A	A	1.4	E	E	1.4	1.4	2.6	2.8	2.8	3.8	3.8	3.6	2.4	2.6	2.3	1.4	1.3	1.4	1.6	1.4	1.5	
23	1.4	1.4	1.4	1.2	E	E	1.3	1.7	2.6	3.0	3.5	3.5	3.2	3.4	3.4	2.7	2.1	2.3	1.4	1.4	1.4	1.5	1.4	
24	1.4	1.6	1.4	1.2	1.4	1.4	1.4	1.7	2.3	2.9	3.3	3.5	3.8	3.8	3.5	3.0	2.1	1.4	2.7	2.0	1.4	1.4	1.4	
25	1.6	1.5	A	E	1.2	A	A	A	2.6	2.9	3.2	4.2	5.0	4.8	C	C	C	C	C	1.7	1.8	1.8	1.6	
26	1.2	1.2	E	E	E	E	1.4	1.8	2.4	2.8	2.8	3.3	3.4	3.3	3.5	3.0	2.2	1.4	2.0	1.6	1.5	1.4	1.4	
27	1.1	1.2	1.2	1.1	1.1	1.1	1.4	1.8	2.6	3.2	3.2	3.3	3.6	3.2	3.5	2.6	3.0	2.6	2.3	1.6	1.5	1.3	1.2	
28	E	E	E	E	E	E	2.0	1.7	3.0	2.8	3.2	4.0	4.6	3.3	C	2.8	2.2	1.4	1.4	A	1.4	A	1.6	
29	1.8	1.4	1.4	1.3	1.4	1.5	1.3	1.4	1.4	3.4	A	C	C	C	C	C	C	1.5	1.5	1.4	A	1.5	1.4	
30	1.4	1.4	1.4	1.4	A	A	1.6	1.4	2.6	3.0	3.4	4.0	3.4	3.5	2.9	2.5	1.6	A	A	A	A	1.8	1.4	
31	1.2	1.2	E	1.3	E	A	1.4	1.7	2.3	3.4	3.2	3.2	4.0	3.4	3.0	3.2	2.7	1.8	1.8	1.5	A	1.4	1.9	
Median Value	1.6	1.4	1.4	1.4	1.2	1.3	1.5	1.8	2.6	3.0	3.3	3.6	3.8	3.4	3.4	2.8	C	.6	1.6	1.6	1.6	1.6	1.6	
Count	2.5	2.4	2.6	2.9	2.6	2.3	2.8	2.7	2.7	2.9	2.7	2.4	2.2	2.2	2.4	2.3	2.6	2.4	2.5	2.5	2.3	2.5	2.7	2.6

Ionospheric Data Form I, 1949 Edition

Manual

A 10

Kadio Regulatory Agency (Denpacho)
 Aoyama-Kita-machi Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 39° 42.5' N
 Long. 140° 08.2' E

Akita

f_{min} E

Dec. 1949

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.6	1.8	1.8	E	E	1.2	B	B	1.7	1.7	1.7	1.6	1.6	1.7	G	1.6	1.6	G	G	G	G	G	G	G
2	G	G	G	G	G	G	B	B	1.8	1.8	1.8	2.0	2.0	2.2	2.1	2.0	B	2.2	1.6	1.9	1.9	B	G	G
3	G	G	G	G	G	G	G	G	1.6	1.6	1.8	1.8	1.9	2.3	2.0	2.0	B	B	B	2.0	B	G	G	G
4	G	2.3	2.1	G	G	2.0	B	B	1.7	1.8	1.9	2.0	1.9	1.8	2.4	2.4	B	G	G	1.7	G	G	2.2	1.6
5	1.5	1.6	G	B	G	G	1.7	1.7	1.9	1.8	1.7	1.8	1.9	1.8	2.0	1.8	G	G	G	G	G	G	1.5	G
6	G	G	1.2	E	E	1.2	1.7	1.6	1.6	1.4	2.0	2.0	1.9	1.8	1.9	1.9	1.7	1.6	1.5	1.5	1.5	B	G	G
7	B	1.2	2.2	1.6	1.5	1.7	E	1.4	1.5	1.4	2.0	1.9	2.0	1.9	1.9	1.8	B	B	2.0	1.8	1.8	1.6	2.0	1.5
8	1.8	G	G	G	G	G	G	2.0	1.8	1.7	2.1	2.0	2.0	2.0	2.0	1.7	1.7	1.8	1.7	1.8	1.8	1.7	1.8	1.5
9	1.7	1.2	E	1.5	1.2	1.2	2.0	2.0	1.8	1.8	1.4	1.4	1.6	1.8	1.8	1.7	1.5	B	G	1.6	1.6	1.6	1.5	1.6
10	1.6	1.4	1.3	1.5	1.4	G	G	B	1.8	1.8	1.9	1.9	1.9	1.9	1.8	1.7	1.8	1.7	1.7	1.7	1.6	1.5	1.5	1.6
11	1.4	1.6	E	E	E	1.2	1.3	1.5	1.6	1.6	1.6	1.6	1.8	2.8	2.8	1.5	1.6	1.5	1.4	1.5	1.4	1.4	1.4	1.4
12	1.4	1.4	E	E	E	E	B	1.4	1.5	1.6	C	C	C	C	C	C	C	G	G	G	G	G	1.6	1.6
13	G	1.5	G	E	G	G	B	B	1.6	B	1.8	1.8	1.8	1.8	1.9	2.0	1.7	1.3	1.4	1.6	1.6	G	G	1.6
14	1.6	1.6	E	E	E	E	B	1.5	1.8	1.8	1.9	C	C	1.8	1.8	1.8	1.4	1.4	1.4	1.6	1.6	1.8	G	G
15	C	1.2	1.6	1.6	1.2	1.2	B	1.8	1.6	1.7	1.7	1.8	1.8	1.8	1.8	1.7	1.8	1.6	1.6	G	1.8	G	G	G
16	G	G	F	F	E	E	B	1.7	1.6	1.5	1.6	2.2	2.2	2.6	2.2	2.2	2.6	2.7	1.7	G	1.5	1.5	1.5	1.5
17	1.2	E	E	E	E	E	G	B	1.8	2.4	B	B	B	B	B	2.0	1.6	1.6	1.6	G	G	G	G	G
18	1.2	G	G	1.6	1.6	1.6	B	B	1.4	2.0	2.0	1.8	1.9	1.4	1.8	1.2	1.4	1.4	1.8	G	G	G	G	G
19	G	G	G	G	G	1.5	B	2.0	1.6	2.0	1.9	1.9	1.9	2.7	2.6	2.3	1.8	G	G	G	1.6	G	G	G
20	G	G	G	G	G	G	B	B	B	2.5	C	C	2.0	2.0	2.0	2.0	1.8	2.1	1.8	1.6	1.8	1.7	1.6	1.5
21	1.7	1.2	1.1	G	G	1.1	1.5	1.4	1.5	1.8	2.0	1.8	1.8	1.8	2.1	1.8	1.8	1.2	1.5	1.8	1.4	1.6	1.6	1.4
22	1.3	E	E	1.2	G	G	B	B	1.7	2.0	B	B	B	B	B	1.8	1.6	B	1.3	1.3	1.2	1.4	1.4	1.4
23	1.2	1.4	G	1.2	E	G	B	1.3	1.4	2.2	2.2	2.4	2.6	2.8	2.8	2.9	1.8	1.4	1.4	1.4	G	G	G	G
24	G	G	G	G	G	G	B	B	1.7	1.8	2.0	E	E	B	B	B	B	B	1.4	1.4	G	G	G	G
25	G	G	E	E	E	E	E	1.6	1.6	1.7	2.0	2.3	2.5	2.0	C	C	C	C	1.7	1.8	1.8	C	G	G
26	G	G	G	G	G	E	1.8	B	1.6	1.7	1.8	2.0	2.0	1.8	1.8	1.6	1.3	G	1.7	G	G	G	G	1.4
27	G	G	G	G	G	G	B	B	1.8	1.8	1.8	1.8	1.8	1.8	2.0	2.0	2.0	2.0	1.4	1.4	1.2	1.4	1.4	1.4
28	1.2	E	G	G	G	G	B	B	1.8	1.8	2.2	2.6	2.6	2.1	C	1.8	B	B	1.4	1.4	1.4	1.4	1.4	1.4
29	1.8	G	1.2	G	G	G	B	1.4	1.4	2.0	2.1	C	C	C	C	C	C	B	2.6	1.4	G	G	G	G
30	1.4	G	G	1.4	1.4	1.4	1.4	1.4	1.6	2.0	2.0	2.4	2.4	1.7	1.5	1.7	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4
31	1.6	1.2	G	E	G	G	B	1.4	1.5	1.4	1.8	1.5	1.5	1.8	1.5	1.5	1.8	1.6	1.4	1.4	1.4	1.4	1.4	1.4
Mean Value	1.2	E	E	E	E	E	1.6	1.6	1.6	1.9	1.9	1.9	1.9	2.0	1.8	1.8	1.6	1.6	1.5	1.5	1.4	1.4	1.4	1.3
Count	29	31	31	30	31	31	13	20	30	30	27	24	25	26	27	26	23	22	29	31	29	29	20	31

Sweep 1.5 Mc 10/15 Mc in 15-min Manual

A 11

Radio Regulatory Agency (Despacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 35° 42.4' N
Long. 139° 29.3E

f_o F2

Dec 19 49

135° E Mean Time
Kokubunji Tokyo

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	4.7	4.4	4.6	4.8	5.4	5.4	6.0	9.1	13.0	13.1	15.0	14.1	13.6	13.2	14.4	14.1	12.2	10.2	9.5	6.7	5.0	4.2	4.7	(4.3)C
2	3.1	3.6	3.7	3.6	3.0	3.0	3.1	7.9	10.7	12.6	14.0	13.0	12.7	12.7	12.2	12.7	10.9	9.2	7.7	6.1	4.2	3.3	3.7	4.1
3	3.0	3.1	3.0	3.4	3.1	3.4	4.6	(6.4)F	10.3	12.2	13.2	13.0	13.0	12.5	12.6	11.7	9.5	7.1	6.2	4.7	4.7	3.8	3.4	3.2
4	3.2	3.1	3.1	3.1	3.2	3.1	3.1	7.4	10.2	12.0	14.5	14.0	13.2	12.9	13.1	12.8	11.8	(5.6)C	8.2	5.8	5.3	3.9	3.4	3.5
5	3.5	3.8	4.0	3.5	3.3	3.3	3.5	8.0	11.1	12.5	(12.3)F	(12.3)F	12.7	13.6	13.0	13.0	12.4	8.2	7.2	7.1	5.9	4.0	3.7	3.7
6	3.6	3.8	3.4	3.6	3.0	3.5	4.5	7.6	10.7	14.0	13.7	13.4	13.2	13.2	12.9	13.8	12.5	8.7	8.2	(5.5)S	5.2	4.1	3.7	3.5
7	3.3	3.3	3.1	3.2	3.2	3.3	6.5	8.2	9.7	11.5	12.1	11.6	10.5	11.2	10.9	11.0	9.0	7.3	7.1	7.0	A	A	A	(4.4)F
8	(4.3)E	3.6	3.5	3.5	3.0	3.1	3.7	S	10.4	10.6	12.2	12.1	11.9	11.2	(11.0)S	10.7	10.9	6.8	5.6	5.8	A	A	3.6	3.6
9	3.5	3.5	3.6	3.5	3.2	3.0	3.3	8.2	10.4	11.3	13.0	11.7	11.0	11.0	12.5	11.7	11.5	10.2	7.2	6.4	(5.7)S	4.7	4.8	4.5
10	3.7	(3.7)C	3.7	3.7	3.6	3.7	4.4	8.3	(9.4)S	11.3	C	C	11.3	(11.3)C	11.3	11.7	11.1	7.9	(7.2)F	(6.4)F	A	A	A	A
11	A	3.2	3.1	3.1	2.9	3.0	3.2	7.2	9.1	13.1	13.1	13.4	13.4	12.9	11.8	11.5	9.8	7.7	6.6	5.2	3.6	3.2	3.6	3.8
12	3.5	3.4	3.3	(3.0)C	2.6	(2.6)E	3.6	7.3	S	12.0	12.0	11.8	11.9	10.6	11.0	10.1	S	6.3	6.3	4.9	4.2	3.4	3.4	3.4
13	3.5	3.6	3.2	3.1	3.1	3.0	4.0	7.0	(6.7)F	11.1	12.5	13.7	12.1	11.6	12.4	S	(10.0)S	S	7.3	6.7	5.0	4.2	4.0	3.7
14	3.5	3.5	3.3	3.5	3.4	4.0	4.7	7.0	9.1	12.7	14.1	13.0	13.0	(2.6)C	12.3	11.6	(10.1)F	7.8	6.8	5.5	4.7	4.2	4.4	4.4
15	3.5	3.5	3.1	3.1	3.1	3.0	C	C	C	13.1	14.3	13.1	11.3	11.1	11.3	10.5	8.8	8.1	7.1	5.8	4.3	3.9	4.2	4.4
16	3.7	3.7	3.7	3.7	3.6	3.7	3.7	7.4	10.6	12.9	12.8	11.8	11.2	11.4	11.7	(8.0)C	8.7	7.6	7.2	C	3.7	3.6	3.4	4.0
17	3.4	3.4	3.4	3.1	3.1	3.1	3.4	5.7	9.6	(10.8)	12.0	11.0	10.4	11.2	11.6	9.9	8.3	7.2	5.8	5.4	4.2	3.1	3.7	3.5
18	3.1	3.4	3.4	3.1	3.0	3.3	3.2	7.8	8.4	9.8	12.4	12.0	10.8	10.3	B	B	8.7	7.5	6.6	6.1	3.4	4.0	3.7	3.2
19	3.0	3.2	3.0	3.1	3.3	3.4	3.6	6.8	8.5	13.3	14.8	12.4	11.3	13.2	(12.0)F	10.2	8.8	10.0	9.4	5.9	3.5	3.7	4.2	4.2
20	3.0	C	C	(2.8)F	2.6	N	3.1	6.2	10.0	14.0	15.0	12.2	11.0	11.0	10.9	10.4	8.8	8.7	(6.5)F	A	3.1	3.7	3.3	3.2
21	3.4	3.4	3.5	3.4	3.0	2.9	3.4	6.5	C	12.2	13.1	12.7	11.6	14.4	13.9	11.2	7.7	7.8	6.3	4.6	3.4	3.7	3.1	3.3
22	C	C	C	(2.8)F	2.6	N	4.0	(6.6)F	(10.4)F	14.7	S	(15.1)F	14.1	14.4	10.5	10.8	10.2	(7.8)F	(7.6)F	5.7	B	B	B	C
23	3.4	3.4	3.4	3.4	3.3	3.4	3.4	5.9	10.0	13.9	14.8	C	C	C	C	12.8	11.7	9.6	9.2	6.8	4.2	3.7	3.8	3.7
24	C	C	C	3.0	3.0	(3.5)F	C	(5.3)S	S	13.0	B	10.7	S	C	C	C	8.9	(8.6)F	5.7	B	B	B	B	C
25	2.5	2.6	3.0	3.0	2.8	2.9	2.2	4.4	9.3	C	C	C	C	C	C	C	8.2	7.7	7.8	3.9	2.6	2.8	3.0	2.9
26	3.2	3.1	3.0	2.8	(2.6)	2.9	2.2	4.4	7.6	12.8	(13.1)C	13.4	B	10.5	(9.8)F	9.8	7.3	(7.7)S	5.8	3.7	3.8	3.0	3.6	4.0
27	F	3.1	3.0	2.6	2.6	2.8	2.8	5.9	7.6	12.8	12.1	10.9	B	10.9	10.2	10.2	8.9	7.6	7.1	4.2	AF	4.5	3.8	3.4
28	3.4	3.4	3.0	3.7	(2.1)F	2.2	2.3	7.1	S	12.6	14.4	12.1	10.9	12.2	12.7	(10.0)F	8.7	7.6	7.1	4.2	AF	4.5	3.8	3.4
29	5.4	5.0	4.0	3.4	2.8	2.8	2.9	5.8	C	11.3	11.3	11.1	11.2	B	B	9.2	9.1	7.0	F	3.8	4.0	4.3	4.3	
30	B	(6.1)F	5.0	3.7	3.3	3.2	3.0	5.8	8.0	C	B	C	9.6	B	B	7.9	8.1	6.7	4.2	3.7	AF	3.3	4.3	F
31	(4.3)E	3.9	3.0	2.7	2.4	3.3	2.7	6.0	8.2	7.8	14.3	C	C	(10.2)F	B	10.1	8.4	8.6	7.0	4.0	(4.0)A	E-1	2.6	2.5
Median Value	3.5	3.6	3.5	3.4	3.1	3.1	3.5	7.0	9.8	12.3	13.4	12.6	11.6	11.4	12.2	10.8	9.0	7.8	7.0	5.5	4.2	3.8	3.7	3.7
Count	2.6	2.9	2.9	3.1	3.0	2.9	2.9	2.5	2.7	2.7	2.6	2.6	2.7	2.7	2.5	2.8	3.0	3.0	3.0	2.5	2.8	2.8	2.7	2.8

