

TABLE II—Continued

| (1)—Channel | (2)—31.4 kilometers (19.5 miles) If beat | (3)—31.4 kilometers (19.5 miles) inter-modulation | (4)—87.7 kilometers (54.5 miles) adjacent channel | (5)—95.7 kilometers (59.5 miles) oscillator | (6)—95.7 kilometers (59.5 miles) sound image | (7)—119.9 kilometers (74.5 miles) picture image |
|-------------|--|---|---|---|--|---|
| 17          | 25                                       | 14-15, 19-22                                      | 16, 18  | 24  | 31   | 32  |
| 18          | 26                                       | 14-16, 20-23                                      | 17, 19  | 25  | 32   | 33  |
| 19          | 27                                       | 14-17, 21-24                                      | 18, 20  | 26  | 33   | 34  |
| 20          | 28                                       | 15-18, 22-25                                      | 19, 21  | 27  | 34   | 35  |
| 21          | 29                                       | 16-19, 23-26                                      | 20, 22  | 28, 14                                      | 35   | 36  |
| 22          | 30, 14                                   | 17-20, 24-27                                      | 21, 23  | 29, 15                                      | 36   | 37  |
| 23          | 31, 15                                   | 18-21, 25-28                                      | 22, 24  | 30, 16                                      | 37   | 38  |
| 24          | 32, 16                                   | 19-22, 26-29                                      | 23, 25  | 31, 17                                      | 38   | 39  |
| 25          | 33, 17                                   | 20-23, 27-30                                      | 24, 26  | 32, 18                                      | 39   | 40  |
| 26          | 34, 18                                   | 21-24, 28-31                                      | 25, 27  | 33, 19                                      | 40   | 41  |
| 27          | 35, 19                                   | 22-25, 29-32                                      | 26, 28  | 34, 20                                      | 41   | 42  |
| 28          | 36, 20                                   | 23-26, 30-33                                      | 27, 29  | 35, 21                                      | 42, 14                                       | 43  |
| 29          | 37, 21                                   | 24-27, 31-34                                      | 28, 30  | 36, 22                                      | 43, 15                                       | 44, 14  |
| 30          | 38, 22                                   | 25-28, 32-35                                      | 29, 31  | 37, 23                                      | 44, 16                                       | 45, 15  |
| 31          | 39, 23                                   | 26-29, 33-36                                      | 30, 32  | 38, 24                                      | 45, 17                                       | 46, 16  |
| 32          | 40, 24                                   | 27-30, 34-37                                      | 31, 33  | 39, 25                                      | 46, 18                                       | 47, 17  |
| 33          | 41, 25                                   | 28-31, 35-38                                      | 32, 34  | 40, 26                                      | 47, 19                                       | 48, 18  |
| 34          | 42, 26                                   | 29-32, 36-39                                      | 33, 35  | 41, 27                                      | 48, 20                                       | 49, 19  |
| 35          | 43, 27                                   | 30-33, 37-40                                      | 34, 36  | 42, 28                                      | 49, 21                                       | 50, 20  |
| 36          | 44, 28                                   | 31-34, 38-41                                      | 35, 37  | 43, 29                                      | 50, 22                                       | 51, 21  |
| 37          | 45, 29                                   | 32-35, 39-42                                      | 36, 38  | 44, 30                                      | 51, 23                                       | 52, 22  |
| 38          | 46, 30                                   | 33-36, 40-43                                      | 37, 39  | 45, 31                                      | 52, 24                                       | 53, 23  |
| 39          | 47, 31                                   | 34-37, 41-44                                      | 38, 40  | 46, 32                                      | 53, 25                                       | 54, 24  |
| 40          | 48, 32                                   | 35-38, 42-45                                      | 39, 41  | 47, 33                                      | 54, 26                                       | 55, 25  |
| 41          | 49, 33                                   | 36-39, 43-46                                      | 40, 42  | 48, 34                                      | 55, 27                                       | 56, 26  |
| 42          | 50, 34                                   | 37-40, 44-47                                      | 41, 43  | 49, 35                                      | 56, 28                                       | 57, 27  |
| 43          | 51, 35                                   | 38-41, 45-48                                      | 42, 44  | 50, 36                                      | 57, 29                                       | 58, 28  |
| 44          | 52, 36                                   | 39-42, 46-49                                      | 43, 45  | 51, 37                                      | 58, 30                                       | 59, 29  |
| 45          | 53, 37                                   | 40-43, 47-50                                      | 44, 46  | 52, 38                                      | 59, 31                                       | 60, 30  |
| 46          | 54, 38                                   | 41-44, 48-51                                      | 45, 47  | 53, 39                                      | 60, 32                                       | 61, 31  |
| 47          | 55, 39                                   | 42-45, 49-52                                      | 46, 48  | 54, 40                                      | 61, 33                                       | 62, 32  |
| 48          | 56, 40                                   | 43-46, 50-53                                      | 47, 49  | 55, 41                                      | 62, 34                                       | 63, 33  |
| 49          | 57, 41                                   | 44-47, 51-54                                      | 48, 50  | 56, 42                                      | 63, 35                                       | 64, 34  |
| 50          | 58, 42                                   | 45-48, 52-55                                      | 49, 51  | 57, 43                                      | 64, 36                                       | 65, 35  |
| 51          | 59, 43                                   | 46-49, 53-56                                      | 50, 52  | 58, 44                                      | 65, 37                                       | 66, 36  |
| 52          | 60, 44                                   | 47-50, 54-57                                      | 51, 53  | 59, 45                                      | 66, 38                                       | 67, 37  |
| 53          | 61, 45                                   | 48-51, 55-58                                      | 52, 54  | 60, 46                                      | 67, 39                                       | 68, 38  |
| 54          | 62, 46                                   | 49-52, 56-59                                      | 53, 55  | 61, 47                                      | 68, 40                                       | 69, 39  |
| 55          | 63, 47                                   | 50-53, 57-60                                      | 54, 56  | 62, 48                                      | 69, 41                                       | 70, 40  |
| 56          | 64, 48                                   | 51-54, 58-61                                      | 55, 57  | 63, 49                                      | 70, 42                                       | 71, 41  |
| 57          | 65, 49                                   | 52-55, 59-62                                      | 56, 58  | 64, 50                                      | 71, 43                                       | 72, 42  |
| 58          | 66, 50                                   | 53-56, 60-63                                      | 57, 59  | 65, 51                                      | 72, 44                                       | 73, 43  |
| 59          | 67, 51                                   | 54-57, 61-64                                      | 58, 60  | 66, 52                                      | 73, 45                                       | 74, 44  |
| 60          | 68, 52                                   | 55-58, 62-65                                      | 59, 61  | 67, 53                                      | 74, 46                                       | 75, 45  |
| 61          | 69, 53                                   | 56-59, 63-66                                      | 60, 62  | 68, 54                                      | 75, 47                                       | 76, 46  |
| 62          | 70, 54                                   | 57-60, 64-67                                      | 61, 63  | 69, 55                                      | 76, 48                                       | 77, 47  |
| 63          | 71, 55                                   | 58-61, 65-68                                      | 62, 64  | 70, 56                                      | 77, 49                                       | 78, 48  |
| 64          | 72, 56                                   | 59-62, 66-69                                      | 63, 65  | 71, 57                                      | 78, 50                                       | 79, 49  |
| 65          | 73, 57                                   | 60-63, 67-70                                      | 64, 66  | 72, 58                                      | 79, 51                                       | 80, 50  |
| 66          | 74, 58                                   | 61-64, 68-71                                      | 65, 67  | 73, 59                                      | 80, 52                                       | 81, 51  |
| 67          | 75, 59                                   | 62-65, 69-72                                      | 66, 68  | 74, 60                                      | 81, 53                                       | 82, 52  |
| 68          | 76, 60                                   | 63-66, 70-73                                      | 67, 69  | 75, 61                                      | 82, 54                                       | 83, 53  |
| 69          | 77, 61                                   | 64-67, 71-74                                      | 68, 70  | 76, 62                                      | 83, 55                                       | 84  |

NOTE: The parenthetical reference beneath the mileage figures in columns 2 through 7, inclusive, indicate, in abbreviated form, the bases for the required mileage separations. For a discussion of these bases, see the "Sixth Report and Order" of the Commission (FCC 52-294; 17 FR 3905, May 2, 1952). The hyphenated numbers listed in column (3) are both inclusive.

