

500k data link



[Jason Phillips](#) 23 posts since Jan 5, 2015

500k data link Sep 2, 2020 3:51 PM

vin #mh8494

m2 gabage truck, new-only has 1352 miles, came in with engine and abs light on, cummins code 3488 and abs code 231/9, basicly the engine lost com with abs and vise versa. the codes are intermittent/not always active. the j1939 at the 9 pin has 120 ohms, the only terminating resister in this data link is the central gateway. I have gone up and down these harnesses and there is no other terminating resister in the circuit, Ive gone over the harness diagrams and parts BOM on mod 160 and there isn't even a call out for a resister, there is a resister in the 250k data link . has anyone come across this? is this a cause for concern?

I don't believe this is my issue with the faults though, I got it to act up and the abs isn't waking up but is getting all of its inputs. im just curious if this is abnormal for the 500k data link. first time ive seen one like this.



[Jon Cecil](#) 783 posts since Nov 25, 2014

Re: 500k data link Sep 3, 2020 2:10 AM

There is a resistor called out in mod 160. Also I have attached picture of the known area of that resistor. It's usually hanging down by the left frame rail and transmission area. It's usually never secured properly to keep it from rubbing the wiring on the trans.

20:05



secure.freightliner.com

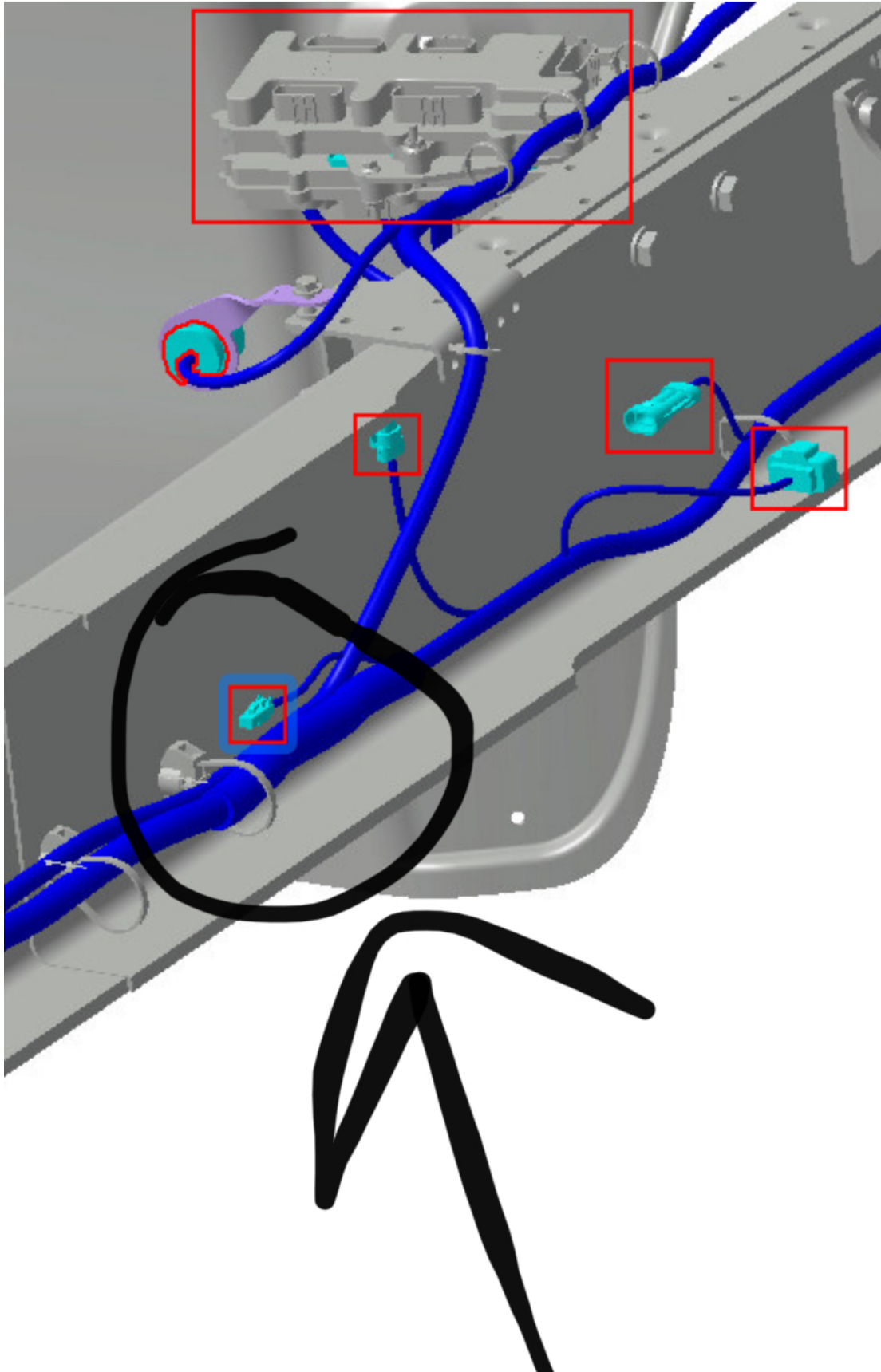
100006

			:SEAL-CABLE,GT150...	23-12497-151	1	...		
			:RCPT-9CAV,HD,GLS...	23-13148-911	1	...		
			:TERM-MALE,S16,0.8-...	23-13210-110	2	...		
			:TERM-FEM,GT150S,...	23-13212-020	1	...		
			:TERM-FEM,MP280T,...	23-13213-140	1	...		
			HARN-DIAG CAN,M2,2...	A66-06023-000	1	...		
			:PLUG-12CAV,MQS,Al...	23-13151-012	1	...		
			:TERM-FEM,MQS,DBL...	23-13208-080	2	...		
			:TERM-MALE,S16,0.8-...	23-13210-110	2	...		
			HARN-1939,500K,CUM,...	A66-05952-000	1	...		
			:SPLICE-SINGLE WAL...	A23-13823-001	14	...		
			:PLUG-2CAV,DTM,DU...	23-13148-204	1	...		
			:TERM-FEM,MQS,DBL...	23-13208-080	2	...		
			:TERM-FEM,S20,0.35-...	23-13210-004	2	...		
			:TERM-MALE,S16,0.8-...	23-13210-110	2	...		
