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* Texas Instruments Data Flash File
* File created Wed Sep 19 15:54:34 2018
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* Device Number 4500
* Firmware Version 2.08
* Build Number 50
* Order Number 0
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* bqz Device Number 4500
* bqz Firmware Version 2.08
* bqz Build Number 50
*
* Field Order: Class name, Subclass name, Parameter name, Parameter Value, Display
Units
"Calibration","Voltage","Cell Gain","12148","-"
"Calibration","Voltage","Pack Gain","49361","-"
"Calibration","Voltage","BAT Gain","49154","-"
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"Calibration","Current","Capacity Gain","1.008","mOhm"
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"Calibration","Current Offset","Board Offset","0","-"
"Calibration","Current Offset","CC Auto Config","07","hex"
"Calibration","Current Offset","CC Auto Offset","120","-"
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"Calibration","Temperature","External1 Temp Offset","1.3","°C"
"Calibration","Temperature","External2 Temp Offset","1.3","°C"
"Calibration","Temperature","External3 Temp Offset","1.2","°C"
"Calibration","Temperature","External4 Temp Offset","1.3","°C"
"Calibration","Internal Temp Model","Int Gain","-12143","-"
"Calibration","Internal Temp Model","Int base offset","6232","-"
"Calibration","Internal Temp Model","Int Minimum AD","0","-"
"Calibration","Internal Temp Model","Int Maximum Temp","6232","0.1°K"
"Calibration","Cell Temperature Model","Coeff a1","-11130","-"
"Calibration","Cell Temperature Model","Coeff a2","19142","-"
"Calibration","Cell Temperature Model","Coeff a3","-19262","-"
"Calibration","Cell Temperature Model","Coeff a4","28203","-"
"Calibration","Cell Temperature Model","Coeff a5","892","-"
"Calibration","Cell Temperature Model","Coeff b1","328","-"
"Calibration","Cell Temperature Model","Coeff b2","-605","-"
"Calibration","Cell Temperature Model","Coeff b3","-2443","-"
"Calibration","Cell Temperature Model","Coeff b4","4696","-"
"Calibration","Cell Temperature Model","Rc0","11703","-"
"Calibration","Cell Temperature Model","Adc0","11703","-"
"Calibration","Cell Temperature Model","Rpad","0","-"
"Calibration","Cell Temperature Model","Rint","0","-"
"Calibration","Fet Temperature Model","Coeff a1","-11130","-"
"Calibration","Fet Temperature Model","Coeff a2","19142","-"
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"Calibration","Fet Temperature Model","Coeff a3","-19262","-"
"Calibration","Fet Temperature Model","Coeff a4","28203","-"
"Calibration","Fet Temperature Model","Coeff a5","892","-"
"Calibration","Fet Temperature Model","Coeff b1","328","-"
"Calibration","Fet Temperature Model","Coeff b2","-605","-"
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"Calibration","Fet Temperature Model","Adc0","11703","-"
"Calibration","Fet Temperature Model","Rpad","0","-"
"Calibration","Fet Temperature Model","Rint","0","-"
"Calibration","Current Deadband","Deadband","3","mA"
"Calibration","Current Deadband","Coulomb Counter Deadband","9","116nV"
"Settings","Configuration","Charging Configuration","00","hex"
"Settings","Configuration","FET Options","44","hex"
"Settings","Configuration","Sbs Gauging Configuration","04","hex"
"Settings","Configuration","Sbs Configuration","20","hex"
"Settings","Configuration","Auth Config","00","hex"
"Settings","Configuration","Power Config","0003","hex"
"Settings","Configuration","IO Config","00","hex"
"Settings","Configuration","LED Configuration","00c4","hex"
"Settings","Configuration","Temperature Enable","1e","hex"
"Settings","Configuration","Temperature Mode","19","hex"
"Settings","Configuration","DA Configuration","0017","hex"
"Settings","Configuration","SOC Flag Config A","0c8c","hex"
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"Settings","Configuration","IT Gauging Configuration","d3fe","hex"
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"Settings","Fuse","PF Fuse D","20","hex"
"Settings","Fuse","Min Blow Fuse Voltage","3700","mV"
"Settings","Fuse","Fuse Blow Timeout","30","s"
"Settings","BTP","Init Discharge Set","150","mAh"
"Settings","BTP","Init Charge Set","175","mAh"
"Settings","SMBus","Address","16","-"
"Settings","SMBus","Address Check","ea","-"
"Settings","Protection","Protection Configuration","00","hex"
"Settings","Protection","Enabled Protections A","7f","hex"
"Settings","Protection","Enabled Protections B","35","hex"
"Settings","Protection","Enabled Protections C","01","hex"
"Settings","Protection","Enabled Protections D","0c","hex"
"Settings","Permanent Failure","Enabled PF A","5f","hex"
