			Bytes Allocate	252																MAX: 255 bytes
		C3 Firmware				Yamcs			Grafana				Yamcs / Grafana						Grafana	
	Subsystem	Data	Raw Data Type	# Bytes	Beacon Offset	Calibrator function (raw to eng value)	Yamcs Eng Data Type	Yamcs Eng Units	Implemented?	Min	Severe Min	Critical Min	Warning Min	Watch Min	Watch Max	Warning Max	Critical Max	Severe Max	Max	Notes
APRS	Packet	APRS Header	UINT8	16	0		String	N/A	TRUE	-	-	-	-	-	-	-	-	-	-	APRS Header
APRS	Packet	Data type identifier	UINT8	3	10		String	N/A	TRUE	-	-	-	-	-	-	-	-	-	-	"{{z" User-Defined APRS packet format
APRS	Packet	Satellite ID	UINT8	1	13		Enum String	N/A	TRUE	0	-	-	-	-	-	-	-	-	255	0 = OreSat0, 1 = Oresat0.5, 2 = OreSat1
APRS	Packet	Revision	UINT8	1	14		Integer	Count	TRUE	0	-	-	-	-	-	-	1	-	255	APRS version #; curently 1
C3	M4	OreSat0 State	CHAR	1	15		Enum String	N/A	TRUE	A	-	-	-	B	-	-	E	-	F	Character representing C3 critical state. A=predploy, B=Deploy, C=standby, D=beacon, E=EDL
C3	M4	Uptime	UINT32	4	16		Integer	Seconds	TRUE	-	-	-	-	-	-	-	-	-	-	Stick at 0xFFFFFF if we reach 194 days of uptime :)
C3	RTC	Time	UINT32	4	1A		Datetime string	N/A	TRUE	-	-	-	-	-	-	-	-	-	-	SCET coarse timestamp with UNIX epoch
C3	WDT	# power cycles	UINT16	2	1E		Integer	Count	TRUE	0	-	-	-	-	2	-	-	10	65535	Stored in FRAM; Stick at 0xFFFF until reset from ground
C3	eMMC	% full	UINT8	1	20		Integer	%	TRUE	0	-	-	-	-	50	-	-	80	100	0 - 100 %
C3	L RX	Bytes received	UINT32	4	21		Integer	Count	TRUE	0	-	-	-	-	-	-	-	-	2^32-1	# of bytes received on the L band radio
C3	L RX	Valid packets	UINT32	4	25		Integer	Count	TRUE	0	-	-	-	-	-	-	-	-	2^32-1	# of packets received on the L band radio
C3	L RX	RSSI	UINT8	1	29		Integer	dB	TRUE	0	-	-	-	-	-	-	-	-	255	Of last packet received; -126 to -45 dBm range; 1 dB step; after LNA, filters, and digital channel filter.
C3	UHF RX	Bytes received	UINT32	4	2A		Integer	Count	TRUE	0	-	-	-	-	-	-	-	-	2^32-1	# of bytes received on the UHF band radio
C3	UHF RX	Valid packets	UINT32	4	2E		Integer	Count	TRUE	0	-	-	-	-	-	-	-	-	2^32-1	# of packets received on the UHF band radio
C3	UHF RX	RSSI	UINT8	1	32		Integer	dB	TRUE	0	-	-	-	-	-	-	-	-	255	Of last packet received; -126 to -45 dBm range; 1 dB step; after LNA, filters, and digital channel filter.
C3	FW Bank	Current and next bank	UINT8	1	33		Bitfield (mutiple enum	N/A	TRUE	0	-	-	-	-	-	-	-	-	3	Bit 0 = Current Bank, Bit 1 = Next Bank
C3	L RX	Sequence number	UINT32	4	34		Integer	N/A	TRUE	0	-	-	-	-	-	-	-	-	2^32-1	This is the sequence number (sometimes called "salt") in the authentication scheme
C3	L RX	Rejected packets	UINT32	4	38		Integer	N/A	TRUE	0	-	-	-	-	-	-	-	-	2^32-1	This is the number of rejected packets, due to noise, bit flips, or bad sequence number or MAC.
