

Baton Control Module: FIPS Action Commands and Parameter ID's for RFB 1.6.1

FIPS COMMANDS AND PARAMETER DATA BASE IDENTIFIERS

RFB 1.6.1

This document contains the FIPS Action Commands and Parameter ID's currently supported by the RF-Baton!. This document is has been updated for *RFB 1.6.1* as new actions and parameters have been added to the RF-B! software.

Revision History

<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description</u>
0.1	08/18/97	M. Elliott	Ported from Mac. Placed under version control. Supports software upto and including version 1.2.4.
0.2	08/18/1998	T. Anderson	AMGfw22836 : Add programmable <r/w> 'FREERUN' timeout parameter.
0.3	08/25/1998	T. Anderson	AMGfw14053 : Add hardware serial number parameter.
0.4	09/18/1998	T. Anderson	AMGfw22836: Updated minimum/maximum values for 'FREERUN' timeout parameter.
0.5	10/19/1998	T. Itchevska	AMGfw01162/PPGjc29583: Changed test mode frequency range to 0 - 15.
0.6	02/05/1999	G. Estes	Updated for RFB 1.6.1

NOTES:

1. All of the new RFB 1.6.1 related objects are in **bold** for clarity.

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Table 1: Supported FIPS Action Commands

Action	Name	Description	Usage	Response
16	GPS Pass Thru Command	Send command to GPS receiver.	a 16 <GPS command>	GPS receiver will react to commands.
17	GPS Pass Thru Mode Start	Put BCM into mode where GPS commands can be directly sent to GPS receiver.	a 17	None
18	GPS Pass Thru Mode End	Remove BCM from mode where GPS commands can be directly sent to GPS receiver.	a 18	None
60	Read OPP Multicast Table	Reads the contents of the OPP Multicast Configuration & Active Tables	a 60 a i (<i>Read Active Table</i>) a 60 c i (<i>Read Config Table</i>) <i>i=1..16 for a specific index into the table or i=? for the contents of the entire table</i>	Multicast IP Address(es) from the Configuration or Active Tables.
61	Configure a Multicast IP Address	Adds a Multicast IP address to the OPP Multicast Configuration Table. If the "Group Write Mode" (FIPS param 347) is set to '1' (Direct Write Mode) the IP address gets updated to the Active Table as well.	a 61 i < <i>Multicast IP Address</i> > <i>i=1..16 is the index into the Configuration Table where the IP Address is to be added</i>	Successful update or invalid IP Address assertion.
99	Read All Alarms	Display all alarms in alarm log.	a 99	All alarms which have become active since last clear-alarm-log command are displayed. Format matches error log. Supported alarms are listed in this document. Full set of alarms is listed in MPD.
103	Clear All Alarms	Clear all alarms in alarm log.	a 103	None. Re-reading alarm log will return no alarms.

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Table 1: Supported FIPS Action Commands

Action	Name	Description	Usage	Response
104	Read Error Log	Display all errors in error log.	a 104	All errors which have become active since last clear-error-log command are displayed. Errors are defined by software developers to indicate failures related to hardware or system problems. Error format is: error -type, module in which error was detected, line number in module, time of last occurrence, number of occurrences.
110	Read Software Error Log	Display all errors in software error log.	a 110	All software errors which have become active since last clear-sware-error-log command are displayed. Software errors are defined by software developers to indicate failures which are software specific. Error format is: error -type, module in which error was detected, line number in module, number of occurrences.
111	Clear Error Log	Clear all errors in error log.	a 111	None. Re-reading error log will return no errors.
113	Clear Software Error Log	Clear all errors in software error log.	a 113	None. Re-reading software error log will return no errors.

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Table 1: Supported FIPS Action Commands