Seep. 12. Air. to 124 Mc in 15 min
Mumbai

K I

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 35° 42.4' N
Long. 139° 29.3E

Kobunbunji Tokyo

135° E Mean Time

h p F Z

Dec. 19 49

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	420	420	400	440	420	380	290	270	270	250	240	260	260	280	300	270	260	300	270	250	300	320	370	(320)C
2	330	370	360	340	280	310	290	250	280	270	280	270	280	310	300	290	270	280	310	240	310	410	430	360
3	370	340	310	330	340	340	310	(250)F	250	300	300	310	310	310	310	300	280	280	270	260	280	280	420	450
4	440	410	370	300	260	260	260	260	260	310	300	290	310	310	310	300	290	(280)C	290	310	260	260	400	410
5	400	340	300	320	340	340	290	270	270	300	290	(300)F	310	280	290	310	320	270	300	280	260	340	340	260
6	340	380	350	400	330	400	300	230	240	240	270	270	260	280	280	260	260	290	(210)S	270	270	270	260	270
7	270	360	400	360	400	360	270	240	240	240	270	270	260	280	280	260	260	290	270	240	A	A	A	(280)F
8	(300)F	320	340	300	330	350	270	S	230	250	240	250	260	270	(280)S	280	280	280	270	260	A	300	350	330
9	360	370	340	340	340	360	270	280	280	280	290	290	270	280	280	280	280	280	270	270	270	480	320	330
10	340	C	400	350	330	350	230	250	(260)S	250	C	C	320	(320)C	330	300	280	300	(280)F	A	A	A	A	A
11	A	440	370	370	370	(350)F	300	240	270	250	280	280	280	280	270	250	260	240	270	250	410	450	410	410
12	400	370	270	320	370	(350)F	300	240	S	250	260	280	280	280	280	260	S	260	260	270	260	360	220	340
13	340	240	310	310	420	350	260	240	250	300	(300)F	210	270	280	300	S	(260)S	S	320	260	270	210	260	210
14	370	360	360	370	320	340	310	260	(250)F	270	300	280	300	300	330	300	280	330	300	290	300	320	350	330
15	350	380	430	430	440	360	270	250	270	260	290	290	320	(310)C	300	(300)F	(270)F	300	300	280	270	310	(320)	290
16	340	350	370	370	370	340	C	C	C	270	270	300	(270)S	300	270	280	250	280	290	270	270	310	360	310
17	330	370	280	340	400	340	320	250	260	240	270	280	280	280	(280)	260	260	300	250	C	270	350	300	410
18	330	350	310	260	370	350	300	240	250	S	280	250	300	300	300	270	270	270	310	300	320	310	340	320
19	300	360	340	350	320	340	310	250	240	280	290	300	270	280	B	B	280	270	280	260	270	310	270	270
20	380	340	300	360	400	360	280	260	250	300	300	290	310	300	(270)F	260	280	290	(270)F	220	330	(340)	370	330
21	330	360	330	350	330	290	340	300	310	280	290	270	290	270	270	250	270	250	(230)F	A	400	210	270	400
22	C	C	C	N	JF	N	A	I	I	280	S	(270)F	300	300	250	230	270	270	240	280	310	270	330	350
23	370	340	290	310	270	340	280	270	C	260	280	280	270	280	300	260	(250)F	(240)F	250	B	B	B	250	C
24	C	C	C	370	320	290	330	310	280	290	280	C	C	C	C	280	250	240	250	270	420	340	280	300
25	(280)	(230)	410	360	360	(310)F	C	(310)F	S	300	B	270	280	280	C	C	(240)	210	210	210	400	320	(330)	400
26	360	330	340	420	410	360	360	300	270	C	C	C	C	C	C	280	(240)	210	210	210	360	310	300	240
27	F	340	360	300	300	(310)F	350	260	280	(270)	(260)	250	F	(240)	250	250	270	270	(270)S	250	280	420	380	280
28	360	310	290	280	360	(310)F	350	260	280	(270)	(260)	250	F	(240)	250	250	270	270	(270)S	250	280	420	380	280
29	370	360	320	350	350	410	310	270	280	310	320	310	B	B	B	330	300	270	250	300	440	(270)F	(230)F	
30	B	(300)	310	360	280	340	310	270	260	B	B	C	270	280	B	(260)	260	230	230	230	AF	1F	(230)	F
31	(270)F	(340)F	(310)F	340	(450)F	(450)F	350	300	260	280	C	C	C	(310)F	B	260	270	280	240	(330)	A	330	270	230
Median Value	345	350	350	350	355	350	310	260	260	280	285	290	290	300	300	275	270	280	270	270	310	325	350	335
Count	26	28	29	30	30	28	28	28	24	28	26	26	27	27	25	29	30	30	30	28	23	26	29	28

Sweep 14-Mc to 22-Mc in 1.5-min

Manual

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 35° 42.4' N
Long. 139° 39.3E

Kokubunji Tokyo

135° E Mean Time

h' f₂

Dec. 1949

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	470	360	320	330	300	300	250	250	220	210	220	210	210	240	210	220	220	200	210	210	200	240	280	280
2	270	200	300	270	230	200	230	210	210	220	220	210	220	220	220	220	210	200	200	220	200	230	300	280
3	270	280	260	250	230	270	240	220	230	230	240	250	250	230	240	230	260	240	220	210	220	220	310	330
4	330	310	250	260	310	300	250	220	220	210	260	250	250	250	240	240	230	220	220	220	220	250	280	330
5	310	300	260	270	200	270	250	240	220	230	250	250	220	300	230	240	220	190	230	220	210	250	250	260
6	270	270	280	300	270	310	250	210	220	220	260	230	240	250	240	240	220	200	230	210	240	240	280	270
7	190	290	270	290	300	300	220	200	220	220	220	210	230	230	240	220	210	170	210	210	A	A	A	270
8	260	260	300	270	270	300	240	220	210	200	210	200	200	240	200	210	210	180	260	210	A	230	270	AF
9	300	290	290	280	250	270	250	240	230	220	250	230	230	270	270	230	240	220	230	270	AF	AF	260	270
10	260	330	310	270	240	280	230	220	230	230	C	C	280	280	280	250	250	220	230	230	A	A	A	A
11	A	340	300	290	320	260	250	230	210	230	220	220	240	220	210	220	210	250	230	250	250	340	350	320
12	300	300	250	260	280	290	230	210	210	210	220	220	220	230	220	220	210	200	210	200	210	260	270	280
13	250	190	240	280	330	300	210	210	220	280	220	220	230	210	250	230	220	220	230	220	220	260	270	300
14	310	AF	A	300	230	280	250	220	230	220	230	250	250	220	230	230	220	220	220	230	230	240	270	270
15	270	270	330	320	360	300	220	220	220	240	230	230	230	240	250	240	210	220	240	230	210	220	240	240
16	250	230	280	270	280	270	C	C	C	230	240	210	240	220	230	230	250	270	230	210	240	210	300	250
17	280	310	300	300	270	280	270	220	220	210	210	210	240	220	230	230	220	280	230	C	220	240	270	280
18	270	280	270	241	350	320	280	230	240	270	220	230	210	260	260	260	220	220	210	230	220	230	280	260
19	260	270	260	250	250	280	250	220	210	240	260	260	240	280	230	250	220	220	220	220	220	230	230	220
20	270	270	300	280	310	270	230	230	200	240	250	230	270	270	240	240	220	250	220	210	240	270	270	250
21	240	270	270	250	250	230	250	240	230	230	230	210	260	220	230	240	210	240	240	250	A	270	270	250
22	C	C	C	N	200	N	260	200	200	230	220	230	220	220	220	210	200	210	210	250	A	240	230	260
23	280	280	260	230	250	300	180	250	270	230	240	230	240	250	220	230	230	220	230	B	B	250	210	C
24	C	C	C	300	260	250	240	270	260	240	230	C	C	C	220	220	210	220	210	210	210	230	250	250
25	270	280	290	300	300	250	C	260	230	270	230	260	260	240	250	240	240	220	230	250	250	290	320	320
26	300	270	250	280	310	280	300	250	240	C	C	C	C	C	C	C	230	230	240	220	220	260	240	270
27	330	300	250	230	300	280	250	240	250	240	250	230	230	270	270	230	220	210	220	240	200	260	300	300
28	320	280	250	230	270	300	280	260	240	250	240	230	230	290	270	250	250	210	210	230	AF	AF	290	250
29	240	240	240	280	280	310	310	270	280	290	270	280	280	250	270	300	240	250	210	230	230	240	280	240
30	240	260	260	260	260	250	240	240	230	230	270	C	240	240	240	240	240	220	230	230	AF	AF	310	250
31	250	250	240	250	320	250	280	240	230	240	280	240	C	240	230	230	220	240	220	220	A	310	250	240
Mean Value	275	260	270	260	280	280	250	230	225	230	230	230	240	240	240	230	220	220	230	220	230	250	280	270
Count	28	28	28	30	31	30	29	28	30	29	28	28	29	29	30	30	31	31	31	28	23	26	27	28

Sample No. 104546 in 15-min Annual

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Dec 19 49

f_oF₁

Lat 35° 42.4' N
Long 139° 29' 30" E

135° E Meas Time
Kokubunji Tokyo

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
2							S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
3							S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
4							Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
5							A	S	S	S	S	S	S	S	A	S	S	S	S	S	S	S	S	S
6							S	S	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
7							S	S	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
8							S	S	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
9							S	S	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
10							Q	S	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
11							Q	Q	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
12							S	Q	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
13							Q	Q	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
14							Q	S	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
15							Q	Q	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
16							S	C	C	C	C	C	C	C	S	S	S	S	S	S	S	S	S	S
17							Q	Q	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
18							Q	Q	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
19							Q	Q	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
20							Q	Q	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
21							Q	Q	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
22							A	A	S	S	S	S	S	S	A	S	S	S	S	S	S	S	S	S
23							Q	Q	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
24							S	Q	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
25							C	Q	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
26							Q	Q	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
27							A	Q	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
28							Q	Q	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
29							Q	Q	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
30							S	Q	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
31							Q	Q	Q	Q	Q	Q	Q	Q	S	S	S	S	S	S	S	S	S	S
Median Usf, MUF							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Count							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sampled at 10:00 AM on 15 min

Manual

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 35°42.4'N
Long. 139°29.8'E

RFI

Dec 1949

Kokubunji Tokyo

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1																									
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									
13																									
14																									
15																									
16																									
17																									
18																									
19																									
20																									
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22																									
23																									
24																									
25																									
26																									
27																									
28																									
29																									
30																									
31																									
Median Value																									
Count																									

Strophogram in 15-min. Manual

K 5

Kaio Regulatory Agency (Denpaco)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

f_oE

Dec 1949

Lat. 35° 42.4'N
Long. 139° 29.8E

Kokubunji Tokyo

135° E Meas Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							B (18)B	26	AF	32F	34	34	34	34	32	26	21	A						
2							E 17	27F	32E (34)F	36	36	36	36	36	B	30F	18	A						
3							E A	26	32F	A	34	34	35	(33)A	29	20F	22	A						
4							E 21	26	26	32	35	35	A	A	A	28	19	C						
5							A A	(25)F	29A	A	35	35	A	A	B	27	21	(113)B						
6							A (14)A	26F	A	A	37	37	A	33	31	26	23	A						
7							(13)B	20F	25	A	B	33	A	A	B	A	A	B						
8							E 30	A	A	A	A	A	A	A	A	A	A	15						
9							E 20	26	27	34	34	34	33	A	31	27	21	16						
10							E 17	A	A	C	C	A	A	C	32	A	A	A						
11							E A	A	31	32	24	34	34	A	(34)A	A	23	A						
12							A 19	27F	31F	33F	B	35	A	A	32	B	22	B						
13							E 20F	30B	32A	32	34	34	34	A	A	A	A	A						
14							A 14	A	A	A	B	35	A	A	A	28	A	A						
15							E B	A	A	33	B	B	B	C	32	F	A	A						
16							C C	C	A	A	B	34	34	B	B	A	A	A						
17							A A	(27)P	B	B	B	B	B	B	B	C	A	A						
18							B B	24	A	A	A	A	A	A	A	A	A	A						
19							B 19	23	27	29A	35	30	30	A	A	A	24	A	B					
20							E 18A	A	B	B	B	B	B	B	B	B	B	A						
21							E AF	A	A	31	A	32F	32	29	27	27	21	A						
22							A A	A	A	A	A	A	B	B	A	A	A	A						
23							A A	26A	31	32	B	B	B	B	B	26	B	A						
24							E 18B	24	B	B	C	C	C	C	B	A	B	A						
25							C A	26	30	B	B	B	B	(32)A	B	A	B	A						
26							B 20	24	C	C	C	34	C	C	C	C	13	1.2A						
27							A B	25	30A	C	34	A	A	A	A	B	2.0	B						
28							E 22	24	29	B	34	34	34	B	B	29	2.0	A						
29							B B	24A	29	33	34	34	34	B	B	28	2.0	1.2						
30							E B	A	A	B	C	34	34	A	A	A	A	A						
31							B 18	22F	28	31	A	C	33	F	32	A	A	B						
Median Value							E 19	26	30	32	34	34	34	33	32	20	21	1.3						
Count							15	17	21	15	13	17	12	8	10	12	15	5						