"Settings","Permanent Failure","Enabled PF B","e0","hex"
"Settings","Permanent Failure","Enabled PF C","0f","hex"
"Settings","Permanent Failure","Enabled PF D","30","hex"
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"Settings","AFE","AFE Protection Control","73","hex"
"Settings","AFE","ZVCHG Exit Threshold","2200","mV"
"Settings","Manufacturing","Mfg Status init","03f8","hex"
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"Advanced Charge Algorithm","Temperature Ranges","T5 Temp","20.0","°C"
"Advanced Charge Algorithm","Temperature Ranges","T6 Temp","30.0","°C"
"Advanced Charge Algorithm","Temperature Ranges","T3 Temp","40.0","°C"
"Advanced Charge Algorithm","Temperature Ranges","T4 Temp","55.0","°C"
"Advanced Charge Algorithm","Temperature Ranges","Hysteresis Temp","1.0","°C"
"Advanced Charge Algorithm","Low Temp Charging","Voltage","3550","mV"
"Advanced Charge Algorithm","Low Temp Charging","Current Low","9000","mA"
"Advanced Charge Algorithm","Low Temp Charging","Current Med","11000","mA"
"Advanced Charge Algorithm","Low Temp Charging","Current High","12000","mA"
"Advanced Charge Algorithm","Standard Temp Low Charging","Voltage","3550","mV"
"Advanced Charge Algorithm","Standard Temp Low Charging","Current Low","9000","mA"
"Advanced Charge Algorithm","Standard Temp Low Charging","Current Med","11000","mA"
"Advanced Charge Algorithm","Standard Temp Low Charging","Current
High","12000","mA"
"Advanced Charge Algorithm","Standard Temp High Charging","Voltage","3550","mV"
"Advanced Charge Algorithm","Standard Temp High Charging","Current Low","9000","mA"
"Advanced Charge Algorithm","Standard Temp High Charging","Current
Med","11000","mA"
"Advanced Charge Algorithm","Standard Temp High Charging","Current
High","12000","mA"
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"Advanced Charge Algorithm","High Temp Charging","Current Med","11000","mA"
"Advanced Charge Algorithm","High Temp Charging","Current High","12000","mA"
"Advanced Charge Algorithm","Rec Temp Charging","Voltage","3550","mV"
"Advanced Charge Algorithm","Rec Temp Charging","Current Low","9000","mA"
"Advanced Charge Algorithm","Rec Temp Charging","Current Med","11000","mA"
"Advanced Charge Algorithm","Rec Temp Charging","Current High","12000","mA"
"Advanced Charge Algorithm","Pre-Charging","Current","180","mA"
"Advanced Charge Algorithm","Maintenance Charging","Current","120","mA"
"Advanced Charge Algorithm","Voltage Range","Precharge Start Voltage","2700","mV"
"Advanced Charge Algorithm","Voltage Range","Charging Voltage Low","2750","mV"
"Advanced Charge Algorithm","Voltage Range","Charging Voltage Med","3200","mV"
"Advanced Charge Algorithm","Voltage Range","Charging Voltage High","3650","mV"
"Advanced Charge Algorithm","Voltage Range","Charging Voltage Hysteresis","5","mV"
"Advanced Charge Algorithm","SoC Range","Charging SoC Med","50","%"
"Advanced Charge Algorithm","SoC Range","Charging SoC High","75","%"
"Advanced Charge Algorithm","SoC Range","Charging SoC Hysteresis","1","%"
"Advanced Charge Algorithm","Degrade Mode 1","Cycle Threshold","50","-"
"Advanced Charge Algorithm","Degrade Mode 1","SOH Threshold","95","%"
"Advanced Charge Algorithm","Degrade Mode 1","Voltage Degradation","10","mV"
"Advanced Charge Algorithm","Degrade Mode 1","Current Degradation","10","%"
"Advanced Charge Algorithm","Degrade Mode 2","Cycle Threshold","150","-"
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"Advanced Charge Algorithm","Degrade Mode 2","SOH Threshold","80","%"
"Advanced Charge Algorithm","Degrade Mode 2","Voltage Degradation","40","mV"
"Advanced Charge Algorithm","Degrade Mode 2","Current Degradation","20","%"
"Advanced Charge Algorithm","Degrade Mode 3","Cycle Threshold","350","-"
"Advanced Charge Algorithm","Degrade Mode 3","SOH Threshold","60","%"
"Advanced Charge Algorithm","Degrade Mode 3","Voltage Degradation","70","mV"
"Advanced Charge Algorithm","Degrade Mode 3","Current Degradation","40","%"
"Advanced Charge Algorithm","CS Degrade","Temperature Threshold","50.0","°C"
"Advanced Charge Algorithm","CS Degrade","Voltage Threshold","3700","mV"
"Advanced Charge Algorithm","CS Degrade","Time Interval","300","s"
"Advanced Charge Algorithm","CS Degrade","Delta Voltage","25","mV"
"Advanced Charge Algorithm","CS Degrade","Min CV","3200","mV"
"Advanced Charge Algorithm","Termination Config","Charge Term Taper
Current","4000","mA"
"Advanced Charge Algorithm","Termination Config","Charge Term Voltage","75","mV"
"Advanced Charge Algorithm","Charging Rate of Change","Current Rate","1","steps"
"Advanced Charge Algorithm","Charging Rate of Change","Voltage Rate","1","steps"
