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Vol. II

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CONTRACT NAS9-9334

# SOLID STATE SEQUENCER SYSTEM
# PHASE II

## SUMMARY REPORT

MARCH 1971

## APPENDIX A

## Engineering Drawing List

FACILITY FORM 602
N71-31458 (ACCESSION NUMBER) (THRU)
9 (PAGES) 03 (CODE)
CR-114956 (NASA CR OR TMX OR AD NUMBER) 26 (CATEGORY)

Prepared for

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS 77058

MARTIN MARIETTA CORPORATION
P. O. Box 179
Denver, Colorado 80201

CR-114956

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## PHASE II

## SUMMARY REPORT

MARCH 1971

## APPENDIX A

## Engineering Drawing List

Approved by

David E. Leck
Program Manager

Prepared for

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MARTIN MARIETTA CORPORATION
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## Numerical List of Drawings

Regardless of how the drawings are marked relative to page and sheet numbers, the actual number of sheets (pages) included in this data package is as shown in the following table.

| DRAWING NUMBER | TITLE | NUMBER OF SHEETS |
|---|---|---|
| 5000-1 | Sequencer System Assembly (List of materials only) | 2 |
| -2, 3, 4 | Not used | |
| -5 | Printed Wiring Board (PWB) Fabrication Data for 1/16" boards | 1 |
| -6 | PWB Fab Data for 3/32" boards | 1 |
| -7 | Fab. data - Assembly with Z-Bars | 1 |
| -8 | Fab. Data - Assembly without Z Bars | 1 |
| -9 | Not used | |
| -10 | Point-to-Point Wiring Process | 16 |
| 5100-1, 2 | Not used | |
| -3 | CMU Nameplate | 2 |
| -4 thru 22 | Not used | |
| -23 | Fuse and Fusistor Housing Details | 1 |
| -24 thru 29 | Not used | |
| -30 | PWB - Fuse Module | 1 |
| -31 | PWB - Fusistor Module 1 | 1 |
| -32 | PWB - Fusistor Module 2 | 1 |
| 5200-1 | CMU Upper Assembly | 6 |
| -2 thru 10 | Not used | |
| -11 | CMU Upper Housing | 7 |
| -12 | CMU Upper Cover | 1 |
| -13 | Not used | |
| -14 | PWB Retainer Assembly | 2 |
| -15 | Not used | |
| -16 | Pyro Firing Circuit (PFC) Module Details | 1 |
| -17 | PWB Module Details | 1 |
| -18 | PWB Module Extractor | 1 |
| -19 | Mother Board Stiffeners | 2 |
| 5200-21 | Not used | |
| -22 | Mother Board #2 Assembly (None exists for Mother Board #1; however see interconnection wire lists in the Summary Report, Appendix B) | 2 |
| -23 | PFC Module Assembly | 1 |
| -24 | Output Switch (OS) Module Assembly | 1 |
| -25 | CTL Module Assembly | 1 |
| -26 | IC Module Assembly | 1 |
| -27 thru 30 | Not used | |
| -31 | PWB - Mother Board 1 | 2 |

