

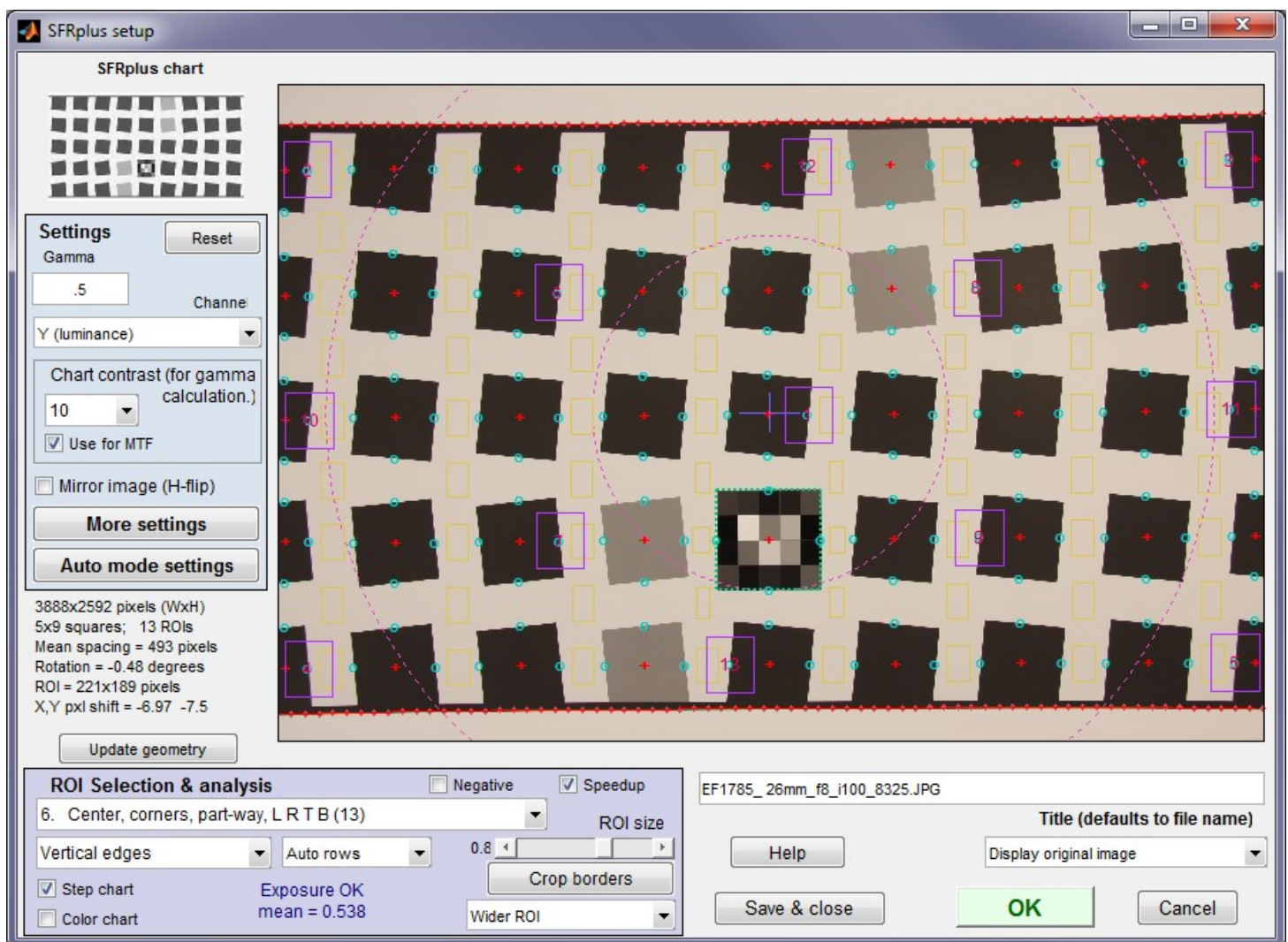
# SFRplus INI Reference

## SFRplus ini file reference

Since **SFRplus** is included in IT EXE and DLL, users may sometimes need to examine or edit the INI file used to control IT versions.

