

Tab 2 – Evaluating Compliance

This is the second tab in the interface (See Figure 1). It deals with determining the flicker compliance for the utility or individual facilities based on the measurement data.

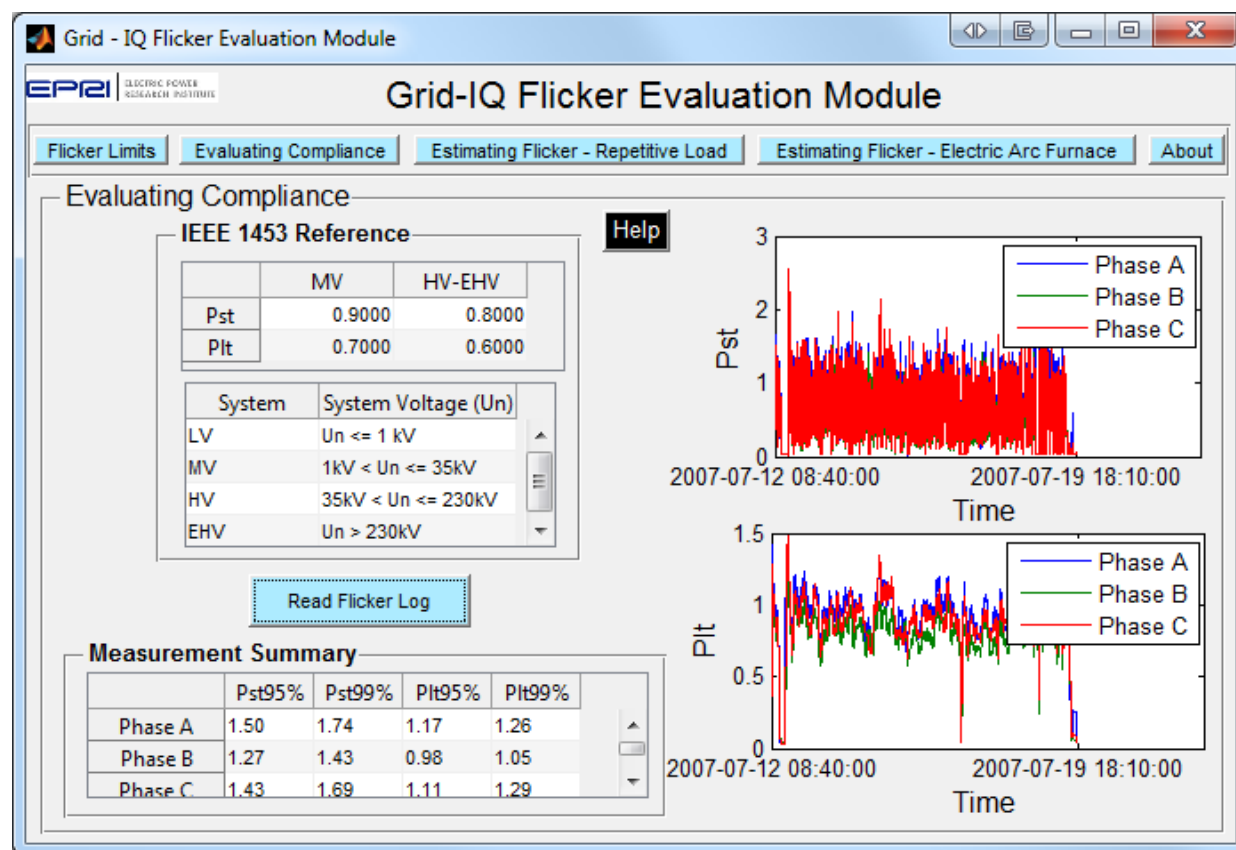


Figure 1
Evaluating Compliance tab

A button named “Read Flicker Log” has been provided to read the flicker data for the purpose of evaluating compliance. Clicking on this button will launch a file-selection dialog box (See Figure 2). The input file needs to have the format that is shown in Figure 3. The program reads from 4th line onwards. The top two lines can contain the header information related to the flicker measurement source and the meter. The third line explains the various parameters in the data from the next line onwards and their sequence that is expected in each line. These parameters can be typically obtained from the flickermeter output log. **It is recommended that a log of at least one week be used for evaluating compliance.**

