

# DynaColor API Parameter Specification

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## TABLE OF CONTENTS

- DOCUMENT HISTORY
- 1 OVERVIEW
  - 1.1 Product and firmware versions
  - 1.2 Valid values
- 2 PARAMETER GROUPS
  - 2.1 General
    - 2.1.1 Brand
    - 2.1.2 Network
    - 2.1.3 Network.eth0
    - 2.1.4 Network.Routing
    - 2.1.5 Network.RTSP
    - 2.1.6 SMTP
    - 2.1.7 SMTP.Authentication.A#
  - 2.2 MJPEG/MPEG
    - 2.2.1 Image
    - 2.2.2 Image.I#.Appearance
    - 2.2.3 Image.I#.RateControl
    - 2.2.4 ImageSource.I0.Sensor
    - 2.2.5 ImageSource.I0.Video
  - 2.3 I/O
    - 2.3.1 Input
    - 2.3.2 Input.I#

- 2.3.3 Output
- 2.3.4 Output.O#
- 2.4 Events
  - 2.4.1 Event.E#
  - 2.4.2 Event HW Actions
  - 2.4.3 Event FTP Actions
  - 2.4.4 Event SMTP Actions
- 2.5 Event servers
  - 2.5.1 EventServers.FTP.F#
- 2.6 Notification
  - 2.6.1 Notify.FTP
  - 2.6.2 Notify.SMTP
- 2.7 Properties
  - 2.7.1 Properties.API
  - 2.7.2 Properties.Audio
  - 2.7.3 Properties.Firmware
  - 2.7.4 Properties.Image
- 2.8 Audio
  - 2.8.1 Audio
  - 2.8.2 AudioSource.A#
- 2.9 DDNS
  - 2.9.1 DDNS
- 2.10 Frame skip
  - 2.10.1 Frame skip
- 2.11 Motion
  - 2.11.1 Motion.M#
  - 2.11.2 Motion.M#.Actions
- 2.12 IR
  - 2.11.1 IR.Mode

## DOCUMENT HISTORY

Version	Date	Comment
1.00	2007-Sep-25	Initial version.
1.01	2007-Oct-16	Add more description on Image.I#.Appearance.
1.02	2007-Oct-29	Correct frame skip and Image.I#.Appearance function.
1.03	2007-Dec-28	Add ImageSource.I#.Sensor.Backlight Add ImageSource.I#.Video Add more valid value(flickerless50 flickerless60 fixshutter) to ImageSource.I#.Sensor.Exposure Add Motion.M# Add IR

## 1 OVERVIEW

This document specifies the parameters and configuration files for DynaColor megapixel camera using firmware version z20070927 and below.

### 1.1 Product and firmware versions

The support for the parameters specified in this document is highly product and release dependent.

Please refer to the parameter list for the actual product.

### 1.2 Valid values

The following valid values are used in this document:

Valid values	Description
An integer	Any number between -2147483647 ( $-2^{31}-1$ ) and 2147483647 ( $2^{31}-1$ ).
An unsigned integer	Any number between 0 and 4294967295 ( $2^{32}-1$ ).

<m>	Any number starting from number m.
<m> ... <n>	Any number between number m and number n.
A string	Any string (valid characters: ISO 8859-1).
A domain name	A string limited to contain a domain name.
A host name	A string limited to contain a host name.
An IP address	A string limited to contain an IP address of the format xxx.xxx.xxx.xxx, where xxx is a number between 0 to 255. Example: 192.168.0.250
A MAC Address	A string limited to contain a MAC address of the format xx:xx:xx:xx:xx:xx, where xx is a hexadecimal value. Example: 00:DO:89:00:AC:01
An e-mail address	A string limited to contain an e-mail address.
A URL/URI	A sting limited to contain a URL/URI.
A path	A string limited to contain a path.
A time	A string limited to contain a time of the format hh:mm:ss. Example: 23:01:14
A date	A string limited to contain a date of the format yyyy-mm-dd. Example: 2004-02-16
<value 1> <value 2> <value 3> ...	Enumeration, only the given values are valid. Example: yes no
<m><value> ... <n><value>	<value><m> ... <value><n>
	Any number between m and n together with value. Example: 1Mbit ... 100Mbit
Read only	Only the default value is valid as value.

