

# Netquality report

## Analysis EN 50160

### Signatur

Company:	UPI
Location:	BANDUNG
Measuring point:	POWER QUQLLITY
Device name:	00000C3A UMG 510
Database:	C:\Documents and Settings\Ase Subandi\.pas\pasdb
Analysis Timeframe:	March 14, 2010 12:00 AM - March 15, 2010 11:59 PM
Analysis date:	March 26, 2010
Creator:	E ASE SUBANDI
Analysis application:	PAS 1.5.0(2008-07-29) build: 5607
Comment:	POWER QUALITY 3

### Overview

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#### *Main input*

Nominal voltage	220V
Nominal current	0A
Frequency	50Hz
Event limits	Sag: 90%; Swell: 110%; Interruption: 5%; Absolut voltage change: Off
Transient limits	Trns: 28%; Peak: 141%

#### *Auxillary input*

Nominal voltage	0V
Nominal current	0A
Event limits	Sag: Off; Swell: Off; Interruption: Off; Absolut voltage change: Off
Transient limits	Trns: Off; Peak: Off

#### Analysis EN 50160

Analysis	March 14, 2010 12:00 AM - March 15, 2010 11:59 PM
Timeframe:	
Device:	UMG510(Rel. "Oct 22 2008 08:36:43",001034)

# Flicker

In 82.6% of the time the flicker was above 1.0.

