

IONOSPHERIC DATA IN JAPAN

FOR NOVEMBER 1949

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PREPARED BY RADIO REGULATORY AGENCY

(DENPACHO)

TOKYO, JAPAN

RADIO REGULATORY AGENCY

(DENPACHO)

TOKYO, JAPAN

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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.

November 1949

Tsuyoshi Amishima
Radio Regulatory Commissioner

SITE OF THE IONOSPHERIC STATIONS

Ionospheric observation is carried out at five stations in Japan.

The stations are situated as follows:

	longitude	latitude	site
Wakkanai	141° 41.1' E	45° 28.6' N	Wakkanai-machi, Soya-gun, Hokkaido
Fukaura	139° 54.1' E	40° 36.6' N	Fukaura-machi, Nishitugaru-gun, Aomori-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:

- Z_d . 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.

Radio Regulatory Agency (Denpaicho)
Aoyama-Kitamachi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Nov 19 49

foF2

135° E Mean Time

WAKKANAI

Lat. 45° 23.0' N
Long. 141° 41.1' E

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	4.5	4.2	4.2	4.2	4.3	4.2	5.0	I	T	(3.1)	(2.3)	B	B	(13.0)	12.0	12.0	C	7.5	7.4	5.5	4.7	4.6	4.0	3.6
2	3.4	3.7	3.4	3.7	3.2	3.6	4.6	S	0.9	1.5	(12.8)	(3.2)	(13.0)	12.1	10.9	10.7	C	8.4	8.2	6.2	4.2	3.8	3.4	4.2
3	4.1	4.2	(3.0)	C	C	7.1	7.1	C	C	C	C	C	(12.9)	C	C	C	C	8.7	(8.0)	5.2	4.8	4.5	4.5	4.3
4	4.2	4.2	4.0	4.0	4.0	4.0	5	B	11.5	12.6	(12.8)	(13.0)	(12.6)	(13.3)	(13.5)	(12.2)	S	8.0	8.0	6.6	5.2	4.5	4.7	4.4
5	4.4	4.6	4.5	4.4	4.5	4.7	5.6	8.6	12.0	12.5	(12.5)	(13.6)	13.1	(12.6)	(12.5)	(12.9)	S	C	C	7.4	6.2	5.8	5.4	5.1
6	5.1	5.1	4.9	4.9	4.4	4.2	5.7	11.2	C	C	C	C	C	C	C	C	C	6.9	7.0	7.0	(16.6)	5.1	5.8	4.7
7	4.8	4.2	4.4	4.9	4.9	4.9	3.1	5.9	S	(12.0)	13.2	C	C	C	C	C	C	7.0	7.5	5.6	4.6	4.6	4.7	4.6
8	4.8	5.0	4.8	4.9	5.0	4.7	5.7	5.7	S	B	13.8	14.0	D	13.0	10.1	9.5	8.6	8.1	7.4	5.8	6.0	5.1	5.2	5.0
9	5.2	5.2	5.2	5.2	5.2	C	6.1	9.2	11.9	12.9	B	13.1	13.4	S	B	B	B	(9.0)	6.8	7.1	7.1	6.5	5.3	5.1
10	5.0	4.8	4.9	5.1	4.6	4.9	5.8	8.9	11.8	12.5	13.0	14.0	12.9	12.9	13.7	12.6	B	B	8.0	6.8	5.8	5.1	4.8	4.8
11	4.6	4.5	5.1	4.8	4.9	5.7	5.3	8.5	11.0	12.7	14.0	14.0	(14.2)	13.7	12.8	11.3	11.3	10.5	8.8	7.5	7.4	7.7	7.7	(6.3)
12	5.5	5.7	5.1	5.0	4.7	5.4	6.7	(9.8)	11.5	(12.3)	(12.8)	13.2	(12.8)	(12.5)	(11.6)	(10.5)	(9.0)	7.6	6.7	6.7	5.3	4.6	4.2	4.5
13	4.5	4.1	4.4	4.4	4.4	4.1	4.2	4.5	8.2	(11.3)	S	S	S	S	S	S	S	8.2	7.6	7.2	6.1	6.0	5.6	5.2
14	5.0	3.9	5.2	5.2	4.7	5.2	5.8	8.6	12.0	13.7	13.4	(13.4)	(13.5)	(13.3)	12.4	12.3	(11.0)	8.4	9.0	5.0	4.6	4.5	4.9	4.7
15	4.5	3.9	4.0	4.0	4.0	4.4	4.3	4.3	11.0	(13.2)	12.8	S	B	B	B	B	10.9	(13.3)	7.3	6.4	(6.4)	3.8	4.0	4.1
16	4.1	4.0	3.8	3.3	3.5	3.6	4.8	5	C	(13.8)	D	13.8	D	12.4	13.2	12.7	10.9	8.1	7.7	7.1	6.6	4.6	4.7	4.5
17	4.4	4.6	4.5	4.4	4.8	4.3	5.0	8.5	C	(14.0)	(14.0)	(13.9)	C	S	10.2	S	S	6.7	C	C	4.3	3.2	3.7	2.6
18	2.7	C	3.0	4.2	4.1	3.8	4.2	R	R	S	C	C	S	C	10.6	(10.9)	10.4	(9.1)	7.8	6.5	6.1	4.4	3.9	2.6
19	3.0	3.9	3.6	3.9	3.6	4.7	4.5	C	(10.7)	C	C	C	C	C	C	12.2	10.6	7.5	7.6	6.7	5.3	4.2	2.9	4.5
20	4.8	5.0	4.5	4.2	3.7	3.6	3.8	(7.5)	C	C	C	C	C	C	C	C	C	8.6	7.8	7.5	6.5	6.5	4.7	4.6
21	5.2	4.9	4.9	5.8	(5.0)	5.8	5.5	C	A	C	A	A	D	A	S	12.0	10.3	9.0	7.4	4.8	4.3	3.8	3.5	3.2
22	3.2	2.8	3.1	2.5	3.5	2.7	4.4	B	(11.8)	12.5	(13.1)	(13.7)	12.7	(13.2)	(12.9)	12.0	10.3	7.7	5.6	6.6	5.2	4.5	4.9	5.0
23	4.7	4.1	4.3	4.3	4.3	4.3	4.0	4.0	7.6	10.5	11.8	D	14.2	11.9	C	(11.8)	11.4	9.5	8.1	6.6	6.1	4.2	3.9	3.5
24	3.6	3.5	3.6	3.6	3.7	3.1	3.8	6.4	11.0	13.7	14.6	13.8	12.4	12.0	12.2	11.9	9.8	C	C	C	5.9	4.1	4.4	4.1
25	3.8	4.0	4.1	4.1	4.1	4.1	3.2	6.8	11.2	S	S	S	10.8	B	11.5	9.7	9.8	5.0	6.0	4.8	3.7	3.9	3.9	3.9
26	4.0	4.0	4.1	4.1	4.1	4.1	3.6	7.1	11.0	12.1	12.7	12.4	12.1	11.9	11.2	11.0	9.4	(7.8)	7.4	(7.0)	5.3	(4.8)	(4.8)	4.0
27	4.0	4.7	4.5	3.9	4.7	4.3	4.4	7.5	10.7	11.5	12.9	12.7	12.1	12.7	11.8	11.0	9.4	7.9	(7.6)	6.5	5.3	4.5	4.9	4.5
28	4.8	4.5	3.9	4.0	4.1	4.2	4.5	7.1	(12.5)	B	(13.8)	B	D	(12.6)	(12.2)	(11.6)	10.6	7.8	6.7	5.4	4.2	3.8	3.9	3.9
29	3.8	3.8	3.8	3.7	3.9	4.0	3.8	7.2	10.7	B	C	B	C	S	12.2	S	S	7.5	7.5	6.6	5.5	4.8	4.7	4.6
30	4.8	4.7	4.0	3.8	3.9	3.5	3.6	8.1	11.4	11.9	(13.4)	(13.5)	(13.5)	B	B	10.0	7.5	6.8	6.2	6.3	3.9	3.9	2.7	
31																								
Median Virtual Height Count	4.5	4.2	4.4	4.2	4.3	4.2	4.5	8.2	11.4	12.6	13.1	13.6	12.9	(12.8)	12.2	12.0	10.5	8.1	7.6	6.5	5.3	4.5	4.7	4.5
	3.0	2.9	3.0	2.9	2.8	2.9	1.9	1.9	1.7	1.6	2.0	2.2	1.9	2.5	2.7	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

Sweep 1.0 Mc to 14.5 Mc in 1.5 min Manual

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

IONOSPHERIC DATA

Lat. 40°23.6'N
Long. 141°41'E

NOV 9.4.49

h p F Z

Wakanaï

135°E Mesth. 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	330	320	320	340	330	320	300 ^S	T	T	(260) ^F	(350) ^B	B	B	(420) ^F	420	390	C	330 ^F	310	310	340	370	360	440 ^F
2	470	470	380	480	370	420	370	S	270	280	(240) ^F	240	240	320	280	280	270	340	350	310	280	(270) ^F	370	
3	430	450	(1500) ^F	C	C	C	250	(120) ^S	D	C	C	B	(290) ^B	C	C	C	C	260	(260) ^S	(210) ^F	280	310	350	(270) ^S
4	(320) ^B	AF	AF	340	330	330	S	B	370	280 ^F	(250) ^F	(270) ^F	(270) ^F	(280) ^F	(280) ^F	(270) ^F	(270) ^F	S	260	240	270	340	310	310
5	310	340 ^F	310	340	360	380	320	330	330	310	350 ^F	(350) ^F	370	(290) ^F	(300) ^F	(280) ^F	S	C	C	280	270	340	350	370
6	330	330	470	400	410	420	(350) ^F	(300) ^F	C	C	C	C	C	C	C	C	C	C	C	330	400	360	420	510 ^F
7	460 ^F	390 ^F	420	(430) ^F	(400) ^F	380	350 ^P	S	(270) ^F	300	C	C	C	C	C	C	C	C	C	400	380	(360) ^F	420	510 ^F
8	420	390	380	370	390	320	C	C	S	B	(310) ^F	310	D	340	280	(350) ^F	400	370	330	330	300	340	410	410
9	340	320	350	360	C	C	310	(240) ^F	290	320 ^S	B	300 ^F	270 ^F	S	B	B	B	(360) ^S	350	440	370	400	410	540
10	500	460	430	460	450	420	350	(330) ^F	(320) ^F	(300) ^S	300	310 ^F	320	(330) ^F	300	300	B	B	330	(310) ^F	(320) ^F	360	350	370
11	340	460	400	380	380	420	210 ^F	300	300	310	350 ^F	340	340	(320) ^F	350 ^F	(330) ^B	(370) ^B	(340) ^F	320	390	430	430	370	(390) ^S
12	360	450	440	470 ^Z	490	440	350	(320) ^S	(370) ^S	(290) ^S	(280) ^S	(280) ^S	(280) ^S	(280) ^S	(290) ^S	(280) ^S	(260) ^S	(250) ^F	240	240	310	430	350	380
13	430	460	440	420	440	370	420	300	(280) ^S	S	S	S	S	S	S	S	S	270 ^F	290	330	310	340	380	420
14	400	490 ^H	480	450	410	430	360	300 ^F	310 ^F	290	280	(290) ^F	(300) ^F	(320) ^S	290 ^F	300	(340) ^S	300	320	310	390 ^Z	(450) ^B	450 ^F	420
15	470	470 ^V	450	440 ^Z	370	350	320	B	(290) ^S	(260) ^S	(260) ^F	S	B	B	B	B	320 ^F	320 ^F	310	350	(350) ^F	330	310	440
16	390	360	410	450	470	420	380	S	C	320	D	380	D	340	320	(320) ^F	290	290	350	270	310	350	330	410
17	410	400	370	400	390	340	390	320 ^F	C	(300) ^F	(300) ^F	C	S	C	300	(310) ^F	(320) ^S	(320) ^S	340	360	360	(330) ^F	380	(440) ^F
18	410	C	410	340	350	310	340	B	B	S	S	C	S	C	300	(310) ^F	(320) ^S	(320) ^S	340	360	320	350	380	(440) ^F
19	(430) ^Z	430	580	630	(580) ^B	(480) ^B	340	C	(280) ^F	C	C	C	C	C	C	C	320	290	300	320	300	350 ^F	350 ^F	(410) ^F
20	440	450	430	450	530	450 ^F	320	(220) ^S	C	C	C	C	C	C	C	C	C	C	C	330	300	330	350	320
21	440	440	430	(350) ^F	(350) ^B	350	370	C	A	C	A	A	D	A	S	(300) ^F	270	320 ^B	300 ^F	280	320	320	350	350
22	430	430	540	400	(430) ^F	330	(400) ^F	B	(310) ^F	310	(330) ^F	(350) ^F	300	(320) ^F	320	300	300	300	350	320	270	340	440	370
23	380	(380) ^B	(410)	440	(440) ^B	350	300 ^F	240	250 ^F	(280) ^F	D	(290) ^F	(300) ^F	C	(320) ^F	290	300	(290) ^B	250	290 ^F	300	310	270	410
24	400	400	430	410 ^F	320	220	350	(300) ^S	280	320	320	320	310	330 ^Z	280	330	C	C	C	300	340	380	370	430
25	380	410	400	360	330	330	290	270	300	S	S	S	270	B	320 ^F	300	280	350	300	330 ^F	430 ^F	450 ^F	350 ^F	
26	430	410	380	370	400	330	280	310 ^F	310	300	310	300	290	300 ^F	300	310	(300) ^S	310 ^F	(310) ^F	(300) ^F	(310) ^F	(330) ^F	350 ^F	
27	(360) ^B	400 ^F	400 ^F	350	360	(440) ^F	300	290	250	(300) ^F	300 ^F	260	280	270	330	330	(320) ^F	(310) ^F	310	(320) ^F	300	320	390	(430) ^F
28	380	410	(470) ^F	(490) ^F	(430) ^F	370	330	310	(290) ^F	B	(280) ^F	B	D	(300) ^F	(290) ^F	(290) ^F	(310) ^F	270	290	270	290	360	370	420
29	410	380	390	330	360	310	310	330	330	B	C	B	(300) ^F	S	S	300 ^F	S	S	320	300	270	320	350	360
30	450	510	500	490	490	420	490	370	300	340	(290) ^S	(290) ^S	(290) ^S	B	B	260	240 ^S	270	280	350	380	440 ^Z	380	
31																								
Median Value	410	410	420	400	400	370	340	300	300	(300)	(300)	300	300	(320)	500	305	300	310	320	310	320	345	375	390
Count	30	28	24	29	28	26	29	19	22	19	19	17	21	16	20	22	19	25	27	29	30	30	30	30

Excerpt from 10.00 to 14.00 UTC on 15.11.49

Moment

W 2

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

IONOSPHERIC DATA

Lat. 45° 23.6' N
Long. 141° 41.1' E

h'F2

Nov. 1949

135° E Mean Time

Wakansai

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	230	280	270	(300) ^A	300 ^A	200	220	200	200	200	200	220	210	260	300	290	290	210 ^A	210	248	220	300	240	300
2	350	330	300	290	310	350	310 ^A	210	200 ^A	200	200	200	190	210	280	200	200	210	210	210	200	250	310	290
3	300 ^A	320	380	C	C	200 ^A	200 ^A	220	220	C	C	210	210 ^A	210	C	C	C	200	200	200	200	200	290 ^A	200
4	300 ^A	A	A	300 ^A	300 ^A	280	(200) ^A	(200) ^A	200	200	(200) ^A	200	200	200	200	200	200	200	200	200	200	280	240	250
5	260	270	260	260	260	250	220	390	300	280	230	280	260	260	270	210	(200) ^A	C	C	230	240	240	250	280
6	280	290	380	300	290	260	300	270	270	C	C	C	C	C	C	C	C	230	210	210	260	260	320	280
7	310 ^A	320 ^A	320	330	310	300	270	210	270	210	250	C	C	200	210	240	250	300	250	220	280	290	300	300
8	300	300	300	270	290	250	220	200	220	240	270	220	210	260	210	200	210	210	250	260	240	220	250	250
9	250	250	250	260	C	C	210	210	200	220	200	220	220	220	220	220	220	280	220	220	220	300	300	330
10	360	330	320	340	330	300	280	300	300	220	270	270	280	270	280	200	220	270	230	280 ^A	290 ^A	240	(300) ^A	290
11	290	330 ^A	310	270	270	220	330	210	240	260	300	270	240	240	290	260	290	300	290	210	280	300	290	240
12	270	290	300	290	390	310	300	290	260	200	200	220	(220) ^C	210	200	200	210	(200) ^C	200	200	210	240	270	300
13	300	320	340	310	320	270	260	230	200	200	200	200	200	200	200	200	230	200	220	230	250	260	270	270
14	300	310	300	320	310	300	300	230	230	200	230	200	220	200	210	220	210	200	250	220	220	300	280	320
15	320	A	360 ^A	360 ^A	310	260	240	220	210	210	210	210	210	210	210	200	200	290	300	300	230	280	300	320
16	300	300	310	380	390	300	230	210	220	210	230	230	250	240	200	290	210	280	260	C	230	280	280	400
17	240	300	300	300 ^A	290	280	260	260	230	260	280	260	(260) ^C	250	230	240	230	280	260	C	230	280	280	400
18	400	C	320	310	270	250	260	220	270	200 ^A	300	(300) ^C	290	(250) ^C	210	270	230	230	260	270	280	(310) ^A	300	360
19	390	310	450	500	450	300	300	C	200	C	C	C	C	C	C	210	230	210	220	220	230	300	340	370
20	300	320	390	370	440	400	280	200	C	C	C	C	C	C	C	C	220	220	220	220	230	250	210	260
21	310	340	290	300	260	260	250	C	A	C	A	220	A	220	A	200	220	240	220	220	230	250	210	260
22	300	340	B	400	360	250	400	250	230	260	270	230	240	250	230	230	270	210	210	280	240	250	300	270
23	290	310	360	340	320	280	230	220	210	200	250	250	260	300	300	270	270	200	210	220	210	250	300	210
24	310	310	320	310	270	200	300	260	210	200	250	240	240	260	240	200	210	C	C	230	250	270	270	280
25	300	300	290	290	280	240	240	210	210	250	270	220	210	210	270	210	230	300	280	200	200	300	300	310
26	300	310	300	290	300	200	220	240	210	220	210	210	220	210	200	210	210	210	210	210	210	210	270	270
27	300	280	290	260	260	250	210	220	200	270	230	200	210	210	210	220	200	210	210	210	210	240	260	310
28	300	300	310	350	300	250	230	220	220	210	210	210	210	200	220	220	210	260	200	200	260	290	300	400 ^A
29	290	270	290	240	260	320	280	280	240	200	(220) ^C	230	240	240	240	210	220	210	220	220	220	220	280	290
30	320	400 ^A	300	300 ^A	400	390	390	300 ^H	200 ^A	220	230	220	210	200	200	200	200	200	200	200	210	200	270	330
31																								
Mean Value	300	310	305	300	300	275	260	220	215	210	230	220	220	230	210	210	220	210	220	230	240	270	295	290
Count	30	27	28	29	28	28	30	29	28	25	25	25	26	26	26	27	28	28	27	29	30	30	30	30

1 sweep 1.5 Mc to 4.0 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

f_oF₁

Nov 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	Q	Q	A	Q	Q	Q	Q	Q	C	A						
2							A	A	Q	A	A	Q	Q	Q	Q	Q	Q	Q						
3							A	A	A	C	A	A	C	C	C	C	C	A						
4							S	A	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q						
5							A	L	L	3.8	A	A	L	L	L	Q	A	A						
6							A	Q	L	C	C	C	C	C	C	C	C	Q						
7							Q	Q	Q	Q	Q	C	C	Q	Q	Q	Q	3.6						
8							Q	Q	Q	L	L	A	Q	Q	Q	Q	Q	A						
9							Q	Q	Q	Q	Q	L	Q	Q	Q	Q	Q	L						
10							Q	Q	L	Q	L	L	S	S	S	Q	Q	L						
11							2.0	Q	4.5P	L	L	Q	L	Q	Q	L	L	L						
12							Q	L	L	Q	Q	L	C	Q	Q	Q	Q	C						
13							Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q						
14							L	Q	Q	Q	L	Q	Q	Q	Q	Q	Q	Q						
15							A	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	L						
16							Q	Q	Q	A	Q	Q	L	Q	Q	Q	Q	Q						
17							Q	Q	L	L	L	L	C	L	Q	Q	Q	L						
18							Q	Q	L	A	L	C	L	C	Q	L	Q	Q						
19							Q	C	Q	C	C	C	C	C	C	Q	Q	A						
20							Q	Q	C	C	C	C	C	C	C	C	Q	Q						
21							A	C	A	C	A	A	A	A	Q	Q	Q	Q						
22							L	Q	Q	L	Q	Q	Q	Q	Q	Q	L	Q						
23							Q	Q	Q	Q	L	L	L	L	L	L	L	Q						
24							Q	L	Q	Q	Q	L	L	Q	Q	Q	Q	C						
25							A	A	Q	L	L	Q	Q	Q	Q	A	Q	L						
26							Q	L	Q	Q	Q	Q	Q	Q	Q	Q	3.4	Q						
27							Q	3.2	Q	L	L	Q	Q	Q	Q	Q	Q	Q						
28							Q	L	Q	Q	Q	Q	Q	Q	Q	Q	Q	L						
29							A	Q	Q	Q	C	Q	Q	Q	Q	Q	Q	Q						
30							Q	A	A	Q	Q	Q	Q	Q	Q	Q	Q	Q						
31																								
Mean Value																								
Count																								

h_o F₁ to h_o F₂ in 15-min

Manual

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

IONOSPHERIC DATA

Lat. 35° 23.6' N
Long. 141° 41.1' E

Wakanaï

h f i

Nov 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	Q	Q	A	Q	Q	Q	Q	Q	C	A							
2							A	A	Q	A	A	Q	Q	Q	Q	Q	Q	Q	Q						
3							A	A	A	C	A	A	A	C	C	C	C	A							
4							S	A	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q						
5							A	290	260	250	A	A	210	210	220	Q	A	A							
6							A	Q	250	C	C	C	C	C	C	C	C	Q							
7							Q	Q	Q	Q	Q	C	C	Q	Q	Q	Q	Q	250						
8							Q	Q	Q	Q	210	220	A	Q	Q	Q	Q	Q	A						
9							Q	Q	Q	Q	Q	220	230	Q	Q	Q	Q	Q	240						
10							Q	260	260	Q	240	230	220	220	220	Q	Q	Q	240						
11							280	Q	210	240	220	Q	Q	250	Q	220	260	260	260						
12							Q	230	210	Q	Q	Q	C	Q	Q	Q	Q	C							
13							Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q						
14							250	Q	Q	Q	200	Q	Q	Q	Q	Q	Q	Q	Q						
15							A	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	200							
16							Q	Q	Q	A	Q	Q	210	Q	Q	210	Q	Q	Q						
17							Q	Q	210	220	220	220	1220	220	Q	Q	Q	230							
18							Q	Q	250	A	220	1240	250	Q	C	240	Q	Q	Q						
19							Q	C	Q	C	C	C	C	C	C	Q	Q	A							
20							Q	Q	C	C	C	C	C	C	C	C	Q	Q							
21							A	C	A	C	A	A	A	A	A	Q	Q	Q							
22							350	Q	Q	250	Q	Q	Q	Q	Q	Q	Q	230	Q						
23							Q	Q	Q	Q	200	200	200	200	200	200	210	Q							
24							Q	230	Q	Q	Q	220	210	Q	Q	Q	Q	Q							
25							A	A	Q	220	210	Q	Q	Q	A	Q	210	200							
26							Q	210	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q							
27							Q	210	Q	220	200	Q	Q	Q	Q	Q	Q	Q							
28							Q	220	Q	Q	Q	Q	Q	Q	Q	Q	Q	200							
29							A	Q	Q	Q	C	Q	Q	Q	Q	Q	Q	Q							
30							Q	A	A	Q	Q	Q	Q	Q	Q	Q	Q	Q							
31																									
Mean value Count							230	1	250	220	220	220	210	220	-	-	210	220							
							3	1	7	7	9	6	7	5	3	4	5	8							

Mean value to 0.5 Mc in 15 min

Annual

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

IONOSPHERIC DATA

Lat. 35° 23.6' N
Long. 141° 41.1' E

Nov. 1949

f_oE

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																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
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25																								
26																								
27																								
28																								
29																								
30																								
31																								
Mean Value																								
Count																								