Action	Name	Description	Usage	Response
117	Reset Station	Initiate "warm" reset of station.	<p>a 117 <option>, where the <options> are:</p> <p>n - Normal Reboot, No Change to Params</p> <p>c - Normal Reboot, Error/Software Logs Cleared, No Change to Params</p> <p>d - Software Single Dip2 Reboot, Preserve Site Dependent/Factory Preset Params</p> <p>o - Software Double Dip2 Reboot, Preserve Factory Preset Params</p>	<p>BCM goes through reset cycle (best indicated by LED sequence). Upon resetting, the FIPS Banner is displayed and the Parameter Database is effected by the parameter given and is confirmed by the following <i>addendum</i> to the FIPS banner:</p> <p style="text-align: center;">MOTOROLA RF-BATON! WIRELESS MESSAGING SYSTEM (WMS) (c) Copyright 1999 Motorola, Inc. All Rights Reserved.</p> <p style="text-align: center;">**** Possible Addendums ****</p> <p>'PARAMETER DATABASE UNCHANGED'</p> <p>"PARAMETER DATABASE UNCHANGED"</p> <p>"SITE CRITICAL PARAMETERS PRESERVED --FACTORY PRESETS PRESERVED-- ALL OTHER PARAMETERS SET TO DEFAULTS"</p> <p>CRITICAL PARAMETERS SET TO DEFAULTS --FACTORY PRESETS PRESERVED-- ALL OTHER PARAMETERS SET TO DEFAULTS</p>
120	Read bus error Log	Display all errors in bus error log	a 120	All errors which have become active since last clear-bus error-log command are displayed.
121	Clear Bus error Log	Clear all errors in bus error log	a 121	None. Re-reading bus error log will return no errors

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Table 1: Supported FIPS Action Commands

Action	Name	Description	Usage	Response
122	Dump Parm DB	Prints all parameter data base 'parameters' such as name, ID, type, index, etc. for a given <type>	a 122 <type>, where <type> = UINT8, UINT16, UINT32, SINT8, SINT16, SINT32 and STRING	Example of a 'UINT8' parameter (partial list shown) Parameter: P_PPS_WINDOW_SIZE Id: 902 Index: 18 Type: UINT8 Min: 1 Max: 5 Default: 5 Value: 5 Operator: Check Range/Write NVM/Read Only/
123	Parm DB Help	Prints all parameter data base indexes and their associated name for a given <type>	a 123 <type>, where <type> = UINT8, UINT16, UINT32, SINT8, SINT16, SINT32 and STRING	Example of a 'UINT8' parameter (partial list shown) 135 P_PSTN_PASSWORD_VERIFY 139 P_GPS_BAUD_RATE 140 P_FPSP_BAUD_RATE 185 P_PEND_CUSTOMER_WARP 191 P_GPS_MASK_ANGLE_DEGREES 213 P_MPIF_BAUD_RATE 345 P_OPP_GROUP_WRITE_STATUS 346 P_OPP_GROUP_COMMIT 347 P_OPP_GROUP_WRITE_MODE
140	Test ADPCM Training (Version 1.2.1+)	Test training on various DSPs	a 140 x (where x is 0,1,2,3)	Requests training on one of the 4 DSPs(0,1,2, or 3). The first byte of the returned message will display 00, if training request was successful Used for Development Testing Only.
141	Enable/Disable ADPCM Training (Version 1.2.1+)	Disables/Enabled ADPCM Training	a 141 x (x=0, disables training, x=1, enables training)	This command enables and disables training for testing purposes. Training is enabled by default after powerup reset. If training is disabled, it will be re-enabled after a reset, or after the "enable" command is sent. Used for Development Testing Only.

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Table 1: Supported FIPS Action Commands

Action	Name	Description	Usage	Response
176	Transmit Test Data Start	Initiate transmission of canned data to the OCM.	a 176 m p1 p2 p3 p4 r d s f m = modulation type 0 = FM 1 = AM; p1 = subchan 1 pattern p2 = subchan 2 pattern p3 = subchan 3 pattern p4 = subchan 4 pattern For AM 0 = disabled 2 = random AM data 4 = Random/1 sideband training 5 = Random/2 sidebands training For FM 0 = disabled 1 = A Pattern 2 = B Pattern 3 = C Pattern 4 = D pattern 5 = Big comma 6 = Little comma 7 = Staircase 8 = random; r = repetition rate 0 - 128 frames; d = # of data blocks per frame (n/a for AM) 1- 11; s = bit rate of data (n/a for AM) 5 = 6400 bps 4 = 3200 bps 2 = 1600 bps-2 lvl fsk only f = FSK, 1 = 4-level 0 = 2-level	BCM stops transmission of normal paging traffic and begins sending data across the Plug-n-Play interface. Station begins transmitting data based on arguments passed to "a 176".