| DRAWING NUMBER | TITLE | NUMBER OF SHEETS |
|---|---|---|
| 5200-32 | PWB - Mother Board 2 | 2 |
| -33 -1 | PFC Board 1 Assembly | 5 |
| -33 -3 | PFC Board 3 Assembly | 5 |
| -33 -5 | PFC Board 5 Assembly | 4 |
| -34 -2 | PFC Board 2 Assembly | 4 |
| -34 -4 | PFC Board 4 Assembly | 5 |
| -34 -6 | PFC Board 6 Assembly | 4 |
| -35 | OS Board 1 Assembly | 5 |
| -36 | OS Board 2 Assembly | 6 |
| -37 | OS Board 3 Assembly | 6 |
| -38 | OS Board 4 Assembly | 4 |
| -39 | OS Board 5 Assembly | 5 |
| -40 | OS Board 6 Assembly | 4 |
| -41, -42 | Not used | |
| -43 | Decode Logic Board 1 Assembly | 6 |
| -44 | Decode Logic Board 2 Assembly | 7 |
| -45 | CTL Board 1 Assembly | 5 |
| -46 | CTL Board 2 Assembly | 6 |
| -47 | CTL Board 3 Assembly | 5 |
| -48 | CTL Board 4 Assembly | 6 |
| -49 | CTL Board 5 Assembly | 6 |
| -50 | CTL Board 6 Assembly | 5 |
| -51 | CTL Board 7 Assembly | 4 |
| -52 | CTL Board 8 Assembly | 4 |
| -53 | PWB - O.S. Terminal Board | 1 |
| -54 thru -56 | Not used | |
| -57 | IC Board 1 Assembly | 3 |
| -58 | Not used | |
| -59 | IC Board 3 Assembly | 3 |
| -60 | IC Board 4 Assembly | 2 |
| -60A | IC Board 2 Assembly | 2 |
| -61 | IC Board 5 Assembly | 3 |
| -62 | IC Board 6 Assembly | 2 |
| -63 | IC Board 7 Assembly | 3 |
| -64 | IC Board 8 Assembly | 2 |
| -65 thru -72 | Not used | |
| -73 | PWB - Pyro Firing Circuit (PFC) 1, 3, 5 | 2 |
| -74 | PWB - PFC 2, 4, 6 | 2 |
| -75 | PWB - Output Switch (OS)1 | 2 |
| -76 | PWB - OS 2 | 2 |
| -77 | PWB - OS 3 | 2 |
| -78 | PWB - OS 4 | 2 |
| -79 | PWB - OS 5 | 2 |
| -80 | PWB - OS 6 | 2 |
| -81 -82 | Not used | |
| -83 | PWB - Decode Logic 1 | 2 |
| -84 | PWB - Decode Logic 2 | 2 |
| -84 - 1 | PWB - Decode Logic 2 (Mod 1) | 1 |
| -85A | PWB - CTL 1 | 2 |
| -86 | PWB - CTL 2 and CTL 5 | 2 |
| -87 | PWB - CTL 3 | 2 |
| -88 | PWB - CTL 4 | 2 |

| DRAWING NUMBER | TITLE | NUMBER OF SHEETS |
|---|---|---|
| 5200-88 - 1 | PWB - CTL 4 (Mod 1) | 1 |
| -89 | Not used | |
| -90 | PWB - CTL 6 | 2 |
| -91 | PWB - CTL 7 | 2 |
| -92 | PWB - CTL 8 | 2 |
| -93 thru -96 | Not used | |
| -97 | PWB - IC 1 | 2 |
| -98 | Not used | |
| -99 | PWB - IC 3 | 2 |
| -100A | PWB - IC 2 and IC 4 | 2 |
| -101 | PWB - IC5 | 2 |
| -102A | PWB - IC6 | 2 |
| -103A | PWB - IC7 | 2 |
| -104 | PWB - IC8 | 2 |
| -105 thru -202 | Not used | |
| -203 | Schematic - PFC 1 thru 6 | 6 |
| -204 | Not used | |
| -205 | Schematic - OS 1 | 1 |
| -206 | Schematic - OS 2 | 1 |
| -207 | Schematic - OS 3 | 2 |
| -208 | Schematic - OS 4 | 1 |
| -209 | Schematic - OS 5 | 1 |
| -210 | Schematic - OS 6 | 1 |
| -211, -212 | Not used | |
| -213 | Schematic - Decode Logic 1 | 1 |
| -214 | Schematic - Decode Logic 2 | 2 |
| -215 | Schematic - CTL 1 | 1 |
| -216 | Schematic - CTL 2 | 1 |
| -217 | Schematic - CTL 3 | 1 |
| -218 | Schematic - CTL 4 | 1 |
| -219 | Schematic - CTL 5 | 1 |
| -220 | Schematic - CTL 6 | 1 |
| -221 | Schematic - CTL 7 | 1 |
| -222 | Schematic - CTL 8 | 1 |
| -223 thru -226 | Not used | |
| -227 | Schematic - IC 1 | 9 |
| -228 | Schematic - IC 2 | 4 |
| -229 | Schematic - IC 3 | 9 |
| -230 | Schematic - IC 4 | 4 |
| -231 | Schematic - IC 5 | 9 |
| -232 | Schematic - IC 6 | 8 |
| -233 | Schematic - IC 7 | 8 |
| -234 | Schematic - IC 8 | 6 |