Most of the settings in the [sfrplus] section are set by one of the **three** SFRplus Settings windows that can be opened when SFRplus is run in Rescharts (or by clicking SFRplus setup in the Imatest main window). A few are set by responses to other windows or user actions. Settings that affect only Rescharts mode (and hence do not affect SFRplus Auto or the IT versions) will be highlighted in pink.

When Rescharts SFRplus is opened, typically by pressing SFRplus setup, the main **SFRplus settings** window is opened.



SFRplus settings window (also ♠ in table)

Two additional windows can be called from the **SFRplus settings** window. You can toggle between them or return to the settings window.

SFRplus settings

Title (defaults to file name)

EF1785\_26mm\_f8\_i100\_8325.JPG

Help

Display options

Click here for SFRplus Auto mode setup, which is in a separate window.

MTF plot units

4. LW/PH

for

5.7

microns per pixel

Magnification

1

Secondary Readout

MTF10P

Change

MTF20P

Max MTF plot freq

2x Nyquist

Edge plot

Edge profile (linear)

Crop (default)

Wavelength (um) for diffraction-ltd MTF

0.555

Rise distance

10-90% (default)

Settings

☐ Mirror image (H-flip) next read

☒ Speedup

☒ Edge roughness

☒ MTF noise reduction (mod apod)

Channel

Y (luminance)

Color reference

Default values

Color space

sRGB

Gamma (input)

.5

Chart contrast (for gamma calc.)

10

☒ Use for MTF

Distortion parameters (for calculating distortion from pre-distorted chart)

0

0

Zone weights: Center, Part Way, Corner (1-3)

1

0.75

0.5

Help

Display oversharpening only

Radius

1

4

2

SQF/Acutance Options

Reset

Optional settings

Indicent Lux (for ISO speed)

285

Bar-to-bar Chart height in cm.

52

Lens-to-chart distance in cm.

110

Optional parameters for Excel CSV output

Description & settings (sharpening, etc...; (for MTF Compare, etc.)

Lens (if interchangeable)

17.0 - 85.0 mm

Camera

Focal length (mm)

ISO speed

Aperture (f-stop)