Battery	Pack 1	VBatt	UINT16	2	3C		Integer	mV	TRUE	0	-	6000	6500	7000	8000	8400	8500	-	65535	Total battery pack voltage
Battery	Pack 1	VCell	UINT16	2	3E		Integer	mV	TRUE	0	-	3000	3250	3500	4000	4200	4250	-	65535	Lowest cell in the pack: voltage
Battery	Pack 1	VCell Max	UINT16	2	40		Integer	mV	TRUE	0	-	3000	3250	3500	4000	4200	4250	-	65535	Lowest cell in the pack: maximum voltage (since ... last charge?)
Battery	Pack 1	VCell Min	UINT16	2	42		Integer	mV	TRUE	0	-	3000	3250	3500	4000	4200	4250	-	65535	Lowest cell in the pack: minimum voltage (since ... last charge?)
Battery	Pack 1	VCell 1	UINT16	2	44		Integer	mV	TRUE	0	-	3000	3250	3500	4000	4200	4250	-	65535	Cell 1 voltage
Battery	Pack 1	VCell 2	UINT16	2	46		Integer	mV	TRUE	0	-	3000	3250	3500	4000	4200	4250	-	65535	Cell 2 voltage
Battery	Pack 1	VCell Avg	UINT16	2	48		Integer	mV	TRUE	0	-	3000	3250	3500	4000	4200	4250	-	65535	Lowest cell in the pack: average voltage (since ... last charge?)
Battery	Pack 1	Temperature	INT16	2	4A		Integer	deg C	TRUE	-32768	-5	0	5	10	40	50	60	-	32767	Could change this to an INT8.
Battery	Pack 1	Temperature Avg	INT16	2	4C		Integer	deg C	TRUE	-32768	-5	0	5	10	40	50	60	-	32767	Could change this to an INT8.
Battery	Pack 1	Temperature Max	INT16	2	4E		Integer	deg C	TRUE	-32768	-5	0	5	10	40	50	60	-	32767	Could change this to an INT8.
Battery	Pack 1	Temperature Min	INT16	2	50		Integer	deg C	TRUE	-32768	-5	0	5	10	40	50	60	-	32767	Could change this to an INT8.
Battery	Pack 1	Current	INT16	2	52		Integer	mA	TRUE	-32768	-	-	-	-	-	-	-	-	32767	Instantaneous current
Battery	Pack 1	Current Avg	INT16	2	54		Integer	mA	TRUE	-32768	-	-	-	-	-	-	-	-	32767	Average current
Battery	Pack 1	Current Max	INT16	2	56		Integer	mA	TRUE	-32768	-	-	-	-	-	-	-	-	32767	Max current
Battery	Pack 1	Current Min	INT16	2	58		Integer	mA	TRUE	-32768	-	-	-	-	-	-	-	-	32767	Min current
Battery	Pack 1	State	UINT8	1	5A		Bitfield (mutiple enum	Bit field	TRUE	0	-	-	-	-	-	-	-	-	255	Bit 0: heater on/off , B1: discharge disabled, B2: charge disabled, B3: discharge status, B4: charge statu
Battery	Pack 1	Reported State of Charg	UINT8	1	5B		Integer	%	TRUE	0	5	12	25	50	-	-	101	-	255	State of Charge (%) of the pack (reported capacity / full capacity)
Battery	Pack 1	full capacity	UINT16	2	5C		Integer	mAh	TRUE	0	-	1000	1500	2000	-	-	3000	-	65535	Best guess at the total storage capacity of the pack
Battery	Pack 1	reported capacity	UINT16	2	5E		Integer	mAh	TRUE	0	100	250	500	1000	2600	2700	-	-	65535	Best guess at the current capacity of the pack
Battery	Pack 2	VBatt	UINT16	2	60		Integer	mV	TRUE	0	-	6000	6500	7000	8000	8400	8500	-	65535	Total battery pack voltage
Battery	Pack 2	VCell	UINT16	2	62		Integer	mV	TRUE	0	-	3000	3250	3500	4000	4200	4250	-	65535	Lowest cell in the pack: voltage
Battery	Pack 2	VCell Max	UINT16	2	64		Integer	mV	TRUE	0	-	3000	3250	3500	4000	4200	4250	-	65535	Lowest cell in the pack: maximum voltage (since ... last charge?)
Battery	Pack 2	VCell Min	UINT16	2	66		Integer	mV	TRUE	0	-	3000	3250	3500	4000	4200	4250	-	65535	Lowest cell in the pack: minimum voltage (since ... last charge?)