Sweep (L-Mc) 10/24Mc in 15-min Manual

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Dec 1949

h_p E

Lat. 35° 45.4' N
Long. 139° 29.3' E

Kokubunji Tokyo

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1																								
2							E	(110)B	100	A	100	100	100	100	100	100	100	A						
3							E	100	100	110	(100)F	100	100	100	100	100	100	100	A					
4							E	100	100	110	A	100	100	100	100	100	100	100	A					
5							E	(100)A	110	100	110	100	A	A	A	110	120	C						
6							A	A	100	100	100	110	A	E	110	110	100	100						
7							A	(140)A	100	A	A	110	A	110	100	110	(100)A	A						
8							B	100	100	A	100	100	A	A	100	A	A	100						
9							F	100	A	A	A	A	A	A	A	A	A	A						
10							E	100	110	110	110	110	110	A	100	100	100	100						
11							E	100	A	110	C	C	A	C	A	A	A	A						
12							E	A	A	100	100	100	100	A	A	A	A	A						
13							A	100	100	(100)A	100	100	100	100	A	100	100	(100)A	A					
14							E	110	100	100	100	100	100	100	A	A	A	A						
15							A	110	A	A	120	100	A	A	A	100	A	A						
16							E	B	100	A	100	100	(100)E	C	110	A	A	A						
17							C	C	C	A	110	100	110	100	110	A	A	A						
18							A	A	100	(100)F	110	B	B	B	B	C	A	A						
19							B	B	120	A	A	A	A	A	A	A	A	A						
20							B	140	100	120	110	110	110	110	110	A	A	100	B					
21							E	110	A	B	E	B	B	B	B	B	B	A						
22							F	AE	A	A	100	A	110	100	110	100	110	A						
23							A	A	A	B	A	A	100	100	100	A	A	A						
24							A	A	100	100	100	B	B	130	120	110	110	A						
25							E	150	110	B	B	C	C	C	100	A	B	A						
26							C	A	100	100	110	120	120	120	120	A	A	A						
27							B	A	100	C	C	110	C	C	C	C	100	140						
28							A	130	140	(100)A	C	100	A	A	A	100	130	B						
29							E	140	120	110	100	100	100	110	100	100	100	A						
30							B	B	100	140	120	130	100	100	140	140	150	130						
31							F	140	A	100	110	C	110	A	110	A	A	A						
							B	160	110	110	110	100	C	100	110	A	A	A						
Median Value							110	100	100	100	100	100	100	100	110	100	100	100						
Count							15	22	18	21	22	16	14	18	14	15	14	15						6

Sweep Rate 10 Hz/Mc in 2-min

Manual

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Mmato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Dec 1949 fES 135° E Mean Time Kokuburji Tokyo Lat. 35° 42.4' N Long. 139° 29.3E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	23	23	24F	26	26	B	20	G	20F	44	58	G	G	45	48Y	24	24F	26F	12	G	B	28F	22F	C
2	22F	25F	24F	24	13	12	23F	20	23F	27	40F	G	G	36F	G	25	(27Y)	26	30	34Y	18Y	28	22	19
3	B	G	(24Y)	B	20Y	24Y	22Y	24	24F	41F	(150Y)	42Y	44Y	24Y	26	27F	27F	27	24	22	24F	22	20	20
4	20F	20F	21	28	21	25	28	28	G	26	27	27	23	24	26	26	24Y	24Y	C	24	G	G	G	G
5	14	20F	22	25	22	24	22	28F	24F	21	25	25	26	B	G	(21Y)	20Y	(17Y)	(17Y)	(18Y)	(28F)	19	18	26
6	14	G	18	(22Y)	24Y	22	29	(20B)	27	26	46	20	28	G	G	G	25	42	28	25	24	28	22	17
7	32	33	30	28F	25F	24F	27F	21F	29	24	28	26	27	45F	G	46	26	G	12	28	74F	90	78	23
8	32	30	40F	30	32	18	B	G	24	20	29	46	24	48	27	26F	22	17	19	30	65	25	26	27
9	41	26F	30	24F	33F	14	22Y	G	28	28	41	29	27	52	27	G	21	24F	23	22F	53	50	25F	23F
10	22F	C	19	19	G	27Y	G	28Y	50	C	C	C	28	C	25	44	50	22F	80	74	75	75	65F	62F
11	44F	57F	30F	26F	18	24F	G	28	42F	26	G	54	29	41	50	47	42	25	28	21	21	20	41F	42
12	26	G	28F	C	23F	25F	25	G	28F	25	G	22	22	24	G	G	(28Y)	24	24	18	19Y	23	22Y	
13	16	G	27F	22	26Y	15	28Y	G	28Y	27	G	20	(28Y)	24	48	42	27F	44	24	24	24F	24F	28F	
14	28F	24F	65	26F	23F	43	46Y	26Y	24F	27	G	42	27	22	22	22	24	22	22	22	22	22	22	22F
15	22F	22F	12	(18Y)	G	G	G	B	22	47	25F	B	28Y	C	20	51	50	46	22Y	17Y	G	B	24	22
16	22	18F	17B	15	20	20	C	C	C	28	G	G	G	G	G	40	46	22	24	24	24	24	24	20
17	49Y	28	20	20	20	24	24	23	G	B	13	B	B	B	B	C	57F	64	20	C	G	G	G	15
18	12	G	G	G	26F	28F	21	20	G	28	26	27	42	24	50	20	42	41F	24	24	24	29	29	G
19	17	22	G	15	G	18Y	20	B	24	26	22	28	(28Y)	28	26	20	G	G	G	G	G	G	G	G
20	G	G	G	11	G	11	G	G	21F	B	29	29	B	B	42	44	48	25	22	21	18	20	17	
21	G	G	16	20	17	G	G	46	50	59	27	27	21	21	23	G	27	27	27	22	22	25	28	20
22	C	C	C	28F	18	N	28	61Y	28F	26F	49	22	G	B	22	25	28	28	28	28	26	26	28	G
23	22	24	24	22	22Y	28	20	(22Y)	24	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
24	C	C	C	G	20	G	G	G	26	B	B	C	C	C	C	B	23	23	20	28	20	18F	20F	24
25	28	25	18	25	22	G	24	20	(24Y)	G	G	G	B	B	B	20	20	20	20	20	20	20	20	20
26	G	G	19	G	G	G	B	28F	G	C	C	C	C	C	C	C	28	G	20	28	G	G	G	G
27	G	G	G	17	22	22	19	B	20	24	C	G	26	26	26	21	G	B	B	24	28	24	24	24
28	25	24	27	17	17	17	G	G	27	G	G	G	21	B	B	G	G	24	22	27	27	27	27	27
29	22	24	29	20F	18Y	G	B	B	20	(42)	26	B	B	B	(24Y)	G	22	24	22	G	24	26	22	20
30	(22Y)	G	17	27	G	G	G	B	26	44	50	C	44	42	44	42	22	22	22	22	22	22	22	22
31	G	G	20	18	B	G	B	(22Y)	27	42Y	42Y	54	C	42Y	46Y	42	42	22	45	44	29	25	28	
Median Value	26	23	24	22	22	20	20	28	30	27	26	24	23	28	26	24	22	22	22	28	28	26	24	24
Count	28	28	24	24	24	24	26	25	30	27	26	24	23	20	25	28	30	29	30	30	30	29	31	29

Standard deviation in dB-min Manual

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 35° 12.4' N
Long. 139° 26.3E

Kokubunji Tokyo

135° E Mean Time

(M3000)F2

Dec 17 49

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	24	26	27	25	25	27F	31	34	33	35	36	32	33	32	31	33	33	31	33F	34	31	26	27	(28)C	
2	28	28F	28	29	33	30	33	33	35	33	32	32	32	31	31	33	33	32S	30F	34	32	26	26	28	
3	28	30	31	30	29	30	30	30F	34	31	31	31	30	30	30	31	32F	31	32	33	34	32	25V	25V	
4	24	26V	31	31	33F	30F	33	33	33	31	31	30	30	30	29	32	(32)C	32	30	33	33	26	27	27	
5	26	26	31	30	29	26	33	33	31	32	(30)F	31	29	31	29	30	30	31	30	32	32	27	28	28	
6	29	27	29	27F	29	26	31	36	36	31	31	27	30	31	27	30	32	31	32	(31)S	32	30	28	27	
7	33	28	28	28	26F	28F	32	26F	35	34	33F	32	32S	32	32	33	33	31	34	37	A	A	A	(28)F	
8	31	30	29	32	29	28	33	S	36S	34	35	35	32	33	(32)S	32	35	27	29	35	A	30	27	30	
9	29	27	28	30	29	28	27	33	32	32	33	31	31	29	29	27	30	31	32	A	S	30	27	30	
10	29	(28)C	26	28	29	28	32	35	(34)S	(33)A	C	C	32	(32)C	32	32	32	31	(32)F	A	A	A	A	A	
11	A	26F	(27)S	28	27	28	31	34	33S	34	33	32	34	32	31	34	35	31	30	30	28	27	27	26	
12	26	24	33F	(30)C	26	(30)F	30	35	34	35	34	33	33	32	31	34	S	33	34	33	34	28	30	29	
13	28	36	30	26	25	29	27	34	35	32	32	33	33	32	32	S	(33)S	S	30	34	31	27	27	27F	
14	28	38	27	27F	27F	28	30	34	(35)F	32	31	34	31	29	32	30S	30	31	32	32	31	29	30	29	
15	28	27	25	25	25	28	22	35S	33	34	32F	32	30	(30)C	31	30	(32)F	32	30	32	33	30	29	32	
16	29	28F	27F	28	28	28F	C	C	C	33	37	31	31	32	32	34	34	32	32	33	30	28	29	31	
17	29	27	27	24	25	28	30	34	34	(34)S	33	33	31	31	32	(32)F	33	32	35	C	31	28	26	26	
18	30	29	30	33	27	28	30	34	36	(34)S	33	33	31	30	32	32	32	34	30	30	29	29	29V	30V	
19	26	27	29	28	30	28	31	35	34	33F	34	32	31	30	32	33	33	33	34	30	29	29	29V	30V	
20	27F	29	27	28	26	29	32	34	34	31	31	31	30	30	31	34	33	33	34	33	32	28	27	27	
21	28	28	30	28	29	31	28	31	29	33	33	32	30	31	(32)F	34	33	32	34	(36)F	A	26	26	26	
22	C	C	C	N	JF	N	A	I	I	33	S	(31)F	30	32	34	34	35	32	35	32	30	28F	29	28	
23	28	29	29	30	34	28F	32	33	C	34	32	33	33	32	32	34	(34)F	36	36	B	B	33F	34	32	
24	C	C	C	27	24F	32F	29	30	32	34	32	33	33	32	32	34	(34)F	35	35	32	30	28F	29	28	
25	(32)S	(30)S	25	28	28	(33)F	C	(31)F	S	33	33	33	32	C	C	32	35	35	35	34	26	29	31	32	
26	28	30	30	27F	(28)F	31	28	31	33	C	C	C	C	C	C	32	(32)F	30S	B	27Z	30	(27)F	27Z	27Z	
27	F	30	31	30	28	(28)F	28	34	32	(32)C	33	33	32	32	31	35	32	31	(34)F	34	28	30	31F	28	
28	28	31	32	31	28	(28)P	28	33S	S	32	32	31	32	32	31	(34)F	32	32	(33)S	36	26	(26)C	27	26	
29	31	35	26F	29F	26Z	25F	28F	29	C	30F	31	29	30	B	29	32	34F	35	35	29	26	(28)F	28Z	32	
30	B	(32)F	31	27	29	29	31	31	24	F	C	32	31	B	(33)S	33	37	38	38	38	AF	AF	(30)F	(28)F	
31	(34)F	(30)F	(31)F	28F	(27)F	(24)F	28	31	32	33	33	C	C	(32)F	B	34	33	34	35	31	A	27	27	28	
Mean Value	28	28	29	28	28	28	30	34	34	33	32	32	31	31	32	32	33	33	33	33	31	29	28	28	28
Count	26	24	29	30	30	28	28	28	24	29	26	26	26	27	25	28	30	30	30	27	23	25	28	28	28

Scale: 0.1 V (1) 0.1 dB in 15 min Manual

K 4

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 35° 12.4' N
Long. 139° 29.3E

