

Notes:

1) These drawings apply to the IT chassis ONLY; the final PIP-II version may differ.

PIP-II IT
Beam Pattern Generator
Top-Level Signal I/O

Fermi National Accelerator Laboratory	
PIP-II IT	
Beam Pattern Generator	
Chassis Diagram	
Top Level	
Version 0	
Updated: 04-20-2020	JED

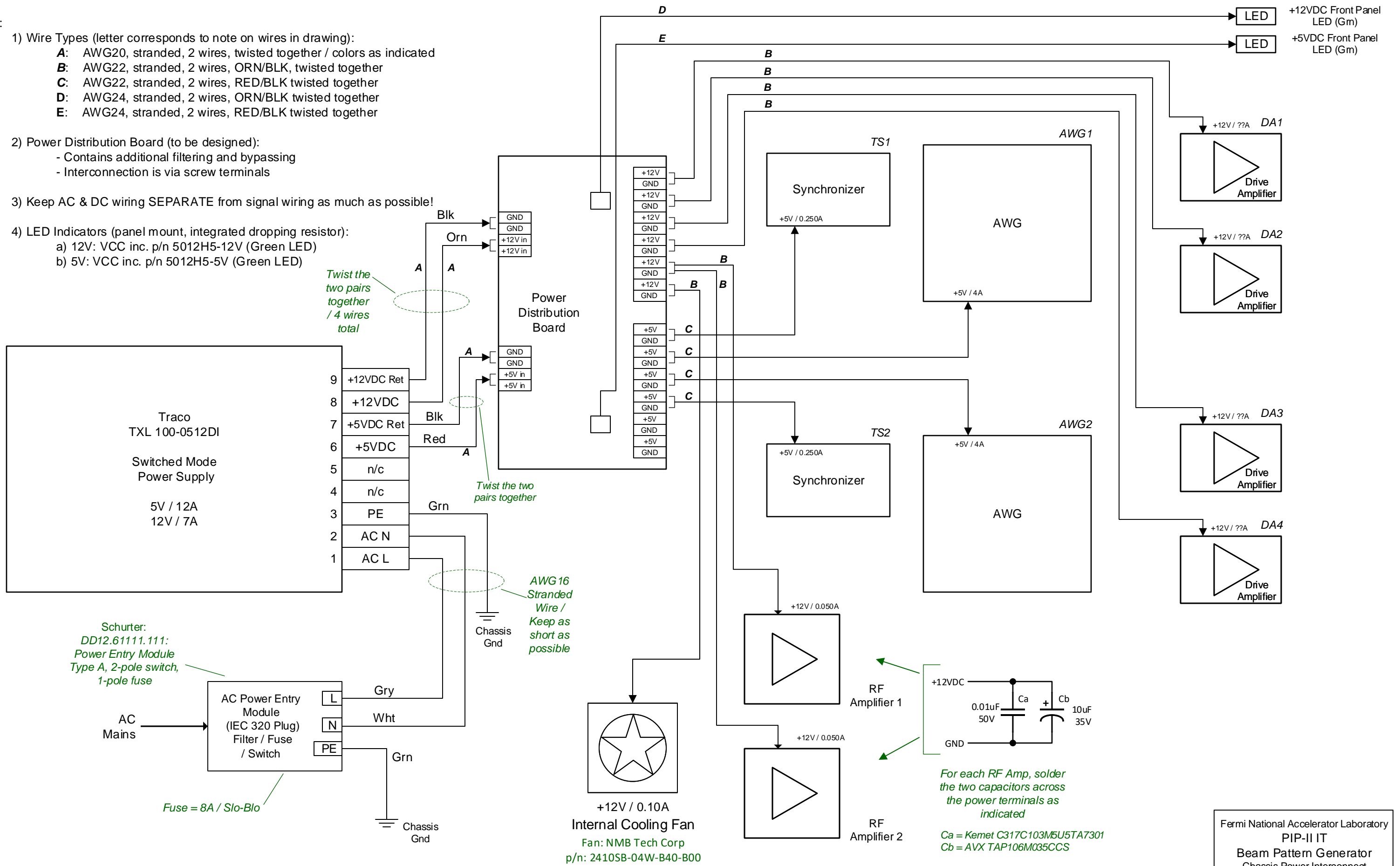
Notes:

