

1. RF Power

1.1 Channel A NRP6A (S/N:103723)

Frequency [MHz]	Setting Value [dBm]	Measured [dBm]	Difference [dB]		Remarks
0.100	0.00				
1.000	0.00				
10.000	0.00				
100.000	0.00				
500.000	0.00				
1000.000	0.00				

2. Linearity

2.1 Channel A NRP6A (S/N:103723)

Level [dBm]	Measured [dBm]	Difference [dB]			Remarks
-30					
-25					
-20					
-15					
-10					
-5					
0					
5					
10					
15					
20					

Frequency: 1MHz

3. Reference & other signal source

Frequency [MHz]	Setting Value [dBm]	Measured [dBm]	Difference [dB]		Remarks
50.00	0.00				

1. Sine wave Power, Frequency Response

Frequency [MHz]	Measured				Remarks
	[dBm]				
0.100	-11.4				
1.000	-10.5				
10.000	-10.8				
100.000	-10.1				
300.000	-11.9				
500.000	-10.1				
1000.000	-11.8				
3000.000	-12.7				
Output Level: 0dBm					

2. Amplitude

Level [dBm]	Measured				Remarks
	[dBm]				
-10	-10.0				
-30	-30.0				
-50	-50.0				
-70	-70.0				
Frequency: 100MHz					

3. Frequency Accuracy

Frequency [MHz]	Measured [MHz]				Remarks
1000.000	1000.0000				
Level: 0dBm					

4. AM Frequency, AM Depth

Frequency [MHz]	Setting		Measured		Remarks
	Frequency [kHz]	Depth [%]	Frequency [kHz]	Depth [%]	
150	1	80	150.000000	80.000000	
Level:0dBm					

1. Frequency Response & Linearity

Applied		X		Y		Z		Average	
Frequency	Field	Reading	Correction	Reading	Correction	Reading	Correction	Reading	Correction
[MHz]	Strength	[V/m]	Factor	[V/m]	Factor	[V/m]	Factor	[V/m]	Factor
0.10	20.00								
0.50	20.00								
1.00	20.00								
10.00	20.00								
20.00	20.00								
50.00	20.00								
100.00	8.00								
100.00	20.00								
100.00	70.00								
100.00	125.00								
200.00	20.00								
300.00	20.00								
400.00	20.00								
500.00	20.00								
600.00	20.00								
700.00	20.00								
800.00	20.00								
900.00	20.00								
1,000.00	20.00								
2,000.00	20.00								
3,000.00	20.00								
4,000.00	20.00								
5,000.00	20.00								
6,000.00	20.00								

1 1.2/50 μ s combination wave generator1.1 1.2/50 μ s combination wave

1.1.1 Front time

1.2/50 μ s Open-circuit voltage				8/20 μ s Short-circuit current			
Indicated voltage [kV]	Measured [μ s]	Limits [μ s]	Results	Indicated voltage [kV]	Measured [μ s]	Limits [μ s]	Results
+0.5				+0.5			
-0.5				-0.5			
+1.0		1.2(± 30 %)		+1.0		8(± 20 %)	
-1.0				-1.0			
+2.0		(0.84-1.56)		+2.0		(6.4-9.6)	
-2.0				-2.0			
+4.0				+4.0			
-4.0				-4.0			

1.1.2 Time to half value

1.2/50 μ s Open-circuit voltage				8/20 μ s Short-circuit current			
Indicated voltage [kV]	Measured [μ s]	Limits [μ s]	Results	Indicated voltage [kV]	Measured [μ s]	Limits [μ s]	Results
+0.5				+0.5			
-0.5				-0.5			
+1.0		50(± 20 %)		+1.0		20(± 20 %)	
-1.0				-1.0			
+2.0		(40-60)		+2.0		(16-24)	
-2.0				-2.0			
+4.0				+4.0			
-4.0				-4.0			