[28 FR 13660, Dec. 14, 1963, as amended at 39 FR 20377, June 10, 1974; 47 FR 35990, Aug. 18, 1982; 50 FR 23701, June 5, 1985; 54 FR 9807, Mar. 8, 1989]

§ 73.699 TV engineering charts.

This section consists of the following Figures 1-5, 5a, 6-10, 10a-10e, 11-12, 13-16.

NOTE: The charts as reproduced herein, due to their small scale, are not to be used in connection with material submitted to the F.C.C.

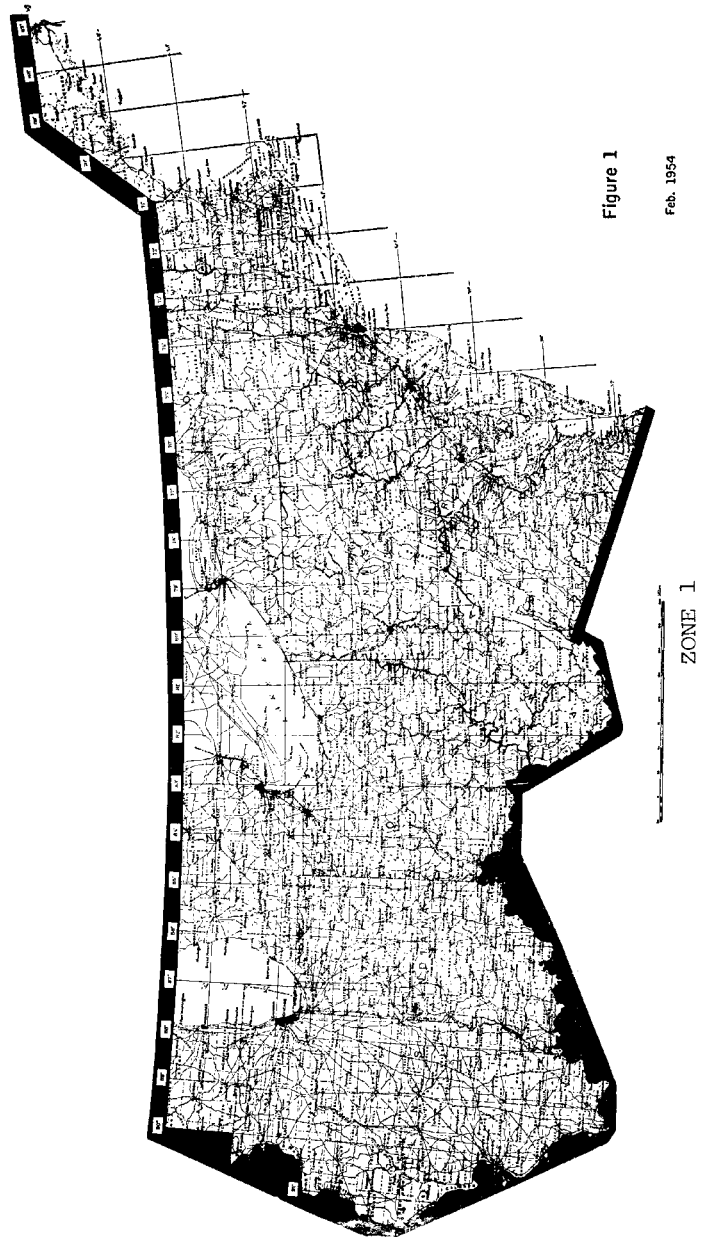
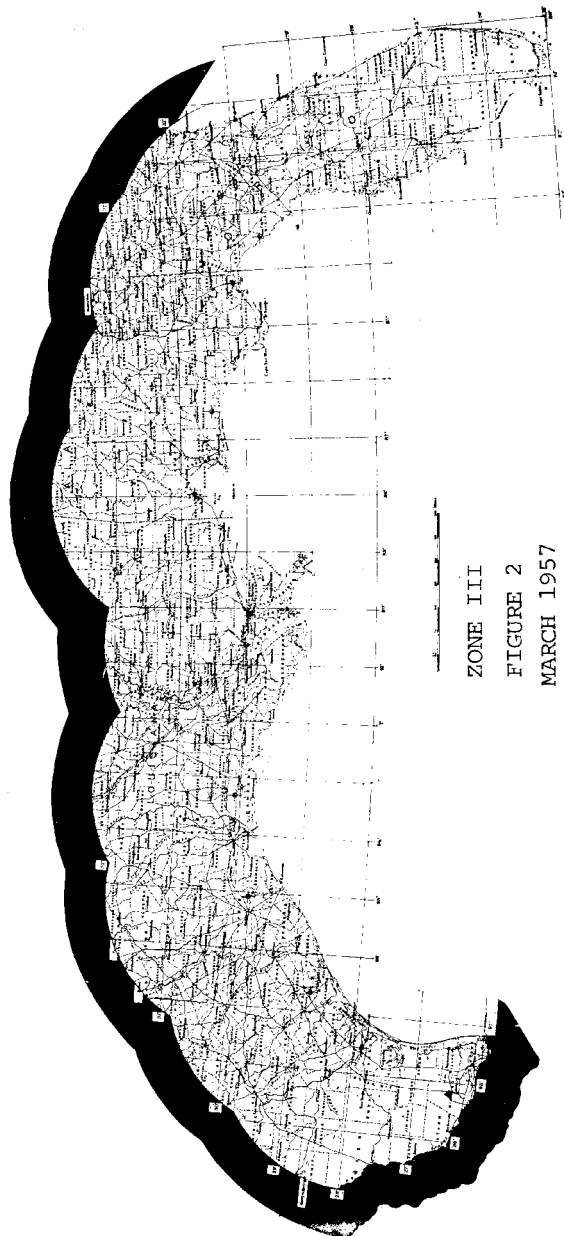
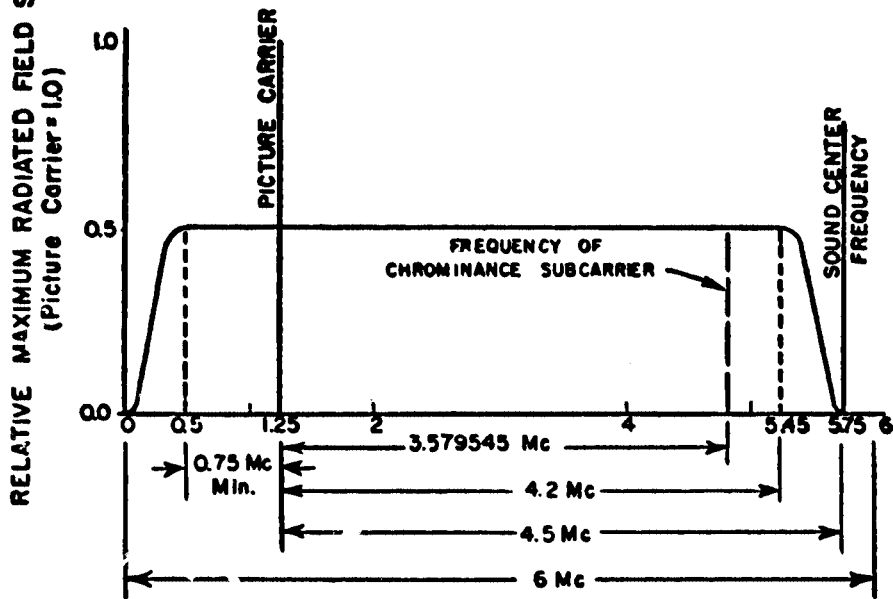