"Advanced Charge Algorithm","Charge Loss Compensation","CCC Current
Threshold","3520","mA"
"Advanced Charge Algorithm","Charge Loss Compensation","CCC Voltage
Threshold","4200","mV"
"Advanced Charge Algorithm","IR Correction","Averaging Interval","12","s"
"Advanced Charge Algorithm","Cell Balancing Config","Bal Time/mAh Cell
1","41","s/mAh"
"Advanced Charge Algorithm","Cell Balancing Config","Bal Time/mAh Cell
2-4","42","s/mAh"
"Advanced Charge Algorithm","Cell Balancing Config","Min Start Balance
Delta","10","mV"
"Advanced Charge Algorithm","Cell Balancing Config","Relax Balance
Interval","18000","s"
"Advanced Charge Algorithm","Cell Balancing Config","Min Rsoc for
Balancing","40","%"
"Advanced Charge Algorithm","Cell Balancing Config","Start Rsoc for Bal in
Sleep","60","%"
"Advanced Charge Algorithm","Cell Balancing Config","End Rsoc for Bal in
Sleep","40","%"
"Advanced Charge Algorithm","Cell Balancing Config","Start Time for Bal in
Sleep","100","hrs"
"Power","Power","Valid Update Voltage","3500","mV"
"Power","Shutdown","Shutdown Voltage","2200","mV"
"Power","Shutdown","Shutdown Time","10","s"
"Power","Shutdown","PF Shutdown Voltage","2200","mV"
"Power","Shutdown","PF Shutdown Time","10","s"
"Power","Shutdown","PS Shutdown Voltage","2500","mV"
"Power","Shutdown","PS NoLoadResCap Threshold","2","mAh"
"Power","Shutdown","Charger Present Threshold","10000","mV"
"Power","Shutdown","Valid Wake up Comm Check Delay","100","s"
"Power","Sleep","Sleep Current","10","mA"
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"Power","Sleep","Current Time","10","s"
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"Power","Power Off","Timeout","30","min"
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"Power","IATA","IATA Delta RSOC","3","%"
"Power","IATA","IATA Wake AbsRsoc","10","%"
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"Power","IATA","IATA Max Temperature","40.0","°C"
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"Power","IATA STORE","IATA FCC cWh","0","cWh"
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"Power","Unintended Wakeup","Count","3","-"
"LED Support","LED Config","LED Flash Period","512","488us"
"LED Support","LED Config","LED Blink Period","4096","488us"
"LED Support","LED Config","LED Delay","16","488us"
"LED Support","LED Config","LED Hold Time","4","s"
"LED Support","LED Config","LED FC Time","60","mins"
"LED Support","LED Config","CHG Flash Alarm","10","%"
"LED Support","LED Config","CHG Thresh 1","0","%"
"LED Support","LED Config","CHG Thresh 2","21","%"
"LED Support","LED Config","CHG Thresh 3","41","%"
"LED Support","LED Config","CHG Thresh 4","61","%"
"LED Support","LED Config","CHG Thresh 5","81","%"
"LED Support","LED Config","DSG Flash Alarm","10","%"
"LED Support","LED Config","DSG Thresh 1","0","%"
"LED Support","LED Config","DSG Thresh 2","20","%"
"LED Support","LED Config","DSG Thresh 3","40","%"
"LED Support","LED Config","DSG Thresh 4","60","%"
"LED Support","LED Config","DSG Thresh 5","80","%"
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"System Data","Manufacturer Data","Manufacturer Info Block A01","61","Hex"
"System Data","Manufacturer Data","Manufacturer Info Block A02","62","Hex"
"System Data","Manufacturer Data","Manufacturer Info Block A03","63","Hex"
"System Data","Manufacturer Data","Manufacturer Info Block A04","64","Hex"
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"System Data","Manufacturer Data","Manufacturer Info Block A05","65","Hex"
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"System Data","Manufacturer Data","Manufacturer Info Block A08","68","Hex"
"System Data","Manufacturer Data","Manufacturer Info Block A09","69","Hex"
"System Data","Manufacturer Data","Manufacturer Info Block A10","6a","Hex"
"System Data","Manufacturer Data","Manufacturer Info Block A11","6b","Hex"
"System Data","Manufacturer Data","Manufacturer Info Block A12","6c","Hex"
"System Data","Manufacturer Data","Manufacturer Info Block A13","6d","Hex"
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"System Data","Manufacturer Info B","Manufacturer Info Block B03","45","Hex"
"System Data","Manufacturer Info B","Manufacturer Info Block B04","67","Hex"
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"System Data","Integrity","All DF Signature","0000","hex"
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"SBS Configuration","Data","Remaining WH Cap. Alarm","432","cWh"
"SBS Configuration","Data","Remaining Time Alarm","10","min"
"SBS Configuration","Data","Initial Battery Mode","0081","hex"
"SBS Configuration","Data","Specification Information","0031","hex"