Auto generated	Automatically generated value, should not be changed manually.
Hardware dependent	The hardware decides the default value/the valid values.
Everything inside brackets	Description.

## 2 PARAMETER GROUPS

### 2.1 General

#### 2.1.1 Brand

**Description:** Contains information about the brand, name and type of the product.

**Configuration file:** /etc/sysconfig/brand.conf

[Brand]

Parameter name	Default value	Valid values	Description
Brand	non brand	A string (Auto generated)	The brand of the product.
ProdFullName	network DynaHawk 060	A string (Auto generated)	The full name of the product.
ProdNbr	060	A string (Auto generated)	The product number.
ProdShortName	nDH060	A string (Auto generated)	The short name of the product.
ProdType	network HD camera	Video Server, Network Camera, Network Video Recorder (Auto generated)	The product type.
WebURL	http://www.dynaco lor.com.tw	A string (Auto generated)	The URL to visit for support and information about the product.

#### 2.1.2 Network

**Description:** Network interface settings. The parameters in this group (as opposed to the subgroups of this group) are static network settings. If the Network.BootProto parameter is "dhcp" these parameters

may not be in use so always use the read-only parameters in the subgroups to retrieve actual network settings in use by the operating system.

**Configuration files:** /etc/sysconfig/network.conf

**[Network]**

Parameter name	Default value	Valid values	Description
BootProto	none	dhcp, none	Enable/disable dynamic IP address assignment to the DynaColor device.
Broadcast	192.168.0.255	An IP address	Broadcast address. Used to disseminate information to several recipients simultaneously.
DefaultRouter	192.168.0.254	An IP address	Default router/gateway used for connecting devices attached to different networks and network segments.
DNSServer1		An IP address	Primary Domain Name System server.
DNSServer2		An IP address	Secondary Domain Name System server.
HostName	MegaPixelCamera	A host name	The name of the DynaColor device on the network, usually the same as the DNS name.
IPAddress	192.168.0.250	An IP address	IP Address. The physical address of the DynaColor device on the network.
SubnetMask	255.255.255.0	An IP address	Subnet mask. Divides the network.

**2.1.3 Network.eth0**

**Description:** Network settings of the first ethernet interface. Use these parameters to retrieve the network settings actually in use by the operating system.

**Configuration files:** /etc/sysconfig/network.conf

**[Network.eth0]**

Parameter name	Default value	Valid values	Description
Broadcast	192.168.0.255	An IP address (Auto generated)	Broadcast address. Used to disseminate information to several recipients simultaneously. This parameter is read only.
IPAddress	192.168.0.250	An IP address (Auto generated)	IP Address. The physical address of the DynaColor device on the network. This parameter is read only.
MACAddress	00:D0:89:xx:xx:xx*	A MAC address (Auto generated)	MAC address. The unique identity of the DynaColor device. This parameter is read only.
SubnetMask	255.255.255.0	An IP address (Auto generated)	Subnet mask. Divides the network. This parameter is read only.

\* The MAC address of the DynaColor device is unique for every single product. The first part of the address is however always the same; 00:D0:89. The MAC address is the same as the serial number, which can be found on the product's label.

#### 2.1.4 Network.Routing

**Description:** Routing table actually in use by the operating system.

**Configuration files:** /etc/sysconfig/network.conf

**[Network.Routing]**

Parameter name	Default value	Valid values	Description
DefaultRouter	192.168.0.254	Auto generated	This parameter is read only.

#### 2.1.5 Network.RTSP

**Description:** Parameters needed by the RTSP daemon.

**Configuration file:** /etc/sysconfig/network.conf

**[Network.RTSP]**

Parameter name	Default value	Valid values	Description
Enabled	yes	Yes,	RTSP support. This parameter is read only.
Port	554	554,	The port number for the RTSP daemon. This parameter is read only.