Figure 1

Feb. 1954



### IDEALIZED PICTURE TRANSMISSION AMPLITUDE CHARACTERISTIC



Note: Not drawn to scale

FIGURE 5

IDEALIZED PICTURE TRANSMISSION  
AMPLITUDE CHARACTERISTIC

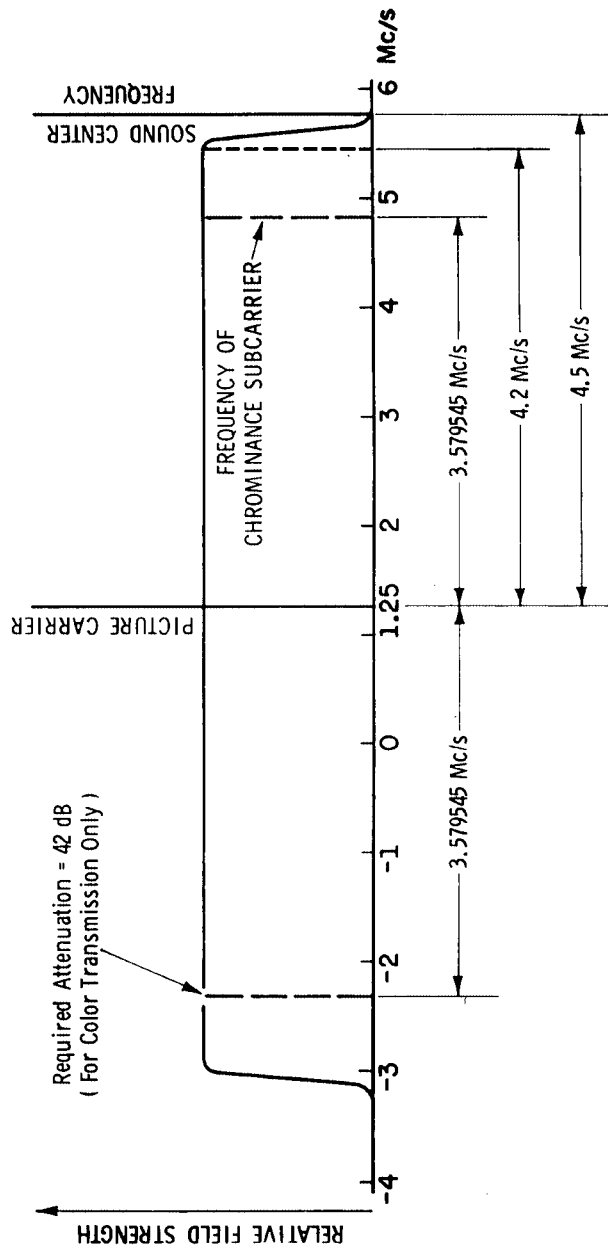
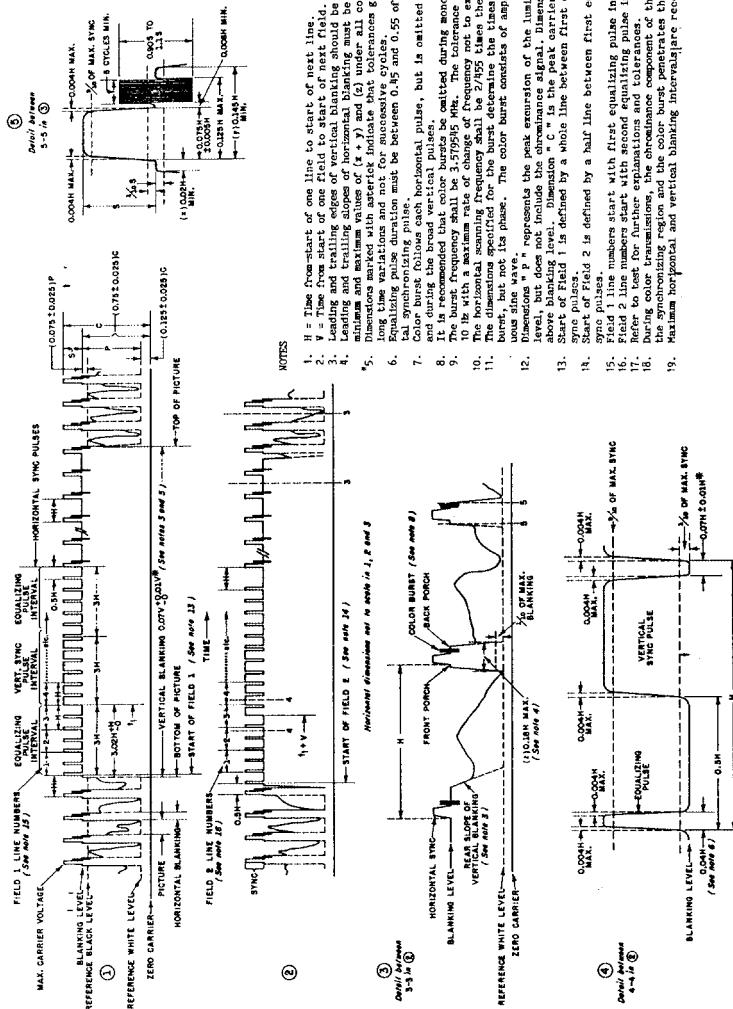


FIGURE 5 (a)

TELEVISION SYNCHRONIZING WAVEFORM  
FOR COLOR TRANSMISSION

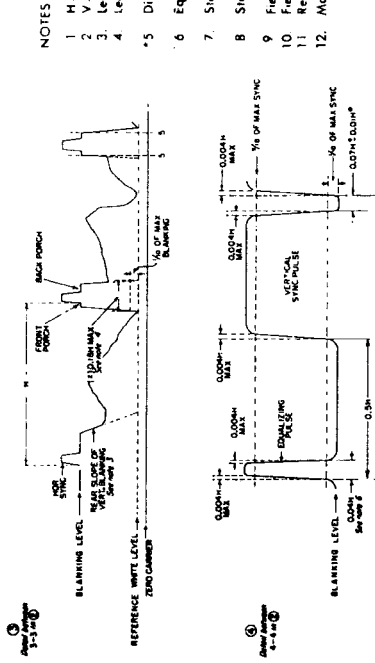
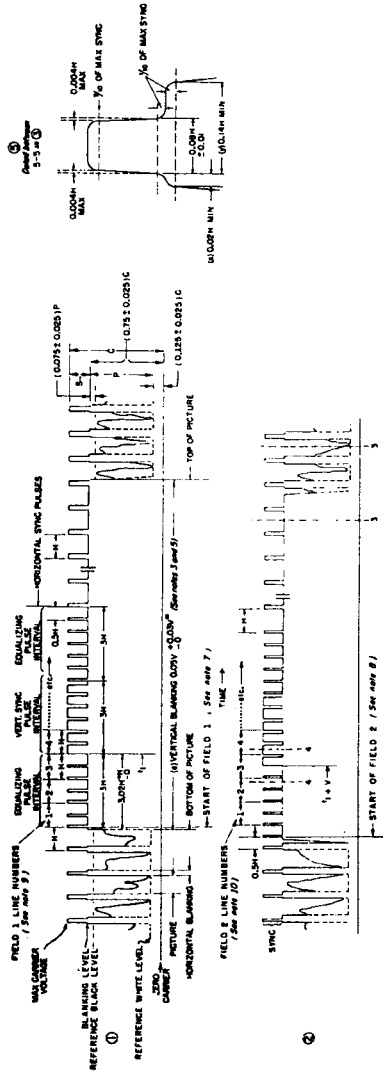


FCC § 73.699, FIGURE 6

NOTES

1. H = Time from start of one line to start of next line.
2.  $\gamma$  = Time from start of one field to start of next field.
3. The leading and trailing slopes of horizontal sync pulses should be complete in less than 0.1H.
4. Leading and trailing slopes of horizontal sync pulses should be complete in less than 0.1H.
5. Dimensions marked with asterisk indicate that tolerances given are permitted only for equalizing pulses and not for successive cycles.
6. Equalizing pulse duration must be between 0.75 and 0.85 of the duration of the horizontal synchronizing pulse.
7. Color burst follows each horizontal pulse, but is omitted following the equalizing pulses.
8. It is recognized that vertical pulses are omitted during monochrome transmission.
9. The burst frequency shall be 3.579545 Mc. The tolerance on the frequency shall be  $\pm 10$  Hz with a maximum rate of change of frequency not to exceed 1/10 Hz per second.
10. The burst amplitude shall be 2705 Hz when the burst frequency is 3.579545 Mc. The dimension is measured from the leading edge of the burst, but not its phase. The color burst consists of amplitude modulation of a continuous sine wave.
11. Dimension C represents the peak excursion of the luminance signal from blanking level, but does not include the color burst.
12. Dimension C' is the peak amplitude of the color burst.
13. Start of Field 1 is defined by a whole line between first equalizing pulse and preceding H sync pulses.
14. Start of Field 2 is defined by a half line between first equalizing pulse and preceding H sync pulses.
15. Field 1 line numbers start with first equalizing pulse in Field 1.
16. Field 2 line numbers start with second equalizing pulse in Field 2.
17. The color burst is transmitted during the equalizing interval.
18. During color transmission, the chrominance component of the picture signal may penetrate the synchronizing region and the color burst penetrates the picture region.
19. Maximum horizontal and vertical blanking intervals are recommended values only.

