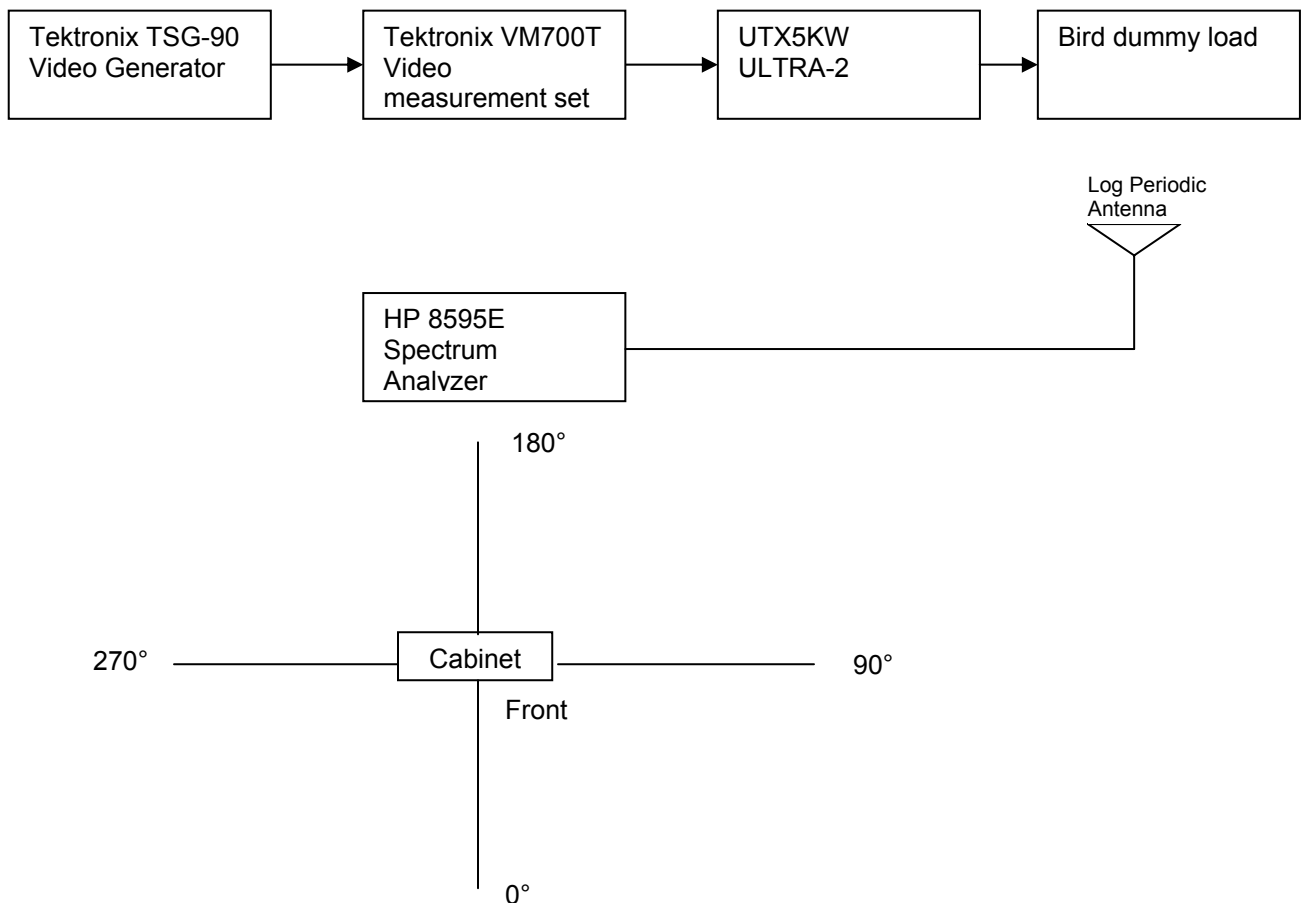


## CABINET RADIATION

The transmitter and test equipment were configured as shown below including the angles of measurement with respect to the transmitter cabinet. The photo on the subsequent page also shows the physical set-up of the test equipment and equipment under test. The transmitter was operated at 5.0 kW peak sync power with a 13 dB visual/aural ratio with the video input signal being a sync signal and 50 IRE "set-up" level. The free space path loss, cable loss, and antenna gain characteristics were obtained at the fundamental frequency and at each of the harmonics of the visual carrier frequency in order to accurately assess the level of the signal radiated from the cabinet. Radiation from the cabinet was measured at a distance of 30 feet in 4 different physical rotation angles: 0, 90, 180, and 270 degrees (0 degrees being the front of the cabinet). All spectral components above -80 dB referenced to peak sync power radiated from the cabinet were recorded. The values are tabulated in the table on the next page following the photos.