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Table 1: Supported FIPS Action Commands

Action	Name	Description	Usage	Response
177	Transmit Test Data Stop	Stop transmission of canned data to the OCM.	a 177	BCM stops sending data across the Plug-n-Play interface. Station stops transmitting data. NOTE: Transmission of data may immediately begin due to PDM's arriving at the network interface; i.e. normal paging traffic.
192	Start Debug Trace	Initiate trace to be displayed via FIPS.	a 192 <TASK> <FLAG> TASK = pSOS Task Name GPSC, PCM, SASM	FIPS terminal begins displaying information captured by software. a 192 GPSC 8: Monitor GPS initialization a 192 PCRM 4: Monitor PDMs information a 192 SASM 34: Monitor Sync and Simulcast
193	Stop Debug Trace	Stop the trace via FIPs	FLAG = Trace to disable	a 193 GPSC 8 a 193 PCRM 4
194	Probe Mode	Puts RFB back into Probe mode. This will cause the RFB to cease normal operation	a 194	Probe should come up on probe port.
195	Set Subchannel Offsets	Set the offset of the subchannels relative to the center frequency.	a 195 o1 o2 o3 o4 o1 = subchannel offset 1 o2 = subchannel offset 2 o3 = subchannel offset 3 o4 = subchannel offset 4 Range 0 - 15	
196	Set Tx Frequencies	Set center frequency to one of 16 possible values.	a 196 f f = 0 - 15	
198	Set/Reset OCM Parameters Writeable Flag	Set or reset the OCM Parameters Writeable Flag on the RF-O! via the PnP Maintenance Path.	a 198 Y (Set) a 198 N (Reset)	Successful or Failed assertion.

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Table 1: Supported FIPS Action Commands

Action	Name	Description	Usage	Response
200	GPS Report Latitude	Report current latitude in msec.	a 200	Motorola: Latitude: xxx msec Trimble: Latitude: xx radians, xx msec
201	GPS Report Longitude	Report current longitude in msec.	a 201	Motorola: Longitude: xxx msec Trimble: Longitude: xx radians, xx msec
202	GPS Report Height	Report current height in msec.	a 202	Motorola: Height: xxx cm(ellipsoid), xx cm (msl) Trimble: Height: xx meters, xx cm
203	GPS Report xDOP Types		a 203	Motorola: xDOP Type= ???? Trimble: Trimble supports.....
204	GPS Report xDOP Values		a 204	Motorola: xDOP Value: xxx Trimble: PDOP mask= xxxx
205	GPS Report Height Reference		a 205	Motorola: ?????? Reference Trimble: Height Reference: ????????
206	GPS Report Position Reference		a 206	Motorola: Position Reference: ?????????? Trimble: Position Reference: ??????????
207	GPS Report Application Type		a 207	Motorola: Application Reference: ??????????? Trimble: Application Type: ????????????

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Table 1: Supported FIPS Action Commands

Action	Name	Description	Usage	Response
208	GPS Report Position Status	Report time, position, velocity, geometry, satellite visibility and tracking status.	a 208	<p>MOTOROLA GPS:</p> <p>Almanac: Data transmitted by GPS satellites which include orbit information on all the satellites.</p> <p>Visible Satellites: Satellites listed in the almanac - range 0..12</p> <p>Tracked Satellites: - range 0..8 for an 8 Channel receiver Satellites that are good enough to be used by the GPS receiver to compute a position fix, which is latitude, longitude, height, time. Note that we are talking channel-6 language, so we can only showup to 6 channels in the FIPS command.</p> <p>Note: If the almanac is bad, we may have an occasion where the number of visible satellites is 0, but number of tracked satellites is 3. This means that there is not enough info about the satellites in the almanac, and the receiver will then at random pick some satellites and tries to track those. This may or may not result in a position fix, or "tracking". If the almanac is OK, the number of tracked satellites is a subset of the number of visible satellites.</p> <p>eters)</p> <p>Receiver Status: There are 8 bits:</p> <ul style="list-style-type: none"> bit 7 (msb): Position propagate mode bit 6 : Poor geometry (DOP > 20) bit 5 : 3D fix bit 4 : 2D fix bit 3: : Acquireing satellites/position hold bit 2 : Differential bit 1 : Insufficient visible satellites (< 3) bit 0 : Bad Almanac

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Table 1: Supported FIPS Action Commands

