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Gerätetechnik
und Elektronik.

Akkreditiertes
Prüflabor (DA Tech)
Reg.Nr. TTI-Go54/92-01

Test report

report No.	number of copies	pages	issued date
MHM-EST-7.970170053/C Jakobi	1	5	12.11.97
test			
vibration and shock test			
test basis / -specification			
E DIN IEC 48D/89/CD : 1995-11 Demand 1			
Object under test	type designation		identification no.
Rack	europac PRO 3 HE "heavy version"		
client	manufacturer		
Schroff GmbH	Schroff GmbH		
Langenalberstraße 96 – 100			
75334 Straubenhardt			
tester	receipt of object under test date		test date / period of time
Jacobi	28.01.1997		29.und 30.01.1997
Prepared by signature	verified signature		

A handwritten signature in black ink, appearing to read 'Jacobi', written over the 'Prepared by' field.

A handwritten signature in black ink, appearing to be a stylized 'M', written over the 'verified signature' field.



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1 *Used documents*

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All these documents are filed in the test report GEL3-UM-7.9701170053/A

2 *Test equipment*

	Type	manufacturer
shaker :	1000 IAR	Unholtz-Dickie
vibration control system:	400 AT	Unholtz-Dickie
signal conditioner:	104/109	Endevco
accelerometers:	4500	Brüel & Kjaer
	10B10T	Unholtz-Dickie
	226C	Endevco

The measuring equipments are calibrated regularly according to the calibration instructions of the TÜV PRODUCT SERVICE GmbH. All calibrations are traced back to national standards.

3 *Test procedure*

3.1 *Object under test*

The tested object was a subrack. It was tested in a mounting frame built by the client. The subrack was fitted with 14 dummies (each one 250 g).

3.2 *Test specification*

3.2.1 *Resonance search*

motion:	sinusiodal
frequency range:	5 - 150 Hz
amplitude:	5 - 150 Hz, 0.2 g
sweep rate:	1 oct / min.
test duration:	1 sweep



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3.2.2 Resonant dwell

motion: sinusoidal
frequency range: resonance determined like 3.2.1
amplitude: 1 g
test duration: 10 min

3.2.3 Vibration test

motion: sinusoidal
frequency range: 10 – 150 Hz
amplitude: 10 - 60 Hz 0,075 mm pk
60 - 150 Hz 1 g
sweep rate: 1 oct / min
test duration: 1 sweep

3.2.4 Shock tests

Type of shock: half sine
amplitude: 15 g
shock duration: 11 ms
application: 3 shocks per axis, on three mutually perpendicular axes

3.3 Test sequence

no.	test	run	axis	page	Measuring points and comments
1	Resonance search	3	X	/U- 1/1	Subrack middle, top and back
2	Resonant dwell	3	X	/U- 2/1	
3	Vibration test	3	X	/U- 3/1	
4	Shock test	5 6	+X -X	/U- 4/1	
5	Resonance search	4	Y	/U- 1/2	Subrack middle, top and back
6	Resonant dwell	4 5	Y	/U -2/2	
7	Vibration test	4	Y	/U -3/2	
8	Shock test	7 8	-Y +Y	/U- 4/2	
9	Resonance search	6	Z	/U- 1/3	Subrack middle, top and back
10	Resonant dwell	7	Z	/U- 2/3	
11	Vibration test	5	Z	/U- 3/3	
12	Shock test	9 10	+Z -Z	/U- 4/3	



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4 Test result

The visual inspection showed no damage. A detailed inspection will be done by the customer.

5 Explanation of the measuring diagrams

5.1 Vibration test (see /U-1/ page 1)

- 1 Frequency range in Hz
 - 2 Acceleration level in g
 - 3 Control channel
 - 4 Reference level
 - 5 Constant acceleration
 - 6 Test duration
 - 7 Measuring level
 - 8 cursor
 - 9 measuring channel
- frequency: FREQ in Hz
 - acceleration: A in g
 - velocity: V in m/s
 - displacement: D in mm

5.2 resonance list (see /U-1 / page 1)

- 1 ratio limit
- 2 measuring channel
- 3 frequency in Hz
- 4 test level in g
- 5 measuring level in g
- 6 ratio

5.3 shock test (see /U-4 / page 1)

- 1 reference level in g
- 2 measuring level in g
- 3 number of shocks
- 4 duration

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