TMYTEK API Reference Guide

Version 1.0.0

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TMYTEK INC.

Changelists

Date	Note
2022/11/16	First edition

Definition

1. API Return Code Definition

Return Code Name	Value	Description
OK	0	
WARNING	1	
ERROR	2	
NO RESPONSE	3	
ERROR_GET_SN	10	
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ERROR_INIT_OBJECT	12	
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ERROR_METHOD_NOT_FOUND	14	
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API Definition

[All] ScanningDevice

Signature

string[] ScanningDevice(DEV_SCAN_MODE scanMode)

Description

Scan the active devices to obtain its information including SN, IP, and device type.

Model support list

Model Name	Is_valid
UDBox	True
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
DEV_SCAN_MODE(int)	NORMAL	0
DEV_SCAN_MODE(int)	FAST	1
DEV_SCAN_MODE(int)	ETH_DISABLE (Based on calibration table)	2

Returns

Declaration type	Description	Values
string[]	Each device includes SN, IP and	[

	device type	“SN1, IP1, Device_Type1”, “SN2, IP2, Device_Type2”]

i.e. [“SN1, IP1, Device_Type1”,“SN2, IP2, Device_Type2”,...]

[All] Init

Signature

retCode Init(string sn)
retCode Init(string sn, int idx)
retCode Init(string sn, int dev_type, int idx)

Description

Initialize device mode and device settings

Model support list

Model Name	Is_valid
UDBox	True
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
string	sn	“D2104L001-28”
int	dev_type	Deprecated parameters
int	idx	Deprecated parameters

Returns

Declaration type	Description	Values
retCode (int)	OK	0
retCode (int)	ERROR	2
retCode (int)	ERROR_DEV_TYPE	11
retCode (int)	ERROR_INIT_OBJECT	12
retCode (int)	ERROR_DEV_NOT_INIT	13
retCode (int)	ERROR_NETWORK_NOT_INIT	20
retCode (int)	ERROR_NETWORK_INIT	21
retCode (int)	ERROR_NETWORK_CONNECT_TIMEOUT	22
retCode (int)	ERROR_DISCONNECT	23
retCode (int)	ERROR_SOCKET	24
retCode (int)	ERROR_SEND_CMD	25
retCode (int)	ERROR_RESP_CMD	26
retCode (int)	ERROR_DEV_COUNT_ZERO	27

[All] DeInit

Signature

retCode DeInit(string sn)

Description

De-initialize device instance and remove connection

Model support list

Model Name	Is_valid
UDBox	True
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True

BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
retCode(int)	OK	0
retCode(int)	ERROR	2

[BBox Series] checkCaliTableLocation

Signature

bool checkCaliTableLocation(string sn)

Description

Check if the calibration table exists or not with the specific sn.

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True

BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
Bool	Calibration table exists	True
Bool	Calibration table does not exist	False

[BBox Series] getFrequencyList

Signature

string[] getFrequencyList(string sn)

Description

Get supported frequency points list from calibration table with the specific sn

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True

BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
string[]	frequency point(double) in string format array	[“26.5”,”27”,”27.5”,”28”]

[All] Query_API_Version

Signature

public string Query_API_Version(string sn)

Description

Get API (BBoxAPI.dll) Version

Model support list

Model Name	Is_valid
UDBox	True
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
string	Device SN	“D2014L001-28”

Returns

Declaration type	Description	Values
string	API version	“v3.3.12”

[All] QueryFWV

Signature

string QueryFWV(string sn)

Description

Get Device Firmware Version

Model support list

Model Name	Is_valid
UDBox	True
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters

string	Device SN	“D2014L001-28”

Returns

Declaration type	Description	Values
string	Device Firmware version	“v1.2.10”

[BBox Series] Query_Calibration_Version

Signature

string Query_Calibration_Version(string sn)

Description

Get Calibration method Version

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
string	Device SN	“D2014L001-28”

Returns

Declaration type	Description	Values

string	Calibration Method Version	“2.0.0”

[BBox Series] getOperatingFreq

Signature

double getOperatingFreq(string sn)

Description

Get current frequency point in calibration table with the specific sn

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
double	Frequecny Point	27.5

[BBox Series] setOperatingFreq

Signature

retCode setOperatingFreq(double freq, string sn)

Description

Load the calibration table with the specific SN and frequency point.