"SBS Configuration","Data","Manufacture Date","2018-9-13","date"
"SBS Configuration","Data","Serial Number","000a","hex"
"SBS Configuration","Data","Manufacturer Name","GS204","-"
"SBS Configuration","Data","Device Name","bq40z50-R2","-"
"SBS Configuration","Data","Device Chemistry","LION","-"
"Lifetimes","Voltage","Cell 1 Max Voltage","3807","mV"
"Lifetimes","Voltage","Cell 2 Max Voltage","3841","mV"
"Lifetimes","Voltage","Cell 3 Max Voltage","3719","mV"
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"Lifetimes","Voltage","Cell 4 Max Voltage","3764","mV"
"Lifetimes","Voltage","Cell 1 Min Voltage","2210","mV"
"Lifetimes","Voltage","Cell 2 Min Voltage","2588","mV"
"Lifetimes","Voltage","Cell 3 Min Voltage","2569","mV"
"Lifetimes","Voltage","Cell 4 Min Voltage","2546","mV"
"Lifetimes","Voltage","Max Delta Cell Voltage","778","mV"
"Lifetimes","Current","Max Charge Current","15911","mA"
"Lifetimes","Current","Max Discharge Current","-25908","mA"
"Lifetimes","Current","Max Avg Dsg Current","-18360","mA"
"Lifetimes","Current","Max Avg Dsg Power","-22686","cW"
"Lifetimes","Temperature","Max Temp Cell","45","°C"
"Lifetimes","Temperature","Min Temp Cell","13","°C"
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"Lifetimes","Gauging Events","Last Qmax Update","1","cycles"
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"Lifetimes","Gauging Events","Last Ra Disable","0","cycles"
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"Lifetimes","Cell Balancing","Cb Time Cell 1","46","h"
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"Lifetimes","Cell Balancing","Cb Time Cell 4","54","h"
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"Lifetimes","Time","Time Spent In LT","0","h"
"Lifetimes","Time","Time Spent In STL","2","h"
"Lifetimes","Time","Time Spent In RT","2172","h"
"Lifetimes","Time","Time Spent In STH","220","h"
"Lifetimes","Time","Time Spent In HT","10","h"
"Lifetimes","Time","Time Spent In OT","0","h"
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"Protections","COV","Threshold Standard Temp Low","3650","mV"
"Protections","COV","Threshold Standard Temp High","3650","mV"
"Protections","COV","Threshold High Temp","3650","mV"
"Protections","COV","Threshold Rec Temp","3650","mV"
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"Protections","OCC","Recovery Delay","5","s"
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"Protections","OCD2","Delay","10","s"
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"Protections","OCD","Counter Dec Delay","15","s"
"Protections","OCD","Reset","30","s"
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"Protections","AOLD","Latch Limit","2","-"
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"Protections","AOLD","Recovery","5","s"
"Protections","AOLD","Reset","60","s"
"Protections","AOLD","Threshold","ff","hex"
"Protections","ASCC","Latch Limit","2","-"
"Protections","ASCC","Counter Dec Delay","10","s"
"Protections","ASCC","Recovery","5","s"
"Protections","ASCC","Reset","15","s"
"Protections","ASCC","Threshold","f3","hex"
"Protections","ASCD","Latch Limit","2","-"
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"Protections","ASCD","Recovery","5","s"
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"Protections","ASCD","Threshold 2","d7","hex"
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"Protections","PTO","Reset","2","mAh"
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"Protections","CTO","Suspend Threshold","29000","mA"
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"Protections","OC","Threshold","25000","mAh"
"Protections","OC","Recovery","20000","mAh"
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"Protections","CHGV","Recovery","-500","mV"
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"Protections","CHGC","Delay","2","s"
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"Protections","CHGC","Recovery Delay","2","s"
"Protections","PCHGC","Threshold","3000","mA"
"Protections","PCHGC","Delay","2","s"
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"Protections","PCHGC","Recovery Delay","2","s"
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"Permanent Fail","SUV","Delay","5","s"
"Permanent Fail","SOV","Threshold","3800","mV"
"Permanent Fail","SOV","Delay","10","s"
"Permanent Fail","SOCC","Threshold","30000","mA"
"Permanent Fail","SOCC","Delay","2","s"
"Permanent Fail","SOCD","Threshold","-32000","mA"
"Permanent Fail","SOCD","Delay","5","s"
"Permanent Fail","SOT","Threshold","65.0","°C"
"Permanent Fail","SOT","Delay","5","s"
"Permanent Fail","SOTF","Threshold","100.0","°C"