### TEST EQUIPMENT CONFIGURATION



## PHYSICAL CABINET RADIATION TEST CONFIGURATION

This photograph shows the actual laboratory environment in which the cabinet radiation tests were conducted. The log periodic antenna, cable and spectrum analyzer is shown in the foreground and the UTX5KW is shown in the background. The transmitter was rotated 90 degrees for each of the measurement orientations.



As calculated from the spreadsheet data on the following page, the worst case measurement was 67.8 dB at the second harmonic. (This photo above shows this particular measurement). The measurement tables for the remaining views of the transmitter are shown below.

## CABINET RADIATION DATA

[illegible]

|          |           |        |         | <u>RIGHT</u> | <u>VIEW</u> |          |          |         |        |       |
|----------|-----------|--------|---------|--------------|-------------|----------|----------|---------|--------|-------|
|          |           |        |         |              |             |          |          |         |        |       |
| Harmonic | Frequency | SIGNAL | MAX SIG | CABLE        | ANTENNA     | PATH     | ADJ      | MAXIMUM | STATUS | NOTES |
|          |           | LEVEL  | ANGLE   | LOSS dB      | GAIN dB     | LOSS dB  | LEVEL    | LEVEL   |        |       |
|          | GHz       | dBm    | DEGREES | dB           | dB          | dB       | dBm      | dBm     |        |       |
| Fc       | 0.69325   | -34.5  | 90      | 0.6          | 5.7         | 49.3178  | 9.717798 | NA      | N/A    |       |
| Fc'2     | 1.3865    | -68.3  | 90      | 1            | 5.7         | 55.3384  | -17.6616 | 7       | P      |       |
| Fc'3     | 2.07975   | -77.3  | 90      | 1.3          | 5.6         | 59.86022 | -22.7398 | 7       | P      |       |
| Fc'4     | 2.773     | -82    | 90      | 1.7          | 5.3         | 61.359   | -24.241  | 7       | P      |       |
| Fc'5     | 3.46625   | -82    | 90      | 1.9          | 4.7         | 63.2972  | -21.5028 | 7       | P      |       |
| Fc'6     | 4.1595    | -82    | 90      | 2            | 5           | 64.88082 | -20.1192 | 7       | P      |       |
| Fc'7     | 4.85275   | -82    | 90      | 2.2          | 3.3         | 66.21976 | -16.8802 | 7       | P      |       |
| Fc'8     | 5.546     | -82    | 90      | 2.1          | 3.1         | 67.3796  | -15.6204 | 7       | P      |       |
| Fc'9     | 6.23925   | -82    | 90      | 2.9          | 2.6         | 68.40265 | -13.2974 | 7       | P      |       |
| Fc'10    | 6.9325    | -82    | 90      | 3.5          | 3           | 69.3178  | -12.1822 | 7       | P      |       |
|          |           |        |         |              |             |          |          |         |        |       |
|          |           |        |         |              |             |          |          |         |        |       |
|          |           |        |         | <u>REAR</u>  | <u>VIEW</u> |          |          |         |        |       |
|          |           |        |         |              |             |          |          |         |        |       |
| Harmonic | Frequency | SIGNAL | MAX SIG | CABLE        | ANTENNA     | PATH     | ADJ      | MAXIMUM | STATUS | NOTES |
|          |           | LEVEL  | ANGLE   | LOSS dB      | GAIN dB     | LOSS dB  | LEVEL    | LEVEL   |        |       |
|          | GHz       | dBm    | DEGREES | dB           | dB          | dB       | dBm      | dBm     |        |       |
| Fc       | 0.69325   | -36.7  | 90      | 0.6          | 5.7         | 49.3178  | 7.517798 | NA      | N/A    |       |
| Fc'2     | 1.3865    | -70.1  | 90      | 1            | 5.7         | 55.3384  | -19.4616 | 7       | P      |       |
| Fc'3     | 2.07975   | -78.6  | 90      | 1.3          | 5.6         | 59.86022 | -24.0398 | 7       | P      |       |
| Fc'4     | 2.773     | -82    | 90      | 1.7          | 5.3         | 61.359   | -24.241  | 7       | P      |       |
| Fc'5     | 3.46625   | -82    | 90      | 1.9          | 4.7         | 63.2972  | -21.5028 | 7       | P      |       |
| Fc'6     | 4.1595    | -82    | 90      | 2            | 5           | 64.88082 | -20.1192 | 7       | P      |       |
| Fc'7     | 4.85275   | -82    | 90      | 2.2          | 3.3         | 66.21976 | -16.8802 | 7       | P      |       |
| Fc'8     | 5.546     | -82    | 90      | 2.1          | 3.1         | 67.3796  | -15.6204 | 7       | P      |       |
| Fc'9     | 6.23925   | -82    | 90      | 2.9          | 2.6         | 68.40265 | -13.2974 | 7       | P      |       |
| Fc'10    | 6.9325    | -82    | 90      | 3.5          | 3           | 69.3178  | -12.1822 | 7       | P      |       |
|          |           |        |         |              |             |          |          |         |        |       |
|          |           |        |         |              |             |          |          |         |        |       |
|          |           |        |         | <u>LEFT</u>  | <u>VIEW</u> |          |          |         |        |       |
|          |           |        |         |              |             |          |          |         |        |       |
| Harmonic | Frequency | SIGNAL | MAX SIG | CABLE        | ANTENNA     | PATH     | ADJ      | MAXIMUM | STATUS | NOTES |
|          |           | LEVEL  | ANGLE   | LOSS dB      | GAIN dB     | LOSS dB  | LEVEL    | LEVEL   |        |       |
|          | GHz       | dBm    | DEGREES | dB           | dB          | dB       | dBm      | dBm     |        |       |
| Fc       | 0.69325   | -37    | 90      | 0.6          | 5.7         | 49.3178  | 7.217798 | NA      | N/A    |       |
| Fc'2     | 1.3865    | -66.5  | 90      | 1            | 5.7         | 55.3384  | -15.8616 | 7       | P      |       |
| Fc'3     | 2.07975   | -78.5  | 90      | 1.3          | 5.6         | 59.86022 | -23.9398 | 7       | P      |       |
| Fc'4     | 2.773     | -82    | 90      | 1.7          | 5.3         | 61.359   | -24.241  | 7       | P      |       |
| Fc'5     | 3.46625   | -82    | 90      | 1.9          | 4.7         | 63.2972  | -21.5028 | 7       | P      |       |
| Fc'6     | 4.1595    | -82    | 90      | 2            | 5           | 64.88082 | -20.1192 | 7       | P      |       |
| Fc'7     | 4.85275   | -82    | 90      | 2.2          | 3.3         | 66.21976 | -16.8802 | 7       | P      |       |
| Fc'8     | 5.546     | -82    | 90      | 2.1          | 3.1         | 67.3796  | -15.6204 | 7       | P      |       |
| Fc'9     | 6.23925   | -82    | 90      | 2.9          | 2.6         | 68.40265 | -13.2974 | 7       | P      |       |
| Fc'10    | 6.9325    | -82    | 90      | 3.5          | 3           | 69.3178  | -12.1822 | 7       | P      |       |

