#### TECHNICAL MANUAL

# MEASURING AND TELEMETRY SYSTEM DESCRIPTION

Prepared under Contract

NAS 8-14000

by

International Business Machines Corporation

Federal Systems Division

Huntsville, Alabama

## LIST OF EFFECTIVE PAGES

NOTE: The portion of the text affected by the changes is indicated by a vertical line in the outer margins of the page.

Page	Issue	Page	Issue
*Title	15 Apr 69	S-IU-209 Tab	
*A	15 Apr 69	5-19	1 Dec 67
I	Original	5-20 Blank	Original
ii Blank	Original	S-IU-210 Tab	
	Original	5-20A Added	1 Dec 67
iv	1 Dec 67	5-20B Blank Added	1 Dec 67
v	Original	S-IU-211 Tab	
vi Blank	Original	5-20C Added	1 Dec 67
1-1 thru 1-7	Original 1 Dec 67	5-20D Blank Added	1 Dec 67
1-8	Original	S-IU-212 Tab 5-20E Added	1 Dec 67
	Original	5-20F Blank Added	1 Dec 67
2-1	1 Dec 67	S-IU-501 Tab	i Dec 07
2-4 thru 2-15	Original	5-21 thru 5-22	Original
2-16 Blank	Original	5-23	1 Dec 67
2-17 thru 2-29	Original	5-24	Original
2-30 Blank	Original	5-25	1 Dec 67
2-31 thru 2-33	Original	5-26 Blank	Original
2-34 Blank	Original	S-1U-502 Tab	
2-35 thru 2-37	Original	5-27	1 Dec 67
2-38 Blank	Original	5-28 Blank	Original
2-39	Original	S-IU-503 Tab	
2-40	1 Dec 67	*5-29	15 Apr 69
2-41	Original	5-30 Blank	Original
2-42 Blank	Original	S-IU-504 Tab	
2-43	Original	5-31	Original
2-44 Blank	Original Original	5-32	1 Dec 67
2-49 thru 2-51	1 Dec 67	5-33	Original
2-52 thru 2-53	Original	*5-34	15 Apr 69
2-54 thru 2-55	1 Dec 67	S-IU-505 Tab	1 0 67
2-56 thru 2-57	Original	5-35	1 Dec 67
2-58 Blank	Original	5-36 Blank	Original
2-59	Original		1 Dec 67
2-60 Blank	Original	5-37	Original
3-1 thru 3-11	Original	S-IU-507 Tab	O. i.g.i.i.a.
3-12 Blank	Original	5-39 Added	1 Dec 67
3-13 thru 3-15	Original	5-40 Blank Added	1 Dec 67
3-16 Blank	Original	*S-IU-508 Tab	
4-1 thru 4-5	Original	*5-41 Added	15 Apr 69
4-6 Blank	Original	*5-42 Blank Added	15 Apr 69
4-7 thru 4-9	Original	*S-IU-509 Tab	
4-10 Blank 4-11	Original Original	*5-43 Added	15 Apr 69
4-12 Blank	Original	*5-44 Blank Added	15 Apr 69
4-13	Original	*S-IU-510 Tab	15 Apr 60
4-14 Blank	Original	*5-45 Added	15 Apr 69 15 Apr 69
4-15 thru 4-21	Original	*S-IU-511 Tab	10 Ahi 09
4-22 Blank	Original	*5-47 Added	15 Apr 69
4-23 thru 4-24	1 Dec 67	*5-48 Blank Added	15 Apr 69
5-1	Original	*S-IU-512 Tab	
5-2 Blank	Original	*5-49 Added	15 Apr 69
S-IU-204 Tab	A-63	*5-50 Blank Added	15 Apr 69
5-3 thru 5-8	Original	*S-IU-513 Tab	
S-IU-205 Tab	0	*5-51 Added	15 Apr 69
5-9 thru 5-11	Original 1 Dec 67	*5-52 Blank Added	15 Apr 69
5-12	1 1200 07	*S-IU-514 Tab	
5-10-206 Tab	Original	*5-53 Added	15 Apr 69
5-14 Blank	Original	*5-54 Blank Added	15 Apr 69
S-IU-207 Tab	= ::: g**1121	*S-IU-515 Tab	15 ^ 50
5-15	Original	*5-55 Added	15 Apr 69 15 Apr 69
5-16 Blank	Original	*5-56 Blank Added Symbols-I	Original
S-IU-208 Tab		Symbols-1 Symbols-2 Blank	Original
5-17	1 Dec 67	Glossary-1 thru 2	Original
5-18 Blank	Original		2

st The asterisk indicates pages changed, added, or deleted by the current change.