- 1) Wire Types (letter corresponds to note on wires in drawing):
 - A:** AWG20, stranded, 2 wires, twisted together / colors as indicated
 - B:** AWG22, stranded, 2 wires, ORN/BLK, twisted together
 - C:** AWG22, stranded, 2 wires, RED/BLK twisted together
 - D:** AWG24, stranded, 2 wires, ORN/BLK twisted together
 - E:** AWG24, stranded, 2 wires, RED/BLK twisted together

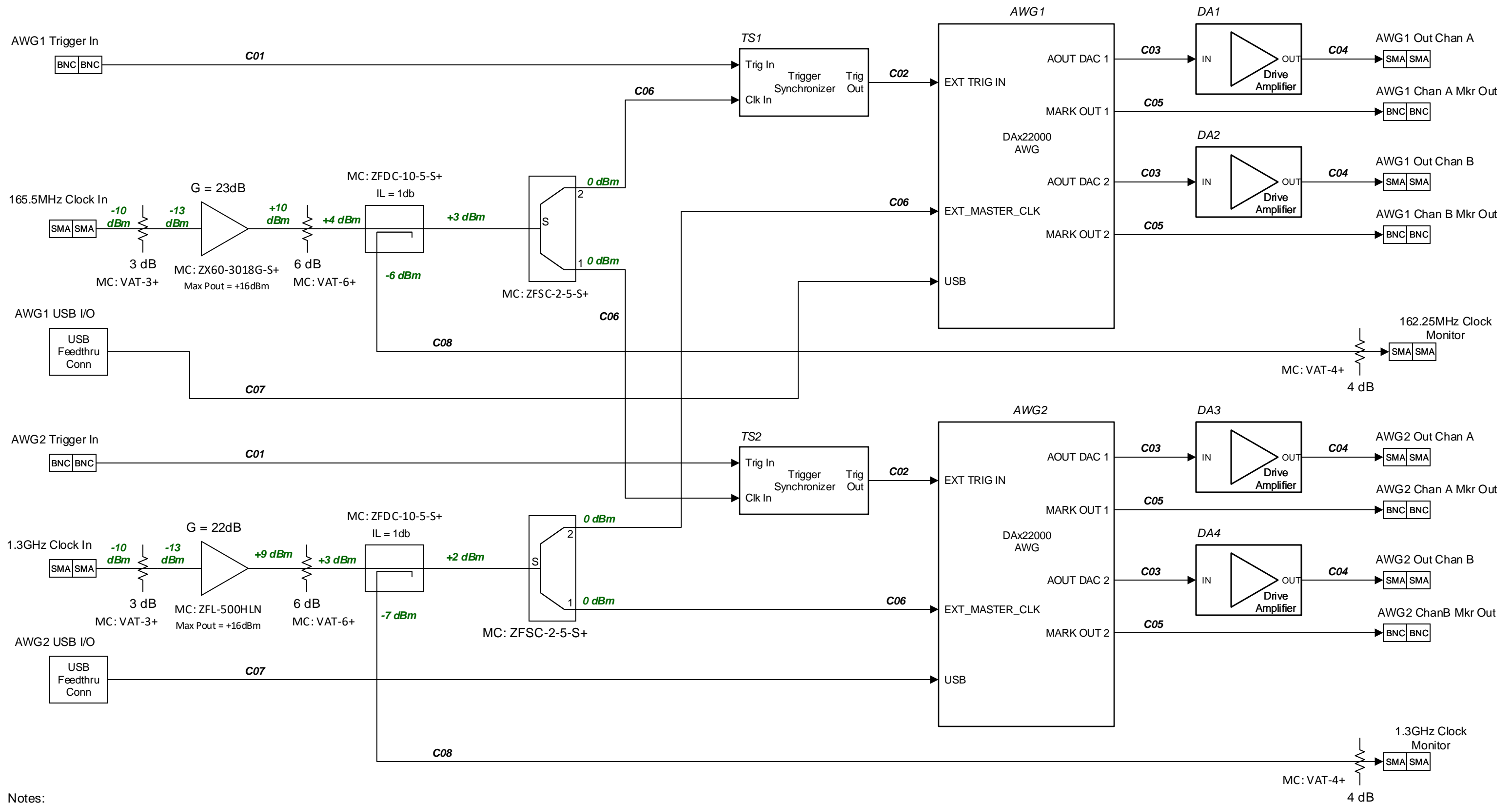
- 2) Power Distribution Board (to be designed):
 - Contains additional filtering and bypassing
 - Interconnection is via screw terminals

