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Code 5170

1 May 1963

Code 5430

7102-C changes in and 7103-A, B, and C Details

Ref: (a) 5430 Memo of 1 Nov 1962
 (b) 5430 memo of 8 Feb 1963
 (c) 5170 Memo Ser 5170-24 of 15 Feb 1963

Encl: (1) Abbreviated Data Sheet

Additional changes in 7102C, for the record.

Now that measurements have been made on the final Flight Hardware for 7102C-2 it has been determined there is insufficient attenuation to the signal from the data link transmitter. It is therefore suggested that the two filters and two detector mounts which were to be connected to the polar antennas for use with the 7102C-2 (Band "B" of Payload #112) be exchanged for four additional filters to be cabled in between the four equatorial antennas and the filters already destined for use with these equatorial antennas. This arrangement will occupy about the same amount of space and will fit adequately so that cabling can be facilitated.

The Antenna system for use on 7102C-3 (C-Band) originally described for use on this Payload has been found to present unacceptable system VSWR characteristics and is now being replaced by a new antenna and Nylon cover. No changes in the Mounting holes will be necessary.

Review and Restatement of the Details of 7103A, 7103B and 7103C

7103A will contain four Collection Bands described individually as follows:

7103A-1 - 105 to 125 mc coverage, utilizing two polar mounted dipole antennas measuring 34 inches in length.

Four Filters, tubular 1/2" dia. x 7-1/4" long

Two Detectors, Tubular 3-1/2" long x 5/8" dia.

One video amplifier with internal bias facility. *

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~~7103A-2 - 665 to 655 mc coverage, utilizing four equatorial mounted monopole antennas measuring 5 inches in length.~~

Six Filters** 6 inches long
Six Detector Mounts***
One Video Amplifier*

7103A-3 - 1080 to 1350 mc coverage, utilizing six monopole antennas 2 inches long, mounted in a symmetrical system of six located at the 36° Latitude.

Six Filters** each 3-1/2" long
Six Detector Mounts 1-1/2" dia. x 3-1/2" long
One video amplifier*

7103A-4 - 3800 to 4700 mc coverage, utilizing a symmetrical system of six monopole antennas located at the 36° latitude, and measuring 3/4" in length.

Six Combined Filter-Mounts, rectangular, 1-1/2" x 1/2" x 3-1/2"
Six Video Amplifiers* and Trigger Amplifiers

NOTE In 7103A-3 there is a plan to prepare and R and D experiment which will

radar emitters in this band.

Several schemes are under investigation now and additional details will follow. Additional hardware in the form of antennas, filters, amplifiers and telemetry channels will be necessary.

7103B-1 - 155 to 180 mc coverage, utilizing two polar mounted monopoles each measuring 18 inches in length.

Four Filters** each 6 inches in length
Two Detector Mounts***
One Video Amplifier*

7103B-2 - 550 to 660 mc coverage, utilizing four equatorial mounted monopole antennas, each 5 inches in length.

Six Filters**, each 6 inches in length
Six Detector Mounts***
One Video Amplifier*

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7103B-3 - 820 to 1080 mc coverage, utilizing six monopole antennas in a symmetrical system located at the 36° latitude and measuring about 3 inches long.

Six Filters**, each 5" long
 Six Detector Mounts***
 One Video Amplifier*

7103B-4 - 4700 to 5100 mc coverage utilizing six monopole antennas in a symmetrical system of 6, located at the 36° latitude, and 3/4" in length.

Six Rectangular Filter-Mounts 1-1/2"x1/2"x3-1/2"
 Six Video Amplifiers*

NOTE In 7103B-1 there are plans to incorporate

7103C-1 - 170 to 205 mc coverage utilizing two polar mounted monopoles each 16 inches in length.

Four Filters** 6 inches in length
 Two Detector Mounts***
 One Video Amplifier*

7103C-2 - 320 to 390 mc coverage utilizing four equatorially mounted monopoles each about 8 inches long.

Six Filters**
 Six Detector Mounts***
 One Amplifier*

7103C-3 - 590 to 720 mc coverage utilizing six monopole antennas in common with 7103C-4, each antenna is about 5 inches long and mounted on 36° Latitude.

Six Filters**, 6 inches in length
 Six Detector Mounts***
 One Video Amplifier

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7103C-4 - 1600 to 2000 mc coverage utilizing antenna system

described above.

Six Filters** 5 inches in length

Six Detector Mounts cylindrical 1-1/2" dia. x 2-1/2" long

One Video Amplifier*

NOTE

- ** Indicates a Tubular Filter which measures 1/2" diameter and if the length is not given it is 5" long.
- *** Indicates a Cylindrical Detector Mount 5/8" in diameter and 3-1/2" long.
- * Indicates a Video Amplifier whose dimensions are 2-3/8" H x 3-1/2" x 15/16 wide. All amplifiers have integral bias distribution facility.

7103A is NRL Payload #126 as determined on occasion of Meeting of 10 Apr 1963.

7103B is NRL Payload #125

7103C is NRL Payload #124 - (SR-VII)

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ABBREVIATED DATA SHEET

4/17/63

	<u>Band 1</u>	<u>Band 2</u>	<u>Band 3</u>	<u>Band 4</u>
PL #126 7103A-	4 Filters 7-1/4" 2 Mounts 5/8" x 3-1/2" 105 - 125 Wide #1	6 Filters 6" 6 Mounts 5/8" x 3-1/2" 665 - 855 Narrow #1	6 Filters 3-1/2" 6 Mounts 1-1/2" x 3-1/2" 1080 - 1350 Narrow #2	6 Filter-Mounts 6 Amplifier + Trig Amps. 3800 - 4700 Wide #2
PL #125 7103B	4 Filters 6" 2 Mounts 5/8" x 3-1/2" 155 - 180 Narrow #1	6 Filters 6" 6 Mounts 5/8" x 3-1/2" 550 - 660 Narrow #2	6 Filters 5" 6 Mounts 5/8" x 3-1/2" 830 - 1080 Wide #2	6 Filter-Mounts 1-1/2" x 1/2" x 3-1/2" 6 Amps + Trig Amps 4700 - 5100 Wide #1
PL #124 7103C SR-VII	4 Filters 6" 2 Mounts 5/8" x 3-1/2" 170 - 205 Narrow #1	6 Filters 5" x 1/2" D. 6 Mounts 5/8" x 3-1/2" 320 - 390 Wide #2	6 Filters 6" 6 Mounts 5/8" x 3-1/2" 590 - 720 Narrow #2	6 Filters 5" 6 Mounts 1-1/2" x 2-1/2" 1600 - 2000 Wide #1

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Encl (1) to
5430 memo of 1 May 1963

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