## Flicker

Name	Average	Minimum	Maximum
Long term flicker L1	1.25	0.87	3.27

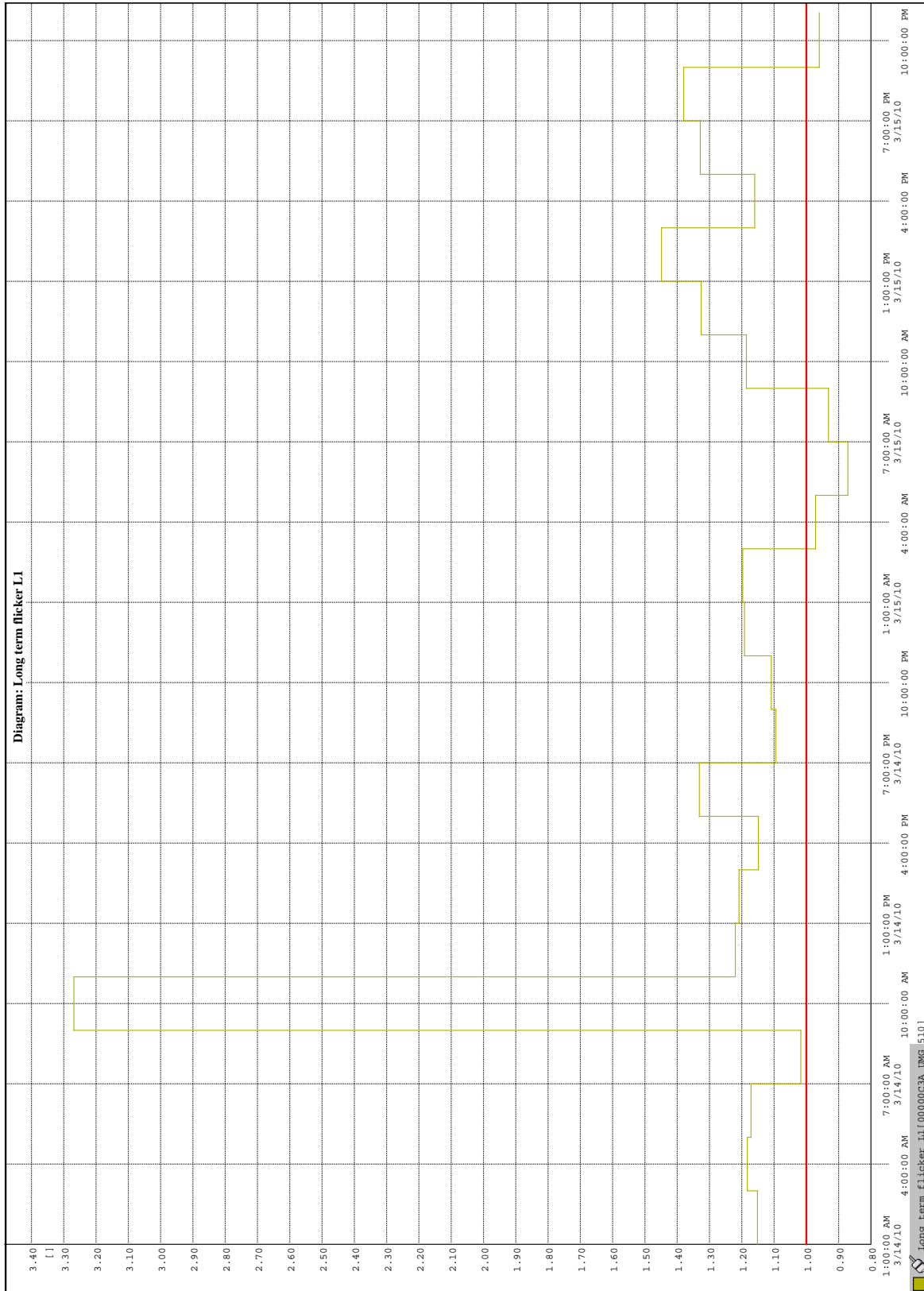
## Errors

No errors occurred

## Warnings

No Warnings reported

Diagram: Long term flicker L1



Analysis EN 50160

Analysis March 14, 2010 12:00 AM - March 15, 2010 11:59 PM

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# Supply frequency

In 99.4% of the time the frequency was between 49.5hz and 50.5hz.

