SMPS Gen2 VITA 67.3 PN Update

Description	Gen1 PN	Gen2 PN
19 PORT PLUG-IN MODULE	SF911-60171	9311-60320
19 PORT PLUG-IN MODULE (ALUMINUM)	9311-80025	9311-80036
19 PORT + 3 MT FIBER HYBRID PLUG-IN MODULE	9311-60214	9311-60373
31 PORT PLUG-IN MODULE	9311-60310	9311-60372
Ø.086 PLUG-IN CONTACT	SF3811-60059	3811-60095
Ø.047 PLUG-IN CONTACT	SF3811-60060	3811-60094
PLUG-IN ADAPTER	SF1138-6020	1138-6058

Table 1: Gen1 (Legacy) and recommended Gen2 (Current) SMPS VITA 67.3 part numbers

Scope

This design evolution improves the alignment of the connectors in the modules and improves reliability. This report clarifies the transition to the revised PNs and illustrates the limitations of the legacy design. All existing legacy hardware meets the VITA 67.3 spec.

History

Demand for higher density solutions drove the implementation of SMPS into the VITA 67.3 standard in 2019. The primary consideration was given to minimizing the contact port to port spacing, allowing contacts to be placed anywhere in the module envelope.

In 2021, SOSA standardized the 19 position module, which did not require the absolute minimum port to port spacing.

SV identified this as an opportunity to enhance the SMPS interface within the VPX ecosystem by optimizing the design based on current system criteria while maintaining backwards compatibility.

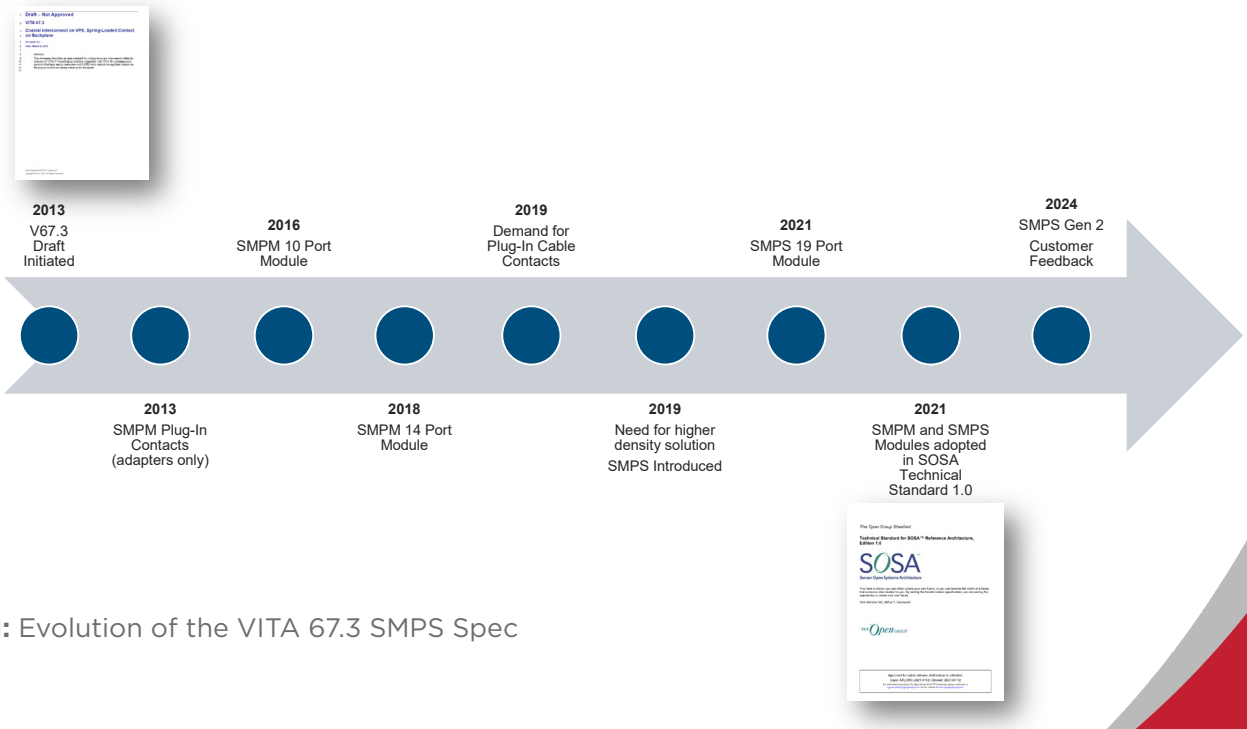

Figure 1: Evolution of the VITA 67.3 SMPS Spec

2025 Changes

These changes allow for more capture of the mating interface and improved alignment of the backplane contact in its neutral position prior to mating.