**TELEVISION SYNCHRONIZING WAVEFORM  
FOR MONOCHROME TRANSMISSION ONLY**



- NOTES**
1. H: Time from start of one line to start of next line.
  2. V: Time from start of one field to start of next field.
  3. Leading and trailing edges of vertical blanking should be complete in less than 0.1H.
  4. Leading and trailing slopes of horizontal blanking must be steep enough to preserve minimum and maximum values of (x + y) and (z) under all conditions of picture content.
  - \*5. Dimensions marked with asterisk indicate that tolerances given are permitted only for long time variations and not for successive cycles.
  6. Equalizing pulse duration must be between 0.45 and 0.55 of the duration of the horizontal synchronizing pulse duration.
  7. Start of Field 1 is defined by a whole line between first equalizing pulse and preceding H sync pulse.
  8. Start of Field 2 is defined by a half line between first equalizing pulse and preceding H sync pulse.
  9. Field line numbers start with first equalizing pulse in Field 1.
  10. Field 2 line numbers start with second equalizing pulse in Field 2.
  11. Refer to text for further explanations and tolerances.
  12. Maximum horizontal and vertical blanking intervals are recommended values only.

Figure 7

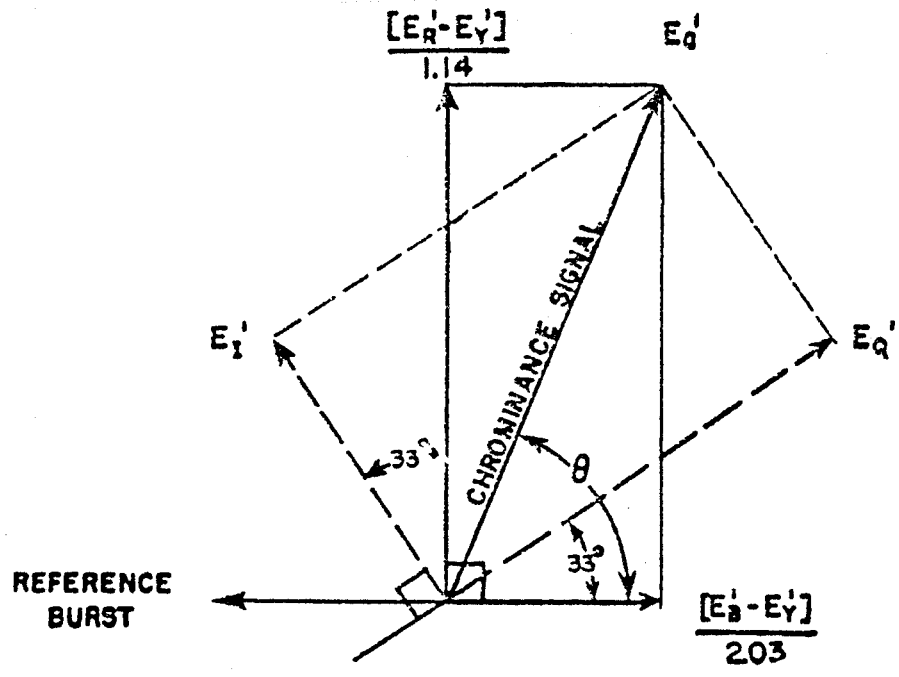
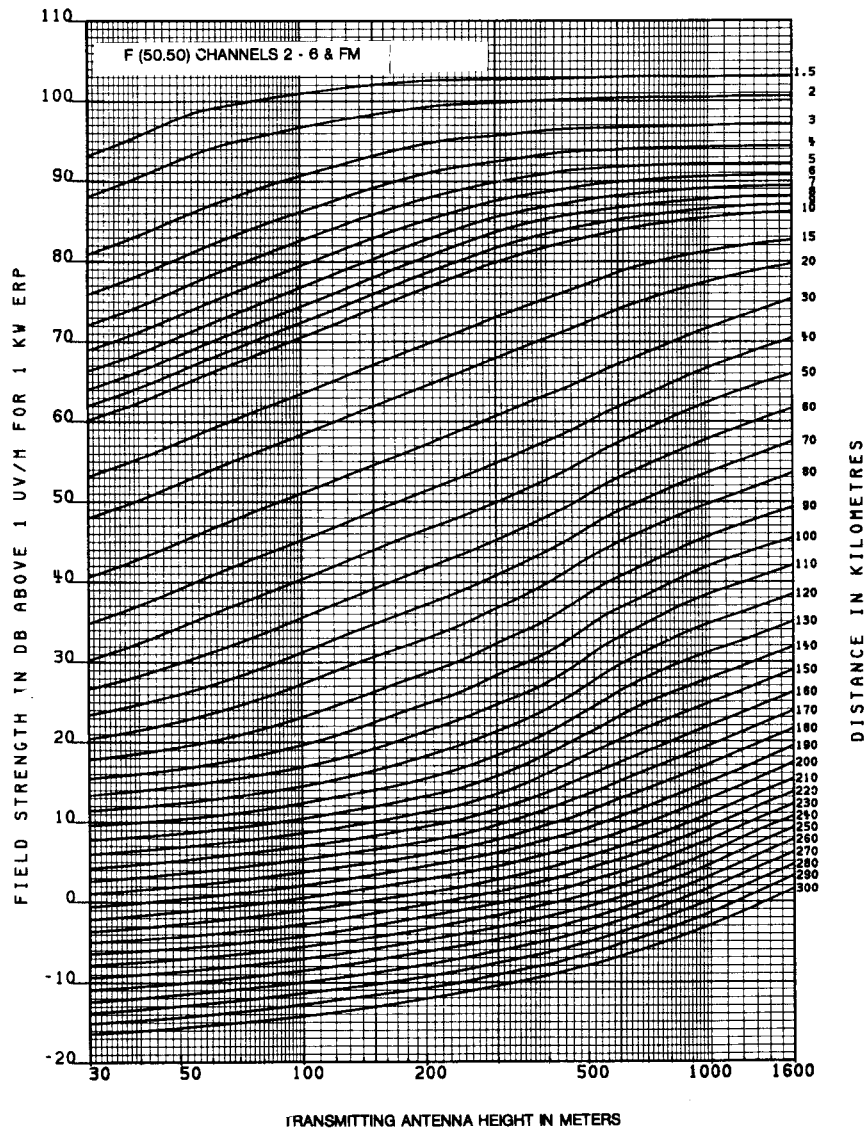