## Supply frequency

Name	Average	Minimum	Maximum
Frequency	50.30Hz	49.19Hz	50.54Hz

## Errors

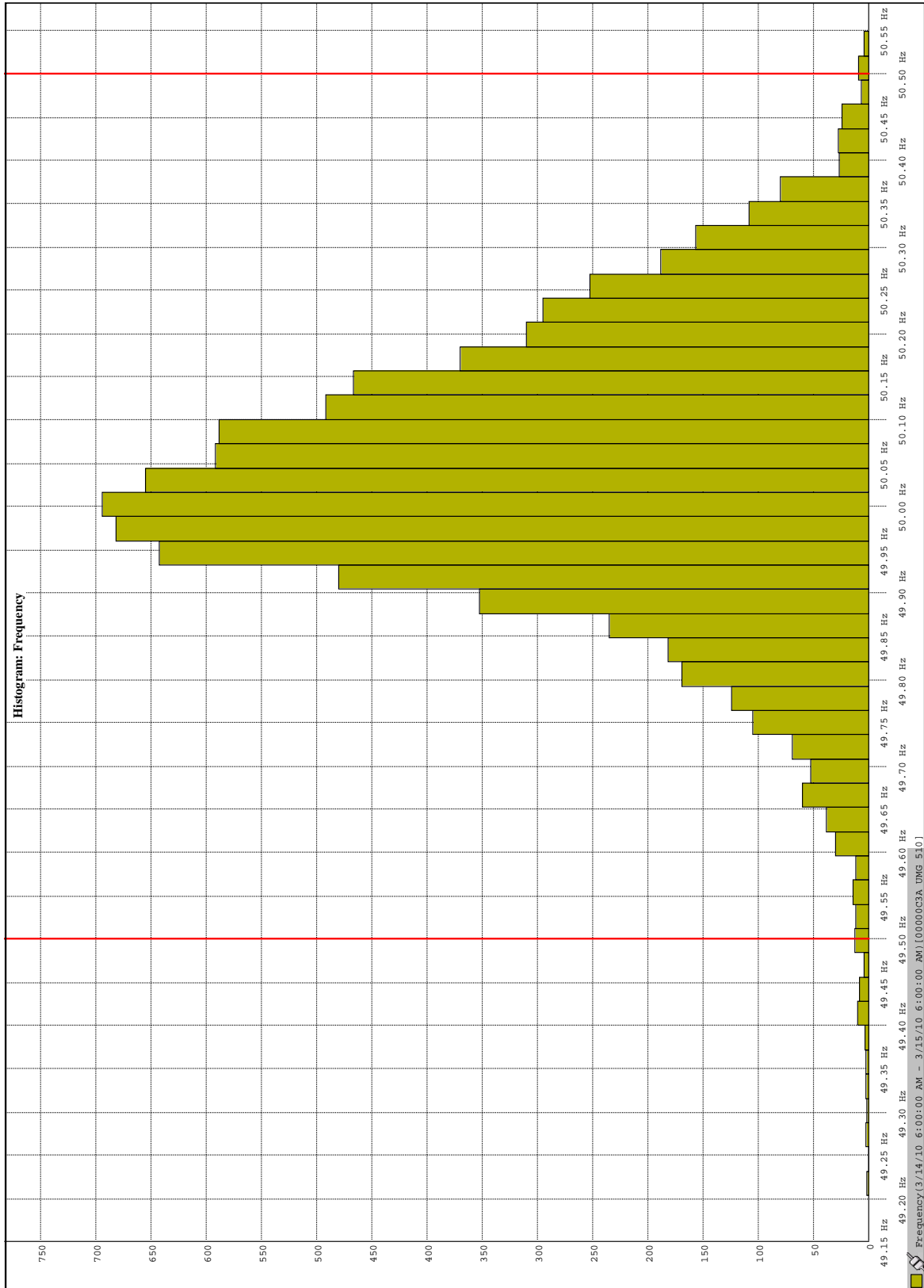
No errors occurred

## Warnings

Missing time sequence from 3/14/10 12:00:00 AM to 3/14/10 6:00:00 AM

Missing time sequence from 3/15/10 6:00:00 AM to 3/15/10 11:59:59 PM

# Histogram: Frequency



## Analysis EN 50160

Analysis: March 14, 2010 12:00 AM - March 15, 2010 11:59 PM  
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# Harmonics