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
double	Frequency point	27.5
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
retCode(int)	OK	0
retCode(int)	ERROR	2

[BBox Series] getDR

Signature

double[,] getDR(string sn)

Description

Get current TX/RX dynamic range with the specific sn from calibration table

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
double	[[TX_MIN_GAIN, TX_MAX_GAIN], [RX_MIN_GAIN, RX_MAX_GAIN]]	[[0, 15], [-2, 9.5]]

[BBox 5G Series] getCOMDR

Signature

double[,] getCOMDR(string sn)

Description

Get current TX/RX board common-arm dynamic range with the specific sn from calibration table

Model support list

Model Name	Is_valid
UDBox	**False**
BBox One 28GHz	**False**
BBoard 5G 28GHz	**True**
BBoard 5G 39GHz	**True**
BBox Lite 5G 28GHz	**True**
BBox Lite 5G 39GHz	**True**
BBox One 5G 26GHz	**True**
BBox One 5G 28GHz	**True**
BBox One 5G 39GHz	**True**

Parameters

Declaration type	Description	Parameters
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
double	[[TX_COM_MIN_GAIN, TX_COM_MAX_GAIN], [RX_COM_MIN_GAIN, RX_COM_MAX_GAIN]]	[[0, 4], [-1, 2]]

[BBox 5G Series] getELEDR

Signature

double[,] getELEDR(string sn)

Description

Get current TX/RX board element-arm dynamic range with the specific sn from calibration table

Model support list

Model Name	Is_valid
UDBox	**False**
BBox One 28GHz	**False**
BBoard 5G 28GHz	**True**
BBoard 5G 39GHz	**True**
BBox Lite 5G 28GHz	**True**
BBox Lite 5G 39GHz	**True**
BBox One 5G 26GHz	**True**
BBox One 5G 28GHz	**True**
BBox One 5G 39GHz	**True**

Parameters

Declaration type	Description	Parameters
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
double	[[TX_ELEMENT_GAIN, TX_ELEMENT_GAIN]]	[[3, 2]]

[BBox Series] getAAKitList

Signature

string[] getAAKitList(string sn)

Description

Get AAKit name string array from aakit table

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
string[]	AAKIT NAME Array	[“TMYTEK_C2104”, “TMYTEK_C2105”,]

[BBox Series] getAAKitInfo

Signature

double[] getAAKitInfo(string kitName, string sn)

Description

Get AAKit information by aakit name and sn

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
string	AAkit Name	“TMYTEK_C2104”
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
double[]	Double array contains [Device type, Type, Spacing, Steering_H, Steering_V, Offset_TX, Offset_RX]	[Device type, Type, Spacing, Steering_H, Steering_V, Offset_TX, Offset_RX]

[BBox Series] setAAKitInfo

Signature

retCode setAAKitInfo(string kitName, int dev_type, int c_type, double[] sp, double[] sh, double[] sv, int[] otx, int[] orx, string sn)

Description

Set AAKit information with its parameters

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
string	AAkit Name	“TMYTEK_C2104”
int	Device type	7
int	Type	1
double[]	Spacing	[5,5]
double[]	Steering_H	[-45,45]
double[]	Steering_V	[0,0]
int[]	TX offset	[0,0,0,0]
int[]	RX offset	[0,0,0,0]
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
retCode(int)	OK	0
retCode(int)	ERROR	2

[BBox Series] deleteAAKitInfo

Signature

retCode deleteAAKitInfo(string kitName, string sn)

