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Elektromagnetische Verträglichkeit -/- Elektrische Sicherheit
Beratung -/- Planung -/- Projektbegleitung

Dipl.-Ing. Wilfried Ottinger A 4872 Neukirchen 6
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EMC Testreport

Report # EMVC 2003-06-07 TCL24-124
Convertec Powersupply
for TRACO TCL 24-124



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1 EUT

1.1 EUT Description

Ordered by	Convertec Ltd. Whitemill Industry Estate Wexford Republic of Ireland
EUT Type: SN:	Powersupply TCL20-124 Prototype
Manufacturer of Powersupply	Convertec Ltd.
Standard	EN 55022:1998; Disturbance Voltages on Powerline Class B EN 55022:1998; Disturbance Voltages on output ports CDN Measurement EN 55022:1998; Radiated Emission
Test Lab	EMC Test Lab EMV Consulting A-4872 Neukirchen
Date	June 6 th 2003
Remarks:	Load 9,4 Ohm
Testresult:	the device complies with the requirements for disturbance voltage on power lines acc. to EN55022 Class B and with the requirements for disturbance voltage on in/out ports acc. to EN55022 as well as with the requirements of radiated emission acc. to EN55022 Class B.
Environment :	T=24 °C,F=44%
Test engineer:	Dipl. Ing. Ottinger Willy



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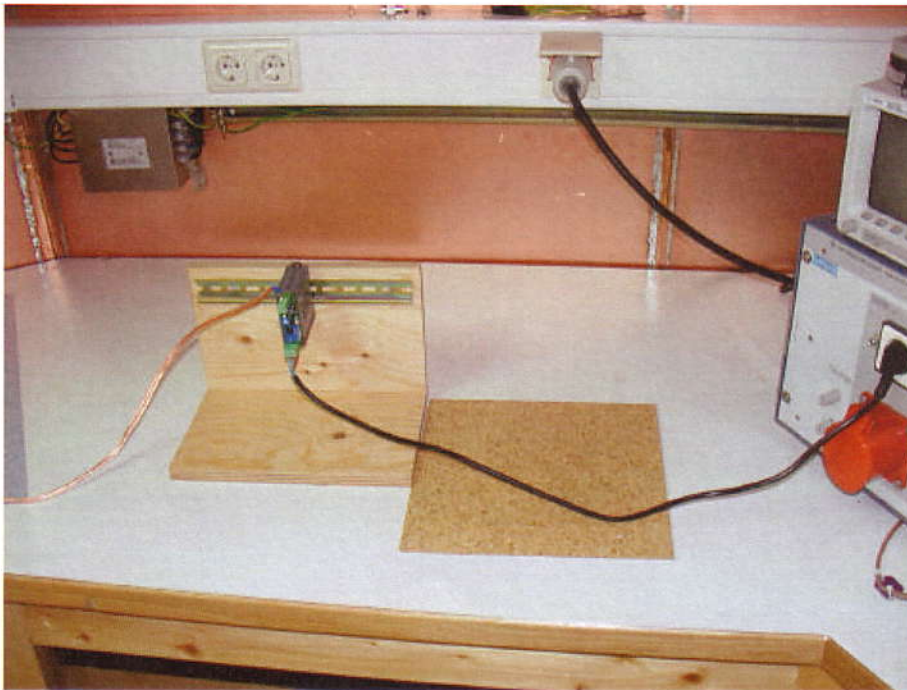
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2.1 Conducted Emission:

The power supply is connected to the LISN (50 Ω // 50 μ F) on the mains terminal.