## 2. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.24%	0.05%	0.29%

## 3. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	3.51%	1.77%	3.61%

## 4. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.09%	0.03%	0.11%

## 5. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	3.00%	2.08%	3.05%

## 6. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.07%	0.03%	0.07%

## 7. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	1.03%	0.56%	1.11%

## 8. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.05%	0.03%	0.06%

## 9. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	1.01%	0.38%	1.08%

## 10. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.04%	0.02%	0.05%

### 11. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.29%	0.05%	0.31%

### 12. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.03%	0.02%	0.04%

### 13. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.52%	0.10%	0.56%

### 14. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.03%	0.02%	0.04%

### 15. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.47%	0.13%	0.51%

### 16. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.03%	0.02%	0.03%

### 17. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.26%	0.17%	0.28%

### 18. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.03%	0.02%	0.03%

### 19. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.26%	0.12%	0.28%

### 20. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.03%	0.02%	0.03%

## 21. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.34%	0.13%	0.35%

## 22. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.02%	0.02%	0.03%

## 23. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.30%	0.15%	0.31%

## 24. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.02%	0.01%	0.03%

## 25. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.24%	0.09%	0.25%

## Errors

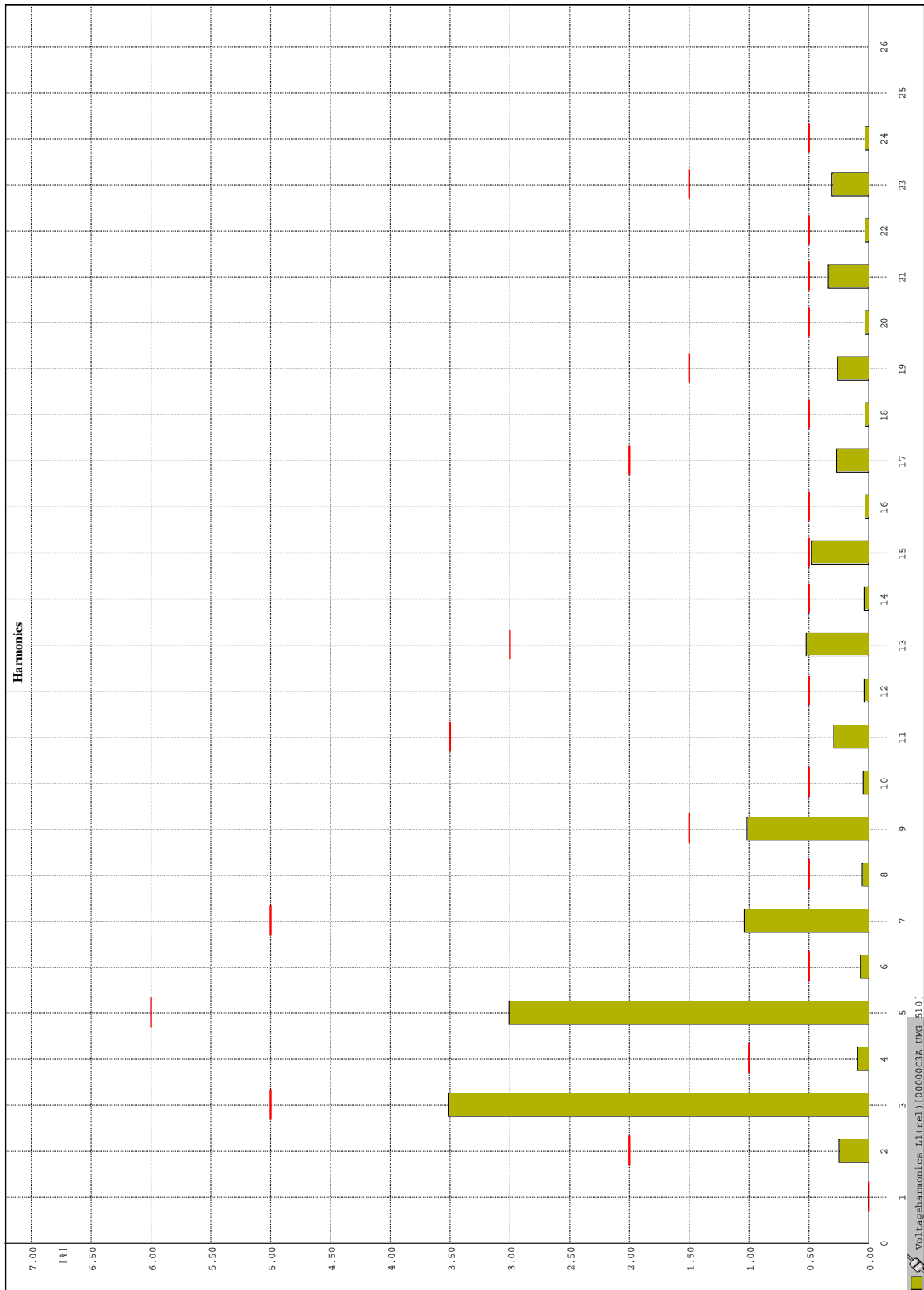
No errors occurred

## Warnings

No Warnings reported



# Harmonics



## Analysis EN 50160

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# THD

In 100.0% of the time the THD was between 0.0% and 8.0%.

## THD

Name	Average	Minimum	Maximum
Total harmonic distortion voltage L1	4.64%	3.35%	4.65%

