HV BT RFCOMM

NEG8 calculation

```
uint8_t neg8_calc(volatile uint8_t *buf, uint16_t len)
{
    uint8_t     neg8;
    for (neg8 = 0; len; len--) neg8 -= *buf++;
    return neg8;
}
```

S300 datalog

Request for the datalog frame (TX to HV device, Big Endian)

Offset	+0	+1	+2
Description	header ID1	header ID2	NEG8
Example	0x1B	0x00	0xE5

Acknowledge for the datalog frame, RX from HV device, start

Offset	+0	+1	+2	+3…4	+5…6	+7…8	+9	+10…11	+12
Description	Header ID1	Header ID2	DLrate	RPM	VSS	MAP	TPS	INJ	IGN
Example	0x1B	0x00	0x14	0x07D0	0xFFFF	0x03F2	0x18	0x0000	0x10

Acknowledge for the datalog frame, continue

+13	+14… 15	+16	+17	+18	+19	+20	+21	+22	+23	+24	+25
KRtrd	Klvl	O2	SW1	SW2	SW3	SW4	?	?	?	?	?
x00	0x0000	0xC4	0x71	0x1C	0x05	0x40	0xB4	0x05	0x41	0x05	0x66

Acknowledge for the datalog frame, continue

+26	+27	+28	+29	+2A	+2B	+2C	+2D	+2E	+2F	+30	+31
?	Gear	?	Strim	?	Ltrim	PA	ECT	IAT	?	BAT	ERR00
0x02	0x01	0x00	0x80	0x00	0x80	0x93	0xA0	0xA0	0xDC	0x7D	0x00

Acknowledge for the datalog frame, continue

+32	+33	+34	+35	+36	+37	+38	+39	+40	+41	+42	+43
ERR01	ERR02	ERR03	Eth.	?	?	?	IATc	ECTc	?	?	SW5
0x00	0x00	0x00	0x00	0x80	0x00	0x00	0x8C	0xB1	0x00	0x00	0x00

Acknowledge for the datalog frame, continue

+44	+45	+46	+47	+48	+49	+50	+51	+52	+53	+54… 81
SW6	?	?	?	?	AF	?	TCrtrd	TClim	?	reserv
0x60	0xC0	0x7D	0x7F	0x08	0x9A	0xC4	0x00	0x00	0x00	[0x00]

Acknowledge for the datalog frame, end

+82… 83	+84… 85	+86… 87	+88… 89	+90… 91	+92… 93	+94… 95	+96… 97	98… 126	+127
AIN0	AIN1	AIN2	AIN3	AIN4	AIN5	AIN6	AIN7	reserv	NEG8
0x0000	0x0000	0x0000	0x0000	0x0000	0x0000	0x0000	0x0000	[0x00]	0x??

Bitmap

SW1: ?(7)+DistErr(6)+SCS(5)+PSP(4)+REVL(3)+BKSW(2)+ACSW(1)+VTP(0)
SW2: ALTC(7)+IAB(6)+MIL(5)+PCS(4)+ACCL(3)+Fuel(2)+VTS(1..0)
SW3: LnchC(7)+LnchR(6)+IGNC(5)+ShftC(4)+BstC(3)+?(2..0)
SW4: SecTable(7)+?(6..5)+DLon(4)+N2On(3)+N2Arm(2)+N1On(1)+N1Arm(0)
SW5: ?(7..6)+SecInj(5)+A10(4)+?(3)+CL(2)+?(1)+FANC(0)
SW6: ?(7..2)+N3On(1)+N3Arm(0)