			:TERM-FEM,M1.6,0.5-...	23-13211-400	2	...		
			:TERM-FEM,MICP100,...	23-13214-002	2	...		
			:LOCK-TERM,DTM,2C...	23-13303-015	1	...		
			HARN-1939,500K,SEM,...	A66-05957-000	1	...		
			:TERM-FEM,ML025,0...	23-13207-260	2	...		
			HARN-1939 250K,M2,2...	A66-05958-000	1	...		
			:PLUG-12CAV,MP280T...	23-13141-019	3	...		
			:PLUG-2CAV,DTM,DU...	23-13148-204	1	...		
			:TERM-FEM,MQS,DBL...	23-13208-080	2	...		
			:TERM-FEM,S20,G-PL...	23-13210-020	2	...		
			:TERM-FEM,MP280T,0...	23-13213-143	12	...		
			:ELEC CMPNT-BK,RC...	23-13303-902	1	...		
			Footnote: TERMINATING RESISTOR					
			HARN-DL_500,OL,ENG...	A66-06461-003	1	...		
			:SPLICE-DUAL WALL, ...	A23-13823-000	6	...		
			:SEAL-CABLE,GT280...	23-12497-281	4	...		
			:RCPT-10CAV,GT280S...	23-13144-001	1	...		
			:TERM-MALE,M1.6,0.5...	23-13211-410	2	...		
			:TERM-FEM,MX150,G...	23-13211-460	2	...		
			:TERM-FEM,GT280S,...	23-13212-120	2	...		
			:TERM-MALE,GT280S...	23-13212-130	2	...		
			:TERM-FEM,MHVT1.2,...	23-13214-060	2	...		
			:LOCK-TERM,GT280S...	23-13302-104	1	...		
			HARN-1939,500K,CHA...	A66-05960-001	1	...		
			:SPLICE-DUAL WALL...	A23-13823-000	6	...		

500k data link

500k data link

Forward Chassis
ft Frame Rail Rear



500k data link



Jason Phillips 23 posts since Jan 5, 2015

Re: 500k data link Sep 3, 2020 4:07 PM

Thank you for the reply jon, the resister that you are looking at is in the 250k datalink, there was no resister in the frame rail on this one, I ended up calling freightliner and it baffled him for a minute too, long story short he followed through the harnesses and was suspecting a misbuild but then stumbled over into the vehicle interface harnesses MOD 33U P/N A66-08400-000 and that's where the 120 resister is. the harness was located under the passenger bench seat going to some body module and the plug for the resister had a dummy plug in it, there was 2 of them one blue one gray, gray is labeled can1 and the blue labled aux 1, both plugs are linked to c and d of the 9 pin connector, I had to order pins to change from a female connector to a male connector on the harness side. ill keep this posted how it turns out.