## EQUIPMENT LIST

The following test equipment was used in the various test equipment configurations or to create calibration of equipment at various frequencies. All equipment was known to be in good working order and the supplier of the equipment stipulated the equipment was within the calibration period.

| <b>EQUIPMENT MODEL</b>                 | <b>SERIAL NUMBER</b> |
|----------------------------------------|----------------------|
| Tektronix 1410 Video generator         | B020216              |
| Modulation Sciences MSI320 demodulator | 390128364            |
| HP 8595E Spectrum Analyzer             | 3523A01399           |
| VM-700T Video Analyzer                 | B010396              |
| HP 3525A Signal Generator              | 2846A01312           |
| HP 339A Distortion Analyzer            | 2520A08480           |
| Tektronix TSG90 Video signal generator | B022622              |
| Tektronix 1750 Waveform Monitor        | B033351              |
| ETS 3147 Log Periodic Antenna          | 9112-1053            |
| Fluke 77 meter                         | 54810424             |
| Wavetek 8003 Scalar Analyzer           | 1813961              |
| HP 54601 Oscilloscope                  | 3134A02137           |
| HP 8590B Spectrum Analyzer             | 3009A0840            |
| Bird 8656-602A Dummy load              | 301                  |
| HP 8903B Modulation Monitor            | 2920A02167           |
| HP 53181 Frequency Counter             | 3736A05957           |