"Permanent Fail","SOTF","Delay","5","s"
"Permanent Fail","Open Thermistor","Threshold","-50.0","°C"
"Permanent Fail","Open Thermistor","Delay","5","s"
"Permanent Fail","Open Thermistor","Fet Delta","20.0","°C"
"Permanent Fail","Open Thermistor","Cell Delta","20.0","°C"
"Permanent Fail","QIM","Delta Threshold","15.0","%"
"Permanent Fail","QIM","Delay","2","updates"
"Permanent Fail","CB","Max Threshold","240","h"
"Permanent Fail","CB","Delta Threshold","40","h"
"Permanent Fail","CB","Delay","2","cycles"
"Permanent Fail","VIMR","Check Voltage","3500","mV"
"Permanent Fail","VIMR","Check Current","10","mA"
"Permanent Fail","VIMR","Delta Threshold","500","mV"
"Permanent Fail","VIMR","Delta Delay","5","s"
"Permanent Fail","VIMR","Duration","100","s"
"Permanent Fail","VIMA","Check Voltage","3700","mV"
"Permanent Fail","VIMA","Check Current","50","mA"
"Permanent Fail","VIMA","Delta Threshold","200","mV"
"Permanent Fail","VIMA","Delay","5","s"
"Permanent Fail","IMP","Delta Threshold","300","%"
"Permanent Fail","IMP","Max Threshold","400","%"
"Permanent Fail","IMP","Ra Update Counts","2","Counts"
"Permanent Fail","CD","Threshold","0","mAh"
"Permanent Fail","CD","Delay","2","cycles"
"Permanent Fail","CFET","OFF Threshold","5","mA"
"Permanent Fail","CFET","OFF Delay","5","s"
"Permanent Fail","DFET","OFF Threshold","-5","mA"
"Permanent Fail","DFET","OFF Delay","5","s"
"Permanent Fail","FUSE","Threshold","5","mA"
"Permanent Fail","FUSE","Delay","5","s"
"Permanent Fail","AFER","Threshold","100","-"
```

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"Permanent Fail","AFER","Delay Period","2","s"
"Permanent Fail","AFER","Compare Period","5","s"
"Permanent Fail","AFEC","Threshold","100","-"
"Permanent Fail","AFEC","Delay Period","5","s"
"Permanent Fail","2LVL","Delay","5","s"
"PF Status","Device Status Data","Safety Alert A","00","hex"
"PF Status","Device Status Data","Safety Status A","00","hex"
"PF Status","Device Status Data","Safety Alert B","00","hex"
"PF Status","Device Status Data","Safety Status B","00","hex"
"PF Status","Device Status Data","Safety Alert C","00","hex"
"PF Status","Device Status Data","Safety Status C","00","hex"
"PF Status","Device Status Data","Safety Alert D","00","hex"
"PF Status","Device Status Data","Safety Status D","00","hex"
"PF Status","Device Status Data","PF Alert A","00","hex"
"PF Status","Device Status Data","PF Status A","00","hex"
"PF Status","Device Status Data","PF Alert B","00","hex"
"PF Status","Device Status Data","PF Status B","00","hex"
"PF Status","Device Status Data","PF Alert C","00","hex"
"PF Status","Device Status Data","PF Status C","00","hex"
"PF Status","Device Status Data","PF Alert D","00","hex"
"PF Status","Device Status Data","PF Status D","00","hex"
"PF Status","Device Status Data","Fuse Flag","0000","hex"
"PF Status","Device Status Data","Operation Status A","7981","hex"
"PF Status","Device Status Data","Operation Status B","1002","hex"
"PF Status","Device Status Data","Temp Range","10","hex"
"PF Status","Device Status Data","Charging Status A","04","hex"
"PF Status","Device Status Data","Charging Status B","00","hex"
"PF Status","Device Status Data","Gauging Status","10","hex"
"PF Status","Device Status Data","IT Status","0014","hex"
"PF Status","Device Voltage Data","Cell 1 Voltage","3457","mV"
"PF Status","Device Voltage Data","Cell 2 Voltage","3410","mV"
"PF Status","Device Voltage Data","Cell 3 Voltage","3413","mV"
"PF Status","Device Voltage Data","Cell 4 Voltage","3456","mV"
"PF Status","Device Voltage Data","Battery Direct Voltage","13890","mV"
"PF Status","Device Voltage Data","Pack Voltage","13768","mV"
"PF Status","Device Current Data","Current","14325","mA"
"PF Status","Device Temperature Data","Internal Temperature","38.7","°C"
"PF Status","Device Temperature Data","External 1 Temperature","32.8","°C"
"PF Status","Device Temperature Data","External 2 Temperature","34.8","°C"
"PF Status","Device Temperature Data","External 3 Temperature","33.9","°C"
"PF Status","Device Temperature Data","External 4 Temperature","34.0","°C"
"PF Status","Device Gauging Data","Cell 1 Dod0","760","-"
"PF Status","Device Gauging Data","Cell 2 Dod0","800","-"
"PF Status","Device Gauging Data","Cell 3 Dod0","776","-"
"PF Status","Device Gauging Data","Cell 4 Dod0","776","-"
"PF Status","Device Gauging Data","Passed Charge","699","mAh"
"PF Status","AFE Regs","AFE Interrupt Status","00","hex"
"PF Status","AFE Regs","AFE FET Status","30","hex"
```

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"PF Status","AFE Regs","AFE RXIN","10","hex"
"PF Status","AFE Regs","AFE Latch Status","00","hex"
