Raytech GmbH
SWITZERLAND

Microohm Junior II

Oberebenestrasse 11
5620 Bremgarten
Switzerland
Tel. +41 56 648 60 10
Fax. +41 56 648 60 11

10 Amp Digital Micro-Ohm Meter
Micro-Junior 2

Command Set

V2.24

Raytech GmbH

Micro Junior 2 Command Set

1 Hardware Protocol

Plug: 9 pole D-Sub
Pin 2 TXD Data µΩJunior to Computer
Pin 3 RXD Data Computer to µΩJunior
Pin 7 GND
Levels +/- 12 V Signals
Protocol: 19200 Baud, 8 Bit, 1 Stopbit, no parity, no handshake

2 Software-Protocol

Required firmware version uJun 2.00 and later.

2.1 Syntax of Commands

„cc [Data1[;Data]..]Term"
cc = 2 ASCII Character for the Command
‘,’ (semicolon or white space) Separator for multiple Data fields
Numeric Format of Numbers: float (C - Language), "." as decimal point
Format of Strings: all ASCII Characters from 0x20 to 0x7f]
Terminator: „CR" (= 0x0D) or "LF" (=0x0A)

Answers without data

"*0 ok";	Commando ok
"*1 unkn";	unknown Command
"*3 Emerg"	Emergency Button pressed
"*4 Range"	Parameter out of Range
"*7 Protocol"	Protocol violation (Framing Error, Overrun, Parity, Input Buffer Full)
"*8 Stop"	Stop Button pressed
"*9 Ovld"	Rx too high, Measuring Cable not connected

General Format of Answer Message
xx,Message1[,Message2;[Message3]..]",CR
xx Type of answer (the command itself)

2.2 *Micro Junior 2 Commands*

gv	Get Version	Get Version of uOhmJunior, Release of the Firmware, Date of Firmware e.g. gv "uOhm-Junior by Raytech uJun 2.01 17.2.05"
gv 1	Get Firmware Release	(short form of "gv") e.g. gv 1 „uJun 2.01"
gv f	Get FBL Version	Release of the Firmware of the FBL (Flash Boot Loader) e.g. gv f „FBL 2.05 7.1.05"
gs	Get Serial Number	Asks the internal serial number The Serialnumber is unique for each µΩJunior e.g. gs „GS 203-401"
mr *mr,1* *mr,2*	Measure Resistance - with Results - with Results	only 1 Result as answer (Single) with intermediate results (Single) continious (Cont)
		MR,rx,ix,t1,t2,t3,q Rx Value of Testobject ix Value of actual Current t1,t2,t3 Temperatur for Probe 1,2,3 q
si,n	Set I Range	Set the Measuring Mode/Current Range 1: 10A with line reversal 2: 10A only straight 3: 1A with line reversal 4: 1A only straight 5: 0.1A 6: 0.01 A 7: <1mA With WR50-1A Option 17: 50A 18: 40A 19: 30A 20: 25A 21: 20A 22: 10A 23: 5A Result: "*0 ok", "*4 Range" if wrong parameter
gi	Get Range	Ask the actual Measuring Mode Result: „GI n" n = 1..7 see above (si,n) n = 17..23 with WR50-1A Option
gm	Get Memory	Reads the stored Values from Archive Datasets are seperated in Header and Result-Datasets HEADER Datasets are marked with positive numbers of the first parameter.

GM no,ddmmyy,hhmmss,range,SNwr50
No: Dataset number (positive)
Ddmmyy: Date of measurement
Hhmmss: Time of measurement
Range: current Range
SNwr50 Serialnumber of WR50 1A (if measured with extension)
Eg: GM 72,260405,161545,5A WR50,243405

