

IP Camera parameter tables

Software division
R&D center
VisionBlue cooperation

Revision History

REVISION	DATE	AUTHOR	COMMENT
0.0	2010-12-20	Sungho Jang	Document was created.
0.1	2011-03-25	Eunbong Jung	Add PTZ Table
0.2	2011-05-13	Eunbong Jung	Summary table
0.3	2011-09-22	Gh shin	Modified tables
0.4	2012-04-12	BK Kim	Simplication and omission of tables
0.5	2012-05-08	Billy Kim	Minimum Set and Example
0.6	2014-02-07	BKKIM	Added GOP for stream Bug Fixed parameter name for bitrate_control => rate_control
0.7	2014-03-28	BKKIM	Added venc for configure video individually
0.8	2014-04-30	BKKIM	Update device_info table, Add lancam_table
0.8.1	2014-05-09	BKKIM	Modified bps range and miss spelling
0.8.2	2014-05-14	BKKIM	Modified stream from bps to kbps, Modified GOP range 1-30
0.8.3	2014-05-23	BKKIM	1.Updated venc table's brc and kbps (from the Parameter Tables). 5.Updated user management's examples
0.8.4	2014-07-01	BKKIM	Added image_quality to venc table. Changed GOP size.
0.9.0	2015-12-04	BKKIM	Added H264 Profile
0.9.2	2016-04-29	BKKIM	Added Time table

1. Parameter Tables

Group	parameter	type	Description	Reboot	R/W/B
device_info	Device Info				
	serial_num	STRING[17]	Device Serial Number (MAC Address)		R
	revision	STRING[64]	Build Date (Revision Date)		R
	model	STRING[64]	Model Name		R
	fwversion	STRING[64]	firmware version.(example, 1.1.1)		R
account	User Management				
	User	STRING[16]	Username String (when account is deleted, "NULL" string is selected)		B
	Password	STRING[16]	User Password String		B
	Authority	U8	User Access Rights (0:"Admin", 1:"Operator", 2:"Viewr")		B
audio	Audio				
	enable	U8	Audio Enable Flag 0:disable, 1:enable		B
	volume_in	U8	Audio volume level : 1 ~ 100		B
	codec_type	U8	Audio codec 0 : G.711 (mlaw) 1 : ACC-LC		B
	sample	U8	Audio Sample Rate 0 : 8Khz 1 : 16Khz		B
	bitrate	U8	Audio Bit Rate (Applies to AAC-LC only) Codectype(1) & samplerate(0) 0 : 24Kbps, 1 : 36Kbps, 2 : 48Kbps Codectype(1) & samplerate(1) 0 : 32Kbps, 1 : 48Kbps, 2 : 64Kbps		B
	bitrate_value	U32	Combination of sample rate and bitrate. This is the actual bitrate being used		R
	apply	U8	The values are stored/applied when they are Written		
overlay	Overlay Text				
	time_enable	U8	Time OSD Enable Flag 0 : disable, 1 : enable		B
	date_enable	U8	Date OSD Enable Flag 0 : disable, 1 : enable		B
	date_position	U8	Data Position		B

			0 : Bottom-Left 1 : Bottom-Right		
	time_position	U8	Time Position 0 : Bottom-Left 1 : Bottom-Right		B
	date_format	U8	Data Format 0 : YYYY/MM/DD 1 : MM/DD/YYYY 2 : DD/MM/YYYY		B
	time_format	U8	Time Stamp Format 0 : 12Hrs 1 : 24Hrs		B
venc					
	enable	U8	1:enable, 0:off		B
	fps	U8	1~30 (PAL's MAX : 25)		B
	res	U8	video resolution (ATM Camera does not supported 1,2) 1:1920x1080, 2:1280x1024, 3:1280x720, 4:1024x768, 5:800x600, 6:800x480, 7:640x480,		B
	brc	U8	bitrate control 1:VBR,2:CBR		B
	kbps	U32	kilo bits per seconds, 400~10,000 CBR Only		B
	gop	U16	1~30		B
	qp	U32	3~95		B
	image_quality	U8	0~2, 0:High, 1:Medium, 2:Low		B
	h264_profile	U8	0:baseline, 1:main, 2:high		B
	apply	U32	2*1 only, else ignore		W
stream	Video Stream				
	codec_type	U16	Code Type 0:NONE(OFF) 1:JPEG 2:MPEG4 3:H264		B
	width	U32	Horizontal Resolution		B
	height	U32	Vertical Resolution		B
	fps	U16	Frame Rate		B