"PF Status","AFE Regs","AFE Interrupt Enable","0a","hex"
"PF Status","AFE Regs","AFE FET Control","c0","hex"
"PF Status","AFE Regs","AFE RXIEN","10","hex"
"PF Status","AFE Regs","AFE RLOUT","07","hex"
"PF Status","AFE Regs","AFE RHOUT","15","hex"
"PF Status","AFE Regs","AFE RHINT","81","hex"
"PF Status","AFE Regs","AFE Cell Balance","01","hex"
"PF Status","AFE Regs","AFE AD/CC Control","19","hex"
"PF Status","AFE Regs","AFE ADC Mux","ef","hex"
"PF Status","AFE Regs","AFE LED Output","1f","hex"
"PF Status","AFE Regs","AFE State Control","40","hex"
"PF Status","AFE Regs","AFE LED/Wake Control","32","hex"
"PF Status","AFE Regs","AFE Protection Control","71","hex"
"PF Status","AFE Regs","AFE OCD","25","hex"
"PF Status","AFE Regs","AFE SCC","11","hex"
"PF Status","AFE Regs","AFE SCD1","21","hex"
"PF Status","AFE Regs","AFE SCD2","32","hex"
"Black Box","Safety Status","1st Status Status A","00","hex"
"Black Box","Safety Status","1st Status Status B","00","hex"
"Black Box","Safety Status","1st Safety Status C","00","hex"
"Black Box","Safety Status","1st Safety Status D","00","hex"
"Black Box","Safety Status","1st Time to Next Event","0","s"
"Black Box","Safety Status","2nd Status Status A","00","hex"
"Black Box","Safety Status","2nd Status Status B","00","hex"
"Black Box","Safety Status","2nd Safety Status C","00","hex"
"Black Box","Safety Status","2nd Safety Status D","00","hex"
"Black Box","Safety Status","2nd Time to Next Event","255","s"
"Black Box","Safety Status","3rd Status Status A","08","hex"
"Black Box","Safety Status","3rd Status Status B","00","hex"
"Black Box","Safety Status","3rd Safety Status C","00","hex"
"Black Box","Safety Status","3rd Safety Status D","00","hex"
"Black Box","Safety Status","3rd Time to Next Event","1","s"
"Black Box","PF Status","1st PF Status A","04","hex"
"Black Box","PF Status","1st PF Status B","00","hex"
"Black Box","PF Status","1st PF Status C","00","hex"
"Black Box","PF Status","1st PF Status D","00","hex"
"Black Box","PF Status","1st Time to Next Event","0","s"
"Black Box","PF Status","2nd PF Status A","00","hex"
"Black Box","PF Status","2nd PF Status B","00","hex"
"Black Box","PF Status","2nd PF Status C","00","hex"
"Black Box","PF Status","2nd PF Status D","00","hex"
"Black Box","PF Status","2nd Time to Next Event","29","s"
"Black Box","PF Status","3rd PF Status A","00","hex"
"Black Box","PF Status","3rd PF Status B","00","hex"
"Black Box","PF Status","3rd PF Status C","00","hex"
"Black Box","PF Status","3rd PF Status D","00","hex"
```

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"Black Box","PF Status","3rd Time to Next Event","0","s"
"Gas Gauging","Current Thresholds","Dsg Current Threshold","50","mA"
"Gas Gauging","Current Thresholds","Chg Current Threshold","20","mA"
"Gas Gauging","Current Thresholds","Quit Current","10","mA"
"Gas Gauging","Current Thresholds","Dsg Relax Time","1","s"
"Gas Gauging","Current Thresholds","Chg Relax Time","1","s"
"Gas Gauging","Design","Design Capacity mAh","19200","mAh"
"Gas Gauging","Design","Design Capacity cWh","24576","cWh"
"Gas Gauging","Design","Design Voltage","12800","mV"
"Gas Gauging","Cycle","Cycle Count Percentage","80","%"
"Gas Gauging","FD","Set Voltage Threshold","2800","mV"
"Gas Gauging","FD","Clear Voltage Threshold","2900","mV"
"Gas Gauging","FD","Set % RSOC Threshold","5","%"
"Gas Gauging","FD","Clear % RSOC Threshold","10","%"
"Gas Gauging","FC","Set Voltage Threshold","3600","mV"
"Gas Gauging","FC","Clear Voltage Threshold","3550","mV"
"Gas Gauging","FC","Set % RSOC Threshold","98","%"
"Gas Gauging","FC","Clear % RSOC Threshold","96","%"
"Gas Gauging","TD","Set Voltage Threshold","2650","mV"
"Gas Gauging","TD","Clear Voltage Threshold","2700","mV"
"Gas Gauging","TD","Set % RSOC Threshold","4","%"
"Gas Gauging","TD","Clear % RSOC Threshold","8","%"
"Gas Gauging","TC","Set Voltage Threshold","3650","mV"
"Gas Gauging","TC","Clear Voltage Threshold","3550","mV"
"Gas Gauging","TC","Set % RSOC Threshold","100","%"
"Gas Gauging","TC","Clear % RSOC Threshold","97","%"
"Gas Gauging","State","Cycle Count","1","-"
"Gas Gauging","State","Qmax Cell 1","21761","mAh"
"Gas Gauging","State","Qmax Cell 2","21714","mAh"
"Gas Gauging","State","Qmax Cell 3","21721","mAh"
"Gas Gauging","State","Qmax Cell 4","21823","mAh"
"Gas Gauging","State","Qmax Pack","21714","mAh"
"Gas Gauging","State","Qmax Cycle Count","1","-"
"Gas Gauging","State","Update Status","0e","-"
"Gas Gauging","State","Cell 1 Chg Voltage at EoC","3403","mV"
"Gas Gauging","State","Cell 2 Chg Voltage at EoC","3647","mV"
"Gas Gauging","State","Cell 3 Chg Voltage at EoC","3578","mV"