Values

Battery voltage: RealBAT = BAT * 26/270

Temperature (Celsius): RealECT = temp_xlt[ECT] + 40

```
const uint8_t temp_xlt[256] = {
    190, 190, 188, 186, 183, 181, 179, 177, 175, 172, 170, 168, 166, 163, 161, 159,
    157, 155, 153, 151, 149, 146, 144, 142, 140, 138, 137, 136, 134, 133, 132, 130,
    129, 128, 127, 125, 124, 123, 122, 121, 121, 120, 119, 118, 117, 116, 115, 115,
    114, 113, 112, 111, 110, 110, 109, 109, 108, 107, 107, 106, 106, 105, 104, 104,
    103, 102, 102, 101, 101, 100,  99,  99,  98,  98,  97,  96,  96,  95,  95,  94,
     94,  93,  93,  93,  92,  92,  91,  91,  90,  90,  90,  89,  89,  88,  88,  87,
     87,  87,  86,  86,  85,  85,  85,  84,  84,  83,  83,  82,  82,  82,  81,  81,
     80,  80,  79,  79,  79,  78,  78,  77,  77,  76,  76,  76,  75,  75,  74,  74,
     73,  73,  73,  72,  72,  71,  71,  71,  70,  70,  69,  69,  68,  68,  68,  67,
     67,  66,  66,  66,  65,  65,  64,  64,  64,  63,  63,  62,  62,  61,  61,  60,
     60,  60,  59,  59,  58,  58,  58,  57,  57,  56,  56,  55,  55,  55,  54,  54,
     53,  53,  52,  52,  52,  51,  51,  50,  50,  49,  49,  49,  48,  48,  47,  47,
     47,  46,  46,  45,  45,  44,  44,  44,  43,  43,  42,  42,  41,  41,  40,  39,
     39,  39,  38,  37,  37,  36,  36,  35,  34,  34,  33,  33,  32,  31,  31,  30,
     30,  29,  28,  28,  27,  27,  26,  25,  24,  23,  21,  20,  19,  18,  17,  16,
     15,  14,  12,  11,  10,   9,   8,   7,   5,   4,   3,   1,   0,   0,   0,   0 };
```

Real MAP (kPa): RealMAP = MAP / 10

Real VSS (km/h):	RealVSS = ((VSS < 893) || (VSS == 0xFFFF)) ? 0 : 228480 / vss
Timing advance:	RealAdv = (IGN + 120) / 2
Real TPS:	RealTPS = (TPS < 25) ? 0 : TPS * 51 / 46

DTC map

ERR00-0:	P0130 - 1 O2A - Oxygen Sensor #1
ERR00-1:	P0150 - 2 O2B - Oxygen Sensor #2
ERR00-2:	P0105 - 3 MAP - Manifold Absolute Pressure Sensor
ERR00-3:	P0335 - 4 CKP - Crank Position Sensor
ERR00-4:	P0105 - 5 MAP - Manifold Absolute Pressure Sensor
ERR00-5:	P0106 - 6 ECT - Engine Coolant Sensor
ERR00-6:	P0123 - 7 TPS - Throttle Position Sensor
ERR00-7:	P1362 - 8 TDC - Top Dead Center Sensor
ERR01-0:	P0340 - 9 CYL - Cylinder/Cam Sensor
ERR01-1:	P0113 - 10 IAT - Intake Air Temperature Sensor
ERR01-2:	P0217 - 11 OH - Engine overheating
ERR01-3:	P0403 - 12 EGR - Exhaust Gas Recirculation Lift Valve
ERR01-4:	P1106 - 13 BARO- Atmospheric Pressure Sensor
ERR01-5:	P0505 - 14 IAC - Idle Air Control Valve
ERR01-6:	P0350 - 15 IGM - Ignition Control Module
ERR01-7:	P0200 - 16 INJ - Fuel Injectors
ERR02-0:	P0500 - 17 VSS - Vehicle Speed Sensor
ERR02-1:	???
ERR02-2:	P0700 - 19 Automatic Transmission Lockup Control Valve
ERR02-3:	P1298 - 20 ELD - Electrical Load Detector
ERR02-4:	P2649 - 21 VTS - VTEC Solenoid
ERR02-5:	P2647 - 22 VTP - VTEC Pressure Valve
ERR02-6:	P0325 - 23 Knock Sensor
ERR02-7:	P1324 - 24 Knock Sensor
ERR03-0:	P0750 - 30 ATA - Automatic Transmission A Signal
ERR03-1:	P0755 - 31 ATB - Automatic Transmission B Signal
ERR03-2:	P0135 - 41 PO2H - Primary Oxygen Sensor Heater
ERR03-3:	P0135 - 0
ERR03-4:	P0169 - 43 Fuel Supply System
ERR03-5:	???
ERR03-6:	???
ERR03-7:	???

DTC resetting

Request for the DTC reset (TX to HV device, Big Endian)

Offset	+0	+1	+2
Description	header ID1	header ID2	NEG8
Example	0x1B	0x70	0x75

Acknowledge for the DTC reset, RX from HV device, start

Offset	+0	+1	+2
Description	header ID1	header ID2	NEG8
Example	0x1B	0x70	0x75

KPro datalog

Request for the datalog frame (TX to HV device, Big Endian)

Offset	+0	+1	+2
Description	header ID1	header ID2	NEG8
Example	0x1B	0x01	0xE4

Acknowledge for the datalog frame, RX from HV device, start

Offset	+0	+1	+2...3	+4	+5	+6	+7	+8	+9
Description	Header ID1	Header ID2	RPM, word	VSS, km/h	TPS	MAP1	CLV	CAM	CAMCMD
Example	0x1B	0x01	0x07D0	0x1E	0x16	0xB0	0x00	0x28	0x00