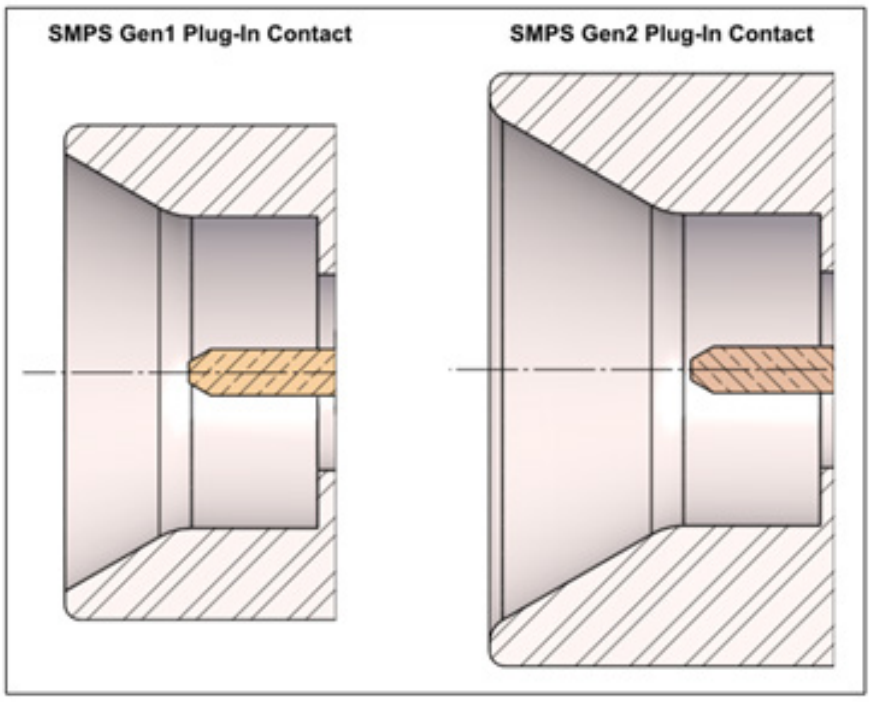

Figure 2: Comparative Illustration of SMPS Gen1 and SMPS Gen2 Plug-In Contact (VITA 67.3 Rev 4.0 Figure 3.2-1)

Plug-In module: The PCB mounting features remain the same. The contact cavity geometry was modified to accept the larger SMPS Gen2 contacts. See Table 1 for compatibility.

Plug-In contact: The contact was embiggened to provide more scoop/capture of the mating interface. See Table 1 for compatibility.

Backplane module: The PCB mounting features remain the same. A counterbore was added to the contact captivation geometry to increase alignment.

Backplane contact: Minor enhancements to the interface per MIL-STD-348 and contact captivation geometry were made. The SMPS Gen1 and SMPS Gen2 backplane contacts fit in either the SMPS Gen1 and SMPS Gen2 backplane modules.

1. Bigger OD of contact
2. Providing a bigger chamfer with added scoop at the interface
3. Requires a bigger cavity in the Connector Module