Shutter speed

Reset

Canon EOS 40D

26.0 mm

100

8.0

0.5

☐ ISO standard SFR

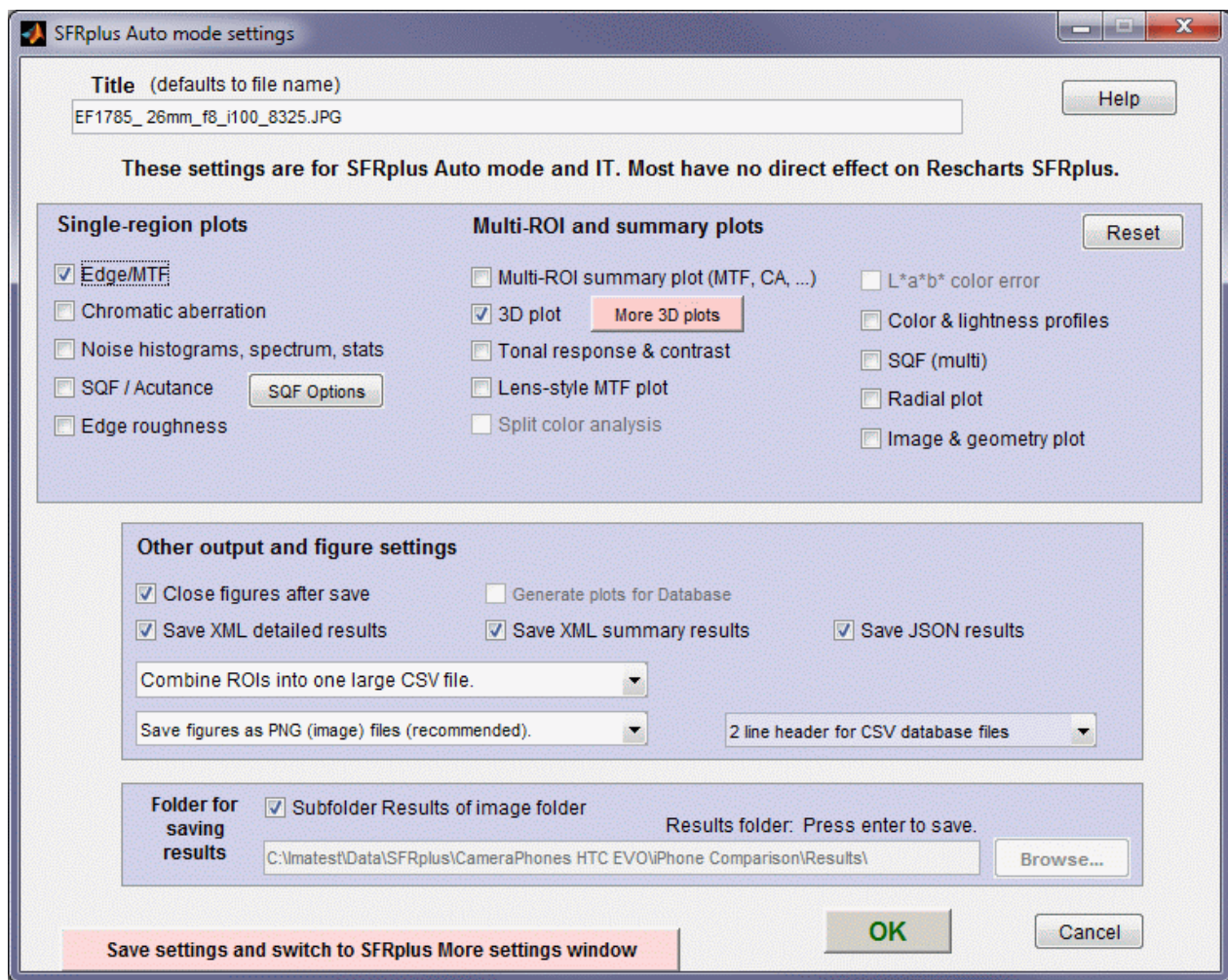
Switch to SFRplus Auto mode setup

OK

Cancel

SFRplus More settings window (also ♠ in table)





SFRplus Auto mode settings window (♦ in table). Settings in this window *only* affect SFRplus Auto (or IT EXE/DLL) runs. They do *not* affect Rescharts (interactive) runs.

INI file settings that affect several modules are described in [Imatest INI Reference](#).

### Notes

<b>(-IT)</b>	Not used in Imatest IT
<b>(gr)</b>	Affects graphics (figures). May not be of interest for Imatest IT, where graphics is often suppressed (by setting <code>disable_figs = 1</code> in the <code>[api]</code> section).
<b>(index)</b>	Setting is equal to the index of the popup menu. You'll need to open the Settings window to see these: Never used for important IT settings.
<b>(index-1)</b>	Setting is equal to the index of the popup menu – 1 (0 – (index-1)). Keeps backwards compatibility for some settings that were originally 0 (off) or 1 (on), but had options added.