BASIC	CHANGE	CHANGE			
15 APR 67	1 DEC 67	15 APR 69			

THE CONTENTS OF THE PRECEDING SECTIONS OF THIS MANUAL APPLY TO THE VEHICLE SPECIFIED ON THESE DATA SHEETS EXCEPT FOR THE FOLLOWING DIFFERENCES.

The information contained in the S-IU-501 Data Sheets also applies to S-IU-503, except for minor changes to the channel configurations and usages listed in Tables 5-19, 5-20, 5-23, and 5-24. The changes and additions for S-IU-503 are as follows:

- CP1 Mux channels 7 and 13 changed to X10 submux
- DP1 Mux channel 17 changed to X10 submux
- F1 Telemeter channels 3, 14-3, 14-5, 17-3, 17-5, and 17-6 added
- F2 Telemeter channels 3, 4, and 14-3 added

5-29/5-30

Table 5-27. List of CP1 Mux Channel Configurations

Table 5-28. List of DP1 Mux Channel Configurations

Channel	Channel Configuration	
1	X10 submux	
2	X10 submux	
3	X10 submux	
4	X10 submux	
5	Continuous	
6	Continuous	
7	Continuous	
8	Continuous	
9	Continuous	
10	Continuous	
11	Continuous	
12	X10 submux	
13	Continuous	
14	Continuous	
15	Continuous	
16	Continuous	
17	Continuous	
18	Continuous	
19	Continuous	
20	Continuous	
21	Continuous	
22	Continuous	
23	Continuous	
24	Continuous	
25	Continuous	
26	Continuous	
27	Continuous	
28	Identification	
29	Identification	
30	Identification	

Channel	Channel Configuration
1	X10 submux
2	X10 submux
3	X10 submux
4	X10 submux
5	Continuous
6	Continuous
7	Continuous
8	Continuous
9	Continuous
10	Continuous
11	Continuous
12	Continuous
13	Continuous
14	Continuous
15	Continuous
16	Continuous
17	X10 submux
18	X10 submux
19	X10 submux
20	X10 submux
21	X10 submux
22	X10 submux
23	Continuous
24	Continuous
25	Continuous
26	Continuous
27	Continuous
28	Identification
29	Identification
30	Identification

Table 5-29. List of RDM-J Output Word Sequence

Input Word	Output Word Sequence
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
1	

Table 5-30. List of RDM-K Output Word Sequence

Input Word	Output Word Sequence
1	Not Used
2	Not Used
3	Not Used
4	1
5	2
6	3
7	4
8	Not Used
9	Not Used
10	Not Used

Table 5-32. List of PCM/DDAS Telemeter Digital Card Configurations

Input Word	Card Type	
1	Digital Gate	
2	Dummy	
3	Dummy	
4	MCR	
5	MCR	
6	MCR	
7	MCR	
8	Digital Gate	
9	Dummy	
10	Dummy	

Table 5-31. List of F1 Telemeter Channel Usage

Available Channels*	Channels Used
2	x
3	x
4	x
5	x
6	x
7	x
8	
9	
10	x
11	
12	
13	x
14-2	
14-3	
14-4	
14-5	
14-6	
15	x
16	x
17-2	***
17-3	
17-4	
17-5	x
17-6	
17-7	
17-8	
18	x

<sup>\*</sup> Refer to table of IRIG frequencies in Section II.

#### THE CONTENTS OF THE PRECEDING SECTIONS OF THIS MANUAL APPLY TO THE VEHICLE SPECIFIED ON THESE DATA SHEETS EXCEPT FOR THE FOLLOWING DIFFERENCES

The information contained in the S-IU-504 Data Sheets also applies to S-IU-508, with 2 exceptions: (1) S-IU-508 has no uhf components (that is, no P2 Transmitter, UHF Coaxial Switch, or TM UHF Antenna) and (2) the serial PCM output of the IU PCM/DDAS Telemeter is furnished to the CCS as indicated in Figure 2-1.

Added 15 April 1969 5-41/5-42

#### THE CONTENTS OF THE PRECEDING SECTIONS OF THIS MANUAL APPLY TO THE VEHICLE SPECIFIED ON THESE DATA SHEETS EXCEPT FOR THE FOLLOWING DIFFERENCES

The information contained in the S-IU-504 Data Sheets also applies to S-IU-509, with 2 exceptions: (1) S-IU-509 has no uhf components (that is, no P2 Transmitter, UHF Coaxial Switch, or TM UHF Antenna) and (2) the serial PCM output of the IU PCM/DDAS Telemeter is furnished to the CCS as indicated in Figure 2-1.