### 2.1.6 SMTP

**Description:** Parameters for the Simple Mail Transfer Protocol, for sending e-mail messages between mail servers.

**Configuration file:** /etc/sysconfig/smtp.conf

**[SMTP]**

Parameter name	Default value	Valid values	Description
MailServer1		An IP address or a host name	Primary mail server.
MailServer2		An IP address or a host name	Secondary mail server.

### 2.1.7 SMTP.Authentication.A#

**Description:** Parameters for SMTP authentication.

**Configuration file:** /etc/sysconfig/smtp\_auth.conf

**[SMTP.Authentication.A#] \***

Parameter name	Default value	Valid values	Description
UserName		A string	The user name for the mail server or the POP server.



Password		A string	The password for the mail server or the POP server.
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\* **Note:** The # is replaced with a group number 1 or 2. The number is representing mail server 1 and mail server 2.

## 2.2 MJPEG/MPEG

### 2.2.1 Image

**Description:** Common image parameters used for all image configurations.

**Configuration files:** /etc/sysconfig/image\_global.conf,

[Image]

Parameter name	Default value	Valid values	Description
DateFormat	YYYY-MM-DD	YYYY-MM-DD	Date format used in text overlay. This parameter is read only.
MaxViewers	20	20	Max number of simultaneous viewers (does not affect multicast delivery). This parameter is read only.
TimeFormat	24	24,	Time format used in text overlay. This parameter is read only.

### 2.2.2 Image.I#.Appearance

**Description:** Image appearance parameters (resolution, compression, rotation) for each image configuration.

**Configuration file:** /etc/sysconfig/image\_appearance.conf

[Image.I#.Appearance] \*

Parameter name	Default value	Valid values	Description
Compression	1	0 ... 2	The level of MJPEG image compression. High

			compression reduces the file size. Low compression produces optimum picture quality, but larger file sizes.
MjpegCompression	1	0 ... 2	The level of MJPEG image compression. High compression reduces the file size. Low compression produces optimum picture quality, but larger file sizes.
Mpeg4Compression	1	0 ... 3	The level of Mpeg-4 image compression. High compression reduces the file size. Low compression produces optimum picture quality, but larger file sizes.
Resolution	Product dependent	quadvga, vga, qvga, cif, qcif,	The image resolution. Note: Available resolutions are product dependent. The parameter Properties.Image.Resolution shows which resolutions are supported by the product. quadvga=1280x960 vga=640x480 qvga=320x240 cif=352x288 qcif=176x144 Ex : to set the MJPEG resolution at quadvga and mpeg4 resolution at vga mode, input the string quadvga,vga
Rotation	0	0, flip, mirror, rotate	Rotates the image. 0 = Normal. flip = up/down inversion. mirror = left/right inversion rotate = both up/down and left/right inversion

\* **Note:** The # is replaced with a group number starting from zero, e.g. Image.I0.Appearance.

### 2.2.3 Image.I#.RateControl

**Description:** Parameters to control the bit rate (bandwidth) from the server.

**Configuration file:** /etc/sysconfig/image\_ratecontrol.conf

**[Image.I#.RateControl] \***

Parameter name	Default value	Valid values	Description
MaxFPS	15	15,30	The rate controller will not produce streams with a frame rate higher than this value. This parameter is read only.
MinFPS	1		The rate controller will try not to produce streams with a frame rate lower than this value. This parameter is read only.

\* **Note:** The # is replaced with a group number starting from zero, e.g. Image.I0.Stream.

#### 2.2.4 ImageSource.I0.Sensor

**Description:** Parameters for each CCD/CMOS image source. This parameter group is product dependent and only available in network cameras. Check the product specification for supported parameters, default values and valid values.

**Configuration file:** /etc/sysconfig/image\_source.conf

#### [ImageSource.I0.Sensor]

Parameter name	Default value	Valid values	Description
Brightness	0	0,25,50,75,100,125,150,175,200,225,250	The image brightness.
Contrast	128	0,25,50,75,100,128,150,175,200,225,250	The image contrast.
Exposure	auto	auto, flickerless50, flickerless60, fixedshutter1, fixedshutter4..., fixedshutter15000 manual2, manual6, manual9, manual12, manual15, manual18, manual20, manual22, manual24, manual27, manual30	The image exposure. fixedshutter# #can be 1...15000 (in 1/10000(s) unit) Ex: 1/4 => #:2500 1.5 => #:15000 Note: Valid values are product dependant.