Swamp 1.0 Mc to 14.5 Mc in 1.5 min Manual

Radio Regulatory Agency (Denpacho)

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

IONOSPHERIC DATA

Nov. 1949

h E

Wakkanai

Lat. 43° 23.6' 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	18	19	20	21	22	23	
1							B	A	A	A	A	110	100	100	100	100	100	A							
2							A	A	A	A	A	A	A	100	100	100	A	A							
3							A	A	A	C	C	A	A	A	A	C	C	A							
4							A	A	A	A	A	A	A	A	A	A	A	A							
5							A	100	A	100	A	A	A	A	A	A	A	A							
6							A	A	A	C	C	C	C	C	C	C	C	B							
7							A	100	100	100	100	C	C	A	100	100	100	B							
8							B	100	A	A	100	A	100	100	100	100	100	100							
9							E	100	100	100	100	100	A	100	100	100	120	B							
10							B	100	110	100	100	100	100	100	100	100	110	A							
11							E	100	100	110	A	110	100	100	100	100	A	A							
12							E	100	A	A	A	100	[100] ^c	100	A	A	A	C							
13							E	120	100	A	S	S	100	100	S	S	S	B							
14							E	140	100	A	A	A	A	100	100	100	100	E							
15							A	100	100	A	A	100 ^A	100	A	A	A	A	A							
16							B	100	100	100	100	100	100	100	100	100	100	A							
17							A	100	100	A	A	100	[100] ^c	100	100	100	100	B							
18							B	B	110	A	100	[100] ^c	100	[100] ^c	100	100	100	A							
19							A	C	100	C	C	C	C	C	C	100	100	A							
20							E	A	C	C	C	C	C	C	C	C	A	A							
21							A	C	A	C	A	A	A	A	S	B	B	B							
22							B	S	100	110	100	100	100	100	120	150	A	100							
23							B	A	100	100	100	100	100	S	100	100	100	100							
24							E	110	110 ^A	100	100	100	100	100	100	100	A	C							
25							A	100	100	100	100	100	100	100	100	100	100	100							
26							E	180	100	100	100	100	100	100	100	100	100	E							
27							E	100	100	100	100	100	110	100	100	100	B	A							
28							E	E	100	A	A	100	100	100	100	100	A	100							
29							A	100	100	100	[100] ^c	100	A	100	100	100	A	A							
30							110 ^B	100	A	100	100	B	B	B	B	B	B	A							
31																									
Median Value Count							100	100	100	100	100	100	100	100	100	100	100	100							
							19	19	14	14	14	17	17	17	19	19	20	13							

Sweep 1.0-Mc to 15.0-Mc in 15 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

fEs

Nov. 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	4.3	2.4	2.5	3.1	2.5	2.8 ^B	2.1	2.4	2.7	3.3	5.0	G	B	G	3.2	G	3.4	3.8	3.0	3.3	3.6	3.5	3.0	B	
2	B	2.2	3.0	2.0	2.0	2.1	3.7	2.8	3.3	6.1	5.4	3.8	4.3	2.7	G	G	2.3	1.9	G	3.4	2.3	3.2	2.1	G	
3	2.1	2.2	2.2 ^Y	C	C	C	6.4	5.2	6.3	C	C	6.4	7.0	3.4	C	C	C	7.9	5.9	3.2	3.3	4.2	3.2	2.5	
4	3.1	3.8	4.2	3.1	3.2	2.0	2.6	2.8	3.2	3.5	3.4	3.5	3.2	3.4	3.4	3.3	2.6	4.0	G	3.9	4.2	3.5	3.2	3.4	
5	3.4	3.2	2.5	1.5	2.2	1.4	2.8	2.2	3.6	G	6.4	7.4	6.2	5.3	5.6	5.5	3.4	6.5	5.5	6.5	5.3	4.3	4.0	3.0	
6	3.0	3.3	2.6	2.5	2.4	1.4	4.3	3.0	3.7	C	C	C	C	C	C	C	C	G	3.5	3.6	5.2	2.0	4.4	3.4 ^Y	
7	3.0	4.1	4.4 ^Y	3.5	3.5 ^F	G	1.7	G	G	G	G	G	G	3.6	G	G	3.4 ^Y	B	G	2.0	G	G	1.8	1.5	
8	2.0	1.3	2.4	2.2	2.3	3.5 ^Y	B	G	3.8	3.8	3.7	6.0	8.0 ^Y	G	G	G	2.0	4.2 ^Y	2.3	G	3.2	3.2	2.3		
9	2.2	3.4 ^F	3.7	3.2	C	C	G	G	G	3.4 ^F	G	4.1 ^Y	3.7	3.1	G	G	2.4 ^Y	(3.1) ^Y	G	G	G	G	G	G	
10	G	G	G	G	G	2.4	B	2.4 ^Y	G	3.1	G	3.8 ^Y	5.2	4.8	4.5	G	G	(3.0) ^Y	G	6.5	4.8	3.7	3.5	2.1	
11	3.4	3.0	2.0	2.2	1.4	(3.4) ^Y	2.0	G	(3.3) ^Y	3.5 ^Y	3.4 ^F	G	3.8	3.8 ^F	3.8 ^Y	G	2.2	(1.8) ^Y	2.3	1.5	G	1.4	2.1	2.0	
12	1.9	1.9	2.5	1.5	1.5	G	G	G	4.3	3.8	3.5	G	C	G	G	3.8	3.1	C	2.2	1.4	1.4	G	G	2.1	
13	1.4	1.3	3.3	2.2	2.1	G	G	2.6	G	4.9	S	S	B	G	S	S	S	2.0	4.0	G	G	G	2.0	3.8	
14	2.4	G	2.1	G	2.1	2.4	G	2.5	(4.2) ^Y	4.6	3.2	3.8 ^Y	3.1	G	B	G	G	G	3.8	2.4	G	G	3.8	2.6	
15	3.6	3.6	3.2	2.4	2.5	2.4	G	2.4	G	3.6	(3.6) ^Y	3.3	G	4.2	4.2	4.1	3.5	2.2	1.5	G	G	2.0	2.2	G	
16	G	2.1	2.1	2.0	2.0	2.0	G	G	(2.7) ^Y	4.7	3.5	3.3	G	G	G	G	1.4	2.6	2.1	C	1.3	2.5	B	G	
17	1.4	2.9	3.6	2.4	2.0	2.2	1.4	2.3	G	4.7	4.7	2.4	C	3.2	(3.4) ^Y	(3.2) ^Y	G	B	C	C	2.4	2.5	B	G	
18	B	C	G	G	B	B	2.0	3.2	2.1	5.2	4.0	C	4.0	C	4.8	3.3	G	3.3	2.3	2.2	G	4.1	2.1	G	
19	1.2	1.7	G	G	B	G	1.6	C	G	C	C	C	C	C	C	3.8	2.3	3.4	3.2	2.2	2.4	2.2	1.4	G	
20	2.5	2.3	2.3	G	B	G	G	G	G	C	C	C	C	C	C	C	2.1	2.0	2.2	2.4	2.2	2.4	2.2	1.4	G
21	2.0	2.0	2.0	2.1	3.8	4.7	4.8	C	12.5	C	12.5	12.5	14.0	11.4	S	B	B	2.4	2.0	2.2	G	G	G	G	
22	B	(2.2) ^Y	B	G	G	G	B	B	5	G	R	G	G	G	B	B	2.0	G	2.3	B	G	G	G	G	
23	G	G	2.5	2.0	G	2.0 ^B	B	2.5 ^Y	G	G	R	G	B	S	G	G	2.6	2.4	3.4	B	G	G	G	G	
24	G	G	G	G	1.8	2.4	G	2.3 ^Y	2.2	5.0 ^Y	G	G	G	G	G	G	3.4	C	C	2.2	G	G	G	G	
25	G	2.1	1.8	1.4	G	1.4	2.2	4.0	4.4	B	G	G	G	G	5.7	G	G	1.3	1.5	2.9	3.2	1.3	2.5	G	
26	2.3	G	G	G	G	1.2	G	G	G	3.6 ^Y	G	G	G	G	G	G	1.7	G	2.0	2.3	G	G	G	G	
27	G	2.6	3.0 ^B	2.4	2.4	2.7	G	G	G	G	G	G	G	G	B	B	1.2	1.2	1.2	1.2	G	G	2.4	G	
28	2.2	2.4	G	1.4	1.3	G	G	G	4.2	3.2	3.2	G	G	G	2.6	3.0	G	1.5	G	G	G	1.6	G	4.4	
29	4.2	3.2	2.0	2.4	2.0	2.2	2.4	2.8	4.5	C	C	C	3.2	C	G	G	2.4	2.0	1.5	G	G	1.6	B	G	
30	G	2.4	1.5	1.3	2.3 ^Y	G	3.5	5.2	B	B	B	B	B	B	B	B	G	2.0	G	2.5	1.8	2.2	2.0	1.8	
31																									
Mean Value	2.1	2.2	2.3	2.0	2.0	2.0	1.6	2.3	2.7	3.6	3.4	3.3	3.2	G	G	G	2.3	2.1	2.2	2.2	G	1.6	2.0	G	
Count	27	29	29	29	25	28	26	27	29	23	22	23	20	24	22	22	22	25	26	28	27	30	27	27	29

freq. Mc to 4.5 Mc in 0.5 min Manual

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

IONOSPHERIC DATA

Lat 35° 23.8' N
 Long 141° 11.1' E

Wakanaï

135° E Mean Time

(M3000)F2

Nov 9 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	3.0	3.0	3.0	2.9	3.0	3.0	3.1	I	I	I	2.9	A	B	2.9	2.9	2.9	2.9	2.9	3.0	2.9	2.9	2.9	2.9	2.5	
2	2.3	2.3	2.6	2.3	2.5	2.6	2.7	S	S	S	2.5	3.4	3.4	3.0	3.2	3.2	3.0	3.0	3.0	3.1	3.1	2.9	2.7	2.6	
3	2.5	2.4	2.5	2.7	2.5	2.9	3.0	D	D	D	3.0	B	3.4	3.0	3.2	3.2	3.0	3.0	3.0	3.2	3.2	3.0	2.9	3.2	
4	3.0	2.9	2.5	2.7	2.5	2.9	3.0	B	B	B	3.4	3.4	3.4	3.3	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	2.9	3.0	
5	3.1	2.8	3.0	2.8	2.7	2.7	3.0	2.9	2.9	3.1	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.9	2.6	
6	2.9	2.9	2.3	2.6	2.6	2.5	2.8	3.2	3.3	3.3	C	C	C	C	C	C	C	C	C	2.7	2.7	2.5	2.9	2.5	
7	2.3	2.6	2.5	2.4	2.6	2.6	2.9	S	S	S	3.1	D	C	S	3.1	3.2	2.7	2.7	2.9	2.9	2.9	2.9	2.6	2.6	
8	2.6	2.7	2.7	2.6	2.7	2.7	2.9	S	S	S	3.1	3.0	D	S	3.1	3.2	2.8	2.7	2.9	2.9	2.9	2.9	2.9	2.6	
9	3.0	3.0	2.8	2.7	C	C	3.0	3.3	3.3	3.3	B	3.1	3.4	B	B	3.0	2.4	2.4	2.4	2.7	2.7	2.6	2.7	2.1	
10	2.4	2.5	2.5	2.3	2.5	2.5	2.8	3.0	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	2.7	2.1	
11	2.6	2.3	2.7	2.7	2.7	2.6	2.5	3.1	3.1	3.1	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.7	2.7	
12	2.7	2.4	2.5	2.4	2.4	2.4	2.5	2.8	2.8	2.8	3.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.7	2.7	
13	2.5	2.4	2.5	2.6	2.6	2.7	2.5	2.7	2.7	2.7	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	2.7	2.6	
14	2.6	2.4	2.4	2.4	2.7	2.5	2.7	3.1	3.1	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.7	2.6	
15	2.3	2.3	2.4	2.5	2.7	2.8	2.9	B	B	B	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.4	
16	2.6	2.6	2.5	2.5	2.4	2.5	2.7	S	S	S	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.4	
17	2.6	2.6	2.7	2.6	2.7	2.8	2.6	3.0	3.0	3.0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.5	
18	2.6	C	2.6	2.4	3.0	3.1	2.9	B	B	B	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	2.5	
19	2.5	2.5	2.0	1.9	2.2	2.3	2.8	C	C	C	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.5	
20	2.5	2.4	2.5	2.4	2.2	2.5	2.9	C	C	C	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.4	
21	2.5	2.5	2.5	2.5	2.5	2.5	2.7	C	C	C	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.4	
22	2.5	2.6	2.3	3.2	2.5	2.9	2.7	A	A	A	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.8	2.8	
23	2.7	2.6	2.5	2.5	2.5	2.8	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	2.7	2.7	
24	2.5	2.5	2.5	2.5	2.9	3.7	2.8	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.6	2.5	
25	2.7	2.6	2.6	2.8	2.9	2.9	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	2.6	2.6	
26	2.5	2.6	2.7	2.6	2.9	2.2	3.0	3.0	3.1	3.1	3.0	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	2.4	2.4	
27	2.7	2.5	2.8	2.8	2.8	3.1	3.2	3.0	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.7	2.7	
28	2.7	2.6	2.4	2.3	2.6	2.6	2.8	3.0	3.0	3.0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.6	2.5	
29	2.5	2.4	2.6	3.0	2.8	3.0	3.1	2.9	3.0	3.0	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	2.8	2.8	
30	2.4	2.2	2.3	2.3	2.5	2.5	2.3	2.8	2.9	2.9	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.7	2.6	
31																									
Median Value	2.6	2.5	2.5	2.6	2.7	2.9	3.0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.6	
Count	3.0	2.9	3.0	2.9	2.8	2.9	1.9	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	3.0	

Sweep Rate: 10.5 Mc in 1.5 Min

Mania

Radio Regulatory Agency (Densetsuho)
Aoyama-2-chu-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 15° 23.6' N
Long. 141° 41.1' E

Wakkanai

135° E Mean Time

5 min F

Nov 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	1.4	F	E	A	A	A	1.2	3.0	A	3.4	5.4	3.5	3.8	3.6	2.9	2.4	2.3	A	A	A	A	A	1.4	1.5	
2	1.2	E	E	E	E	E	A	3.4 ^F	A	3.8	A	3.8	4.3	4.3	3.0	2.7 ^B	2.1	1.2	1.3	A	1.5	A	A	1.4	
3	A	E	1.3	C	C	C	A	2.4	C	C	C	3.1	4.2	A	4.2	C	C	S	2.0	A	E	1.3	1.8	1.9	
4	A	A	A	A	A	A	A	A	2.7	2.8	A	3.4	2.9	3.2	3.7	3.4	2.0	A	A	A	1.5	1.6	2.2	2.2	
5	1.4	1.8	1.6	1.2	1.4	1.2	E	2.4	2.2	2.9	2.7	A	3.7 ^A	A	A	A	A	A	A	A	A	1.8	2.0	1.6	
6	1.6	1.2	1.4	E	1.2	E	1.8	2.1 ^A	2.9	C	C	C	C	C	C	C	C	C	1.5	1.6	1.6	1.4	A	F	
7	1.8	2.0	A	A	1.4	1.2	E	2.2	3.1	3.5	3.3	C	C	C	C	C	C	1.5	2.0	E	1.4	E	1.4	E	
8	F	E	F	E	E	E	1.5	2.1	3.0	A	3.7	3.2	3.6	3.6	3.5	2.5	2.0	1.5	E	1.4	E	E	1.4	E	
9	1.2	1.2	1.3	1.3	C	C	1.3	2.2	2.8	3.1	3.5	3.4	3.5	3.5	3.2	2.7	2.0	1.4	2.2	1.5	1.4	1.4	1.4	1.2	
10	1.2	1.1	E	1.2	1.1	1.2	1.5	2.2 ^F	3.0	3.1	3.3	3.4	3.4	3.4	3.1	3.0	1.9	1.2	1.1	1.3	1.3	1.6	1.4	1.2	
11	E	2.0	1.6	E	1.3	E	E	2.9	3.1	3.0 ^F	3.2	3.3 ^F	3.3 ^F	3.3 ^F	3.1 ^F	3.0	2.7	1.9 ^F	1.8	1.5	1.5	1.1	1.5	1.5	
12	F	E	A	E	E	E	E	2.0	3.0	3.1	3.2	3.5	3.6 ^C	3.3	3.2	2.8	2.5	2.0 ^C	1.6	1.4	1.2	1.3	1.3	1.4	
13	1.3	F	E	E	E	E	1.3	1.1	2.0	3.3	2.4	3.1	3.7	3.5	3.0 ^S	2.6	2.4	1.6	A	1.1	1.1	1.1	1.1	1.9	
14	1.4	E	E	E	E	E	E	2.2	A	3.1	3.1	3.3	3.3	3.3	3.0	3.3	1.7	1.1	1.3	1.6	F	E	1.9 ^A	1.9 ^A	
15	A	A	A	A	1.6	1.5	2.1	2.8	2.3	3.3	3.3	3.3	3.3	3.3	3.2	2.9	1.1	1.2	1.4	E	1.4	E	E	E	
16	E	F	E	E	E	E	1.2	2.0 ^F	2.4	2.0	3.5	3.0	3.3	3.4	3.3	2.4	1.4	A	1.5	1.4	1.4	1.5	1.5	E	
17	E	F	A	1.4	1.2	1.2	1.4	1.7	3.0	3.2	3.2	3.4	(3.3) ^C	3.1	3.0	2.4	1.5	1.3	C	C	1.1	1.3	2.3	1.4	
18	1.6	C	E	E	1.2	1.1	1.2	1.8	2.0	3.2	3.5	3.5	(3.3) ^C	3.1	3.0	2.4	1.5	1.3	E	E	E	1.1	E	E	
19	E	E	E	E	1.6	E	1.6	C	2.8	C	C	C	C	C	C	3.1	2.0	1.7	1.5	1.4	1.5	1.7	1.2	1.5	
20	E	E	E	E	1.6	E	E	2.5	C	C	C	C	C	C	C	C	1.8	1.7	1.8	1.4	1.7	1.4	1.4	1.4	
21	1.4	1.4	1.2	E	1.7	1.4	1.5	C	A	C	A	A	A	A	3.3	2.6	2.1	2.8	2.0	2.0	1.6	1.5	1.5	1.6	
22	E	1.1	1.9	F	E	E	1.6	2.9	3.0	2.5	3.2	3.0	3.9	3.2	3.3	2.4	1.9	1.3	1.7	E	E	E	E	E	
23	E	E	E	E	E	E	1.2	1.9	2.4	2.8	3.0	2.5	A	S	3.3	2.5	2.1	1.7	1.5	1.2	E	E	E	E	
24	E	F	E	E	E	E	E	1.9	2.3	2.6	3.2	3.2	3.2	3.1	2.9	2.5	1.5	C	1.8	E	E	E	E	E	
25	E	E	E	E	E	E	1.2	1.5	A	2.9	3.6	3.2	3.3	3.2	3.1	2.3	1.6	1.2	1.7	1.3	1.4	E	E	E	
26	E	E	E	E	E	E	E	2.2	2.8	2.8	3.2	3.2	3.2	3.2	3.1	2.7	1.8	1.1	E	E	E	E	E	E	
27	E	1.2	E	E	E	E	1.1	E	1.9	2.9	2.7	3.2	3.2	3.2	3.2	3.6	1.9	1.3	E	E	E	E	E	E	
28	E	E	E	E	E	E	E	E	2.6	2.9	2.8	2.2	3.2	3.0	2.8	2.5	2.1	1.8	1.6	E	1.4	1.6	F	1.6	
29	1.3	1.4	E	E	E	E	1.1	2.0	2.3	A	3.5	3.0	3.0	3.0	3.0	3.2	A	1.6	1.6	1.3	1.4	1.4	1.5	1.5	
30	1.2	A	1.7	1.2	1.3	1.1	1.8	1.8	A	3.2	3.2	3.2	3.7	2.2	2.9	2.7	1.6	E	E	1.8	1.6	1.5	1.3	F	
31																									
Mean Value	E	E	E	E	E	E	1.2	2.1	2.8	3.0	3.2	3.3	3.4	3.3	3.1	2.7	2.0	1.4	1.5	1.4	1.2	1.3	1.4	1.2	
Count	27	26	25	25	26	27	27	25	24	22	22	24	24	24	25	26	26	23	25	24	27	27	28	30	

Strength in dBm in 15 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

Nov 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	E	E	E	E	E	B	E	1.4	1.5	1.6	2.2	1.8	1.4	1.6	1.6	1.1	E	E	1.6 ^S	1.2	1.3	B	
2	B	E	E	E	E	E	E	E	1.5	1.4	1.3	1.6	1.8	1.5	1.6	1.6	1.2	E	E	E	E	E	E	E
3	E	E	E	E	E	E	E	E	1.6	1.7	1.7	1.6	1.9	1.9	1.9	1.9	2.2 ^S	E	E	E	E	E	E	E
4	E	E	E	E	E	E	E	E	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.4	1.2	E	E	1.6	1.6	1.6	1.5	1.5
5	1.4	1.1	1.1	1.1	1.1	E	1.2	1.3	1.2	1.4	1.4	2.0	1.7	1.6	1.7	1.6	1.4	1.4	1.5	1.4	1.3	1.5	1.2	1.3
6	1.4	E	E	E	E	E	E	E	1.1	1.3	1.3	C	C	C	C	C	C	C	E	E	E	1.4	E	E
7	E	E	E	E	E	E	E	E	1.2	1.5	1.6	1.8	1.9	2.0	1.6	1.4	1.4	B	E	E	E	1.4	1.4	E
8	E	E	E	E	E	E	E	E	1.3	1.7	1.6	1.8	1.8	1.7	1.5	E	E	E	1.5	1.5	1.4	1.4	1.4	1.2
9	E	E	E	E	E	E	E	E	1.4	1.4	1.5	1.6	1.6	1.6	1.6	1.4	1.3	E	E	1.1	E	E	E	E
10	E	E	E	E	E	E	E	E	1.2	1.4	1.4	1.5	1.5	1.5	1.4	1.5	1.1	E	E	E	E	E	E	E
11	E	E	E	E	E	E	E	E	1.2	1.4	1.4	1.5	1.5	1.5	1.4	1.5	1.1	E	E	E	E	E	E	E
12	E	E	E	E	E	E	E	E	1.1	1.2	1.3	1.4	1.3	1.4	1.3	1.2	E	E	E	E	E	E	E	E
13	E	E	E	E	E	E	E	E	1.1	1.4	1.4	1.5	2.1	2.4	1.5	1.5	1.6	1.4	1.4	1.4	1.4	1.4	1.4	1.1
14	E	E	E	E	E	E	E	E	1.5	1.5	1.5	1.8	1.6	1.7	1.6	1.5	E	E	E	E	E	E	E	E
15	E	E	E	E	E	E	E	E	1.4	1.4	1.6	1.7	1.3	1.5	1.6	1.4	1.1	1.2	E	E	E	E	E	E
16	E	E	E	E	E	E	E	E	1.1	1.4	1.6	1.2	1.8	1.7	1.5	1.2	E	E	E	E	E	E	E	E
17	E	E	E	E	E	E	E	E	1.3	1.5	2.0	1.5	1.5	1.5	1.4	1.1	E	E	E	E	E	E	E	E
18	B	C	G	G	B	1.6	B	1.6	1.2	1.4	1.6	1.6	1.6	1.6	1.6	1.5	1.1	E	E	E	E	E	E	E
19	E	E	E	E	B	G	E	C	1.4	C	C	C	C	C	C	1.5	1.6	E	E	E	E	E	E	E
20	E	E	E	E	G	G	E	E	C	C	C	C	C	C	C	C	E	1.4	E	E	E	E	E	E
21	1.6	1.5	E	1.4	E	1.2	1.5	1.8	2.2	1.8	2.1	2.1	2.1	2.1	1.5	1.6	B	1.6	1.4	1.4	1.4	1.4	1.4	1.4
22	B	1.9	B	G	G	G	B	1.5	2.0	1.8	1.5	2.2	1.6	1.5	1.8	1.6	1.4	E	E	E	E	E	E	E
23	G	G	E	E	G	1.7	B	E	1.1	1.8	1.5	2.0	1.3	1.1	1.1	F	E	E	E	E	E	E	E	E
24	G	G	G	E	E	E	E	1.4	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
25	G	1.5	1.3	E	G	E	E	E	1.7	1.8	1.9	1.9	1.8	1.4	1.6	E	E	E	E	E	E	E	E	E
26	E	G	G	G	G	E	E	1.4	1.4	1.5	1.4	1.6	1.6	1.4	1.6	1.5	1.8	E	E	E	E	E	E	E
27	G	E	E	E	E	E	E	1.5	1.5	1.5	1.6	1.8	2.0	2.4	1.6	1.8	E	E	E	E	E	E	E	E
28	E	E	E	E	E	E	E	E	1.2	1.2	1.2	1.2	1.2	1.2	1.1	E	E	E	E	E	E	E	E	E
29	E	E	E	E	E	E	E	E	1.4	1.4	1.4	2.0	1.6	1.6	1.5	E	E	E	E	E	E	E	E	E
30	G	E	E	E	E	E	E	1.6	2.1	1.8	1.8	1.8	1.8	1.8	1.8	1.4	E	E	E	E	E	E	E	E
31																								
Maker																								
Y-axis																								
Count	27	29	29	29	25	28	22	28	29	26	24	24	25	26	23	34	26	24	28	27	30	27	27	29