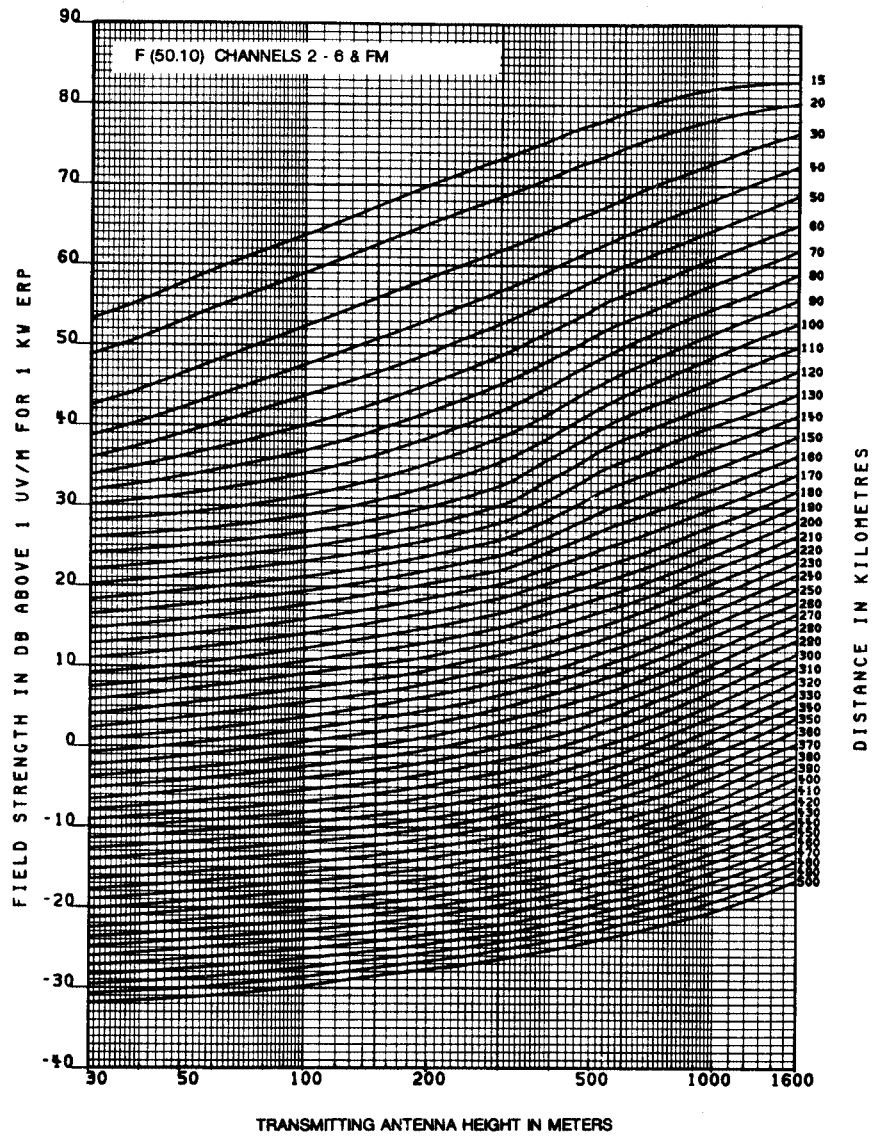
FIGURE 8





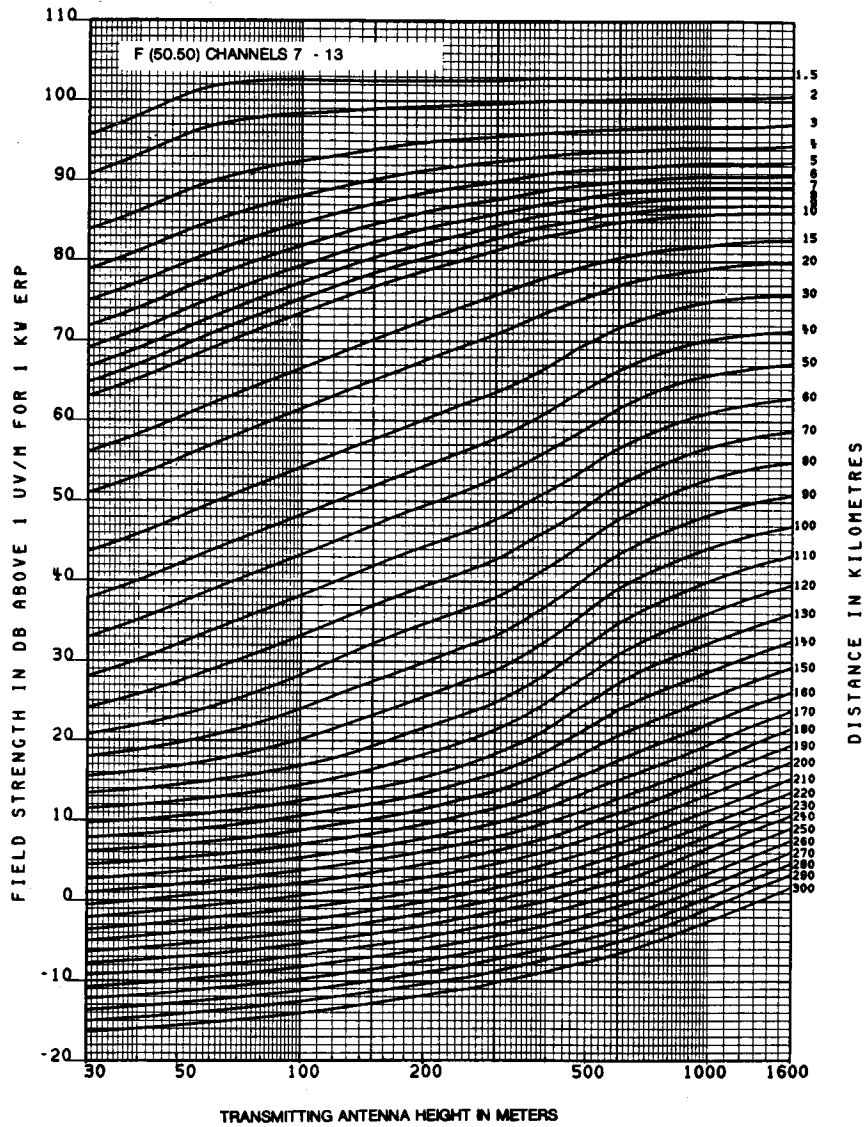
FCC 73.699 Figure 9

ESTIMATED FIELD STRENGTH EXCEEDED AT 50 PERCENT  
 OF THE POTENTIAL RECEIVER LOCATIONS FOR AT LEAST 50 PERCENT  
 OF THE TIME AT A RECEIVING ANTENNA HEIGHT OF 9 METERS