Backlight	off	on, off	Enable/Disable Backlight Compensation.
Sharpness	128	0,25,50,75,100,128,150,175,200,225,250	The image sharpening.
WhiteBalance	auto	auto, fixed_outdoor, fixed_indoor, manual25, manual30, manual33, manual37, manual41, manual45, manual48 · manual51 · manual54, manual57, manual60	The image white balance.
Digitalzoom	1	1~12	The image digital zoom

### 2.2.5 ImageSource.IO.Video

**Description:** Parameters for each video image source. This parameter group is product dependent.

Check the product specification for supported parameters, default values and valid values.

**Configuration file:** /etc/sysconfig/image\_source.conf

#### [ImageSource.IO.Video]

Parameter name	Default value	Valid values	Description
DetectedType		ntsc, pal	Which type of TV system is used. (Read only) Note: The value is product dependent

## 2.3 I/O

### 2.3.1 Input

**Description:** Parameters for hardware input(s).

**Configuration file:** /etc/sysconfig/inputs.conf

### [Input]

Parameter name	Default value	Valid values	Description
NbrOfInputs	Hardware specific	An unsigned integer (Read only)	Number of inputs. Read only.

### 2.3.2 Input.I#

**Description:** Parameters for hardware input(s).

**Configuration file:** /etc/sysconfig/inputs.conf

### [Input.I#] \*

Parameter name	Default value	Valid values	Description
Name	Input 1	A string	The name of the input. This parameter is read only.
Trig	closed	open, closed	Determines when to trig.

\* **Note:** The # is replaced with a group number starting from zero, e.g. Input.I0.

### 2.3.3 Output

**Description:** Parameters for hardware output(s).

**Configuration file:** /etc/sysconfig/outputs.conf

### [Output]

Parameter name	Default value	Valid values	Description
NbrOfOutputs	Hardware specific	An unsigned integer (Read only)	Number of outputs.

### 2.3.4 Output.O#

**Description:** Parameters for hardware output(s).

**Configuration file:** /etc/sysconfig/outputs.conf

**[Output.O#] \***

Parameter name	Default value	Valid values	Description
Name	Output 1	A string	The name of the output. Read only
Active	open	open, closed	The active state of the output.

\* **Note:** The # is replaced with a group number starting from zero, e.g. Output.I0.

## 2.4 Events

### 2.4.1 Event.E#

**Description:** This group defines an event, which is a set of parameters describing how and when the product performs certain actions.

**Configuration file:** /etc/sysconfig/event.conf

**Template:** event

**[Event.E#] \***

Parameter name	Default value	Valid values	Description
Enabled	no	yes, no	Event enabled (disabled events are never triggered).

### 2.4.2 Event HW Actions

**Description:** This group defines an action that controls a digital output.

**Configuration file:** /etc/sysconfig/event.conf

**[Event.E#.Actions.A0] \***

Parameter name	Default value	Valid values	Description
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Type	N	N	Type of action. N = Notification.
Protocol	HW	HW	Protocol.
Output	1	1	Output number to activate.

\* **Note:** the # is replaced with a group number, e.g. Event.E0.Actions.A0.

### 2.4.3 Event FTP Actions

**Description:** This group defines an action that uploads files to an FTP server.

**Configuration file:** /etc/sysconfig/event.conf

[Event.E#.Actions.A1] \*

Parameter name	Default value	Valid values	Description
Type	N	N	Type of action. N = Notification.
Protocol	FTP	FTP	Protocol. This parameter is read only.
Server		blank, F0 ... Fn (n = number of FTP event servers - 1)	Primary FTP server ID. Refers to a parameter group under root.EventServers.FTP. Example: "F0" refers to the parameter group root.EventServers.FTP.F0.
Server2		blank, F0 ... Fn (n = number of FTP event servers - 1)	Secondary FTP server ID.