	rate_control	U16	Bit-Rate Control 1:VBR 2:CBR		B
	bitrate	U32	Bitrate(in kbps), range: Refer to each model's spec If codec_type is JPEG: Jpeg Quality levelrange:3~95		B
	gop	U16	Number for Group of Picture (Key frame Interval) 1~30		B
	qp	U8	QP for MJPEG when codec_type is 1 only.		B
	apply	U8	The values are stored/applied when they are Written		W
stream_info	Video Stream (RTSP Stream)				
	width	U16	Horizontal Resolution		R
	height	U16	Vertical Resolution		R
	rtsp_port	U16	RTSP TCP/UDP Port Number		R
	name	STRING[75]	Stream Name (Codec Name)		R
	rtsp_url	STRING[75]	RTSP URL		R
time	Time				
	sync_mode	U8	NTP/Manual Flag (1~2) 1: NTP mode 2: Manual Mode, Can set date and time manually.		B
	server	STRING[40]	NTP Server string		B
	timezone	U8	Current Time Zone (0 ~ 24) (* ntp_timezone and daylight_time should be updated simultanelously) "GMT-12 Eniwetok, Kwajalein", "GMT-11 Midway Island, Samoa", "GMT-10 Hawaii", "GMT-09 Alaska", "GMT-08 Pacific Time (US & Canada), Tijuana", "GMT-07 Mountain Time (US & Canada), Arizona", "GMT-06 Central Time (US & Canada), Mexico City, Tegucigalpa, Saskatchewan", "GMT-05 Eastern Time (US & Canada), Indiana(East), Bogota, Lima", "GMT-04 Atlantic Time (Canada), Caracas, La Paz", "GMT-03 Brasilia, Buenos Aires, Georgetown", "GMT-02 Mid-Atlantic", "GMT-01 Azores, Cape Verdes Is.", "GMT+00 GMT, Dublin, Edinburgh, London, Lisbon, Monrovia, Casablanca", "GMT+01 Berlin, Stockholm, Rome, Bern, Brussels, Vienna, Paris, Madrid, Amsterdam, Prague, Warsaw, Budapest", "GMT+02 Athens, Helsinki, Istanbul, Cairo, Eastern Europe, Harare, Pretoria, Israel",		B

