

# RP1210 Adapters

Joe Batt, Solid Design  
Jan. 16 2023

<https://github.com/SolidDesignNet/rp1210test> was developed to test RP1210 adapters for throughput and latency. Because testing requires 2 CAN nodes, the intent was to run with each adapter as a client and a server.

The adapters tested include:

1. NEXIQ USB-Link 2
2. Vector VN1610 with the Vector RP1210 driver (separate products)
3. PEAK PCAN

All adapter have been shown to work with J1939-84. In addition, ValueCAN has been tested with J1939-84, but not in this performance test.

Other adapters will be tested when available.

The NEXIQ USB-Link2 was run with the connection string "J1939:Baud=Auto". Vector VN1610 and Peak PCAN required explicit baud rate "J1939:Baud=500".

The test was run with a J1939 ECM in KOEO. The adapters would not reliably create a CAN network without an existing node. Partially due to the unknown effect of the ECM, the values are not precise (they varied by 15%), but the relative performance of adapters can be compared and verification that each of the adapters work well enough.

The ping test sent a request from the client that the server would respond to. Any missing responses would be logged. There were no missing responses. This test would demonstrate inefficiencies in switching between read and write modes.

The TX test notifies the server of a batch of incoming packets. Any missing responses would be logged. There were no missing responses. The test would demonstrate deficiencies in sending CAN packets.

The RX test requests that the server send a batch of packets. Any missing packets would be logged. There were no missing packets. The test would demonstrate deficiencies in receiving CAN packets.

The only surprising test result is that the Vector device sends traffic at least 3 times faster than the other adapters.



<b>Ping Latency (ms)</b>		5,000 requests	
	NULN2R32	PEAKRP32	Vector
NULN2R32		2.74	2.76
PEAKRP32	1.91		0.31
VRP32	2.75	1.74	
<b>Tx Packet/s</b>		5,000 packets	
	NULN2R32	PEAKRP32	Vector
NULN2R32		384	380
PEAKRP32	491		480
VRP32	1589	1605	
<b>Rx Packet/s</b>		5,000 packets	
	NULN2R32	PEAKRP32	Vector
NULN2R32		480	476
PEAKRP32	381		
VRP32	411	423	1586