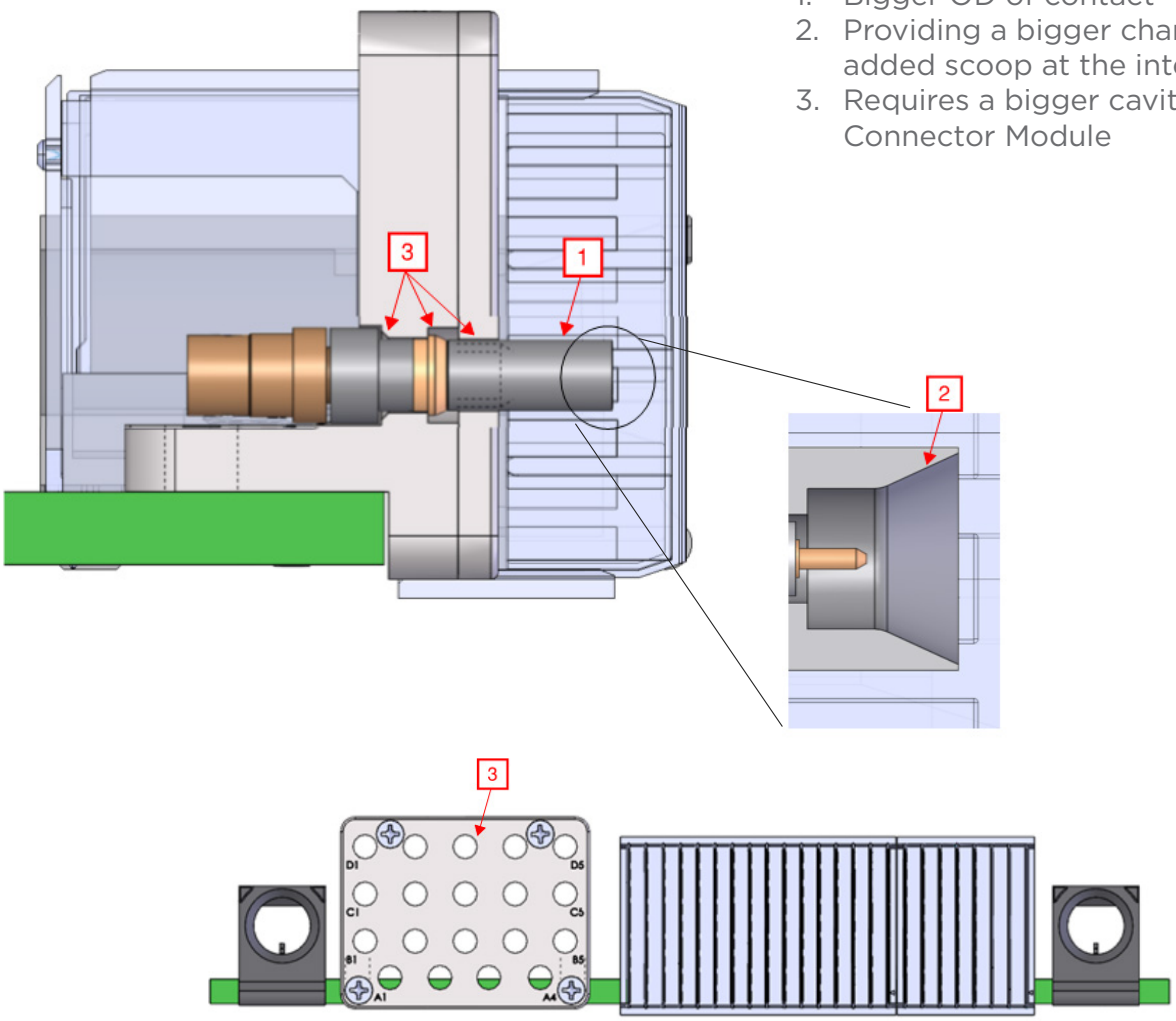

Figure 3: The total scope of changes made to the plug-in modules and connectors

Compatibility Matrix

Gen1 parts comply with VITA 67.3 and are in fielded systems and will continue to be supported as legacy product. They are no longer recommended for new designs. Due to this continued support, the following compatibility matrices are provided.

	Description	PN	Compatible Parts
Gen1 (Legacy)	19 PORT PLUG-IN MODULE	SF9311-60171	SF3811-60059 SF3811-60060 SF1138-6020
	19 PORT PLUG-IN MODULE (ALUMINUM)	9311-80025	
	19 PORT + 3 MT FIBER HYBRID PLUG-IN MODULE	9311-60214	
	31 PORT PLUG-IN MODULE	9311-60310	
	Ø.086 PLUG-IN CONTACT	SF3811-60059	SF9311-60171 9311-80025 9311-60214 9311-60310
	Ø.047 PLUG-IN CONTACT	SF3811-60060	
	PLUG-IN ADAPTER	SF1138-6020	
Gen2 (Current)	19 PORT PLUG-IN MODULE	9311-60320	3811-60094 3811-60095 1138-6058
	19 PORT PLUG-IN MODULE (ALUMINUM)	9311-80036	
	19 PORT + 3 MT FIBER HYBRID PLUG-IN MODULE	9311-60373	
	31 PORT PLUG-IN MODULE	9311-60372	
	Ø.086 PLUG-IN CONTACT	3811-60095	9311-60320 9311-80036 9311-60373 9311-60372
	Ø.047 PLUG-IN CONTACT	3811-60094	
	PLUG-IN ADAPTER	1138-6058	

Table 2: What fits where

Table 3.2.1-1: SMPS Compatibility Matrix

Plug-In Connector Module	Mates to	Backplane Connector Module
SMPS Gen1	Yes	SMPS Gen1
SMPS Gen1	Yes	SMPS Gen2
SMPS Gen2	Yes	SMPS Gen1
SMPS Gen2	Yes	SMPS Gen2