Kokubunji Tokyo

135° E Mean Time

f min F₂

Dec. 1949

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.7	1.7	1.7	1.8	1.1	1.1	1.3	1.9	2.8	3.4	3.3	3.5	3.4	3.4	3.2	2.7	2.1	A	E	E	E	E	E	C
2	E	E	E	E	E	E	1.1	2.0	2.8	3.3	3.6	3.7	4.7	3.8	3.2	3.0	2.3	1.8	2.2	1.3	1.6	1.2	1.2	1.4
3	1.2	1.2	1.2	1.2	E	E	1.1	2.2	2.6	3.2	3.5	3.5	3.5	3.5	2.9	2.0	2.2	A	1.8	1.3	1.2	E	E	E
4	E	E	E	1.6	E	1.6	1.4	2.2	3.0	3.2	3.2	3.5	3.8	A	4.5	2.8	2.2	(2.0) ^C	2.0	1.1	1.1	1.2	1.1	1.1
5	1.1	1.5	1.3	1.1	1.1	1.1	1.2	2.2	2.5	3.7	3.4	3.6	3.8	3.8	3.2	2.9	2.5	1.1	1.2	1.2	E	E	E	E
6	E	E	1.1	1.1	1.1	1.1	1.1	1.9	2.8	2.2	3.5	3.8	3.8	3.3	3.1	3.0	2.3	A	2.2	A	1.7	1.6	E	E
7	E	E	E	E	E	E	1.3	2.1	2.6	3.1	3.2	3.6	3.7	3.7	3.6	3.0	2.1	1.6	1.5	A	A	A	A	1.8
8	AF	1.6	A	1.6	1.2	E	1.2	1.2	2.0	3.5	3.5	A	S	3.6	3.2	2.8	2.4	1.7	1.5	1.8	A	1.4	1.9	AF
9	1.7	1.1	1.2	1.5	1.1	1.1	1.1	1.1	2.8	3.2	3.5	3.5	3.5	3.0	3.3	3.1	2.4	1.6	AF	AF	AF	AF	1.6	1.6
10	E	1.1	1.3	1.6	1.1	1.1	1.2	2.8	3.2	3.4	C	C	4.0	C	2.2	2.8	2.0	2.3	1.7	A	A	A	A	A
11	A	A	A	1.1	1.1	1.1	1.1	2.0	2.6	3.1	3.4	3.6	3.6	3.8	3.4	3.2	2.3	1.8	1.8	1.7	1.3	1.3	1.1	E
12	E	E	E	1.4	1.3	1.1	1.2	2.1	2.7	3.2	3.5	3.6	3.6	3.4	3.5	2.8	2.2	1.4	1.7	1.6	1.4	1.5	1.6	1.5
13	1.2	1.2	1.2	1.2	1.1	1.1	1.2	2.0	3.0	3.4	3.4	3.4	3.6	3.7	3.6	2.8	2.3	2.4	1.8	1.8	2.0	1.6	1.4	1.8
14	2.0	AF	E	1.6	1.1	E	E	2.0	2.5	3.2	3.5	3.6	3.6	3.7	3.6	2.8	2.5	1.8	2.0	1.5	1.5	1.3	1.3	1.3
15	1.1	1.1	1.1	1.2	1.1	1.1	1.2	1.8	2.8	3.4	3.5	3.9	4.5	C	3.7	3.1	2.9	2.7	1.8	1.3	1.2	E	1.2	1.3
16	E	E	1.1	1.1	1.1	1.1	C	C	C	3.2	3.5	3.5	3.5	3.5	3.2	3.1	2.2	2.2	1.8	1.3	1.7	1.7	2.0	1.7
17	1.8	1.7	E	A	E	E	1.4	1.9	2.7	4.2	3.6	4.0	3.8	4.2	3.6	C	3.1	A	2.7	C	E	E	E	E
18	F	E	1.7	1.7	1.8	1.7	1.8	1.6	2.2	3.0	3.2	3.5	3.6	3.4	3.0	2.8	2.6	2.1	1.4	1.2	1.1	1.1	1.1	1.1
19	1.1	1.1	E	E	E	E	E	1.9	2.4	3.0	3.6	3.6	3.6	A	2.8	3.2	2.4	1.4	1.3	1.1	1.6	1.2	1.2	1.2
20	1.1	1.1	E	E	E	E	E	2.0	(2.0) ^A	3.1	3.6	3.8	4.2	E	4.2	4.0	3.7	A	1.6	1.8	1.6	1.5	1.3	E
21	E	E	E	1.1	1.1	1.1	1.1	AF	2.8	3.0	3.4	4.3	3.4	3.2	2.9	2.7	2.1	A	A	A	1.5	A	A	E
22	C	C	C	AF	E	1.3	A	A	2.8	3.2	3.7	3.2	3.8	3.7	3.5	2.7	A	A	A	A	1.8	1.2	1.2	1.2
23	1.2	1.4	1.1	E	1.6	E	1.6	E	2.1	2.6	3.6	4.2	5.0	4.1	4.0	2.6	1.5	2.4	A	A	B	1.2	2.0	C
24	C	C	C	C	1.1	1.1	1.1	2.0	2.7	3.2	3.4	C	C	C	4.2	3.7	3.0	1.7	1.1	1.7	1.3	1.5	1.1	E
25	A	1.4	1.3	1.6	1.4	1.3	C	2.8	2.6	3.6	3.6	3.8	3.4	3.4	A	3.0	2.1	1.7	2.1	A	1.5	1.2	1.1	E
26	E	E	E	E	E	E	1.3	2.1	2.4	C	C	3.6	C	C	C	C	2.4	1.5	1.6	E	E	E	E	E
27	E	E	E	E	E	E	E	1.9	A	3.0	C	4.7	5.2	3.4	2.8	2.7	2.0	1.8	1.4	1.4	1.8	1.4	1.6	1.5
28	1.8	F	1.1	E	E	1.1	1.2	2.2	2.5	3.5	3.6	3.4	3.4	3.6	3.4	2.9	2.5	1.5	A	A	AF	A	A	AF
29	AF	2.0	1.3	E	E	1.1	1.2	2.1	2.5	3.6	3.5	3.4	3.6	3.6	3.8	3.4	2.6	1.6	1.6	1.2	2.0	1.8	1.6	1.6
30	1.4	1.1	E	1.3	E	E	E	A	2.5	3.5	3.6	C	3.8	3.8	3.6	2.6	2.4	2.4	AF	AF	AF	AF	AF	E
31	E	1.1	E	E	E	E	1.4	1.9	2.5	3.2	3.8	3.8	C	4.2	3.2	3.2	2.4	1.2	1.3	A	A	A	AF	E
Mean Value	1.1	1.1	1.1	1.1	1.1	1.1	1.2	2.0	2.6	3.2	3.5	3.6	3.6	3.7	3.3	2.9	2.4	1.8	1.7	1.3	1.4	1.2	1.2	1.2
Count	25	27	26	28	31	31	28	27	29	30	28	27	27	25	29	29	30	24	25	20	23	24	25	26

Excep. 1.4, 1.6, 1.8, 2.0, 2.2, 2.4, 2.6, 2.8, 3.0, 3.2, 3.4, 3.6, 3.8, 4.0, 4.2, 4.4, 4.6, 4.8, 5.0

Manual

Radio Regulatory Agency (Derpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Dec 1949

f min E

135° E Mean Time

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.8' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
2	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
3	B	G	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
4	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
5	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
6	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
7	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
8	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
9	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
10	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
11	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
12	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
13	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
14	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
15	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
16	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
17	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
18	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
19	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
20	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
21	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
22	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
23	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
24	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
25	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
26	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
27	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
28	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
29	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
30	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
31	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Median MUF	28	29	29	27	31	30	30	27	30	28	27	27	25	25	29	24	30	29	30	29	29	29	31	29
CoEF																								

Manual

Frequency in Mc (1000 cycles in 10⁶ min)

K 11

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 35° 42.4' N
Long. 139° 29.3E

Zd

Dec. 1949

Kokubunji Tokyo

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	80	80	80	100	120	120	100	60	80	60	100	90	80	100	90	80	80	90	60P	150	130	130	150	140	
2	120	70F	90	80	60	90	60	120	50	90	80	90	90	90	80	60	70	100S	120P	130	40	120	70	70	
3	60	70	70	60	120	100	160	(30)P	70	70	70	70	110	120	120	90	120P	120	100	100	110	110	160V	80V	
4	100V	90V	110	100	120F	60F	150F	240	120	120	70	110	110	100	110	100	90	(30)C	80	90	100	70	90	60	
5	80	90	90	110	90	120	120	90	90	110	70	(10)P	90	80	100	90	90	100	110	70	110	90	80	110	
6	60	110	100	50F	130	80	110	100	60	120	90	100	90	80	100	100	130	130	90	(110)S	100	140	90	90	
7	100	90	50	70	90F	90F	60F	80	70	110F	70	130S	90	90	90	100	90	90	50	40	A	A	A	(110)F	
8	(90)P	80	80	60	100	70	90	S	80S	70	80	60	70	90	(80)S	80	60	90	120	50	A	100A	80	70	
9	80	80	140	80	110	100	150	80	60	60	70	120	110	90	90A	90	80	90	90A	S	100A	60	110	A	
10	130	S	90	80	90	70	70	50	(90)S	100	C	C	90	(90)C	80	80	90	120	(60)P	(120)F	A	A	A	A	
11	A	120F	(60)F	110	70	100	130	60	70S	50	80	70	60	130	110	80	70	80	90	210	190	110	70	80	
12	90	120	100F	(120)C	130	(70)F	120	80	S	70	80	70	100	140	110	60	S	80	90	100	80	70	90	90	
13	90	80	120	110	110	60	110	100	50	(70)F	50P	90	90	90	100	S	(120)S	S	70	50	120	110	140	90F	
14	50	90	90	120F	140	160	120F	140	(100)P	120	90	40	90	90	100	80	120S	80	70	80	110	110	100	100	
15	120	90	80	120	70	70	100	90S	90	80	100F	100	90	(90)C	90	(110)P	50P	90	100	90	100	90	(80)P	70	
16	100	130F	130F	60	120	150F	C	C	C	80	50	90	(90)S	90	100	110	100	70	50	110	120	100	130	90	
17	90	80	120	90	120	140	120	100	80	80	60	70	120	100	80	(90)C	100	80	60	60	80	100	100	70	
18	70	70	140	100	100	110	150	120	60	S	60	100	80	90	100	80	130	70	150	140	150	190	90V	100V	
19	130	110	80	130	80	120	70	60	100	80F	40	60	110	70	70	13	B	60	80	60	70	40	70	100	
20	90F	90	100	70	130	60	60	60	130	80	70	60	100	50	(70)F	60	60	60	(50)P	50	120	(90)P	70	100	
21	80	80	70	100	120	200	90	150	110	70	70	(110)P	110	90	90	100	100	100	(80)P	A	110	100	130	110	
22	C	C	C	N	A	T	A	T	T	70	S	(110)P	110	90	90	100	100	100	100	70	130	(160)P	130	130	
23	70	80	80	100	60	120	140	100	C	60	100	50	80	140	50	70	(70)P	(90)P	60	B	B	B	130F	C	
24	C	C	C	130	130F	120F	110	110	90	90	90	C	C	C	100	70	90	110	110	140P	100	150	120	80	
25	(80)P	(60)S	100	110	70	(30)F	C	(90)S	S	50	B	60S	80P	C	C	90	(70)F	90P	B	140P	100	150	120	80F	
26	100	110	60	80F	(40)F	80F	90	130	110	C	C	C	C	C	C	C	C	60	90	(50)P	110	100	40F	90	
27	F	70	120	100	(110)P	110	70	80	(80)P	(90)C	90	B	(60)P	(40)P	70P	80	(90)S	40	50S	70	C	90	110		
28	70	50	70	(130)P	(90)F	60	80	(70)S	S	70	70	(80)P	120	80	60	(90)P	80	90	40	50S	AF	90P	170	130	
29	120	70	110F	100F	90Z	140F	130F	160	C	100F	70	120	110	B	B	90	60	50P	60	110	80	(70)P	60F	(70)F	
30	B	(60)P	90	110	120	90	90	90	B	B	C	70	90	90	(120)P	80	50	40	30	AF	F	(60)P	F		
31	(50)P	(50)P	(60)P	100F	(40)P	(100)P	120	90	80	60	40	C	(60)P	B	80	80	60	60	70	(50)P	A	100	100	130	
Mean Value	90	90	100	100	100	100	110	90	80	75	70	85	90	90	90	85	90	85	70	85	70	85	100	90	95
Count	26	28	27	30	30	30	28	28	24	28	26	26	27	27	25	28	30	30	30	28	28	23	26	27	28