Green Line: Average Detector
Blue Line: Peak Detector
Blue Asterik: Quasi Peak Detector

Position for Measurement





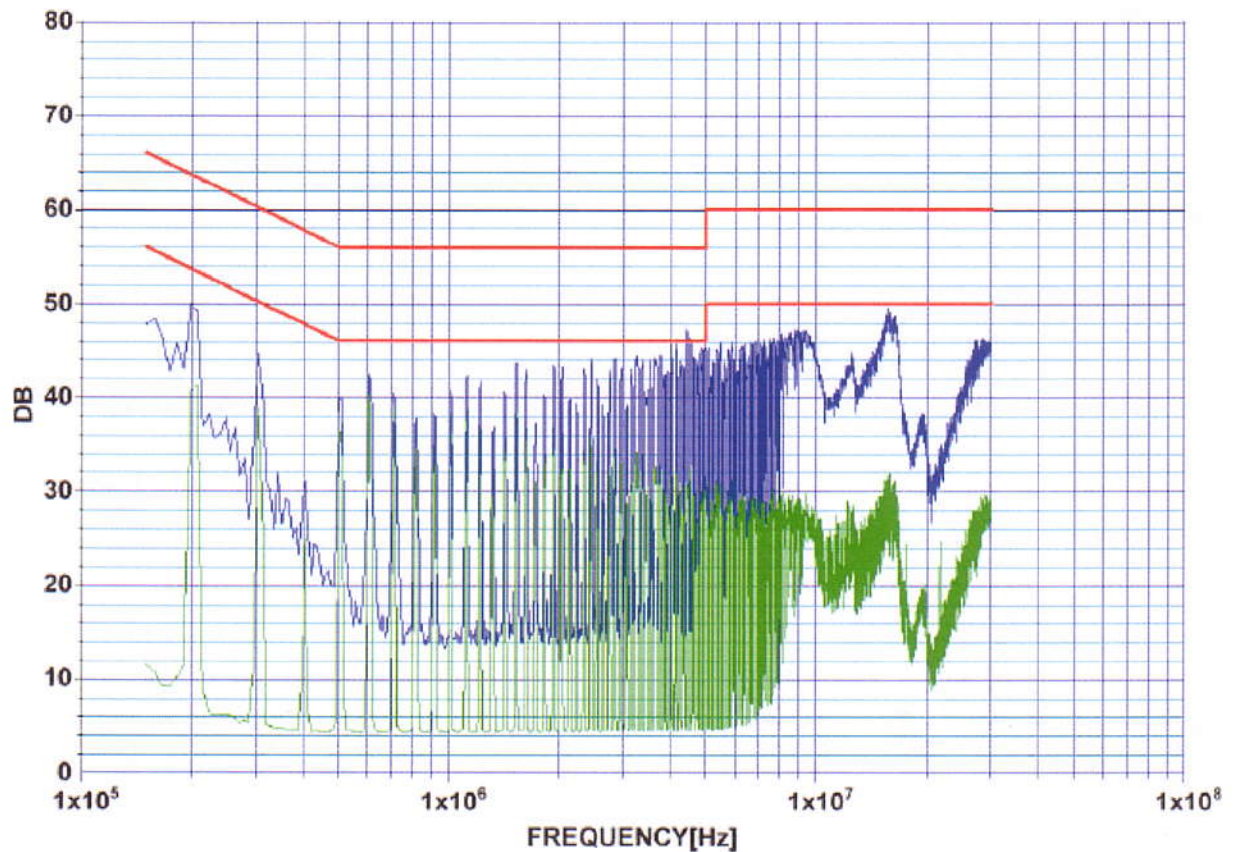
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Diagram 1 Voltage Line L (LISN) (values are dB μ V)