1.1.3 Undershoot

1.2/50 μ s Open-circuit voltage				8/20 μ s Short-circuit current			
Indicated voltage [kV]	Measured [%]	Limits [%]	Results	Indicated voltage [kV]	Measured [%]	Limits [%]	Results
+0.5				+0.5			
-0.5				-0.5			
+1.0				+1.0			
-1.0		30(Max)		-1.0		30(Max)	
+2.0				+2.0			
-2.0				-2.0			
+4.0				+4.0			
-4.0				-4.0			

1.1.4 Open-circuit peak voltage, Short-circuit peak current

1.2/50 μ s Open-circuit voltage				8/20 μ s Short-circuit current			
Indicated voltage [kV]	Measured [kV]	Limits [kV]	Results	Indicated voltage [kV]	Measured [kA]	Limits [kA]	Results
+0.5		+0.45 — +0.55		+0.5		+0.225 — +0.275	
-0.5		-0.45 — -0.55		-0.5		-0.225 — -0.275	
+1.0		+0.90 — +1.10		+1.0		+0.45 — +0.55	
-1.0		-0.90 — -1.10		-1.0		-0.45 — -0.55	
+2.0		+1.80 — +2.20		+2.0		+0.90 — +1.10	
-2.0		-1.80 — -2.20		-2.0		-0.90 — -1.10	
+4.0		+3.60 — +4.40		+4.0		+1.80 — +2.20	
-4.0		-3.60 — -4.40		-4.0		-1.80 — -2.20	

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2.1 1.2/50 μ s combination wave (N-L1)

2.1.1 Front time

1.2/50 μ s Open-circuit voltage (N-L1)				8/20 μ s Short-circuit current (N-L1)			
Indicated voltage [kV]	Measured [μ s]	Limits [μ s]	Results	Indicated voltage [kV]	Measured [μ s]	Limits [μ s]	Results
+0.5				+0.5			
-0.5				-0.5			
+1.0		1.2(± 30 %)		+1.0		8(± 20 %)	
-1.0				-1.0			
+2.0		(0.84-1.56)		+2.0		(6.4-9.6)	
-2.0				-2.0			
+4.0				+4.0			
-4.0				-4.0			

2.1.2 Time to half value

1.2/50 μ s Open-circuit voltage (N-L1)				8/20 μ s Short-circuit current (N-L1)			
Indicated voltage [kV]	Measured [μ s]	Limits [μ s]	Results	Indicated voltage [kV]	Measured [μ s]	Limits [μ s]	Results
+0.5				+0.5			
-0.5				-0.5			
+1.0		50 μ s+10 μ s		+1.0		20(± 20 %)	
-1.0		-15 μ s		-1.0			
+2.0		(35-60)		+2.0		(16-24)	
-2.0				-2.0			
+4.0				+4.0			
-4.0				-4.0			

2.1.3 Undershoot

1.2/50 μ s Open-circuit voltage (N-L1)				8/20 μ s Short-circuit current (N-L1)			
Indicated voltage [kV]	Measured [%]	Limits [%]	Results	Indicated voltage [kV]	Measured [%]	Limits [%]	Results
+0.5				+0.5			
-0.5				-0.5			
+1.0				+1.0			
-1.0		N/A		-1.0		N/A	
+2.0				+2.0			
-2.0				-2.0			
+4.0				+4.0			
-4.0				-4.0			

2.1.4 Open-circuit peak voltage, Short-circuit peak current

1.2/50 μ s Open-circuit voltage (N-L1)				8/20 μ s Short-circuit current (N-L1)			
Indicated voltage [kV]	Measured [kV]	Limits [kV]	Results	Indicated voltage [kV]	Measured [kA]	Limits [kA]	Results
+0.5		N/A		+0.5		N/A	
-0.5		N/A		-0.5		N/A	
+1.0		N/A		+1.0		N/A	
-1.0		N/A		-1.0		N/A	
+2.0		N/A		+2.0		N/A	
-2.0		N/A		-2.0		N/A	
+4.0		N/A		+4.0		N/A	
-4.0		N/A		-4.0		N/A	