Sample No. 1012231C 1112-min Manual

Radio Regulator Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

Dec. 1949

f. F2

Lat. 35° 12.5' N
Long. 139° 37.7' E

Yamagawa

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	5.0	5.6	5.8	5.6	4.9 ^J	5.5	6.0	8.7	11.6	S	13.0 ^F	13.9 ^F	13.9 ^F	13.9 ^F	14.3	14.3	14.5	13.2	11.8	11.2	11.0	10.6	9.2	7.9
2	4.7	5.0	4.6	3.5	4.1	3.7	4.6	6.3	9.5	10.9	12.4	13.1	13.6	13.3	13.4	13.5	13.7	12.2	8.8	8.0 ^S	7.2	6.9	4.5	4.8
3	4.2	4.2	3.8 ^Z	3.4	3.8	2.7	3.0	4.0	10.1	11.4	12.6	13.0	14.1	14.0	13.8	13.2	11.7	9.8	7.4	6.8	7.0	7.0	3.4	3.7
4	3.6	3.5	3.7	3.7	3.9	(2.5) ^X	2.4 ^K	5.9	10.1	11.1	12.6	11.6	12.5	12.7	13.8	12.9	13.6	13.3	10.4	9.2	8.4	7.1	6.4	3.9
5	3.9	3.8	4.2	3.1	3.3	3.2	3.4	6.2	C	C	C	C	C	C	C	C	C	C	C	C	7.7 ^T	7.1 ^T	6.4	5.2
6	5.3	3.7	3.5	3.3	3.6	3.0	3.8	4.0	8.5	11.6	13.1 ^F	13.9 ^F	14.0 ^F	(14.2) ^F	S	16.4 ^J	16.5 ^J	S	14.1	11.6	(10.0) ^S	7.1	4.7	4.6
7	4.2	4.3	4.2	3.8	3.7	3.5	3.9	7.1	10.2	11.1	12.8	11.4	12.8	13.4	13.0	13.1	12.8	11.5	8.6	7.7	8.2	7.6	6.4	4.6
8	3.5	3.4	3.5	3.3	3.2	3.1	3.3	6.4	9.9	11.1	12.0	12.1	12.5	12.5	12.6	12.4	13.0	12.1	6.7	7.7	8.6	6.2	5.5	4.7
9	4.7	4.4	3.7	3.7	3.8	2.8	3.0	5.8	11.0	11.8	12.2	11.6	12.0	12.3	13.2	13.4	12.9	12.9	11.8	7.9	9.0	6.7	6.4	6.2
10	6.3	3.8 ^F	4.1 ^F	4.5	4.4	3.8	5.0	6.8	9.4	11.5	11.2	12.4	12.9	12.6	12.0	13.1	13.6	13.4	9.2	8.6	7.8	6.7	4.0	4.0
11	4.0	3.6	2.8	2.8	2.5	2.8	3.4	5.6	10.1	11.6	13.6	13.4	14.9	15.7	14.6	15.1 ^F	14.0	13.3	11.1	8.8	9.6	6.8	4.0 ^V	(5.0) ^S
12	4.8	4.0 ^F	3.5	4.0	3.5	2.7	2.7	4.7	8.8	13.0	12.1	11.4	12.8	13.3	13.4	13.1	12.4	12.1	7.3	8.2	7.5	6.7	5.1	5.4
13	5.2	4.8	4.3	3.0	3.0	3.2	3.2	5.9	9.5	11.5	11.7	13.2	12.4	13.2	14.9	14.2	13.4	11.6	9.3	9.8	9.6	8.6	5.9	4.7
14	3.8	3.1	3.0	3.0	3.0	3.0	3.7	5.7	6.5	10.1	11.3	12.4	14.1	13.0	13.8	14.1	15.0	14.0	10.5	11.3	8.4	8.0	5.0	5.8
15	4.1	4.2	3.6	3.8	3.2	3.8	5.8	7.7	10.3	11.9	12.4	13.2	13.2	13.5	13.5	13.8	13.1	11.5	8.9	7.7	7.5	6.2	4.8	4.7
16	4.7	3.5 ^F	3.4 ^F	3.5	2.7	2.5	2.8	4.6	9.3	9.9	12.4	13.3	12.6	12.1	12.5	13.1	11.6	10.4	9.4	8.4	8.2	6.0	5.4	5.3
17	4.1	4.0	3.6	3.4	3.4	3.4	3.5	5.2	9.6	12.0 ^F	14.1	13.6	13.0	12.5	14.0	13.1	12.4	10.2	8.4	7.7	7.2	6.5	4.3	4.4
18	4.3	4.9	4.6 ^T	3.0 ^F	2.6 ^F	2.9	3.0	5.5	9.2	9.4	12.1	11.7	12.7	12.4	12.7	12.0	11.9	10.8	7.8	7.5	8.0	7.5	3.8	3.9
19	(4.2)	4.3	3.7	3.9	4.0	2.5	3.1	4.1	8.5	8.4	12.1	13.3	12.6	11.5	11.3	11.9	12.3	10.2	8.7	8.7	8.6	5.9	4.9	3.7
20	3.0	2.8	3.1	3.0	2.7 ^T	3.0	3.3	4.3	9.1	8.9 ^P	13.4	13.4	13.9	12.8	13.3	13.0	11.6	10.7	9.1	9.4	(12.0) ^F	4.5	4.2	4.4
21	3.8	3.5	3.5	2.8	3.7	3.6	3.3	4.1	8.0	7.4	16.6 ^F	14.4	12.6	12.9	12.6	12.9	11.0	9.3	8.9	4.8	4.5	3.8 ^F	4.4	4.4
22	4.0	4.1	2.8	2.6	2.5 ^F	3.5	3.6	3.8	8.4	8.0	11.7	12.2	12.6	16.4 ^F	16.2	B	B	2.9	8.4	8.0	5.3	4.8	4.0	4.1
23	3.4	3.5	3.6	4.0	2.8	2.9	3.0	4.8	9.5	10.6	14.1	14.9	15.3 ^T	B	B	16.1	10.6	8.5	6.7	5.3	3.5	3.5	4.0	4.1
24	3.7 ^F	3.7	4.4	3.2	3.3 ^F	3.5 ^F	3.2 ^F	3.8	9.5	11.5	14.0	13.1	13.5 ^T	13.4	13.9	13.2	11.5	9.7	9.4	8.4	8.0	5.3	5.0	4.4
25	2.8	3.2	3.0	3.2	3.0	3.9	3.7	5.0	8.5	8.0	(10.0) ^F	11.3	11.8	12.9	13.0	11.6	10.8	10.4	9.0	10.0 ^S	4.6	3.6	3.9	3.1
26	3.0	2.6 ^F	3.5 ^F	2.9	3.0	3.0	3.0	4.2	10.7 ^F	13.9	14.5	14.3	15.4	11.8	13.5	13.5	13.8	12.2	11.5	9.1	8.3	7.3	3.6	4.0
27	3.0	2.9	2.6	2.4	2.5	2.6	3.3	4.8	9.2	10.3	11.6	14.3	14.4	11.8	13.0	12.7	11.3	8.9	7.5	6.3	6.0	4.5	5.1 ^F	4.2
28	4.3	4.3	4.9	3.2	3.5	3.1	3.9	4.1	8.6	13.4	12.7	13.4	15.2	15.4 ^T	16.4 ^T	15.7	14.0	11.9	9.4	8.8	6.5 ^T	6.0	5.9	5.6
29	5.4	5.4	3.9 ^F	3.2	3.5	3.1	3.9	4.1	8.6	13.4	12.7	13.4	13.4	12.2	11.7	12.1	10.3	10.8	9.4	6.6	16.3 ^S	5.0 ^F	4.9	6.3
30	5.8 ^J	5.3	4.8 ^T	2.7	2.1	2.5	3.6	5.0	9.0	10.2	12.8	14.7	13.1	12.6	11.4	11.3	8.6	8.4	8.1	7.0 ^T	7.8	4.2 ^T	5.0	5.1
31	3.5	2.6	3.3 ^F	3.4 ^F	2.6 ^F	3.0 ^F	3.4 ^T	4.4	7.6	8.9	12.8	14.5	13.0	10.7	12.0	12.1	11.9	11.0	9.4	7.7	6.1	7.2	6.3	4.7
Mean Value	4.1	3.4	3.2	3.1	3.1	3.1	3.4	5.0	9.4	11.1	12.5	13.2	13.2	13.3	13.4	13.1	12.4	11.0	9.0	8.2	7.3	6.5	4.8	4.6
Count	31	31	31	31	31	31	31	31	30	29	30	30	30	30	29	28	29	29	30	31	31	31	31	31

Speed 12.5 Mc to 12.8 Mc in 15 min

Manna

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Dec 1949

$h_p F_2$

135° E Mean Time Yamagawa

Lat. 31° 12.5' N
Long. 139° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	450	450	450	380	360	320	310	240	S	310 ^F	(320) ^F	330 ^F	370	350	330	310	260	260	260	260	260	250	250	250	
2	280	370	330	350	320	350	330	380	270	300	280	310	330	330	330	340	330	280	260	(280) ^F	320	350	370	360	
3	320	310	320	320	290	370	320	310	290	300 ^F	310	320	340	340	340	340	310	300	290	300	310	280	300	410	
4	450	420	320	310	260	(550) ^N	400 ^K	290	290	300	310	320	330	330	370	370	350	340	320	310	350	300	340	330	
5	410	350	310	340	300	430	320	320	C	C	C	C	C	C	C	C	C	C	C	280	320	(330) ^F	310	370	
6	360	360	370	410	380	440	370	300	260	290	300	340	340 ^F	(370) ^F	(380) ^F	(330) ^F	S	300	300	300	300	250	310	400	
7	390	380	340	340	300	370	370	300	270	290	300	310	330	330	360	340	340	270	290	330	300	300	280	330	
8	330	360	370	480	360	360	270	340	280	300	310	340	370	330	330	350	370	280	290	360	290	320	280	360	
9	340	340	310	360	330	380	410	320	280	280	310	310	340	370	340	330	350	310	280	280	340	360	290	290	
10	310	400	(420) ^F	360	320	350	290	220	270	290	280	340	340	340	350	350	350	310	270	270	270	270	390	380	
11	310	340	390	410	420	430	340	360	290	300	310	330	360	360 ^F	340	360 ^F	340	320	280	330	310	280	380	(410) ^S	
12	350	350	360	320	280	480	380	320	270	290	290	350	360	350	360	320	320	280	300	300	300	290	360	350	
13	320	320	390	330	480	410	380	340	280	280	340	320	310	340	340	360	320	290	270	320	310	290	320	310	
14	320	380	400	340	320	(340) ^F	360	300	280	280	280	340	320	320	340	330	330	320	310	300	290	310	320	310	
15	310	350	400	360	440	420	360	290	290	280	300	320	350	350	340	330	330	320	310	300	290	320	320	310	
16	290 ^S	360	360	300	260 ^F	410	360 ^F	350	280	290	300	320	340	340	370	370	320	310	320	320	320	320	320	320	340
17	320	360	380	380	340	400	340	350	300	300	310	360	340	350	350	330	310	300	300	320	280	290	290	340	
18	340 ^F	360	(320) ^F	380 ^F	400	360	300	300	250	300	300	290	310	330	330	360	310	290	290	320	280	290	350	390	
19	(360) ^F	350	350	380	330	320	310	330	240	250	350	270	340	340	330	300	310	310	300	310	300	290	340	340	
20	400	370	410	370	350 ^F	390 ^F	330	340	260	280	300	320	320	320	320	320	240	290	280	270	270	320	340	350	
21	400	370	370	350	400	290	370	380	310	310	(360) ^F	360	320 ^F	350	360	310	290	290	300	300	280	(280) ^F	480 ^F	370	
22	350	290	280	310	280	430	270	360	330	320	310	300	320	320	310	B	B	300	290	310	380	320	310	350	
23	310	310	310	320	290	410	380	340	280	300	360	340	320	320	B	B	220	240	300	280	280	260	360	360	
24	(300) ^F	260	300	430	390 ^F	350 ^F	330	390	300	290	290	300	340	350	340	310	310	300	300	300	270	270	400	310	
25	370	340	330	360	400	370	320	360	300	350	(420) ^S	310	350	310	360	320	320	300	300	300	300	370	350	420	
26	370	370	370	420	410	360 ^F	310	300	280	280	360	320	330	340	350	340	310	320	270	300	300	330	330	320	
27	360	330	360	380	430	460	360	360	290	280	360	300	310	310	310	300	270	300	320	290	350	350	360	340	
28	350	350	260	410 ^F	370	390	400	360	280	310	300	360	330	(340) ^F	(280) ^F	(330) ^F	320	(300) ^F	270	(310) ^F	360	360	360	300	
29	310	330	300	300	300	330	260	330	300	310	330	360	320	340	340	320	290	(280) ^F	280	(310) ^F	310	350	350	350	
30	(290)	290	260	290	430	440	400	320	270	300	340	300	310	340	330	300	290	320	290	(270) ^F	320	440	390	350	
31	370	350	390	370	400 ^F	(420) ^F	(380) ^F	350	270	310	360	310	300	300	360	360	310	300	290	290	300	300	360	310	
Mean Value	340	350	330	360	360	340	340	340	285	290	300	310	330	340	340	330	320	300	295	300	310	310	340	350	
Count	31	31	31	31	31	31	31	31	30	29	30	30	29	29	28	29	29	29	30	29	31	31	31	31	

Summit 12, No. 10, 15, etc. in 15-min. Manual

Kadio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 31° 12.5' N
Long. 130° 37.7' E

Yamagawa

135° E Mean Time

h'F2

Dec. 1949

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.0	3.2	3.2	2.4	2.3	2.8	2.7	2.7	2.5	2.7	2.5	2.6	2.7	2.7	2.6	2.7	2.5	2.2	2.0	2.0	2.0	2.2	2.2	2.1
2	2.4	2.8	3.0	3.0	2.8	2.1	2.0	3.0	2.3	2.3	2.5	2.7	2.5	2.0	2.5	2.4	2.4	2.3	2.1	2.2	2.2	2.0	2.5	2.4
3	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.4	2.5	2.4	2.4	2.0	2.5	2.0	2.6	2.6	2.3	2.1	2.4	2.5	2.3	2.7	2.2
4	3.0	3.0	3.0	2.4	2.3	4.1	2.4	2.4	2.5	2.7	2.6	2.8	2.7	2.8	2.4	2.8	2.8	2.5	2.1	2.4	2.4	2.2	2.7	2.4
5	3.0	3.0	2.6	2.6	2.7	3.0	2.8	2.8	C	C	C	C	C	C	C	C	C	C	C	2.4	2.4	2.4	2.7	2.0
6	3.0	3.0	3.0	3.0	2.4	2.4	3.1	2.5	2.5	2.3	2.5	2.2	2.0	2.7	2.7	3.0	2.5	2.2	2.1	2.1	2.2	2.2	2.5	3.0
7	3.1	3.1	2.8	2.8	2.4	3.0	3.0	2.7	2.7	2.4	2.7	2.4	2.8	2.5	2.6	2.8	2.6	2.2	2.2	2.5	2.5	2.3	2.3	2.8
8	2.4	2.0	3.3	3.6	3.4	A	3.2	2.2	2.2	2.6	2.5	2.4	2.4	2.7	2.4	2.4	2.8	2.6	3.0	2.8	2.4	2.3	2.6	2.9
9	2.4	2.0	2.4	2.8	2.6	2.5	3.5	3.0	2.4	2.4	2.4	2.4	2.7	2.0	2.6	2.8	2.8	2.6	2.3	2.5	2.7	2.1	2.4	2.3
10	2.3	2.3	2.2	3.1	3.0	3.2	3.1	2.8	2.8	2.8	2.4	2.4	2.7	2.6	2.7	2.8	2.8	2.6	2.3	2.5	2.7	2.3	2.4	2.3
11	2.8	3.0	3.5	3.6	3.0	3.0	3.0	3.0	2.4	2.4	2.5	2.7	2.6	2.4	2.4	2.8	2.8	2.6	2.2	2.3	2.1	2.3	2.1	2.0
12	2.4	3.0	3.0	2.3	3.1	3.0	3.2	3.0	2.4	2.4	2.4	2.4	2.7	2.6	2.4	2.8	2.8	2.6	2.2	2.3	2.1	2.3	2.5	2.0
13	2.7	2.8	2.6	2.7	1.4	3.0	3.2	2.4	2.6	2.4	2.5	2.7	2.7	2.7	2.4	2.4	2.7	2.4	2.4	2.4	2.2	2.4	2.6	2.6
14	2.6	3.0	3.2	2.8	2.8	2.8	2.4	2.4	2.8	2.3	2.3	2.3	2.7	2.6	2.7	2.6	2.5	2.0	2.4	2.4	2.2	2.2	2.5	2.0
15	2.6	2.5	3.1	2.4	2.4	3.3	2.4	2.5	2.5	2.5	2.5	2.7	2.8	2.0	2.8	2.8	2.7	2.4	2.4	2.4	2.7	2.4	2.6	2.9
16	2.6	2.0	3.0	2.6	2.3	3.4	2.4	2.4	2.4	2.4	2.5	2.8	2.7	2.5	2.4	2.5	2.4	2.3	2.5	2.2	2.6	2.7	2.9	2.4
17	2.8	3.0	3.4	3.0	2.8	3.0	3.2	3.0	2.5	2.6	2.5	2.4	2.5	2.4	2.4	2.7	2.4	2.2	2.2	2.2	2.4	2.4	2.5	2.4
18	2.7	2.2	2.4	2.2	2.8	3.3	3.0	2.5	2.2	2.4	2.4	2.4	2.8	2.4	2.7	2.4	2.7	2.5	2.2	2.4	2.3	2.2	2.6	3.1
19	3.0	3.0	3.2	2.8	2.7	2.8	2.5	2.8	2.3	2.2	3.0	2.4	2.8	2.8	2.8	2.6	2.8	2.5	2.2	2.3	2.2	2.2	2.3	2.4
20	2.4	2.4	2.5	2.5	2.0	2.3	2.0	2.0	2.3	2.4	2.6	2.7	2.6	2.4	2.4	2.3	2.3	2.5	2.3	2.2	2.2	2.2	2.0	2.4
21	3.0	3.1	3.1	3.1	3.2	2.7	3.0	3.7	2.7	2.8	2.4	2.5	2.6	2.8	2.4	2.8	2.4	2.1	2.2	2.4	2.6	2.4	2.2	2.4
22	2.8	2.5	2.4	2.4	2.1	3.1	2.3	2.8	2.7	2.8	2.4	2.7	2.8	2.6	2.6	2.5	2.3	2.2	2.5	2.5	2.5	2.4	2.5	2.1
23	2.8	2.6	2.6	2.6	2.7	3.7	3.4	3.0	2.6	2.4	2.4	2.7	2.7	2.6	2.5	2.4	2.4	2.3	2.4	2.4	2.4	2.5	2.7	3.1
24	2.8	2.3	2.8	2.4	3.2	2.7	2.6	3.2	2.4	2.3	2.5	2.5	2.7	2.5	2.4	2.6	2.5	2.4	2.6	2.2	2.1	2.1	2.6	2.8
25	3.0	3.0	2.7	2.4	3.1	3.0	2.5	3.0	2.7	3.0	2.5	2.8	3.0	2.8	2.7	2.6	2.7	2.6	2.1	2.2	2.2	2.4	2.1	2.2
26	3.1	3.2	2.8	2.3	3.2	3.0	2.4	2.8	2.6	2.5	2.5	2.6	2.6	2.6	2.4	3.0	2.5	2.5	2.4	2.4	2.3	2.4	2.4	3.0
27	3.0	3.1	3.2	3.4	3.7	3.4	3.1	3.0	2.7	2.5	2.4	2.4	2.6	2.6	2.6	2.4	2.4	2.4	2.4	2.3	2.3	2.4	2.7	3.0
28	2.3	2.4	2.4	2.1	2.4	2.2	2.0	3.0	2.8	2.8	2.8	2.8	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
29	2.4	2.6	2.3	2.7	2.6	2.3	2.9	3.0	2.8	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
30	2.2	2.2	2.2	2.3	3.1	3.0	2.4	2.5	2.6	2.6	2.6	2.6	2.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
31	3.0	2.7	2.9	2.8	3.6	3.0	3.0	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Median Value	2.9	2.9	2.9	2.8	2.4	3.2	3.0	2.9	2.5	2.5	2.6	2.7	2.7	2.7	2.8	2.7	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Count	31	31	31	31	31	31	31	31	30	30	30	30	30	30	30	30	30	30	30	31	31	31	31	31