			"GMT+03 Baghdad, Kuwait, Nairobi, Riyadh, Moscow, St. Petersburg, Kazan, Volgograd", "GMT+04 Abu Dhabi, Muscat, Tbilisi", "GMT+05 Islamabad, Karachi, Ekaterinburg, Tashkent", "GMT+06 Alma Ata, Dhaka", "GMT+07 Bangkok, Jakarta, Hanoi", "GMT+08 Taipei, Beijing, Chongqing, Urumqi, Hong Kong, Perth, Singapore", "GMT+09 Tokyo, Osaka, Sapporo, Seoul, Yakutsk", "GMT+10 Brisbane, Melbourne, Sydney, Guam, Port Moresby, Vladivostok, Hobart", "GMT+11 Magadan, Solomon Is., New Caledonia", "GMT+12 Fiji, Kamchatka, Marshall Is., Wellington, Auckland"		
	refresh	U8	Setting Time by NTP Server		W
	dst	U8	Adjust for daylight saving time changes (timezone and dst should be updated simultaneously) 0 : OFF 1 : Auto		B
	date	STRING[10]	Current date yyyy/mm/dd		B
	time	STRING[8]	Current time hh:mm:ss		B
network	Network				
	mac	STRING[17]	Hardware MAC Address string		R
	dhcp_enable	U8	DHCP mode 0 : static 1 : dynamic (with dynamic, ip1~4 are Read Only)	O	B
	ip1	U32	Network IP1 (0 ~ 255)	O	B
	ip2	U32	Network IP2 (0 ~ 255)	O	B
	ip3	U32	Network IP3 (0 ~ 255)	O	B
	ip4	U32	Network IP4 (0 ~ 255)	O	B
	netmask1	U32	Netmask1 (0 ~ 255)	O	B
	netmask2	U32	Netmask2 (0 ~ 255)	O	B
	netmask3	U32	Netmask3 (0 ~ 255)	O	B
	netmask4	U32	Netmask4 (0 ~ 255)	O	B
	gateway1	U32	Gateway1 (0 ~ 255)	O	B
	gateway2	U32	Gateway2 (0 ~ 255)	O	B
	gateway3	U32	Gateway3 (0 ~ 255)	O	B
	gateway4	U32	Gateway4 (0 ~ 255)	O	B
	dns1	U32	DNS1 (0 ~ 255)	O	B
	dns2	U32	DNS2 (0 ~ 255)	O	B
	dns3	U32	DNS3 (0 ~ 255)	O	B
	dns4	U32	DNS4 (0 ~ 255)	O	B

	http_port	U16	HTTP Port	O	B
	apply	U8	The values are stored when they are Written		W
lancam_table	lancam_table				
	title	STRING[128]	Device Name (Host name on Web page)		B

2. Stream specification.

ATM Camera has range of resolution, 3~7 (eg, 1280x720~640x480)

Maximum Channels	2 channels	
Compression	JPEG / H264	
Supported Stream combinations	1. Single Stream	1) stream1 : H264 or stream2 : MJPEG, 1920x1080
		2) stream1 : H264 or stream2 : MJPEG, 1280x1024
		3) stream1 : H264 or stream2 : MJPEG, 1280x720
		4) stream1 : H264 or stream2 : MJPEG, 1024x768
		5) stream1 : H264 or stream2 : MJPEG, 800x600
		6) stream1 : H264 or stream2 : MJPEG, 800x480
		7) stream1 : H264 or stream2 : MJPEG, 640x480
	2. Dual Stream	1) stream1 : H264, 1920x1080 stream2 : MJPEG, 1920x1080
		2) stream1 : H264, 1920x1080 stream2 : MJPEG, 1024x768
		3) stream1 : H264, 1920x1080 stream2 : MJPEG, 800x600
		4) stream1 : H264, 1920x1080 stream2 : MJPEG, 800x480
		5) stream1 : H264, 1920x1080 stream2 : MJPEG, 640x480
		6) stream1 : H264, 1280x1024 stream2 : MJPEG, 1280x1024
		7) stream1 : H264, 1280x1024 stream2 : MJPEG, 1024x768
		8) stream1 : H264, 1280x1024 stream2 : MJPEG, 800x600
		9) stream1 : H264, 1280x1024 stream2 : MJPEG, 800x480
		10) stream1 : H264, 1280x1024 stream2 : MJPEG, 640x480
		11) stream1 : H264, 1280x720 stream2 : MJPEG, 1280x720
		12) stream1 : H264, 1280x720 stream2 : MJPEG, 1024x768
		13) stream1 : H264, 1280x720 stream2 : MJPEG, 800x600
		14) stream1 : H264, 1280x720 stream2 : MJPEG, 800x480
		15) stream1 : H264, 1280x720 stream2 : MJPEG, 640x480
		16) stream1 : H264, 1024x768 stream2 : MJPEG, 1920x1080
		17) stream1 : H264, 1024x768 stream2 : MJPEG, 1280x1024
		18) stream1 : H264, 1024x768 stream2 : MJPEG, 1280x720
		19) stream1 : H264, 1024x768 stream2 : MJPEG, 1024x768
		20) stream1 : H264, 1024x768 stream2 : MJPEG, 800x600
		21) stream1 : H264, 1024x768 stream2 : MJPEG, 800x480
		22) stream1 : H264, 1024x768 stream2 : MJPEG, 640x480
		23) stream1 : H264, 800x600 stream2 : MJPEG, 1920x1080
		24) stream1 : H264, 800x600 stream2 : MJPEG, 1280x1024
		25) stream1 : H264, 800x600 stream2 : MJPEG, 1280x720