"Gas Gauging","State","Cell 4 Chg Voltage at EoC","3413","mV"
"Gas Gauging","State","Current at EoC","336","mA"
"Gas Gauging","State","Avg I Last Run","-3838","mA"
"Gas Gauging","State","Avg P Last Run","-4938","cW"
"Gas Gauging","State","Delta Voltage","12","mV"
"Gas Gauging","State","Temp k","3.80","°C/256mW"
"Gas Gauging","State","Temp a","18000","s"
"Gas Gauging","State","Max Avg I Last Run","-3840","mA"
"Gas Gauging","State","Max Avg P Last Run","-5037","cW"
"Gas Gauging","Turbo Cfg","Min Turbo Power","0","cW"
"Gas Gauging","Turbo Cfg","Ten Second Max C Rate","-2.0","C"
```

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"Gas Gauging","Turbo Cfg","Ten Millisecond Max C Rate","-4.0","C"
"Gas Gauging","Turbo Cfg","High Frequency Resistance","30","mOhm"
"Gas Gauging","Turbo Cfg","Reserve Energy %","2","%"
"Gas Gauging","Turbo Cfg","Turbo Adjustment Factor","1.00","-"
"Gas Gauging","IT Cfg","Load Select","7","-"
"Gas Gauging","IT Cfg","Fast Scale Load Select","3","-"
"Gas Gauging","IT Cfg","Load Mode","0","-"
"Gas Gauging","IT Cfg","User Rate-mA","0","mA"
"Gas Gauging","IT Cfg","User Rate-cW","0","cW"
"Gas Gauging","IT Cfg","Reserve Cap-mAh","0","mAh"
"Gas Gauging","IT Cfg","Reserve Cap-cWh","0","cWh"
"Gas Gauging","IT Cfg","Predict Ambient Time","0","s"
"Gas Gauging","IT Cfg","Design Resistance","12","2^-10ohm"
"Gas Gauging","IT Cfg","Pack Resistance","0","2^-10ohm"
"Gas Gauging","IT Cfg","System Resistance","0","2^-10ohm"
"Gas Gauging","IT Cfg","Ra Filter","80.0","%"
"Gas Gauging","IT Cfg","Ra Max Delta","15","%"
"Gas Gauging","IT Cfg","Reference Grid","4","-"
"Gas Gauging","IT Cfg","Resistance Parameter Filter","65142","-"
"Gas Gauging","IT Cfg","Near EDV Ra Param Filter","59220","-"
"Gas Gauging","IT Cfg","Cell 1 Interconnect Resistance","0","2^-10ohm"
"Gas Gauging","IT Cfg","Cell 2 Interconnect Resistance","0","2^-10ohm"
"Gas Gauging","IT Cfg","Cell 3 Interconnect Resistance","0","2^-10ohm"
"Gas Gauging","IT Cfg","Cell 4 Interconnect Resistance","0","2^-10ohm"
"Gas Gauging","IT Cfg","Max Current Change %","10","%"
"Gas Gauging","IT Cfg","Resistance Update Voltage","50","mV"
"Gas Gauging","IT Cfg","Qmax Delta","3","%"
"Gas Gauging","IT Cfg","Qmax Upper Bound","130","%"
"Gas Gauging","IT Cfg","Term Voltage","12000","mV"
"Gas Gauging","IT Cfg","Term V Hold Time","5","s"
"Gas Gauging","IT Cfg","Term Voltage Delta","300","mV"
"Gas Gauging","IT Cfg","Term Min Cell V","3000","mV"
"Gas Gauging","IT Cfg","Max Simulation Iterations","30","-"
"Gas Gauging","IT Cfg","Fast Scale Start SOC","10","%"
"Gas Gauging","IT Cfg","Min Delta Voltage","0","mV"
"Gas Gauging","IT Cfg","Max Delta Voltage","220","mV"
"Gas Gauging","IT Cfg","DeltaV Max Voltage Delta","10","mV"
"Gas Gauging","Smoothing","Smooth Relax Time","1000","s"
"Gas Gauging","Smoothing","Term Smooth Start Cell V Delta","150","mV"
"Gas Gauging","Smoothing","Term Smooth Final Cell V Delta","100","mV"
"Gas Gauging","Smoothing","Term Smooth Time","20","s"
"Gas Gauging","Condition Flag","Max Error Limit","100","%"
"Gas Gauging","Max Error","Time Cycle Equivalent","24","h"
"Gas Gauging","Max Error","Cycle Delta","0.05","%"
"Gas Gauging","SoH","SoH Load Rate","5.0","Hr rate"
"Ra Table","R_a0","Cell0 R_a flag","0055","-"
"Ra Table","R_a0","Cell0 R_a 0","12","2^-10ohm"
"Ra Table","R_a0","Cell0 R_a 1","16","2^-10ohm"
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"Ra Table","R_a0","Cell0 R_a 2","17","2^-10ohm"
"Ra Table","R_a0","Cell0 R_a 3","13","2^-10ohm"
"Ra Table","R_a0","Cell0 R_a 4","15","2^-10ohm"
"Ra Table","R_a0","Cell0 R_a 5","17","2^-10ohm"
"Ra Table","R_a0","Cell0 R_a 6","18","2^-10ohm"
"Ra Table","R_a0","Cell0 R_a 7","18","2^-10ohm"
"Ra Table","R_a0","Cell0 R_a 8","18","2^-10ohm"
"Ra Table","R_a0","Cell0 R_a 9","19","2^-10ohm"
"Ra Table","R_a0","Cell0 R_a 10","20","2^-10ohm"
"Ra Table","R_a0","Cell0 R_a 11","23","2^-10ohm"
"Ra Table","R_a0","Cell0 R_a 12","38","2^-10ohm"
"Ra Table","R_a0","Cell0 R_a 13","46","2^-10ohm"
"Ra Table","R_a0","Cell0 R_a 14","98","2^-10ohm"
"Ra Table","R_a1","Cell1 R_a flag","0000","-"
"Ra Table","R_a1","Cell1 R_a 0","10","2^-10ohm"
"Ra Table","R_a1","Cell1 R_a 1","12","2^-10ohm"
"Ra Table","R_a1","Cell1 R_a 2","14","2^-10ohm"
"Ra Table","R_a1","Cell1 R_a 3","12","2^-10ohm"
"Ra Table","R_a1","Cell1 R_a 4","12","2^-10ohm"
"Ra Table","R_a1","Cell1 R_a 5","13","2^-10ohm"
"Ra Table","R_a1","Cell1 R_a 6","13","2^-10ohm"
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"Ra Table","R_a1","Cell1 R_a 8","13","2^-10ohm"
"Ra Table","R_a1","Cell1 R_a 9","13","2^-10ohm"
"Ra Table","R_a1","Cell1 R_a 10","17","2^-10ohm"
"Ra Table","R_a1","Cell1 R_a 11","17","2^-10ohm"