Repeat 1.4 Mc to 4.0 Mc in 15 min Manual

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

IONOSPHERIC DATA

f_oF₂

Nov 1949

Lat. 40° 36' N
Long. 139° 54' E

Fukaura

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	C	C	C	C	C	C	C	7.8	10.0	11.2	B	B	B	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	4.1	A	4.2	4.7	4.2	3.5	5.7	9.5	12.0	R	R	R	R	B	B	11.1	10.7	10.0	8.3	7.7	5.7	A	A	4.7
4	4.5	4.5	4.2	4.2	4.2	4.0	5.7	C	11.3	R	S	S	R	B	B	11.9	10.5	9.5	8.4	7.9	7.0	4.5	4.9	4.8
5	4.8	4.5	4.5	4.4	4.1	4.2	5.5	9.0	10.9	B	B	B	B	B	B	B	12.3	12.0	9.6	8.4	5.7	5.0	4.8	4.7
6	5.0	4.9	4.6	5.4	3.7	4.5	6.7	10.1	R	R	B	B	B	B	S	S	11.1	9.6	7.5	7.2	5.4	5.2	4.8	4.7
7	4.6	4.7	4.7	4.8	4.9	5.1	8.2	10.4	11.4	B	B	B	B	B	S	B	11.1	9.6	7.6	7.6	7.2	5.2	4.8	4.3
8	4.8	4.3	4.5	4.5	4.5	4.7	6.3	10.7	10.6	R	B	B	B	B	B	B	11.3	9.7	7.9	6.4	6.0	5.5	5.2	5.4
9	5.2	5.0	5.2	5.2	5.1	4.8	6.1	9.8	10.7	11.6	R	B	B	B	B	B	11.2	7.3	7.4	7.2	7.3	6.3	5.0	4.7
10	4.9	4.8	4.6	4.5	4.5	4.5	5.2	8.4	10.0	11.7	11.8	11.9	11.9	11.8	12.2	12.0	11.5	9.7	8.9	8.2	6.2	5.2	4.7	4.7
11	4.7	4.5	4.8	4.9	4.8	4.7	5.1	7.2	C	C	C	C	C	C	C	C	C	10.0	9.6	8.2	8.0	6.3	7.2	6.4
12	6.5	5.0	5.2	5.0	4.9	5.2	6.7	9.3	B	B	B	B	B	(12.1)	(12.2)	B	T	8.8	8.0	7.2	5.7	4.6	4.9	(4.8)
13	4.7	4.6	4.7	4.8	4.5	4.5	4.5	9.9	R	C	B	B	B	B	B	B	B	(9.6)	8.2	7.1	6.4	6.0	5.9	5.2
14	5.0	5.1	5.0	4.9	5.1	5.2	6.0	9.1	11.3	P	R	R	R	B	B	B	B	(11.8)	9.0	(7.4)	5.7	5.2	5.1	5.0
15	4.8	4.1	4.3	4.4	5.0	5.1	5.4	8.4	(9.6)	B	C	B	T	C	C	C	C	C	7.4	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	4.3	4.4	4.3	C	C	C	5.2	10.3	12.1	12.1	B	B	C	C	C	C	C	C	9.3	7.9	7.1	5.4	4.4	4.5
18	3.9	3.8	3.9	4.0	3.8	3.1	3.8	7.0	9.0	10.2	C	C	C	C	C	C	C	C	4.6	6.0	5.2	A	4.0	3.3
19	4.3	4.7	4.8	4.6	4.6	4.5	4.8	8.4	11.3	12.0	(12.0)	(12.6)	(12.0)	10.7	(11.4)	(11.4)	10.4	(9.8)	7.2	6.2	5.0	3.8	4.0	4.0
20	5.0	5.0	4.8	4.4	4.2	4.0	5.0	8.5	9.2	(12.0)	B	B	B	B	B	B	11.2	9.8	9.2	8.8	7.9	6.0	5.0	5.1
21	4.5	4.8	5.7	5.2	5.0	4.0	4.3	10.0	R	B	B	B	B	B	B	B	B	8.7	8.1	6.9	4.4	4.0	3.4	3.4
22	3.1	3.3	3.2	3.4	3.6	3.5	3.6	8.3	10.2	B	C	C	T	B	C	C	C	C	C	C	5.9	4.3	4.1	4.1
23	4.1	4.3	5.0	5.0	5.0	5.2	5.2	9.1	9.8	11.8	(12.6)	B	B	B	11.7	11.6	11.3	7.6	6.6	5.6	4.4	3.6	3.4	
24	3.9	3.8	3.6	3.8	3.8	3.4	3.2	7.2	10.4	11.3	12.0	(12.1)	11.4	11.5	(12.3)	11.3	10.5	8.5	7.0	5.8	4.8	4.6	4.3	
25	4.1	3.9	4.2	4.1	4.2	3.9	(4.0)	6.4	C	C	C	C	C	C	C	C	C	C	C	6.0	5.7	C	4.1	(3.8)
26	3.8	4.0	3.9	4.1	3.9	4.1	4.8	7.0	C	11.5	(12.5)	(12.6)	11.6	(12.1)	(12.0)	11.2	10.6	7.8	8.0	7.5	4.6	3.9	4.0	3.8
27	3.7	4.0	4.1	4.2	4.8	5.3	5.9	7.3	10.6	(11.7)	(11.4)	(11.8)	(11.6)	(11.4)	(11.7)	10.9	10.5	9.0	8.0	6.9	5.5	3.8	4.7	4.5
28	4.1	4.4	4.1	4.0	4.5	4.7	5.2	5.1	(11.7)	B	H	H	B	B	12.2	11.3	(10.8)	10.7	9.5	6.4	5.5	4.8	4.7	4.3
29	4.6	4.2	4.0	4.6	4.5	4.6	4.8	9.0	10.3	(11.4)	(12.5)	B	B	11.2	12.0	12.0	11.1	(8.7)	7.0	7.2	6.0	4.6	4.1	4.3
30	4.5	4.2	F	F	F	4.3	4.5	3.3	9.7	B	B	B	C	13.0	(12.4)	11.8	10.6	10.0	8.8	6.2	4.9	3.7	3.9	3.5
Median Value	4.5	4.6	4.6	4.5	4.5	5.2	9.9	10.5	11.6	(12.4)	(12.1)	(11.6)	11.8	12.0	11.4	10.8	9.3	7.8	7.0	5.7	4.6	4.7	4.6	4.6
Count	2.7	2.6	2.6	2.5	2.6	2.6	2.7	2.1	2.0	1.3	1.1	1.5	1.0	1.2	1.2	1.2	1.9	2.4	2.2	2.5	2.7	2.5	2.7	2.8

Group 3.0 Mc 10 min

Manual

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

IONOSPHERIC DATA

Lat 40° 36.6' N
Long. 139° 54.1' E

Fukaura

RP F2

Nov 19 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	C	C	C	C	C	C	C	250	250	300	B	B	B	C	C	C	C	C	C	C	C	C	C	C	
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	280	280	300	280	290	290	310	380	
3	430	A	470	420	370	330	370	380	300	C	H	B	B	B	300	310	290	280	300	300	290	400	370	380	
4	380	270	370	400	400	360	350	C	270	F	S	S	R	B	B	300	310	320	310	280	320	330	400	370	
5	330	290	360	370	310	350	310	270	290	B	B	B	B	B	B	B	270	290	300	330	320	330	330	400	
6	500	450	410	350	410	360	350	290	B	B	B	B	B	B	S	S	280	320	320	330	280	310	320	400	
7	430	430	370	330	290	300	240	250	270	B	B	B	B	B	C	C	300	310	330	270	270	340	370	420	
8	380	390	350	370	390	370	340	280	250	B	B	B	B	B	310	310	320	310	310	270	270	340	370	420	
9	360	310	340	360	360	400	340	290	280	260	B	B	B	B	B	B	320	290	300	370	330	320	330	400	
10	400	360	320	370	380	410	330	280	280	300	300	300	300	300	300	280	280	350	330	350	340	340	420	370	
11	410	400	410	330	320	310	330	270	C	C	C	C	C	C	C	C	C	300	300	330	420	370	360	380	
12	350	400	390	450	430	410	330	290	B	B	B	B	B	B	(290)	B	I	320	300	280	300	350	400	380	
13	380	420	410	380	410	340	400	260	B	C	B	B	B	B	B	B	R	(310)	290	300	320	330	380	360	
14	370	370	420	370	400	330	250	260	R	B	B	B	B	B	B	B	290	270	(280)	290	360	350	370	340	
15	340	400	440	400	350	330	310	270	280	B	C	B	B	B	B	B	C	C	C	290	C	C	C	C	
16	C	C	C	C	C	C	C	C	C	C	B	B	B	B	B	B	B	B	300	330	310	280	320	360	350
17	370	370	350	C	C	C	330	260	270	290	B	C	C	C	C	C	C	C	C	250	270	290	380		
18	410	380	(410)	440	360	310	350	290	270	270	C	C	C	C	C	C	280	(300)	320	280	310	390	410		
19	420	400	470	420	420	360	400	280	260	250	300	290	280	280	300	290	B	C	340	310	300	320	350	310	
20	390	400	440	420	470	430	330	260	290	250	B	B	B	B	B	B	B	300	310	330	300	330	330	330	
21	420	480	460	320	300	370	400	290	290	290	B	B	B	B	B	B	B	270	290	270	280	310	280	280	
22	350	430	460	450	390	320	420	230	290	B	C	C	C	C	C	C	C	C	C	280	270	310	330	370	
23	370	380	500	480	390	380	370	260	250	250	H	B	B	B	300	300	280	260	300	290	270	370	430	430	
24	360	350	350	340	350	300	410	290	260	240	300	300	280	290	300	270	300	290	300	320	340	320	310	270	
25	350	340	360	330	340	330	270	240	C	C	C	C	C	C	C	C	C	C	C	310	260	C	330	A	
26	360	360	340	380	330	300	330	270	C	C	C	C	C	C	C	C	C	C	C	270	260	C	330	A	
27	400	390	250	350	420	340	330	290	250	240	270	310	300	310	290	290	270	270	270	260	230	260	370	350	
28	360	380	430	430	400	400	300	290	270	B	B	B	B	B	H	H	290	290	290	280	480	330	370	350	
29	350	390	370	440	400	350	330	240	250	(260)	280	B	B	B	H	H	300	260	310	270	280	360	360	350	
30	380	430	F	F	430	430	370	270	B	260	B	B	C	C	(290)	290	340	270	320	270	420	390	B	530	
31																									
Median Value	390	370	380	380	355	330	270	270	270	260	(290)	(300)	(280)	290	295	295	290	295	300	285	290	330	365	380	
Count	27	26	25	26	26	27	27	20	13	7	5	5	5	10	12	12	18	24	28	28	27	25	26	26	

Sweep Rate 10 Hz/Sec in 2-min

Manual

F 2

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

IONOSPHERIC DATA

Nov 1949

K F 2

Fukaura

Lat. 40° 36.6' N
Long. 139° 54.1' E

136° 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									220	230	240	250												
2									220	230	240	250												
3	4.0	A	4.2	3.6	3.2	2.8	2.4	2.0	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A
4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
6	4.0	3.8	3.8	3.2	3.0	2.7	2.5	2.2	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	3.4
7	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
8	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
10	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
11	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
12	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
13	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
14	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
15	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
16	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
17	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
18	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
19	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
20	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
21	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
22	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
23	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
24	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
25	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
26	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
27	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
28	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
29	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
30	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
31																								
Mean	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Min	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Max	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Scale 2000 ft. (1 Mile) in 1.5. min

Mean

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

IONOSPHERIC DATA

Lat. 40° 36.6'N
Long. 139° 54.1'E

FUKUZU

135° E Mean Time

f_oF₁

Nov 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	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
3								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
5								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
7								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
9								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
11								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
13								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
15								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
17								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
19								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
21								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
23								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
25								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
27								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
29								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
31								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Median Value																								
Count																								

Frequency in Mc in 1.5 min

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

Nov 1949

R'FI

IONOSPHERIC DATA

Lat. 40° 36.6' N
 Long. 139° 54.1' E

Fukawa

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	220	Q	Q	220	C	C	C	C	C						
2							C	Q	C	C	C	Q	Q	Q	Q	Q	Q	Q	Q					
3							Q	Q	Q	Q	Q	Q	A	A	Q	220	Q	Q	Q					
4							C	Q	Q	Q	Q	Q	Q	Q	210	Q	Q	Q	Q					
5							Q	Q	Q	Q	A	220	Q	Q	Q	Q	Q	Q	Q					
6							Q	Q	Q	Q	Q	210	Q	Q	Q	Q	Q	Q	Q					
7							Q	Q	Q	220	Q	Q	Q	Q	Q	Q	Q	Q	Q					
8							Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q					
9							Q	Q	Q	Q	Q	220	220	Q	Q	Q	Q	Q	Q					
10							Q	Q	Q	Q	Q	Q	250	Q	Q	Q	Q	Q	Q					
11							Q	C	C	C	C	C	C	C	C	C	C	C	240					
12							Q	Q	Q	Q	220	Q	Q	Q	Q	Q	Q	Q	Q					
13							Q	210	C	Q	Q	Q	Q	Q	220	Q	Q	Q	230					
14							Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q					
15							Q	Q	Q	Q	C	Q	Q	Q	Q	C	C	C	C					
16							C	C	220	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q					
17							Q	Q	Q	Q	C	C	C	C	C	C	C	C	C					
18							Q	Q	Q	Q	C	C	C	C	C	C	Q	Q	C					
19							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					
21							200	Q	Q	A	Q	Q	Q	Q	Q	Q	Q	Q	Q					
22							Q	Q	Q	Q	C	C	Q	Q	C	C	C	C	C					
23							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					
25							Q	Q	C	C	C	C	C	C	C	C	C	C	C					
26							Q	C	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					
28							Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q					
29							Q	Q	C	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q					
30							Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q					
31							Q	Q	Q	Q	Q	Q	C	Q	Q	Q	Q	Q	Q					
Median Value																								
Count																								

Sweep: 3.0 Mc to 10.0 Mc in 1.2 min Manual

Radio Regulatory Agency Denpacho
Aoyama-Kite-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Lat. 40° 36.6' N
Long. 139° 54.1' E

Fukawa

f_oE

Nov 1949

135° 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								E	E	E	B	B	B	C	C	C								
2								C	C	C	C	C	B	B	B	A	A							
3								E	A	A	A	A	A	A	B	B	B							
4								E	E	R	A	A	E	R	3.2	2.9	E							
5								E	E	A	A	A	B	A	B	B	E							
6								E	A	A	A	A	A	B	B	B	B							
7								E	E	B	A	S	B	E	C	B	B							
8								E	E	B	B	B	B	B	B	B	B							
9								E	B	A	B	E	B	B	B	B	B							
10								E	E	B	B	B	B	B	B	B	B							
11								E	E	C	C	C	C	C	C	C	C							
12								E	E	A	A	A	A	A	A	A	A							
13								E	E	C	B	B	B	B	B	E	E							
14								E	B	A	A	B	B	B	B	B	B							
15								E	E	B	C	B	B	B	C	C	C							
16								C	C	E	B	A	B	B	B	B	B							
17								E	E	A	A	C	C	C	C	C	C							
18								E	E	E	C	C	C	C	C	C	C							
19								E	E	B	B	B	B	B	B	B	E	E						
20								E	A	E	E	A	B	A	A	A	E	E						
21								E	E	A	A	A	A	A	A	A	E	E						
22								E	E	E	B	C	C	R	R	C	C							
23								E	E	E	A	A	B	B	3.2	E	E	E						
24								E	E	E	A	B	B	B	B	B	E	E						
25								E	E	C	C	C	C	C	C	C	C							
26								E	C	E	E	B	B	B	B	E	E							
27								E	E	E	E	B	B	B	B	B	E	E						
28								E	E	B	B	B	B	B	B	B	B							
29								E	E	C	A	B	B	B	B	B	E	E						
30								E	E	E	A	B	C	B	B	E	E							
31								E	E	E	E	E	E	E	E	E	E							
Median Value																								
Count								28	21	8	3	0	0	0	2	12	13							

Steep 30 Mc to 10 Mc in 3 min Manual

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

IONOSPHERIC DATA

Lat. 40° 36.6' N
Long. 139° 54.1' E

Fukushima

R' E

Nov 19 49

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	R	R	R	R	C	C	C	C							
3									C	C	C	C	B	B	B	A	A							
4									A	A	A	A	A	A	A	B	B							
5									E	R	A	B	110	100	110	B	E							
6									E	VA	130	A	B	A	A	B	E							
7									E	A	A	A	A	110	B	B								
8									E	110	A	5	B	B	C	F	B							
9									E	B	B	B	B	B	B	B	B							
10									E	B	A	R	F	B	B	B	B							
11									E	B	R	R	B	B	B	B	B							
12									E	C	C	C	C	C	C	C	C							
13									E	A	A	A	A	110	A	E	A							
14									E	C	120	110	110	B	B	E	E							
15									E	B	A	A	B	R	B	B	B							
16									E	E	120	C	B	B	C	C	C							
17									C	C	E	110	A	B	B	B	B							
18									E	E	A	A	C	C	C	C	C							
19									E	E	E	C	C	C	C	C	C							
20									E	B	B	R	R	B	B	E	E							
21									E	A	E	A	A	120	A	A	E	E						
22									E	E	A	A	A	A	A	E	E							
23									E	E	B	C	C	B	C	C	C							
24									E	E	A	A	A	R	120	E	E							
25									E	E	F	A	B	R	B	B	E	E						
26									E	C	C	C	C	C	C	C	C							
27									E	C	E	F	B	B	B	B	E	E						
28									E	E	E	F	B	B	B	B	E	E						
29									E	E	B	B	R	R	R	B	B	B						
30									E	E	C	A	B	B	B	B	E	E						
31									E	E	A	B	C	B	B	B	E	E						
Mean Value Scale																								
Count	26	21	10	5	1	3	4	2	11	13														

Frequency in MHz

Time in min

Manual

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

IONOSPHERIC DATA

Lat. 40° 36.6' N
Long. 139° 54.1' E

Fukuoka

135° E Mean Time

fEs

Nov 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	C	C	C	C	C	C	C	G	H	R	R	H	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	4.2	6.8	3.5	3.2	(3.0)	G	G	G	4.0	5.6	4.8	5.2	7.0	5.0	B	P	R	4.8	4.2	3.4	3.2	3.5	3.5	3.5	6.7
4	G	G	G	G	G	G	G	3.4	3.6	B	4.0	4.4	G	G	G	3.4	G	3.2	G	G	3.2	3.4	G	G	G
5	G	G	G	G	G	G	G	G	G	5.0	3.8	5.7	B	4.8	B	B	3.4	4.2	3.4	G	G	G	G	G	G
6	3.6	5.8	4.5	3.6	G	G	G	3.4	4.4	5.6	4.7	5.0	4.4	B	B	B	4.6	G	G	G	G	G	G	G	G
7	5.0	4.8	3.2	G	G	G	3.2	3.4	3.5	B	4.7	5	R	B	C	B	B	G	G	G	G	G	G	G	G
8	G	G	G	G	G	G	G	G	G	R	B	B	B	B	B	B	B	B	G	G	G	G	G	G	G
9	G	G	G	G	G	G	G	G	G	R	B	B	B	B	B	B	B	B	G	G	G	G	G	G	G
10	G	G	G	G	G	G	G	G	G	R	B	B	B	B	B	B	B	B	G	G	G	G	G	G	G
11	G	3.2	3.2	G	3.4	3.2	G	G	C	C	C	C	C	C	C	C	C	4.8	G	G	G	G	G	G	G
12	G	G	G	G	G	G	G	G	G	6.6	7.0	7.0	4.0	6.0	3.4	3.4	3.4	G	G	G	G	G	G	G	C
13	G	G	G	G	G	G	G	G	3.4	C	G	G	G	B	B	B	B	G	3.2	G	G	G	G	G	G
14	G	G	G	G	G	G	G	7.0	B	3.4	3.8	H	B	B	B	B	B	B	B	C	B	B	B	B	G
15	G	G	G	G	G	G	G	G	G	G	B	B	B	B	B	B	B	B	G	G	G	G	G	G	G
16	C	C	C	C	C	C	C	C	C	3.1	R	4.2	B	B	B	B	B	B	B	B	B	B	B	B	G
17	G	G	G	C	C	C	C	G	3.3	3.4	3.6	C	C	C	C	C	C	C	C	5.0	4.0	5.5	5.7	G	G
18	G	G	C	G	G	G	G	G	G	G	G	C	C	C	C	C	C	C	G	G	G	G	G	G	G
19	G	G	G	G	G	G	G	G	G	B	B	B	B	B	B	B	B	B	G	G	G	G	G	G	G
20	G	G	G	G	G	G	G	3.6	3.4	5.0	G	G	3.6	B	3.5	3.2	3.3	C	G	G	G	G	G	G	G
21	G	G	5.4	G	G	G	G	G	3.2	5.8	3.8	3.8	3.6	3.4	3.4	G	G	G	(3.2)	3.8	G	G	G	G	G
22	G	G	G	G	G	G	G	G	3.2	B	C	C	B	B	C	C	C	C	C	G	G	G	G	G	G
23	G	G	G	G	G	G	G	G	4.0	3.6	3.4	3.4	3.2	G	G	G	G	G	G	G	G	G	G	G	G
24	G	G	G	G	G	G	G	G	G	3.2	3.2	3.2	B	B	B	B	B	B	G	G	G	G	G	G	G
25	G	G	G	G	G	G	G	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	G
26	G	G	G	G	G	G	G	G	C	G	B	B	B	B	B	B	B	B	G	G	G	G	G	G	G
27	G	G	G	G	G	G	G	G	G	G	B	B	B	B	B	B	B	B	(5.2)	G	G	G	G	G	G
28	G	G	G	G	G	G	G	G	G	B	B	B	B	B	B	B	B	B	G	G	G	G	G	G	G
29	G	G	G	G	G	G	G	G	G	C	3.4	B	B	B	B	B	B	B	G	G	G	G	G	G	G
30	G	G	G	G	G	G	G	G	3.2	4.0	3.4	4.0	B	B	B	B	B	B	G	G	G	G	G	G	G
31																									
Median Value	G	G	G	G	G	G	G	G	G	3.4	3.8	4.2	(3.6)	(3.4)	(3.4)	G	G	G	G	G	G	G	G	G	G
Count	27	27	26	26	26	26	26	26	26	23	16	17	11	7	6	13	16	21	26	26	26	27	28	27	27