blue= peak, green=average



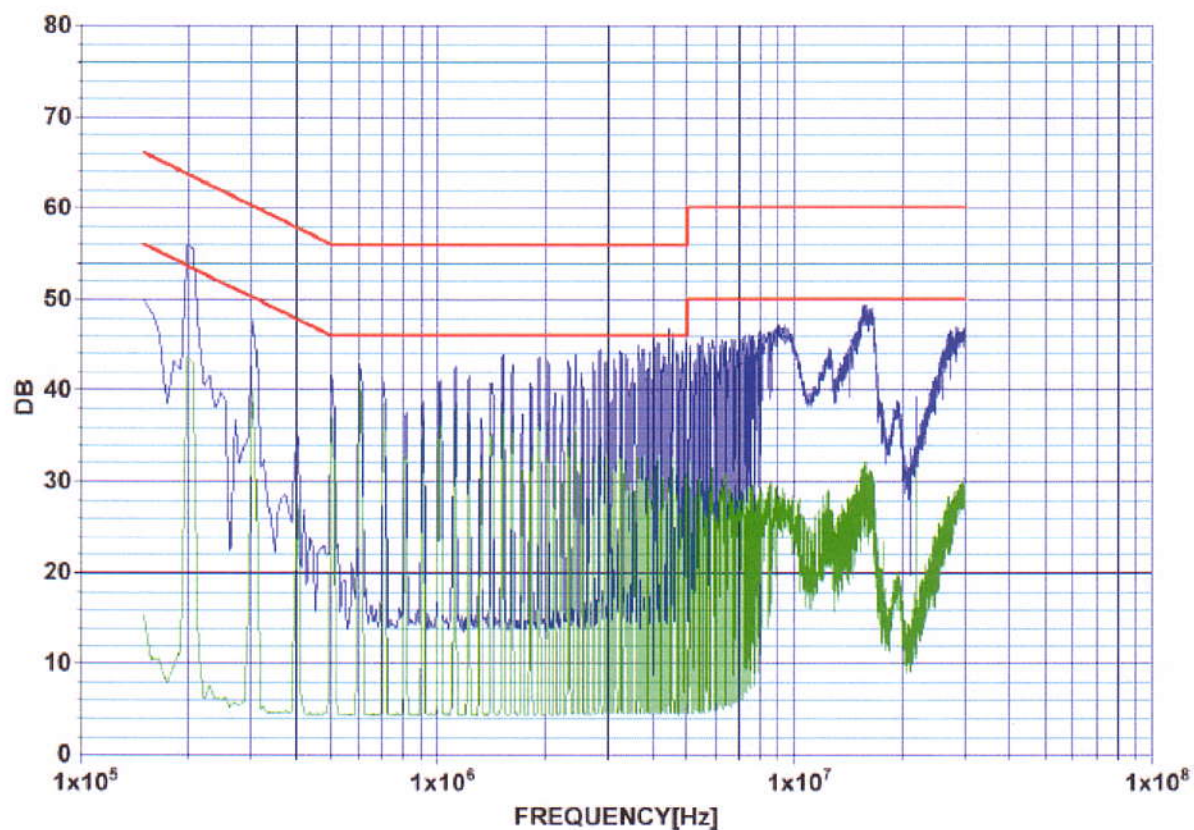


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Diagram 2 Voltage Line N (LISN) (values are dB μ V)

