



Publication Year	1998
Acceptance in OA	2023-02-10T13:42:34Z
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Handle	http://hdl.handle.net/20.500.12386/33400

EMCS CALIBRATION CURVES

EPIC-EST-TN-008 I.2
Appendix J

4000

Eng. Value [V] = (Binary Value - 128) * 0.082

EMAE 6 V / EMCR 5 V Line

Raw Value	Engineering Value
0	-10,496
2	-10,332
3	-10,25
122	-0,492
128	0
255	10,414

4002

Eng. Value [V] = (Binary Value - 128) * 0.195

EMAE +/- 13 V Line

Raw Value	Engineering Value
0	-24,96
2	-24,57
3	-24,375
122	-1,17
128	0
255	24,765

4004

Eng. Value [V] = (Binary Value - 128) * 0.414

EMAE + 28 V Line

Raw Value	Engineering Value
0	-52,992
2	-52,164
3	-51,75
122	-2,484
128	0
255	52,578

4005

Eng. Value [V] = (Binary Value - 128) * 0.260

EMAE + 18 V Line

Raw Value	Engineering Value
0	-33,28
2	-32,76
3	-32,5
122	-1,56
128	0
255	33,02

4006

Eng. Value [V] = (Binary Value - 128) * 0.039

EMCR Signal Ground

Raw Value	Engineering Value
0	-4,992
2	-4,914
3	-4,875
122	-0,234

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128 0
255 4,953

4007

EMAE + 32 V Line

Eng. Value [V] = (Binary Value - 128) * 0.466

Raw Value	Engineering Value
0	-59,648
2	-58,716
3	-58,25
122	-2,796
128	0
255	59,182

4008

EMVC/EMCR Temperature

Eng. Value [°C] = (((Binary Value - 128) * 0.039) + 1.325) / 0.0681

Raw Value	Engineering Value
0	-53,847
2	-52,702
3	-52,129
122	16,021
128	19,457
255	92,188

4009

EMDH Primary Power Consumption

Eng. Value [A] = ((Binary Value * 20) / 4095) - 10

Raw Value	Engineering Value
0	-10
2	-9,9902312
3	-9,985348
122	-9,4041514
255	-8,7545788
10000	38,8400488
65535	310,07326

4011

EMDH Power Supply Temperature

Eng. Value [°C] = (Binary Value * (-0.1268)) + 345.74

Raw Value	Engineering Value
0	345,74
2	345,4964
3	345,3596
122	330,2704
255	313,406
10000	218,94
65535	-7964,098

4012

EMCR +/- 13 V Line

Eng. Value [V] = (Binary Value - 128) * 0.205

Raw Value	Engineering Value
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0	-26,24
2	-25,83
3	-25,625
122	-1,23
128	0
255	26,035

4015

VOD Voltage

Eng. Value [V] = Binary Value * 0.152

Raw Value	Engineering Value
0	0
2	0,304
3	0,456
122	18,544
255	38,76

4016

VSS/VOG Voltage

Eng. Value [V] = Binary Value * 0.039

Raw Value	Engineering Value
0	0
2	0,078
3	0,117
122	4,758
255	9,945

4019

VRD Voltage

Eng. Value [V] = Binary Value * 0.081

Raw Value	Engineering Value
0	0
2	0,162
3	0,243
122	9,882
255	20,655

4022

EMDH Power Supply

Eng. Value [V] = (((Binary Value * 20) / 4095) - 10) * 2

Raw Value	Engineering Value
0	-20
2	-20
3	-19,971
122	-18,808
255	-17,509
65535	620,147

4023

EMCR Observation Tim

Eng value [s] = Binary value * 0.1

Raw Value	Engineering Value
0	0

EMCS CALIBRATION CURVES

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2	0
3	0,3
122	12,2
255	25,5
4095	409,5

4024

Eng. Value [°C] = (Binary Value * 1.668) - 223.6

EMCH FP Extended Ran

Raw Value	Engineering Value
0	-223,6
122	-20,104
255	201,74

4025

Eng. Value [V] = Binary Value * 0.0612

S/R Voltage

Raw Value	Engineering Value
0	0
2	0,1224
3	0,1836
122	7,4664
255	15,606

4026

Eng. Value [V] = Binary Value * 0.121

VBB/VID/VGR Voltage

Raw Value	Engineering Value
0	0
2	0,242
3	0,363
122	14,762
255	30,855

4027

Eng. Value [°C] = (Binary Value * 0.357) - 159

EMCH FP NormalRangeT

Raw Value	Engineering Value
0	-159
122	-115,446
255	-67,965

4028

Eng value [s] = Binary value * 0.1

EMCR Observation Tim

Raw Value	Engineering Value
0	0
122	12,2
255	25,5

4029

Eng. Value [V] = Binary Value * 0.0613

I Voltage

Raw Value	Engineering Value
0	0

1	0,0613
122	7,4786
255	15,6315

4030

Eng. Value [V] = Binary Value * 0.059

IG Voltage

Raw Value	Engineering Value
0	0
1	0,059
122	7,198
255	15,045

4031

Eng. Value [V] = Binary Value * 0.062

RESET Voltage

Raw Value	Engineering Value
0	0
1	0,062
122	7,564
255	15,81

4034

Eng. Value [°C] = (Binary Value * 0.869) - 168

EMAE FP Thermal Control Setting

Raw Value	Engineering Value
0	-168
122	-61,982
255	53,595

4098

Eng. Value [°C] = (Binary Value * 1.1) - 170.1

EMAE FP ThermalContrTempMonitor

Raw Value	Engineering Value
0	-170,1
2	-170,1
3	-166,8
122	-35,9
255	110,4

4099

Eng. Value [mV] = Binary Value * 39.06

EMCH Vacuum Monitor

Raw Value	Engineering Value
0	0
2	0
3	117,18
122	4765,32
255	9960,3

4100

Eng. Value [°C] = (Binary Value * 1.689) - 225.9

EMCH Secondary Radiator

Raw Value	Engineering Value
0	-225,9

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2	-225,9
3	-220,833
122	-19,842
255	204,795

4101

EMCH Door Bellow Pressure

Eng. Value [Bar] = ((Binary Value * 39.06)/1000)-2

Raw Value	Engineering Value
0	-2
1	-1,96094
128	2,99968
255	7,9603

4137

EMCH FW Motor Temper

Eng. Value [°C] = (Binary Value * 1.953) - 273

Raw Value	Engineering Value
0	-273
2	-273
3	-267,141
122	-34,734
255	225,015

4138

EMAE Electronics Tem

Eng. Value [°C] = 89.794 - (Binary Value * 1.2723) + (Binary Value^2 * 6.9E-3) - (Binary Value^3 * 1.7E10-5)

Raw Value	Engineering Value
0	89,794
2	89,794
3	86,039
50	41,304
122	6,404
185	-17,067
255	-67,853

4142

EMCH Electronics Tem

Eng. Value [°C] = 58.08 - (Raw Value * 2.2888) + (Raw Value^2 * 2.9E-2) - (Raw Value^3 * 1.7E-4) + (Raw Value^4 * 3.5E-7)

Raw Value	Engineering Value
0	58,08
2	58,08
3	51,47
50	-2,923
122	-20,675
185	-39,227
255	21,215