Step 2.0 Mc to 2.5 Mc in 1.5 min Manual

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

11 Nov 1949

(M3000)F2

Fukawa

Lat. 40°36.6'N
Long. 139°54.1'E

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	C	C	C	C	C	C	C	C	C	C	B	B	B	C	C	C	C	C	C	C	C	C	C	C	
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
3	2.5	A	2.3	2.4	2.6	2.9	2.6	Z	3.0	P	B	B	B	B	B	3.3	P	2.9	3.3	P	3.1	A	A	2.5	
4	2.7	2.7	2.4	2.5	2.6	2.7	2.8	C	3.3	P	B	S	B	B	B	3.1	3.1	3.2	3.1	3.1	2.9	2.7	2.7	2.7	
5	2.7	2.7	2.8	2.7	3.2	2.9	2.9	3.2	3.3	P	B	B	B	B	B	3.1	3.0	3.1	3.1	3.1	2.9	2.8	2.6	2.6	
6	2.3	2.4	2.6	2.8	2.7	2.7	2.8	3.0	R	B	B	B	B	B	B	3.2	P	3.1	3.0	2.9	3.0	2.9	2.9	2.5	
7	2.5	2.5	2.7	2.9	3.1	3.0	3.4	3.4	3.3	B	R	R	S	B	C	B	3.1	2.9	2.9	3.2	3.0	2.9	2.9	2.5	
8	2.7	2.6	2.9	2.8	2.6	2.7	2.8	2.7	3.1	3.4	R	R	R	B	C	B	3.0	3.0	3.0	3.2	3.0	2.9	2.7	2.5	
9	2.7	3.0	2.8	2.8	2.9	2.7	3.1	3.1	3.2	P	R	R	R	B	B	B	2.9	3.4	3.1	2.7	3.0	3.0	2.8	2.6	
10	2.6	2.8	2.9	2.8	2.6	2.8	2.9	3.2	3.1	3.2	P	3.1	3.1	3.0	3.2	P	3.2	2.7	3.0	3.0	2.8	2.9	2.5	2.6	
11	2.6	2.6	2.7	2.9	2.9	3.0	2.9	3.3	C	C	C	C	C	C	C	C	C	3.1	3.1	2.8	2.8	2.9	2.5	2.6	
12	2.7	2.6	2.7	2.4	2.5	2.6	2.9	3.1	C	C	C	C	C	C	C	C	C	3.1	3.1	2.8	2.6	2.7	2.7	2.7	
13	2.8	2.5	2.6	2.7	2.5	2.8	2.5	3.3	R	C	B	B	B	B	(3.1)	B	I	2.9	3.1	3.3	3.1	2.8	2.6	(2.7)	
14	2.7	2.6	2.7	2.5	2.8	2.6	3.0	3.4	3.3	B	B	B	B	B	B	B	B	(3.1)	2.9	2.9	2.9	3.0	2.9	2.7	
15	2.8	2.5	2.5	2.6	2.8	2.9	3.0	3.2	3.2	R	B	B	B	B	B	B	B	(3.1)	3.1	2.9	2.8	2.7	2.9	2.9	
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
17	2.6	2.7	2.8	C	C	C	2.9	3.2	3.3	(3.3)	B	C	C	C	C	C	C	3.2	3.0	3.1	3.2	2.9	2.7	2.7	
18	2.5	2.7	(2.6)	2.5	2.7	3.0	2.9	3.1	3.2	3.3	C	C	C	C	C	C	C	3.2	3.3	3.3	3.2	A	2.6	3.0	
19	2.5	2.5	2.4	2.5	2.5	2.6	2.6	3.2	3.3	3.5	C	C	C	C	C	C	3.2	(3.0)	2.9	3.3	3.0	2.6	2.6	2.6	
20	2.7	2.6	2.5	2.5	2.4	2.5	2.9	3.2	3.3	3.5	3.1	3.1	3.1	3.1	3.1	3.2	B	C	2.7	3.0	2.1	3.0	2.8	3.0	
21	2.5	2.4	2.4	2.7	3.0	2.7	2.7	2.8	3.1	3.4	B	B	B	B	B	B	B	3.0	3.0	2.8	3.1	2.2	2.8	2.9	
22	2.9	2.5	2.5	2.4	2.7	2.8	2.6	3.1	3.1	B	C	C	C	C	C	C	C	C	3.1	3.2	3.1	3.0	3.1	3.2	
23	2.6	2.6	2.2	2.7	2.6	2.6	2.8	3.4	3.5	3.0	(3.0)	B	B	B	3.1	3.2	3.1	3.3	3.0	3.0	3.1	2.9	2.7	2.6	
24	2.8	2.8	3.0	3.4	2.8	3.0	2.7	2.9	3.0	3.5	3.1	(3.0)	3.2	2.9	3.2	3.0	3.0	3.1	3.1	3.4	2.9	2.9	3.0	3.1	
25	2.8	2.8	2.8	2.8	2.9	2.9	(3.2)	3.4	C	C	C	C	C	C	C	C	C	C	2.6	3.4	C	A	2.7	A	
26	2.8	2.8	2.8	2.7	2.8	2.9	3.5	(3.4)	3.4	3.2	3.0	3.1	3.1	(3.0)	3.1	3.2	3.0	3.4	3.4	3.4	3.5	2.7	2.7	2.8	
27	2.7	2.7	2.8	2.7	2.5	2.8	3.1	3.2	3.3	(3.3)	(3.3)	(3.3)	(3.3)	(3.3)	(3.3)	(3.1)	3.1	3.1	3.1	3.1	3.2	2.9	2.8	2.9	
28	2.8	2.7	2.5	2.5	2.6	3.0	3.2	3.3	3.4	(3.3)	B	B	B	3.1	3.3	(3.2)	*2.9	3.2	3.4	3.2	3.2	3.2	2.8	2.9	
29	2.8	2.7	2.5	2.5	2.6	2.9	3.3	3.4	(3.3)	(3.2)	R	B	B	3.1	3.0	3.0	3.0	(3.3)	3.0	3.4	3.2	2.7	2.8	2.8	
30	2.7	2.6	F	F	2.7	(2.6)	2.7	3.4	B	3.2	R	C	3.4	P	3.2	3.2	2.9	3.2	2.9	2.7	2.4	2.7	2.3	2.3	
31																									
Hidden Value Count	2.7	2.6	2.7	2.7	2.8	2.9	3.2	3.2	3.2	(3.2)	(3.1)	(3.1)	(3.1)	(3.1)	3.1	3.2	3.1	3.1	3.0	3.1	3.1	2.9	2.7	2.7	
Count	2.7	2.6	2.6	2.5	2.6	2.6	2.7	2.7	2.1	1.3	7	5	5	10	11	12	1.8	2.4	2.8	2.8	2.7	2.5	2.7	2.7	

Repeat 3.0-MHz to 15-MHz in 15 min

Manual

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

IONOSPHERIC DATA

Nov 1949

f_{min} F

136° E Mean Time

Lat. 40° 36.6' N
Long. 139° 54.1' E

Fukaura

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	C	C	C	C	C	C	C	4.0	E	4.0	4.7	3.8	4.5	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	5.3	4.0	4.0	3.6	A	A	E	A	A	A	E	A
3	E	A	F	E	E	E	E	E	3.6	3.8	3.8	A	A	A	4.4	5.0	4.6	3.6	3.4	F	F	E	E	E
4	E	E	F	E	E	E	E	E	E	3.8	3.8	4.0	3.9	3.9	3.9	E	3.3	E	E	E	E	E	E	E
5	E	E	E	E	E	E	E	E	E	3.8	3.8	3.8	4.6	4.6	4.6	4.6	E	E	E	E	E	E	E	E
6	E	E	E	E	E	E	E	E	E	E	3.8	E	4.0	5.0	5.0	5.4	A	3.1	E	E	E	E	E	E
7	E	A	F	3.2	E	E	E	E	E	4.6	4.2	5.0	4.0	4.0	4.1	4.2	4.4	E	E	E	E	E	E	E
8	E	E	F	F	E	E	E	E	E	4.2	4.8	5.0	6.0	5.0	5.6	3.8	4.0	E	E	E	E	E	E	E
9	E	E	F	E	E	E	E	E	5.6	A	3.9	5.0	5.0	4.0	4.0	4.0	4.0	E	E	E	E	E	E	E
10	E	E	E	E	E	E	E	E	3.2	3.8	4.0	5.0	4.6	4.6	4.6	4.6	4.0	E	E	E	E	E	E	E
11	E	E	E	E	E	E	E	E	C	C	C	C	C	C	C	C	C	E	E	E	E	E	E	E
12	E	E	E	E	E	E	E	E	E	3.6	3.4	3.6	A	3.8	3.3	E	3.8	E	E	E	E	E	E	E
13	E	E	E	E	E	E	E	E	E	C	4.2	E	4.0	4.0	E	E	A	E	E	E	E	E	E	E
14	E	E	F	E	E	E	E	E	3.8	3.2	5.0	5.0	5.0	5.0	5.0	5.0	E	4.2	14.0	3.8	3.8	E	E	
15	E	F	E	E	E	E	E	E	E	3.8	4.2	4.6	4.2	4.2	C	C	C	C	E	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	3.8	4.0	5.0	5.0	5.0	4.0	3.8	E	E	E	E	E	E	E
17	F	F	E	C	C	C	C	C	C	E	E	C	C	C	C	C	C	C	A	A	A	A	E	E
18	F	E	C	E	E	E	E	E	E	E	5.0	4.0	4.8	5.0	4.0	5.0	E	C	E	E	E	E	E	E
19	E	E	E	E	E	E	E	E	E	E	E	E	3.6	3.6	4.0	E	E	E	E	E	E	E	E	E
20	F	E	E	E	E	E	E	E	E	E	E	E	3.4	3.4	3.4	E	E	E	E	E	E	E	E	E
21	F	E	A	E	E	E	E	E	E	A	3.4	3.4	3.4	3.4	3.4	E	E	E	E	E	E	E	E	E
22	E	E	E	E	E	E	E	E	E	E	C	C	5.0	4.8	C	C	C	C	C	C	C	C	C	C
23	E	E	E	E	E	E	E	E	E	E	3.4	3.4	3.8	3.2	F	F	E	E	E	E	E	E	E	E
24	E	E	E	E	E	E	E	E	E	E	3.2	3.8	3.6	3.6	3.2	E	E	E	E	E	E	E	E	E
25	E	E	E	E	E	E	E	E	E	C	C	C	C	C	C	C	C	C	E	E	E	E	E	E
26	E	E	E	E	E	E	E	E	E	E	E	3.8	3.8	4.4	3.6	E	E	E	E	E	E	E	E	E
27	E	E	E	E	E	E	E	E	E	E	E	3.2	3.6	3.6	3.6	F	F	E	E	E	E	E	E	E
28	E	E	E	E	E	E	E	E	E	3.9	4.6	4.6	5.0	4.3	4.2	4.4	4.3	E	E	E	E	E	E	E
29	E	E	E	E	E	E	E	E	E	C	3.4	4.2	4.2	4.2	4.0	E	E	E	E	E	E	E	E	E
30	E	E	E	E	E	E	E	E	E	A	3.8	3.8	C	4.2	4.4	E	E	E	E	E	E	E	E	E
31																								
Total Value	E	E	E	E	E	E	E	E	E	3.7	3.8	4.0	4.2	4.0	4.0	E	E	E	E	E	E	E	E	E
Count	27	25	25	26	26	26	27	28	24	22	24	23	23	24	23	23	22	21	26	25	25	26	28	25

Sweep 3.0 Mc to 10.0 Mc in 1.5 min Manual

F 10

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

IONOSPHERIC DATA

Nov 1949

Fukaura

Lat. 40° 36.6'N
 Long. 139° 54.1'E

135° E Mean Time

f_{min} 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	C	C	C	C	C	C	C	E	E	B	B	B	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	B	B	B	E	E	E	E	E	E	E	E	E
3	E	E	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	C	C	C	C	C	C	C	C	C	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																								
Median Value	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Count	27	27	26	26	26	26	27	28	23	18	17	12	8	9	7	13	17	22	25	26	26	27	28	27

Frequency to 3000 Mc in 15-min Moment

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

IONOSPHERIC DATA

Lat. 35° 42.4' N
Long. 139° 29.3' E

Kokubunji Tokyo

135° E Mean Time

f_o F₂

Nov 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	4.2	4.0	4.1	3.7	4.0	3.8	5.9	8.9	10.1	11.6	13.6	14.1	14.1	14.1	14.1	13.6	12.2	10.5	C	S	7.3	5.2	(4.8)C	4.3
2	3.8	3.7	3.6	3.0	3.2	3.8	4.3	13.0	13.3	14.8	14.7	14.7	14.7	14.7	14.7	14.7	11.0	8.7	7.9	7.9	5.9	4.7	3.9	4.7
3	4.2	4.4	4.2	4.5	4.3	4.0	7.4S	10.5	12.6	14.9	16.0	C	15.2	14.3	13.2	11.3	11.7	11.8	C	5.5	5.0	5.0	5.0	5.2
4	5.0	5.0	4.6	4.0	4.0	4.0	6.0	11.0	12.6	13.7	14.3	14.0	14.7	14.3	14.3	13.1	12.3	11.0	8.0	7.5	6.9	5.8	5.2	5.0
5	5.0	5.0	4.7	4.2	4.0	4.2	6.1	S	9.9	13.0	14.4	14.0	14.1	14.7	13.9	13.0	11.6	9.8	8.2	7.2	6.9	5.8	4.8	4.6
6	(4.6)A	4.7	4.8	4.8	4.4	4.5	6.1S	10.7	12.1	13.7	16.0	15.2	15.6	14.6	14.1	13.1	11.9	10.5	8.7	7.3	6.9	6.1	4.8	4.5
7	4.2	4.1	5.0	B	3.9	C	7.9	10.0	11.5	13.2	13.7	13.4	13.4	13.4	13.1	12.5	11.1	10.3	7.5	8.2	6.0	5.4	5.2	4.5
8	4.5	4.8	4.7	(4.2)C	3.6	3.9	6.4	B	10.7	12.1	13.3	13.3	13.0	13.7	13.3	12.1	11.8	8.6	7.4	7.3	6.3	5.7	5.3	5.0
9	5.0	4.7	4.8	4.9	4.2	4.0	5.9	4.8	11.6	12.4	12.0	13.2	13.2	13.2	12.7	12.6	11.5	10.5	9.1	7.6	7.7	6.7	5.0	4.4S
10	4.6	4.7	4.5	4.3	4.0S	4.1	5.9	9.3	11.1	12.8	13.6	13.1	14.2	14.5	13.6	13.3	12.1	(10.3)S	9.1	8.2	6.8	5.9	4.3	4.4
11	4.5	4.3	4.6	5.1	3.7	3.7	4.3	9.5	11.0	13.2	13.8	13.4	14.3	14.3	13.7	13.5	13.0	12.1	10.9	(9.8)P	7.3	7.0	7.0	6.7
12	5.7	4.9	4.7	4.7	4.6	C	10.0	C	13.2	14.4	14.4	13.1	14.7	14.7	13.9	13.3	11.9	9.8	7.8	7.2	5.8	4.8	4.5	4.8
13	4.8	4.4	4.7	4.8	4.6	4.6	5.8	9.9	12.0	(14.5)P	(14.5)C	14.4	14.1	14.3	14.0	13.2	12.2	10.7	8.7	7.2	6.9	6.6	6.0	5.3
14	5.4	5.3	4.9	4.8	4.7	5.0	6.3	9.5	12.4	14.0	14.2	12.8	13.4	13.4	13.1	12.3	12.0	9.8	7.4	6.4	5.7	6.1	5.8	5.1
15	4.6	4.1	4.2	4.4	4.3	H	4.6	5.4	10.0S	12.1	13.7	12.5	12.5	13.2	13.5	13.0	13.0	10.8	8.5	7.4	6.5	5.7	5.2	4.5
16	4.4	4.0	4.2	3.6	3.4	3.8	3.7	4.8	11.4	12.7	14.2	14.3	13.3	14.2	14.2	13.2	12.7	10.9	8.3	7.1	6.7	5.8	4.4	4.2
17	4.2	4.2	4.2	4.2	3.3	3.7	4.8	8.7	11.0	12.7	13.8	13.3	13.0	13.3	12.5	11.7	11.2	10.7	8.3	6.0	6.0	4.7	A	A
18	3.9	3.7	3.8	4.2	3.8	3.0	4.7	8.1S	10.4	10.3	11.7	13.1	13.4	13.5	13.3	12.5	10.5	9.0	7.2	6.4	5.2	4.4	4.3	4.3
19	4.4	4.5	4.2	4.3	4.4	4.4	5.2	8.8	10.9	11.2	11.8	12.4	12.8	12.4	12.3	12.4	11.6	8.2	7.1	6.2	5.6	5.0	5.0	5.2
20	5.2	(4.8)C	4.3	4.3	4.0	3.8	5.4	9.4	(9.6)S	13.7	14.2	13.9	14.2	14.0	13.6	13.2	12.0	11.2	10.0	8.6	7.7	6.2	5.0	5.2
21	4.4	4.4	5.0	4.2	4.0	3.9	4.3S	10.6	12.6	14.1	14.7	14.1	14.8	14.1	14.4	13.9	13.1	8.6	8.7	8.0	4.9	4.2	4.0	3.7
22	3.2	3.4	3.0	3.4	3.5	3.5	7.1	10.1	11.7	12.3	13.3	13.1	13.9	14.1	12.9	12.4	11.3	10.5	8.2	6.8	6.1	4.6	4.0	4.0
23	4.0	4.1	3.9	3.9	3.9	4.0	5.2	9.5S	10.9	12.3	13.0	13.6	14.0	14.3	13.6	12.5	12.1	9.9	6.2	5.5	4.7	4.0	4.0	4.1
24	4.0	3.7	3.5	3.6	3.5	3.7	3.7	9.6	11.2	11.4	11.0	11.6	12.1	12.3	12.2	11.7	10.2	9.1	7.1	5.9	5.7	4.8	4.7	4.4
25	4.1	4.1	4.1	3.8	3.7	4.0	3.7	8.1	10.4	11.7	13.2	13.3	12.1	12.7	13.2	11.9	10.1	8.3	5.9	6.4	5.6	4.1	3.7	3.8
26	3.6	3.9	4.0	3.6	3.7	3.9	3.5	8.5	9.3S	11.0	12.9	12.4	(12.8)C	13.2	13.4	12.0	11.2	9.4	8.0	7.1	5.0	3.7	3.9	2.6
27	3.5	3.6	3.9	3.6	3.7	3.8	4.7	8.6	10.1	(11.3)S	12.5	12.9	13.0	12.5	13.4	12.2	10.4	(9.3)C	8.1	7.6	6.1	4.5	4.4	3.7
28	3.9	4.5	3.7	(3.3)F	4.3	4.2	4.8	9.3	12.2	15.0	14.5	13.7	13.0	12.7	11.9	12.2	(10.9)C	9.5	8.0	6.0	5.5	4.1	4.0	4.2
29	4.1	4.0	3.8	3.6	3.9	3.7	4.3	8.7	11.1	13.5	12.6	12.9	13.2	12.6	12.6	12.5	11.7	10.3	7.8	8.2	8.0	5.4	4.8	4.8
30	4.6	4.2	(3.6)F	(3.7)F	4.1	4.1	4.0	9.2	14.2	13.5	S	14.0	14.2	14.3	12.7	12.8	11.8	9.5	9.7	7.4	6.4	4.3	4.2	4.1
31																								
Mean Value	4.4	4.2	4.2	4.2	4.0	4.0	5.3	9.5	11.2	13.2	13.8	13.3	13.4	14.0	13.4	12.5	11.8	10.3	8.1	7.2	6.1	5.2	4.8	4.5
Count	30	30	30	29	30	28	29	28	30	30	29	29	30	30	30	30	30	29	29	28	30	30	29	29

Sweep 6 Mc in 15 min

Manual

K 1

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

Lat. 35° 42.4' N
Long. 139° 59.3E

h_p F2

Nov. 1949

135° E Mean Time Kokuibunji Tokyo

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	360	350	360	340	320	370	290	270	250	280	280	280	320	300	280	280	260	270	C	S	280	250	(400)C	440
2	410	450	470	500	470	440	430	430	460	310	310	310	320	300	280	270	310	280	C	270	290	380	490	430
3	450	460	470	410	370	360	360	360	380	300	300	C	300	310	300	300	300	260	300	C	280	360	330	310
4	330	310	320	330	320	350	300	260	270	290	(280)B	(320)B	330	310	280	280	290	280	290	290	290	340	320	350
5	370	360	320	330	380	340	300	S	230	300	290	(320)B	340	320	310	300	280	290	290	320	330	290	360	380
6	(400)A	430	410	410	310	380	340	300	280	270	270	280	300	290	280	280	270	260	260	290	260	280	310	310
7	350	380	370	B	280	C	270	260	270	210	300	320	220	220	240	240	270	260	270	270	260	280	310	310
8	400	340	340	(330)C	320	400	290	B	240	280	280	310	310	310	300	310	300	300	290	270	280	280	280	310
9	310	300	320	270	310	330	320	280	280	290	310	330	320	320	320	320	320	270	270	240	240	290	280	420
10	410	370	370	320	350	280	280	250	270	300	330	320	340	340	340	360	320	(300)S	320	330	310	310	380	440
11	430	390	420	330	290	350	350	290	270	290	300	320	340	340	360	320	320	290	290	290	310	310	380	440
12	250	280	380	400	410	C	C	C	240	270	290	300	320	340	340	340	340	290	290	290	310	310	380	440
13	360	400	(400)B	410	430	370	320	260	240	270	290	330	350	320	320	320	310	300	290	240	240	330	360	370
14	380	350	400	400	420	400	350	280	280	(280)C	(300)C	300	310	320	290	300	290	270	290	380	300	290	270	330
15	350	420	440	370	380	300	300	260	280	290	290	300	320	320	350	310	310	280	300	320	320	350	330	320
16	360	340	350	460	460	420	360	270	240	290	300	310	270	320	310	310	280	270	280	300	300	290	360	350
17	370	340	370	360	320	290	330	270	280	280	290	300	270	320	320	320	300	280	300	320	310	290	360	380
18	380	390	340	240	310	350	300	240	250	270	290	300	320	320	330	330	320	280	B	270	330	310	320	A
19	360	330	360	370	380	380	320	260	260	260	310	300	330	320	320	300	290	270	260	260	300	340	380	400
20	370	C	400	420	460	320	300	260	270	(320)S	280	300	320	330	350	290	280	280	330	310	320	420	370	370
21	370	470	350	300	330	320	310	260	270	280	290	300	330	320	(320)B	320	320	320	320	300	300	320	380	350
22	290	470	350	360	350	320	270	220	240	240	310	300	310	290	310	300	290	310	310	300	290	290	310	370
23	340	350	370	360	320	360	270	220	220	240	260	290	300	300	310	290	280	280	280	320	290	290	370	370
24	300	310	310	370	380	340	370	250	250	260	270	280	280	280	280	280	270	270	280	320	310	290	370	370
25	330	340	350	320	340	310	260	240	250	270	270	270	270	270	270	280	260	260	270	270	270	270	370	370
26	370	350	340	350	350	310	290	240	240	240	270	300	300	(300)C	300	310	280	280	280	270	270	270	370	370
27	370	400	360	370	370	300	240	240	240	270	270	300	300	300	310	300	280	280	280	270	270	270	370	370
28	360	390	400	(440)F	440	370	320	270	270	(280)S	270	300	300	300	310	290	280	280	280	270	270	270	370	370
29	300	320	340	330	350	370	310	260	250	270	270	300	300	310	320	300	280	280	280	270	270	270	370	370
30	360	(440)F	(420)F	(420)F	430	370	300	260	280	S	280	300	300	310	320	300	280	280	280	270	270	270	370	370
31																								
Median Value	360	370	365	360	350	365	300	260	265	270	270	300	320	320	310	300	270	270	270	275	270	270	360	350
Count	30	30	30	29	28	29	28	28	29	30	29	29	30	30	30	30	30	30	29	28	28	30	29	29

Swapped Mc to kHz Mc in 100-min Manual

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

IONOSPHERIC DATA

Nov 19 41

A. F. Z.

135 E Max. Time

Kokubunji Tokyo

Lat. 35°24'N
Long 139°29.3'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	290 ^A	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280
2	410	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370
3	300	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320
4	270	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280
5	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
6	(320) ^A	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340
7	250	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270
8	300	270	270	(250)	230	300	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240
9	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240
10	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270
11	340	310	340	270	230	230	240	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
12	230	220	250	240	320	C	C	210	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220
13	300	270	310	270	300	300	220	220	210	220	(230)	220	210	230	210	210	210	210	210	210	210	210	210	210
14	270	300	300	300	300	300	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240
15	270	280	340	300	210 ^A	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240
16	250	250	280	320	360	330	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240
17	280	290	290	280	230	B	270	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230
18	310	320	290	240	220	240	A	210	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220
19	270	260	280	270	270	280	250	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210
20	270	(260)	260	300	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270
21	280	A	280	(200)	270	260	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270
22	AF	A	300	300	270	290	240	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230
23	260	230	280	230	260	270	200	210	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
24	240	260	260	260	260	270	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220
25	240	240	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260
26	270	270	300 ^A	270	270	250	200	210	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
27	270	270	280	240	270	300	240	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210
28	240	270	280	350 ^F	310	310	270	250	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230
29	230	270	260	240	270	280	250	220	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210
30	280	270	340	310	340	300	210	210	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220
31																								
Mean Value	280	280	280	280	265	280	230	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220
Count	29	28	30	30	30	27	24	30	30	30	30	29	30	30	30	30	30	30	29	28	30	29	29	29