		26) stream1 : H264, 800x600	stream2 : MJPEG, 1024x768
		27) stream1 : H264, 800x600	stream2 : MJPEG, 800x600
		28) stream1 : H264, 800x600	stream2 : MJPEG, 800x480
		29) stream1 : H264, 800x600	stream2 : MJPEG, 640x480
		30) stream1 : H264, 800x480	stream2 : MJPEG, 1920x1080
		31) stream1 : H264, 800x480	stream2 : MJPEG, 1280x1024
		32) stream1 : H264, 800x480	stream2 : MJPEG, 1280x720
		33) stream1 : H264, 800x480	stream2 : MJPEG, 1024x768
		34) stream1 : H264, 800x480	stream2 : MJPEG, 800x600
		35) stream1 : H264, 800x480	stream2 : MJPEG, 800x480
		36) stream1 : H264, 800x480	stream2 : MJPEG, 640x480
		37) stream1 : H264, 640x480	stream2 : MJPEG, 1920x1080
		38) stream1 : H264, 640x480	stream2 : MJPEG, 1280x1024
		39) stream1 : H264, 640x480	stream2 : MJPEG, 1280x720
		40) stream1 : H264, 640x480	stream2 : MJPEG, 1024x768
		41) stream1 : H264, 640x480	stream2 : MJPEG, 800x600
		42) stream1 : H264, 640x480	stream2 : MJPEG, 800x480
		43) stream1 : H264, 640x480	stream2 : MJPEG, 640x480
Stream Setting Method	Refer to: WELDEX_HTTP_API.doc		

3. Stream example

Item	Sample CGI Expression	Notes
Stream Single	<p>1.1920x1080</p> <p>http://192.168.0.201/param.cgi?action=update&stream.codec_type=0*3&stream.width=0*1920&stream.height=0*1080&stream.fps=0*30&stream.rate_control=0*1&stream.bitrate=0*12000&stream.codec_type=1*0&stream.width=1*0&stream.height=1*0&stream.fps=1*0&stream.rate_control=1*0&stream.bitrate=1*0&stream.apply=1*1</p> <p>2.1280x720</p> <p>http://192.168.0.201/param.cgi?action=update&stream.codec_type=0*3&stream.width=0*1280&stream.height=0*720&stream.fps=0*30&stream.rate_control=0*1&stream.bitrate=0*8000&stream.codec_type=1*0&stream.width=1*0&stream.height=1*0&stream.fps=1*0&stream.rate_control=1*0&stream.bitrate=1*0&stream.apply=1*1</p> <p>3.640x480</p> <p>http://192.168.0.201/param.cgi?action=update&stream.codec_type=0*3&stream.width=0*640&stream.height=0*480&stream.fps=0*30&stream.rate_control=0*1&stream.bitrate=0*4000&stream.codec_type=1*0&stream.width=1*0&stream.height=1*0&stream.fps=1*0&stream.rate_control=1*0&stream.bitrate=1*0&stream.apply=1*1</p>	
Dual Stream	<p>1. CH[0] : 1280x720 [H264], CH[1] : 640x480 [JPEG]</p> <p>http://192.168.0.201/param.cgi?action=update&stream.codec_type=0*3&stream.width=0*1280&stream.height=0*720&stream.fps=0*30&stream.rate_control=0*1&stream.bitrate=0*8000</p> <p>http://192.168.0.201/param.cgi?action=update&stream.codec_type=1*1&stream.width=1*640&stream.height=1*480&stream.fps=1*30&stream.rate_control=1*0&stream.bitrate=1*0</p> <p>http://192.168.0.201/param.cgi?action=update&stream.apply=1</p>	