Example to 15-min

Y 3

Radio Regulatory Agency (Deputcho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 35° 12' N
Long. 139° 37' E

f_oF₁

Dec. 1944

Yamagawa

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1							Q	Q	Q	L	Q	C	L	L	L	L	Q	Q							
2							Q	Q	Q	L	Q	L	L	L	L	L	Q	Q	Q						
3							Q	Q	Q	Q	Q	L	L	A	L	L	Q	Q	Q						
4							Q	Q	Q	Q	Q	Q	Q	Q	L	A	Q	Q	Q						
5							Q	Q	C	C	C	C	C	C	C	C	C	C	C						
6							Q	Q	Q	Q	Q	Q	L	L	L	L	Q	Q	Q						
7							Q	Q	Q	Q	Q	Q	L	L	L	L	L	L	Q						
8							Q	Q	Q	Q	Q	Q	L	L	L	L	L	L	Q						
9							Q	Q	Q	Q	Q	Q	L	L	L	L	L	L	Q						
10							Q	Q	Q	Q	Q	L	L	L	L	L	L	L	Q						
11							Q	Q	Q	Q	Q	L	L	L	L	L	L	L	Q						
12							Q	Q	Q	Q	Q	L	L	L	L	L	L	L	Q						
13							Q	A	Q	Q	L	L	L	L	L	L	L	L	Q						
14							Q	Q	L	Q	L	L	L	L	L	L	L	L	Q						
15							Q	Q	Q	Q	Q	L	L	L	L	L	L	L	Q						
16							Q	Q	Q	Q	Q	L	L	L	L	L	L	L	Q						
17							Q	Q	Q	L	Q	Q	Q	Q	L	L	L	L	Q						
18							Q	Q	Q	Q	Q	L	L	L	L	L	L	L	Q						
19							Q	Q	Q	Q	L	L	L	L	L	L	L	L	Q						
20							Q	Q	Q	Q	L	L	L	L	L	L	L	L	Q						
21							Q	Q	L	L	L	L	L	L	L	L	L	L	Q						
22							Q	Q	Q	Q	Q	L	L	L	L	L	L	L	Q						
23							Q	Q	L	L	L	L	L	L	L	L	L	L	Q						
24							Q	Q	Q	Q	L	L	L	L	L	L	L	L	Q						
25							Q	A	Q	Q	Q	L	L	L	L	L	L	L	Q						
26							Q	Q	Q	Q	L	L	L	L	L	L	L	L	Q						
27							Q	Q	L	Q	L	L	L	L	L	L	L	L	Q						
28							Q	Q	Q	Q	Q	L	L	L	L	L	L	L	Q						
29							Q	Q	Q	Q	L	L	L	L	L	L	L	L	Q						
30							Q	Q	L	L	L	L	L	L	L	L	L	L	Q						
31							Q	Q	Q	A	L	L	L	L	L	L	L	L	Q						
Median Value							-	-	-	-	-	-	-	-	-	-	-	-	-						
Count							0	0	0	0	1	0	0	0	0	1	0	0	0						

Sweep 1.5 Mc (0.5 Mc in 1.5 min) Manual

Radio Regulatory Agency (Denshicho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Dec. 1949

h'F1

Lat. 31° 12.5' N
Long. 130° 37.7' E

Yamagawa

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							Q	Q	Q	250	Q	C	220	230	210	250	Q	Q						
2							Q	Q	Q	220	200	250	220	220	Q	Q	Q	Q						
3							Q	Q	Q	Q	Q	220	210	A	250	A	Q	Q						
4							Q	Q	Q	Q	Q	Q	C	Q	240	A	Q	Q						
5							Q	Q	Q	C	C	C	C	C	C	C	C	C						
6							Q	Q	Q	Q	Q	Q	230	230	Q	250	Q	Q						
7							Q	Q	Q	Q	Q	Q	230	230	Q	250	250	Q						
8							Q	Q	Q	Q	Q	Q	260	Q	240	210	220	Q						
9							Q	Q	Q	Q	230	220	240	230	230	260	260	Q						
10							Q	Q	Q	Q	Q	250	250	Q	240	240	230	220						
11							Q	Q	Q	Q	260	240	230	260	260	210	260	Q						
12							Q	Q	Q	Q	Q	Q	240	240	240	240	240	Q						
13							Q	A	Q	Q	230	230	240	240	240	240	240	Q						
14							Q	Q	Q	210	Q	220	240	240	240	Q	Q	Q						
15							Q	Q	Q	Q	Q	250	250	250	240	240	240	Q						
16							Q	Q	Q	Q	Q	260	Q	Q	230	Q	Q	A						
17							Q	Q	Q	Q	250	Q	Q	Q	Q	230	240	Q						
18							Q	Q	Q	Q	Q	220	220	210	220	Q	240	Q						
19							Q	Q	Q	Q	210	Q	230	230	Q	250	Q	Q						
20							Q	Q	Q	Q	230	240	240	210	220	Q	240	Q						
21							Q	Q	Q	200	260	240	220	210	240	240	Q	Q						
22							Q	Q	Q	Q	Q	240	220	210	240	240	Q	Q						
23							Q	Q	Q	Q	Q	240	Q	220	210	Q	Q	Q						
24							Q	Q	Q	Q	220	240	230	230	220	210	Q	Q						
25							Q	A	Q	Q	Q	210	220	210	230	Q	Q	Q						
26							Q	Q	Q	Q	Q	250	210	240	240	240	240	240						
27							Q	Q	Q	Q	220	220	240	240	240	240	Q	Q						
28							Q	Q	Q	210	240	230	230	220	Q	220	Q	Q						
29							Q	Q	Q	Q	Q	240	240	220	220	240	Q	Q						
30							Q	Q	Q	240	240	250	240	240	240	240	240	240						
31							Q	Q	Q	A	240	230	240	240	240	240	220	A						
Mean Value										250	230	240	230	230	240	240	240							
Count							0	0	5	6	15	22	26	24	25	18	14							

Sweep 2-Mc to 18-Mc in 15-min

Manual

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

Lat. 31° 12.5' N
Long. 130° 37.7' E

Yamagawa

f_oE

Dec. 1949

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							B	1.7 ^B	2.4	(2.0) ^A	A	C	3.3	A	A	2.4 ^T	2.3	2.1						
2							B	B	(2.6) ^A	A	3.4 ^T	A	A	A	B	3.1	B	2.3						
3							E	1.7	2.7	3.0	3.3	A	A	A	A	B	2.8	(2.2) ^B						
4							B	1.7 ^B	2.3	3.1	(3.5) ^T	F	F	F	A	A	A	A						
5							B	1.5	C	C	C	C	C	C	C	C	C	C						
6							A	A	A	A	A	A	A	A	A	3.4	3.1	2.8	A					
7							B	1.4	2.2	AF	3.5 ^T	3.4	3.5	A	A	3.2 ^T	2.9 ^A	2.1						
8							B	1.3	A	A	3.7	A	A	A	A	A	A	A						
9							B	1.5	2.4 ^F	3.1	3.3	3.7	3.5	B	B	A	A	A						
10							B	1.7 ^A	A	A	A	A	A	A	A	A	A	A	B					
11							F	B	1.8	A	A	A	A	A	A	3.8 ^A	B	B	A					
12							F	1.5 ^P	2.5 ^J	2.4	3.5	A	3.7	3.7	A	A	2.3	A						
13							B	A	A	A	2.9	B	A	2.6	A	A	A	A						
14							B	B	2.1 ^A	A	A	A	A	A	A	A	A	A						
15							F	B	2.1	AF	2.2 ^A	Δ	3.3 ^A	A	3.2 ^T	A	2.2 ^A	2.0						
16							F	F	(2.2) ^A	2.6	A	B	3.9	A	3.4	3.1	2.8 ^B	A						
17							B	B	(2.3) ^A	3.0 ^T	A	B	B	3.5 ^B	3.3 ^B	B	2.8 ^B	A						
18							F	1.4 ^P	2.1	2.7	3.2	3.2 ^A	A	A	A	A	A	A						
19							B	B	2.1	A	3.6	A	A	A	3.5 ^B	A	A	A						
20							F	B	(1.3) ^T	A	3.0	A	B	3.4	B	3.0	2.6	2.0 ^B						
21							B	A	(3.3) ^A	A	A	A	A	3.6	3.3	A	(2.6) ^A	A						
22							B	B	(2.4) ^B	(2.1) ^A	3.4	3.5 ^T	3.5	(3.5) ^T	A	3.1 ^A	A	A						
23							F	B	A	2.7	3.1	A	(2.4) ^A	3.4	(3.3) ^A	3.1	(2.9) ^A	A						
24							B	B	2.2	2.9	3.5	A	3.4	3.6	B	3.5 ^B	A	2.2						
25							B	A	2.2 ^J	3.0 ^A	A	A	B	A	A	A	A	A						
26							F	1.3 ^T	2.0 ^A	A	3.2	3.4	3.7	3.6	3.3	A	2.7 ^A	2.0						
27							A	B	A	A	2.9	A	(3.4) ^A	A	A	A	A	A						
28							B	1.4 ^B	2.0	2.5	A	A	A	A	B	3.1 ^J	A	A						
29							B	B	2.7 ^A	3.3	3.5	3.5	3.2 ^A	A	A	A	A	C						
30							B	1.4 ^T	2.0 ^A	A	B	B	B	A	3.5 ^A	3.0 ^A	A	(2.1) ^T						
31							B	P	A	A	A	A	A	A	2.6	A	A	A						
Mean Value							F	1.5	2.2	2.4	3.3	3.4	3.6	3.3	3.3	3.1	2.8	2.1						
Count							9	14	21	16	17	6	14	12	9	13	14	11						

Sweep (2 Mc to 6.5 Mc in 15 min)

Manual

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 31° 12' 5" N
Long. 139° 37.7' E

Yamagawa

k'E

Dec. 1949

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							B	B	B	11.0	11.0	11.0	11.0	A	A	10.6	11.0	A						
2							E	B	A	A	A	A	B	A	B	10.0 ^A	E	A						
3							E	B	12.0	11.0	A	A	A	A	A	10.0	11.0	13.0	11.0 ^B					
4							B	B	A	10.0	11.0	11.0	11.0	10.0 ^B	A	A	A	A	A					
5							B	B	C	C	C	C	C	C	C	C	C	C	C					
6							A	A	A	A	A	A	A	A	A	12.0	12.0	11.0	A					
7							B	B	11.0	AE	11.0	10.0	10.0	10.0	A	11.0	11.0	A	11.0					
8							A	B	A	A	A	A	A	A	A	11.0	11.0	13.0	B					
9							B	B	10.0	11.0	10.0	11.0	10.0	10.0	A	A	A	A	A					
10							B	B	13.0	12.0	A	A	A	A	A	A	A	A	A					
11							E	B	13.0	A	A	12.0	12.0	12.0	13.0 ^B	B	B	A						
12							E	B	A	11.0	A	11.0	11.0	A	A	A	12.0	A						
13							B	B	11.0	12.0	11.0	A	11.0	A	A	A	A	A						
14							B	B	11.0	A	A	A	A	A	A	11.0	10.0	A						
15							E	B	12.0	AE	11.0	11.0	11.0	A	10.0 ^A	A	10.0	A						
16							E	E	A	11.0	12.0	12.0	13.0	A	12.0 ^A	12.0	12.0	A						
17							B	B	13.0	B	A	11.0	11.0	B	13.0	B	B	3.0	A					
18							E	B	11.0	13.0	12.0	11.0	A	A	A	A	A	A						
19							E	B	B	A	11.0	10.0	10.0	A	10.0	10.0	11.0	11.0	B					
20							E	B	B	12.0	A	11.0	A	11.0	10.0	10.0	10.0	10.0	B					
21							B	B	A	A	A	A	A	A	11.0	11.0	A	11.0	A					
22							B	B	B	12.0	12.0	13.0	11.0	10.0	A	10.0	A	A						
23							E	B	A	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	A					
24							B	B	A	12.0	10.0	A	11.0	11.0	E	11.0	A	B						
25							B	B	A	11.0	A	A	11.0	12.0	A	A	A	A	B					
26							E	B	11.0	11.0	10.0	10.0	10.0	10.0	11.0	A	12.0	15.0						
27							A	B	A	A	11.0	A	11.0	A	A	A	A	A	14.0					
28							B	12.0	15.0	12.0	A	A	A	A	A	11.0	13.0	A	A					
29							B	B	B	13.0	11.0	12.0	11.0	12.0	A	A	A	A	A					
30							B	B	12.0	A	11.0	11.0	11.0	B	A	11.0	11.0	A	P					
31							B	B	14.0	A	A	11.0	11.0	11.0	A	A	A	A	B					
Median Value									12.0	12.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0						
Count								3	17	15	19	16	18	16	14	15	13	13						