## Errors

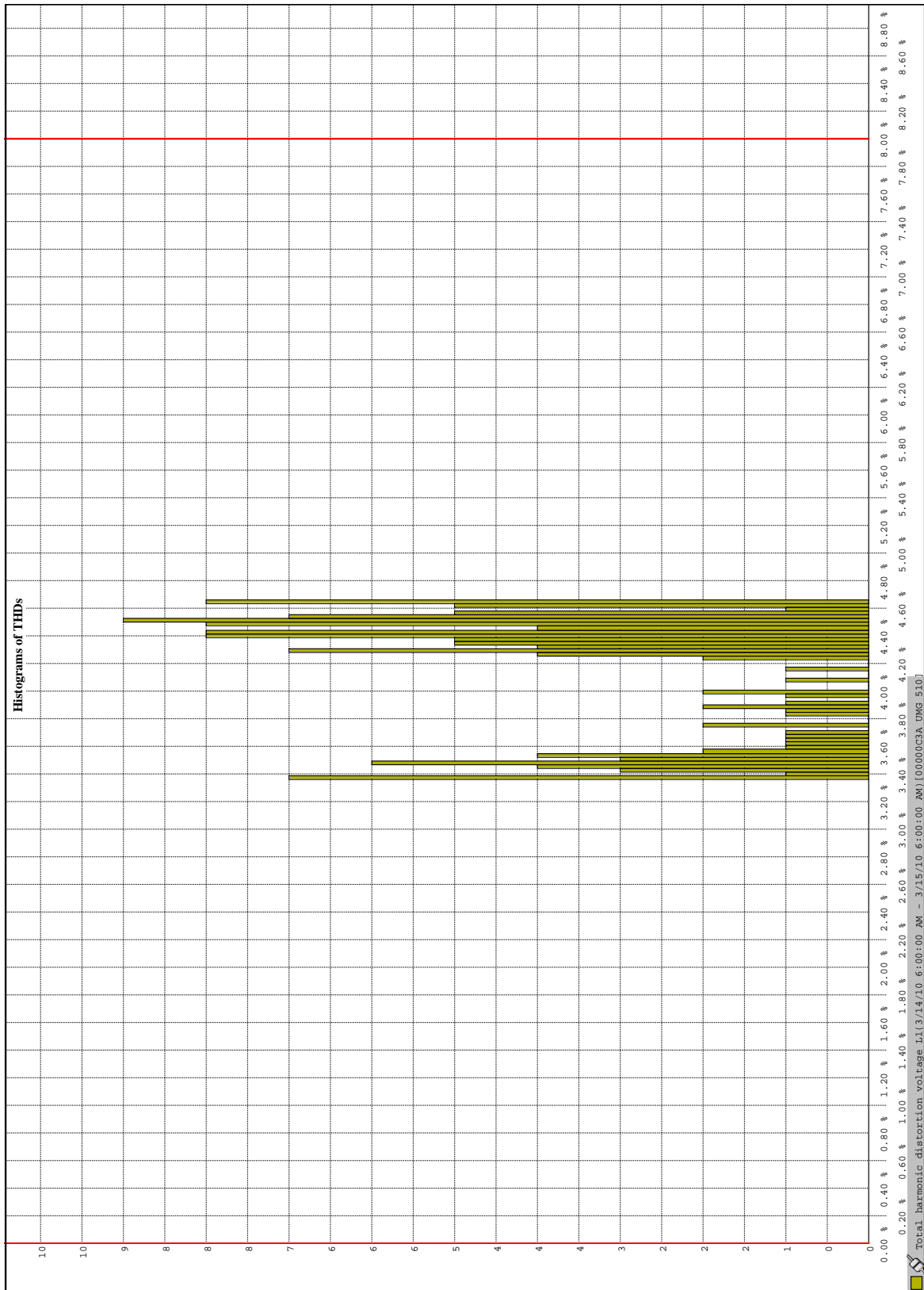
No errors occurred

## Warnings

Missing time sequence from 3/14/10 12:00:00 AM to 3/14/10 6:00:00 AM

Missing time sequence from 3/15/10 6:00:00 AM to 3/15/10 11:59:59 PM

# Histograms of THDs



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# Symmetry

## Errors

Missing Value: Spannungsunsymmetrie with 600sec average for 1 week as Histogram.

## Warnings

Missing time sequence from 3/14/10 12:00:00 AM to 3/15/10 11:59:59 PM

# Supply voltage

In 100.0% of the time the voltage was between 198.0V and 242.0V.

