

# Accessories for the KLIPPEL Analyzer System

Specification for the KLIPPEL ANALYZER SYSTEM (Document Revision 2.6)

### FEATURES

- Bluetooth® converters and interfaces
- Temperature / humidity sensor
- Bar / QR code scanner
- Manual sweep controller
- GPIB-USB controller

### BENEFITS

- Test wireless audio devices
- Control manual sweep parameters (frequency, voltage) in an intuitive, fast and accurate way
- Monitor environmental conditions
- Read serial numbers from DUT labels



### DESCRIPTION

The KLIPPEL Analyzer System supports a selection of accessories, dedicated for use in both lab and manufacturing environment. All components are tested and selected according to robustness and endurance under daily lab- and production conditions.

Note that individual accessories might be available for dedicated modules only. Further available accessories are listed in separate specifications


### CONTENT

1	Temperature and Humidity Sensor .....	2
2	Bar Code Scanner .....	3
3	Manual Sweep Controller .....	3
4	GPIB-USB Controller .....	4
5	Bluetooth Audio Interfaces and Converters .....	4
6	Further Accessories .....	5
7	Deprecated Accessories .....	6


## 1 Temperature and Humidity Sensor

<b>1.1 Features</b>		Art. Nr. 2800-011
	<ul style="list-style-type: none"> <li>• Robust for use at assembly line</li> <li>• USB interface (USB powered)</li> <li>• No separate driver installation (included in QC installation)</li> <li>• Temperature and humidity data recorded automatically with each measurement</li> <li>• Logged data can be analyzed regarding impact on driver behavior</li> <li>• Requires QC6.1</li> <li>• Compatible to any hardware platform</li> </ul>	
<b>1.2 General Data</b>		
	<ul style="list-style-type: none"> <li>• Calibrated sensor, traceable to national standards</li> <li>• Optional available: Certificate of calibration (DAkkS, additional cost)</li> <li>• Weight: 100g</li> <li>• Cable length: 2m</li> </ul>	
<b>1.3 Data Sheet</b>		
	<p><b>Temperature</b></p> <ul style="list-style-type: none"> <li>• Measurement range: -40°C ... 120°C</li> <li>• Accuracy typ.: ±0.3 °C at 25°C</li> <li>• Resolution: &lt; 0.01 °C</li> <li>• Repeatability: ±0.1 °C</li> </ul>	<p><b>Humidity</b></p> <ul style="list-style-type: none"> <li>• Measurement range: 0% ... 100%</li> <li>• Accuracy: ±3%RH (25% &lt; %RH &lt; 90%)</li> <li>• Resolution: &lt;0.03% %RH</li> <li>• Nonlinearity: &lt; 1% RH</li> <li>• Hysteresis: ±1% full scale</li> <li>• Repeatability: ±0.1% RH</li> <li>• Long term stability: &lt;1% RH/year</li> </ul>


## 2 Bar Code Scanner

<p><b>2.1 Features</b></p>	<p>Art. Nr. 2800-004</p>	
	<ul style="list-style-type: none"> <li>• Sturdy housing for use in assembly line</li> <li>• Ergonomic handling</li> <li>• Requires no driver installation</li> <li>• Serial number is recorded automatically with each measurement</li> <li>• Logged data can be easily analyzed</li> <li>• Comfortable test selection via QC Start (test name mask)</li> </ul>	
<p><b>2.2 Data Sheet</b></p>		
	<ul style="list-style-type: none"> <li>• Decodes all common barcodes and QR codes (“quick response” - 2D barcodes)</li> <li>• visible LED</li> <li>• Interfaces USB, keyboard, RS-232(C)</li> <li>• Dimensions:180 x 66 x 43 mm</li> <li>• Weight: 180g (without cable)</li> <li>• Operation temperature range: 0°C ... 40°C (32°F ... 104°F)</li> <li>• Operation humidity range: 0% ... 95%</li> </ul> <p>Please note that the exact specifications may vary. Please contact Klippel to get a manufacturer data sheet of a particular bar code scanner.</p>	



## 3 Manual Sweep Controller

<p><b>3.1 Features</b></p>	<p>Art. Nr. 2800-005</p>	
	<ul style="list-style-type: none"> <li>• Intuitive control of the manual sweep frequency and voltage in selected QC tasks (SPL, SPL-IMP)</li> <li>• Ergonomic handling</li> <li>• Toggling between frequency and level control mode</li> <li>• Change speed between very detailed and fast</li> <li>• Driver available with QC installation</li> </ul>	
<p><b>3.2 Data Sheet</b></p>		
	<ul style="list-style-type: none"> <li>• USB connector</li> <li>• Weight: 479 g</li> <li>• Height: 55 mm</li> </ul>	

## 4 GPIB-USB Controller

<b>4.1 Features</b>		Art. Nr. 2800-400
	<ul style="list-style-type: none"> <li>• Control and measure with 3<sup>rd</sup> party test instruments with the Klippel QC software via GPIB bus</li> <li>• Extend testing capabilities of the QC system</li> <li>• Remote control secondary test equipment like power supplies</li> <li>• Supports multiple devices</li> <li>• Easy integration of external test results in QC test</li> <li>• Requires <i>EXD – External Devices</i> module for the QC framework</li> </ul>	
<b>4.2 Data Sheet</b>		
	<ul style="list-style-type: none"> <li>• Drivers for Windows Vista/7/8/8.1/10</li> <li>• Supported standards: IEEE 488.1 &amp; 488.2</li> <li>• USB 1.1 and USB 2.0 compatible</li> <li>• Standard USB (B) and IEEE 488 (Male) connectors</li> <li>• USB virtual serial port</li> <li>• USB powered (max. 100 mA)</li> <li>• Indicators: TALK, LISTEN</li> <li>• Dimensions: 2.5 in. (L) x 2.5 in. (W) x 1.0 in. (H)</li> <li>• Weight: 3 oz.</li> </ul>	