Sweep 12 Mc 10-15 min Monthly

Y 7

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Dec. 1949

fEs

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	B	2.2	2.5	G	2.6	2.2	B	G	G	4.4	C	4.0	5.2	5.6	G	G	3.8	3.2	3.1	2.3	2.1	G	
2	G	G	G	G	G	2.6 ^B	2.6	B	3.4	3.8	4.8	3.8	4.5	5.6	4.4	3.2	3.2 ^Y	3.4	C	2.8	2.6 ^Y	2.4	G	
3	G	G	G	G	G	G	G	G	3.0	5.0 ^Y	4.5	6.4 ^Y	6.2	7.0	5.2 ^F	(4.0 ^Y)	4.2	2.9	3.6	2.0	2.7	3.0	G	
4	G	3.0 ^B	G	G	G	G	B	3.1	2.7	G	G	G	G	G	5.8	5.8	4.6	3.6	(4.1 ^Y)	3.6	2.7	2.6	G	
5	G	G	G	G	G	2.6	B	2.4 ^Y	C	C	C	C	C	C	C	C	C	C	C	G	3.2	G	G	
6	G	G	G	G	G	2.9	2.3	2.7	1.8	G	4.8	3.5	3.6	4.2	3.6	G	3.4 ^Y	4.4	4.6	4.6	4.4	2.6	2.6 ^F	G
7	2.7	2.6	G	G	G	G	3.0	G	3.0	4.8 ^F	4.8 ^Y	4.6 ^Y	4.2	4.8	4.6	5.0	4.0	3.0	3.5	4.4	4.8	3.8	3.4	3.4
8	3.0	2.6	5.5	5.4	3.6	3.6	3.4	G	4.0	4.2	3.8	4.2	5.0	5.0	5.1	4.2 ^F	3.3	3.2	2.4	G	G	G	G	3.1
9	G	G	G	G	G	G	G	2.0	2.8 ^F	G	3.3	G	5.0 ^Y	5.0	4.6	3.5	4.4	3.8	3.6	4.8	3.8	3.5	2.0	2.2
10	2.2	3.0	2.3	3.4	G	2.6	2.8	2.1	2.8	5.4	5.3	7.4	7.2	5.0	4.2	5.0	3.0	2.8	3.8	3.8	3.2	2.6	2.4	2.5
11	3.0	2.0	3.1	3.7	3.8	3.7	2.6	B	3.1 ^F	4.4	4.6 ^F	4.3 ^F	4.4	4.6 ^Y	4.6	4.6	4.6	3.8	3.2	3.4	3.8	3.2	3.8	3.3
12	3.2	2.6	2.3	G	G	2.6	2.6	B	2.7	3.6	4.4	4.5	5.0	G	4.5	4.0	G	3.4	3.4	3.4	2.6	G	3.3	2.5
13	3.0	2.4	2.6	2.4	2.0	G	2.8	3.6	2.8	G	B	4.2	4.4	4.2	3.5	4.8	4.0	3.6	2.5	3.2	G	2.8	G	G
14	G	G	G	G	G	G	G	G	3.3	4.6	4.7	4.4	5.0	4.6	5.0	4.6 ^Y	4.8	5.0	4.2	3.2	5.0	5.8	4.0	4.4
15	3.0	3.2	3.0	G	G	G	G	B	G	4.6 ^Y	4.4	4.0	4.3	5.0 ^Y	5.2	4.7	4.6 ^F	2.4	B	G	G	3.1	G	3.2
16	3.2	3.7	(2.6)	G	G	G	G	G	2.7	G	3.0	G	4.3	4.6	4.2	G	G	5	4.8	6.2	3.0	G	G	G
17	G	G	G	3.4	3.5	2.6	2.4	2.4	B	B	3.5	B	B	B	B	B	G	3.0	3.4	3.2	4.3	G	G	G
18	G	G	G	G	G	G	G	2.7	2.1	3.4	G	4.4	5.1 ^F	4.8	3.8	3.8	2.8	3.4	B	G	G	G	G	G
19	C	G	G	2.6	3.0	3.0	B	B	G	G	4.6	4.4	4.8	4.2	4.7	3.9	7.4	3.9	2.7	G	G	G	G	G
20	G	G	G	G	G	G	G	G	G	3.2	G	3.5	G	G	G	G	3.4 ^Y	G	2.1	B	C	G	G	G
21	G	G	G	3.4	3.1	2.8	2.1	2.2	2.6	3.8	3.2	5.0	4.2	4.7 ^Y	4.6	3.6	3.2	3.8	3.2	4.0	4.4	2.0	3.0	3.0
22	2.3	G	G	2.6	2.8 ^F	2.0	B	2.2	G	3.4	G	4.5	G	5.0	7.0	3.4	2.3	2.8	3.6	3.6	3.0	3.1	G	2.0
23	3.0	3.2	G	G	G	G	G	G	3.4	(3.8 ^Y)	3.8	5.2	5.0	G	4.0	3.8	5.0	4.4	4.8	3.2	2.9	2.1	2.1	2.8
24	3.4	3.1	3.2	2.5	F	G	B	B	2.6	G	4.6	4.6 ^F	G	G	4.2	G	3.0	3.0 ^Y	3.0	3.6	2.4	G	2.2	2.2
25	G	3.0	G	G	G	G	2.9	2.4	4.2	4.9	3.4	3.8	4.2	G	4.2	4.2	3.5	3.0	3.0	3.0	2.2	3.0	2.5	G
26	2.4	G	G	G	G	2.0	2.1	2.7	3.2	3.0	3.6	G	4.0	4.4	5.2	3.6	B	2.3	2.2	2.6	3.0	G	G	G
27	G	G	G	G	G	2.2 ^F	2.4 ^F	1.6	3.3	3.5	3.8	3.5	4.4	3.8	4.4	3.3	2.8	G	B	2.4	2.4	G	3.0	3.2
28	2.4	G	G	G	G	B	B	2.4 ^Y	3.2	3.6	3.6	3.6	4.4	3.8	4.4	4.4	3.2	3.1	2.2	2.4	4.2	3.2	3.2	3.2
29	2.8	2.4	2.2	2.6	3.0	2.2	3.0	3.0	3.0	3.1	4.0 ^Y	G	4.6 ^Y	G	4.5	4.2	3.4	3.4	4.7	3.0	2.0	G	G	G
30	G	G	G	G	2.1	2.3	2.3	2.3	3.5	3.0	B	B	4.2	4.5	5.2 ^F	4.8	3.8	3.3	3.8 ^Y	4.0 ^Y	G	2.6	3.2	2.3
31	G	G	2.6	2.4	G	2.4	F	B	3.2	7.6	5.3	4.5	4.7	4.8	4.3	3.8	4.8	4.2	B	3.6	3.2	3.0	3.0	4.4
Mean Value	G	G	G	G	G	2.0	2.4	2.3	2.8	3.5	3.8	4.2	4.4	4.6	4.6	3.9	3.4	3.4	3.4	3.2	3.0	2.6	2.2	2.0
Count	3.0	3.0	3.1	3.1	3.1	3.0	2.5	2.3	2.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.6	2.9	3.0	3.0	3.1	3.1	3.1

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Dec. 1949

(M3000)F2

Lat. 31° 13.5' N
Long. 130° 37.7' E

Yamagawa

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.4	2.6	2.4	2.6	(2.8) ^J	2.7	3.0	3.0	3.2	S	3.3 ^F	(3.2) ^C	3.1 ^F	(2.9) ^F	2.8	2.8	3.0	3.0	3.0	3.1	3.4	2.5	2.5	2.4
2	3.2	2.7	3.0	2.8	2.4	2.8	2.4	2.7	3.3	3.2	3.3	3.1	2.8	2.4	2.8	2.8	3.0	3.3	3.5	(3.2) ^F	3.0	2.8	2.9	2.8
3	3.3	3.1	3.0	2.9	3.2	2.6	3.0	3.2	3.0	3.1	2.9	3.1	2.4	2.8 ^F	2.4	2.4	2.4	3.1	3.2	3.0	3.0	3.2	3.1	2.5
4	2.5	2.5	3.0	3.3	(2.4) ^H	2.6	2.9	2.4	3.2	3.2	3.1	3.1	3.0	3.0	2.8	2.8	2.4	2.4	2.4	2.9	3.0	3.0	2.8	2.5
5	2.6	2.8	3.1	2.4	3.1	2.5	(3.1) ^B	3.0	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.1	2.9	(2.4) ^S	(2.4) ^S	3.0	2.8
6	2.4	2.8	2.7	2.6	2.8	2.7	2.5	2.7	3.3	3.1	3.1	2.9	2.9 ^P	(2.4) ^F	S	(2.7) ^J	(2.8) ^J	S	3.2	3.2	(2.7) ^S	3.5	3.1	2.6
7	2.7	2.7	2.8	2.6	2.7	2.6	2.7	3.1	3.2	3.1	3.2	3.1	3.0	2.4	2.8	2.4	2.4	3.3	3.0	2.8	3.0	3.1	3.2	2.8
8	3.0	2.8	2.8	2.7	2.7	2.4	3.2	2.4	3.2	3.2	3.2	2.8	2.8	2.4	2.4	2.8	2.7	3.3	3.1	2.4	3.3	3.0	3.2 ^S	2.8
9	2.8	2.7	3.2	2.7	2.9	2.6	2.6	3.1	3.3	3.3	3.1	3.0	2.4	2.7	2.6	2.4	2.8	3.0	3.3	3.1	2.4	2.8	3.3	3.1
10	3.0	2.6 ^P	(2.5) ^J	2.7	3.0	2.4	2.7	3.1	2.7	3.3	3.3	2.4	2.4	2.4	2.8	2.8	2.4	2.0	3.1	3.0	3.2	3.2	2.7	2.7
11	3.0	2.4	2.7	2.7	2.5	2.5	2.8	2.8	3.2	3.1	3.1	3.0	2.8	2.8 ^F	2.8	2.8	2.4	2.8	3.2	2.8	3.0	3.2	2.6	(2.6) ^F
12	2.8	2.8 ^F	2.8	3.0	2.6	2.5	2.8	3.0	3.3	3.3	3.2	3.2	2.4	2.8	2.8	2.4	2.4	3.3	3.1	3.0	3.1	3.1	2.7	2.9
13	2.9	3.0	3.2	2.4	2.6	2.6	2.4	2.4	3.1	3.3	3.1	3.1	2.4	2.4	2.4	2.4	7.0	3.1	3.2	3.0	2.4	3.0	2.4	3.0
14	3.1	2.7	2.6	2.4	3.2	(2.4) ^J	2.8	2.7	3.2	3.3	3.3	2.8	3.1	3.0	2.4	2.4	2.4	3.1	3.2	3.3	3.1	2.4	3.0	2.7
15	3.1	2.8	2.7	2.7	2.5	2.5	2.7	3.2	3.1	3.1	3.0	3.0	2.8	2.8	2.8	2.4	2.4	3.1	3.1	2.7	2.8	3.2	2.4	2.8
16	3.3	3.1 ^F	2.8 ^F	3.1	3.5 ^F	2.6	2.6	2.8	3.2	3.1	3.2	3.1	3.1	3.0	2.7	2.4	2.4	3.0	3.0	2.4	2.4	3.1	2.4	2.4
17	3.0	2.8	2.7	2.6	2.4 ^F	2.6 ^F	2.6	2.8	3.1	3.2 ^F	3.1	3.2	3.0	2.8	2.8	3.0	3.0	3.0	3.0	3.2	3.2	3.1	2.8	2.4
18	3.0	2.6	(2.8) ^J	3.1 ^F	2.7 ^F	2.6	2.4	3.2	3.3	3.1	3.2	3.2	2.4	3.0	3.0	2.8	3.1	3.2	3.1	3.0	3.2	3.2	2.7	2.8
19	(2.8) ^J	2.8	2.9	2.4	2.4	2.4	3.0	3.0	3.5	3.5	2.4	3.3	3.0	3.0	2.4	3.1	3.2	3.1	3.1	3.1	3.2	3.1	3.1	2.7
20	2.6	2.8	2.6	2.7	2.8 ^F	2.7	2.4	2.4	3.4	3.1 ^F	3.1	3.3	3.0	3.0	3.0	2.4	3.2	3.2	3.3	3.2	(2.4) ^J	2.6	2.8	2.8
21	2.7	2.8	2.6	3.0	2.6	3.0	2.6	2.7	3.0	3.1	(3.2) ^J	3.1	3.0 ^F	2.8	2.4	3.1	3.2	3.1	3.1	3.3	(3.2) ^F	2.6 ^F	2.6 ^F	3.0
22	2.8	3.3	3.1	3.1	3.4 ^F	2.4	3.3	2.9	2.4	3.1	3.1	3.2	3.1	3.0 ^F	3.2	B	B	3.2	3.0	3.1	3.0	2.4	3.1	2.8
23	3.1	3.1	3.1	2.4	2.8	2.6	2.8	2.4	3.3	3.1	3.1	3.1	3.0 ^F	B	B	2.4	3.0	3.0	3.1	3.0	3.0	3.4	2.8	2.7
24	(3.1) ^J	3.5	3.1	3.5	2.4 ^F	2.8 ^F	2.4	2.6	3.0	3.2	3.2	3.1	2.4	2.4	2.4	3.0	3.3	3.0	3.0	3.2	3.2	2.6	3.1	3.0
25	2.7	2.4	2.4	2.8	2.6	2.7	3.0	2.8	3.2	2.4	(3.0) ^J	3.1	2.4	3.1	3.1	3.0	3.1	3.1	3.1	3.2	2.4	2.8	2.8	2.6
26	2.7	2.4 ^F	2.4 ^F	2.6	2.6	2.8	3.1	3.1	3.3	3.3	3.2	3.0	3.0	3.0	2.8	2.4	2.4	3.1	3.1	3.3	3.1	3.0	3.0	2.4
27	2.4	3.0	2.8	2.7	2.5	2.4	2.7	2.8	3.3	3.3 ^F	3.2	3.1	3.2	3.0	3.0	3.1	3.3	3.2	3.5	3.2	2.8	2.8	2.4 ^F	2.8
28	2.4	2.7	3.2	2.6 ^F	2.7	2.6	2.6	2.8	3.2	3.2	3.2	2.9	3.1	(2.4) ^J	(2.7) ^J	(3.0) ^J	3.0	(3.1) ^J	3.3	3.2	(3.1) ^J	2.8	2.8	3.0
29	2.9	2.4	3.0 ^F	3.0	2.4	3.5	2.8	3.0	3.1	3.1	2.4	2.4	2.4	2.8	2.4	2.4	3.2	(3.3) ^J	3.4	3.1	(3.0) ^F	2.8	2.8	3.0
30	(3.1) ^J	3.2	3.3 ^F	3.1	2.5	2.5	3.0	3.0	3.2	3.2	2.4	3.3	3.2	2.4	2.4	3.2	3.1	3.0	3.0	(3.4) ^J	3.0	2.7 ^F	2.7	2.4
31	2.8	3.0	3.0 ^F	AF	2.8 ^F	F	2.6 ^F	2.4	3.3	3.0	2.8	3.0	3.1	2.8	2.4	(2.8) ^F	3.0	3.2	3.1	3.2	2.7	3.1	2.8	3.0
Median Value	2.4	2.8	2.9	2.8	2.6	2.8	2.9	3.1	3.2	3.2	3.1	3.1	3.0	2.4	2.4	2.4	2.4	3.0	3.1	3.1	3.0	3.0	2.4	2.8
Count	31	31	31	30	31	30	31	31	30	24	24	30	30	24	28	24	24	29	30	31	31	31	31	31