## Supply voltage

Name	Average	Minimum	Maximum
Voltage L1	228.78V	211.98V	229.70V

## Errors

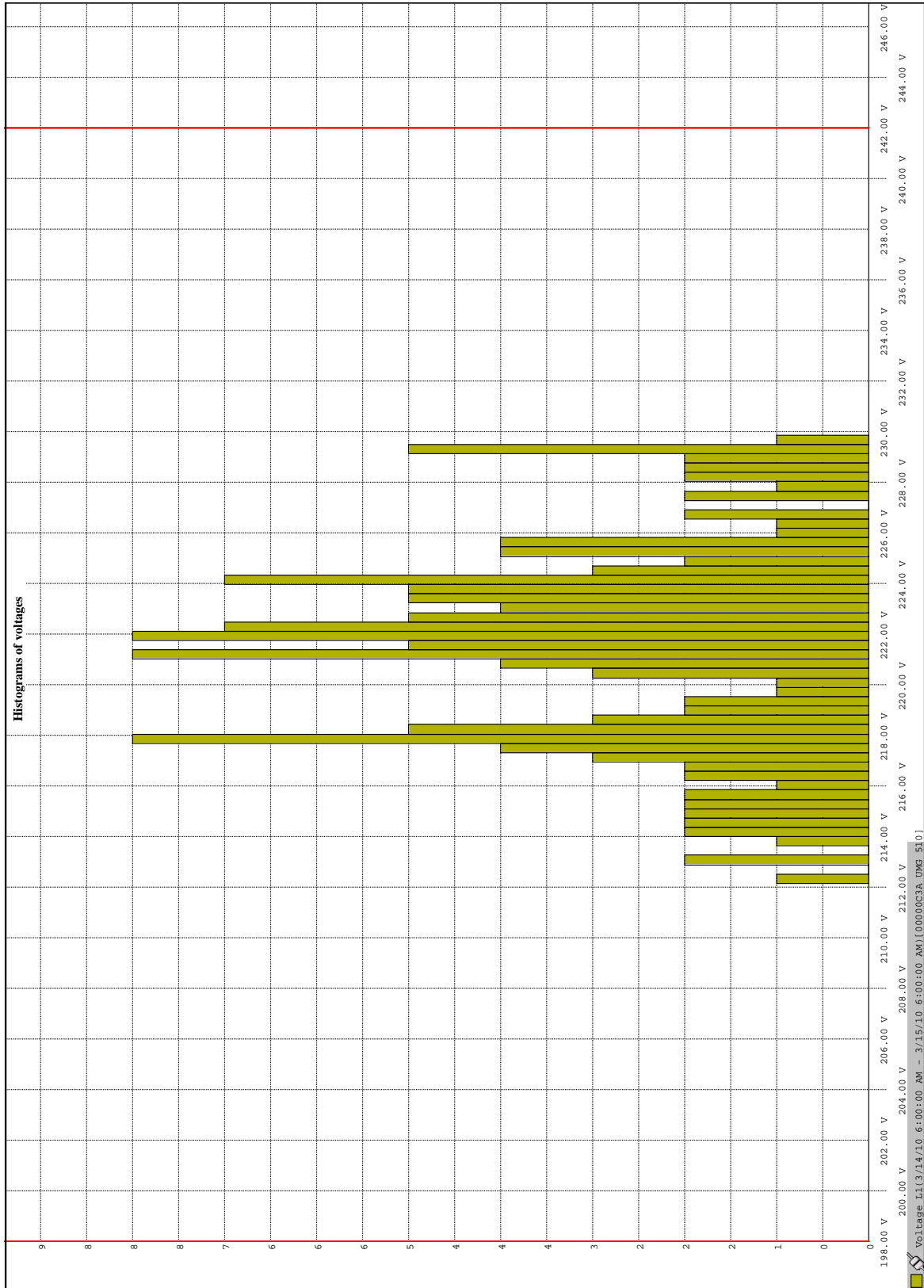
No errors occurred

## Warnings

Missing time sequence from 3/14/10 12:00:00 AM to 3/14/10 6:00:00 AM

Missing time sequence from 3/15/10 6:00:00 AM to 3/15/10 11:59:59 PM

# Histograms of voltages



## Analysis EN 50160

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# Voltage drop

5 events have been found.

## Undervoltage

Time	Input	Average	Minimum	Duration
3/14/10 10:12:37 AM '401	L1	157.53V	120.81V	20 ms
3/14/10 10:12:37 AM '422	L1	1.66V	0.05V	80 ms
3/14/10 10:12:37 AM '502	L1	102.67V	46.23V	20 ms
3/15/10 7:40:19 PM '010	L1	198.65V	196.46V	221 ms
3/15/10 7:46:18 PM '451	L1	199.13V	197.63V	200 ms