♠	SFRplus Settings or More Settings window
♦	Auto mode settings window
ρ	Set during read
σ	Set during save
◇	Set in other window

## Table of [sfrplus] settings

Parameter	Settings window ♠ SFRplus settings or More settings; ◇ Other; ♦ Auto mode ρ Read; σ Save	Typical values (default if in [brackets])	Description
anlz_rough	♠ Analyze roughness	0 or 1 [0]	Analyze edge roughness if 1; leave needed.
anlz_sqf			
aper	♠ Aperture	(real number)	Normally obtained from EXIF data, entered in More settings if needed calculation.
areanorm	♠ Area display normalization	[2 2]	See <a href="#">Secondary Readout settings</a> .
autoreload	◇ Auto Reload (check) settings in Rescharts Settings dropdown menu	0 or 1 [0]	1 enables automatic (repeating) re Sensor edition.
bayeraw	◇ (Set by several buttons in the Monochrome image settings window)	0-5 [0]	If > 0, monochrome files contains E indicates primary color to analyze ( indicates Demosaic.

CA	♦ Plot Chromatic Aberration (checkbox)	Min or Max [Min]	Plot Chromatic Aberration
camera	Camera type	(text)	Normally obtained from EXIF data. populated.
charht	♠ Chart height (bar-to-bar) in cm.	>0 [0]	Used in Field of View (FoV) calculation.
chcontrast	♠ Chart contrast index & use	[1 0 0]	Element 1: Chart contrast index. 2: 1. If 1, use chart contrast to determine calculation.
closefigs	Set by the Close figures after save checkbox in the Save window.	0 or 1 [0]	1 recommended for IT (closes window)
colorchart	♠ Analyze color chart	0 or 1 [0]	Set in SFRplus settings window
colorspace	♠ Color space	sRGB	Color Space name. Used in color calibration.
crop_borders	(NOT RECOMMENDED) Extra cropping beyond the coarse & find adjustments. Set in the Crop pixels near borders section (lower-left).	0 0 0 0 0	First value turns extra cropping off/ T B in pixels. (NOT RECOMMENDED)
csvbase_header	Lines in header of CSV database file	1 or 2 [2] (index)	
csvs	CSV output file options	1-3 [1] (index)	1 = Separate CSV files for individual summary CSV file only. 3 = Combined CSV file.
cyclesper	Plot Edge and MTF	Min or Max	Used in SFR. Replaced by edgeMTF

cyclesper_value	Index for Edge/MTF plot units	1-9 [1] (index)	1. Cycles/pixel, 2. Cycles/mm, 3. Cycles/object, 4. Cycles/object pixel, 5. LP/PH, 6. Cycles/milliradian, 7. Cycles/object milliradian, 8. Cycles/Object mm, 9. Cycles/Object pixel mm
dbase_plots			(For Future database edition; unused)
disp3d	Display format for 3D plots	1-6 [2] (index)	1. Pseudocolor, image & text; 2. Pseudocolor, image & text; 3. Contours, image & text; 4. Contours, image only; 5. Pseudocolor shaded-only; 6. Pseudocolor, image only
distort_params	Distortion parameters for pre-distorted chart	[0 0]	Parameters for pre-distorted chart (correct distortion and Field of View distortion is compensated).
edgeIDfile	Edge ID file	” (empty)	File for specifying Edge IDs. Used in Edge ID 16. <a href="#">Instructions here</a> (Scroll down to Edge ID 16)
edgeMTF	♦ Plot Edge and MTF	Min or Max [Max]	Edge and MTF plot
figsave	♦ Store images in PNG or FIG format.	1 or 2 [1 (PNG) recommended]	File type for saving figures (PNG or FIG recommended because it requires less space)
filecomb	Set when multiple files are selected for analysis	0 or 1 [0]	0: Read and analyze files as a batch (signal-average) 1: Read and analyze files individually
foclth			
folder	Set during image file read	(Path name)	Folder for last input image
gamma	♠ Gamma (input) (Settings area)	[0.5]	Used to linearize image. Initial setting is 0.5
imageo	♦ Image & geometry plot	Min or Max	Plot Image and Geometry
iso			
labcolor			

