Pi Data Stream : 17/01/01 (rev1)

All packets contain 12 bytes. Packets are sent at 10 millisecond intervals.

Byte 1	Byte 2	Byte 3		Byte 11	Byte 12
0xff	ID (0..9)	Data 1	…	Data 9	Sum Byte1..Byte11

Signal		Size	Transform	Display Range	Units	Rate (Hz)	
Engine Speed	RPM	U16	x 1	0 - 15000	RPM	50	
Throttle Angle	TPS	U8	/ 2	0 - 100	°	50	
Manifold Pressure	MAP	U16	x 1	0 - 5000	millibar	50	
Lambda1	LAM1	U8	/ 100	0 - 2	λ	50	
Lambda 1 Trim	LAM1T	U8	/ 1.28	0 - 200	%	50	
Lambda 2	LAM2	U8	/ 100	0 - 2	λ	50	
Lambda 2 Trim	LAM2T	U8	/ 1.28	0 - 200	%	50	
Wheel Speed	SPD	U16	x 0.06	0 - 300	Km/h	50	
Spare 1	Sp1	U16				50	
Detonation Average	DETG	U8	/ 2.55	0 - 100	%	50	
Fuel Pulse Width	TJ	U16	/ 250	0 - 40	ms	20	M
Ignition Angle	SA	U16	- 360 / 4	-90 - 90	°BTDC	20	M
Oil Pressure	EOP	U8	x 50	0 - 12750	millibar	10	
Fuel Pressure	FP	U8	x 50	0 - 12750	millibar	10	
Gear Position	GPOS	U8	R=0, N=1, first=2..			10	
Spare 2	sp2	U8				10	
Spare 3	sp3	U16				10	
Battery Voltage	VBAT	U8	/ 10	0 – 20	volts	5	
Spare 4	sp4	U8				5	
Error Flag	ERR	U16				5	
Air Temperature	ACT	U8	- 55	-55 – 200	°C	2	
Water Temperature	ECT	U8	- 55	-55 – 200	°C	2	
Spare 5	sp5	U16				2	
Oil Temperature	EOT	U8	- 55	-55 – 200	°C	2	
Fuel Temperature	FT	U8	- 55	-55 – 200	°C	2	
Spare 6	sp6	U16				2	
Barometric Pressure	BAP	U16	x 1	600 - 1200	millibar	2	
Spare 7	sp7	U16				2	
Fuel Consumption	FC	U16	/ 100	0-650	litres	2	
Spare 8	sp8	U16				2	
Exhaust Temperature	TEX	U8	x 5	0 – 1200	°C	2	
Det Ignition Correction	DETI	U8	/ 4 - 32	-20 - 0	°	2	
Change Light Speed	CLS	U16	x 1		RPM	2	

Packet Data Formats

	ID	byte1	byte2	byte3	byte4	byte5	byte6	byte7	byte8	byte9
50	0	RPMH	RPML	TPS	MAPH	MAPL	LAM1	LAM1T	LAM2	LAM2T
20	1	SPDH	SPDL	sp1H	sp1L	DETG	TJH	TJL	SAH	SAL
10	2	SPDH	SPDL	sp1H	sp1L	DETG	EOP	FP	GPOS	sp2
5a	3	SPDH	SPDL	sp1H	sp1L	DETG	VBAT	sp4	sp3H	sp3L
5b	4	SPDH	SPDL	sp1H	sp1L	DETG	ERRH	ERRL	sp3H	sp3L
2a	5	SPDH	SPDL	sp1H	sp1L	DETG	ACT	ECT	sp5H	sp5L
2b	6	SPDH	SPDL	sp1H	sp1L	DETG	EOT	FT	sp6H	sp6L
2c	7	SPDH	SPDL	sp1H	sp1L	DETG	BAPH	BAPL	sp7H	sp7L
2d	8	SPDH	SPDL	sp1H	sp1L	DETG	FCH	FCL	sp8H	sp8L
2e	9	SPDH	SPDL	sp1H	sp1L	DETG	TEX	DETI	CLSH	CLSL

Packet Transmission Order:

	0	1	2	3	4	5	6	7	8	9
0	0	1	0	2	0	1	0	3	0	5
10	0	1	0	2	0	1	0	4	0	6
20	0	1	0	2	0	1	0	3	0	7
30	0	1	0	2	0	1	0	4	0	8
40	0	1	0	2	0	1	0	3	0	9
50	0	1	0	2	0	1	0	4	0	5
60	0	1	0	2	0	1	0	3	0	6
70	0	1	0	2	0	1	0	4	0	7
80	0	1	0	2	0	1	0	3	0	8
90	0	1	0	2	0	1	0	4	0	9

Notes
1. Data link 38400,8,n,1.
2. 1 packet sent every 10 milliseconds.