AVCOM of VA

Text-based API

This document outlines all the commands of the text-based API. Note this is also the output of the help command (*H?) if using a terminal.

LBR products:

Interface	Baud Rate
USB	115200
RS232	115200
RS232 (Data-stream)	115200
RS422	115200

Text API Version: 5.1
This is the list of all functions and how to use them:

All returns start with the start character '$', followed by the cmd received.
 Then a comma followed by 3 char error code (except for streaming) based on the sbs2api error codes.
 If the command has data to return it will be comma separated after the error code.
 All returns include a carriage return followed by a line feed.
Example:
	COMMAND:	BR:CFREQ?\r\n
	RESPONSE:	$BR:CFREQ?,000,1505000000\r\n

Basic Functions:

Command:	Description:
*H?	print help/usage information
*IDN?	get the unit information in the following format: UnitName,ModelNumber,ProductID,HardwareVersion,BOMVersion, SerialNumber,FirmwareVersion
*RST?	reset br settings to default
*REBOOT?	reboot the unit
*VERSION?	get text based api version
*TEMPERATURE?	get current temperature(degC)

Data Functions:

Command:	Description:
DATA:SA?	TODO
DATA:ZERO?	TODO
DATA:BR?	get basic br outputs in format: LockStatus,Voltage(V)
DATA:BR:OUTPUT?	get br outputs in format: Version,LockStatus,CurrentCN0(dB-Hz),LockCN0(dB-Hz), CurrentPower(dBm),LockPower(dBm),FreqDrift(Hz),Voltage(V),RawPeakPower(dBm)
DATA:BR:SWEEP?	get br outputs with a sweep, format: is output of DATA:BR:SWEEP? followed by: ,InputIndex,RBW(Hz),VBW(Hz),RefLvl(dBm),SampleRate,NumOfPoints, StartFreq(Hz),StopFreq(Hz),FreqStep(Hz),CenterFreq(Hz),Span(Hz), PowerData[0](dBm),...continuedForNumOfPoints

Streaming Outputs:

Response:	Description:
ST	stream br output data if enabled and br is running, every br cycle based on update rate, in the following format (note no error code): $ST,(BR:SERIALSTREAM),OutputData

	Streaming Outputs Formats (based on current BR:SERIALSTREAM):
	  $ST,1,Lock(0 or 1),CurrentVoltage(V)
	  $ST,2,Lock(0 or 1),CurrentCN0(dB-Hz)
	  $ST,3,Lock(0 or 1),CurrentPower(dBm)
	  $ST,4,Lock(0 or 1),CurrentRawPower(dBm)
	  $ST,5,Lock(0 or 1),CurrentVoltage(V),CurrentCN0(dB-Hz),CurrentPower(dBm),CurrentRawPower(dBm)

List and Limit Functions:

Command:	Description:
LIST:LIMITS?	get all limits (see individual commands for details)
LIST:SA:SETTINGS?	get all sa current settings (see individual commands for details)
LIST:BR:SETTINGS?	get all br current settings (see individual commands for details)
LIST:INPUT?	get input options in format: NumOfInputs,n(InputIndex),InputName[n],MinFreq[n](MHz),MaxFreq[n](MHz), MaxPower[n](dBm),MinRefLvl[n](dBm),MaxRefLvl[n](dBm),...RepeatForNumOfInputs
LIST:RBW?	get RBW options in format: NumOfRBWs,rbwFreq[n](Hz),...RepeatForNumOfRBWs
LIST:VBW?	get VBW options in format: NumOfVBWs,vbwFreq[n](Hz),...RepeatForNumOfVBWs
LIST:SA?	get Unit has spectrum analyzer feature (0 disabled, 1 enabled)
LIST:BR?	get Unit has beacon receiver feature (0 disabled, 1 enabled)
LIST:BR:STATUS?	get br status options in format: NumOfBRStatus,n(BRStatusIndex),BRStatusName[n],...RepeatForNumOfBRStatus
LIST:BR:ALGORITHM?	get br algorithm options in format: NumOfBRAlgorithms,n(BRAlgorithmIndex),BRAlgorithmName[n], ...RepeatForNumOfBRAlgorithms
LIST:BR:LPF?	get br low pass filter options in format: NumOfLPFs,BRLPF[n](mHz),BRLPFName[n],...RepeatForNumOfLPFs
LIST:BR:TIMETOLOCK?	get br time to lock limits, format: MinTime(ms),MaxTime(ms)
LIST:BR:VOLTMODE?	get br voltage mode options in format: NumOfBRVoltModes,n(BRVoltModeIndex),BRVoltModeName[n],...RepeatForNumOfVoltModes