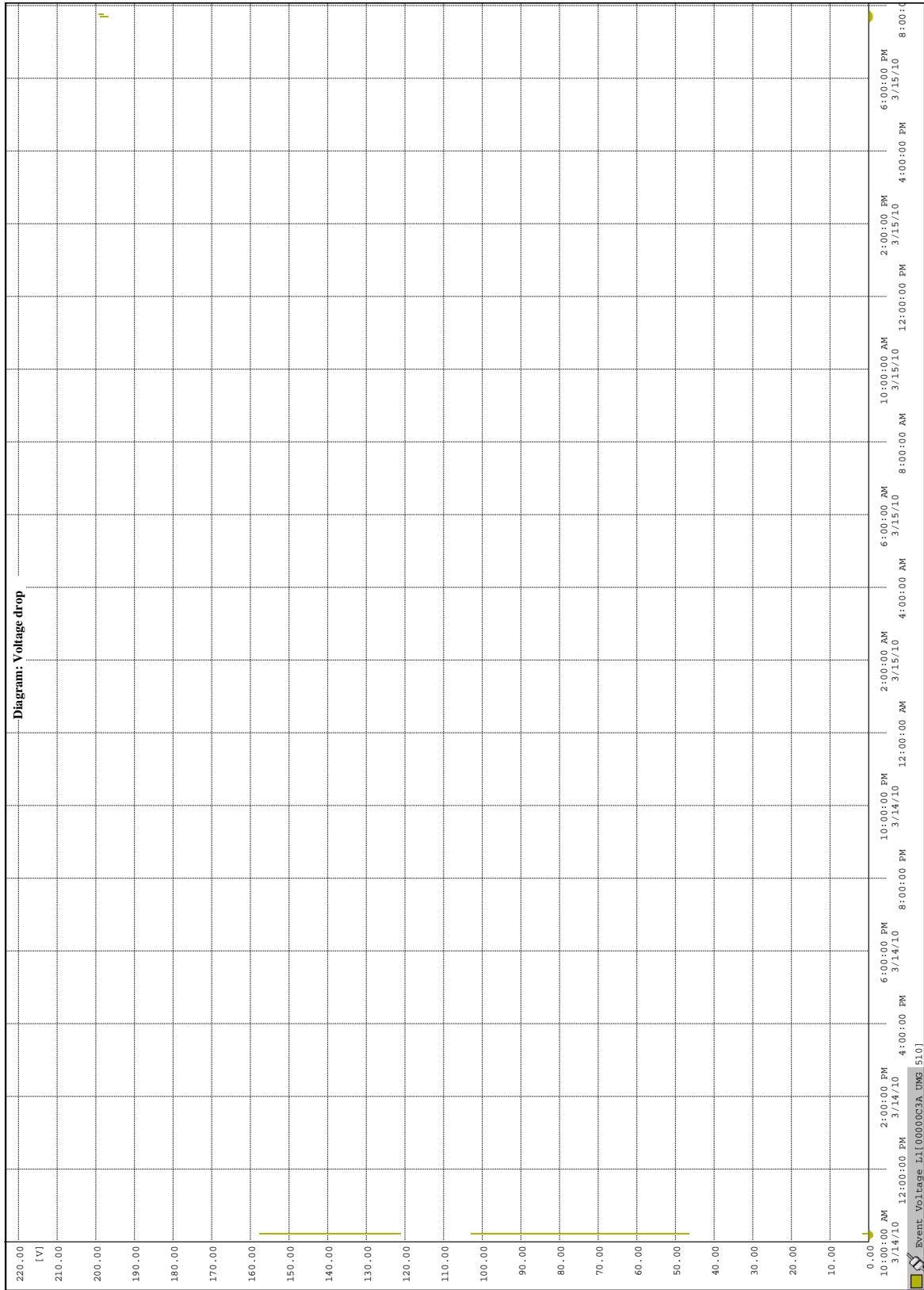
## Errors

No errors occurred

## Warnings

No Warnings reported

# Diagram: Voltage drop



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# Transients

2 transients have been found.