	<p>http://192.168.0.201/param.cgi?action=update&stream.codec_type=0*3&stream.width=0*1280&stream.height=0*720&stream.fps=0*30&stream.rate_control=0*1&stream.bitrate=0*8000&stream.codec_type=1*1&stream.width=1*640&stream.height=1*480&stream.fps=1*30&stream.rate_control=1*0&stream.bitrate=1*0&stream.apply=1*1</p> <p>2. CH[0] : 640x480 [H264], CH[1] : 640x480 [JPEG]</p> <p>http://192.168.0.201/param.cgi?action=update&stream.codec_type=0*3&stream.width=0*640&stream.height=0*480&stream.fps=0*30&stream.rate_control=0*1&stream.bitrate=0*4000&stream.codec_type=1*1&stream.width=1*640&stream.height=1*480&stream.fps=1*30&stream.rate_control=1*0&stream.bitrate=1*0&stream.apply=1*1</p> <p>3. CH[0] : 1280x720 [H264], CH[1] : 1280x720 [JPEG]</p> <p>http://192.168.0.201/param.cgi?action=update&stream.codec_type=0*3&stream.width=0*1280&stream.height=0*720&stream.fps=0*30&stream.rate_control=0*1&stream.bitrate=0*4000&stream.codec_type=1*1&stream.width=1*1280&stream.height=1*720&stream.fps=1*30&stream.rate_control=1*0&stream.bitrate=1*0&stream.apply=1*1</p> <p>4. CH[0] : 1920x1080 [H264], CH[1] : 640x480 [JPEG]</p> <p>http://192.168.0.201/param.cgi?action=update&stream.codec_type=0*3&stream.width=0*1920&stream.height=0*1080&stream.fps=0*30&stream.rate_control=0*1&stream.bitrate=0*4000&stream.codec_type=1*1&stream.width=1*640&stream.height=1*480&stream.fps=1*30&stream.rate_control=1*0&stream.bitrate=1*0&stream.apply=1*1</p>	
Stream Information	<p>http://192.168.0.201/param.cgi?action=search&param=stream_info</p> <p>1. Dual Stream</p> <pre><?xml version="1.0" encoding="UTF-8" standalone="yes" ?> <root> <stream_info table_offset = "0" width="1280" height="720" rtsp_port="8557" name="H.264" rtsp_url="/wdx/media/stream.h264"/></pre>	

	<pre> <stream_info table_offset = "1" width="640" height="480" rtsp_port="8555" name="MJPEG" rtsp_url="/wdx/media/stream.mjpeg"/> <stream_info table_offset = "2" width="0" height="0" rtsp_port="0" name="" rtsp_url=""/> </root> 2. Single Stream <?xml version="1.0" encoding="UTF-8" standalone="yes" ?> <root> <stream_info table_offset = "0" width="1280" height="720" rtsp_port="8557" name="H.264" rtsp_url="/wdx/media/stream.h264"/> <stream_info table_offset = "1" width="0" height="0" rtsp_port="0" name="" rtsp_url=""/> <stream_info table_offset = "2" width="0" height="0" rtsp_port="0" name="" rtsp_url=""/> </root> Note) Maximum of 2x Streams is supported. Unused Stream fields will be set as 0. </pre>	

4. venc table example

- This table enables individual settings for the stream table. Most field names are similar to stream table.

All fields in the venc table can be configured individually, and **venc.apply=2*1** must be added to apply any changes to the system.