The module performs the necessary computations, and the summary is provided in tabular form. The individual columns in the summary table are described as follows:

- Pst95%: 95th percentile value of short-term flicker index (Pst) over the evaluation period
- Pst99%: 99th percentile value of short-term flicker index (Pst) over the evaluation period
- Plt95%: 95th percentile value of long-term flicker (Plt) over the evaluation period

- $P_{It99\%}$: 99th percentile value of long-term flicker (P_{It}) over the evaluation period

In order to check for compliance, 95th percentile values above can be compared against the planning levels and emission limits as determined in the “Flicker Limits” tab of the interface. The recommended planning levels based on system voltage level are also displayed in tabular form in the interface itself for reference, and the same are reproduced in Table 1 and Table 2.

In addition, P_{st} and P_{It} log is displayed in a plot form.

Table 1
System voltage levels

System	System Voltage (U_N)
LV	$U_N \leq 1 \text{ kV}$
MV	$1 \text{ kV} < U_N \leq 35 \text{ kV}$
HV	$35 \text{ kV} < U_N \leq 230 \text{ kV}$
EHV	$U_N > 230 \text{ kV}$

Table 2
Planning levels for P_{st} and P_{It} in MV, HV, and EHV power systems (IEEE 1453)

	Flicker Planning Levels	
	MV	HV-EHV
P_{st}	0.9	0.8
P_{It}	0.7	0.6

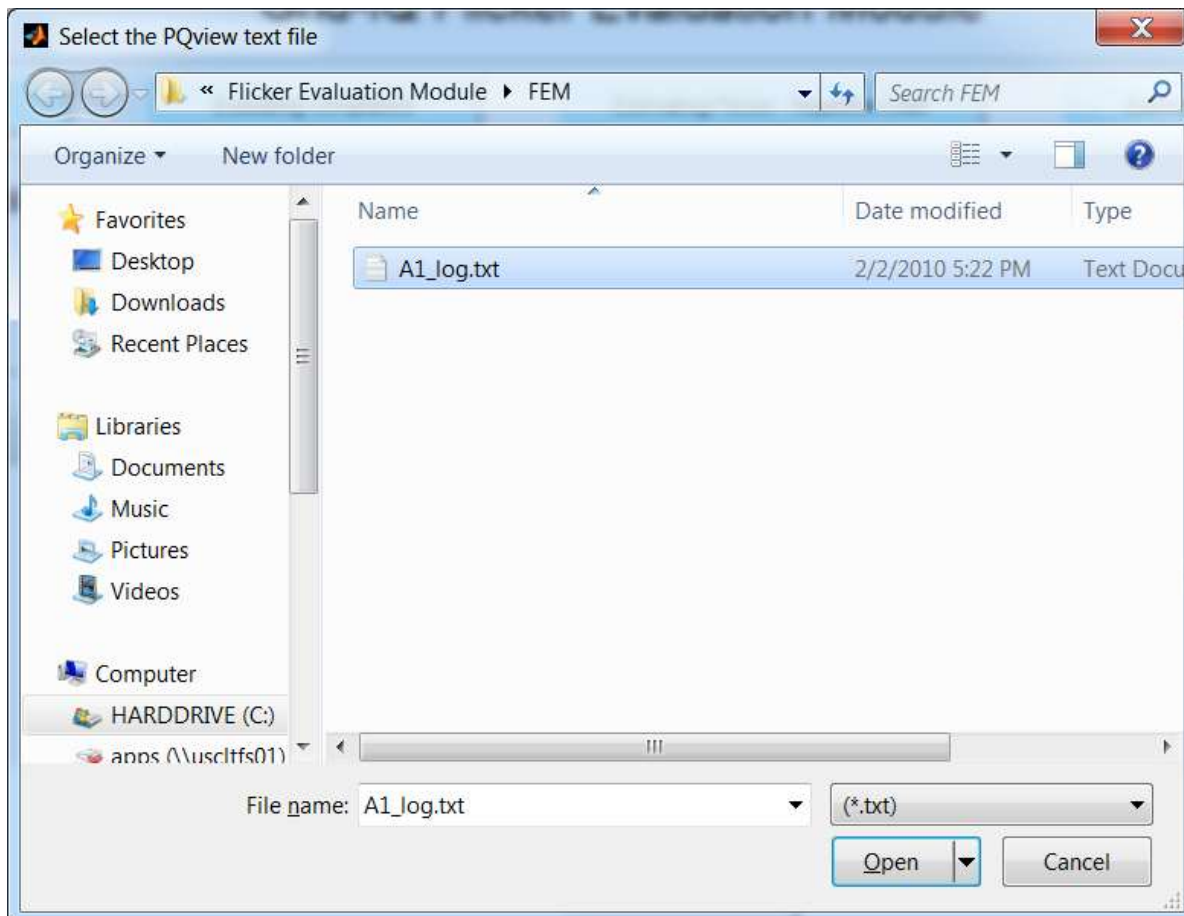


Figure 2
Flicker log-selection dialog box

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[PQview SteadyState]
A1
V Flicker Pst A,V Flicker Pst B,V Flicker Pst C,V Flicker Plt A,V Flicker Plt B,V Flicker Plt C
2007-07-12 08:40:00,0.398,0.3854,0.3631,0.398,0.3854,0.3631
2007-07-12 08:50:00,1.6628,1.3961,1.5197,1.39934358309151,1.15995731309439,1.24336948794752
2007-07-12 09:00:00,0.9593,0.737,0.6943,1.41919073256617,1.20603820214766,1.28477264652263