Time	Type
3/14/10 10:12:37 AM '509	Transient (trns L1) 3/14/10 10:12:37 AM '509
3/15/10 4:06:52 PM '837	Transient (trns L1) 3/15/10 4:06:52 PM '837

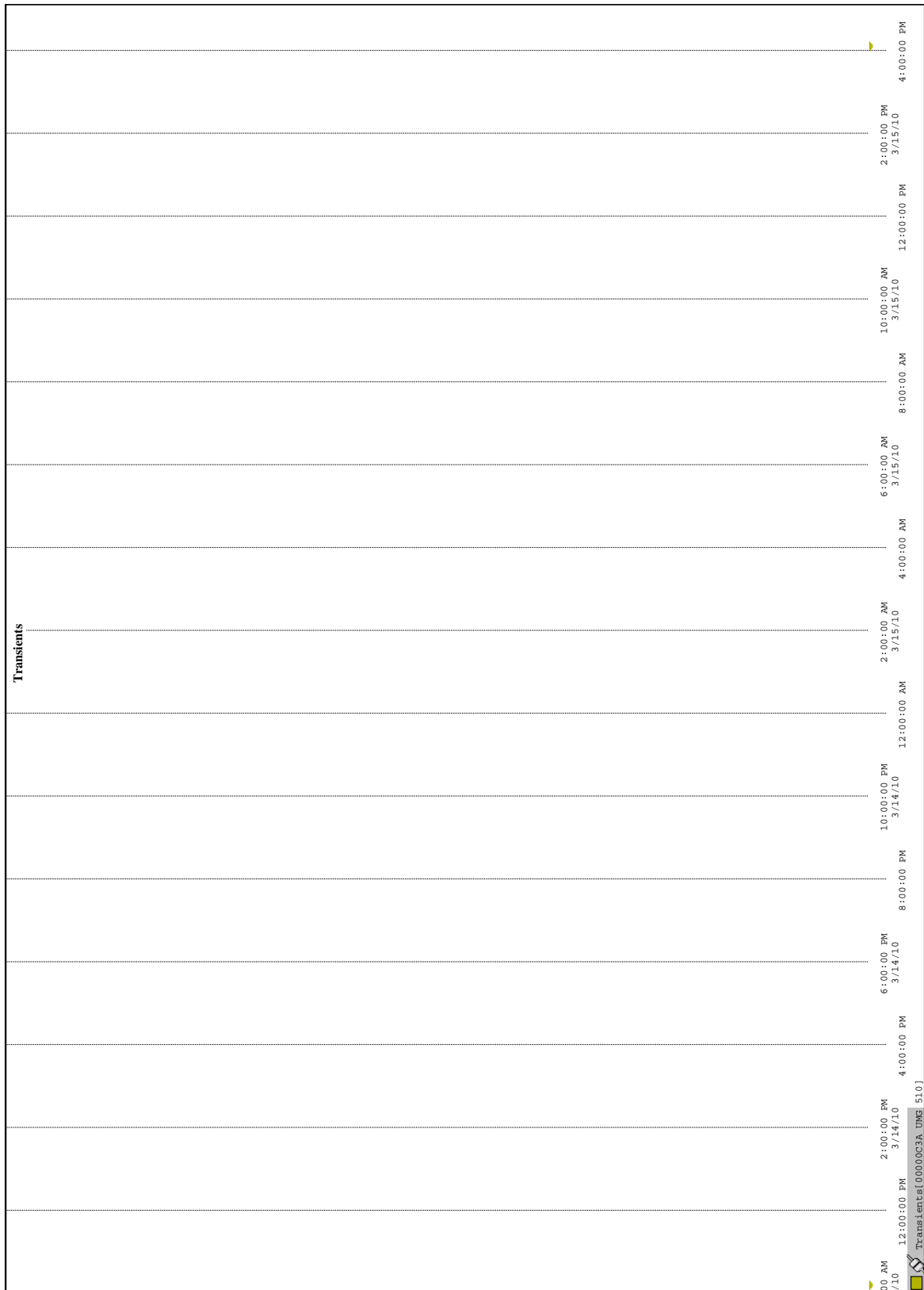
## Errors

No errors occurred

## Warnings

No Warnings reported

# Transients



## Analysis EN 50160

Analysis March 14, 2010 12:00 AM - March 15, 2010 11:59 PM

Timeframe:

Device: UMG510(Rel. "Oct 22 2008 08:36:43",001034)