Sampled by 1000 Mc in 15 min

Mean

nihon Regulatory Agency (Denpacho)
 oyama-Kita-machi, Minato-Ku, Tokyo, Japan-

IONOSPHERIC DATA

Lat. 35° 42.4'N
 Long. 139° 29.8E

Kokubunji Tokyo

135° E Mean Time

f_oF₁

Nov. 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	Q	Q	L	Q	Q	Q	Q	Q	Q	AF						
2						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q					
3						Q	Q	Q	AF	L	L	L	L	L	L	L	Q	Q						
4						Q	Q	Q	L	L	L	L	Q	L	Q	Q	Q	Q						
5						Q	Q	Q	Q	A	Q	Q	Q	L	L	Q	Q	A						
6						Q	Q	Q	Q	L	Q	Q	Q	Q	Q	Q	AF	A						
7						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						
9						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	A						
10						Q	Q	Q	Q	Q	L	L	L	L	L	L	L	AF						
11						Q	Q	Q	Q	L	L	L	L	L	L	L	Q	Q						
12						Q	Q	Q	Q	L	L	L	L	L	L	L	L	Q						
13						Q	Q	Q	Q	A	C	Q	Q	L	L	L	Q	Q						
14						Q	Q	Q	Q	L	L	L	Q	Q	L	L	L	Q						
15						Q	Q	Q	Q	Q	L	Q	Q	Q	Q	L	L	Q						
16						Q	Q	Q	Q	Q	Q	Q	L	L	L	L	Q	Q						
17						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	AF	Q					
18						Q	Q	Q	Q	Q	Q	L	Q	L	L	L	L	Q						
19						Q	Q	Q	Q	Q	Q	L	Q	L	L	L	L	Q						
20						Q	Q	Q	AF	AF	AF	A	A	L	L	L	L	Q						
21						Q	Q	Q	Q	Q	Q	L	L	L	L	L	L	Q						
22						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						
24						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						
26						Q	Q	Q	Q	Q	Q	Q	L	L	L	L	L	Q						
27						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						
29						Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q						
30						Q	Q	Q	Q	L	L	L	L	L	L	L	L	Q						
31						Q	Q	Q	Q	A	A	Q	L	L	L	L	L	Q						
Mean Value																								
Count																								

Sweep 10 Mc to 1.5 Mc in 15 min

Manual

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

IONOSPHERIC DATA

Lat. 35° 42.4'N
Long. 139° 29.3'E

h'F1

Nov. 19 49

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							g	g	g	g	270	g	g	g	g	g	g	AF							
2							g	A	g	g	g	g	g	g	g	g	g	g							
3							g	g	AF	230	C	200	210	210	210	g	g	g							
4							g	g	210	220	220	220	220	220	g	g	A	g							
5							g	g	g	A	g	g	g	230	230	230	g	A							
6							g	g	g	200	g	g	g	g	g	g	AF	A							
7							g	g	g	g	g	g	g	g	g	g	g	g							
8							g	g	g	g	g	g	g	g	g	g	g	A							
9							g	g	g	g	240	250	220	240	220	210	F	g	AF						
10							g	g	g	220	230	220	240	230	g	g	g	g							
11							g	230	g	230	g	200	230	230	g	g	g	g							
12							C	g	220	240	230	240	240	240	g	g	g	g							
13							g	g	A	C	g	g	g	220	g	g	g	g							
14							g	230	g	230	230	g	g	g	g	230	g	g							
15							g	g	g	g	220	g	g	g	220	230	g	A							
16							g	g	g	g	g	g	220	240	g	g	g	g							
17							g	g	g	g	g	g	220	240	g	g	AF	g							
18							g	g	g	g	g	g	g	g	g	g	A	AF							
19							g	g	g	g	230	g	230	g	g	g	g	g							
20							g	g	g	g	g	g	240	220	240	g	g	g							
21							g	g	AF	AF	A	A	A	A	g	g	g	g							
22							g	g	g	g	g	210	230	g	g	g	g	g							
23							g	g	g	g	g	g	g	g	g	g	g	g							
24							g	g	g	g	g	g	g	g	g	g	g	g							
25							g	g	g	g	g	g	220	B	g	B	B	B							
26							g	g	g	g	g	g	220	210	220	g	g	g							
27							g	g	g	g	g	g	g	220	g	g	g	C							
28							g	g	g	g	g	g	g	g	g	g	g	g							
29							g	g	g	230	g	220	g	230	230	g	g	g							
30							g	g	g	A	A	g	220	210	g	g	200	g							
31																									
Median Value										220	230	220	220	230	230	225	230								
Count							0	2	2	7	8	7	11	16	8	5	1	0							

Mean Time 135° E

Annual

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

Lat. 35° 12.4' N
Long. 139° 29.3' E

Kokubunji Tokyo

IONOSPHERIC DATA

f_oE

Nov 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																								
2							(14) ^A	AF	20 ^{AF}	33	B	34	36	34	32	30	AF	A						
3							.A	A	(35) ^A	A	A	A	A	34	A	31	A	14						
4							(18) ^A	A	A	A	C	A	A	A	A	29	A	A						
5							16	24	29 ^A	(31) ^F	A	(35) ^A	A	(35) ^A	(33) ^A	(30) ^A	A	(15) ^A						
6							B	25	27	A	A	(37) ^B	35	E	E	30	24	A						
7							(14) ^B	24	A	A	A	36	A	37	35	31	A	A						
8							B	F	A	B	36	A	A	A	A	23	A	A						
9							13	23 ^F	29	A	35	37	(37) ^B	A	E	A	(25) ^A	A						
10							(15) ^A	A	(28) ^F	32	32 ^J	B	B	B	30	A	24	A						
11							15	23 ^F	21 ^F	F	A	(40) ^F	A	A	A	(26) ^A	22	A						
12							E	24	(27) ^A	30	34	35	34	33	33	30	A	A						
13							C	A	A	A	A	A	A	36	A	30	24	(14) ^F						
14							11	22	31 ^J	A	C	A	A	A	A	E	25 ^A	A						
15							13	26	27	AF	A	A	A	A	B	30 ^A	24	A						
16							B	(26) ^B	29	30	33	A	A	A	33	30	23	A						
17							11	A	A	A	A	35	34	32	32	28 ^J	23	A						
18							E	22	28 ^F	A	A	B	A	A	A	30 ^A	A	B						
19							A	A	26	33	35	37	35	A	32	F	21 ^A	AF						
20							F	18	28 ^F	A	36	36	A	A	A	A	A	(11) ^A						
21							E	A	A	A	A	A	A	A	A	A	A	(12) ^B						
22							E	A	A	A	(35) ^J	A	A	A	A	A	A	A						
23							11	23 ^A	29	32	A	A	35	33	A	26	A	A						
24							11	20	27	A	32	34	34	33 ^A	30	26	20	14 ^A						
25							14 ^B	24 ^B	31	34	B	B	B	B	B	B	B	A						
26							B	22 ^A	28 ^F	AF	AF	34	35	34	32	28	22 ^F	(13) ^A						
27							F	17	28	30 ^F	34 ^{AF}	34 ^{AF}	32 ^A	B	27	27	A	A						
28							E	19	30	(32) ^A	E	36 ^A	B	A	A	(27) ^A	(22) ^A	A						
29							E	15	25	31	35	35	(35) ^B	35	30	27	21	E						
30							F	27 ^F	A	A	A	A	(23) ^F	A	A	20 ^A	A	A						
31																								
Mean																								
Median																								
Count																								

See pp. 1-6, No. 10122-24, in 1-5, 1-11, 1-15, 1-19, 1-23, 1-27, 1-31, 1-35, 1-39, 1-43, 1-47, 1-51, 1-55, 1-59, 1-63, 1-67, 1-71, 1-75, 1-79, 1-83, 1-87, 1-91, 1-95, 1-99, 2-3, 2-7, 2-11, 2-15, 2-19, 2-23, 2-27, 2-31, 2-35, 2-39, 2-43, 2-47, 2-51, 2-55, 2-59, 2-63, 2-67, 2-71, 2-75, 2-79, 2-83, 2-87, 2-91, 2-95, 2-99, 3-3, 3-7, 3-11, 3-15, 3-19, 3-23, 3-27, 3-31, 3-35, 3-39, 3-43, 3-47, 3-51, 3-55, 3-59, 3-63, 3-67, 3-71, 3-75, 3-79, 3-83, 3-87, 3-91, 3-95, 3-99, 4-3, 4-7, 4-11, 4-15, 4-19, 4-23, 4-27, 4-31, 4-35, 4-39, 4-43, 4-47, 4-51, 4-55, 4-59, 4-63, 4-67, 4-71, 4-75, 4-79, 4-83, 4-87, 4-91, 4-95, 4-99, 5-3, 5-7, 5-11, 5-15, 5-19, 5-23, 5-27, 5-31, 5-35, 5-39, 5-43, 5-47, 5-51, 5-55, 5-59, 5-63, 5-67, 5-71, 5-75, 5-79, 5-83, 5-87, 5-91, 5-95, 5-99, 6-3, 6-7, 6-11, 6-15, 6-19, 6-23, 6-27, 6-31, 6-35, 6-39, 6-43, 6-47, 6-51, 6-55, 6-59, 6-63, 6-67, 6-71, 6-75, 6-79, 6-83, 6-87, 6-91, 6-95, 6-99, 7-3, 7-7, 7-11, 7-15, 7-19, 7-23, 7-27, 7-31, 7-35, 7-39, 7-43, 7-47, 7-51, 7-55, 7-59, 7-63, 7-67, 7-71, 7-75, 7-79, 7-83, 7-87, 7-91, 7-95, 7-99, 8-3, 8-7, 8-11, 8-15, 8-19, 8-23, 8-27, 8-31, 8-35, 8-39, 8-43, 8-47, 8-51, 8-55, 8-59, 8-63, 8-67, 8-71, 8-75, 8-79, 8-83, 8-87, 8-91, 8-95, 8-99, 9-3, 9-7, 9-11, 9-15, 9-19, 9-23, 9-27, 9-31, 9-35, 9-39, 9-43, 9-47, 9-51, 9-55, 9-59, 9-63, 9-67, 9-71, 9-75, 9-79, 9-83, 9-87, 9-91, 9-95, 9-99, 10-3, 10-7, 10-11, 10-15, 10-19, 10-23, 10-27, 10-31, 10-35, 10-39, 10-43, 10-47, 10-51, 10-55, 10-59, 10-63, 10-67, 10-71, 10-75, 10-79, 10-83, 10-87, 10-91, 10-95, 10-99, 11-3, 11-7, 11-11, 11-15, 11-19, 11-23, 11-27, 11-31, 11-35, 11-39, 11-43, 11-47, 11-51, 11-55, 11-59, 11-63, 11-67, 11-71, 11-75, 11-79, 11-83, 11-87, 11-91, 11-95, 11-99, 12-3, 12-7, 12-11, 12-15, 12-19, 12-23, 12-27, 12-31, 12-35, 12-39, 12-43, 12-47, 12-51, 12-55, 12-59, 12-63, 12-67, 12-71, 12-75, 12-79, 12-83, 12-87, 12-91, 12-95, 12-99, 13-3, 13-7, 13-11, 13-15, 13-19, 13-23, 13-27, 13-31, 13-35, 13-39, 13-43, 13-47, 13-51, 13-55, 13-59, 13-63, 13-67, 13-71, 13-75, 13-79, 13-83, 13-87, 13-91, 13-95, 13-99, 14-3, 14-7, 14-11, 14-15, 14-19, 14-23, 14-27, 14-31, 14-35, 14-39, 14-43, 14-47, 14-51, 14-55, 14-59, 14-63, 14-67, 14-71, 14-75, 14-79, 14-83, 14-87, 14-91, 14-95, 14-99, 15-3, 15-7, 15-11, 15-15, 15-19, 15-23, 15-27, 15-31, 15-35, 15-39, 15-43, 15-47, 15-51, 15-55, 15-59, 15-63, 15-67, 15-71, 15-75, 15-79, 15-83, 15-87, 15-91, 15-95, 15-99, 16-3, 16-7, 16-11, 16-15, 16-19, 16-23, 16-27, 16-31, 16-35, 16-39, 16-43, 16-47, 16-51, 16-55, 16-59, 16-63, 16-67, 16-71, 16-75, 16-79, 16-83, 16-87, 16-91, 16-95, 16-99, 17-3, 17-7, 17-11, 17-15, 17-19, 17-23, 17-27, 17-31, 17-35, 17-39, 17-43, 17-47, 17-51, 17-55, 17-59, 17-63, 17-67, 17-71, 17-75, 17-79, 17-83, 17-87, 17-91, 17-95, 17-99, 18-3, 18-7, 18-11, 18-15, 18-19, 18-23, 18-27, 18-31, 18-35, 18-39, 18-43, 18-47, 18-51, 18-55, 18-59, 18-63, 18-67, 18-71, 18-75, 18-79, 18-83, 18-87, 18-91, 18-95, 18-99, 19-3, 19-7, 19-11, 19-15, 19-19, 19-23, 19-27, 19-31, 19-35, 19-39, 19-43, 19-47, 19-51, 19-55, 19-59, 19-63, 19-67, 19-71, 19-75, 19-79, 19-83, 19-87, 19-91, 19-95, 19-99, 20-3, 20-7, 20-11, 20-15, 20-19, 20-23, 20-27, 20-31, 20-35, 20-39, 20-43, 20-47, 20-51, 20-55, 20-59, 20-63, 20-67, 20-71, 20-75, 20-79, 20-83, 20-87, 20-91, 20-95, 20-99, 21-3, 21-7, 21-11, 21-15, 21-19, 21-23, 21-27, 21-31, 21-35, 21-39, 21-43, 21-47, 21-51, 21-55, 21-59, 21-63, 21-67, 21-71, 21-75, 21-79, 21-83, 21-87, 21-91, 21-95, 21-99, 22-3, 22-7, 22-11, 22-15, 22-19, 22-23, 22-27, 22-31, 22-35, 22-39, 22-43, 22-47, 22-51, 22-55, 22-59, 22-63, 22-67, 22-71, 22-75, 22-79, 22-83, 22-87, 22-91, 22-95, 22-99, 23-3, 23-7, 23-11, 23-15, 23-19, 23-23, 23-27, 23-31, 23-35, 23-39, 23-43, 23-47, 23-51, 23-55, 23-59, 23-63, 23-67, 23-71, 23-75, 23-79, 23-83, 23-87, 23-91, 23-95, 23-99

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

IONOSPHERIC DATA

Lat. 35° 42.4' N
Long. 139° 29.3E

Kokubunji Tokyo

Nov 19 49

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							A	A	100	100	100	100	100	100	100	(100) ^A	AF	A						
2							A	A	A	110	A	100	100	100	100	100	100	100	100					
3							A	A	110	110	100	C	A	A	A	110	100	100	100					
4							100	110	110	100	A	100	100	110	100	100	A	A						
5							B	110	110	A	A	A	110	100	100	100	(100) ^A	A						
6							B	110	A	A	A	100	A	100	100	100	A	A						
7							B	100	100	B	100	A	A	100	100	100	A	A						
8							(150) ^B	100	100	A	100	100	100	100	100	100	100	A						
9							A	110	110	100	100	100	100	100	100	A	100	A						
10							130	110	100	100	120	120	120	100	110	100	100	A						
11							E	110	120	110	100	100	100	100	100	100	A	A						
12							C	A	A	A	A	A	A	A	A	110	100	F						
13							B	120	100	A	C	A	A	A	A	110	110	A						
14							(160) ^B	110	110	110	A	A	A	A	100	100	130	A						
15							B	110	110	100	100	A	A	A	100	100	100	A						
16							B	A	A	A	A	A	100	100	100	100	100	A						
17							E	100	100	110	A	100	A	A	A	A	A	B						
18							A	A	100	100	110	100	120 ^B	110	100	100	100	A						
19							E	110	100	A	100	100	100	100	100	A	A	A						
20							A	A	A	A	A	A	A	A	A	100	A	110						
21							E	A	100	100	100	A	A	A	100	100	A	A						
22							E	A	A	A	100	100	100	100	A	A	A	A						
23							(130) ^B	140 ^B	110	110	A	A	100	110	A	(120) ^A	A	A						
24							A	100	100	100	F	100	100	100	100	100	100	A						
25							B	110	110	100	100	100	110	100	100	100	(120) ^B	B	A					
26							B	100	100	A	A	100	100	100	100	100	(100) ^A	A						
27							E	100	100	100	100	100	100	100	100	B	100	A						
28							E	110	110	(110) ^A	110	110	110	110	A	(100) ^A	A	A						
29							E	100	100	100	100	110	100	100	120	100	100	E						
30							E	100	A	A	A	A	A	100	110	100	100	A						
31																								
Mean Value							110	100	100	100	100	100	100	100	100	100	100	100						
Count							14	21	23	19	17	19	17	24	22	23	10	4						

See p. 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

K 7

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

IONOSPHERIC DATA

Lat. 35° 42.4' N
Long. 139° 29.3' E

Kokubunji Tokyo

135° E Mean Time

fEs

Nov 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	3.2	1.8	3.2	1.9	1.7 F	3.0 F	2.4 Y	3.4 F	3.6 F	G	G	G	3.8	3.7	3.6	4.1	4.2 F	4.4	3.6	3.5	(28) Y	1.8	3.0	
2	1.6	2.0	2.0	2.6	3.3	(20) B	2.0	3.5	4.6	5.0	5.1	5.0	4.1	3.9	4.3 Y	3.8	3.6	3.2	4.8	3.6	3.6	3.2 F	5.9 Y	3.8
3	3.0 Y	4.4 F	1.8	2.8	3.6 F	(31) Y	2.1	3.8	5.0	7.4	4.2	C	5.2	5.6	5.0	3.3 Y	5.0	4.6 Y	C	3.4 F	3.2 F	3.4 F	3.3	
4	3.0	2.4	3.2	2.8	2.9	2.6	2.0 Y	3.3	3.4	4.0	4.1	3.8	3.9	4.1	3.9	4.0 F	5.5	3.4	3.4	3.2	1.8	G	G	1.7
5	3.3 F	3.0 F	1.7 F	2.6	(20) Y	2.0 Y	G	(30) Y	3.2	6.0	4.2	4.7	4.1	G	G	G	3.7	3.4	4.4	3.4	3.5	G	G	3.6 F
6	5.2	3.2	3.6	3.4	3.0	2.2	G	3.0 F	3.9	7.2	5.2	3.8 Y	5.8	6.5	G	3.4	5.6	4.4	3.0	3.0 F	2.0	G	G	G
7	3.0 F	3.2	3.4	3.2	3.4	C	B	(28) Y	3.3	4.1	5.8	4.1	(4.2) Y	3.5	3.2	3.4 Y	2.3	2.0	1.7	1.8	G	1.8	G	G
8	G	G	2.8	C	3.4	3.2	3.1 Y	3.0	3.4	3.8	6.3	G	G	4.0	G	3.5	3.0	3.5	2.0 F	3.4 F	2.2	G	G	G
9	G	1.8	2.5 Y	2.3	3.0	3.6 Y	2.5	3.2 Y	3.4 F	3.4	G	G	B	B	3.7	3.4	G	4.2	G	3.0	1.8	G	G	G
10	1.1	1.2	1.2	G	1.8	2.1	(1.7) Y	3.7 F	G	G	4.1	G	4.0	4.1	3.9	3.8	G	2.4	2.2	2.1	2.2	2.2	2.6	2.4 F
11	(3.0) Y	2.4	3.0 F	2.0 F	B	B	1.8	2.8	3.0	B	6.2 Y	G	G	3.7	G	G	3.4	2.6	2.4	1.9	2.4	2.2	B	6.0
12	3.0 Y	3.2	2.7	2.8	3.0	C	C	3.8	3.0	4.5	5.5	5.0	4.7	4.4	4.4	4.4	3.8	3.5	G	3.3	3.6	3.2 F	4.2	
13	3.4	3.3 F	3.2 F	3.4 F	3.6 F	3.0	3.0 Y	2.9 F	4.0	4.6	C	3.6	4.2	3.8	6.0	G	3.2	2.9	1.5	1.5	G	G	G	G
14	2.8	2.4 F	3.4 F	3.8 F	3.2 F	3.5 F	(3.0) B	3.0 B	4.0	4.3	4.0	3.8	B	B	G	3.3	G	2.9	1.5	1.4	G	G	G	G
15	G	G	(3.2) Y	1.4	B	B	G	3.4	3.2	3.7	4.5	3.9	G	3.5	3.8	G	G	3.0	G	G	1.8	2.4	3.0	G
16	1.4	G	3.2	3.0 F	1.8 Y	1.7 Y	B	3.8	4.0	4.4	3.8	3.7	G	5.1	3.7	3.4 F	3.7	2.8	3.2	3.0	1.8	G	3.0	B
17	2.2	2.4	3.0	2.0	2.7	B	1.8	2.4	3.8	4.0	4.0	(6.1) Y	4.0	4.8	4.2	3.6	5.0	2.6	4.8	3.6	G	3.8 F	1.4	10.8
18	3.0	2.4	2.8	2.0	2.5	3.3 F	(4.0) Y	3.2	G	G	G	G	G	3.7	6.8	5.8 F	5.1 Y	4.8 F	3.8 F	6.2	4.1	4.8	3.1 F	2.8
19	1.8	2.8	3.3	2.5	1.7	3.1 F	G	3.0 Y	G	(3.8) Y	G	3.8	4.6	3.8	4.8	(6.0) Y	3.0 F	2.2 F	2.2	1.7	1.7	1.6	1.7	1.5
20	G	C	1.6	2.4	(2.0) Y	1.7	1.8 F	4.2	5.2	6.4	(14.0) B	13.4 Y	9.4	7.8	(6.0) Y	4.0	3.6	B	B	4.2	4.8	3.4 Y	3.0 F	3.0
21	(2.8) Y	3.0 Y	3.2	3.0	2.2	2.4	2.2 Y	3.2	4.0	4.1	3.8	3.7	5.3	3.7	G	5.2	3.1	3.6	3.4	3.2	2.6	2.2	B	1.8
22	3.4 F	3.7 F	3.4 F	3.0 F	3.0 F	2.5	2.9 F	3.0	2.8	3.6	G	G	3.7	3.8	4.1	4.1	3.7	(4.0) Y	3.7	2.5	2.0	1.8	G	3.0
23	2.0	1.4	2.2	2.9	3.0	2.2	G	G	G	G	6.0	3.7	G	G	3.7	3.5	3.5	1.8	1.8	1.8	1.8	2.4	3.4 F	G
24	2.0	G	2.6	3.1 F	3.1	(3.1) Y	2.9 Y	G	G	3.5 F	3.7 F	G	3.8 F	4.1	3.6	G	2.7	3.3 F	2.3	2.3	G	G	G	G
25	1.1	G	2.7 Y	2.2	2.2	2.3 Y	G	B	3.2 F	(5.8) Y	6.5 Y	G	G	B	B	B	2.3	(2.4) F	3.6 F	3.0 F	3.0 F	4.5	(3.9) F	2.9 F
26	2.4 F	2.7 F	3.0 F	2.4	(3.0) Y	2.2 F	B	2.4	3.4	3.8	3.8	3.9	G	4.2	3.8	3.4	3.7	2.5	2.4	G	2.2	3.2 Y	3.4	3.4
27	3.2	3.8 F	3.4 F	3.3 F	3.4	3.6 F	3.4	3.9 F	3.2	3.6 F	G	3.8	3.8 Y	B	B	3.4 F	3.4	3.4	2.7	4.0 F	3.4 F	2.5	G	G
28	E	1.4	1.4	1.2 F	1.7	1.7	G	G	3.0	3.6	(3.7) Y	G	G	(5.0) Y	3.8	3.9	3.2	3.8 F	3.6 F	2.4	1.8	2.2	2.0	G
29	(2.8) F	B	(3.9) F	2.9 F	2.9	2.8 Y	(3.0) Y	G	3.6 F	G	3.5	4.1	(5.4) Y	G	4.4 Y	2.4 Y	2.6	2.3	G	1.8	G	3.0	G	G
30	G	G	G	B	B	2.1	G	(2.9) Y	7.4	6.9 F	7.6	6.2 B	5.1	3.7 F	4.1 F	2.8	(2.0) A	(2.2) Y	3.2	3.2	1.3	G	1.9	3.5
31																								
Mean Value	2.6	2.4	3.0	2.6	2.9	2.5	2.0	3.0	3.4	3.9	4.1	3.8	3.9	4.0	3.8	3.4	3.4	3.0	2.7	3.0	2.0	2.0	2.0	1.8
Count	30	28	30	28	27	25	26	24	24	28	24	29	29	27	27	24	24	24	24	24	24	24	24	24