\* **Note:** the # is replaced with a group number, e.g. Event.E0.Actions.A1.

### 2.4.4 Event SMTP Actions

**Description:** This group defines an action that sends mail to a mail server.

**Configuration file:** /etc/sysconfig/event.conf

**[Event.E#.Actions.A2] \***

Parameter name	Default value	Valid values	Description
Type	N	N,	Type of action. N = Notification.
Protocol	SMTP	SMTP	Protocol.
EmailTo		A string	E-mail address.

\* **Note:** the # is replaced with a group number, e.g. Event.E0.Actions.A2.

## 2.5 Event servers

### 2.5.1 EventServers.FTP.F#

**Description:** This group defines an FTP server that can be used by an event to upload files to.

**Configuration file:** /etc/sysconfig/eventservers.conf

**[EventServers.FTP.F#] \***

Parameter name	Default value	Valid values	Description
Address		An IP address or a host name	IP address or host name of the server
Login		A string	FTP user name
Password		A string	FTP password.
UploadPath		A string	Directory where uploaded files go.
Port	21	0 ... 65535	FTP port.
Passive	no	yes, no	Use passive FTP.

\* **Note:** the # is replaced with a group number starting from zero, e.g. EventServers.FTP.F0.



## 2.6 Notification

### 2.6.1 Notify.FTP

**Description:** Parameters for notification by FTP.

**Configuration file:** /etc/sysconfig/notify.conf

#### [Notify.FTP]

Parameter name	Default value	Valid values	Description
Enabled	no	yes, no	Enable sending of notifications by FTP.
HostName		A hostname	The IP address or hostname of the FTP server.
PassiveMode	no	yes, no	Establish a passive FTP connection.
Password		A string	The password for logging on to the FTP server.
Port	21	0 ... 65535	FTP port.
UploadPath		A string	The path to where the notification file will be saved on the FTP server.
UserName		A string	The username for logging on to the FTP server.

### 2.6.2 Notify.SMTP

**Description:** Parameters for notifications by e-mail.

**Configuration file:** /etc/sysconfig/notify.conf

#### [Notify.SMTP]

Parameter name	Default value	Valid values	Description
Enabled	no	yes,	Enable sending notifications by e-mail.

		no	
ToEmail		An e-mail address or a list of e-mail addresses separated by ;	The recipient(s) for the e-mail.

## 2.7 Properties

**Description:** Contains information about the firmware and system of the product. It also contains information about product dependent functionality and functionality that have no ordinary parameters. All user levels should be able to access the property parameters.

**Note:** The Properties parameters are product dependent. If a parameter does not exist, the functionality is not supported.

### 2.7.1 Properties.API

**Configuration file:** /etc/sysconfig/properties.conf

#### [Properties.API.HTTP]

Parameter name	Default value	Valid values	Description
Version		An unsigned integer	The supported HTTP API version (only the first digit).

### 2.7.2 Properties.Audio

**Configuration file:** /etc/sysconfig/properties.conf

#### [Properties.Audio]

Parameter name	Default value	Valid values	Description
Audio		yes, no	The product has audio support.
Format		A string	The supported formats separated by commas, e.g.

			g711,g726.
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### 2.7.3 Properties.Firmware

**Configuration file:** /etc/sysconfig/properties.conf

**[Properties.Firmware]**

Parameter name	Default value	Valid values	Description
BuildDate		A string	The build date for the current firmware in use.
BuildNumber		An unsigned integer	The build number for the current firmware in use.
Version		A string	The firmware version in use.

### 2.7.4 Properties.Image

**Configuration file:** /etc/sysconfig/properties.conf

**[Properties.Image]**

Parameter name	Default value	Valid values	Description
Format		A string	The supported image format. E.g. mjpeg,mpeg4.
Resolution		A string	The supported resolutions separated by commas. E.g. QUADVGA,VGA,QVGA,CIF,QCIF.
Rotation		A string	The supported image rotations separated by commas. E.g. 0,flip,mirror,rotate. For products not supporting image rotation the value is 0.