1.3 Phase shifting

1.3.1 N-L1

Phase angle [deg]	Indicated voltage [kV]	Measured		Limits		Results
		Time [ms]	Phase angle [deg]	Time [ms]	Phase angle [deg]	
0	+1.0			0.555 - 0.555	0(±10)	
	-1.0					
90	+1.0			4.445 - 5.555	90(±10)	
	-1.0					
180	+1.0			9.445 - 10.555	180(±10)	
	-1.0					
270	+1.0			14.445 - 15.555	270(±10)	
	-1.0					
電源電圧設定: AC 231.84 V / 50 Hz						

1.4 Effective output impedance

1.4.1 1.2/50 μ s combination wave

Indicated voltage [kV]	Open-circuit peak voltage [kV]	Short-circuit peak current [kA]	Effective output impedance [Ω]	Limits [Ω]	Results
+0.5				2(±10 %) (1.8-2.2)	
-0.5					
+1.0					
-1.0					
+2.0					
-2.0					
+4.0					
-4.0					
Effective output impedance = Open-circuit peak voltage / Short-circuit peak current					

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2.5 1.2/50 μ s combination wave (L1-L2)

2.5.1 Front time

1.2/50 μ s Open-circuit voltage (L1-L2)				8/20 μ s Short-circuit current (L1-L2)			
Indicated voltage [kV]	Measured [μ s]	Limits [μ s]	Results	Indicated voltage [kV]	Measured [μ s]	Limits [μ s]	Results
+0.5				+0.5			
-0.5				-0.5			
+1.0		1.2(± 30 %)		+1.0		8(± 20 %)	
-1.0				-1.0			
+2.0		(0.84-1.56)		+2.0		(6.4-9.6)	
-2.0				-2.0			
+4.0				+4.0			
-4.0				-4.0			

2.5.2 Time to half value

1.2/50 μ s Open-circuit voltage (L1-L2)				8/20 μ s Short-circuit current (L1-L2)			
Indicated voltage [kV]	Measured [μ s]	Limits [μ s]	Results	Indicated voltage [kV]	Measured [μ s]	Limits [μ s]	Results
+0.5				+0.5			
-0.5				-0.5			
+1.0		50 μ s + 10 μ s		+1.0		20(± 20 %)	
-1.0		-15 μ s		-1.0			
+2.0				+2.0		(16-24)	
-2.0		(35-60)		-2.0			
+4.0				+4.0			
-4.0				-4.0			

2.5.3 Undershoot

1.2/50 μ s Open-circuit voltage (L1-L2)				8/20 μ s Short-circuit current (L1-L2)			
Indicated voltage [kV]	Measured [%]	Limits [%]	Results	Indicated voltage [kV]	Measured [%]	Limits [%]	Results
+0.5			N/A	+0.5			N/A
-0.5			N/A	-0.5			N/A
+1.0			N/A	+1.0			N/A
-1.0			N/A	-1.0			N/A
+2.0		N/A	N/A	+2.0		N/A	N/A
-2.0			N/A	-2.0			N/A
+4.0			N/A	+4.0			N/A
-4.0			N/A	-4.0			N/A

2.5.4 Open-circuit peak voltage, Short-circuit peak current

1.2/50 μ s Open-circuit voltage (L1-L2)				8/20 μ s Short-circuit current (L1-L2)			
Indicated voltage [kV]	Measured [kV]	Limits [kV]	Results	Indicated voltage [kV]	Measured [kA]	Limits [kA]	Results
+0.5		N/A		+0.5		N/A	
-0.5		N/A		-0.5		N/A	
+1.0		N/A		+1.0		N/A	
-1.0		N/A		-1.0		N/A	
+2.0		N/A		+2.0		N/A	
-2.0		N/A		-2.0		N/A	
+4.0		N/A		+4.0		N/A	
-4.0		N/A		-4.0		N/A	