Summary: Mc 135.0 Mc in 15-min Manual

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

IONOSPHERIC DATA

Lat. 35° 42.4' N
Long. 139° 29.3' E

Kokubunji Tokyo

135° E Mean Time

(M3000)F2

Nov. 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	27	28	28	29	29	27	32	34	35	32	33	31	30	31	32	32	32	32	C	S	32	28	(26)C	25
2	24	25	25	26	24	23	34	34	34	31	32	31	30	31	32	32	30	32	31	33	32	27	AF	25
3	26	25	26	28	25	25	31	34	31	32	31	C	33	30	31	30	30	33	32	C	32	28	29	30
4	30	31	31	29	28	31	34	34	34	31	32	32	30	30	30	31	31	31	31	32	28	F	30	29
5	27	28	30	29	27	28	31	S	35	32	32	30	29	30	30	30	32	32	30	30	29	32	28	27
6	(76)A	26	26	26	30	27	24	S	32	32	32	32	31	31	33	32	32	33	33	32	33	32	31	30
7	28	26	27	B	31	32	36	33	33	30	31	30	29	27	29	30	32	30	32	31	32	26	27	29
8	27	28	29	(30)C	30	26	31	F	24	33	32	30	30	30	31	30	32	31	31	32	32	32	32	30
9	31	32	30	31	29	29	33	33	33	31	30	28	28	29	30	29	30	30	29	29	29	29	31	26
10	26	27	27	30	29	28	32	33	32	32	30	29	31	29	28	29	30	(31)S	30	29	30	30	27	25
11	25	27	26	30	31	28	32	32	32	31	31	31	29	28	29	31	31	31	31	30	29	30	29	32
12	34	32	27	26	26	C	C	34	35	33	32	29	29	28	29	31	31	31	29	30	29	29	28	27
13	28	26	26	26	25	27	29	33	33	(32)F	(30)C	29	30	29	32	30	32	32	34	31	29	31	32	29
14	27	28	26	26	25	25	29	33	32	32	32	30	28	29	29	30	30	33	31	29	28	29	30	29
15	28	25	25	27	27	31	30	33	33	32	33	31	29	30	31	31	33	32	33	32	31	29	27	28
16	28	28	28	25	25	31	35	35	34	32	31	30	27	28	28	29	31	31	31	29	31	31	27	26
17	27	29	27	27	29	26	29	33	33	32	31	32	29	29	29	30	32	B	32	29	31	30	A	A
18	27	27	29	31	28	28	31	35	35	32	30	31	29	30	31	32	31	33	33	33	30	29	26	26
19	27	29	28	27	27	27	29	33	34	32	32	30	30	29	28	32	32	32	29	30	30	25	27	27
20	27	(76)C	26	25	25	29	31	34	(29)S	32	30	30	28	29	29	30	30	30	30	30	30	33	27	28
21	26	25	29	30	29	30	S	34	34	32	32	31	30	32	31	30	32	30	30	32	33	31	30	28
22	A	24	30	28	29	30	32	36	35	30	29	31	30	32	31	31	32	30	32	32	32	34	29	28
23	31	28	27	29	29	28	32	(36)S	36	34	32	31	31	30	30	30	32	34	34	32	33	28	27	28
24	31	31	31	27	28	28	27	34	34	34	33	32	31	32	33	32	32	31	33	30	32	30	27	29
25	30	26	29	30	29	30	34	35	35	33	32	33	32	31	32	32	34	33	33	31	32	30	27	28
26	28	29	27	28	28	30	31	35	36	35	33	31	(31)C	31	31	31	32	(32)S	33	34	30	30	28	28
27	27	26	29	29	27	26	31	34	33	(32)S	32	31	30	32	31	31	31	31	(30)C	30	31	32	31	30
28	29	26	27	29	24	27	29	32	34	33	(32)S	32	31	30	30	32	(32)C	33	37	33	32	31	28	28
29	31	24	26	29	29	27	30	33	35	33	34	32	30	30	28	29	31	30	30	29	32	30	27	27
30	27	27	(25)F	(25)F	25	27	30	31	33	32	S	32	33	31	31	32	32	30	33	34	33	30	26	25
31																								
Minimum Value	27	27	28	27	28	28	31	34	34	32	32	31	30	30	30	30	31	32	32	31	31	30	28	28
Count	29	30	30	29	30	28	28	28	30	30	29	29	30	30	30	30	30	29	29	28	30	30	28	29

8 sep 10

Manual

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

IONOSPHERIC DATA

Nov 1949

f min F

135° E Mean Time

Kokubunji Tokyo

Lat. 35°42.4'N
Long. 139°29.3'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	1.8	1.4	1.5	1.5	1.1	1.1	1.4	2.6	2.9	3.6	3.6	3.8	3.6	3.5	3.4	3.0	3.6	AF	C	A	1.8	1.6	C	2.4
2	1.3	1.1	E	E	1.4	1.8	A	3.5	4.1	4.2	4.1	3.8	4.1	3.8	4.1	3.5	3.8	1.5	1.6	1.1	2.0	1.8	1.9	AF
3	1.4	A	1.3	1.3	1.5	1.1	1.9	2.3	3.0	AF	3.8	C	3.8	4.0	3.7	3.1	3.0	2.0	AF	C	AF	1.9	1.7	2.0
4	1.4	1.2	E	E	E	1.1	1.6	2.4	3.2	3.4	3.5	3.8	3.7	3.7	3.3	3.1	A	1.6	1.1	1.2	1.2	1.1	1.1	1.1
5	1.3	1.2	1.1	1.1	1.2	1.2	1.1	2.2	2.0	A	2.6	4.6	3.7	3.7	3.7	3.1	2.4	A	A	2.0	1.6	1.2	1.3	1.8
6	A	2.0	1.6	1.3	1.4	1.1	1.4	2.4	3.0	3.2	3.8	3.8	4.0	4.1	4.3	3.2	3.2	2.5	1.7	2.0	1.5	1.1	E	1.2
7	E	E	E	E	E	E	1.3	2.3	3.7	4.0	3.8	4.0	4.1	4.3	3.2	3.2	2.5	1.7	2.0	1.5	1.1	E	E	1.2
8	E	E	E	E	E	E	1.3	2.4	3.0	3.4	3.7	3.7	3.7	3.7	3.8	T	2.5	A	1.6	1.5	1.4	1.2	1.1	E
9	E	E	E	E	E	E	1.5	2.9	3.1	4.2	4.2	3.9	4.0	4.1	4.1	3.4	2.8	A	1.2	1.8	1.2	1.1	1.1	E
10	E	E	E	E	1.1	1.1	1.5	2.6	3.2	3.4	4.0	4.1	3.9	3.7	3.7	2.6	2.2	A	1.2	1.5	1.1	1.6	1.1	1.8
11	1.3	1.1	1.5	1.3	1.1	1.1	1.1	2.5	3.2	3.3	3.5	3.8	3.8	3.7	3.4	3.0	2.4	2.0	1.4	1.4	1.6	1.3	1.8	A
12	1.7	1.4	E	E	E	C	C	3.0	3.0	3.3	3.5	3.8	3.7	3.6	3.5	3.1	2.4	1.4	1.1	1.7	1.4	1.1	1.1	1.2
13	E	E	E	1.6	1.2	E	E	2.4	3.2	A	1.6	4.0	3.8	3.9	3.0	2.5	1.5	1.5	1.2	1.1	1.2	1.1	1.1	E
14	E	1.3	1.4	E	E	E	1.3	2.4	2.7	3.0	3.8	3.9	3.8	3.8	3.7	3.1	2.5	1.6	1.1	1.2	1.1	1.1	1.1	E
15	E	E	E	1.1	1.1	1.3	1.2	2.6	3.0	3.7	3.7	3.7	3.8	3.6	3.3	3.0	2.3	A	1.1	1.2	1.2	1.4	1.8	1.1
16	1.1	E	1.1	1.1	1.1	1.1	1.1	2.9	3.7	3.8	3.5	3.8	3.7	3.5	3.4	3.1	2.2	AF	2.0	F	E	1.1	1.1	E
17	E	E	E	E	1.2	1.1	1.1	2.2	3.2	3.4	3.8	3.8	3.6	3.6	3.0	2.0	AF	1.6	1.5	AF	1.5	AF	A	A
18	1.5	1.1	1.1	1.1	1.6	1.6	1.4	3.4	3.3	3.6	3.6	4.0	3.7	3.7	3.8	3.6	AF	AF	AF	AF	AF	1.5	1.8	1.2
19	E	E	E	E	E	E	E	2.3	3.1	3.8	3.7	3.8	4.2	3.9	3.2	3.0	2.3	1.1	1.1	1.2	1.2	E	E	E
20	E	C	1.1	1.1	1.4	1.1	1.8	1.8	2.4	AF	AF	AF	A	A	3.4	2.2	1.6	1.3	1.1	1.1	AF	1.7	AF	1.6
21	1.4	A	1.4	A	1.2	E	E	(2.0)	2.5	3.5	3.7	4.4	3.8	3.7	3.3	AF	2.3	1.8	2.0	A	1.1	1.2	1.1	1.1
22	AF	A	AF	E	E	E	E	AE	2.3	3.3	3.6	4.1	3.7	3.6	3.3	2.8	2.2	2.5	2.3	1.8	F	1.4	1.2	1.1
23	1.2	1.1	1.1	1.1	E	E	E	1.2	2.3	3.2	3.5	3.6	3.6	3.5	3.2	2.6	2.4	1.5	1.5	E	E	1.4	A	E
24	E	E	E	E	E	E	1.1	2.4	2.8	2.7	3.2	3.5	3.4	3.2	3.1	2.9	2.0	1.4	1.1	E	E	E	A	E
25	E	E	1.1	1.1	1.1	1.1	1.4	3.4	3.1	4.1	3.9	4.1	4.0	3.6	3.7	3.1	3.6	(3.0)	AF	1.5	1.9	1.6	A	1.9
26	E	E	1.1	1.3	1.1	1.1	1.3	2.2	2.8	3.2	3.2	3.7	3.6	3.5	3.2	2.9	2.2	1.3	E	E	E	E	E	E
27	E	E	E	E	E	E	1.1	2.0	2.8	3.5	3.7	3.5	3.8	3.5	4.4	2.8	2.6	1.8	1.9	1.6	1.3	1.2	E	E
28	E	1.2	E	E	E	E	1.4	E	3.6	4.2	3.6	3.6	4.2	3.6	3.6	2.8	2.7	3.8	1.8	2.2	E	E	E	E
29	E	E	E	E	E	E	E	2.1	2.7	3.1	3.6	3.6	3.4	3.2	3.2	2.7	2.1	1.1	E	E	E	E	E	E
30	E	E	1.1	1.1	1.1	1.1	1.1	2.2	4.0	A	A	4.0	A	3.4	3.0	2.8	2.0	1.7	1.3	1.2	1.1	1.2	1.4	1.6
31																								
Mean Value	E	E	1.1	1.1	1.1	1.1	1.2	2.4	3.0	3.4	3.7	3.8	3.7	3.4	3.0	2.4	1.6	1.2	1.4	1.1	1.2	1.1	1.1	1.1
Count	28	26	22	28	30	28	39	28	30	26	27	28	28	29	27	24	25	21	25	25	27	29	24	27

Swamp. @ Mc. 10126-Mc m²-min Manual

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

IONOSPHERIC DATA

Lat. 42.1°N
 Long. 139°20.3E

Kokubunji Tokyo

MIN E

Nov 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	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	E	E	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
MUF3000																								
Minimum																								
Count	30	29	30	28	27	25	21	30	30	29	30	29	30	30	27	16	29	30	28	29	29	30	28	29

Swamp: No. to 100 Mc in 15 min Manual

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

IONOSPHERIC DATA

Lat. 35° 12.4' N
Long 139° 29.3' E

Kokubunji Tokyo

135° E Mean Time

Zd

Nov 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	120	80	70	80	150	110	140	40	50	90	50	100	90	90	90	80	130	100	C	S	80	120	(110)C	100
2	70	70	70	70	50	120	70	50	70	70	50	60	100	100	100	90	90	70	70	C	100	130	120	80
3	130	70	60	70	80	100	70	80	130	100	100	100	50	80	80	100	100	70	C	100	130	120	90	90
4	90	100	100	90	140	120	110	100	70	70	(60)B	60	(100)B	70	100	100	80	130	140	80	110	90	140	90
5	100	110	90	90	110	90	100	S	80	100	70	(100)B	100	80	70	90	130	100	120	110	100	110	70	100
6	(90)A	80	100	110	80	150	140	100	90	80	120	100	100	80	90	70	70	80	100	80	80	70	80	100
7	120	100	100	B	110	C	160	80	70	100	90	90	100	120	150	140	110	100	80	110	120	140	90	80
8	70	90	80	(80)C	90	50	110	5	80	90	70	120	90	90	120	140	110	110	110	80	70	90	80	110
9	110	70	80	80	210	130	160	70	70	90	140	150	110	80	80	70	70	120	80	70	80	120	150	120
10	120	80	100	90	70	70	100	110	70	80	100	110	40	80	80	100	100	(100)B	120	100	120	130	90	120
11	100	80	90	70	210	130	140	120	80	90	90	70	100	100	100	120	110	80	70	140	120	130	90	120
12	70	80	110	130	80	C	120	90	70	70	70	80	90	80	80	80	70	110	100	70	100	100	70	110
13	100	80	(80)B	100	100	100	130	90	60	(80)F	(100)C	120	100	80	90	80	80	90	130	120	90	80	100	130
14	110	110	100	110	130	130	120	80	70	70	80	130	110	110	90	130	110	80	100	110	70	80	100	130
15	90	100	90	80	80	80	120	100	70	80	80	90	70	70	90	90	70	70	100	110	70	80	70	70
16	90	90	130	50	80	80	130	40	80	80	70	110	90	80	110	120	100	120	100	80	70	100	120	80
17	140	130	130	120	170	90	140	100	70	60	100	110	80	100	100	90	90	120	100	80	70	100	120	110
18	90	70	80	140	130	280	110	90	60	110	110	100	90	70	90	80	80	100	140	160	130	150	120	100
19	100	100	90	100	110	90	150	80	40	100	100	90	100	110	120	130	130	90	70	110	90	120	100	110
20	90	C	100	80	50	80	100	100	80	80	90	100	120	80	(90)B	90	100	100	80	100	120	80	100	90
21	90	70	90	130	90	110	100	70	50	60	90	100	110	110	80	90	70	110	100	60	90	110	100	70
22	160	90	60	100	60	50	100	100	70	130	100	100	90	60	90	100	110	90	80	100	120	120	100	70
23	70	110	100	130	80	100	80	60	80	60	80	80	80	80	80	110	90	80	100	110	120	120	100	70
24	90	70	100	100	170	130	110	70	170	60	80	90	90	100	80	80	90	120	70	60	70	60	110	80
25	80	90	90	70	70	90	70	60	50	70	50	110	100	80	80	100	110	90	110	90	80	120	70	70
26	80	120	130	100	100	100	110	100	80	90	80	110	100	80	80	100	110	110	70	80	120	100	70	70
27	80	90	60	80	110	120	120	130	80	80	100	100	100	80	80	100	110	110	70	80	120	100	70	70
28	80	110	70	(80)F	120	110	110	60	70	70	(80)S	70	110	90	110	70	(80)C	100	80	80	130	130	120	160
29	110	120	80	110	170	90	150	120	70	40	40	60	80	100	110	100	80	90	100	80	100	110	110	70
30	90	120	(70)F	(80)F	80	90	120	120	40	70	5	90	50	100	80	100	90	80	(80)S	100	120	110	80	80
31																								
Mean Value	90	90	90	90	100	100	110	85	70	80	80	100	100	90	90	90	90	90	80	90	90	105	100	90
Count	30	27	30	29	30	28	29	28	30	27	27	27	30	30	30	30	30	29	28	28	30	20	27	27

See page 36 for details in 12-min

Manual

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

IONOSPHERIC DATA

Lat. 31° 12.5' N
Long. 130° 37.7' E

Nov. 1949

f_oF₂

135° E Mean Time

Yamagawa

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	5.5	4.7	4.7	4.8	4.5	3.3	4.0 ²	8.8	9.7	10.3	10.3	13.8 ^F	12.4	14.3	14.5	14.5	13.6	13.8	12.3 ^F	10.2	10.4	8.8	7.2	5.6	
2	4.4	4.7	4.7	3.2	3.8	4.0	C	C	12.6	13.0	12.4	13.3	13.6	14.3	14.7	14.0 ^F	12.3	11.7	11.3 ^J	9.7	8.7	8.7	5.9	4.8	
3	5.0	4.9	4.7	4.7	4.5	4.6	4.6	9.2	11.7	13.0	14.8	14.6 ^J	14.8	14.6	14.6	13.4	13.1	12.7	11.9 ^J	9.1	8.3	8.5	10.7	6.6	
4	6.4	6.8	6.2	5.3	5.0	3.6	6.0	8.2	8.8	12.5	14.9	14.5 ^J	13.5	13.7	13.8	14.1 ^J	13.7	13.2	11.2	10.5	10.6	10.1	8.3	6.8	
5	5.8	5.9	6.3	5.3	4.3	3.8	4.2	8.2	10.3	12.0	14.5 ^F	14.1	14.0	14.4	14.8	13.6	12.5	11.2	11.0	9.0 ^F	9.1	8.9	6.4	5.6	
6	5.5	5.9	6.1	4.9	4.8	3.8	3.8	7.5	11.1	12.7	14.4	14.6 ^F	14.6	14.7	14.8 ^F	14.5	15.2	15.5	11.3	9.0	S	8.0	5.5	4.9	
7	4.6	4.0	4.3	5.0	5.0	3.0	3.2	7.8	9.8	12.8	14.1	13.4	13.5	13.5	14.8	14.5	13.1	12.6	12.0	11.0	10.2	9.4	8.2	6.7	
8	5.2	5.1	5.3	5.1	5.1	2.8	3.5	8.4	C	C	C	C	C	14.1	14.1 ^F	14.5	13.8 ^F	12.8	11.9	10.7 ^J	9.1 ^F	9.0	7.9	6.4	5.9
9	5.2	5.1	4.8	5.2	4.7	3.6	5.6 ^J	7.6	10.8	11.3	11.3	13.1 ^J	13.4	14.4	13.7 ^F	13.3 ^F	S	10.4	10.6	10.0	10.5 ^F	S	6.8	5.6	
10	5.4	5.1	4.8	5.2	4.7	3.6	5.6 ^J	7.6	10.8	11.3	11.3	13.1 ^J	13.4	14.4	13.7 ^F	13.3 ^F	S	10.4	10.6	10.0	10.5 ^F	S	6.8	5.6	
11	5.1	4.9	4.8	5.4	4.4	3.6	2.9	8.3	9.5	12.7	14.0	13.4	C	S	14.7 ^F	S	14.1	S	12.1	C	C	8.7	8.8	8.6	
12	5.4	5.1	5.5	3.7	4.2	4.7	4.3	8.3	12.8	13.7	14.3	14.2	13.4	13.7 ^J	14.1 ^J	13.0	13.5	13.0	S	8.9 ^J	9.1	8.1	5.5	5.8	
13	5.2	5.0	4.7	4.9	4.6 ^C	4.2	4.7	9.2	10.6 ^J	11.9	13.0	12.4	13.1	14.1	14.5 ^J	13.7 ^F	13.4	12.8	12.0	8.7 ^F	9.0	8.8	7.9	5.2	
14	5.1	5.4	5.0	4.4	3.8	3.6	4.2	7.6	9.3	14.0 ^J	13.6 ^J	12.3	12.8 ^J	14.0 ^F	14.0 ^F	14.0	12.4	11.3	9.8	8.7 ^F	8.2	8.8	9.4	7.2	
15	6.4	6.3	4.8	4.9	5.0	4.8	4.3	7.3	10.2	C	C	12.8	12.8	13.8	14.0	14.0	14.3	15.3	12.5	10.3	9.7	9.2	7.9	6.8	
16	5.9	5.0	4.5	3.8	3.6	3.3	4.5	9.4	11.2 ^F	12.0 ^F	14.1	13.6	14.0	13.8 ^J	14.3 ^J	14.0	13.1	13.1	12.1	8.8	7.8	7.9	7.8	7.5	
17	5.0	5.1	5.0	4.3	3.2	2.9	3.2	7.0	10.0 ^J	13.1	14.0	13.1	12.8	13.8	13.5	13.5	11.3 ^J	13.2	C	C	C	9.7	6.5	5.8	
18	5.6	4.9	4.8	5.2	4.0 ^J	2.8	2.7 ^J	6.1	11.1	10.7	11.7	12.8	13.4	13.6	13.8	14.7	15.3	15.9	9.3	8.7 ^F	8.1	6.9	6.2	5.4	
19	5.4	5.0	5.2	6.0	C	C	3.8	6.9	10.1	11.3	12.1	12.4	13.2	13.2	13.2	13.2	13.2	12.2	12.2	10.4	7.8	7.2	7.8	6.6	
20	6.6	5.8 ^F	4.5	3.7	3.2 ^J	3.5 ^J	3.0	8.3	10.2	S	12.7	12.8	12.6	13.0	A	13.0	12.6	12.0	10.4	10.1	8.3	6.9	6.4	5.8	
21	5.0	5.4	5.4	5.4	4.6	3.0	2.8	6.7	8.5 ^F	11.2	13.5	14.3	13.1	13.5	13.9 ^F	14.2 ^F	14.0	12.9	10.4	9.8	7.8	6.9	5.3	5.2	
22	3.6	3.4	2.9	2.7	3.5	2.6 ^F	2.7	7.5	10.1	10.3	S	13.3	13.3	13.8	14.1	13.4	13.4	13.4	8.8	9.9	7.5	7.8	5.3	5.1	
23	4.6	5.2	4.6	3.3	4.2	3.6	4.0	6.7	10.1	12.5	13.5	13.3	B	C	C	C	C	14.0	12.3	9.5	8.7	8.6	7.8	7.9	
24	5.7	4.7 ^C	4.3	4.9	5.0	3.5	2.7	6.8	9.4	10.2 ^F	10.1	10.8	12.1	13.1 ^J	13.4	11.9	11.3	10.5	10.2	8.3	7.7	7.4	7.1	5.3	
25	5.9 ^F	4.0	3.8	3.6	3.6	3.2	3.6	5.8	9.6	9.5	11.3	11.5	11.8	12.3	12.4	11.9	11.3	8.4	6.9	8.4	7.3	5.1	4.1		
26	4.0	4.5	4.6	4.6	4.8 ^F	3.0	3.4	6.6	9.4	9.4	10.0	13.1	13.4	13.1 ^F	14.1	12.7	14.2	13.2	10.7	9.5	8.1	7.0	6.0	5.5 ^F	
27	4.2	4.4	4.4	3.7	3.4 ^F	3.0 ^F	3.3 ^F	6.8	9.3 ^F	11.1	12.2	12.7	13.1	13.5	13.2	14.1	13.7	13.0	11.2	11.9	8.7	7.0	6.2	6.3	
28	5.2	4.6 ^J	3.7	3.4	4.8	4.8	7.6	8.4	10.6	12.4	15.7	13.2	12.8	13.2	13.4	12.5	12.8	11.8	10.9	8.2	7.2	7.5	6.9	5.5	
29	5.4	4.4	4.0	4.2	3.4	3.3	3.8	7.3	10.7	S	13.8	12.9	13.8	13.4	13.3	13.4	13.0	12.4	13.3	12.4	11.7	11.4	8.2	5.9	
30	5.7	5.1	3.6	3.5	3.5	3.5	3.8	6.8	10.9	10.8	10.9	13.0	14.2	12.8	12.7	12.8	13.0	13.0	10.4	11.1	10.1	7.4	6.4	5.2	
31																									
Mean Value	5.4	5.0	4.8	4.8	4.2	3.5	3.8	7.6	10.2	12.0	13.4	13.2	13.4	13.8	14.8	13.6	12.1	12.9	11.0	9.5	8.7	8.0	6.8	5.7	
Count	30	30	30	30	29	29	29	28	26	28	26	26	27	26	25	25	25	27	27	27	27	24	20	30	