RESULT-Datasets are marked with negative number of the first parameter
GM no,dt,Rx,T1,T2,T3
No: number of Measurement (negative)
Dt: relative time, since starting measurement in sec
Rx: Resistance of testobject
T1,T2,T3 Temperature of probe 1, 2 & 3
Eg GM -1,+113,5.3788,-100.0,-100.0,-100.0 (in °C)

gm,n Get Memory location n

Reads the stored Values from Archive
0 -> last measured value (t = 0)
1 -> previous Value (t = -1)

eg	cmd	answer
	GM 1	GM -1,+5,0.00099904,-100.0,-100.0,-100.0
	GM 2	GM 40,280305,105834,10A ,0

gmi Get Index

Lists only header datasets
GMI
Answer:
GM 40,280305,105834,10A ,0
GM 41,280305,110037,10A ,0
GM 42,280305,110545,10mA,0
GM 43,280305,110710,10mA,0
GM 44,280305,110930,0.1A,0
GM 45,280305,111112,10Ax,0
GM 46,280305,111500,10A ,0
GM 47,280305,111553,10A ,0
GM 48,280305,111656,<1mA,0
GM 49,280305,112920,5A WR50,251404
GM 50,280305,113032,5A WR50,251404
*0 ok

gmd,n Get Dataset

Lists all results of a measurment, Header an all Resultsdatasets
GMD 40
Results:
GM 40,280305,105834,10A ,0
GM -1,+5,0.00099904,-100.0,-100.0,-100.0
GM -2,+31,0.000999585,-100.0,-100.0,-100.0
GM -3,+47,0.000999239,-100.0,-100.0,-100.0
GM -4,+67,0.00099919,-100.0,-100.0,-100.0
GM -5,+86,0.00099914,-100.0,-100.0,-100.0
*0 ok

gma Get all datas

Lists all Datasets (Header and Results) in the archive.
List can be very long (more than 2000 Lines)

cm Clear Memory

All Dataset are deleted

Special Use

sd 0 Enable automatic ShutDown
sd 1 Disable automatic ShutDown

psi Print out of systeminformation on the internal Printer

?1 Get Size of Archive

Answer is as follows: „?1,a,b,c,d“
a = size of Chip A (IC8) in kByte (factory default)
b = size of Chip B (IC7) in kBytes
c = Number of Entries in the Archive
d = Total Number of used Entries in the Archive
Example
„?1,4,32,2296,8“
Chip A 4kB (M24C32)
Chip B 32kByte (M24C256)
2296 Entries in the Archive
8 Entries are used

XD Stores a String in the Archive

SO Set Options

SO xxC Displays Temperature in Celcius
SO xxF Displays Temperature in Fahrenheit
This Parameter has no effect for Temperatureformat on the interface
Temperatures on the interface are always in °C

XT Get time of the Real time clock
Answer
XT ddmmyyhhmm

XT,ddmmyyhhmm Sets Real Time Clock

Firmware after Version 2.24

lc Length Correction

The Resitance is corrected to a specific length
n,l

n = 0	Off
n = 1	Ohm/m
n = 2	Ohm/100m
n = 3	Ohm/km
n = 4	Ohm/ft
n = 5	Ohm/100ft
n = 6	Ohm/1000ft
l	Length of Testsample in mm

2.3 Special privileged Commands

Special Low Level Commands are subject to use in a external Software running on a PC.
These Commands are locked until a special command is used.

SS	Set Serialnumber	SS@414-402
XX x	Enter security code	
XI x	Special Infos	
		X = 0 Off
		X = 1 Ubattavg
		X = 2 Ubatt
XK x	Control Encoder	
		Turns encoder x (+/-)steps
XKP	Press Encoder Button	
XKR	Release Encoder Button	
XY	Get Information String	
		Result: XY "L1100 "
XV@Str	Set Information String	
HC	Hardcopy	
XO	Get Offset Values	
		Result: X=,iiii.ii,uuu.uuu
		Result: XO -2.453460e-05,-3.094277e-05
XS	Get all Shuntvalues	
		Result: „XS 9.2827,0.991636,0.1000,0.00997104“
X1,n,f	Set Shunt n to Value f	
		X1 n,f
		n = Shunt 1 = I_0A001, 2 = I_0A1, 3 = I_1A,
		4 = I_10A
		f = new Shunt Value
X2	Store Shunt Values	
Xmon	Call FBL	
PSI	Print System Info to Internal, External Printer oder Serial Interface	
PSE		
PSS		

3 Appendix

Definition of Constants (Language C Syntax)