Added 15 April 1969 5-43/5-44



#### THE CONTENTS OF THE PRECEDING SECTIONS OF THIS MANUAL APPLY TO THE VEHICLE SPECIFIED ON THESE DATA SHEETS EXCEPT FOR THE FOLLOWING DIFFERENCES

The information contained in the S-IU-504 Data Sheets also applies to S-IU-510, with 2 exceptions: (1) S-IU-510 has no uhf components (that is, no P2 Transmitter, UHF Coaxial Switch, or TM UHF Antenna) and (2) the serial PCM output of the IU PCM/DDAS Telemeter is furnished to the CCS as indicated in Figure 2-1.

Added 15 April 1969 5-45/5-46

### THE CONTENTS OF THE PRECEDING SECTIONS OF THIS MANUAL APPLY TO THE VEHICLE SPECIFIED ON THESE DATA SHEETS EXCEPT FOR THE FOLLOWING DIFFERENCES

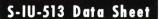
The information contained in the S-IU-504 Data Sheets also applies to S-IU-511, with 2 exceptions: (1) S-IU-511 has no uhf components (that is, no P2 Transmitter, UHF Coaxial Switch, or TM UHF Antenna) and (2) the serial PCM output of the IU PCM/DDAS Telemeter is furnished to the CCS as indicated in Figure 2-1.

Added 15 April 1969 5-47/5-48

#### THE CONTENTS OF THE PRECEDING SECTIONS OF THIS MANUAL APPLY TO THE VEHICLE SPECIFIED ON THESE DATA SHEETS EXCEPT FOR THE FOLLOWING DIFFERENCES

The information contained in the S-IU-504 Data Sheets also applies to S-IU-512, with 2 exceptions: (1) S-IU-512 has no uhf components (that is, no P2 Transmitter, UHF Coaxial Switch, or TM UHF Antenna) and (2) the serial PCM output of the IU PCM/DDAS Telemeter is furnished to the CCS as indicated in Figure 2-1.

Added 15 April 1969 5-49/5-50



### THE CONTENTS OF THE PRECEDING SECTIONS OF THIS MANUAL APPLY TO THE VEHICLE SPECIFIED ON THESE DATA SHEETS EXCEPT FOR THE FOLLOWING DIFFERENCES

The information contained in the S-IU-504 Data Sheets also applies to S-IU-513, with 2 exceptions: (1) S-IU-513 has no uhf components (that is, no P2 Transmitter, UHF Coaxial Switch, or TM UHF Antenna) and (2) the serial PCM output of the IU PCM/DDAS Telemeter is furnished to the CCS as indicated in Figure 2-1.

Added 15 April 1969 5-51/5-52

#### THE CONTENTS OF THE PRECEDING SECTIONS OF THIS MANUAL APPLY TO THE VEHICLE SPECIFIED ON THESE DATA SHEETS EXCEPT FOR THE FOLLOWING DIFFERENCES

The information contained in the S-IU-504 Data Sheets also applies to S-IU-514, with 2 exceptions: (1) S-IU-514 has no uhf components (that is, no P2 Transmitter, UHF Coaxial Switch, or TM UHF Antenna) and (2) the serial PCM output of the IU PCM/DDAS Telemeter is furnished to the CCS as indicated in Figure 2-1.

Added 15 April 1969 5-53/5-54

#### THE CONTENTS OF THE PRECEDING SECTIONS OF THIS MANUAL APPLY TO THE VEHICLE SPECIFIED ON THESE DATA SHEETS EXCEPT FOR THE FOLLOWING DIFFERENCES

The information contained in the S-IU-504 Data Sheets also applies to S-IU-515. with 2 exceptions: (1) S-IU-515 has no uhf components (that is, no P2 Transmitter, UHF Coaxial Switch, or TM UHF Antenna) and (2) the serial PCM output of the IU PCM/DDAS Telemeter is furnished to the CCS as indicated in Figure 2-1.

5-55/5-56

#### NOTICE

The enclosed pages comprise Change NO. 2 to the following technical manual:

Measuring and Telemetry System Description IBM NO. 67-966-0008

Before inserting these change pages, your manual title page must reflect the following dates:

Basic date: 15 April 1967

Change date: 1 December 1967

Should these dates on your manual be incorrect, direct inquiries to:

IBM Corporation Federal Systems Division P. O. Box 1250 Huntsville, Alabama 35807

ATTN: Department 966, Manual Distribution

The enclosed pages change, delete, or supplement the information in your technical manual. Insert these pages (See page A, "List of Effective Pages", contained in the change pages) and destroy the pages they replace. The level of each page is noted by the date at the bottom of the page; original pages are not dated.

DESTROY THIS PAGE AFTER INSERTING CHANGED PAGES