1 1.2/50 μ s combination wave generator1.1 1.2/50 μ s combination wave

1.1.1 Front time

1.2/50 μ s Open-circuit voltage				8/20 μ s Short-circuit current			
Indicated voltage [kV]	Measured [μ s]	Limits [μ s]	Results	Indicated voltage [kV]	Measured [μ s]	Limits [μ s]	Results
+3.0				+3.0			
-3.0				-3.0			
+4.0				+4.0			
-4.0		1.2(± 30 %)		-4.0		8(± 20 %)	
+4.5				+4.5			
-4.5		(0.84-1.56)		-4.5		(6.4-9.6)	
+5.0				+5.0			
-5.0				-5.0			
+7.0				+7.0			
-7.0				-7.0			

1.1.2 Time to half value

1.2/50 μ s Open-circuit voltage				8/20 μ s Short-circuit current			
Indicated voltage [kV]	Measured [μ s]	Limits [μ s]	Results	Indicated voltage [kV]	Measured [μ s]	Limits [μ s]	Results
+3.0				+3.0			
-3.0				-3.0			
+4.0				+4.0			
-4.0		50(± 20 %)		-4.0		20(± 20 %)	
+4.5				+4.5			
-4.5		(40-60)		-4.5		(16-24)	
+5.0				+5.0			
-5.0				-5.0			
+7.0				+7.0			
-7.0				-7.0			

1.1.3 Open-circuit peak voltage, Short-circuit peak current

1.2/50 μ s Open-circuit voltage				8/20 μ s Short-circuit current			
Indicated voltage [kV]	Measured [kV]	Limits [kV]	Results	Indicated voltage [kV]	Measured [kA]	Limits [kA]	Results
+3.0		+2.0 - +4.0		+3.0		+0.2 - +1.0	
-3.0		-2.0 - -4.0		-3.0		-1.0 - -0.2	
+4.0		+3.0 - +5.0		+4.0		+0.4 - +1.2	
-4.0		-3.0 - -5.0		-4.0		-1.2 - -0.4	
+4.5		+3.5 - +5.5		+4.5		+0.5 - +1.3	
-4.5		-3.5 - -5.5		-4.5		-1.3 - -0.5	
+5.0		+4.0 - +6.0		+5.0		+0.6 - +1.4	
-5.0		-4.0 - -6.0		-5.0		-1.4 - -0.6	
+7.0		+6.0 - +8.0		+7.0		+1.0 - +1.8	
-7.0		-6.0 - -8.0		-7.0		-1.0 - -1.8	

2 AC Volt Line

2.1 1.2/50 μ s combination wave (R Line)

2.1.1 Open-circuit peak voltage, Short-circuit peak current

1.2/50 μ s Open-circuit voltage (R-G)				8/20 μ s Short-circuit current (R-G)			
Indicated voltage [kV]	Measured [kV]	Limits [kV]	Results	Indicated voltage [kV]	Measured [kA]	Limits [kA]	Results
+3.0		N/A		+3.0		N/A	
-3.0		N/A		-3.0		N/A	
+4.0		N/A		+4.0		N/A	
-4.0		N/A		-4.0		N/A	
+4.5		N/A		+4.5		N/A	
-4.5		N/A		-4.5		N/A	
+5.0		N/A		+5.0		N/A	
-5.0		N/A		-5.0		N/A	
+7.0		N/A		+7.0		N/A	
-7.0		N/A		-7.0		N/A	

2.2 1.2/50 μ s combination wave (S Line)

2.2.1 Open-circuit peak voltage, Short-circuit peak current

1.2/50 μ s Open-circuit voltage (S-G)				8/20 μ s Short-circuit current (S-G)			
Indicated voltage [kV]	Measured [kV]	Limits [kV]	Results	Indicated voltage [kV]	Measured [kA]	Limits [kA]	Results
+3.0		N/A		+3.0		N/A	
-3.0		N/A		-3.0		N/A	
+4.0		N/A		+4.0		N/A	
-4.0		N/A		-4.0		N/A	
+4.5		N/A		+4.5		N/A	
-4.5		N/A		-4.5		N/A	
+5.0		N/A		+5.0		N/A	
-5.0		N/A		-5.0		N/A	
+7.0		N/A		+7.0		N/A	
-7.0		N/A	----	-7.0		N/A	