Manual

Speed 1.2 Mc to 5 Mc in 15 min

Y 9

Radio Regulatory Agency (Deupacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

Lat. 31° 12.5' N
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

f_{min} F

Dec. 1949

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.5	1.3	E	1.6	1.5	1.5	1.4	1.7	2.4	3.2	4.0	4.4	3.9	3.6	3.4	3.4	2.8	2.1	A	2.4	A	1.5	1.4	1.3
2	E	1.3	E	E	1.4	1.8	1.6	1.6	2.6	2.4	3.4	3.7	3.7	3.5	4.2	3.2	2.0	2.3	1.8	1.6	1.4	A	1.8	1.5
3	1.3	1.3	1.3	E	E	1.3	1.4	1.7	2.7	3.0	3.3	3.2	A	A	4.0	3.1	3.0	2.2	2.0	2.0	1.8	1.6	1.6	1.5
4	1.5	1.5	E	E	E	1.4	1.6	1.7	2.4	3.5	3.7	4.3	5.2	5.1	3.2	A	3.2	2.2	A	A	1.4	1.5	1.4	1.4
5	1.3	1.3	1.5	1.3	1.3	1.3	1.5	1.6	E	E	E	E	E	E	E	E	E	E	E	2.2	2.0	1.4	1.5	1.6
6	1.6	1.3	1.7	E	1.6	E	1.3	1.6	3.1	2.8	3.5	3.0	3.7	3.6	3.9	3.1	2.9	A	A	A	1.6	1.6	1.6	1.6
7	1.6	1.6	1.4	E	E	1.3	1.5	1.4	2.5	3.0	4.3	4.0	3.6	3.4	3.4	2.9	2.2	2.0	2.0	A	A	1.4	1.8	1.7
8	1.8	A	1.8	A	A	2.0	1.8	1.8	2.2	2.2	3.7	3.4	4.2	4.2	3.1	3.4	3.3	2.3	1.8	1.3	1.5	1.5	1.5	1.5
9	1.5	E	E	E	E	E	1.6	1.5	2.6	3.1	3.6	3.7	3.8	3.7	3.5	3.3	3.0	2.4	2.2	2.6	2.4	2.3	1.7	1.7
10	1.9	2.0	1.7	A	1.4	1.8	2.0	1.7	2.8	3.4	3.2	3.3	A	3.5	3.8	2.0	2.0	1.8	1.8	A	A	1.8	A	1.7
11	2.1	2.0	2.1	1.9	1.8	1.3	1.4	1.4	2.4	3.0	3.2	3.6	4.0	4.0	4.2	4.2	4.2	3.2	2.8	1.8	1.4	1.6	1.7	1.6
12	1.6	1.7	1.7	1.5	1.5	1.5	1.5	1.5	2.4	2.4	3.5	3.3	3.7	A	3.7	4.0	2.9	A	A	2.2	1.6	1.4	1.8	1.5
13	1.5	1.5	E	1.3	1.3	1.3	1.8	2.2	2.2	2.4	3.5	3.6	3.6	3.5	3.5	4.0	2.8	2.8	2.1	1.6	1.4	1.5	1.6	1.5
14	1.4	1.5	1.6	1.5	1.8	2.1	1.7	2.0	2.6	3.3	3.4	3.6	3.7	4.2	3.8	3.4	3.2	2.0	A	1.8	2.2	A	A	A
15	2.0	1.5	1.6	1.8	E	E	E	1.4	2.2	3.0	3.5	3.5	3.8	3.6	3.2	3.2	2.2	2.0	1.5	1.5	1.4	1.9	1.5	1.8
16	2.0	2.1	1.6	1.7	E	1.3	1.4	1.3	2.2	2.6	4.0	4.1	4.1	3.7	3.3	3.2	3.0	A	A	2.0	1.6	1.4	1.6	1.4
17	E	1.4	1.4	A	2.0	1.7	1.8	1.6	2.3	3.0	3.5	3.7	4.0	3.6	3.3	3.8	3.0	2.6	2.3	2.2	2.1	1.5	1.4	1.4
18	1.3	2.2	2.5	1.3	1.3	E	1.3	1.4	2.3	2.4	3.3	3.5	3.6	3.4	3.6	3.2	2.2	2.2	2.4	1.6	1.5	1.6	1.4	1.4
19	1.4	1.3	1.5	1.5	1.5	1.6	1.6	1.5	2.1	3.0	3.4	3.8	3.5	3.6	4.8	3.9	3.8	3.8	2.4	1.5	1.5	1.6	1.5	1.6
20	1.5	1.6	1.4	1.3	E	E	1.4	1.6	2.3	2.7	3.4	3.5	3.6	3.5	3.6	3.1	2.7	2.0	2.1	1.6	1.8	2.0	2.0	1.8
21	2.0	2.0	2.0	1.4	2.3	A	1.9	1.8	2.3	3.3	3.2	3.4	3.6	3.6	3.4	3.2	2.8	2.6	1.8	A	A	1.6	2.2	2.0
22	2.0	2.0	E	1.3	1.8	1.3	1.8	1.5	2.5	3.3	3.1	3.7	3.6	4.1	3.1	3.1	2.8	2.2	2.4	A	1.5	1.5	1.5	1.5
23	1.3	1.3	E	1.4	E	2.2	A	1.4	2.0	2.9	3.4	3.5	3.6	3.7	3.5	3.2	2.9	2.8	2.0	A	1.6	2.6	2.5	2.7
24	2.8	1.6	2.8	1.3	E	E	1.5	1.4	2.3	3.4	3.5	3.7	3.6	3.4	3.8	2.3	2.2	2.2	2.4	2.0	1.6	1.4	1.8	1.8
25	2.0	2.0	E	E	E	1.7	1.4	A	2.4	3.0	A	3.4	3.8	4.2	3.1	3.3	2.8	2.5	2.0	2.0	1.8	1.6	1.8	1.5
26	E	1.5	1.5	E	E	1.3	1.5	1.5	2.3	2.8	3.3	3.4	3.7	3.5	3.4	3.2	3.5	2.3	2.0	2.0	1.6	E	1.4	1.4
27	1.4	E	E	1.4	E	1.3	1.6	1.5	A	A	3.0	3.0	3.8	3.1	4.0	3.3	3.0	3.0	2.0	1.6	1.6	1.5	2.1	A
28	1.5	E	E	E	1.4	1.4	1.5	1.5	2.3	2.6	A	3.4	3.6	3.6	3.9	3.8	2.8	3.0	2.0	1.6	1.6	1.6	1.6	1.6
29	1.6	1.6	1.6	1.6	1.5	1.8	1.6	1.9	2.0	2.8	3.3	3.5	4.0	3.6	3.0	3.3	3.4	C	A	2.2	2.0	1.5	1.6	1.5
30	1.3	1.3	E	E	E	1.3	1.5	1.5	A	2.4	3.5	3.4	4.0	4.0	3.8	3.2	3.2	2.3	2.6	2.0	1.6	2.0	A	1.6
31	1.5	1.5	1.4	A	1.4	1.4	1.8	2.0	2.4	A	3.1	3.6	3.8	3.7	4.0	3.6	3.0	A	1.6	2.0	1.9	1.5	1.5	2.2
Median Value	1.5	1.5	1.4	1.3	1.3	1.3	1.5	1.6	2.4	3.0	3.4	3.5	3.7	3.6	3.6	3.3	2.9	2.3	2.0	2.0	1.6	1.5	1.6	1.5
Count	31	30	31	27	30	30	31	30	28	28	28	30	28	28	30	29	30	25	23	25	26	24	28	24

Sweep 1.2 Mc to 8.5 Mc in 1.5 min

Annual

Radio Regulatory Agency (Denpacho)
Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 31° 12.5' N
Long. 130° 37.7' E

Yamagawa

135° E Mean Time

f_{min} E

Dec 1949

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	G	B	2.0	G	G	G	1.6	1.7	2.0	1.8	1.8	2.0	2.2	2.0	2.0	1.8	1.8	1.7	1.6	1.6	1.7	1.3	E	G	
2	G	G	G	G	E	E	1.6	B	1.6	2.0	2.0	2.7	3.6	3.2	2.0	1.8	2.0	1.6	1.8	1.6	1.4	1.4	1.6	G	
3	G	G	G	G	G	G	G	1.6	1.4	1.8	1.8	2.1	2.0	2.3	1.8	2.0	2.0	2.1	2.0	1.8	1.8	1.8	1.8	G	
4	G	2.0 ^B	G	G	G	G	B	1.4	1.4	2.4	2.1	2.4	3.2	3.3	2.4	2.6	2.2	2.0	1.4	1.5	1.4	2.2	G	G	
5	G	G	G	G	2.0	G	B	1.4	G	C	C	C	C	C	C	C	C	C	C	G	1.6	G	G	G	
6	G	G	G	G	1.4	E	1.3	1.3	1.6	1.8	2.0	2.0	2.0	2.3	2.2	2.0	1.4	1.5	1.5	1.4	1.5	1.5	1.7	F	G
7	2.1	2.0	G	G	G	G	1.8	G	1.6	1.8	2.0	2.0	1.4	2.0	2.0	1.4	1.7	1.6	1.8	1.4	1.4	1.5	1.4	1.4	
8	1.3	E	E	E	1.4	1.5	1.8	B	1.6	1.8	2.0	2.2	2.2	2.2	1.4	2.0	2.1	2.2	2.0	G	G	G	1.5	1.5	
9	G	G	G	G	G	G	1.6	1.8	1.5	1.6	2.2	1.8	1.8	1.8	1.8	1.7	1.5	1.7	1.8	1.8	1.8	1.6	1.5	E	E
10	E	1.3	1.3	1.4	G	1.3	1.6	1.6	1.5	2.1	1.3	2.0	1.9	1.8	1.8	1.8	1.8	2.0	1.3	1.4	1.3	1.4	1.3	1.3	1.3
11	1.3	1.2	E	E	1.3	E	1.4	B	1.4	1.4	1.7	1.8	2.2	2.4	3.6	3.8	4.0	1.8	1.8	1.8	1.4	1.6	1.7	1.6	
12	1.6	1.7	1.6	1.5	1.5	1.5	1.5	1.5	2.0	1.4	1.4	1.5	1.6	2.1	2.5	2.6	2.1	1.9	1.8	1.5	2.2	G	1.5	1.5	
13	1.5	1.5	2.0	2.2	F	G	1.6	1.8	1.6	1.6	2.0	2.1	2.2	2.6	2.3	2.0	1.8	1.5	1.5	1.6	G	1.5	G	G	
14	G	G	G	G	G	G	G	B	1.7	2.2	2.1	2.2	2.0	1.6	1.8	2.0	1.6	1.8	1.8	1.8	1.8	1.6	1.6	1.6	
15	1.8	1.8	2.0	G	G	G	G	B	1.4	1.5	1.6	1.7	1.8	2.0	1.4	2.0	2.0	2.0	B	5	G	1.4	G	1.5	
16	1.3	1.4	1.2	G	G	G	G	G	1.6	1.7	2.2	2.5	2.5	2.4	2.2	2.2	2.1	1.7	2.0	1.6	G	G	G	G	
17	G	G	G	1.4	1.3	2.0	2.0	(1.7) ^B	B	3.0	2.1	B	3.1	B	B	B	2.4	1.9	1.8	1.6	1.9	G	G	G	
18	G	G	G	G	G	G	G	2.0	1.4	1.7	1.8	2.1	2.0	2.1	2.2	2.2	2.0	1.6	B	G	G	G	G	G	
19	C	G	G	2.0	2.0	2.0	B	B	2.0	2.0	2.0	2.0	2.4	2.2	3.2	2.5	2.4	3.3	1.8	G	G	G	G	G	
20	G	G	G	G	G	G	G	B	1.6	1.8	2.0	2.0	2.0	2.0	1.9	1.9	1.9	B	1.5	B	C	G	G	G	
21	G	G	G	2.0	2.2	2.2	1.9	1.6	1.6	2.0	2.2	2.2	2.0	2.0	2.0	2.0	1.4	2.0	1.8	1.5	2.0	1.5	1.4	2.0	
22	2.0	G	G	1.4	1.3	B	2.0	B	1.5	2.4	2.5	2.5	2.1	2.7	2.0	1.4	1.3	1.6	1.4	1.6	1.5	G	1.6	1.6	
23	1.4	1.7	G	G	1.4	G	B	1.6	1.8	2.0	2.0	2.0	2.4	2.0	2.0	2.0	2.0	2.0	2.0	1.6	1.4	1.3	1.9	2.1	
24	1.9	F	2.2	2.1	G	G	B	B	1.4	2.0	2.2	2.6	2.8	2.5	3.8	2.0	2.0	B	1.8	1.4	1.4	G	2.0	2.0	
25	G	2.0	G	G	G	E	1.8	1.4	1.7	1.4	2.0	2.2	2.2	2.6	2.6	2.6	2.3	1.4	2.1	2.0	1.6	1.6	1.6	G	
26	1.6	1.6	G	G	1.7	1.6	1.3	1.3	1.4	1.6	1.8	1.6	1.6	1.6	1.5	1.7	1.6	1.4	1.6	1.4	1.4	G	G	G	
27	G	G	G	G	1.7	F	1.9	E	1.8	1.4	1.8	1.6	1.8	1.8	1.9	1.8	2.0	1.4	B	1.4	G	G	1.5	1.5	
28	1.5	G	G	G	G	B	B	E	1.8	2.0	1.8	2.0	2.2	2.2	3.1	2.6	2.2	1.9	1.8	1.5	1.4	1.4	1.4	1.4	
29	1.6	E	1.6	2.0	1.8	1.8	2.0	2.2	1.8	1.8	2.0	2.0	2.2	1.8	1.7	1.7	(1.7) ^C	1.7	1.4	1.5	1.5	1.5	G	G	
30	G	G	G	1.8	1.4	1.6	1.6	1.6	1.4	2.0	2.0	1.8	3.8	2.0	2.1	2.0	1.9	1.8	1.4	1.6	1.5	1.3	1.8	1.8	
31	G	G	2.0	1.3	1.5	G	2.0	B	2.0	1.7	1.9	2.0	2.0	2.2	2.2	2.2	2.0	B	1.6	1.5	1.5	1.5	1.5	1.5	
Mean Value	G	G	G	G	G	G	1.6	1.6	1.6	1.8	2.0	2.0	2.0	2.2	2.0	2.0	2.0	1.8	1.8	1.5	1.5	1.4	1.3	G	
Count	30	30	31	31	31	30	25	21	24	24	30	30	29	22	29	29	30	28	28	30	20	21	31	31	

Frequency Mc to 1.5 Mc in 1.5 min Manual

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(不許複製非賣品)

編 集 兼
發 行 人

莊 宏

東京都港區青山北町4丁目1

發 行 所

電 波 廳

東京都港區青山北町4丁目1
電話赤坂(48) { 3913-3915
3991-3995

印 刷 所

科 學 新 興 社

東京都千代田區丸ノ内2ノ2丸ビル740號室