Description

Delete AAKit information by aakitname and sn

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
string	AAkit Name	“TMYTEK_C2104”
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
retCode(int)	OK	0
retCode(int)	ERROR	2

[BBox Series] saveAAkitFile

Signature

retCode saveAAkitFile(string kitName, string sn)

Description

Save AAkit file with AAkit name

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
string	AAkit Name	“TMYTEK_C2104”
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
retCode(int)	OK	0
retCode(int)	ERROR	2

[BBox Series] selectAAKit

Signature

retCode selectAAKit(string AAKitName, string sn)

Description

Set operating AAkit by AAKitName for device with sn

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
string	AAKitName	“TMYTEK_C2104”
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
retCode(int)	OK	0
retCode(int)	ERROR	2

[BBox Series] getTxRxMode

Signature

void getTxRxMode(string sn)

Description

Get Device Operating Mode

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
int	Standby Mode	0
int	TX Mode	1
int	RX Mode	2
int	Sleep Mode	3

[BBox 5G Series] Get_Fast_Parallel_Mode_Status

Signature

bool Get_Fast_Parallel_Mode_Status(string sn)

Description

Get fast parallel mode and external SPI status

Model support list

Model Name	Is_valid
UDBox	**False**
BBox One 28GHz	**False**
BBoard 5G 28GHz	**True**
BBoard 5G 39GHz	**True**
BBox Lite 5G 28GHz	**True**
BBox Lite 5G 39GHz	**True**
BBox One 5G 26GHz	**True**
BBox One 5G 28GHz	**True**
BBox One 5G 39GHz	**True**

Parameters

Declaration type	Description	Parameters
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
bool	Fast parallel mode and external SPI enable	true
bool	Fast parallel mode and external SPI disable	false

[BBox 5G Series] Set_Fast_Parallel_Mode

Signature

retCode Set_Fast_Parallel_Mode(bool en, string sn)

Description

Set fast parallel mode and external SPI enable or not.

The external SPI interface is for FPGA or other MCU development boards.

The SCPI command and API control will be disabled when external SPI is on.
All control from API or SCPI will get an error code from the firmware ethernet response.

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	False
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
bool	Enable	True , False
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
retCode(int)	OK	0
retCode(int)	ERROR	2

[BBox Series] SwitchTxRxMode

Signature

retCode SwitchTxRxMode(int mode, string sn)

Description

Set Device operating mode

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
int	Standby Mode	0
int	TX Mode	1
int	RX Mode	2
int	Sleep Mode	3

Declaration type	Description	Parameters
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
retCode(int)	OK	0
retCode(int)	ERROR	2

[BBox Series] switchChannelPower

Signature

string switchChannelPower(int board, int ch, int sw, string sn)

Description

Turn on/off the specific channel power with device sn

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
int	Board number	1 (start value)
int	Channel number	1 (start value)
int	ON/OFF value	0 (On) , 1 (Off)
string	Device SN	“D2104L001-28”

Returns

Declaration type	Param Description	Values
string	OK	“OK”
string	ERROR	“ERROR”

[BBox Series] setChannelGainPhase

Signature

string setChannelGainPhase(int board, int ch, double db, int deg, string sn)

Description

Set Gain and Phase setting in the specific channel

Model support list

Model Name	Is_valid
UDBox	**False**
BBox One 28GHz	**True**
BBoard 5G 28GHz	**True**
BBoard 5G 39GHz	**True**
BBox Lite 5G 28GHz	**True**
BBox Lite 5G 39GHz	**True**
BBox One 5G 26GHz	**True**
BBox One 5G 28GHz	**True**
BBox One 5G 39GHz	**True**

Parameters

Declaration type	Description	Parameters
int	Board number	1 (start value)
int	Channel number	1 (start value)
double	Gain db	Dynamic range
int	Phase deg	0 - 355
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
string	OK	“OK”
string	ERROR	“ERROR”