1 Voltage dips, short interruptions Generators (N-L1 AC 230 V / 50 Hz)

1.1 Output voltage at no load

Test level	Duration	Measured [V] r.m.s.	Limits [V]		Results	Remarks
100 % output	-		230(±5 %)	218.5-241.5	Pass	
80 % output	250 cycle		184(±5 %)	174.8-193.2	Pass	
70 % output	25 cycle		161(±5 %)	152.95-169.05	Pass	
40 % output	10 cycle		92(±5 %)	87.4-96.6	Pass	
0 % output	1 cycle		—	0-46	Pass	Peak-Peak
0 % output	1/2 cycle		—	0-46	Pass	Peak

1.2 Output voltage at 100 Ω load

Test level	Duration	Measured [V] r.m.s.	Limits [V]		Results	Remarks
100 % output	-		230(±5 %)	218.5-241.5	Pass	
80 % output	250 cycle		184(±5 %)	174.8-193.2	Pass	
70 % output	25 cycle		161(±5 %)	152.95-169.05	Pass	
40 % output	10 cycle		92(±5 %)	87.4-96.6	Pass	

1.3 Rise time / Fall time at 100 Ω load

Test level	Phase angle [°]	Measured [μs]	Limits [μs]	Results	Remarks
0 % to 100 %	90		1-5	Pass	
	270			Pass	
100 % to 80 %	90			Pass	
	270			Pass	
100 % to 70 %	90			Pass	
	270			Pass	
100 % to 40 %	90			Pass	
	270			Pass	
100 % to 0 %	90			Pass	
	270			Pass	

1.4 Overshoot, Undershoot at 100 Ω load

Test level	Phase angle [°]	Measured [V]	Limits [V]	Results	Remarks
0 % to 100 %	90		Less than 5 % of (r.m.s) (at Power supply voltage 230 V) <11.5 V	Pass	
	270			Pass	
100 % to 80 %	90			Pass	
	270			Pass	
100 % to 70 %	90			Pass	
	270			Pass	
100 % to 40 %	90			Pass	
	270			Pass	
100 % to 0 %	90			Pass	
	270			Pass	

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1.5 Phase angle accuracy at 100 Ω Load

Test level	Phase angle [°]	Measured		Limits		Results
		Time [ms]	Phase angle [°]	Time [ms]	Phase angle [°]	
0 % to 100 %	0			-0.555-0.555	0 $\pm$ 10	Pass
	45			1.945-3.055	45 $\pm$ 10	Pass
	90			4.445-5.555	90 $\pm$ 10	Pass
	135			6.945-8.055	135 $\pm$ 10	Pass
	180			9.445-10.555	180 $\pm$ 10	Pass
	225			11.945-13.055	225 $\pm$ 10	Pass
	270			14.445-15.555	270 $\pm$ 10	Pass
	315			16.945-18.055	315 $\pm$ 10	Pass
	359			19.389 - 20.50	359 $\pm$ 10	Pass
100 % to 0 %	0			-0.555-0.555	0 $\pm$ 10	Pass
	45			1.945-3.055	45 $\pm$ 10	Pass
	90			4.445-5.555	90 $\pm$ 10	Pass
	135			6.945-8.055	135 $\pm$ 10	Pass
	180			9.445-10.555	180 $\pm$ 10	Pass
	225			11.945-13.055	225 $\pm$ 10	Pass
	270			14.445-15.555	270 $\pm$ 10	Pass
	315			16.945-18.055	315 $\pm$ 10	Pass
	359			19.389 - 20.50	359 $\pm$ 10	Pass
100 % to 80 %	90			4.445-5.555	90 $\pm$ 10	Pass
	180			9.445-10.555	180 $\pm$ 10	Pass
80 % to 100 %	90			4.445-5.555	90 $\pm$ 10	Pass
	180			9.445-10.555	180 $\pm$ 10	Pass
100 % to 70 %	90			4.445-5.555	90 $\pm$ 10	Pass
	180			9.445-10.555	180 $\pm$ 10	Pass
70 % to 100 %	90			4.445-5.555	90 $\pm$ 10	Pass
	180			9.445-10.555	180 $\pm$ 10	Pass
100 % to 40 %	90			4.445-5.555	90 $\pm$ 10	Pass
	180			9.445-10.555	180 $\pm$ 10	Pass
40 % to 100 %	90			4.445-5.555	90 $\pm$ 10	Pass
	180			9.445-10.555	180 $\pm$ 10	Pass