lambdadiff	♠ Wavelength (um) for diffraction-ltd MTF	[0.555]	Wavelength (microns) for diffractio MTF curves in Edge/MTF plot
lastfiles			
lens			
luxinc			
lwlpd			
magnification			
mirror			
mod_apod			
multi			
multistyle			
n1090			
ncolor			
negative			
noisehist		Min or Max [Min]	
nroi			
other			
nchan	Channel popup menu	1-4	Channel to analyze: 1-4: R, G, B, Y

p3d			
partway			
pixelsper			
pixelsper			
pixunits_value			
plot3d		Min or Max	
plotimage			
plotmax			
plot_image	Plot checkboxes in Settings window	1 0 0 0 0 0	
pltrad			
pltsharp			
pop_edge			
prevdisp	Preview display popup menu, under the Preview image	[1] (index)	Display type for the Preview in the window
profiles			
radius			
RGBY_value	♠ Channel popup menu	1-8 [4]	Channel(s) to analyze. 10*: R, G, B only, G-only, B-only, Y-only
roi	Set during region selection (primarily in the fine adjust	1 1 3264 2448 (typical)	Region of interest (crop) in pixels. 4, each group corresponding to a rowid_save.



	window)		
roilth	ROI (region) size (length)	0.5-0.9 [0.85]	Selected in the ROI size slider in the window. 0.8 is good for most undistorted images, lower for strongly barrel-distorted images
roisel	Region selection	1-17	Determines which regions are selected. Described in <a href="http://www.imatest.com/docs/sfrplus">http://www.imatest.com/docs/sfrplus</a> . 1: Center, 2: Center, corners, etc. 3: All. Selected in the dropdown menu in the SFRplus settings window
save_answer	Save window—main answer (unused)	Yes, No	Saved setting not used.
save_dir	Set in Save window	(Folder name)	Last folder used to save results
saveCSV	Save window	0 or 1 [-99 = ignore]	Save CSV results. Overrides saveJSON
saveJSON	Save window	0 or 1 [-99 = ignore]	Save JSON results. Overrides saveXML
saveXML	Save window	0 or 1 [-99 = ignore]	Save XML results. Overrides saveJSON
save_file_list	Save window	[1 1 1 0 0 0 0 0 0 0]	List of results to save if element is 1: Orig. image, 2: Image LPF, HPF, 3: Image HPF, exag. noise, 4: Blemish image, 5: Image HPF, exag. noise, 6: Blemish line image, 7: CSV, 8: XML, 9: Ble, 10: JSON
SFRsuffix	Suffix... popup menu in Options II window	1-3 [1]	Information added to root file name 1: Channel – Orientation – Distance number (nn) 2: Channel_ROI_number (nn) 3: Channel – Orientation – Distance number (nn)
speedup	♠ Speedup (checkbox in Settings area)	0 or 1 [0]	Speedup removes detailed noise calculations as well as SQF/Acutal speedup = 1 is recommended if the image is not distorted

SQF	♦ SQF/Acutance plot	Min or Max	
SQFmult	Multi-region SQF/Acutance plot	Min or Max	
splitcolor	Plot split color results from color pattern		
stepchart	Analyze grayscale stepchart pattern	0 or 1 [1]	
stopplot2	Select parameter for lower stepchart plot	1-4 [1]	1: Local contrast, 2: Delta-C, 3: De Mireds
tones	Plot tonal response from grayscale stepchart pattern	Min or Max [Min]	
vhdisp	Edges to display for 3D plot: V, H, or V & H	1-3 [3]	1: V, 2: H, 3: V & H
vhor	Select edges to analyze: V, H, or V & H	1-3 [1]	1: V, 2: H, 3: V & H
zweights	Weights for MTF, etc. Weighted sums	[1 .75 .25]	[center part-way corner] weights (3 corner distance defines regions.) [ images; corner would be higher for

## Sample data

[sfrplus]