[BBox Series] setAllChannelGain

Signature

retCode setAllChannelGain(int board, double ch1_db,double ch2_db,double ch3_db, double ch4_db, string sn)

Description

Set four channel Gain settings in the specific board

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
int	Board number	1 (start value)
double	Channel 1 gain settings	3.5
double	Channel 2 gain settings	3.5
double	Channel 3 gain settings	3.5
double	Channel 4 gain settings	3.5
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
retCode(int)	OK	0

retCode(int)	ERRO	2

[BBox Series] setBeamAngle

Signature

retCode setBeamAngle(double db,int theta, int phi, string sn)

Description

Set the specific beam angle with (db, theta,phi) for device with sn

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
double	Gain Settings	Dynamic range
int	Theta	0 - 45
int	Phi	BBoxOne : 0 - 359 BBoxLite : 0 or 180
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values

retCode(int)	OK	0
retCode(int)	ERRO	2

[BBox Series] readBeamGainValues

Signature

double[,] readBeamGainValues(string sn)

Description

Read all channel gain settings with current mode

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
double[,]	All channel gain settings	[[3.5,4,3.5,4]]

[BBox Series] readBeamPhaseValues

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Signature

int[,] readBeamPhaseValues(string sn)

Description

Read all channel phase settings with current mode

Parameters

Declaration type	Description	Parameters
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
int[,]	All channel phase settings	[[45,60,75.90]]

[BBox 5G Series] ReadChannelSwitchValues

Signature

int[,] ReadChannelSwitchValues(int mode, string sn)

Description

Read all channel On/OFF settings by the specific mode

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
int	TX Mode	1
int	RX Mode	2
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
int[,]	All channel ON/OFF settings	[[0,0,0,1]]

[All] Query_Static_IP

Signature

string Query_Static_IP(string sn)

Description

Get device static IP settings

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
string	Static IP address	“192.168.100.111”

[All] setStaticIP

Signature

retCode setStaticIP(string ip, string sn)

Description

Set device static IPsettings

Model support list

Model Name	Is_valid
UDBox	True
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
string	Static IP settings	“192.168.100.111”
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
retCode(int)	OK	0
retCode(int)	ERROR	2

[All] Reboot

Signature

retCode Reboot(string sn)

Description

System reboot

Required time is 15 seconds

Model support list

Model Name	Is_valid
UDBox	True
BBox One 28GHz	True
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
retCode(int)	OK	0
retCode(int)	ERROR	2

[BBox Series] get_TC_Status

Signature

void get_TC_Status(string sn)

Description

Get dynamic temperature compensation status

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	False
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
N/A	N/A	N/A

[BBox 5G Series] Get_BeamPattern_Config_by_ID

Signature

string Get_BeamPattern_Config_by_ID(int beamId, int mode, string sn)

Description

Get Beam Pattern config by BeamId

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	False

BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
int	BeamId	1 - 64
int	mode	1 - Tx, 2 - RX
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
string	BeamPattern in json format	“”

[BBox 5G Series] Set_BeamPattern_Config

Signature

retCode Set_BeamPattern_Config(int beamId, int mode, double db, int theta, int phi, string sn)

Description

Set device beam pattern with beamId, mode, db, theta and phi

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	False
BBoard 5G 28GHz	True

BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
int	beamId	1 - 64
int	mode	1 - TX, 2 - RX
double	db(In dynamic range)	7.5
int	theta	15
int	phi	180
string	Device SN	“D2104L001-28”

Returns

Declaration type	Description	Values
retCode	OK	0
retCode	ERROR	2

[BBox 5G Series] getTemperatureADC

Signature

int[] getTemperatureADC(string sn)

Description

Get Device RF board temperature adc value

Model support list

Model Name	Is_valid

UDBox	**False**
BBox One 28GHz	**False**
BBoard 5G 28GHz	**True**
BBoard 5G 28GHz	**True**
BBoard 5G 39GHz	**True**
BBox Lite 5G 28GHz	**True**
BBox Lite 5G 39GHz	**True**
BBox One 5G 28GHz	**True**
BBox One 5G 39GHz	**True**