Battery	Pack 2	VCell 1	UINT16	2	68		Integer	mV	TRUE	0	-	3000	3250	3500	4000	4200	4250	-	65535	Cell 1 voltage
Battery	Pack 2	VCell 2	UINT16	2	6A		Integer	mV	TRUE	0	-	3000	3250	3500	4000	4200	4250	-	65535	Cell 2 voltage
Battery	Pack 2	VCell Avg	UINT16	2	6C		Integer	mV	TRUE	0	-	3000	3250	3500	4000	4200	4250	-	65535	Lowest cell in the pack: average voltage (since ... last charge?)
Battery	Pack 2	Temperature	INT16	2	6E		Integer	deg C	TRUE	-32768	-5	0	5	10	40	50	60	-	32767	Could change this to an INT8.
Battery	Pack 2	Temperature Avg	INT16	2	70		Integer	deg C	TRUE	-32768	-5	0	5	10	40	50	60	-	32767	Could change this to an INT8.
Battery	Pack 2	Temperature Max	INT16	2	72		Integer	deg C	TRUE	-32768	-5	0	5	10	40	50	60	-	32767	Could change this to an INT8.
Battery	Pack 2	Temperature Min	INT16	2	74		Integer	deg C	TRUE	-32768	-5	0	5	10	40	50	60	-	32767	Could change this to an INT8.
Battery	Pack 2	Current	INT16	2	76		Integer	mA	TRUE	-32768	-	-	-	-	-	-	-	-	32767	Instantaneous current
Battery	Pack 2	Current Avg	INT16	2	78		Integer	mA	TRUE	-32768	-	-	-	-	-	-	-	-	32767	Average current
Battery	Pack 2	Current Max	INT16	2	7A		Integer	mA	TRUE	-32768	-	-	-	-	-	-	-	-	32767	Max current
Battery	Pack 2	Current Min	INT16	2	7C		Integer	mA	TRUE	-32768	-	-	-	-	-	-	-	-	32767	Min current
Battery	Pack 2	State	UINT8	1	7E		Bitfield (mutiple enum	Bit field	TRUE	0	-	-	-	-	-	-	-	-	255	Bit 0: heater on/off , B1: discharge disabled, B2: charge disabled, B3: discharge status, B4: charge statu
Battery	Pack 2	Reported State of Charg	UINT8	1	7F		Integer	%	TRUE	0	5	12	25	50	-	-	101	-	255	State of Charge (%) of the pack (reported capacity / full capacity)
Battery	Pack 2	full capacity	UINT16	2	80		Integer	mAh	TRUE	0	-	1000	1500	2000	-	-	3000	-	65535	Best guess at the total storage capacity of the pack
Battery	Pack 2	reported capacity	UINT16	2	82		Integer	mAh	TRUE	0	100	250	500	1000	2600	2700	-	-	65535	Best guess at the current capacity of the pack
Solar-X		Voltage avg	UINT16	2	84		Integer	mV	TRUE	0	-	-	-	-	-	-	-	-	65535	Average of the solar array voltage since power up (NOT bus voltage!)
Solar-X		Current avg	INT16	2	86		Integer	mA	TRUE	-32,768	-	-	-	-	-	-	-	-	32767	Average of the solar array current since power up (NOT bus current)
Solar-X		Power avg	UINT16	2	88		Integer	mW	TRUE	0	-	-	-	-	-	-	-	-	65535	Average of the solar array power output since power up
Solar-X		Voltage max	UINT16	2	8A		Integer	mV	TRUE	0	-	-	-	-	-	-	-	-	65535	Maximum of the solar array voltage since power up (NOT bus voltage!)
Solar-X		Current max	INT16	2	8C		Integer	mA	TRUE	-32,768	-	-	-	-	-	-	-	-	32767	Maximum of the solar array current since power up (NOT bus current)
Solar-X		Power max	UINT16	2	8E		Integer	mW	TRUE	0	-	-	-	-	-	-	-	-	65535	Maximum of the solar array power output since power up
Solar-X		Energy	UINT16	2	90		Integer	J	TRUE	0	-	-	-	-	-	-	-	-	65535	Total energy (power over time) output of the solar array since power up
Solar-Y		Voltage avg	UINT16	2	92		Integer	mV	TRUE	0	-	-	-	-	-	-	-	-	65535	Average of the solar array voltage since power up (NOT bus voltage!)