2007-07-12 09:10:00,1.4573,1.2889,1.3604,1.29634961827527,1.10632593106222,1.17225113860648
2007-07-12 09:20:00,0.518,0.5357,0.4334,1.20584123588303,1.03021101671138,1.09100627353977
2007-07-12 09:30:00,0.3747,0.3699,0.3674,1.16912469960724,0.994169109376688,1.06755808838525
2007-07-12 09:40:00,0.9365,0.754,0.931,1.11318619592181,0.945750014087748,1.01657161346108
2007-07-12 09:50:00,0.4081,0.29542,0.3774,1.14319882066552,0.973660021867953,1.06674656608399
2007-07-12 10:00:00,1.3193,1.1352,1.3309,1.09940406599036,0.936339444802041,1.02585147681527
2007-07-12 10:10:00,0.18753,0.15767,0.17066,1.06153277630448,0.804101021075305,0.800510378150700
...
2007-07-19 16:30:00,0.04093,0.04092,0.04098,0.258916612170708,0.0605438919856965,0.0872519213630776
2007-07-19 16:40:00,0.04093,0.04178,0.04122,0.258904780266424,0.0604948506736762,0.0872116426178775
2007-07-19 16:50:00,0.04155,0.04166,0.04161,0.258844080337313,0.0604626062174707,0.0872085956400045
2007-07-19 17:00:00,0.03172,0.028729,0.027715,0.0407236986354826,0.0593340654149846,0.0860967386508518
2007-07-19 17:10:00,0.04093,0.04092,0.04026,0.0396471313192787,0.0388619850078658,0.039022730878209
2007-07-19 17:20:00,0.04537,0.0443,0.04431,0.0403481135183752,0.0386544143486085,0.0388634228693173
2007-07-19 17:30:00,0.04776,0.04183,0.0413,0.0401824513269583,0.038741106906478,0.0394626138397876
2007-07-19 17:40:00,0.04012,0.04092,0.04098,0.0401277689637248,0.0387195912912912,0.0393750534905217
2007-07-19 17:50:00,0.041,0.04109,0.04177,0.0402531539985751,0.0386873911136838,0.0394048109476568
2007-07-19 18:00:00,0.041,0.04109,0.04328,0.0460551907877609,0.0395416455286186,0.0396227520133087
2007-07-19 18:10:00,0.07709,0.08064,0.08068,0.0451391122690741,0.0463870974561425,0.0464522435670375
```

Figure 3
Flicker log file format