Group 2, Mc to 5 Mc to 15 mhz

Y 1

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

IONOSPHERIC DATA

Nov 1949

4 F2

135° E Mean Time Yamagawa Lat. 31° 12.5' N Long. 130° 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	310	320	320	320	240	350	380	240	(2700)	340	340	310	340	340	340	340	340	340	320	320	330	300	350	370
2	52	410	340	420	560	440	C	C	290	320	340	340	340	340	340	340	340	340	(320)	310	310	350	310	470
3	300	400	410	300	370	420	420	240	240	330	340	340	(320)	350	360	360	360	300	300	320	330	320	380	370
4	310	280	310	280	330	310	230	330	310	310	340	(310)	340	(320)	320	(310)	350	320	(330)	310	S	320	330	(420)
5	280	380	340	310	350	340	360	290	280	210	320	310	340	370	330	340	340	360	320	370	310	320	350	370
6	400	390	370	370	300	340	400	260	300	320	350	330	370	370	350	360	360	310	320	S	S	320	320	350
7	350	340	420	350	220	340	370	280	280	320	330	330	260	B	B	B	350	320	290	310	290	290	300	320
8	290	320	330	320	270	430	340	310	S	310	310	S	360	350	370	350	350	300	340	300	340	300	360	320
9	340	370	370	330	320	270	400	300	C	C	C	C	C	C	C	C	C	C	C	C	C	360	350	410
10	420	400	280	370	270	(220)	(360)	300	290	C	C	C	C	C	C	(360)	S	S	280	320	300	(290)	320	400
11	410	410	480	320	260	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440
12	320	280	310	330	460	340	360	260	260	340	290	320	340	360	380	S	380	S	340	S	C	300	320	360
13	370	340	380	360	(380)	410	410	210	(280)	300	300	320	360	(350)	(350)	(310)	330	310	S	340	320	300	340	310
14	350	340	350	(380)	270	240	320	320	300	300	300	320	320	320	(260)	350	370	360	320	330	320	300	300	310
15	370	380	410	390	310	360	340	330	360	280	C	C	370	370	360	320	340	310	280	340	320	290	340	370
16	330	320	320	410	440	450	340	330	280	C	C	C	370	370	360	320	340	310	280	340	320	290	340	370
17	240	340	300	330	280	420	420	320	(310)	300	310	320	360	(240)	(370)	370	340	320	320	300	290	290	300	310
18	380	350	320	240	(300)	270	(260)	300	320	300	310	320	330	360	330	330	330	330	C	C	C	300	320	360
19	360	330	340	T	C	C	330	270	280	240	240	320	340	340	340	340	340	340	340	340	340	340	340	340
20	360	370	360	330	(240)	(280)	410	330	280	S	360	330	350	380	A	340	340	340	310	310	290	350	320	400
21	240	420	330	260	350	450	350	310	280	320	330	340	(340)	380	350	340	340	310	300	330	300	310	320	310
22	340	330	450	410	360	460	470	310	280	320	330	340	350	380	350	340	340	290	300	330	300	310	320	310
23	B	370	340	400	230	360	300	310	260	300	310	320	350	380	B	C	C	C	300	310	350	300	310	310
24	320	300	310	380	330	310	330	310	270	(260)	320	320	350	340	310	310	320	300	320	310	320	340	320	310
25	320	350	440	340	360	340	360	280	280	300	310	310	310	340	330	320	300	260	300	350	310	280	310	400
26	400	340	320	330	300	360	260	240	240	250	310	320	320	340	340	340	340	300	280	320	310	320	310	300
27	330	370	360	340	380	390	360	290	260	F	340	340	340	360	360	370	350	320	300	290	340	310	320	330
28	360	(320)	340	360	310	290	240	270	280	300	(310)	310	320	350	350	330	340	310	300	270	320	300	350	360
29	330	340	330	360	370	380	340	360	280	S	300	310	350	350	360	350	340	340	350	S	320	330	370	400
30	420	360	420	440	440	430	390	360	320	290	310	340	340	350	370	380	340	330	330	320	300	340	340	420
31																								
Median Value	360	360	350	370	340	360	360	300	280	300	310	325	350	350	350	340	340	310	310	325	320	320	320	345
Count	24	30	30	24	24	24	24	24	28	26	28	26	27	26	25	26	27	27	27	26	26	26	24	30

Sweep 2-Mc 1085-Mc in 1.5-min

Manual

Radio Regulatory Agency (Denpacho)

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

IONOSPHERIC DATA

Nov. 1949

h'F2

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	270	300	300	260	250	260	240	240	220	250	260	260	250	280	300	280	260	240	230	220	260	230	270	240
2	420	340	300	300	460	380	C	C	230	250	370	280	240	300	280	270	260	240	250	220	250	270	280	400
3	440	370	370	350	300	300	350	260	240	240	270	260	240	250	250	260	230	220	230	230	250	250	250	280
4	270	250	240	230	250	260	260	270	260	240	240	250	270	300	270	270	240	220	220	230	260	240	250	280
5	300	280	250	250	260	270	280	250	220	220	240	250	260	260	270	240	230	220	230	240	240	230	230	270
6	300	310	300	310	280	280	320	280	250	260	250	260	260	260	310	310	280	270	230	220	230	230	230	270
7	280	330	320	240	230	260	240	230	240	250	250	240	240	210	260	270	240	250	250	270	230	240	260	270
8	230	240	250	260	220	260	320	280	250	260	240	250	310	300	250	260	230	240	230	240	270	240	260	270
9	280	290	280	250	240	250	330	270	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	280
10	300	300	290	210	220	240	240	250	220	230	240	250	280	300	270	260	250	240	210	210	210	250	230	250
11	310	320	310	250	220	330	300	230	230	240	230	250	280	280	280	280	250	240	220	220	220	220	260	270
12	250	240	250	280	370	320	280	270	260	230	230	260	260	260	300	300	250	240	220	220	220	230	260	270
13	240	300	310	280	1300	330	330	260	240	260	240	260	260	260	260	250	270	230	230	230	270	260	230	270
14	280	300	290	270	220	210	220	240	240	260	240	220	220	220	280	240	230	230	230	230	240	270	260	230
15	270	270	320	320	260	240	240	280	C	C	C	C	C	250	280	270	280	270	220	210	220	230	230	240
16	250	230	250	310	270	360	300	260	230	240	260	260	260	270	260	260	260	250	210	210	250	240	230	270
17	230	220	210	280	240	B	350	270	1260	250	250	250	270	250	270	250	1250	250	C	C	C	240	230	270
18	300	300	290	250	220	220	240	260	230	240	230	280	240	240	260	260	260	230	210	250	240	250	250	300
19	300	260	250	T	C	C	250	250	210	250	240	300	300	270	240	260	260	230	240	240	230	270	280	290
20	280	240	240	240	210	210	210	220	240	250	240	300	250	280	A	250	240	230	240	260	200	250	250	250
21	250	A	280	220	260	250	350	280	250	270	240	280	280	280	290	210	230	230	220	230	220	250	200	240
22	270	220	340	250	300	250	250	280	240	230	260	230	250	280	C	C	C	C	(210)	(210)	220	250	200	240
23	270	240	240	310	260	240	280	270	260	240	240	290	290	270	250	250	250	240	200	230	240	230	260	300
24	230	230	230	260	260	240	280	280	240	240	240	240	240	240	260	260	260	250	260	220	230	240	260	260
25	250	300	280	260	290	320	280	240	240	240	250	240	260	260	260	260	260	250	260	220	230	220	260	260
26	320	300	280	260	280	240	280	240	240	240	250	240	260	260	260	260	260	250	260	220	220	240	230	280
27	280	280	260	270	300	320	300	260	250	260	260	270	270	280	280	280	260	270	220	220	220	240	230	280
28	280	280	260	260	250	230	250	240	250	220	230	240	240	240	260	260	250	230	230	220	230	230	230	280
29	260	260	240	320	240	310	300	260	240	250	240	250	270	270	270	270	250	220	220	220	230	230	250	280
30	240	280	240	300	250	360	350	260	240	250	270	270	270	270	270	260	260	270	250	230	230	230	250	320
31																								
Mean Value	280	240	285	270	260	280	290	260	250	260	270	260	270	280	270	260	250	240	230	240	240	230	250	270
Count	70	20	30	24	24	28	24	24	28	28	24	27	24	24	27	28	28	24	28	24	24	24	30	30

Mean Time 135° E
Sleep 1/2 hr. 135 Mc in 15 min

Moment

Y 3

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

IONOSPHERIC DATA

Nov. 1949

f_oF₁

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	Q	L	L	L	L	L	L	L	Q	Q	Q					
2						C	Q	C	Q	Q	Q	A	A	L	L	L	L	Q	Q	Q				
3						Q	Q	Q	Q	L	L	L	Q	Q	L	L	L	Q	Q	Q				
4						Q	Q	Q	Q	L	L	L	L	L	L	L	L	Q	Q	Q				
5						Q	Q	Q	Q	L	L	L	L	L	L	L	L	Q	Q	Q				
6						Q	Q	Q	Q	L	L	L	L	L	L	L	L	B	L	Q				
7						Q	Q	Q	Q	L	L	Q	B	Q	Q	Q	Q	Q	Q	Q				
8						Q	Q	Q	Q	L	Q	Q	L	5.0	Q	Q	Q	Q	Q	Q				
9						Q	Q	Q	C	C	C	C	C	C	C	C	C	C	C	C				
10						C	Q	Q	Q	L	L	L	L	L	L	L	L	Q	Q	Q				
11						Q	Q	Q	Q	L	L	L	L	L	L	L	L	Q	Q	Q				
12						Q	Q	Q	Q	L	L	L	L	L	L	L	L	Q	Q	Q				
13						Q	Q	Q	Q	L	L	L	L	L	L	L	L	Q	Q	Q				
14						Q	Q	Q	Q	L	L	L	L	L	L	L	L	L	L	A				
15						Q	Q	L	L	Q	Q	Q	Q	L	L	L	L	Q	Q	Q				
16						Q	Q	Q	Q	C	C	C	L	L	L	L	L	L	L	Q				
17						Q	Q	Q	Q	L	L	L	L	L	L	L	L	Q	Q	Q				
18						Q	Q	C	L	L	L	L	L	L	L	L	Q	C	Q	C				
19						Q	Q	Q	Q	L	L	L	L	L	L	L	L	L	Q	Q				
20						Q	Q	Q	Q	L	L	L	L	L	L	L	L	L	Q	Q				
21						Q	Q	Q	Q	L	L	L	L	L	L	L	L	L	Q	Q				
22						Q	Q	Q	Q	L	L	L	L	L	L	L	L	L	Q	Q				
23						Q	Q	Q	Q	L	L	L	L	L	L	L	L	L	L	L				
24						Q	Q	Q	Q	A	L	L	L	L	L	L	L	L	L	L				
25						Q	Q	Q	Q	Q	Q	L	L	L	L	L	L	L	L	L				
26						Q	Q	Q	Q	Q	Q	L	L	L	L	L	L	L	L	L				
27						Q	Q	Q	Q	Q	Q	L	L	L	L	L	L	L	L	L				
28						Q	Q	Q	Q	L	L	L	L	L	L	L	L	L	L	L				
29						Q	Q	Q	Q	Q	Q	L	L	L	L	L	L	L	L	L				
30						Q	Q	Q	Q	Q	Q	L	L	L	L	L	L	L	L	L				
31						Q	Q	Q	Q	Q	Q	L	L	L	L	L	L	L	L	L				
Median Value						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Count						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

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

IONOSPHERIC DATA

Lat. 31° 12.5' N
Long. 130° 37.7' E

Nov. 1949

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	Q	240	230	220	220	260	260	Q	Q							
2							C	C	Q	Q	Q	A	A	240	250	240	Q	Q							
3							Q	Q	Q	Q	240	240	Q	Q	230	240	Q	Q							
4							Q	Q	Q	230	230	230	220	230	240	240	Q	Q							
5							Q	Q	Q	Q	240	230	230	230	240	Q	Q	Q							
6							Q	Q	Q	Q	240	240	240	230	B	B	250	Q							
7							Q	Q	Q	Q	230	Q	B	Q	Q	Q	Q	Q							
8							Q	Q	Q	Q	240	Q	Q	230	Q	Q	Q	Q							
9							Q	Q	C	C	C	C	C	C	C	C	C	C							
10							C	Q	Q	Q	210	250	230	240	220	240	Q	Q							
11							Q	Q	Q	Q	Q	220	220	220	220	230	Q	Q							
12							Q	Q	Q	Q	Q	Q	Q	220	220	230	Q	Q							
13							Q	Q	Q	Q	Q	Q	Q	240	240	230	Q	Q							
14							Q	240	210	Q	Q	Q	Q	220	Q	Q	Q	Q							
15							Q	Q	Q	C	C	C	210	230	210	220	230	240							
16							Q	Q	Q	Q	Q	220	240	230	240	Q	Q	Q							
17							Q	Q	C	230	230	230	210	220	Q	C	Q	C							
18							Q	Q	Q	Q	Q	240	240	230	Q	240	240	Q	Q						
19							Q	Q	Q	Q	Q	250	240	230	260	Q	260	Q	Q						
20							Q	Q	Q	Q	Q	Q	Q	230	A	A	Q	Q							
21							Q	Q	Q	Q	250	240	240	230	240	Q	Q	Q							
22							Q	Q	Q	Q	A	240	Q	Q	Q	240 ^A	250	220	210						
23							Q	Q	Q	Q	Q	Q	240	Q	C	C	C	Q							
24							Q	Q	Q	Q	Q	240	230	230	230	Q	Q	Q							
25							Q	Q	Q	Q	Q	230	220	240	A	A	210	A							
26							Q	Q	Q	Q	Q	230	230	230	220	230	Q	Q							
27							Q	Q	Q	230	220	250	240	220	260	Q	Q	Q							
28							Q	Q	Q	Q	Q	Q	240	230	240	240	Q	Q							
29							Q	Q	Q	Q	Q	230	240	240	240	Q	Q	Q							
30							Q	Q	Q	Q	Q	240	230	250	Q	Q	Q	Q							
31																									
Median Usable Count							-	-	-	230	230	240	230	230	240	230	245	240							
Frequency-Mc (3-30Mc in 1.5-min)							0	1	1	6	9	19	21	25	21	14	6	5	1						

Manual

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

IONOSPHERIC DATA

Nov. 1949

f_oE

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							E 1.1		B 2.5	B	A	A	A	B	A	3.7 ^A	3.0 ^A	A	A					
2							C	A	A	2.8	A	B	A	3.8 ^F	3.6	3.4	2.7 ^A	(2.3)	B					
3							E 2.1	A	A	3.1	A	A	3.5 ^A	A	3.3 ^A	A	A	(2.2)	A					
4							E 2.0	A	A	2.8	B	A	A	3.3 ^A	(3.2)	(2.6)	(2.6)	5						
5							B 2.0	A	2.8	3.1	3.2	3.3	A	3.7	A	3.4	2.9 ^F	2.2 ^B	B					
6							B (2.6)	A	(2.6)	3.0	3.4	3.6	3.8	3.8	3.8	3.7	3.3	B	B					
7							B 2.0	(2.8)	B	A	A	A	B	A	A	A	2.4	A	A	P				
8							B 2.8	A	3.0	B	3.8	3.8	3.6	3.3	3.2	2.9	(2.4)	B						
9							B (1.8)	C	C	C	C	C	C	C	C	C	C	C	C					
10							C 1.7	(2.6)	(3.1)	(3.4)	3.6	3.7	3.5	3.4	3.0	2.8	2.2	B						
11							1.5 ^B	2.2	2.7	2.5	2.8	(3.6)	3.5	3.5	3.4	3.1	3.2	1.3 ^B						
12							B 1.8	2.6	(3.3)	(3.6)	3.6	A	(3.6)	B	3.7	(2.9)	A	B						
13							B 2.0	2.8	A	(3.6)	A	A	A	A	A	A	A	B						
14							A B	2.7	B	3.0	3.5	3.8	3.9	3.5	3.1	2.7	2.2	A						
15							B (2.2)	2.8	C	C	C	3.7	3.6	3.0	3.3	B	B							
16							E A	(2.3)	3.0	A	A	A	A	A	3.6	A	A	2.2	A					
17							B 1.9	(2.6)	C	3.2	A	A	A	A	3.0	A	C	A	C					
18							B 1.9	A	3.0	3.3	3.5	3.6	B	(3.4)	(3.2)	A	A	A	B					
19							B 1.9	A	3.2	3.3	3.3	3.5	3.5	A	A	2.6	2.4	A						
20							A 1.6	(2.1)	A	A	3.2	A	A	3.4	A	A	A	1.7	A					
21							E A	2.6	2.7	A	A	A	A	A	A	A	A	2.0	A					
22							B 1.6	2.4	A	A	A	A	A	A	A	A	A	A	A					
23							B B	2.4	3.0	3.6	3.6	3.4	A	C	C	C	A	A	B					
24							E A	2.5	2.7	2.8	A	A	A	A	(3.2)	2.6	2.0	B						
25							B 1.7	2.1	2.7	A	(3.3)	A	A	A	A	A	A	A						
26							B 2.2	2.2	A	3.1	B	B	B	A	A	2.8	B	A						
27							B 1.5	2.5	A	A	A	A	3.4	A	A	A	2.4	B	B					
28							A A	2.8	A	3.4	3.6	B	3.6	3.3	A	2.7	(1.9)	B						
29							B 1.7	(2.6)	(2.9)	A	(3.4)	A	3.4	A	A	A	A	A	B					
30							B 1.7	A	B	3.4	A	A	A	A	A	A	A	A	B					
31																								
Median Value							E 1.9	2.6	3.0	3.3	3.6	3.6	3.6	3.4	3.2	2.8	2.2							
Count							6	20	23	19	15	14	11	13	14	14	14	14	14					

See p. 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

Manual

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

IONOSPHERIC DATA

Lat. 31° 12.5' N
Long. 139° 37.7' E

h' E

Nov. 1949

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							B	150	110	B	A	B	A	110	120	110	120	A	A					
2							C	120	A	A	120	B	B	120	110	110	100	A	B					
3							E	B	110	110	110	110	(100)	110	110	B	B	A	A					
4							E	B	110	110	110	110	A	A	110	110	110	B	S					
5							B	(120)	100	100	110	110	120	110	A	120	110	B	B					
6							B	B	A	110	110	110	110	110	A	100	B	B	B					
7							B	120	(120)	B	A	A	B	110	A	A	110	A	B					
8							B	B	110	120	120	120	110	100	110	110	110	B	B					
9							B	B	C	C	C	C	C	C	C	C	C	C	C					
10							C	B	110	110	110	110	110	110	110	110	110	110	(120)	B				
11							B	150	100	100	100	100	(100)	100	100	100	100	110	110					
12							B	B	120	(120)	120	120	A	110	B	110	(110)	A	B					
13							B	B	A	130	130	A	A	A	A	A	A	A	B					
14							A	110	110	100	100	100	110	120	110	110	110	A	B					
15							B	170	120	C	C	C	100	100	110	110	B	B	B					
16							E	A	110	110	A	A	A	A	100	100	120	A	B					
17							B	B	C	110	110	A	A	A	100	A	C	A	C					
18							B	B	A	120	110	110	110	110	110	100	A	A	B					
19							B	170	A	100	110	110	110	110	A	130	120	120	B					
20							A	100	110	A	A	A	A	A	A	A	A	A	B					
21							E	A	A	120	A	A	A	A	A	A	A	110	B					
22							B	(150)	(130)	A	120	110	110	A	A	A	A	A	A					
23							B	B	100	120	100	110	100	A	C	C	C	A	B					
24							E	B	100	120	120	A	A	A	A	110	110	A	B					
25							B	B	(120)	100	A	A	A	110	A	A	100	A	A					
26							B	170	130	A	110	F	B	A	A	A	A	A	B					
27							B	B	110	A	A	A	110	A	A	A	A	A	B					
28							A	A	100	A	100	110	B	110	110	A	100	A	B					
29							B	B	120	110	A	110	A	120	A	A	A	A	B					
30							B	B	A	100	110	A	A	A	A	A	A	A	B					
31																								
Median Value								150	110	110	110	110	110	110	110	110	110	110	110					
Count								10	20	20	20	16	13	17	14	16	16	16	4					

Scale: 1 Mc to 3 Mc in 15 min

Manual

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

IONOSPHERIC DATA

Lat. 31° 12.5' N
Long. 130° 37.7' E

Nov. 1949

fEs

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	3.2	3.0	3.0 Y	2.6	G	G	G	2.4	G	B	4.2	B	4.0	G	4.6	4.8	3.2	3.8	3.2	G	G	G	1.4	2.7	
2	2.0	G	2.4	G	G	G	C	C	4.0	4.4	5.4	5.5	7.4	7.4	4.6	3.8	4.9	3.0	2.2	6.0	3.4	3.8	3.8	2.8	
3	2.4	4.2 Y	4.2	3.2	3.6	2.7	G	B	2.8	4.8	4.8	4.8	5.2	5.2	4.4	(4.2) Y	5.0	3.2	2.6	3.4	3.8	3.8	3.2	3.2	
4	G	G	G	G	G	G	G	G	3.2	3.0 Y	G	B	4.2	4.2	3.6	3.6	G	2.6	3.0	2.8 F	2.5	2.8	3.2 Y	G	
5	G	G	G	G	G	G	B	2.4 Y	2.1 Y	4.1	4.8	3.7	4.2	G	4.0	G	3.5	B	B	2.2	G	B	G	G	
6	G	3.0	3.0	3.0	G	G	B	B	3.6 Y	4.1	4.4	4.6	4.2	4.2	7.8	4.8	4.6	3.0	2.9	1.8	G	G	G	(4.0) B	
7	G	G	G	G	G	G	B	G	3.6	B	4.0	4.1	B	4.1	3.8	G	4.2	2.4	B	G	3.0	2.2	2.6	G	
8	G	G	G	G	G	G	B	B	G	G	B	G	G	4.2	3.8	G	C	C	C	G	G	G	G	G	
9	G	G	G	G	G	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
10	G	G	G	G	G	G	C	G	3.3	3.7 Y	G	4.6	5.0	4.6	4.8	4.4	G	G	3.7	3.6	2.6	G	G	G	
11	G	G	G	G	4.4	3.5	(4.0) Y	2.0	G	G	3.8	G	C	3.6	4.4	G	3.6	2.1	2.3	G	C	2.6	G	G	
12	2.6	4.0	G	G	G	G	B	G	G	3.4	5.0	5.1	4.2	4.7	4.4	G	3.0	3.3	4.0	3.4 Y	3.2	G	G	G	
13	G	G	3.0	G	C	G	B	G	3.4 F	3.0	G	4.6	4.6	4.6	4.6	4.6	4.2	3.6	4.1	4.2	3.0	G	G	G	
14	G	G	G	G	G	G	G	G	G	3.4	3.0	G	4.6	4.6	4.6	4.6	4.2	3.6	4.1	4.2	3.0	G	G	G	
15	G	G	G	G	G	G	B	G	G	3.4	3.0	G	4.6	4.6	4.6	4.6	4.2	3.6	4.1	4.2	3.0	G	G	G	
16	G	G	G	G	G	G	B	G	2.6	C	C	4.6 Y	B	B	5.1	4.7	G	G	3.2	1.4	2.7	G	2.4	G	
17	2.4	1.5	1.4	G	G	G	G	3.8 Y	3.7	3.4	4.2	4.2	4.2	5.0	4.2	3.8	3.2	2.6	2.6	2.4	1.8	G	2.3	2.7	
18	G	G	G	G	G	B	B	2.4	C	G	5.4	4.6	4.4	4.8	4.2	4.4	C	3.8	C	C	C	G	G	G	
19	2.4	2.0	G	G	C	C	B	2.2	3.7	2.8	(4.1) B	5.0 F	4.5 Y	4.0	B	G	6.2	5.6	3.0	3.8	3.8	2.0	2.6	2.6	
20	G	G	2.7 Y	2.6	1.7	1.4	G	G	G	4.5	5.6	4.6	4.6	3.8	13.0	6.2	3.5	2.2	B	2.4	3.0	2.8 F	G	G	
21	2.6	2.3	G	G	G	B	G	2.4	2.2	3.8	4.8	4.6	5.7	5.1	7.2	7.2	5.4	4.4	3.2	3.8	3.6	3.0	3.2	2.8	
22	2.2	2.2	3.5	G	2.6	2.7	2.0	1.8	2.7 Y	4.2	(5.0) Y	4.8	5.0	4.6	4.4	4.2	4.3	5.7	5.3	3.0	4.7	2.6	2.6	G	
23	2.6	2.4	G	G	G	G	G	2.4	4.4 F	4.8	4.6	4.8	4.7	4.8	C	C	C	4.2	3.2	3.2	3.2	1.9	2.4	G	
24	3.8	3.7	2.3	G	G	G	G	2.1	2.8 Y	3.3	4.4	4.2	4.2	4.0	4.2	3.2	3.0 Y	3.2	2.6	2.8	G	G	G	G	
25	1.6	G	G	G	G	B	B	2.4	G	2.8	4.8 F	5.0	6.8	4.2	4.7 F	4.4 F	3.2 Y	2.8	2.8	2.6	G	G	G	G	
26	G	G	G	G	G	B	B	2.8	2.8	(3.5) B	3.0	4.2	4.2	3.5	3.8	G	3.2	2.8	2.8	2.6	G	G	G	G	
27	G	G	G	2.6	G	G	B	2.8	G	3.8	3.6	3.8	5.2	5.2	4.8	4.6	4.8	4.2	7.0	2.9	3.0	2.8	G	G	
28	G	G	G	G	G	2.4 B	2.3	2.7	3.0	4.2 F	4.0	5.1	B	4.4	4.1	5.2	4.0	3.5	4.2	3.8	G	G	3.4	G	
29	G	2.6	G	G	G	G	B	3.4	G	G	4.0	4.6	3.6	G	3.6	3.8	2.9	4.2	3.1	3.5	3.4	2.2	2.4	G	
30	G	G	G	G	G	G	B	2.4	G	G	5.4	3.8	5.2	5.0	3.8	3.4	3.4	2.8	3.0	G	G	G	G	G	
31																									
Mean MUF3000 Count	G	G	G	G	G	G	G	2.4	2.8	3.8	4.0	4.6	4.3	4.4	5.4	4.2	3.5	3.2	3.0	2.7	2.4	2.9	2.8	2.9	3.0