Parameters

Declaration type	Description	Parameters
string	Device SN	“D2104L001-28“

Returns

Declaration type	Description	Values
int[]	BBoard ADC [Board1_ADC]	[34]
int[]	BBoxLite ADC [Board1_ADC]	[34]
int[]	BBoxOne ADC [Board1_ADC,Board2_ADC,Board3_ADC,Board4_ADC,]	[34,34,34,34]

[BBox 5G Series] Get_Gain_Control_Step

Signature

int[,] Get_Gain_Control(int mode, string sn)

Description

Get device current gain step settings

Model support list

Model Name	Is_valid
UDBox	False
BBox One 28GHz	False
BBoard 5G 28GHz	True
BBoard 5G 39GHz	True
BBox Lite 5G 28GHz	True
BBox Lite 5G 39GHz	True
BBox One 5G 26GHz	True
BBox One 5G 28GHz	True
BBox One 5G 39GHz	True

Parameters

Declaration type	Description	Parameters
int	mode	1 - TX , 2 - RX
string	sn	“D2104E001-28”

Returns

Declaration type	Description	Values
int[,]	Channel gain step settings	0 - 15

- **BBoxLite/BBoard TMYTEK Mark 朝上**

Board1 Com : **Gain_Step[0,4]**		**CH4 :** **Gain_Step[0,3]** **Phase_Step[0,3]**	**CH3 :** **Gain_Step[0,2]** **Phase_Step[0,2]**	**CH2 :** **Gain_Step[0,1]** **Phase_Step[0,1]**	**CH1 :** **Gain_Step[0,0]** **Phase_Step[0,0]**

- **BBoxOne TMYTEK Mark 朝上**

Board1 Com : **Gain_Step[3,4]**		**CH4 :** **Gain_Step[3,3]** **Phase_Step[3,3]**	**CH3 :** **Gain_Step[3,2]** **Phase_Step[3,2]**	**CH2 :** **Gain_Step[3,1]** **Phase_Step[3,1]**	**CH1 :** **Gain_Step[3,0]** **Phase_Step[3,0]**

Board2 Com : **Gain_Step[2,4]**		**CH8 :** **Gain_Step[2,3]** **Phase_Step[2,3]**	**CH7 :** **Gain_Step[2,2]** **Phase_Step[2,2]**	**CH6 :** **Gain_Step[2,1]** **Phase_Step[2,1]**	**CH5 :** **Gain_Step[2,0]** **Phase_Step[2,0]**
Board3 Com : **Gain_Step[1,4]**		**CH12 :** **Gain_Step[1,3]** **Phase_Step[1,3]**	**CH11 :** **Gain_Step[1,2]** **Phase_Step[1,2]**	**CH10 :** **Gain_Step[1,1]** **Phase_Step[1,1]**	**CH9 :** **Gain_Step[1,0]** **Phase_Step[1,0]**
Board4 Com : **Gain_Step[0,4]**		**CH16 :** **Gain_Step[0,3]** **Phase_Step[0,3]**	**CH15 :** **Gain_Step[0,2]** **Phase_Step[0,2]**	**CH14 :** **Gain_Step[0,1]** **Phase_Step[0,1]**	**CH13 :** **Gain_Step[0,0]** **Phase_Step[0,0]**

[BBox 5G Series] Get_Phase_Control_Step

Signature

int[,] Get_Phase_Control(int mode, string sn)

Description

Get device current phase step settings

Model support list

Model Name	Is_valid
UDBox	**False**
BBox One 28GHz	**False**
BBoard 5G 28GHz	**True**
BBoard 5G 39GHz	**True**
BBox Lite 5G 28GHz	**True**
BBox Lite 5G 39GHz	**True**
BBox One 5G 26GHz	**True**
BBox One 5G 28GHz	**True**
BBox One 5G 39GHz	**True**

