

NOTES:

1. SECTIONS SHOWN COLORED ARE:

- A) WHITE ON BLACK BACKGROUND FOR POWERING THE ROBOT IN CLEANING AND MOST SELF-TEST MODES;
- B) ORANGE BECOMES POWERED UPON CONNECTING A BATTERY CHARGING POWER SUPPLY TO THE ROBOT; AND
- C) BLUE / AQUA COLOR DENOTES PROCESSING OF BATTERY TEMPERATURE DATA TO ASSIST IN THE CHARGE TERMINATION DECISION.

2. SPECIAL COMPONENT NOTATIONS:

- A) COMPONENTS ARE POSITIONED ON BOTH SIDES OF THE MAIN PCB. THE "AFT" SIDE (THE ROBOT'S "AFT") CARRIES THE MAJORITY OF PARTS, WHILE THERE ARE ONLY 40 COMPONENTS ON THE FORWARD (FWD) SIDE TO DISCRIMINATE FWD PARTS FROM AFT, LOWER CASE "F" PREFIXES ALL FWD-SIDE PART DESIGNATORS.

- B) SIMILARLY, PARTS ARE POSITIONED ON BOTH SIDES OF THE SMALL DAUGHTER-BOARD (DTR-BD)-THE AQUA COLORED CIRCUIT. COMPONENTS ON THE AFT SIDE OF THE DTR-BD ARE PREFIXED WITH LOWER-CASE "DB", AND THOSE ON THE DTR-BD'S FWD SIDE ARE PREFIXED WITH LOWER-CASE "DFB". THE DTR-BD IS LOCATED APPROX. 125 MILLIMETERS FROM THE LEFT END OF THE MAIN BOARD, AND 35 MILLIMETERS DOWN FROM ITS TOP EDGE.

- C) SMD-TYPE RESISTOR VALUES HAD TO BE MEASURED WHEN PACKAGES WERE ODDLY CODE-MARKED, E.G., "184", "18D", ETC. MEASURED DATA ARE SHOWN ON THE DWG. ALTHOUGH ALL LARGE COMPONENTS AND ICs HAD BEEN DOCUMENTED TO ASSIST TRACING, THERE IS A FINITE POSSIBILITY THAT SOME MEASURED VALUES ARE POLLUTED BY PARALLEL RESISTANCES. COMPLETION OF THE SCHEMATIC WILL MAKE SUCH PARALLEL COMBINATIONS EVIDENT, AND TO THEN PROMOTE ISOLATED REMEASUREMENTS OF SUSPICIOUS VALUES, FOLLOWED BY DWG-CORRECTION.

- D) CAPACITANCE OF ALL SMD-TYPE CAPACITORS REMAIN UNKNOWN. THIS BEING THE CASE, SOME WILL BE REMOVED FROM THE PCB, MEASURED AND RECORDED IN THE PARTS-LIST.

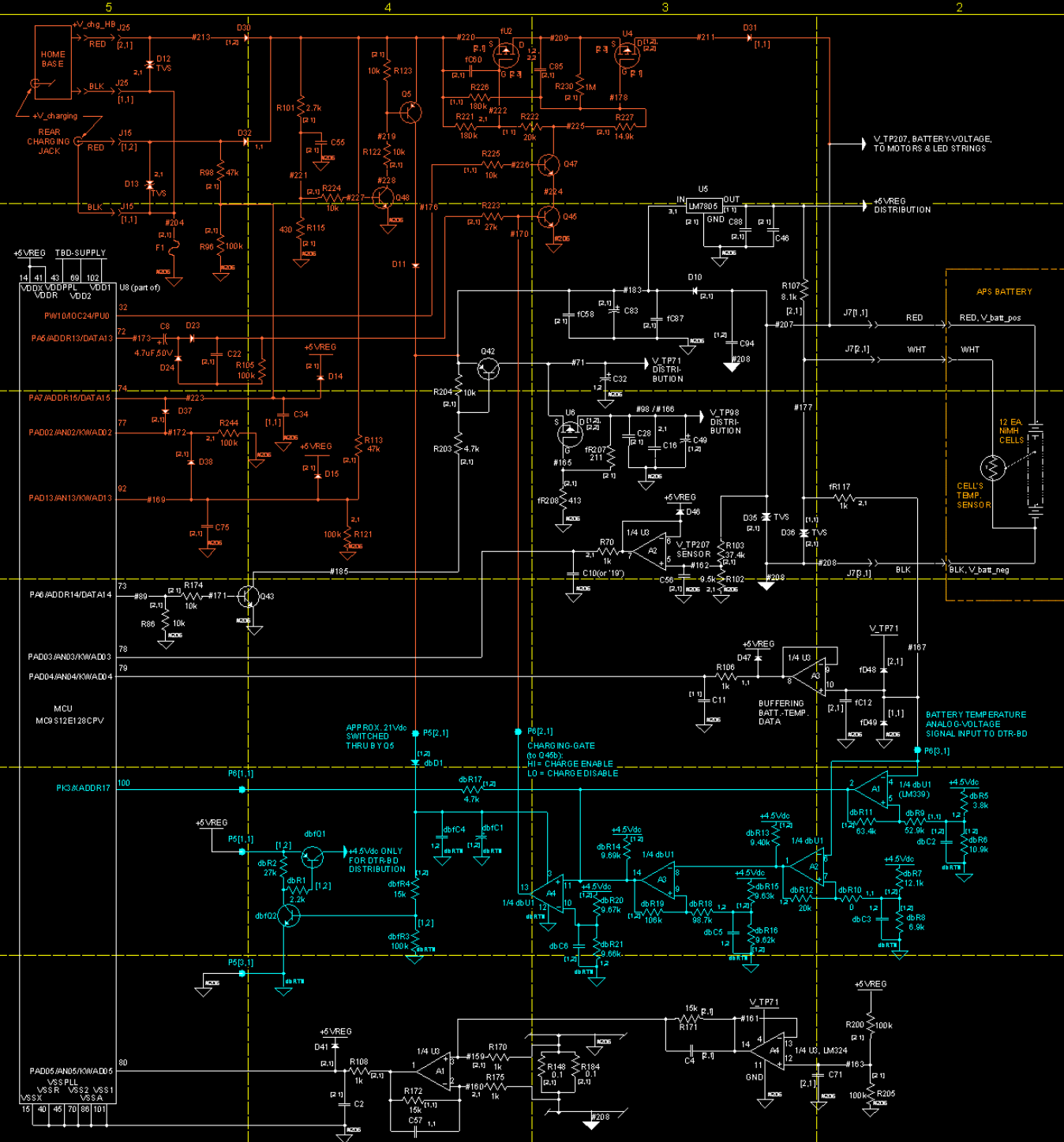
3. COMPONENT LOCATIONS:

- A) TO ASSIST IN LOCATING ANY COMPONENT WHILE TROUBLE-SHOOTING THE PCB/ASM, COORDINATE POSITIONS OF EACH PART HAS BEEN LOGGED IN THE PARTS LIST. REFER TO (GIVE THE LINK TO ON-GOING OBSERVATIONS) TO LEARN THE CARTESIAN COORDINATE SYSTEM ASSIGNMENT, AND THE METHOD OF TAGGING EACH PIN/TERMINAL OF ANY COMPONENT.

- B) TO ASSIST IN LOCATING PARTS WITHIN THE SCHEMATIC DWG, THE USE OF DWG-ZONES IS MADE. NOTICE THE YELLOW GRID-LINES SUPERIMPOSED ON THIS SCHEMATIC. THE RECTANGULAR ZONES (CELLS) BETWEEN THOSE LINES ARE IDENTIFIED BY MARGIN ROW\*ALPHAS AND COLUMN\*NUMBERS\*, IAW THE NORMAL ANSI DRAFTING STANDARD. FOR EXAMPLE, THE BATTERY IS SAID TO BE IN ZONE D2 (NORMALLY REDUCED TO "ZD2" IN A REFERENCE). PERHAPS IT COULD BE HANDY TO HAVE A LIST OF "PRINCIPAL CIRCUIT FEATURES" AND THEIR ZONES:

- 5VDC REGULATOR: ZN-B3
- BATTERY ASSEMBLY: ZN-D2
- BATTERY-VOLTAGE TO MOTORS, ETC., DISTRIBUTION: ZN-B3
- BATTERY-VOLTAGE MONITOR: ZN-D3
- CHARGING-CONTROL MOSFETS: ZNS-F3/4
- CHARGING, BATTERY-TEMPERATURE MONITOR: ZNS-B2/G/4
- EXTERNAL CHARGING POWER-SUPPLY INPUTS: ZN-F5
- MICRO CONTROLLER UNIT (PARTIAL): ZNS-A/B/C/D/E
- RUN-TIME BATTERY-TEMPERATURE MONITOR: ZNS-C2/G
- SYSTEM CURRENT (NON-TIME-CHARGING) MONITOR: ZNS-G2/G/4
- V\_T.P71 POWER-FORM CREATION POINT: ZN-B3
- V\_T.P98 POWER-FORM CREATION POINT: ZN-D3

-META-NOTES, NOTES AB OUT NOTES-  
MORE NOTES HAVE BEEN WRITTEN THAN CAN BE MADE TO FIT ON THIS SHEET. THE ENTIRE LIST IS AVAILABLE IN HTML FORMAT. THE SHORT LIST, ABOVE, WILL NOT BE MAINTAINED AT THE SAME FREQUENCY AS THE ONLINE LIST.



DAUGHTER-BOARD COMPARATORS' NON-INVERTING INPUTS THRESHOLD VOLTAGES

NODE	NODE'S VOLTAGE WHEN SECTIONS' OUTPUT PIN IS:	
	HIGH	LOW
A1-5	2.88*	1.78
A2-7	2.01	1.34
A3-9	1.28*	1.14

\* NOTE: A1 & A5 SHARE PULL-UP RES. dbR14 IN COMMON, HENCE EITHER OUTPUT CAN BE TAKEN LOW BY THE OTHER SECTION.

DC-POWER-FORMS & BATTERY-CHARGING CONTROL SECTIONS [Schematic #1]  
File Version = 070816

F

E

D

C

B

A

F

E

D

C

B

A

6

5

4

3

2

1

6

5

4

3

2

1