Steep 1/2 Mc to 1.5 Mc in 15 min

Manual

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

IONOSPHERIC DATA

Lat. 31° 12.5' N
Long. 130° 37.7' E

(M3000)F2

Nov 1949

Y a m a e t a w a

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	2.7	2.7	2.8	3.0	3.2	2.7	2.6	3.2	(3.3)	3.1	3.1	3.0 ^P	2.8	2.8	3.0	2.0	3.0	3.2	3.0	2.9	2.0	3.1	2.4	2.7
2	2.3	2.4	2.7	2.5	2.1	2.5	C	C	3.3	3.1	3.1	2.9	2.8	2.8	2.4	2.4 ^P	2.4	2.8	(2.6)	3.0	2.8	2.8	3.1	2.4
3	2.7	2.6	2.7	3.0	2.8	2.6	2.6	3.2	3.1	2.9	3.1	(3.2)	(3.1)	2.8	2.8	2.3	2.8	3.0	2.4 ^F	2.9	2.0	2.8	2.8	2.7
4	2.9	2.7	3.0	3.2	3.0	3.2	3.0	3.2	3.1	3.1	3.0	(3.1)	3.0	(3.1)	3.2	(3.2)	2.8	3.0	2.8	2.8 ^S	S	(3.0)	3.0	(2.7)
5	2.7	2.7	3.0	3.0	2.9	2.7	2.8	3.1	3.2	3.0	3.1	3.1	3.0	3.0	3.1	2.9	2.8	3.1	3.0	2.7 ^F	3.1	3.0	2.8	2.7
6	2.7	2.7	2.8	2.8	3.1	2.6	2.6	2.4	3.4	2.4	2.8	3.0	2.9 ^F	2.8	2.4	2.4 ^F	3.1	3.2	3.0	S	S	3.1	3.0	2.4
7	2.7	2.7	2.6	3.0	3.5	2.9	2.8	3.3	3.3	3.0	3.1	2.9	2.8	B	B	B	2.8	3.0	3.4	3.2	7.4	3.3	3.1	3.0
8	3.2	3.0	2.9	3.5	3.3	2.6	2.7	3.0	S	3.1 ^F	3.1	S	2.8	2.8 ^P	2.8	2.4 ^F	2.8	3.0	3.0	2.7 ^F	3.1	2.9	2.9	2.6
9	2.8	2.8	2.7	3.0	3.2	2.6	2.6	3.2	C	C	C	C	C	C	C	C	C	C	C	2.7	2.0	(3.2)	3.0	2.5
10	2.7	2.7	2.7	2.9	3.2	2.5	(2.8)	3.1	3.1	3.0	3.1	2.8	2.8	3.0 ^F	2.8 ^P	(2.9)	S	S	3.2	2.0	3.0	(3.2)	3.0	2.5
11	2.6	2.6	2.6	2.4	3.4	2.5	2.7	3.2	3.3	3.0	3.2	2.4	C	S	2.4	S	2.9	S	3.1	C	C	3.2	2.9	2.8
12	2.9	2.9	2.5	2.9	2.5	2.6	2.9	3.2	3.2	3.2	3.1	2.9	(3.0)	(3.3)	2.4	S	3.0	3.0	S	2.7	2.4	3.0	2.4	2.8
13	2.7	2.7	2.7	2.8	2.7	2.6	2.6	3.0	(3.2)	3.2	3.0	3.1	3.0	3.0	(2.9)	3.0	2.8	2.8	3.1	2.9	3.0	3.1	3.2	3.0
14	2.9	2.7	2.8	(3.2)	3.4	3.4	3.0	3.3	3.4	(3.3)	3.1 ^H	2.9	2.8 ^H	3.0 ^F	B	2.8	3.0	3.0	3.1	2.8	3.0	3.2	3.0	2.9
15	2.7	2.9	2.6	2.6	3.0	3.1	2.9	3.0	3.4	C	C	C	2.8	2.8	2.9	3.1	3.4	3.3	2.0	2.8	2.8	2.9	2.9	2.8
16	2.9	3.0	3.0	2.6	2.5	2.4	2.6	3.1	(3.4)	3.2 ^P	3.1	3.1	2.8	(3.0)	(2.9)	2.8	2.9	3.1	2.9	3.1	3.2	3.2	3.3	3.3
17	3.1	2.9	3.0	3.2	3.4	2.6	2.5	3.0	(3.2)	3.3	3.1 ^F	3.1	2.4	2.8	3.0	3.0	3.0	(3.0)	2.9	C	C	3.1	3.1	2.7
18	2.7	2.9	2.9	3.1	(3.1)	3.1	(3.5)	3.1	3.2	3.0	3.2	2.9	2.9	2.9	2.7	2.4	3.1	3.1	3.0	2.7 ^F	2.8	3.0	2.9	2.6
19	2.8	2.9	3.0	T	C	C	2.9	3.3	3.3	3.2	3.2	2.9	2.9	2.9	2.6	A	2.7	2.8	3.0	3.1	3.0	2.9	2.9	3.1
20	2.8	2.8 ^F	2.7	2.9	(3.2)	(3.2)	2.6	3.0	3.4	S	3.1	2.8	2.9	(2.9)	2.8	2.9 ^F	2.9 ^F	3.0	3.0	2.8	3.1	3.0	2.9	3.0
21	3.2	2.8	3.0	3.4	2.8	2.5	2.9	3.1	3.2	3.1	3.0	2.8	2.8	2.8	2.4	2.4	2.4	2.4	3.2	3.2	3.1	2.8	3.2	2.7
22	2.6	3.1	2.4	2.8	2.7	2.5 ^F	2.3	3.1	3.5	3.1	2.8	S	2.9	2.9 ^F	2.4	2.4	2.4	2.4	3.2	3.1	2.8	3.1	2.9	2.7
23	2.8	2.5	2.8	2.8	2.4	2.8	3.2	3.1	3.1	3.2	3.1	2.3	B	B	C	C	C	C	3.1	3.0	3.1	2.8	3.2	2.9
24	2.9	2.8 ^F	3.0	2.7	3.0	3.1	2.9	3.0	3.6	(3.5)	3.1	2.9	2.8	2.8	2.4	2.4	3.0	3.1	3.3	3.5	2.7	3.1	2.8	2.7
25	3.0	2.9	2.9	3.0	2.8	2.9	3.0	3.2	3.3	3.2	3.2	3.0	3.0	2.9	2.9	2.9 ^F	3.2	3.2	3.2	3.2	3.0	3.1	2.8	2.9
26	2.7	2.8	3.0	3.0	(3.1)	3.0	3.3	3.2	3.4	3.4	3.1	3.3	3.5	3.1 ^F	3.4	3.2	3.2	3.2	3.2	2.9	3.1	2.9	2.7	2.8 ^F
27	2.8	2.8	2.7	2.8	2.8 ^F	2.6 ^F	2.8 ^F	3.2	3.2	3.2	3.0	3.3	3.2	2.8	2.9	2.8	2.9	2.8	2.4	3.0	3.1	3.3	2.4	2.9
28	2.7	(2.7)	2.8	2.8	3.0	3.1	3.3	3.4	3.4	3.2	(3.1)	3.0	2.9	2.8	2.9	2.9	2.8	2.9	3.0	3.1	3.2	3.0	2.2	2.8
29	2.9	2.9	2.9	2.7	2.7	2.7	2.7	3.1	3.3	S	3.1	3.1	2.8	2.8	2.7	2.7	2.8	2.9	2.8	2.8	(2.6)	2.8	2.9	2.6
30	2.5	2.9	2.5	2.5	2.4	3.1 ^F	2.8	2.8	2.8	3.2	3.0	2.9	2.9	3.0	2.8	2.8	2.9	2.9	2.9	2.9	2.9	3.1	2.7	2.6
31																								
Median Value	2.8	2.8	2.8	2.9	3.0	2.7	2.8	3.1	3.3	3.1	3.1	3.0	2.9	2.8	2.9	2.9	2.9	2.9	3.0	2.9	2.9	3.0	2.9	2.8
Count	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.6	2.8	2.6	2.7	2.6	2.5	2.6	2.7	2.7	2.7	2.7	2.7	2.6	2.9	2.9

Scale: 1 Mc to 1.5 Mc in 15 min

Manual

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

IONOSPHERIC DATA

Nov 1949

f_{min}F

135° E Mean Time Yamagawa

Lat. 31° 12.5' N
Long. 130° 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	A	2.0	1.8	1.6	1.6	1.6	1.6	2.1	2.7	3.5	3.8	3.6	4.2	3.5	4.2	4.2	3.2	A	1.6	1.3	1.4	1.4	1.6	1.7
2	E	1.6	1.6	1.3	1.6	E	C	C	2.8	2.8	A	A	A	4.1	4.2	3.9	3.6	2.4	1.5	2.0	2.2	A	2.2 ^A	A
3	A	A	A	A	2.0 ^A	1.5	1.5	2.2	2.2	3.3	3.5	4.0	4.5	4.2	3.6	3.2	3.2	2.5	2.6	2.2	2.2	A	A	2.0
4	E	1.6	1.6	1.4	E	E	E	1.5	2.1	3.0	3.5	4.2	4.2	4.0	3.4	3.2	2.6	2.6	2.2	2.0	1.8	2.0	1.5	1.7
5	E	1.3	E	E	1.4	1.6	1.6	2.0	2.8	3.3	4.2	3.7	3.8	4.2	3.8	3.6	3.1	2.2	1.8	1.8	1.6	1.8	1.5	1.6
6	E	1.5	1.8	1.8	1.7	1.8	1.6	1.8	2.6	3.2	4.0	4.0	4.0	4.0	4.3	5.9	4.7	3.0	1.8	1.4	1.6	1.6	1.6	1.6
7	E	1.6	1.6	E	1.4	1.6	1.6	2.0	2.8	5.0	3.8	4.1	5.2	4.0	A	A	3.1	2.6	2.5	1.4	2.4	1.5	1.4	1.5
8	E	E	E	E	E	E	E	2.0	(2.0) ^B	3.0	3.2	3.8	4.2	4.0	3.8	3.7	(3.3) ^B	2.4	1.7	1.6	A	1.4	1.4	1.5
9	E	1.4	E	E	E	E	E	1.8	1.8	C	C	C	C	C	C	C	C	C	C	1.4	1.6	1.4	1.4	1.4
10	E	1.4	E	E	E	E	E	1.8	2.7	3.2	4.0	4.0	4.4	4.1	4.2	3.5	2.8	2.2	(2.4) ^B	1.7	1.7	1.6	1.5	1.4
11	E	1.4	1.4	1.5	1.5	1.8 ^A	2.0	2.2	2.9	3.1	3.4	3.9	(3.9) ^A	3.9	3.6	3.4	3.1	2.2	1.3	1.8	(1.7) ^A	1.6	2.1	1.5
12	E	1.3	2.0	1.3	1.4	E	1.4	1.8	2.0	3.3	3.8	4.1	4.0	3.8	4.6	4.1	2.9	3.8	1.8	1.8	A	1.8	1.6	1.6
13	E	1.6	1.6	1.6	1.8	1.8	1.8	2.0	2.8	2.6	3.6	3.8	4.2	4.2	3.4	3.2	A	2.6	2.4	A	1.6	1.8	1.6	1.6
14	E	1.6	1.5	E	E	E	E	2.0	3.2	3.2	3.6	3.7	3.9	4.1	4.4	3.3	3.3	2.2	2.0	1.4	A	1.6	1.4	1.5
15	E	1.4	E	E	E	E	1.4	1.6	2.8	C	C	C	4.2	4.0	3.2	4.1	3.7	3.4	1.8	1.3	1.4	1.6	1.3	1.4
16	E	1.4	E	E	E	E	E	1.3	1.7	2.5	3.8	A	2.4	4.0	3.6	3.4	3.0	2.2	2.0	1.8	1.8	1.8	1.8	1.7
17	E	1.3	1.5	F	F	2.0	1.8	1.9	(2.4) ^A	3.3	3.4	3.8	4.0	4.2	3.1	3.6	(3.1) ^C	2.6	C	C	C	1.6	1.6	1.4
18	E	1.4	1.3	1.4	1.8	1.6	1.9	1.9	2.6	3.6	3.6	3.7	4.0	4.2	4.5	4.0	3.8	3.3	2.0	2.0	1.7	1.8	1.6	1.3
19	E	1.4	E	1.5	C	C	1.5	1.9	2.6	3.3	3.4	4.2	3.8	3.7	4.2	3.2	3.2	2.4	2.2	2.0	1.5	A	2.0	1.6
20	E	1.3	E	E	E	1.9	1.3	E	1.9	2.4	2.5	2.3	3.4	3.4	A	A	3.0	1.8	1.3	2.0	1.8	1.4	1.3	1.4
21	E	A	1.4	E	E	1.6	E	2.4	2.7	2.8	3.0	3.4	3.6	3.2	3.0	2.2	2.2	2.0	2.0	1.8	1.7	1.6	1.6	1.6
22	E	1.6	1.5	E	E	E	E	1.7	2.4	A	3.0	3.1	3.1	3.2	3.8	3.0	3.0	2.9	1.8	A	A	1.6	1.4	1.3
23	E	1.4	1.3	1.3	E	E	E	2.0	2.4	3.4	3.6	4.2	3.6	3.6	C	C	2.6	1.6 ^A	1.4	1.8	1.7	1.4	1.4	
24	E	1.3	1.4	E	E	1.5	E	1.8	2.6	2.7	2.8	3.3	3.2	2.8	3.4	3.2	2.7	2.2	1.7	1.6	1.6	1.4	1.4	
25	E	1.4	1.4	E	E	1.3	1.4	1.7	2.2	2.9	3.3	3.3	A	3.4	3.1	2.3	2.8	2.9	1.9	1.3	1.5	1.4	1.5	
26	E	1.6	E	E	E	E	E	1.4	2.2	3.0	3.1	3.6	3.8	3.2	3.4	A	2.7	2.0	1.5	1.3	1.4	1.4	1.4	
27	E	1.4	1.3	1.4	1.4	1.6	1.4	1.5	2.5	2.6	3.2	3.6	3.4	4.4	3.4	2.6	2.4	1.6	1.7	1.6	1.5	1.6	1.6	
28	E	1.5	1.5	E	E	E	E	1.5	1.8	2.0	3.0	3.4	3.6	3.6	3.4	3.1	2.7	2.2	2.2	A	1.6	1.4	1.4	1.6
29	E	1.8	1.6	E	E	1.3	1.5	1.7	2.0	2.9	2.8	3.5	3.0	3.6	3.0	3.4	2.7	A	1.6	1.6	1.5	1.4	1.4	1.3
30	E	1.4	E	1.4	1.4	1.4	1.4	1.8	2.0	3.5	3.4	4.2	3.8	3.8	3.6	3.6	2.9	2.4	2.0	1.8	1.4	1.5	1.6	1.6
31																								
Mean Value	1.4	1.4	1.4	1.2	E	1.3	1.5	1.9	2.7	3.2	3.5	3.8	3.9	3.3	3.6	3.4	3.0	2.4	1.8	1.8	1.6	1.6	1.5	1.5
Count	28	28	29	29	24	24	28	24	29	28	27	26	27	28	26	25	27	27	28	26	25	27	29	29

Swamp 1.2 Mc (1.85 Mc) in 1.5 min Manual

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

IONOSPHERIC DATA

Lat. 31° 12.5' N
Long. 130° 27.7' E

f_{min} E

Nov. 1949

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	1.6	1.6	1.7	2.0	G	G	B	1.4	1.8	B	2.2	B	2.8	2.8	2.2	2.2	2.2	1.8	1.4	G	G	G	E	1.8	
2	1.7	1.6	2.0	G	G	C	C	C	1.8	1.7	3.4	3.4	3.5	2.2	2.3	2.4	2.0	1.6	1.8	1.8	1.8	1.6	1.6	1.6	
3	1.4	1.6	1.4	1.4	2.0	E	E	1.8	2.0	1.8	2.0	2.0	2.0	2.4	2.2	2.8	3.0	1.4	1.6	1.4	1.5	1.4	1.4	1.4	
4	G	G	G	G	G	G	F	B	1.6	2.0	2.4	2.2	3.2	2.2	2.6	2.2	1.6	2.2	2.0	1.8	1.8	1.7	1.7	G	
5	G	G	G	G	G	G	B	1.4	1.8	1.8	2.2	2.5	2.4	2.4	2.6	2.6	2.3	B	B	1.5	G	B	G	G	
6	G	1.6	1.8	1.8	1.8	G	B	B	1.8	2.2	2.4	2.4	2.6	2.4	2.5	2.8	B	B	G	G	G	G	G	G	
7	G	G	G	G	G	G	B	1.6	1.8	B	2.6	3.0	B	3.0	2.2	2.0	1.8	1.8	1.7	1.3	G	G	G	(2.2)	
8	G	G	G	G	G	G	B	B	2.2	2.3	2.4	2.7	2.4	2.0	2.2	2.2	2.0	2.2	B	G	1.4	1.6	1.8	G	
9	G	G	G	G	G	G	B	C	C	C	C	C	C	C	C	C	C	C	C	G	G	G	G	G	
10	G	G	G	G	G	G	C	1.4	2.0	1.7	2.0	2.6	2.5	2.6	2.4	2.1	1.8	1.8	1.8	2.6	1.6	G	G	G	
11	G	G	G	G	G	2.6	1.5	1.5	1.6	1.8	2.0	2.0	(2.1)	2.2	2.4	2.4	2.2	1.6	1.8	G	C	1.6	G	G	
12	1.4	E	G	G	G	G	B	1.5	2.0	2.8	2.7	3.3	3.6	3.8	3.5	2.2	2.3	2.2	2.2	(1.6)	1.5	G	G	G	
13	G	G	F	G	C	G	B	B	1.8	2.2	2.2	2.2	3.2	2.2	2.1	2.2	2.0	1.9	2.0	1.6	1.5	G	G	G	
14	G	G	G	G	G	G	E	1.3	1.9	2.1	2.0	2.2	2.4	2.5	2.2	2.1	2.0	2.1	1.5	1.4	1.6	G	G	G	
15	G	G	G	G	G	G	B	1.4	1.6	C	C	C	2.4	2.2	2.2	2.3	B	2.5	1.8	1.6	G	1.6	G	G	
16	G	G	G	G	G	G	B	1.4	1.8	2.0	2.2	2.0	2.0	3.0	2.2	2.2	2.2	1.8	2.0	1.8	1.4	G	1.3	E	
17	E	E	E	G	G	G	E	1.8	(2.0)	2.2	2.2	2.1	2.8	2.4	2.4	2.0	(2.0)	1.9	C	C	C	G	G	G	
18	G	G	G	G	G	B	1.9	2.0	1.9	2.1	2.1	2.1	2.1	2.3	2.5	2.3	2.0	2.0	1.7	1.3	1.3	1.4	1.4	1.3	
19	1.4	1.4	G	G	C	C	B	1.4	1.6	1.5	1.8	1.8	1.9	2.0	2.0	2.2	2.2	1.8	1.7	1.8	1.6	1.3	1.3	1.3	
20	G	G	E	E	E	E	E	1.4	2.0	2.0	1.8	2.0	2.0	1.8	2.0	1.6	2.0	1.5	B	1.6	1.5	G	G	G	
21	1.8	2.1	G	E	E	B	G	1.6	1.6	1.6	1.7	1.8	1.8	1.3	2.0	1.8	1.6	1.5	1.6	1.4	1.4	2.0	2.6	1.6	
22	1.7	1.8	1.6	G	E	E	E	F	1.6	1.7	1.8	2.0	2.0	1.9	2.2	2.2	1.9	1.8	1.3	E	E	E	G	G	
23	E	1.6	G	G	G	G	G	2.3	1.5	2.0	2.0	2.2	2.2	2.2	C	C	C	1.8	1.4	1.4	1.4	E	E	G	
24	3.4	2.8	1.4	G	G	G	G	1.6	1.8	1.4	1.6	1.6	1.7	1.9	2.0	2.0	2.0	1.5	1.7	1.6	G	G	G	G	
25	G	G	G	G	G	1.6	B	1.9	2.0	1.6	1.5	1.8	1.9	2.0	2.0	2.0	2.0	1.8	E	1.6	G	G	G	G	
26	E	G	G	G	G	G	B	1.4	1.5	2.4	2.8	4.0	3.8	3.0	2.8	2.6	2.0	1.7	3.4	G	G	G	G	G	
27	G	G	G	G	G	G	B	2.1	1.4	2.2	2.2	2.2	2.0	2.0	2.2	2.2	2.0	1.6	1.8	E	2.0	1.6	G	G	
28	G	G	G	G	G	E	1.3	1.5	1.9	1.7	2.1	2.1	B	2.0	2.0	1.8	1.4	1.3	1.6	1.1	G	G	2.8	G	
29	G	1.6	G	G	G	G	B	2.1	1.5	2.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.6	1.6	1.4	1.7	1.4	1.4	G	
30	G	G	G	G	G	G	B	1.5	1.5	1.7	1.9	2.2	2.4	2.2	2.2	2.0	1.8	2.2	1.8	G	G	G	G	G	
31																									
Median Value	G	G	G	G	G	G	G	1.5	1.8	2.0	2.1	2.2	2.4	2.2	2.2	2.2	2.0	1.8	1.7	1.4	1.4	G	G	G	
Count	3.0	3.0	3.0	3.0	2.9	2.9	1.1	2.3	2.9	2.6	2.8	2.7	2.7	2.4	2.8	2.3	2.6	2.7	2.4	2.4	2.4	3.0	3.0	3.0	

Sweep 1.5 sec 18.5 Mc in 15 min

Manual

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