Third row and above are not used. First row = H264(number 0), Second row=MJPEG(number 1)

4.1. example

1) get venc table information for all rows.

→ ["http://192.168.0.200/param.cgi?action=search¶m=venc"](http://192.168.0.200/param.cgi?action=search¶m=venc)

→ result :

```
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
```

```
<root>
```

```
<venc table_offset = "0" enable="1" fps="30" res="3" brc="1" kbps="4000" gop="30" qp="0" image_quality="0" h264_profile="0" apply="0"/>
```

```
<venc table_offset = "1" enable="1" fps="30" res="3" brc="0" kbps="0" gop="0" qp="75" image_quality="0" h264_profile="0" apply="0"/>
```

```
<venc table_offset = "2" enable="0" fps="0" res="0" brc="0" kbps="0" gop="0" qp="0" image_quality="0" h264_profile="0" apply="0"/>
```

```
</root>
```

2) get venc table information for the first row.

→ ["http://192.168.0.200/param.cgi?action=search¶m=venc*0"](http://192.168.0.200/param.cgi?action=search¶m=venc*0)

→ result : (italic is not used in the first stream)

```
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
```

```
<root>
```

```
<venc table_offset = "0" enable="1" fps="30" res="3" brc="1" kbps="4000" gop="30" qp="0" image_quality="0" h264_profile="0" apply="0"/>
```

```
</root>
```

3) get venc table information for the second row.

→ ["http://192.168.0.200/param.cgi?action=search¶m=venc*1"](http://192.168.0.200/param.cgi?action=search¶m=venc*1)

→ result : (italic is not used in the second stream)

```
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
```

```
<root>
```

```
<venc table_offset = "0" enable="1" fps="30" res="3" brc="0" kbps="0" gop="0" qp="75" image_quality="0" h264_profile="0" apply="0"/>
```

```
</root>
```

4) Disable second stream (encoder)

→ ["http://192.168.0.200/param.cgi?action=update&venc.enable=1*0&venc.apply=2*1"](http://192.168.0.200/param.cgi?action=update&venc.enable=1*0&venc.apply=2*1)

→ Return :

OK

5) Enable second stream (encoder)

→ http://192.168.0.200/param.cgi?action=update&venc.enable=1*1&venc.apply=2*1

→ Return :

OK

6) Change the resolution for the first stream to 4 (1024x768)

→ http://192.168.0.200/param.cgi?action=update&venc.res=0*4&venc.apply=2*1

→ return :

OK

7) Change the resolution for the second stream to 4 (1024x768)

→ http://192.168.0.200/param.cgi?action=update&venc.res=1*4&venc.apply=2*1

→ return :

OK

8) Change the fps for the first stream to 15

→ http://192.168.0.200/param.cgi?action=update&venc.fps=0*15&venc.apply=2*1

→ return :

OK

9) Change the fps for the second stream to 15

→ http://192.168.0.200/param.cgi?action=update&venc.fps=1*15&venc.apply=2*1

→ return :

OK

10) Change the image_quality High (0 stream only)

→ http://192.168.0.200/param.cgi?action=update&venc.image_quality=0*1&venc.apply=2*1

→ return :

OK

11) Change the h264_profile to Baseline (0 stream only)

→ http://192.168.0.200/param.cgi?action=update&venc.h264_profile=0*1&venc.apply=2*1

→ return :

OK

5. User Management

2.1 Modify User

Password / authority change sample (It searches for duplicate User Name)

<http://host/param.cgi?action=update&account.user=admin&account.password=1234&account.authority=0>

2.2 Add User

Same as Modify (it searches for duplicates)

<http://host/param.cgi?action=update&account.user=bbk&account.password=1111&account.authority=0>

2.3 Delete User

It performs Search>the slot to be deleted becomes 'n', and the 'NULL' string is used for the username.

http://host/param.cgi?action=update&account.user=n*NULL