blue= peak, green=average

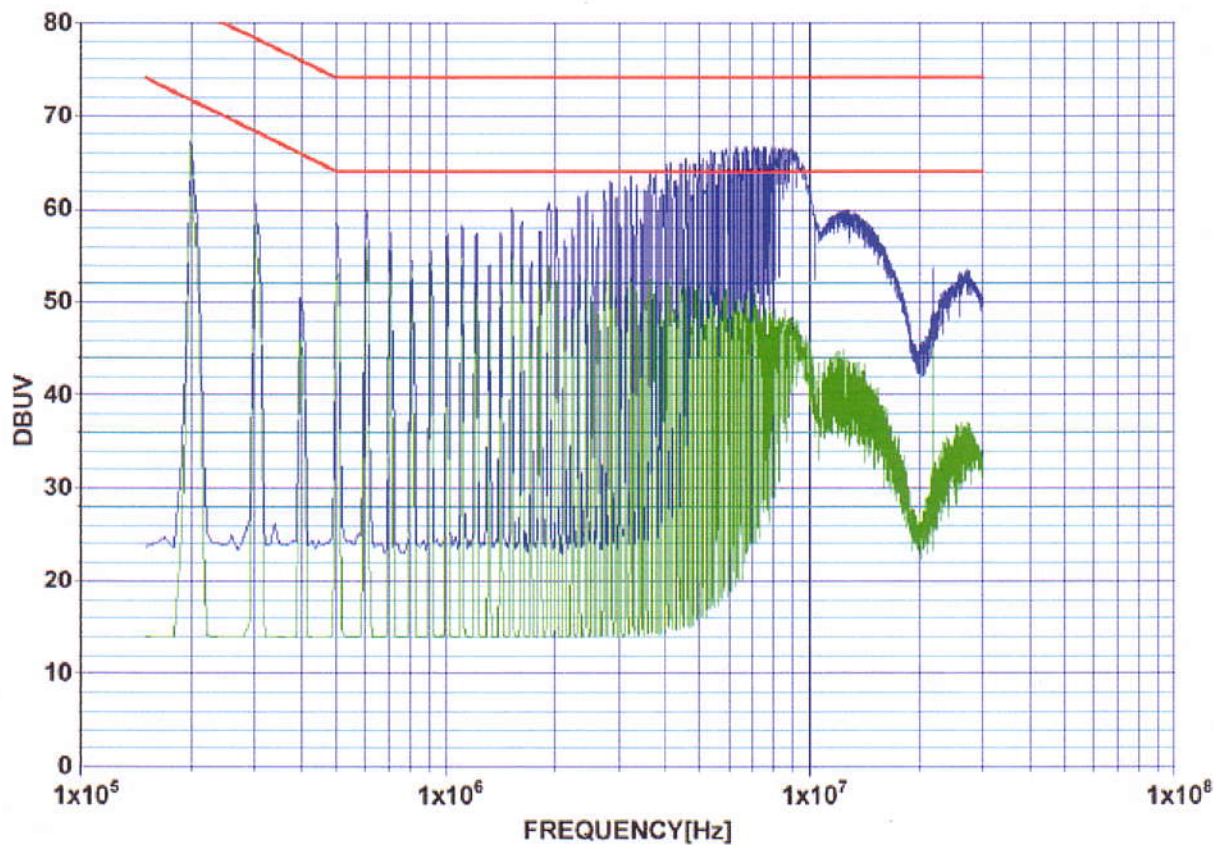




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Diagram 3 CDN M5 probe on port: DC out
(values are dB μ V) blue= peak, green=average



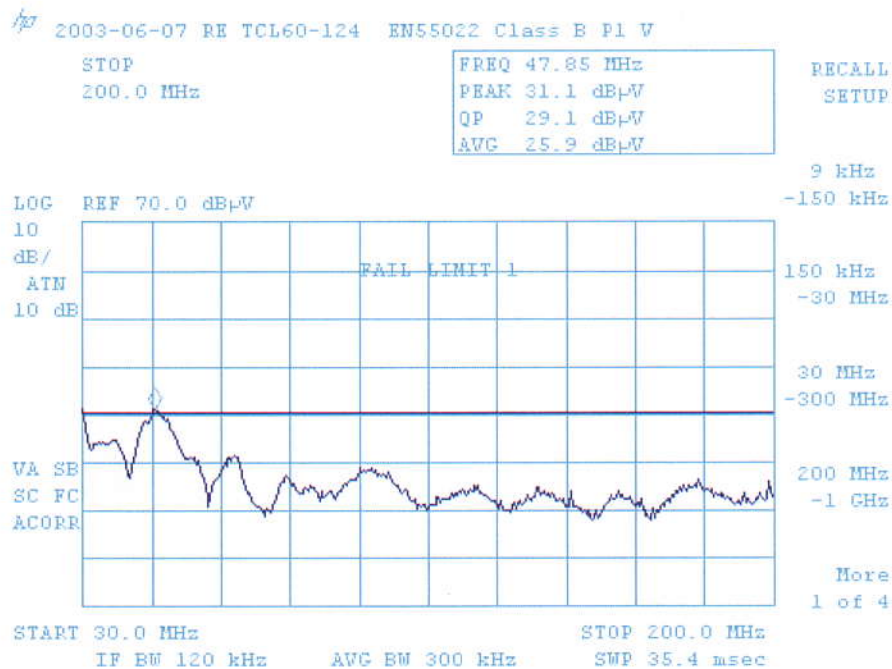


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Radiated Emission 30 MHz – 200 MHz
(vertical polarisation)

Diagram 4



Frequenz [MHz]	Peak [dBuV/m]	Qpeak [dBuV/m]	Q-Peak Limit [dBuV/m]	Result
30	30.5	28.6	30	Pass
47,85	31.1	29.1	30	Pass