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1.6 Duration for voltage dips and output voltage at 100 Ω load

1.6.1 100 % to 80 %

1.6.2 100 % to 70 %

	1/2 cycle 10[ms]	80 % output 260.22[V](peak)		1/2 cycle 10[ms]	70 % output 227.69[V](peak)
Measured	10		Measured	10	
	1 cycle 20[ms]	80 % output 520.43[V](peak to peak)		1 cycle 20[ms]	70 % output 455.38[V](peak to peak)
Measured	20		Measured	20	
	5 cycle 100[ms]	80 % output 520.43[V](peak to peak)		5 cycle 100[ms]	70 % output 455.38[V](peak to peak)
Measured	100		Measured	100	
	10 cycle 200[ms]	80 % output 520.43[V](peak to peak)		10 cycle 200[ms]	70 % output 455.38[V](peak to peak)
Measured	200		Measured	200	
	25 cycle 500[ms]	80 % output 520.43[V](peak to peak)		25 cycle 500[ms]	70 % output 455.38[V](peak to peak)
Measured	500		Measured	500	
	50 cycle 1000[ms]	80 % output 520.43[V](peak to peak)		50 cycle 1000[ms]	70 % output 455.38[V](peak to peak)
Measured	1000		Measured	1000	

1.6.3 100 % to 40 %

1.6.4 100 % to 0 %

	1/2 cycle 10[ms]	40 % output 130.11[V](peak)		1/2 cycle 10[ms]	0 % output 0[V](peak)
Measured	10		Measured	10	
	1 cycle 20[ms]	40 % output 260.22[V](peak to peak)		1 cycle 20[ms]	0 % output 0[V](peak to peak)
Measured	20		Measured	20	
	5 cycle 100[ms]	40 % output 260.22[V](peak to peak)		5 cycle 100[ms]	0 % output 0[V](peak to peak)
Measured	100		Measured	100	
	10 cycle 200[ms]	40 % output 260.22[V](peak to peak)		10 cycle 200[ms]	0 % output 0[V](peak to peak)
Measured	200		Measured	200	
	25 cycle 500[ms]	40 % output 260.22[V](peak to peak)		25 cycle 500[ms]	0 % output 0[V](peak to peak)
Measured	500		Measured	500	
	50 cycle 1000[ms]	40 % output 260.22[V](peak to peak)		50 cycle 1000[ms]	0 % output 0[V](peak to peak)
Measured	1000		Measured	1000	

1.7 Inrush current

1.7.1 AC 230 V / 50 Hz, 90 [deg]

1.7.2 AC 230 V / 50 Hz, 270 [deg]

	[A]		[A]
Measured		Measured	

1. Vertical Axis (Voltage)

1.1 DC

Range [mV/div]	Setting [mV]	Vertical Axis [mV]			
		Channel 1	Channel 2	Channel 3	Channel 4
10	80				
20	160				
50	400				
100	800				
200	1600				
500	4000				
1000	8000				
2000	16000				
5000	40000				

Input Impedance: 1 M Ω

2 Horizontal Axis (Time)

2.1 Channel 1

Frequency [MHz]	Horizontal Axis	
	[MHz]	[ms]
1000.000000		

Input Impedance: 50 M Ω

3. Frequency Response

Frequency [MHz]	Frequency Response [mVrms]			
	Channel 1	Channel 2	Channel 3	Channel 4
1000.00000				

Input Impedance: 50 M Ω

Input Level: 100 mVrms