Parameters

Declaration type	Description	Parameters

int	mode	1 - TX , 2 - RX
string	sn	“D2104E001-28”

Returns

Declaration type	Description	Values
int[,]	Channel phase step settings	0 - 63

- **BBoxLite/BBoard TMYTEK Mark 朝上**

Board1 Com : **Gain_Step[0,4]**		**CH4 :** **Gain_Step[0,3]** **Phase_Step[0,3]**	**CH3 :** **Gain_Step[0,2]** **Phase_Step[0,2]**	**CH2 :** **Gain_Step[0,1]** **Phase_Step[0,1]**	**CH1 :** **Gain_Step[0,0]** **Phase_Step[0,0]**

- **BBoxOne TMYTEK Mark 朝上**

Board1 Com : **Gain_Step[3,4]**		**CH4 :** **Gain_Step[3,3]** **Phase_Step[3,3]**	**CH3 :** **Gain_Step[3,2]** **Phase_Step[3,2]**	**CH2 :** **Gain_Step[3,1]** **Phase_Step[3,1]**	**CH1 :** **Gain_Step[3,0]** **Phase_Step[3,0]**
Board2 Com : **Gain_Step[2,4]**		**CH8 :** **Gain_Step[2,3]** **Phase_Step[2,3]**	**CH7 :** **Gain_Step[2,2]** **Phase_Step[2,2]**	**CH6 :** **Gain_Step[2,1]** **Phase_Step[2,1]**	**CH5 :** **Gain_Step[2,0]** **Phase_Step[2,0]**
Board3 Com : **Gain_Step[1,4]**		**CH12 :** **Gain_Step[1,3]** **Phase_Step[1,3]**	**CH11 :** **Gain_Step[1,2]** **Phase_Step[1,2]**	**CH10 :** **Gain_Step[1,1]** **Phase_Step[1,1]**	**CH9 :** **Gain_Step[1,0]** **Phase_Step[1,0]**
Board4 Com : **Gain_Step[0,4]**		**CH16 :** **Gain_Step[0,3]** **Phase_Step[0,3]**	**CH15 :** **Gain_Step[0,2]** **Phase_Step[0,2]**	**CH14 :** **Gain_Step[0,1]** **Phase_Step[0,1]**	**CH13 :** **Gain_Step[0,0]** **Phase_Step[0,0]**

[BBoard Series] set_TC_Params

Signature

retCode set_TC_Params(int board, int TXC, int TXQ, int RXC, intRXQ, string sn)

Description

Set temperature compensation parameters

Model support list

Model Name	Is_valid
UDBox	**False**
BBox One 28GHz	**False**
BBoard 5G 28GHz	**True**
BBoard 5G 39GHz	**True**
BBox Lite 5G 28GHz	**False**
BBox Lite 5G 39GHz	**False**
BBox One 5G 26GHz	**False**
BBox One 5G 28GHz	**False**
BBox One 5G 39GHz	**False**

Parameters

Declaration type	Description	Parameters
int	Board number	1 (start number)
int	TX_C	0 - 31
int	TX_Q	0 -31
int	RX_C	0 - 31
int	RX_Q	0 - 31
string	Device SN	“D2104L001-28“

Returns

Declaration type	Description	Values
retCode(int)	OK	0
retCode(int)	ERROR	2

[BBoard Series] setChannelGainStep

Signature

retCode setChannelGainStep(int board, int channel, int gain_step, string sn)

Description

Set the specific channel gain step

Model support list

Model Name	Is_valid
UDBox	**False**
BBox One 28GHz	**False**
BBoard 5G 28GHz	**True**
BBoard 5G 39GHz	**True**
BBox Lite 5G 28GHz	**False**
BBox Lite 5G 39GHz	**False**
BBox One 5G 26GHz	**False**
BBox One 5G 28GHz	**False**
BBox One 5G 39GHz	**False**