Action	Name	Description	Usage	Response
208 cont'd	GPS Report Position Status			<p>ID: Satellite ID - range from 0 .. 37</p> <p>Mode: Channel tracking mode - range from 0 ..8</p> <ul style="list-style-type: none"> 0 - Code search 1 - Code acquire 2 - AGC set 3 - Freq acquire 4 - Bit sync detected 5 - Message sync detected 6 - Satellite time avail 7 - Ephemeris acquire 8 - Avail for position fix <p>SS: Signal Strength - range from 0 .. 255 A good signal strength is between 80..140. If Channel mode is 0, signal strength is meaningless.</p> <p>Channel Status: There are 8 bits:</p> <ul style="list-style-type: none"> bit 7 (msb): Using for position fix bit 6 : Satellite momentum alert flag set bit 5 : Satellite anti spoof flag set bit 4 : Satellite unhealthy bit 3: : Satellite inaccurate (>16 meters) bit 2,bit 1: Spare <p>TRIMBLE GPS: # tracked Satelliltes Health of GPS Receiver:</p>
209	GPS Report Satellite Status		a 209	<p>Motorola: Status / Health</p> <p>Trimble: # of Visible Satellite List</p>
210	GPS Report xDOP Status		a 210	<p>Motorola: N-IN-View or Best-4</p> <p>Trimble: Mode: # Satellite</p>
211	GPS Report Almanac Status		a 211	<p>Motorola: Almanac Status</p> <p>Trimble: Almanac Status NOT Supported</p>

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Table 1: Supported FIPS Action Commands

Action	Name	Description	Usage	Response
212	GPS Report Receiver ID		a 212	Motorola: COPYRIGHT 1991-1995 Motorola Inc. Trimble: Trimble Navigation - Pathfinder Basic
213	GPS Report Position Hold		a 213	Motorola: Position-Hold: ?????????? Trimble: Position Hold Not Supported
214	GPS Report Date		a 214	Date : mm/dd/yyyy
215	GPS Report Time		a 215	Time: HH:MM:SS
218	GPS_PERFORM_SELF_TEST		a 218	Motorola: Results: Trimble: Not Supported
300	Display TFTP Configuration	Displays the tftp parameters configurations	a 300	Current tftp parameter configuration: TFTP server IP address: 199.4.70.10 remote file name : test.fil Commands to procede further: a 310 to start download to RFB a 312 to switch over to dormant bank a 301 xx.xx.xx.xx to set TFTP Server IP address a 302 file name to set TFTP download file NOTE: 8 characters MAXimum
301	Set TFTP IP Address	Sets the TFTP server IP address	a 301 xx.xx.xx.xx	MUST BE SET AT INSTALLTION
302	Set TFTP File Name	Sets the download file name for TFTP server. NOTE: 8 character name maximum	a 302 <filename>	
310	Start RFB Remote Software Download	Starts the remote download to the RFB	a 310	LED starts to flash during the burning of the flash.
311	Start RFO Remote Software Download	Starts the remote download to the RFO	a 311	None

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Table 1: Supported FIPS Action Commands

Action	Name	Description	Usage	Response
312	Flash Bank Switch	Switch to the dormant Flash bank	a 312	None

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Table 2: Supported Parameters

Param ID	Name	Description	Usage	Range	Default
50	FIPS Port Number	Reads/sets the remote FIPS Port Number	r 50 w 50 <value>	0 - 65535	20000
55	OPP Port Number	Reads/sets the UDP Port Number	r 55 w 55 <value>	0 - 65535	12000
99	Paging Access Disabled	Parameter to show paging enabled or disabled: 1= Disabled , 0 = Enabled	r 99 w 99 <value>	“0”= Enabled “1” = Disabled	None
136	FIPS timeout	FIPS inactivity timeout value in seconds	r 136 w 136 <value>	60 - 3600	300
148	Active Bank Software Version	Reads the active bank software version	r 148	?	?
139	FPSP Baud rate	Reads/sets FIPS serial port connection baud rate	r 139 w 139 <value>	1200 = 1, 2400 = 2, 4800 = 3, 9600 = 4, 19.2K = 5, 38K = 6, 57K = 7, 115K = 8,	9600 = 4
140	GPS Baud rate	Reads/sets GPS baud rate	r 140 w 140 <value>	1200 = 1, 2400 = 2, 4800 = 3, 9600 = 4, 19.2K = 5, 38K = 6, 57K = 7, 115K = 8,	9600 = 4
152	Dormant Bank Software Version	Reads the dormant bank software version	r 152	?	?

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Table 2: Supported Parameters

Param ID	Name	Description	Usage	Range	Default
154	MIB version	Reads the current MIB version number	r 154	?	None
155	Hardware Serial Number	Storage string for serial number	r 155 w 155 <value>	?	None
185	Pendulum Warp Value	Programmable Pendulum Warp <i>WARNING: This parameter intended for Lab/ Development use only!</i>	r 185 w 185 <value>	0 - 215	110
194	GPS Latitude	Parameter used to set a predetermined latitude value for use by the GPS receiver.	r 194 w 194 <value>	-324000000 324000000	118234479
195	GPS LongitudeE	Parameter used to set a predetermined longitude value for use by the GPS receiver.	r 195 w 195 <value>	-648000000 648000000	-350254697
196	GPS Height	Parameter used to set a predetermined height value for use by the GPS receiver.	r 196 w 196 <value>	-100000 1800000	20533
198	GPS 1 PPS Cable Delay	Parameter used to offset the 1 PPS pulse to compensate for antenna cable delay.	r 198 w 198 <value>	0 - 999,999 (ns)	0
213	MPIF Baud Rate	Reads/sets maintenance path baud rate	r 213 w 213 <value>	1200 = 1, 2400 = 2, 4800 = 3, 9600 = 4, 19.2K = 5, 38K = 6, 57K = 7, 115K = 8,	9600 = 4