- 3) Keep AC & DC wiring SEPARATE from signal wiring as much as possible!

- 4) LED Indicators (panel mount, integrated dropping resistor):
 - a) 12V: VCC inc. p/n 5012H5-12V (Green LED)
 - b) 5V: VCC inc. p/n 5012H5-5V (Green LED)



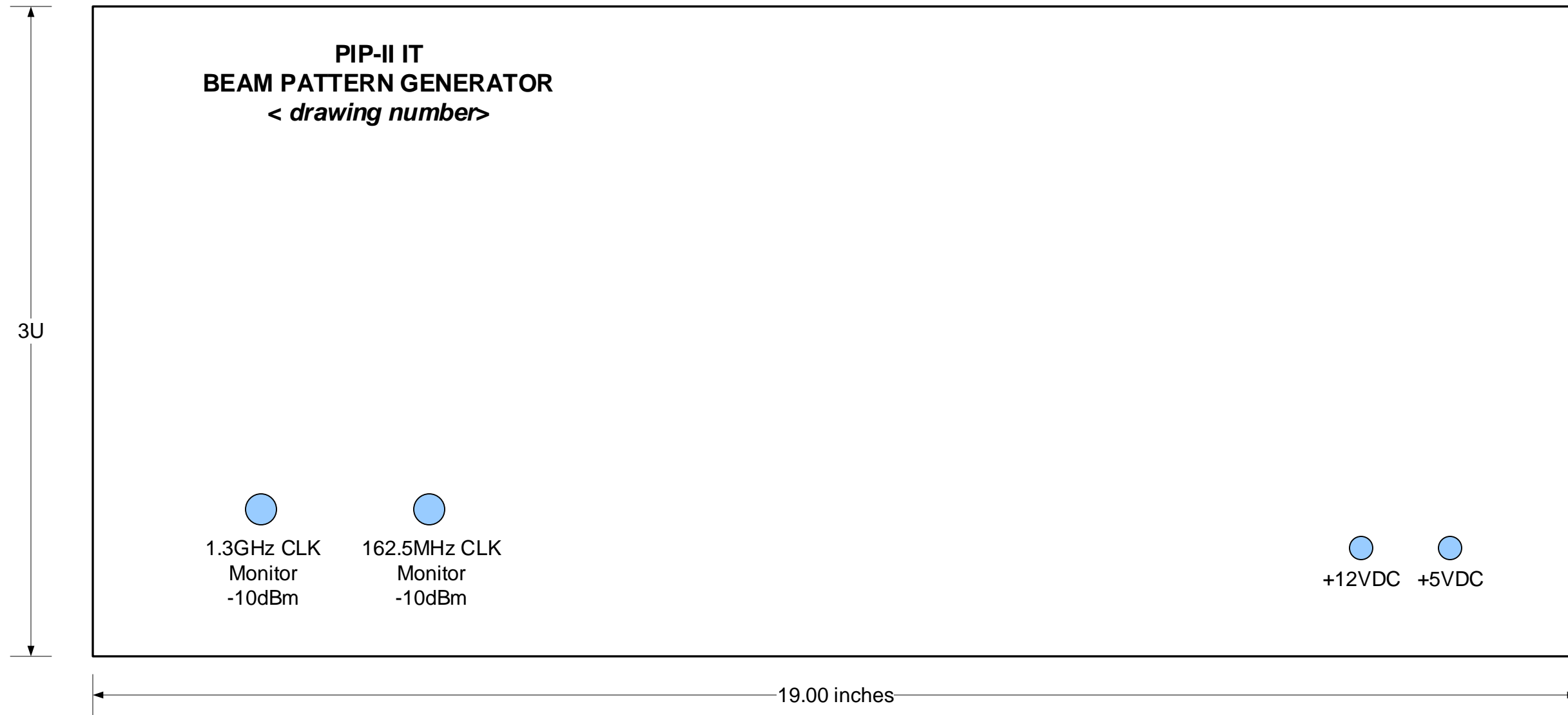
Chassis Power System Electrical Interconnect



