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| SANDIA SYSTEMATIC DECLASSIFICATION COORDINATING CENTER | |
| CLASSIFICATION CHANGED TO: <u>4</u> | AUTHORITY: <u>W.C. Layne</u> |
| PERSON CHECKING: <u>Emelda Selph</u> <u>11/3/97</u> | RECORD ID: <u>98SN0013</u> |
| PERSON VERIFYING MARKING & DATE: <u>Carmella Dalley</u> <u>11/11/97</u> | DATED: <u>10/01/97</u> |

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May 11, 1965

Colonel S. S. Sherrill, Jr.
Space Systems Division, SSUN
Los Angeles, California

Attn: Captain B. J. Meyer

Subject: W. Antenna Systems Requirements for 461/Vela Program

The following requirements for three channels of the W Experiment were requested by Lockheed Missiles and Space Company:

A. Antenna and Filter

1. Antenna length = 36" (antenna and filter can be connected directly or by less than 0.5 meter of cable).
2. The filter box shall be made up of passive components only and shall withstand the spacecraft environment.
3. The filter z_{in} with a 50 resistive load on the output shall match the antenna for maximum power transfer from 27 to 29 Mc and 34 to 37 Mc with less than 1 db loss.
4. The filter z_{out} with antenna connected should match a 50 resistive load for maximum power transfer from 27 to 29 Mc and 34 to 37 Mc with less than 1 db loss.
5. Attenuation from 29 to 34 Mc should be at least as much as in either band of interest (27 to 29 Mc and 34 to 37 Mc).
6. Attenuation will be greater than 40 db below 6.75 Mc and from 200 Mc to 3000 Mc. Attenuation from 6.75 to 27 Mc will be greater than that indicated by a -20 db/octave slope between these two frequencies. Attenuation from 37 to 200 Mc will be greater than that indicated by a +16.4 db/octave slope between these two frequencies.
7. Attenuation curve of the filter: See Figure 1

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| SANDIA SYSTEMATIC DECLASSIFICATION REVIEW | |
| 1. Review Date: <u>9/30/97</u> | 2. Review Date: <u>10/01/97</u> |
| Authority: <u>W.C. Lawrence</u> | Authority: <u>W.C. Layne</u> |
| Decision (Circle Numbers) <input checked="" type="checkbox"/> Classification Retained <input type="checkbox"/> Classification Changed to <u>UNCL</u> <input type="checkbox"/> Contains No DOE Classified Information <input type="checkbox"/> Coordinate With: 1. Containing UCAI? 2. Containing: | |
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B. Antenna and Filter

1. Antenna length = 36" (antenna and filter can be connected directly or by less than 0.3 meter of cable).

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2. The filter box shall be made up of passive components only and shall withstand the spacecraft environment.
3. The filter z_{in} with a 50 resistive load on the output shall match the antenna for maximum power transfer from 42 to 47 Mc and from 54 to 58 Mc with less than 1 db loss.
4. The filter z_{out} with antenna connected should match a 5052 resistive load for maximum power transfer from 42 to 47 Mc and from 54 to 58 Mc with less than 1 db loss.
5. Attenuation from 47 to 54 Mc should be at least as much as in either band of interest (42 to 47 Mc and 54 to 58 Mc).
6. Attenuation will be greater than 40 db below 10.5 Mc and from 200 to 3000 Mc. Attenuation from 10.5 to 42 Mc will be greater than that indicated by a -20 db/octave slope between these two frequencies. Attenuation from 58 to 200 Mc will be greater than that indicated by a +22.3 db/octave slope between these two frequencies.
7. Attenuation curve of the filter: See Figure 2

C. Antenna and Filter

1. Antenna length = 36" (antenna and filter can be connected directly or by less than 0.2 meter of cable.
2. The filter box shall be made up of passive components only and shall withstand the spacecraft environment.
3. The filter z_{in} with a 50 resistive load on the output shall match the antenna for maximum power transfer from 68 to 74 Mc and 86 to 92 Mc with less than 1 db loss.
4. The filter z_{out} with antenna connected should match a 50 resistive load for maximum power transfer from 68 to 74 Mc and 86 to 92 Mc with less than 1 db loss.
5. Attenuation from 74 to 86 Mc should be at least as much as in either band of interest (68 to 74 Mc and 86 to 92 Mc).
6. Attenuation will be greater than 40 db below 17 Mc and from 200 to 3000 Mc. Attenuation from 17 to 68 Mc will be greater than that indicated by a -20 db/octave slope between these two frequencies. Attenuation from 92 to 200 Mc will be greater than that indicated by a +35.5 db/octave slope between these two frequencies.

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7. Attenuation curve: See Figure 3.

Please forward this information to Phil Schuyler at Lockheed Missile and Space Company.

Original Signed by
W. C. MYRE

W. C. Myre, Supervisor
Satellite Systems Division

W.B.Goldrick:9231:dwp

Enclosures (3)

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