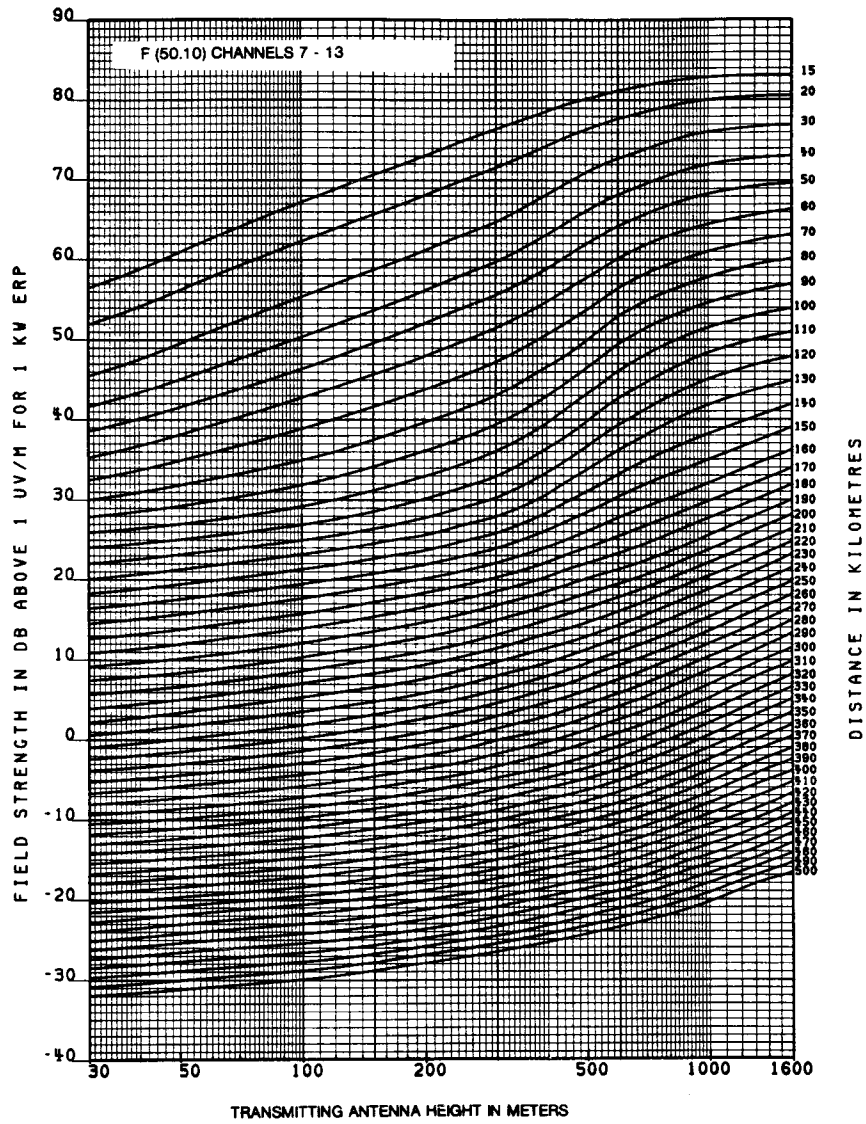
FCC 73.699 Figure 9a

ESTIMATED FIELD STRENGTH EXCEEDED AT 50 PERCENT  
 OF THE POTENTIAL RECEIVER LOCATIONS FOR AT LEAST 10 PERCENT  
 OF THE TIME AT A RECEIVING ANTENNA HEIGHT OF 9 METERS



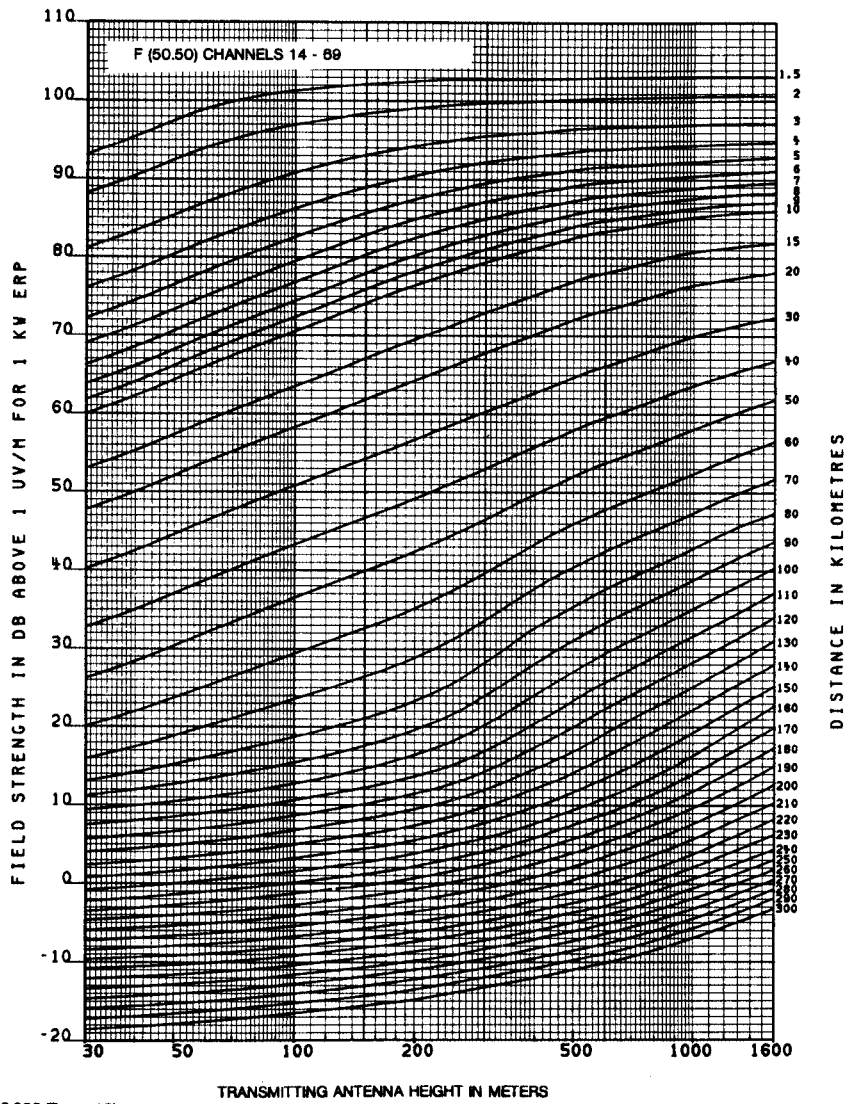
FCC 73.699 Figure 10

ESTIMATED FIELD STRENGTH EXCEEDED AT 50 PERCENT  
 OF THE POTENTIAL RECEIVER LOCATIONS FOR AT LEAST 50 PERCENT  
 OF THE TIME AT A RECEIVING ANTENNA HEIGHT OF 9 METERS



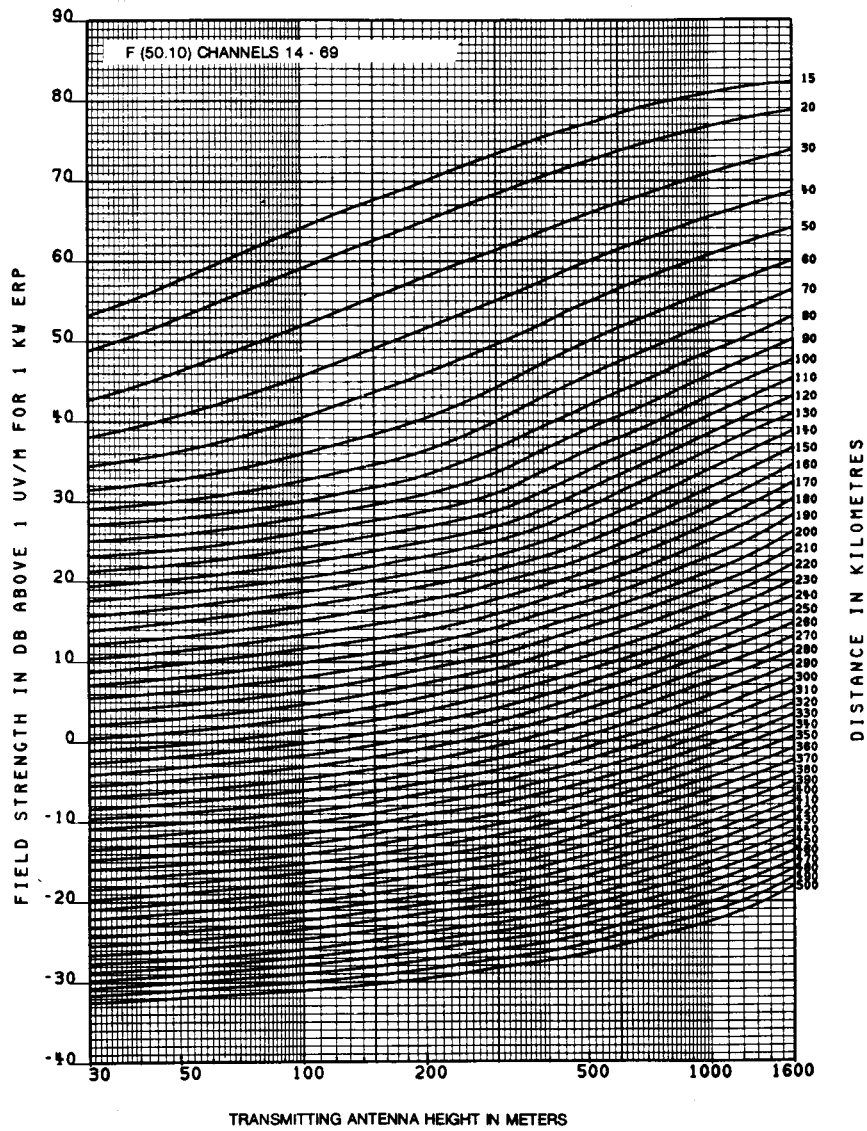
FCC 73.699 Figure 10a

ESTIMATED FIELD STRENGTH EXCEEDED AT 50 PERCENT OF THE POTENTIAL RECEIVER LOCATIONS FOR AT LEAST 10 PERCENT OF THE TIME AT A RECEIVING ANTENNA HEIGHT OF 9 METERS