Notes:

- 1) The letters **Cxx** identifies the cable on the system cable list sheet
- 2) Connectors in this diagram:
 - SMA-SMA Bulkhead Feedthrough: Amphenol p/n 132170-10
 - BNC-BNC Bulkhead feedthrough: Amphenol p/n 112433
 - USB bulkhead feedthrough: Bulgin PXP6042/B Front: USB type A / Rear: USB type B
- 3) Keep power wiring SEPARATE from all signal wiring as much as possible!

Chassis Signal Electrical Interconnect Diagram

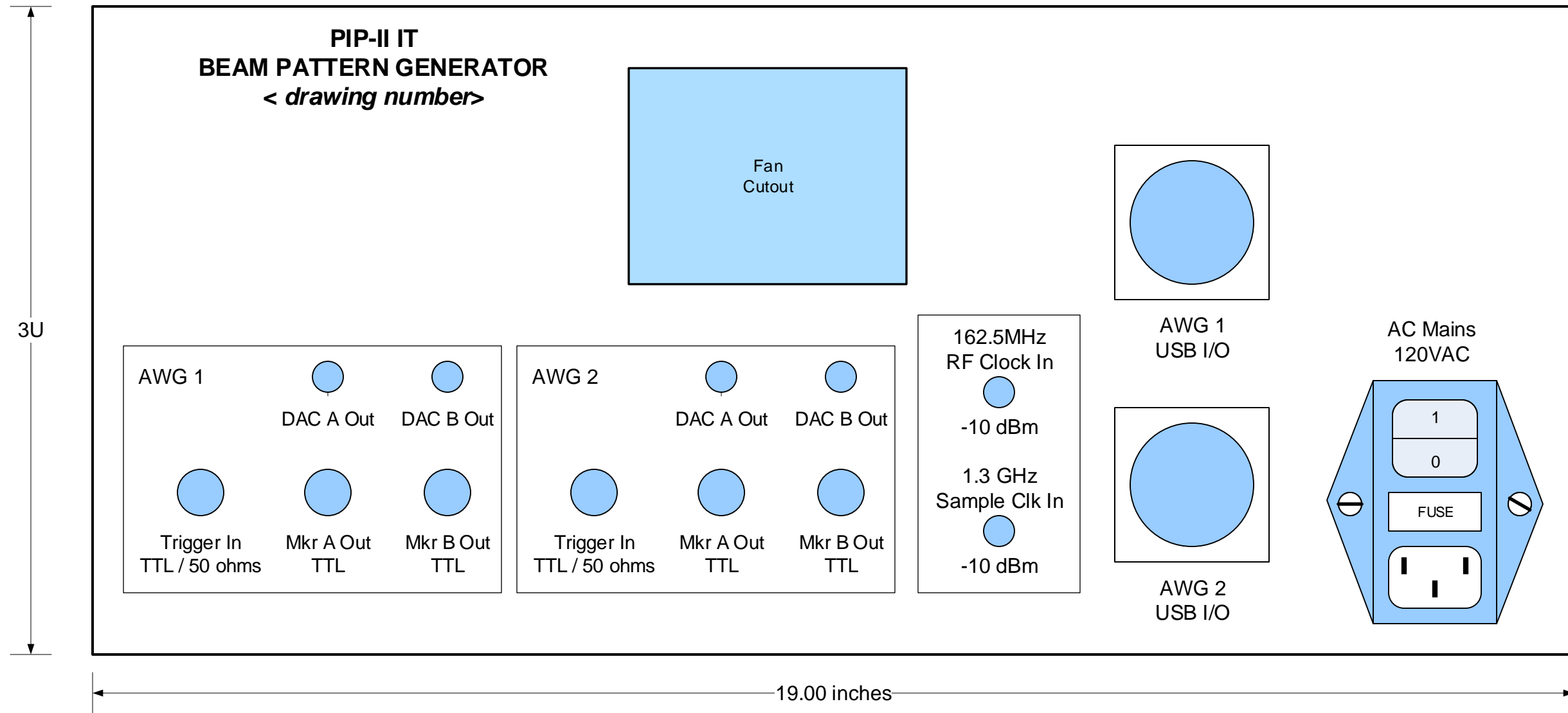


Notes:

- 1) Chassis Type: 3U x 19 inches Rack Mount
- 2) Drawing is NOT to scale
- 3) Front panel LEDs are Green
- 4) Location of name label is approximate / match to existing convention
- 5) Chassis depth is <td> and unrestricted up to maximum rack depth, if required
- 6) Chassis marking/labeling applied as silkscreen or decal