CA = Min

RGBY\_value = 4

SFRsuffix = 1

SQF = Min

SQFmult = Min  
anz\_rough = 0  
aper = 5.6  
areanorm = 2            2  
bayeraw = 0  
bkgnd3d = 0.9  
camera = DMC-GF1  
charht = 60  
chcontrast = 9            4            0  
closefigs = 1  
colorchart = 1  
colorspace = sRGB  
crop\_borders = 0            0            0            0  
csvbase\_header = 2  
csvs = 3  
cyclesper = Max  
cyclesper\_value = 4  
dbase\_plots = 0  
disp3d = 2  
distort\_params = 0            0  
edgeIDfile = C:\imatest\Documents\Companies\Lab126\2012-06-09\TedC\_11\_edge\_id\_selection.txt  
edgeMTF = Min  
edgecrop = 1  
edgerough = Min  
emph2 = 0  
expert = 1  
figsave = 1  
filecomb = 0  
foclth = 14.0 mm  
folder = C:\imatest\Data\SFRplus\CameraPhones HTC EVO\SamsungGII\  
gamma = .5  
imageo = Min  
invert3d = 0  
iso = 100  
labcolor = 0  
lambdadiff = 0.555  
lastfiles = "GII\_new\_chart\_4\_4mm\_f2.7\_i32\_20120620131238.jpg"  
"GII\_new\_chart\_4\_4mm\_f2.7\_i32\_20120620131241.jpg"  
lens = LUMIX G VARIO 14-45mm F3.5-5.6  
lenschart = 45

lensmtf = 0  
luxinc =  
lwlpd = 1  
magnification = 1  
mirror = 0  
mod\_apod = 1  
multi = 0  
multistyle = 1  
n1090 = 1  
ncolor = 1  
negative = 0  
noisehist = Min  
nroi = 13  
other =  
p3d = 6  
partway = 1  
pixelsper =  
pixunits\_value = 1  
plot3d = Max  
plotimage = 1  
plotmax = 1  
pltrad = 1            1            1  
pltsharp = 0  
pop\_edge = 1  
pprofiles = Min  
profile = 1  
radius = 2  
rdnum = 0.3  
rdnum2 = 0.2  
rdnum3 = 0.2  
rdpct = 30  
rdpct2 = 20  
rdpct3 = 20  
rdtype = MTF  
rdtype2 = (none)  
rdtype3 = (none)  
rdunit = 1  
rdunit2 = 1  
rdunit3 = 1  
ref\_value = 1

```

resultsave = 1
roi_mult = 1711      1332      1897      1622;284      129      470      418;3523
123      3709      409;271      2560      457      2850;3527      2530      3713
2817;880      725      1066      1015;879      1948      1065      2239;2929
721      3115      1010;2933      1936      3119      2225;270      1337      456
1627;3531      1328      3717      1614;2101      113      2287      403;1715
2555      1901      2845
roilth = 0.85
roisel = 6
roiwidth = 1
rowdet = 1
saveCSV = 1
saveJSON = 1
saveXML = 0
saveXMLsummary = 0
save_dir = c:\imatest\matlab\trunk\Results\
scale3d = 1      1      3      1      1      1      3      1      1
1      3      1      1      1      3      1      1      1      3
1      1      1      3      1      1      1      3      1      1
1      3      1      1      1      3      1      1      1      3
1      1      1      3      1      1      1      3      1      1
1      3      1      1      1      3      1      1      1      3
1      1      1      3      1      1      1      3      1      1
1      3      1      1      1      3      1      1      1      3
1      1      1      3      1      1      1      3      1      1
1      3      1      1      1      3      1      1      1      3      1
select3d = 0      0      0      0      0      0      0      0      0      0
0      0      0      0      0      0      0      0      0      0
0      0      0      0      0      0
shannon = Min
shutter = 0.3
speedup = 1
splitcolor = 0
stepchart = 1
stepplot2 = 1
tones = Min
vhdisp = 3
vhor = 1
zweights = 1      0.75      0.25

```