Acknowledge for the datalog frame, continue

+10	+11	+12	+13	+14	+15	+16	+17	+18	+19	+20	+21
?	INJ	INJ+ DUTY	IGN	O2_O2C	SO2	AFCMD _L	AFCMD _H	?	AFCMD	STRIM	KRtrd
x00	0x00	0x00	0x80	0x00	0xD1	0x00	0x80	0x00	0x80	0x80	0x00

Acknowledge for the datalog frame, continue

+22	+23	+24	+25	+26	+27	+28	+29	+30	+31	+32	+33
KLvl	KThr	KCntL	KCntH	?	?	?	?	?	SW1	SW2	MAP2L
0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x09	0x00

Acknowledge for the datalog frame, continue

+34	+35	+36	+37	+38	+39	+40	+41	+42	+43	+44	+45
MAP2H	?	BCDutL	BCDutH	?	?	?	?	?	?	ELDV	DLOG
0x00	0x00	0x00	0x00	0xFF	0x00	0x00	0x7F	0x01	0x7F	0xE8	0x00

Acknowledge for the datalog frame, continue

+46	+47	+48	+49	+50	+51	+52	+53	+54	+55	+56	+57
KLimL	KLimH	KControl	ECT	IAT	PA	BAT	KCnt	ELD	?	?	?
0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00

Acknowledge for the datalog frame, continue

+58	+59	+60	+61	+62	+63	+64	+65	+66	+67	+68	+69
?	?	INF	?	ERR00	ERR01	ERR02	ERR03	ERR04	ERR05	ERR06	ERR07
0x00	0x00	0x61	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00

Acknowledge for the datalog frame, continue

+70	+71	+72	+73	+74	+75	+76	+77	+78	+79	+80	+81
ERR08	ERR09	ERR10	ERR11	ERR12	ERR13	ERR14	ERR15	ERR16	ERR17	?	?
0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00

Acknowledge for the datalog frame, end

+82… 83	+84… 85	+86… 87	+88… 89	+90… 91	+92… 93	+94… 95	+96… 97	98… 126	+127
AIN0	AIN1	AIN2	AIN3	AIN4	AIN5	AIN6	AIN7	reserv	NEG8
0x0000	0x0000	0x0000	0x0000	0x0000	0x0000	0x0000	0x0000	[0x00]	0x??

Bitmap

SW1: RVSLCK + BKSW + ACSW + ACCL + SCS + EPS + FLR + FANC
SW2: VTP + VTS + MIL + N20Arm1 + N20On1 + N20Arm2 + N20On2
INF: EGR + O2_Sensor_Heater + O2_Sensor + A/C_Refrigerant + SecondAirSystem + EVAP_System + HeatedCatalyst + Catalyst

Values

Battery voltage: RealBAT = BAT / 10
Real MAP (kPa): RealMAP = (MAP2) ? MAP2 / 10 : MAP1
Real RPM: RealRPM = RPM / 4
Temperature (Celsius): RealIAT = temp_xlt[IAT] + 40 | RealECT = temp_xlt[ECT] + 40

```
const uint8_t temp_xlt[256] = {
    190, 190, 188, 186, 183, 181, 179, 177, 175, 172, 170, 168, 166, 163, 161, 159,
    157, 155, 153, 151, 149, 146, 144, 142, 140, 138, 137, 136, 134, 133, 132, 130,
    129, 128, 127, 125, 124, 123, 122, 121, 121, 120, 119, 118, 117, 116, 115, 115,
    114, 113, 112, 111, 110, 110, 109, 109, 108, 107, 107, 106, 106, 105, 104, 104,
    103, 102, 102, 101, 101, 100,  99,  99,  98,  98,  97,  96,  96,  95,  95,  94,
     94,  93,  93,  93,  92,  92,  91,  91,  90,  90,  90,  89,  89,  88,  88,  87,
     87,  87,  86,  86,  85,  85,  85,  84,  84,  83,  83,  82,  82,  82,  81,  81,
     80,  80,  79,  79,  79,  78,  78,  77,  77,  76,  76,  76,  75,  75,  74,  74,
     73,  73,  73,  72,  72,  71,  71,  71,  70,  70,  69,  69,  68,  68,  68,  67,
     67,  66,  66,  66,  65,  65,  64,  64,  64,  63,  63,  62,  62,  61,  61,  60,
     60,  60,  59,  59,  58,  58,  58,  57,  57,  56,  56,  55,  55,  55,  54,  54,
     53,  53,  52,  52,  52,  51,  51,  50,  50,  49,  49,  49,  48,  48,  47,  47,
     47,  46,  46,  45,  45,  44,  44,  44,  43,  43,  42,  42,  41,  41,  40,  39,
     39,  39,  38,  37,  37,  36,  36,  35,  34,  34,  33,  33,  32,  31,  31,  30,
     30,  29,  28,  28,  27,  27,  26,  25,  24,  23,  21,  20,  19,  18,  17,  16,
     15,  14,  12,  11,  10,   9,   8,   7,   5,   4,   3,   1,   0,   0,   0,   0 };
```