Solar-Y		Current avg	INT16	2	94		Integer	mA	TRUE	-32,768	-	-	-	-	-	-	-	-	32767	Average of the solar array current since power up (NOT bus current)
Solar-Y		Power avg	UINT16	2	96		Integer	mW	TRUE	0	-	-	-	-	-	-	-	-	65535	Average of the solar array power output since power up
Solar-Y		Voltage max	UINT16	2	98		Integer	mV	TRUE	0	-	-	-	-	-	-	-	-	65535	Maximum of the solar array voltage since power up (NOT bus voltage!)
Solar-Y		Current max	INT16	2	9A		Integer	mA	TRUE	-32,768	-	-	-	-	-	-	-	-	32767	Maximum of the solar array current since power up (NOT bus current)
Solar-Y		power max	UINT16	2	9C		Integer	mW	TRUE	0	-	-	-	-	-	-	-	-	65535	Maximum of the solar array power output since power up
Solar-Y		Energy	UINT16	2	9E		Integer	J	TRUE	0	-	-	-	-	-	-	-	-	65535	Total energy (power over time) output of the solar array since power up
Solar+X		Voltage avg	UINT16	2	A0		Integer	mV	TRUE	0	-	-	-	-	-	-	-	-	65535	Average of the solar array voltage since power up (NOT bus voltage!)
Solar+X		Current avg	INT16	2	A2		Integer	mA	TRUE	-32,768	-	-	-	-	-	-	-	-	32767	Average of the solar array current since power up (NOT bus current)
Solar+X		Power avg	UINT16	2	A4		Integer	mW	TRUE	0	-	-	-	-	-	-	-	-	65535	Average of the solar array power output since power up
Solar+X		Voltage max	UINT16	2	A6		Integer	mV	TRUE	0	-	-	-	-	-	-	-	-	65535	Maximum of the solar array voltage since power up (NOT bus voltage!)
Solar+X		Current max	INT16	2	A8		Integer	mA	TRUE	-32,768	-	-	-	-	-	-	-	-	32767	Maximum of the solar array current since power up (NOT bus current)
Solar+X		power max	UINT16	2	AA		Integer	mW	TRUE	0	-	-	-	-	-	-	-	-	65535	Maximum of the solar array power output since power up

			Bytes Allocate	252															MAX: 255 bytes
	C3 Firmware					Yamcs			Grafana	Yamcs / Grafana								Grafana	
	Subsystem	Data	Raw Data Type	# Bytes	Beacon Offset	Calibrator function (raw to eng value)	Yamcs Eng Data Type	Yamcs Eng Units	Implemented?	Min	Severe Min	Critical Min	Warning Min	Watch Min	Watch Max	Warning Max	Critical Max	Severe Max	Max	Notes
Solar+X		Energy	UINT16	2	AC		Integer	J	TRUE	0	-	-	-	-	-	-	-	-	65535	Total energy (power over time) output of the solar array since power up
Solar+Y		Voltage avg	UINT16	2	AE		Integer	mV	TRUE	0	-	-	-	-	-	-	-	-	65535	Average of the solar array voltage since power up (NOT bus voltage!)
Solar+Y		Current avg	INT16	2	B0		Integer	mA	TRUE	-32,768	-	-	-	-	-	-	-	-	32767	Average of the solar array current since power up (NOT bus current)
Solar+Y		Power avg	UINT16	2	B2		Integer	mW	TRUE	0	-	-	-	-	-	-	-	-	65535	Average of the solar array power output since power up
Solar+Y		Voltage max	UINT16	2	B4		Integer	mV	TRUE	0	-	-	-	-	-	-	-	-	65535	Maximum of the solar array voltage since power up (NOT bus voltage!)
