

Technobox Inc. support for VITA 42, 61, and 88 connectors

Technobox enthusiastically supports VITA and its three embodiments of XMC connectors: VITA 42, VITA 61, and the upcoming VITA 88.

VITA 42, the original connector for XMC, is 4-contact per pin connector introduced in 2008 by the VITA working group. It is a SAMTEC connector.

Eventually, the need for higher performance and different stacking heights spawned development/ratification of VITA 61. The original VITA 61 featured 4 points of contact per pin, however, due to industry experience/feedback, a second embodiment with a 2-point per contact pin design was developed to solve mechanical mating and stress issues. TYCO (TE Connectivity) developed and produces the connector.

To satisfy evolving performance demands of designers and end users, VITA established the VITA 88 working group to adapt/migrate the well-accepted FMC (VITA 57) contact technology to XMC. VITA 88 offers a single-point of contact per pin. Note that it is similar to the older PMC IEEE 1386 standard that has been deployed in countless applications and is recognized for being robust and exceedingly reliable. This is a SAMTEC connector.

Presented with multiple connectivity options, Technobox anticipated the need to support all three. Many of our products been converted VITA 61, and we have successfully prototyped boards with VITA 88. Furthermore, our in-house ISO 9001 SMT assembly avoids having to rely on SMT assembly subcontractors for small quantity builds.

The three connector systems are not intermataable; the VITA Working Groups have been very careful to support a single Printed Circuit Board (PCB) footprint to work with all connectors. This permits the manufacture of three XMC solutions, based on a single PCB.

Although our online presentations and product documents may show or reference only the original VITA 42, VITA 61 versions of the products may have already been produced and part numbers assigned accordingly. When you do see a photograph with the characteristic “white” VITA 61 connector, it demonstrates our ability produce a variant, so please contact us!

VITA Standard	Driving Company	Points of contact per pin	Performance (See Below)	Connector Color
42	SAMTEC	4	Gen 1 thru 5	Black
61	TE Connectivity	4, but newly 2	Gen 1 thru 5	White
88	SAMTEC	1	Gen 1 thru 5	Black

Gen 1 (2.5 Gbaud 8b/10b) and 2 (5.0 Gbaud 8b/10b) are easily supported with all three connectors. Technobox's experience with Gen 3 (8.0 Gbaud 128b/132b) has been favorable as well. Success with Gen 4 (16 Gbaud) and Gen 5 (32 Gbaud) needs Signal Integrity (SI) simulation of the entire end-to-end path, which includes the connectors, PCB material, and repeaters/retimers that might be implemented along the path. However, we believe the low inductance/capacitance offered by the proven single-point VITA 88 connector should be considered the preferred connector moving forward.

With our great success with PMC since the 1990's and the uptick in XMC sales we are uniquely positioned in the industry to serve customer needs from a design and manufacturing standpoint – both for small quantity prototype runs as well as 1000+ piece production runs. Please see <https://www.technobox.com/manufacturing>.