DTC map

ERR00-0: Unknown error 0
ERR00-1: P1607, Internal Circuit Malfunction (check calibration type)

ERR00-2:	P0131, O2 Sensor Voltage Low
ERR00-3:	P0132, O2 Sensor Voltage High
ERR00-4:	P0107, MAP Sensor Low Voltage
ERR00-5:	P0108, MAP Sensor High Voltage
ERR00-6:	P0335, CRK Sensor No Signal
ERR00-7:	P0336, CRK Sensor Intermittent Interruption
ERR01-0:	P1128, MAP Sensor Signal Lower Than Expected
ERR01-1:	P1129, MAP Sensor Signal Higher Than Expected
ERR01-2:	P0117, ECT Sensor Low Voltage
ERR01-3:	P0118, ECT Sensor High Voltage
ERR01-4:	P0122, TPS Low Voltage
ERR01-5:	P0123, TPS High Voltage
ERR01-6:	P1121, TPS Signal Lower Than Expected
ERR01-7:	P1122, TPS Signal Higher Than Expected
ERR02-0:	P0176, Ethanol sensor input error
ERR02-1:	No description available
ERR02-2:	No description available
ERR02-3:	No description available
ERR02-4:	P1362, TDC Sensor No Signal
ERR02-5:	P1361, TDC Sensor Intermittent Signal Interruption
ERR02-6:	P0112, IAT Sensor Low Voltage
ERR02-7:	P0113, IAT Sensor High Voltage
ERR03-0:	P1213, IMA sensor voltage low
ERR03-1:	P1214, IMA sensor voltage high
ERR03-2:	???, EGR lift sensor voltage error
ERR03-3:	???, EGR F/B error
ERR03-4:	P1107, Barometric Pressure Low Voltage
ERR03-5:	P1108, Barometric Pressure High Voltage
ERR03-6:	P1106, Barometric Pressure Sensor Range/Performance
ERR03-7:	???, Unknown error 37
ERR04-0:	P0505, Idle Control System Malfunction
ERR04-1:	P1519, Idle Air Control Valve Circuit Malfunction
ERR04-2:	P0500, VSS Malfunction
ERR04-3:	???, VSP
ERR04-4:	P1297, ELD Circuit Low Voltage
ERR04-5:	P1298, ELD Circuit High Voltage
ERR04-6:	P1253, VTEC solenoid drive time road abnormality
ERR04-7:	???, Unknown error 47
ERR05-0:	P1259, VTEC System Malfunction (Oil Pressure Switch)
ERR05-1:	???, Unknown error 51
ERR05-2:	P0325, Knock Sensor Circuit Malfunction
ERR05-3:	P1324, Knock Sensor Circuit Failure
ERR05-4:	P0563, VBU Voltage High
ERR05-5:	???, Unknown error 55
ERR05-6:	???, Unknown error 56
ERR05-7:	???, Unknown error 57
ERR06-0:	P1162, Air Fuel Ratio Sensor Circuit Malfunction
ERR06-1:	???, LAF Sensor AFV1 short
ERR06-2:	???, LAF Sensor AFC1 short
ERR06-3:	???, Unknown error 63
ERR06-4:	???, Daughter board communication error (battery voltage low when cranking
ERR06-5:	???, Unknown error 65
ERR06-6:	P0600, Multiplexer not present (for engine swaps disable in misc parameters)
ERR06-7:	???, Unknown error 67
ERR07-0:	P1505, PCV negative pressure
ERR07-1:	???, Unknown error 71
ERR07-2:	???, Unknown error 72
ERR07-3:	???, Idle valve
ERR07-4:	P0135, Primary HO2S Circuit Malfunction
ERR07-5:	P1166, Primary HO2S Heater Circuit Malfunction
ERR07-6:	P1167, Primary LAF HO2S Heater System Malfunction
ERR07-7:	P0134, Air/Fuel Ratio Sensor No Activity Detected
ERR08-0:	P0172, Fuel System Too Rich
ERR08-1:	P0171, Fuel System Too Lean
ERR08-2:	P1162, Air/Fuel Ratio (A/F) Sensor Slow Response