Solar+Y		Current max	INT16	2	B6		Integer	mA	TRUE	-32,768	-	-	-	-	-	-	-	-	32767	Maximum of the solar array current since power up (NOT bus current)
Solar+Y		power max	UINT16	2	B8		Integer	mW	TRUE	0	-	-	-	-	-	-	-	-	65535	Maximum of the solar array power output since power up
Solar+Y		Energy	UINT16	2	BA		Integer	J	TRUE	0	-	-	-	-	-	-	-	-	65535	Total energy (power over time) output of the solar array since power up
Star Tracker		eMMC Capacity	UINT8	1	BC		Integer	%	TRUE	0	-	-	-	-	-	50	70	80	100	
Star Tracker		readable files	UINT8	1	BD		Integer		TRUE	0	-	-	-	-	-	-	-	-	255	
Star Tracker		updater status	UINT8	1	BE		Enum String		TRUE	0	-	-	-	-	-	-	-	-	255	States: 0=standby, 1=updating, 2=update_failed, 3=status_file
Star Tracker		updates cached	UINT8	1	BF		Integer		TRUE	0	-	-	-	-	-	-	-	-	255	
Star Tracker		Right Ascension	INT16	2	C0		Integer		TRUE	-32,768	-	-	-	-	-	-	-	-	32767	
Star Tracker		Declination	INT16	2	C2		Integer		TRUE	-32,768	-	-	-	-	-	-	-	-	32767	
Star Tracker		Roll	INT16	2	C4		Integer		TRUE	-32,768	-	-	-	-	-	-	-	-	32767	
Star Tracker		Timestamp of last meas	UINT32	4	C6		Integer	ms since midni	TRUE	0	-	-	-	-	-	-	-	-	86400000	
GPS		eMMC Capacity	UINT8	1	CA		Integer	%	TRUE	0	-	-	-	-	-	50	70	80	100	
GPS		readable files	UINT8	1	CB		Integer		TRUE	0	-	-	-	-	-	-	-	-	255	
GPS		updater status	UINT8	1	CC		Enum String		TRUE	0	-	-	-	-	-	-	-	-	255	States: 0=standby, 1=updating, 2=update_failed, 3=status_file
GPS		updates cached	UINT8	1	CD		Integer		TRUE	0	-	-	-	-	-	-	-	-	255	
GPS		gps status	UINT8	1	CE		Enum String		TRUE	0	-	-	-	-	-	-	-	-	255	States: 0=standby, 1=locked, 2=hardware_error, 3=parser_error
GPS		num of sats locked	UINT8	1	CF		Integer		TRUE	0	-	-	-	-	-	-	-	-	255	12 is max of SkyTraq
GPS		X position	INT32	4	D0		Integer	cm	TRUE	SMOL	-	-	-	-	-	-	-	-	BEEG	
GPS		Y postition	INT32	4	D4		Integer	cm	TRUE	SMOL	-	-	-	-	-	-	-	-	BEEG	
GPS		Z position	INT32	4	D8		Integer	cm	TRUE	SMOL	-	-	-	-	-	-	-	-	BEEG	
GPS		X velocity	INT32	4	DC		Integer	cm/s	TRUE	SMOL	-	-	-	-	-	-	-	-	BEEG	
GPS		Y velocity	INT32	4	E0		Integer	cm/s	TRUE	SMOL	-	-	-	-	-	-	-	-	BEEG	
GPS		Z velocity	INT32	4	E4		Integer	cm/s	TRUE	SMOL	-	-	-	-	-	-	-	-	BEEG	
GPS		Timestamp of last packe	UINT32	4	E8		Integer	ms since midni	TRUE	0	-	-	-	-	-	-	-	-	86400000	
ADS	Gyro	Roll dot	INT16	2	EC		Integer	deg/sec?	TRUE	-32,768	-	-	-	-	-	-	-	-	32767	
ADS	Gyro	Pitch dot	INT16	2	EE		Integer	deg/sec?	TRUE	-32,768	-	-	-	-	-	-	-	-	32767	
ADS	Gyro	Yaw dot	INT16	2	F0		Integer	deg/sec?	TRUE	-32,768	-	-	-	-	-	-	-	-	32767	
ADS	Gyro	IMU temp	INT8	1	F2		Integer	Deg C	TRUE	-128	-30	-20	-10	0	40	50	60	70	127	
DxWiFi		eMMC Capacity	UINT8	1	F3		Integer	%	TRUE	0	-	-	-	-	-	50	70	80	100	
DxWiFi		readable files	UINT8	1	F4		Integer		TRUE	0	-	-	-	-	-	-	-	-	255	
DxWiFi		updater status	UINT8	1	F5		Enum String		TRUE	0	-	-	-	-	-	-	-	-	255	States: 0=standby, 1=updating, 2=update_failed, 3=status_file
DxWiFi		updates cached	UINT8	1	F6		Integer		TRUE	0	-	-	-	-	-	-	-	-	255	
DxWiFi		transmitting	BOOL	1	F7		Enum String		TRUE	0	-	-	-	-	-	-	-	-	1	States: 0=disabled, 1=enabled
APRS	Packet	CRC-32	UINT32	4	F8		Integer	FCS	TRUE	0	-	-	-	-	-	-	-	-	BEEG	Polynomial 0x04C11DB7; computed over all bytes allocated