Michael Palumbo 1,371 posts since Nov 13, 2014

Re: 500k data link Sep 3, 2020 2:49 PM

Body builders guide page 16 confirms the need for two 120 resistors in 1939 500k. https://dtnacontent-dtna.prd.freightliner.com/content/dam/dtna-connect/TrucksMarketing/BodyBuilderGuides/GeneralInfo/Electrical%20Guide-M2106%20M2112%20108SD%20114SD_RevD-2019.pdf

Although [Feedback](#) I believe the IMPORTANT: needs updating to include 500k.

Multiplexing System - Mod 160

The term "multiplexing" describes how the SmartPlex electrical system works.

Multiplexing is defined as the process of sending multiple electronic messages through the same signal path in sequence - in this case, through the data link.

The system communicates using two primary forms of communication called data links: J1939-500K datalink (High speed) and the J1939-250K (Low speed).

J1939-500K (High speed)
(White w/ yellow stripe J1939+ ; White w/ green stripe J1939- ; In a twisted-pair)

- A high-speed vehicle communications network, which permits devices to broadcast requests as well as receive information from all other devices on the network.
- Each message includes an identifier much like a CB channel setting that defines the message priority, who sent it, and what data is contained within it.
- A terminating resistor is installed at each end of the network for proper signal function.

J1939-250K (Low speed)
(Yellow J1939+ ; Green J1939- ; In a twisted-pair)

- This databus information is available through the use of a standard Gateway (Mod 835).
- This is the recommended interface databus for all aftermarket/TEM devices.

Databus Troubleshooting

The correct datalink resistance measured at any device, or at the diagnostic plug should be 60 ohms with the battery disconnected.

IMPORTANT: THIS NOTE NEEDS EDITING @FEEDBACK
- It is essential that the terminating resistor(s) remain connected to the end of the J1939-250K backbone to dampen feedback signals. Numerous J1939 problems can be attributed to terminating resistors missing or being disconnected.

Multiplexing System Backbone

The J1939 Datalink

System Terminology

J1939 Backbone - The main J1939 datalink wiring that lies between the two terminating resistors. It does not include the branch nodes to each ECU or to the diagnostic connector.

- Minimum length between any 2 nodes = 10(ten) cm.
- Maximum Branch length (off -250K backbone) = 3(three) meters.
- Maximum Branch length (off -500K backbone) = 1.67(one point six-seven) meters.
- Maximum total Network length = 40(forty) meters.

Node Branch Circuit - The section of J1939 datalink between the backbone and each control unit that has J1939, and between the backbone and the diagnostic connector.

Diagnostic Connector - a 9-pin diagnostic connector is used for troubleshooting the electrical system. It can be found under the dash on the driver side, outboard of the steering column.

Control Unit - connects to the J1939 datalink via a branch circuit (Node).

NODE - A node is the connection point for a device or control unit. See "Electrical Splice Packs" for more information on adding nodes to the backbone.

Gateway - A gateway is a conversion device that translates information from J1939-500K into J1939-250K signals.

Cab resistor
Resistor Receptor
Part FTL# 23-13303-902
Deutsch # DTM04 - 2P - EP10

EQ016
Rev D - Jan., 2015



Josue Ramirez 1 posts since Aug 2, 2019

Re: 500k data link Sep 10, 2020 8:05 PM

HAD A FEW 2019-2020 M2'S AND TBB'S WITH CUMMINS ENGINES AND CODE 4388 ABS CONTROLLER . FOUND ALL RADIOS PROGRAMMED TO COMMUNICATE ON 250KB WITH A 500KB TRUCK, WHICH INTERFERES WITH THE ABS MODULE, CODE WOULD COME BACK AFTER A 30 MILE ROAD TEST. CHANGED THE RADIO BAUD RATE FROM 250KB TO 500KB AND VERIFIED REPAIR. HOW TO CHANGE THE BAUD RATE ON THE RADIO SIDE. KEY ON/ENGINE OFF, RADIO OFF UNTIL TIME IS DISPLAYED, PRESS 1 AND 6 BUTTONS AT THE SAME TIME, OP BAUD RATE SETTINGS, CHOICES OF 250KB OR 500KB IN THIS CARE 500KB,