ERR08-3: ???, Unknown error 83
ERR08-4: P0010, VTC Oil Control Solenoid Valve Malfunction
ERR08-5: P0011, VTC System Malfunction
ERR08-6: P0340, CMP Sensor No Signal
ERR08-7: P0344, CMP Sensor Intermittent Interruption
ERR09-0: P0341, Variable Valve Timing (VTC) Phase Gap
ERR09-1: ???, Unknown error 91
ERR09-2: ???
ERR09-3: P1163, Air Fuel Ratio Sensor Slow Response
ERR09-4: P1164, Air Fuel Ratio Sensor Range/Performance Problem
ERR09-5: ???
ERR09-6: P0137, Secondary O2 Circuit Low Voltage
ERR09-7: P0138, Secondary O2 Circuit High Voltage
ERR10-0: P0139, Secondary O2 Circuit Slow Response
ERR10-1: ???, Unknown error 101
ERR10-2: P0141, Secondary O2 Circuit Heater Circuit Malfunction
ERR10-3: ???, Unknown error 103
ERR10-4: P0420, Catalyst System Efficiency Below Threshold
ERR10-5: ???, Catalyst / Secondary o2 Sensor
ERR10-6: ???, Unknown error 106
ERR10-7: ???, Unknown error 107

ERR11-0: P0301, Cylinder #1 Misfire
ERR11-1: ???, Unknown error 111
ERR11-2: P0302, Cylinder #2 Misfire
ERR11-3: ???
ERR11-4: P0303, Cylinder #3 Misfire
ERR11-5: ???, Unknown error 115
ERR11-6: P0304, Cylinder #4 Misfire
ERR11-7: ???, Unknown error 117
ERR12-0: P0300, Random Misfire
ERR12-1: ???, Unknown error 121
ERR12-2: ???, EGR flow
ERR12-3: ???, Unknown error 123
ERR12-4: P0116, ECT Sensor Range/Peformance Problem
ERR12-5: ???, Unknown error 125
ERR12-6: P0128, Cooling System Malfunction (Thermostat)
ERR12-7: ???, VTC solenoid
ERR13-0: P1456, EVAP Control System Leakage (Fuel Tank)
ERR13-1: P1457, EVAP Control System Leakage (Canister System)
ERR13-2: P0452, Fuel Tank Pressure Sensor Low Voltage
ERR13-3: P0453, Fuel Tank Pressure Sensor High Voltage
ERR13-4: P0451, Fuel Tank Pressure Sensor Sensor Range/Performance
ERR13-5: ???
ERR13-6: P0443, EVAP purge valve circuit
ERR13-7: ???, Unknown error 137
ERR14-0: ???, PF2 low
ERR14-1: ???, PF2 high
ERR14-2: ???, PF2 monitor
ERR14-3: ???
ERR14-4: ???, TF2 low
ERR14-5: ???, TF2 high
ERR14-6: ???, PF0 low
ERR14-7: ???, PF0 high
ERR15-0: ???, TF0 low
ERR15-1: ???, TF0 high
ERR15-2: ???, 3rd O2 sensor voltage low
ERR15-3: ???, 3rd O2 sensor voltage high
ERR15-4: ???, 3rd O2 sensor response
ERR15-5: ???, Unknown error 155
ERR15-6: ???, 3rd O2 sensor heater current abnormality
ERR15-7: ???, Unknown error 157
ERR16-0: ???, NOx ability monitor
ERR16-1: ???, Unknown error 161
ERR16-2: P1077, Intake Manifold Runner Control System Malfunction (low rpm)

ERR16-3: P1078, Intake Manifold Runner Control System Malfunction (high rpm)
ERR16-4: P0661, Intake Manifold Runner Control Low Voltage
ERR16-5: P0662, Intake Manifold Runner Control High Voltage
ERR16-6: ???, P1 switch abnormality
ERR16-7: ???, Unknown error 167
ERR17-0: P0219, Engine over-rev
ERR17-1: P0217, Engine over-heating
ERR17-2: ???
ERR17-3: ???
ERR17-4: ???
ERR17-5: ???
ERR17-6: ???
ERR17-7: ???

DTC resetting

Request for the DTC reset (TX to HV device, Big Endian)

Offset	+0	+1	+2
Description	header ID1	header ID2	NEG8
Example	0x1B	0x70	0x75

Acknowledge for the DTC reset, RX from HV device, start

Offset	+0	+1	+2
Description	header ID1	header ID2	NEG8
Example	0x1B	0x70	0x75