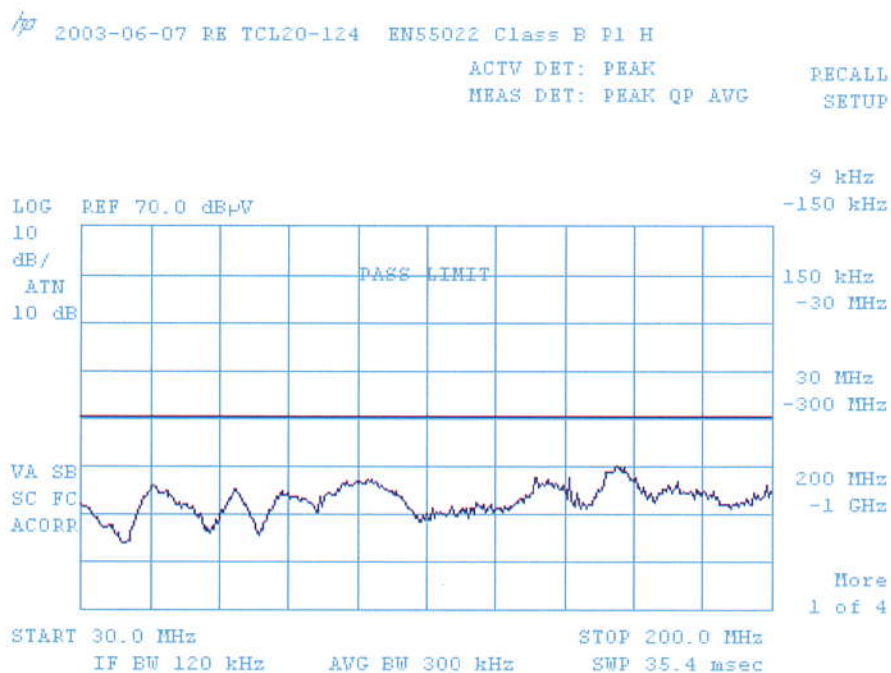


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Radiated Emission 30 MHz - 200 MHz
(horizontal polarisation)

Diagram 5





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Equipment used for testing 1/2:

valid from 09/2002

Device	Type	Manufacturer	Serial Number	EVMC ID #	
Spectrumanalyser	hp8591EM	hp	3536A00453	EC 0002	??
Spectrumanalyser	hp8592A	hp	310BU00256	EC 0075	?
Preamplifier	hp8447D Opt. 10	hp	2944A07193	EC 0031	??
Preamplifier	SFT84-1309 (1,5 8GHz)	Avantek	8544SN02	EC 0094	?
Preamplifier	AFT-18854 (5-18 GHz)	Avantek	8742-k409	EC 0095	?
Preamplifier	CSA-B70126 (2-8GHz)	Celeritek	2100	EC 0083	?
Preamplifier	145767Rev A(5-18GHz)	CTT	2250	EC 0084	?
Preamplifier	AM-2A-000110-N	MITEQ	369674	EC 0053	?
Biconical Antenna	HK 116	Rohde&Schwarz	844416/003	EC 0032	??
Log. per Antenna	HL 223	Rohde&Schwarz	843990/020	EC 0033	??
Ultalog Antenna	HL 562	Rohde&Schwarz	100027	EC 0100	?
Rod Antenna	HFH2-Z1 9kHz-30MHz	Rohde&Schwarz	880563/022	EC 0059	?
Loop Antenna	HFH2-Z2 9kHz-30MHz	Rohde&Schwarz	880665/7	EC0060	?
DRG Horn 1-18GHz	3115	EMCO	2652	EC0077	?
LISN	NSLK 8127 (V2 Phasen)	Schwarzbeck	8127111	EC 00	?
LISN	ESH2-Z5 (V3Phasen)	Rohde&Schwarz	881493/0010	EC 0001	??
LISN	EZ10 (T-4Draht)	Rohde&Schwarz	816.1255.02	EC0081	?
Pulslimiter	Model 3752	Pomona	n.a.	EC 0023	??
Current Probe	ESV-Z1	Rohde&Schwarz	829.536/9	EC 0051	?
Current Probe	ESV-Z1	Rohde&Schwarz	829/1001/20	EC 00	?
Fixed Attenuator	Spinner 10 dB	Spinner		EC 0071	?
Signalgenerator	APN	Rohde&Schwarz	883873/006	EC 0064	?
Signalgenerator	SMG. Opt 1,2	Rohde&Schwarz	830338/007	EC 0014	?
Signalgenerator	SMH. Opt 1,2	Rohde&Schwarz	832311/015	EC 0082	?
Signalgenerator	1018	Gigatronics		EC 00	?
RF powermeter	URY	Rohde&Schwarz	882.852/047	EC 0058	?
RF powermeter	URV5	Rohde&Schwarz	879945/076	EC 0003	?
RF powermeter	URV35	Rohde&Schwarz	864262/052	EC 0011	?
Directional Coupler	DC 6180	AR	16549	EC0061	?
Directional Coupler	DC 100 R	Kalmus	051195-3	EC0041	?
Meas. probe 10V	URV5-Z2	Rohde&Schwarz	825.938/015	EC 0040	?
Meas. probe 10V	URVY-Z2	Rohde&Schwarz	891.649/04	EC 0062	?
Meas. probe 100V	URV5-Z4	Rohde&Schwarz	890.922//1	EC 00	?
Meas. probe 100V	URV5-Z4	Rohde&Schwarz	890.922//2	EC 0038	?
Meas. Probe	URV5-Z7	Rohde&Schwarz	891 931	EC 0057	?
Meas. Probe	NRV-Z1	Rohde&Schwarz	860462/005	EC 0074	?
RF-AMPLIFIER	AR25W1000	Amplifi.Research	20721	EC 0034	?
RF-AMPLIFIER	AR30W250	Amplifi.Research	20667	EC 0035	?