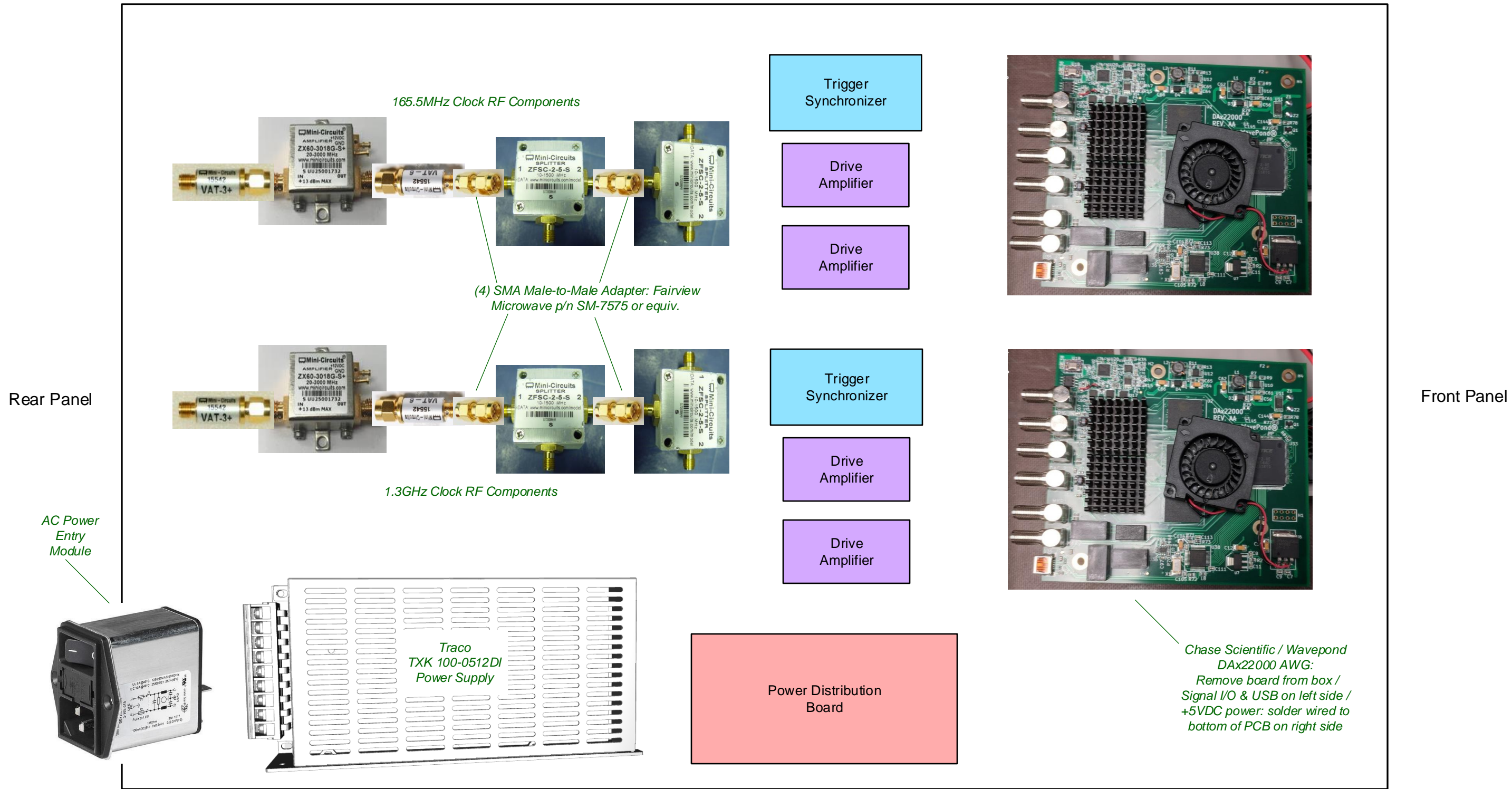
Chassis Front Panel

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- Notes:
- 1) Chassis feed-thru connectors specified on Signal Interconnect sheet
 - 2) Drawing is NOT to scale
 - 3) Chassis marking/labeling applied as silkscreen or decal
 - 4) Location of name label is approximate / match to existing convention
 - 5) AC power entry module is specified on Power Interconnect sheet

Chassis Rear Panel



- Notes:
- 1) Suggested chassis layout is shown in this drawing, layout is approximate
 - 2) Drawing is NOT to scale / Individual components are NOT to scale
 - 3) Not all components are shown here
 - 4) Signal and power wiring is not shown
 - 5) Power Distribution Board is to be designed, so dimensions are not specified yet
 - 6) AWG board is to be removed from its enclosure and mounted into the chassis, there are 4 mounting holes (see photo), measure board for exact dimensions
 - 7) Drive Amplifier mounts in its own small box, details (dimensions, connections) <td>
 - 8) Trigger Synchronizer mounts in its own small box, details <td>
 - 9) Cooling fan mounting location is on rear panel; front panel vent openings are <td>

Suggested Chassis Layout – Top View

Fermi National Accelerator Laboratory								