| DRAWING NUMBER | TOTAL | NUMBER OF SHEETS |
|---|---|---|
| 5300-1 | CMU Base Assembly (List of Material) | 1 |
| -2 thru -10 | Not used | |
| -11 | CMU Base Housing Detail | 1 |
| -12 | CMU Base Shield Detail | 1 |
| -13, -14 | Not used | |
| -15 | CMU Base Misc. Hardware | 3 |
| -16 thru -20 | Not used | |
| -21 | O.S. Base Boards and Plate Assembly | 8 |
| -22 | Power Supply Assembly | 15 |
| -23, -24 | Not used | |
| -25 | Power Supply Frame Detail | 1 |
| -26, -27 | Not used | |
| -28 | Transformer Detail | 1 |
| -29 | Inductor Detail | 1 |
| -30 | Not used | |
| -31 | O.S. Base Plate Detail | 1 |
| -31A | PWB - O.S. Base Boards 1, 2 | 2 |
| -32 | PWB - Power Supply | 2 |
| -33 thru -40 | Not used | |
| -41 | Schematic - O. S. Base Plate and Boards | 1 |
| -42 | Schematic - Power Supply | 2 |

| DRAWING NUMBER | TOTAL | NUMBER OF SHEETS |
|---|---|---|
| 5400-1 | Memory Assembly | 1 |
| -2 thru -10 | Not used | |
| -11 | Misc. Memory Assembly Details | 1 |
| -12 thru -20 | Not used | |
| -21 | Memory Board 1 Assembly | 7 |
| -22 | Memory Board 2 Assembly | 5 |
| -23 | Memory Board 3 Assembly | 5 |
| -24 | Memory Board 4 Assembly | 5 |
| -25 | Memory Board 5 Assembly | 7 |
| -26 | Memory Board 6 Assembly | 6 |
| -27 | Memory Board 7 Assembly | 9 |
| -28 | Memory Board 8 Assembly | 3 |
| -29, -30 | Not used | |
| -31 | PWB - Memory Board 1 | 2 |
| -32 | PWB - Memory Board 2 | 2 |
| -33 | PWB - Memory Board 3 | 2 |
| -34 | PWB - Memory Board 4 | 2 |
| -35 | PWB - Memory Board 5 | 2 |
| -36 | PWB - Memory Board 6 | 2 |
| -37 | PWB - Memory Board 7 | 2 |
| -38 | PWB - Memory Board 8 | 2 |
| -39, -40 | Not used | |
| -41 | Schematic - Memory Board 1 | 1 |
| -42 | Schematic - Memory Board 2 | 1 |
| -43 | Schematic - Memory Board 3 | 1 |
| -44 | Schematic - Memory Board 4 | 1 |
| -45 | Schematic - Memory Board 5 | 1 |
| -46 | Schematic - Memory Board 6 | 1 |
| -47 | Schematic - Memory Board 7 | 4 |
| -48 | Schematic - Memory Board 8 | 4 |

| DRAWING NUMBER | TOTAL | NUMBER OF SHEETS |
|---|---|---|
| 5500-1 | SMU Assembly | 1 |
| -2 | Not used | |
| -3 | SMU Nameplate | 2 |
| -4 thru -10 | Not used | |
| -11 | SMU Case Detail | 2 |
| -12 | SMU Miscellaneous Hardware | 1 |
| -13 thru -20 | Not used | |
| -21 | SMU Top Board Assembly | 4 |
| -22 | SMU Bottom Board Assembly | 4 |
| -23 thru -30 | Not used | |
| -31 | PWB - SMU Top Board | 2 |
| -32 | PWB - SMU Bottom Board | 2 |
| -33 thru -40 | Not used | |
| -41 | SMU Schematic | 1 |
| | Total Number of Sheets | 460 |