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Equipment used for testing 2/2:

valid from 09/2002

RF-AMPLIFIER	VZL 6940K1DHJ	VARIAN 1-2GHz	66634	EC 0069	?
RF-AMPLIFIER	3100LA	ENI	263	EC 0099	?
RF-AMPLIFIER	8020H	Hughes 2-4GHz	no	EC 0097	?
RF-AMPLIFIER	VZC 6990K1	VARIAN 4-8GHz	no	EC 0098	?
RF-AMPLIFIER	VZM 6990K1	VARIAN 8-18GHz	5608	EC 0096	?
Stripline	STPL 1	Kretz-Technik			?
E-Field probe	EMR-20	Wandel-Golterm.	B0063	EC 0042	?
E-Field probe	HI 4422	Holaday Industr.	89204	EC 0043	?
Field probe display	HI 4416	Holaday Industr.	84554	EC 0044	?
ESD Gun	ESD 30	EM-Test	1094/27	EC 0050	?
EFT, Surge, Pow.fail	UCS 500	EM-Test	0879-45	EC 0029	?
EFT generator	EFT500	EM-Test	0195-02	EC 0048	?
cap. coupl. Clamp	HFK	EM-Test	1194-15		?
Test Receiver	ESHS10	Rohde&Schwarz	832970/004	EC 0052	?
Test Receiver	ML422B	Anritsu	M42347	EC 0039	?
Current Clamp	TEK P 6302	Tektronix	B078174	EC0065	?
CDN	IEC1000-4-6 M3	MEB	11214	EC 0010	?
CDN	IEC1000-4-6 AF4S	MEB	11373	EC 0003	?
CDN	IEC1000-4-6 S25	MEB	11317	EC 0012	?
CDN	IEC1000-4-6 M5	EM_Test	5100102330012	EC 0093	?
Helmholtz Coil	IEC1000-4-8	EMVC			?
Current Clamp	IEC1000-4-6	Fischer		Keba	?
Anechoic Room	3 m FAR Chamber	Bell. Lee Intec Ltd	80541	EC	?
Powersupply	OPC 25-4M	Kepco	94255		?
Voltmeter	Modell 45	Fluke	4875095	EC 0026	?
Scope	64122	Agilent	MY0000657	EC 0063	?