## 2.8 Audio

### 2.8.1 Audio

**Description:** Common audio parameters used for all audio configurations.

**Configuration file:** /etc/sysconfig/audio.conf

**[Audio]**

Parameter name	Default value	Valid values	Description
DuplexMode	disable	full, half, post, get disable	How the audio should be transferred.  full = Full duplex - simultaneous two-way audio. Transmit and receive audio at the same time.  half = Half duplex - non simultaneous two-way audio. Audio only allowed in one direction at a time.  post = Simplex. Audio to the server.  get = Simplex. Audio from the server.  disable=Disable the Audio function.

### 2.8.2 AudioSource.A#

**Description:** Parameters for each audio source (audio input/chip).

**Configuration file:** /etc/sysconfig/audio\_source.conf

**[AudioSource.A#] \***

Parameter name	Default value	Valid values	Description
BitRate	Encoder dependent	G711: ulaw (64000) alaw (64000) G726: 16000, 24000, 32000, 40000	The output bit rate (bits per second) from the encoder.

\* **Note:** the # is replaced with a group number starting from zero, e.g. AudioSource.A0

## 2.9 DDNS

### 2.9.1 DDNS

**Description:** Common DDNS parameters used for all DDNS configurations.

**Configuration file:** /etc/sysconfig/ddns.conf

**[DDNS]**

Parameter name	Default value	Valid values	Description
Enabled	no	Yes, no	Enable/disable DDNS function
Provider	1	1,2	The provider list contains two hosts that provide DDNS services. Please connect to the service provider's website to make sure the service charges.
Hostname		A string	Please input the hostname that is registered in the DDNS server.
Login		A string	The username for logging on to the DDNS server
Password		A string	The password for logging on to the DDNS server

## 2.10 Frame skip

### 2.10.1 Frame skip

**Description:** Common frame skip parameters used for all frame skip configurations.

**Configuration file:** /etc/sysconfig/frameskip.conf

**[Frameskip]**

Parameter name	Default value	Valid values	Description
Mjpeg	0	0~3	0: No skip, default
Mpeg4	0	0~3	1.: Frame skipping at 5 frame internal 2.: Frame skipping at 10 frame internal 3.: Frame skipping at 15 frame internal

## 2.11 Motion

### 2.11.1 Motion.M#

**Description:** Motion detection

**Configuration file:** /etc/sysconfig/motion.conf

**[Motion.M#]**

Parameter name	Default value	Valid values	Description
Enable	no	yes, no	Enable/Disable motion detection.
SamplingInterval	10	1-100	Sampling interval of motion detection. Ex: SamplingInterval: 10, system will take 1 sampling pixel for every 10 pixel.
DetectionLevel	10	1-100	Detection level for each sampling pixel, the smaller the value, the more sensitivity.
Sensitivity	80	1-100	Sensitivity level of the motion detection function. Sensitivity value is 40, it means when 60% or more sampling pixel detect different, system detect motion. The bigger the value, the more sensitivity.
TimeInterval	10	0-7200	When detect motion, wait a period of time for next detection. 10:wait 10 sec

### 2.11.2 Motion.M#.Actions

**Description:** When motion detect, the system action(alarm or send message)

**Configuration file:** /etc/sysconfig/motion.conf

**[Motion.M#.Actions]**

Parameter name	Default value	Valid values	Description
Alarm.Enable	no	yes, no	Enable/Disable alarm when motion detect
Alarm.Output	low	low, high	Alarm output high or low, when motion detect.
SMTP.Enable	no	yes, no	Send message to user preset E-mail address, when motion detect.
FTP.Enable	no	yes, no	Send message to user preset FTP site, when motion detect.

## 2.12 IR

### 2.12.1 IR Mode

**Description:** Set different mode of IR

**Configuration file:** /etc/sysconfig/ir.conf

[IR]

Parameter name	Default value	Valid values	Description
Mode	auto	auto manualon manualoff	Remove IR cut filter automatically / manually.