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Table 2: Supported Parameters

Param ID	Name	Description	Usage	Range	Default
346	OPP Multicast Group Commit Flag	Reads/Sets the OPP Multicast Group Commit Flag. If "Group Write Mode" (FIPS Param 347) is set to '1' (Direct Write Mode), setting this flag has no effect. If "Group Write Mode" is set to '0' (Gated Write Mode), setting this flag updates the contents of the <i>entire</i> OPP Multicast Configuration Table to the Active Table.	r 346 (Read) w 346 1 (Group Commit)		0
347	OPP Multicast Group Write Mode	Reads/Sets the OPP Multicast Group Write Mode.	r 347 (Read) w 347 <mode>	0 = Gated Write Mode 1 = Direct Write Mode	0
430	Dormant download status	Software download status of the dormant bank	r 430	0 = fail 1 = pass	0 = fail
500	SNMP Address0	Network address of SNMP manager 0.	r 500 w 500 <xxx.xxx.xxx.xxx>		0
501	SNMP Address1	Network address of SNMP manager 1.	r 501 w 501 <xxx.xxx.xxx.xxx>		0
502	SNMP Address2	Network address of SNMP manager 2.	r 502 w 502 <xxx.xxx.xxx.xxx>		0
503	SNMP Address3	Network address of SNMP manager 3.	r 503 w 503 <xxx.xxx.xxx.xxx>		0
504	SNMP Address4	Network address of SNMP manager 4.	r 504 w 504 <xxx.xxx.xxx.xxx>		0
600	Frequency Change Delay	Reads frequency change delay <i>PnP value, should not be overwritten</i>	r 600	0 -999999	0

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Table 2: Supported Parameters

Param ID	Name	Description	Usage	Range	Default
601	Key up Delay	Reads transmitter key up delay <i>PnP value, should not be overwritten</i>	r 601	0 - 999999	0
602	Workahead Time	Reads Minimum workahead time <i>PnP value, should not be overwritten</i>	r 602	0 - 999999	30000
603	Workahead Window Width	Reads Workahead Window Width <i>PnP value, should not be overwritten</i>	r 603	0 - 999999	50000
703	Paging Protocol Supported	Parameter to determine which protocol will be decoded in the RFB.	r 703 w 703 <value>	1 = OPP 2 = CNET (CNET not supported)	1 = OPP
704	Transmitter Color Code	Parameter used to set InFLEXion protocol's "transmitter color code" in outbound control information.	r 704 w 704 <value>	0 - 65535	21845
705	Network IP Address	Parameter used to set IP address of RFB	r 705 w 705 <x.x.x.x>	where each x = 0 - 255	0.0.0.0
706	Sub-Network Mask	Parameter used to set IP sub-network mask of RFB	r 706 w 706 <x.x.x.x>	where each x = 0 - \$FF	0.0.0.0
707	User Password	Password used to access FIPS	r 707 w 707 <value>	<string>	6000
708	Gateway Address	Default gateway address	r 708 w 708 <x.x.x.x>	where each x = 0 - 255	0.0.0.0
800	UHSO Steering	Value used to steer the UHSO frequency - higher values result in lower frequencies.	r 800 w 800 <value>	0 - 4095	2047
801	FREERUN timeout	Length of time in minutes that RF-B will remain in FREERUN state before shutdown.	r 801 w 801 <value>	15 -200	96

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Table 2: Supported Parameters

Param ID	Name	Description	Usage	Range	Default
899	Dip 2 Setting	Stores the a 117 parameter	N/A - temporary storage	N/A	0
901	Active FLASH Bank	Active Software FLASH	r 901	1 = Bank A 2 = Bank B	1 = Bank A
930	GPS Access Disabled	Parameter used to enable/disable GPS synchronization.	r 930 w 930 <value>	0 = Enabled 1 = Disabled, when Disabled, the BCM will inhibit paging.	0 = Enabled