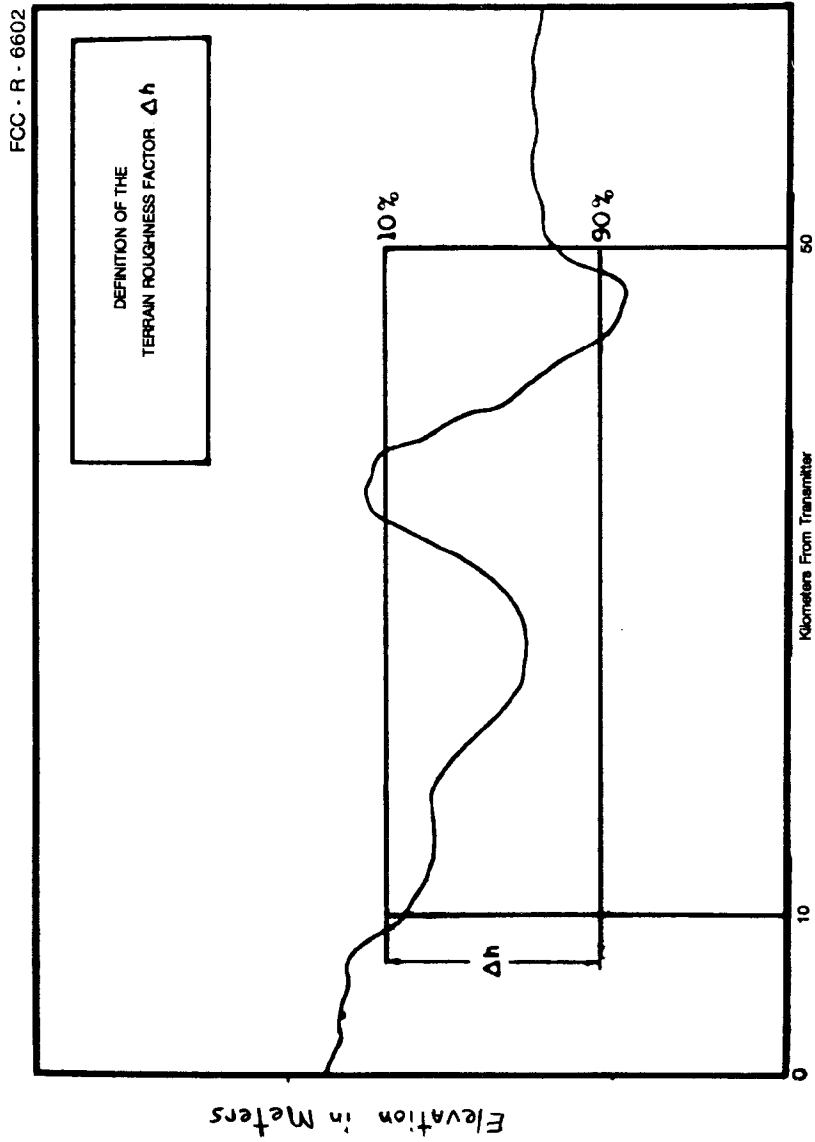
FCC 73.699 Figure 10b

ESTIMATED FIELD STRENGTH EXCEEDED AT 50 PERCENT  
 OF THE POTENTIAL RECEIVER LOCATIONS FOR AT LEAST 50 PERCENT  
 OF THE TIME AT A RECEIVING ANTENNA HEIGHT OF 9 METERS

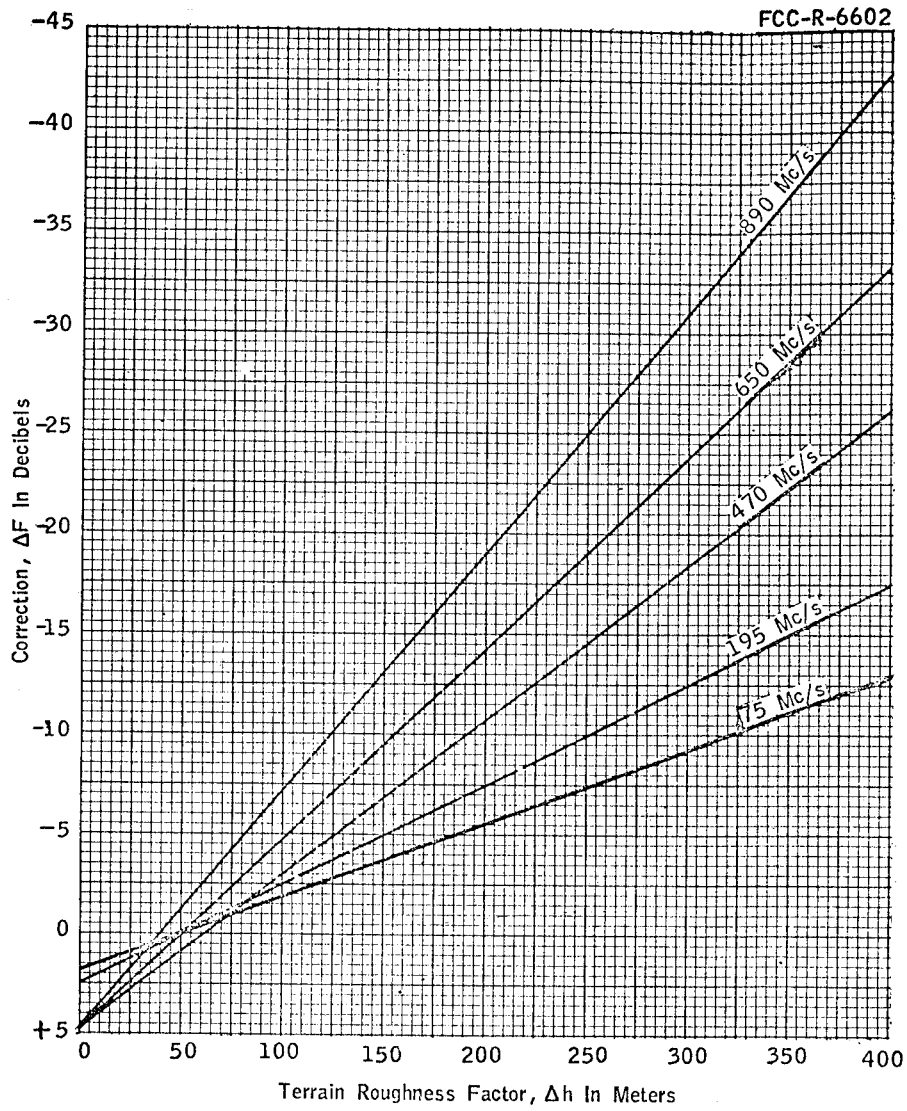


FCC 73.699 Figure 10c

ESTIMATED FIELD STRENGTH EXCEEDED AT 50 PERCENT  
 OF THE POTENTIAL RECEIVER LOCATIONS FOR AT LEAST 10 PERCENT  
 OF THE TIME AT A RECEIVING ANTENNA HEIGHT OF 9 METERS



FCC § 73.699 FIGURE 10d



**TERRAIN ROUGHNESS CORRECTION**  
 for use with estimated F(50,50) and F(50,10) field strength curves  
 FCC § 73.699 FIGURE 10e



