



IP Based Navigation Manager For Rolling Stock

eyeTrain is designed to rail group standards, and incorporates the very latest in video, storage and communications technology. The eyeTrain range offers digital (IP) technology matched to the harsh environment of rolling stock applications, providing the highest performance and resilience on the market.



Specifications

General

Type	Navigation manager provides location data from GNSS and/or vehicle tacho
Part Number	NAV-ST-397
Form Factor	Flanged enclosure
Dimensions	160mm (W) x 65 mm (D) x 205 mm (D) *Flanges add 20 mm each end
Weight	4 kg



Specifications

GNSS Performance

Positioning Systems	GPS/QZSS, GLONASS, BeiDou, Galileo Ready
Time-to-First Fix	26s Cold Start, 1s Hot Start
Horizontal Position Accuracy	2.5m Autonomous, SBAS 2.0m
Antenna	Passive or Active, min gain 15 dB
Enhanced Accuracy	A-GNSS assistance function available
Channels	72

Electrical

Power Supply	PoE to IEEE802.3af Mixed DC & Data (mode A) Class 0
Power Consumption	5 W

Indicators

PoE (Green) Indicates that VDIU is powered
Link (Green) Indicates Ethernet link present

Connectivity

Ethernet (PoE)	M12 Female D-Coded										
	<table><thead><tr><th>Pin</th><th>Signal</th></tr></thead><tbody><tr><td>1</td><td>Eth TX +</td></tr><tr><td>2</td><td>Eth TX -</td></tr><tr><td>3</td><td>Eth RX +</td></tr><tr><td>4</td><td>Eth RX -</td></tr></tbody></table>	Pin	Signal	1	Eth TX +	2	Eth TX -	3	Eth RX +	4	Eth RX -
Pin	Signal										
1	Eth TX +										
2	Eth TX -										
3	Eth RX +										
4	Eth RX -										
Service Port	9 Way Standard D-Sub Male Pins. No end user wiring, use a standard RS232 cable to connect to laptop										



Specifications

Connectivity (cont.)

Odometer M12 8-Way A Code Female

Pin	Signal
1	Train 24 V
2	Odometer 0 +
3	Odometer 0 -
4	Odometer 1 +
5	Odometer 1 -
6	Train 0 V
7	n/c
8	n/c
housing	Enclosure chassis Gnd

Digital I/O 19 Way Souriau UTGO 1619S Female

Pin	Signal	Pin	Signal
A	Train 24 V 0	G	FI Com
B	WSP Spare	H	Train 0 V 1
C	WSP Spare Common	J	Train 24 V 2
D	Train 0 V 0	K	WSP SLPSLD
E	Train 24 V 1	L	SD Com
F	WSP Fault	M	Train 0 V 2

RS-485 Pins N, P, R, S, T, U & V are not connected
9 Way Standard D-Sub Male Pins

Pin	Signal	Pin	Signal
1	Rx +	6	Gnd
2	Rx -	7	n/c
3	Tx +	8	n/c
4	Tx -	9	n/c
5	Gnd		



Specifications

Interface

GNSS Antenna	SMA Connector						
	<table><thead><tr><th>Pin</th><th>Signal</th></tr></thead><tbody><tr><td>Inner</td><td>Signal</td></tr><tr><td>Outer</td><td>Ground</td></tr></tbody></table>	Pin	Signal	Inner	Signal	Outer	Ground
Pin	Signal						
Inner	Signal						
Outer	Ground						
Earth Bond	M6 Stud						

Standards Compliance

Shock & Vibration	EN50155:2007, 12.2.11 EN61373:2010
Ingress Protection	EN60529:1992
Cooling	EN50155:2007, 12.2.3 EN60068-2-1:2007 Test Ad
Dry Heat	EN50155:2007, 12.2.4, EN60068-2-2:2007 Test Bd
Low Temp Storage	EN50155:2007, 12.2.14, EN60068-2-1
Insulation	EN50155:2007, 12.2.9.1
Voltage Withstand	EN50155:2007, 12.2.9.2
Earth Bonding	EN50155:2007
Conducted Emissions	EN50155:2007 12.2.8.2 EN50121-3-2:2015, EN55011:2009 +A1:2010
Radiated Emissions	EN50155:2007 12.2.8.2 EN50121-3-2:2015, EN55011:2009 +A1:2010
Radiated Susceptibility	EN50155:2007, 12.2.8.1 EN50121-3-2:2015, EN61000-4-3:2006 +A1:2010
Conducted Susceptibility	EN50155:2007, 12.2.8.1, EN50121-3-2:2015, EN61000-4-6:2009
Fast Transient Burst Sus.	EN50155:2007, 12.2.7.3, EN 50121-3-2:2015, EN61000-4-4:2004 A1:2010
Electrostatic Discharge	EN50155:2007, 12.2.7.2, EN50121-3-2:2015, EN61000-4-2:2009