Parameters

Declaration type	Description	Parameters
int	Board number	1 (start number)
int	Channel number	1 (start number)
int	Gain Step	0 - 15
string	Device SN	“D2104L001-28“

Returns

Declaration type	Description	Values
retCode(int)	OK	0
retCode(int)	ERROR	2

[BBoard Series] setCommonGainStep

Signature

retCode setCommonGainStep(int board, int gain_step, string sn)

Description

Set the specific board common-arm gain with the common-arm gain step

Model support list

Model Name	Is_valid
UDBox	**False**
BBox One 28GHz	**False**
BBoard 5G 28GHz	**True**
BBoard 5G 39GHz	**True**
BBox Lite 5G 28GHz	**False**
BBox Lite 5G 39GHz	**False**
BBox One 5G 26GHz	**False**
BBox One 5G 28GHz	**False**
BBox One 5G 39GHz	**False**

Parameters

Declaration type	Description	Parameters
int	Board number	1 (start number)
int	Com gain Step	0 - 15
string	Device SN	“D2104L001-28“

Returns

Declaration type	Description	Values
retCode(int)	OK	0
retCode(int)	ERROR	2

[BBoard Series] setChannelPhaseStep

Signature

retCode setChannelPhaseStep(int board, int channel, int phase_step, string sn)

Description

Set the specific channel phase step

Model support list

Model Name	Is_valid
UDBox	**False**
BBox One 28GHz	**False**
BBoard 5G 28GHz	**True**
BBoard 5G 39GHz	**True**
BBox Lite 5G 28GHz	**False**
BBox Lite 5G 39GHz	**False**
BBox One 5G 26GHz	**False**
BBox One 5G 28GHz	**False**
BBox One 5G 39GHz	**False**

Parameters

Declaration type	Description	Parameters
int	Board number	1 (start number)
int	Channel number	1 (start number)
int	Phase Step	0 - 63
string	Device SN	“D2104L001-28“

Returns

Declaration type	Description	Values
retCode(int)	OK	0
retCode(int)	ERROR	2

[UDBox] QueryHWV

Signature

string QueryHWV(string sn)

Description

Get UDBox hardware version.

Model support list

Model Name	Is_valid
UDBox	True
BBox One 28GHz	False
BBoard 5G 28GHz	False
BBoard 5G 39GHz	False
BBox Lite 5G 28GHz	False
BBox Lite 5G 39GHz	False
BBox One 5G 26GHz	False
BBox One 5G 28GHz	False
BBox One 5G 39GHz	False

Parameters

Declaration type	Description	Parameters
string	Device SN	“UD-BS20343100-24”

Returns

Declaration type	Description	Values
string	Hardware version	“00G”

[UDBox] SetUDFreq

Signature

retCode SetUDFreq(double freq_ud, double freq_rf, double freq_if, double bandwidth, string sn)

Description

Set UDBox Frequency.

Model support list

Model Name	Is_valid
UDBox	True
BBox One 28GHz	False
BBoard 5G 28GHz	False
BBoard 5G 39GHz	False
BBox Lite 5G 28GHz	False
BBox Lite 5G 39GHz	False
BBox One 5G 26GHz	False
BBox One 5G 28GHz	False
BBox One 5G 39GHz	False

Parameters

Declaration type	Description	Parameters
double	UDBox LO frequency (KHz)	TBD
double	UDBox RF frequency (KHz)	TBD
double	UDBox IF frequency (KHz)	TBD
double	UDBox bandwidth (KHz)	TBD
string	Device SN	“UD-BS20343100-24”

Returns

Declaration type	Description	Values

retCode(int)	OK	0
retCode(int)	ERROR_FREQ_EQUATION	250
retCode(int)	ERROR_SOCKET	24
retCode(int)	ERROR_NETWORK_NOT_INIT	20
retCode(int)	WARNING_HARMONIC	252
retCode(int)	ERROR_PLO_CRC	251

[UDBox] GetState

Signature

int[] GetState(string sn)

Description

UDBox current status.