ITEMIZED LIST OF DRAWINGS

| TITLE | Assembly Drawing (Includes List of Materials and Wire List | Printed Wiring Board Drawing | Schematic Drawing |
|---|---|---|---|
| Sequencer System Assembly | 5000-1 | NA | NA |
| Fuse and Fusistor Housings | 5100-23 (Details) | NA | NA |
| Fuse Module | NA | 5100-30 | NA |
| Fusistor Module 1 | NA | -31 | NA |
| Fusistor Module 2 | NA | -32 | NA |
| CMU Upper Assembly | 5200-1 (See Appendix B Summary Report for Interconnection Wiring List | NA | NA |
| CMU Upper Housing | -11 | NA | NA |
| CMU Upper Cover | -12 | NA | NA |
| Pyro Firing Circuit Boards 1, 3, 5 | -33 | 5200-73 | 5200-203 |
| Pyro Firing Circuit Boards 2, 4, 6 | -34 | -74 | 5200-203 |
| Output Switch Board 1 | -35 | -75 | 5200-205 |
| Output Switch Board 2 | -36 | -76 | -206 |
| Output Switch Board 3 | -37 | -77 | -207 |
| Output Switch Board 4 | -38 | -78 | -208 |
| Output Switch Board 5 | -39 | -79 | -209 |
| Output Switch Board 6 | -40 | -80 | -210 |
| Output Switch Terminal Board | NA | 5200-53 | NA |
| Decode Logic Board 1 | 5200-43 | 5200-83 | 5200-213 |
| Decode Logic Board 2 (Mod 1) | -44 | -84 (84 -1) | -214 |
| Core Transistor Logic Board 1 | -45 | 5200-85A | -215 |
| Core Transistor Logic Board 2 | -46 | -86 | -216 |
| Core Transistor Logic Board 3 | -47 | -87 | -217 |
| Core Transistor Logic Board 4 (Mod 1) | -48 | -88 (88 -1) | -218 |
| Core Transistor Logic Board 5 | -49 | -86 | -219 |
| Core Transistor Logic Board 6 | -50 | -90 | -220 |
| Core Transistor Logic Board 7 | -51 | -91 | -221 |
| Core Transistor Logic Board 8 | -52 | -92 | -222 |
| Integrated Circuit Board 1 | 5200-57 | 5200-97 | 5200-227 |
| Integrated Circuit Board 2 | -58 | -100A | -228 |
| Integrated Circuit Board 3 | -59 | -99 | -229 |
| Integrated Circuit Board 4 | -60 | -100A | -230 |
| Integrated Circuit Board 5 | -61 | -101 | -231 |
| Integrated Circuit Board 6 | -62 | -102A | -232 |
| Integrated Circuit Board 7 | -63 | -103A | -233 |
| Integrated Circuit Board 8 | -64 | -104 | -234 |
| CMU Base Assembly | 5300-1 | NA | NA |
| CMU Base Housing | -11 | NA | NA |
| CMU Base Shield | -12 | NA | NA |
| Output Switch Base Boards 1 and 2 | -21 | 5300-31A | 5300-41 |
| Output Switch Base Plate | -21 and 31 | NA | 5300-41 |
| Power Supply | -22 | 5300-32 | 5300-42 |
| Power Supply Frame | -25 | NA | NA |
| Memory Assembly | 5400-1 | NA | NA |
| Memory Board 1 | -21 | 5400-31 | 5400-41 |
| Memory Board 2 | -22 | -32 | -42 |
| Memory Board 3 | -23 | -33 | -43 |
| Memory Board 4 | -24 | -34 | -44 |
| Memory Board 5 | -25 | -35 | -45 |
| Memory Board 6 | -26 | -36 | -46 |
| Memory Board 7 | -27 | -37 | -47 |
| Memory Board 8 | -28 | -38 | -48 |
| SMU Assembly | 5500-1 | NA | 5500-41 |
| SMU Case | -11 | NA | NA |
| SMU Top Board | -21 | 5500-31 | 5500-41 |
| SMU Bottom Board | -22 | 5500-32 | 5500-41 |