ASSUMED IDEAL DETECTOR OUTPUT

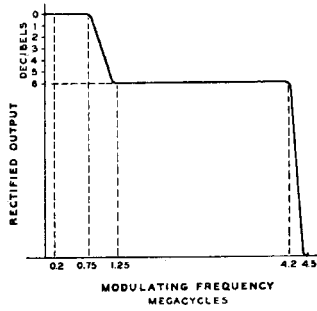


FIGURE 11

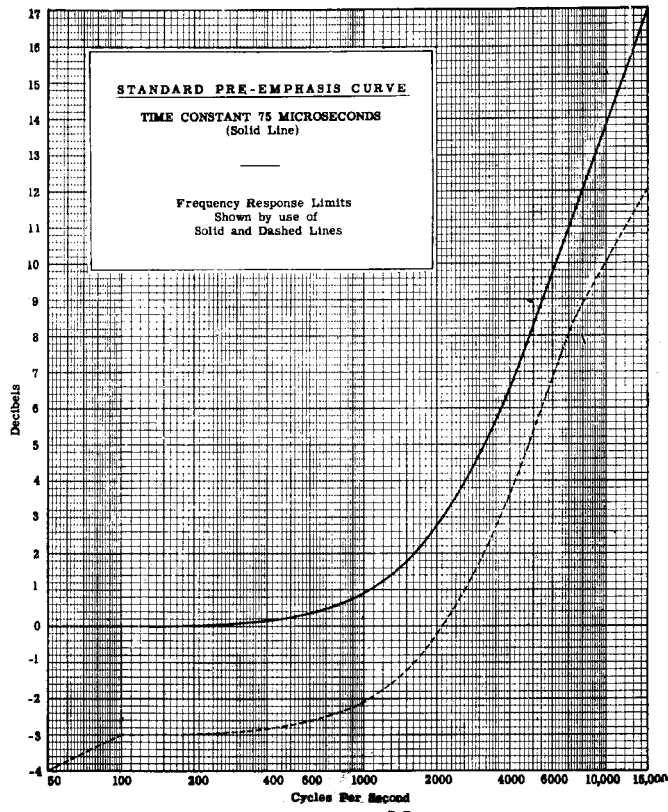
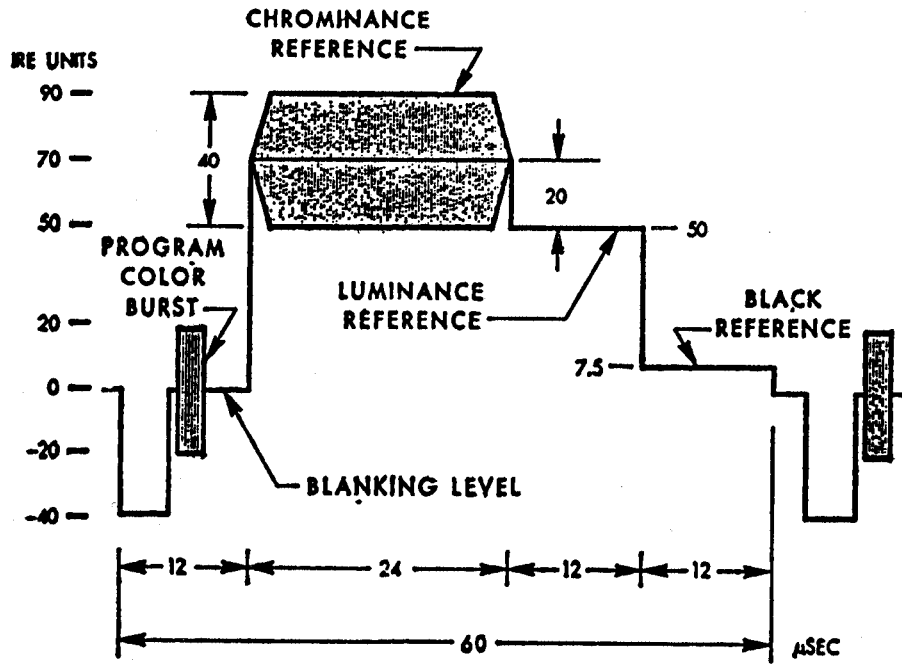


FIGURE 12

FIGURES 13 THROUGH 15 [RESERVED]



NOTE: THE CHROMINANCE REFERENCE AND THE PROGRAM COLOR BURST HAVE THE SAME PHASE.

FIGURE 16

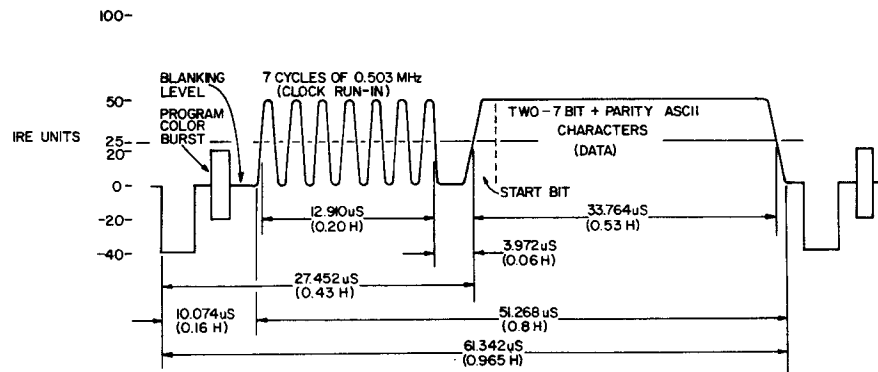


FIGURE 17 LINE 21 FIELD DATA SIGNAL FORMAT

1. DATA "1" = 50 IRE UNITS, DATA "0" = 0.
2. DATA PULSE RISE TIME = 2 T BAR RISE TIME.
3. DATA TIME BASE =  $32 T_H$  (0.50349650 MHz).
4. DATA BIT INTERVAL =  $H/32$  (1.986 μs).
5. NEGATIVE GOING ZERO CROSSINGS OF CLOCK ARE COHERENT WITH DATA TRANSITIONS.
6. DATA AND CLOCK RUN-IN COHERENT WITH H.

HORIZONTAL DIMENSIONS NOT TO SCALE

## FCC § 73.699, Figure 17

[28 FR 13660, Dec. 14, 1963, as amended at 36 FR 17429, Aug. 31, 1971; 39 FR 40957, Nov. 22, 1974; 40 FR 27684, July 1, 1975; 41 FR 56326, Dec. 28, 1976; 44 FR 36040, June 20, 1979; 47 FR 3790, Jan. 27, 1982; 47 FR 35990, Aug. 18, 1982; 50 FR 13972, Apr. 9, 1985; 50 FR 23701, June 5, 1985; 50 FR 32205, Aug. 9, 1985; 52 FR 11656, Apr. 10, 1987; 54 FR 9807, Mar. 8, 1989; 58 FR 29983, May 25, 1993]

EFFECTIVE DATE NOTE: At 42 FR 25736, May 19, 1977, the effective date of § 73.699 Figure 10e was stayed indefinitely.

### Subpart F—International Broadcast Stations

#### § 73.701 Definitions.

The following definitions apply to terminology employed in this subpart:

(a) *International broadcast stations.* A broadcasting station employing frequencies allocated to the broadcasting service between 5900 and 26100 kHz, the transmissions of which are intended to be received directly by the general public in foreign countries. (A station may be authorized more than one transmitter.) There are both Federal and non-Federal Government international broadcast stations; only the latter are licensed by the Commission and are subject to the rules of this subpart.

(b) *Transmitter-hour.* One frequency used on one transmitter for one hour.

(c) *Frequency-hour.* One frequency used for one hour regardless of the number of transmitters over which it is simultaneously broadcast by a station during that hour.

(d) *Multiple operation.* Broadcasting by a station on one frequency over two or more transmitters simultaneously. If a station uses the same frequency simultaneously on each of two (three, etc.) transmitters for an hour, it uses one frequency-hour and two (three, etc.) transmitter-hours.

(e) *Coordinated Universal Time (UTC).* Time scale, based on the second (SI), as defined in Recommendation ITU-R TF.460-6. For most practical purposes associated with the ITU *Radio Regulations*, UTC is equivalent to mean solar time at the prime meridian (0° longitude), formerly expressed in GMT. (RR)