Model support list

Model Name	Is_valid
UDBox	True
BBox One 28GHz	False
BBoard 5G 28GHz	False
BBoard 5G 39GHz	False
BBox Lite 5G 28GHz	False
BBox Lite 5G 39GHz	False
BBox One 5G 26GHz	False
BBox One 5G 28GHz	False
BBox One 5G 39GHz	False

Parameters

Declaration type	Description	Parameters
string	Device SN	“UD-BS20343100-24”

Returns

Declaration type	Description	Values
int[0]	Lock status	0 - Unlock, 1 - Lock
int[1]	CH1 enable	0 - Disable, 1 - Enable
int[2]	CH2 enable	0 - Disable, 1 - Enable
int[3]	10MHz output	0 - Disable, 1 - Enable
int[4]	100MHz output	0 - Disable, 1 - Enable

int[5]	100MHz source	0 - Internal, 1 - External
int[6]	100MHz Led status	0 - Off, 1 - White, 2 - Blue
int[7]	5V output	0 - Disable, 1 - Enable
int[8]	9V output	0 - Disable, 1 - Enable

[UDBox] SetState

Signature

int[] SetState(int[] state, string sn)

Description

Set UDBox status.

Model support list

Model Name	Is_valid
UDBox	True
BBox One 28GHz	False
BBoard 5G 28GHz	False
BBoard 5G 39GHz	False
BBox Lite 5G 28GHz	False
BBox Lite 5G 39GHz	False
BBox One 5G 26GHz	False
BBox One 5G 28GHz	False
BBox One 5G 39GHz	False

Parameters

Declaration type	Description	Parameters
int[0]	Reserved	N/A
int[1]	CH1 enable	0 - Disable, 1 - Enable
int[2]	CH2 enable	0 - Disable, 1 - Enable
int[3]	10MHz output	0 - Disable, 1 - Enable
int[4]	100MHz output	0 - Disable, 1 - Enable
int[5]	100MHz source	0 - Internal, 1 - External
int[6]	Reserved	N/A
int[7]	5V output	0 - Disable, 1 - Enable
int[8]	9V output	0 - Disable, 1 - Enable

string	Device SN	“UD-BS20343100-24”

Returns

Declaration type	Description	Values
int[0]	Lock status	0 - Unlock, 1 - Lock
int[1]	CH1 enable	0 - Disable, 1 - Enable
int[2]	CH2 enable	0 - Disable, 1 - Enable
int[3]	10MHz output	0 - Disable, 1 - Enable
int[4]	100MHz output	0 - Disable, 1 - Enable
int[5]	100MHz source	0 - Internal, 1 - External
int[6]	100MHz Led status	0 - Off, 1 - White, 2 - Blue
int[7]	5V output	0 - Disable, 1 - Enable
int[8]	9V output	0 - Disable, 1 - Enable

[UDBox] GetHarmonic

Signature

bool GetHarmonic(double freq_ud, double freq_rf, double freq_if, double bandwidth, string sn)

Description

Set UDBox Frequency.

Model support list

Model Name	Is_valid
UDBox	True
BBox One 28GHz	False
BBoard 5G 28GHz	False
BBoard 5G 39GHz	False
BBox Lite 5G 28GHz	False
BBox Lite 5G 39GHz	False
BBox One 5G 26GHz	False
BBox One 5G 28GHz	False
BBox One 5G 39GHz	False

Parameters

Declaration type	Description	Parameters
double	UDBox LO frequency (KHz)	TBD
double	UDBox RF frequency (KHz)	TBD
double	UDBox IF frequency (KHz)	TBD
double	UDBox bandwidth (KHz)	TBD
string	Device SN	“UD-BS20343100-24”

Returns

Declaration type	Description	Values

bool	If the frequency setting has harmonic interference	True or False