PIP-II IT Beam Pattern Generator								
Chassis Cable List								
Last Updt: 20-Apr-20								
Notes:								
1) The qtys below reflect ONE chassis assembly								
2) Power cabline is not listed here, it assumed those will be fabricated in-house								
Item	Qty	Side A Connector (type + gender)	Cable Type	Side B Connector (type + gender)	Length	Supplier	Part Number	Comment
C01	2	BMC-M	RG-316	SMA-M	(?)8 inches	<tdb>	<tdb>	Ext. trigger input to syncer box
C02	2	SMA-M	RG-316	SMA-M	(?)4 inches	<tdb>	<tdb>	Sync'd trig to AWG
C03	1	SMA-M	RG-402 or RG-405	SMA-M	(?)4 inches	<tdb>	<tdb>	AWG DAC out to drive amp
C04	2	SMA-M	RG-402	SMA-M	(?)8 inches	<tdb>	<tdb>	Drive amp to read panel
C05	4	SMA-M	RG-316	BNC-M	(?)10 inches	<tdb>	<tdb>	AWG Marker out to rear panel
C06	4	SMA-M	RG-402	SMA-M	(?)5 inches	<tdb>	<tdb>	Splitter clk outs to syncers & AWGs
C07	2	USB-Type-A Plug	USB Standard	USB mini-B Plug (5-pin)	12 inches	Tripp-Lite	UR030-001	Internal USB Cable: Rear panel to AWG
C05	4	SMA-M	RG-405	SMA-M	(?)10 inches	<tdb>	<tdb>	Clk monitors: coupler outs to front panel
Additional Items								
Qty	Description	Supplier	Part Number	Cost/ea	Comment			
4	SMA 50 ohm SMA-M to SMA-M adapter	Fairview Microwave	SM-7575	12.98	Used on for interconnect between clock RF Components			