"Ra Table","R_a1","Cell1 R_a 12","30","2^-10ohm"
"Ra Table","R_a1","Cell1 R_a 13","71","2^-10ohm"
"Ra Table","R_a1","Cell1 R_a 14","106","2^-10ohm"
"Ra Table","R_a2","Cell2 R_a flag","0055","-"
"Ra Table","R_a2","Cell2 R_a 0","14","2^-10ohm"
"Ra Table","R_a2","Cell2 R_a 1","14","2^-10ohm"
"Ra Table","R_a2","Cell2 R_a 2","14","2^-10ohm"
"Ra Table","R_a2","Cell2 R_a 3","10","2^-10ohm"
"Ra Table","R_a2","Cell2 R_a 4","12","2^-10ohm"
"Ra Table","R_a2","Cell2 R_a 5","14","2^-10ohm"
"Ra Table","R_a2","Cell2 R_a 6","14","2^-10ohm"
"Ra Table","R_a2","Cell2 R_a 7","13","2^-10ohm"
"Ra Table","R_a2","Cell2 R_a 8","13","2^-10ohm"
"Ra Table","R_a2","Cell2 R_a 9","14","2^-10ohm"
"Ra Table","R_a2","Cell2 R_a 10","15","2^-10ohm"
"Ra Table","R_a2","Cell2 R_a 11","15","2^-10ohm"
"Ra Table","R_a2","Cell2 R_a 12","21","2^-10ohm"
"Ra Table","R_a2","Cell2 R_a 13","21","2^-10ohm"
"Ra Table","R_a2","Cell2 R_a 14","32","2^-10ohm"
"Ra Table","R_a3","Cell3 R_a flag","0055","-"
"Ra Table","R_a3","Cell3 R_a 0","15","2^-10ohm"
"Ra Table","R_a3","Cell3 R_a 1","16","2^-10ohm"
```

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"Ra Table","R_a3","Cell3 R_a 2","16","2^-10ohm"
"Ra Table","R_a3","Cell3 R_a 3","14","2^-10ohm"
"Ra Table","R_a3","Cell3 R_a 4","15","2^-10ohm"
"Ra Table","R_a3","Cell3 R_a 5","17","2^-10ohm"
"Ra Table","R_a3","Cell3 R_a 6","18","2^-10ohm"
"Ra Table","R_a3","Cell3 R_a 7","17","2^-10ohm"
"Ra Table","R_a3","Cell3 R_a 8","18","2^-10ohm"
"Ra Table","R_a3","Cell3 R_a 9","18","2^-10ohm"
"Ra Table","R_a3","Cell3 R_a 10","20","2^-10ohm"
"Ra Table","R_a3","Cell3 R_a 11","23","2^-10ohm"
"Ra Table","R_a3","Cell3 R_a 12","40","2^-10ohm"
"Ra Table","R_a3","Cell3 R_a 13","71","2^-10ohm"
"Ra Table","R_a3","Cell3 R_a 14","122","2^-10ohm"
"Ra Table","R_a0x","xCell0 R_a flag","0000","-"
"Ra Table","R_a0x","xCell0 R_a 0","12","2^-10ohm"
"Ra Table","R_a0x","xCell0 R_a 1","16","2^-10ohm"
"Ra Table","R_a0x","xCell0 R_a 2","17","2^-10ohm"
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"Ra Table","R_a0x","xCell0 R_a 12","36","2^-10ohm"
"Ra Table","R_a0x","xCell0 R_a 13","44","2^-10ohm"
"Ra Table","R_a0x","xCell0 R_a 14","93","2^-10ohm"
"Ra Table","R_a1x","xCell1 R_a flag","0055","-"
"Ra Table","R_a1x","xCell1 R_a 0","10","2^-10ohm"
"Ra Table","R_a1x","xCell1 R_a 1","12","2^-10ohm"
"Ra Table","R_a1x","xCell1 R_a 2","14","2^-10ohm"
"Ra Table","R_a1x","xCell1 R_a 3","12","2^-10ohm"
"Ra Table","R_a1x","xCell1 R_a 4","12","2^-10ohm"
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"Ra Table","R_a1x","xCell1 R_a 6","13","2^-10ohm"
"Ra Table","R_a1x","xCell1 R_a 7","13","2^-10ohm"
"Ra Table","R_a1x","xCell1 R_a 8","13","2^-10ohm"
"Ra Table","R_a1x","xCell1 R_a 9","13","2^-10ohm"
"Ra Table","R_a1x","xCell1 R_a 10","17","2^-10ohm"
"Ra Table","R_a1x","xCell1 R_a 11","17","2^-10ohm"
"Ra Table","R_a1x","xCell1 R_a 12","30","2^-10ohm"
"Ra Table","R_a1x","xCell1 R_a 13","71","2^-10ohm"
"Ra Table","R_a1x","xCell1 R_a 14","106","2^-10ohm"
"Ra Table","R_a2x","xCell2 R_a flag","0000","-"
"Ra Table","R_a2x","xCell2 R_a 0","14","2^-10ohm"
"Ra Table","R_a2x","xCell2 R_a 1","14","2^-10ohm"
```

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"Ra Table","R_a2x","xCell2 R_a 2","14","2^-10ohm"
"Ra Table","R_a2x","xCell2 R_a 3","10","2^-10ohm"
"Ra Table","R_a2x","xCell2 R_a 4","12","2^-10ohm"
"Ra Table","R_a2x","xCell2 R_a 5","14","2^-10ohm"
"Ra Table","R_a2x","xCell2 R_a 6","14","2^-10ohm"
"Ra Table","R_a2x","xCell2 R_a 7","13","2^-10ohm"
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"Ra Table","R_a2x","xCell2 R_a 9","14","2^-10ohm"
"Ra Table","R_a2x","xCell2 R_a 10","15","2^-10ohm"
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"Ra Table","R_a2x","xCell2 R_a 12","23","2^-10ohm"
"Ra Table","R_a2x","xCell2 R_a 13","23","2^-10ohm"
"Ra Table","R_a2x","xCell2 R_a 14","35","2^-10ohm"
"Ra Table","R_a3x","xCell3 R_a flag","0000","-"
"Ra Table","R_a3x","xCell3 R_a 0","15","2^-10ohm"
"Ra Table","R_a3x","xCell3 R_a 1","16","2^-10ohm"
"Ra Table","R_a3x","xCell3 R_a 2","16","2^-10ohm"
"Ra Table","R_a3x","xCell3 R_a 3","14","2^-10ohm"
"Ra Table","R_a3x","xCell3 R_a 4","15","2^-10ohm"
"Ra Table","R_a3x","xCell3 R_a 5","17","2^-10ohm"
"Ra Table","R_a3x","xCell3 R_a 6","18","2^-10ohm"
"Ra Table","R_a3x","xCell3 R_a 7","17","2^-10ohm"
"Ra Table","R_a3x","xCell3 R_a 8","18","2^-10ohm"
"Ra Table","R_a3x","xCell3 R_a 9","18","2^-10ohm"
"Ra Table","R_a3x","xCell3 R_a 10","20","2^-10ohm"
"Ra Table","R_a3x","xCell3 R_a 11","23","2^-10ohm"
"Ra Table","R_a3x","xCell3 R_a 12","38","2^-10ohm"
"Ra Table","R_a3x","xCell3 R_a 13","67","2^-10ohm"
"Ra Table","R_a3x","xCell3 R_a 14","116","2^-10ohm"
```