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        LIST:BR:REFPOWER?       get br reference power limits, format: MinPower(dBm),MaxPower(dBm)
        LIST:BR:REFPOWERMODE?   get br reference power mode options in format:
                                  NumOfBRRefPowerModes,n(BRRefPowerModeIndex),BRRefPowerModeName[n],
                                  ...RepeatForNumOfRefPowerModes
        LIST:BR:REFVOLTS?       get br reference voltage limits, format: MinRefVolts(V),MaxRefVolts(V)
        LIST:BR:SLOPE?          get br slope limits, format: MinSlope(V/dB),MaxSlope(V/dBm)
        LIST:BR:ACQBW?          get br acquisition Bandwidth limits, format: MinBW(kHz),MaxBW(kHz)
        LIST:BR:ACQCN0?         get br acquisition CN0 limits, format: MinCN0(dB-Hz),MaxCN0(dB-Hz)
        LIST:BR:TRACKBW?        get br tracking Bandwidth limits, format: MinBW(kHz),MaxBW(kHz)
        LIST:BR:TRACKCN0?       get br tracking CN0 limits, format: MinCN0(dB-Hz),MaxCN0(dB-Hz)
        LIST:BR:CEPTBW?         get br carrier edge power tracking bandwidth limits, format: MinBW(MHz),MaxBW(MHz)
        LIST:BR:LOCKPOL?        get br lock polarity options in format:
                                  NumOfBRLockPol,n(BRLockPolIndex),BRLockPolName[n],...RepeatForNumOfLockPol
        LIST:BR:UPDATERATE?     get br update rate options in format:
                                  NumOfBRUpdateRates,n(BRUpdateRateIndex),BRUpdateRateName[n],
                                  ...RepeatForNumOfUpdateRates
        LIST:BR:ENABLEBOOT?     get br enable on boot options in format:
                                  NumOfBREnableOnBoots,n(BREnableOnBootIndex),BREnableOnBootName[n],
                                  ...RepeatForNumOfEnableOnBoots
        LIST:BR:SERIALSTREAM?   get br serial stream options in format:
                                  NumOfBRSerialStreams,n(BRSerialStreamIndex),BRSerialStreamName[n],
                                  ...NumOfBRSerialStreams

Beacon Receiver (BR) Functions:
        Command:                Description:
        BR:STATUS?              get the br status (0 disabled, 1 enabled)
        BR:STATUS=#             set the br status (0 disabled, 1 enabled)
        BR:INPUT?               get the br input index
        BR:INPUT=#              set the br input index
        BR:CFREQ?               get the br center frequency in Hz
        BR:CFREQ=#              set the br center frequency in Hz
        BR:REFLVL?              get the br reference level in dBm
        BR:REFLVL=#             set the br reference level in dBm
        BR:ALGORITHM?           get the br tracking algorithm index
        BR:ALGORITHM=#          set the br tracking algorithm index
        BR:LPF?                 get the br low pass filter (LPF) cutoff frequency (Hz)
        BR:LPF=#                set the br low pass filter (LPF) cutoff frequency (Hz)
        BR:TIMETOLOCK?          get the br time to lock (ms)
        BR:TIMETOLOCK=#         set the br time to lock (ms)
        BR:VOLTMODE?            get the br voltage mode index
        BR:VOLTMODE=#           set the br voltage mode index
        BR:REFPOWER?            get the br reference power (dBm)
        BR:REFPOWER=#           set the br reference power (dBm)
        BR:REFPOWERMODE?        set the br reference power mode index
        BR:REFPOWERMODE=#       get the br reference power mode index
        BR:REFVOLTS?            get the br reference voltage (V)
        BR:REFVOLTS=#           set the br reference voltage (V)
        BR:SLOPE?               get the br slope (V/dB)
        BR:SLOPE=#              set the br slope (V/dB)
        BR:ACQBW?               get the br acquisition bandwidth (kHz)
        BR:ACQBW=#              set the br acquisition bandwidth (kHz)
        BR:ACQCN0?              get the br acquisition CN0 (dB-Hz)
        BR:ACQCN0=#             set the br acquisition CN0 (dB-Hz)
        BR:TRACKBW?             get the br tracking bandwidth (kHz)
        BR:TRACKBW=#            set the br tracking bandwidth (kHz)
        BR:TRACKCN0?            get the br tracking CN0 (dB-Hz)
        BR:TRACKCN0=#           set the br tracking CN0 (dB-Hz)
        BR:CEPTBW?              get the br carrier edge power tracking bandwidth (MHz)
        BR:CEPTBW=#             set the br carrier edge power tracking bandwidth (MHz)
        BR:LOCKPOL?             get the br lock polarity index
        BR:LOCKPOL=#            set the br lock polarity index
        BR:UPDATERATE?          get the br update rate index
        BR:UPDATERATE=#         set the br update rate index
        BR:ENABLEBOOT?          get the br enable on boot setting (0 disabled, 1 enabled)
        BR:ENABLEBOOT=#         set the br enable on boot setting (0 disabled, 1 enabled)
        BR:SERIALSTREAM?        get the br serial stream index
        BR:SERIALSTREAM=#       set the br serial stream index
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