## 5 Bluetooth Audio Interfaces and Converters

<b>5.1 MegaSig U980 (Analog Bluetooth® Converter)</b>		Art. Nr. 2800-407
<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• Configurable professional audio interface</li> <li>• Analog in/output connects directly to DA, PA, KA3 hardware</li> <li>• Control interface over USB                             <ul style="list-style-type: none"> <li>○ Integrated into Klippel software</li> <li>○ Set codec, sample rate, volume, and more</li> <li>○ Read signal strength and more</li> <li>○ Pair by address, auto connect to next device, or choose after scanning</li> </ul> </li> <li>• Designed for headset testing (supports 1 mic input &amp; 2 speaker outputs via BNC connectors)</li> </ul>	
<b>DATA</b>	<ul style="list-style-type: none"> <li>• Bluetooth v4.2</li> <li>• Supported profiles: A2DP, AVRCP, HFP</li> <li>• Supported codecs: SBC, aptX™, aptX™ Low Latency, aptX™ HD, CVSD, mSBC</li> <li>• Operation range: Class 1</li> <li>• Max. in/output voltage: 0.8 V<sub>peak</sub></li> </ul>	
<b>5.2 Laird BT820 (USB Bluetooth® Radio)</b>		Art. Nr. 2800-405
<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• Enables Windows Bluetooth radio</li> <li>• DUT available as Windows Sound Device after pairing</li> <li>• Automated pairing, profile and volume control for EoL testing (<i>QC EXD Task</i>, QC Version 6.2 and higher)</li> <li>• Use Windows Bluetooth dialog to manually connect/pair</li> <li>• Can be used with Klippel QC4 and higher (manual operation)</li> </ul>	

<b>DATA</b>	<ul style="list-style-type: none"> <li>• Bluetooth v4.0</li> <li>• Supported profiles: A2DP, AVRCP, HFP, HSP</li> <li>• Supported codecs: SBC, aptX™ (Windows 10)</li> <li>• Operation range: Class 1</li> </ul>
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## 6 Further Accessories

### 6.1 Microphones

See specification *A4 - Microphones*



### 6.2 Cables

See specification *A3 – Amplifier and Speaker Cables*



### 6.3 Multiplexers

See specification *A8 - Multiplexer*



### 6.4 Ear, Cheek, Head and Torso simulators

See specification *A14 - Ear, Cheek, Head and Torso simulators*

For artificial mouths see specification *A15 – Sound Sources*



### 6.5 Laser Displacement Sensors

See specification *A2 – Laser Displacement Sensor*



### 6.6 Amplifiers

See document *KLIPPEL Amplifier Selection Guide*



**6.7 Sound Sources**

See specification A15 – Sound Sources



**6.8 Turntables**

Standard measurement turntables to perform fully automated directivity measurement.

Supported turntables:

- Outline ET50-3D
- Outline ET250R2-3D
- Outline ET250-3D (replaced by ET250R2-3D)
- Head Acoustics HRT I
- LinearX LT360 (discontinued)



**7 Deprecated Accessories**

**7.1 Temperature and Humidity Sensor (for QC / PA only)**

Art. Nr. 2800-001

**FEATURES**

- Robust for testing at assembly line
- Requires no calibration
- Is connected directly to the Production Analyzer I/O port
- Requires no driver installation
- Temperature and Humidity data will be recorded automatically with each measurement
- Logged data can be analyzed regarding impact on driver behavior



**DATA**

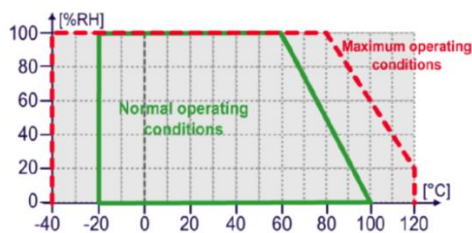
**Temperature**


- Measurement range -40°C ... 123.8°C
- Accuracy <math>\pm 1\text{ }^\circ\text{C}</math> ( $0\text{ }^\circ\text{C} < T < 40\text{ }^\circ\text{C}</math>)$
- Resolution <math>< 0.01\text{ }^\circ\text{C}</math>

**Relative Humidity**

- Measurement range 0% ... 100%
- Accuracy  $\pm 3\%$ RH ( $20\% < \%RH < 80\%$ )
- Resolution <math>< 0.5\%</math> RH
- Long term stability <math>< 0.5\%</math> RH/y

**Normal and max. operating conditions**



<b>7.2 Foot Switch</b>		Art. Nr. 2800-003
<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• Dedicated to Klippel QC System</li> <li>• Starts test operation</li> <li>• Robust for testing at assembly line</li> <li>• Secure stand</li> <li>• Is connected directly to the Production Analyzer I/O port</li> <li>• Requires no driver installation</li> <li>• Approvals by BG, CSA, UL</li> </ul> <p>The foot switch can be simply assembled using recommended parts. A list of required components from global distributors is available on request.</p>	
<b>DATA</b>	<ul style="list-style-type: none"> <li>• Voltage 500 VAC</li> <li>• Current max. 10 A</li> <li>• Mechanical life time 107 switching actions</li> <li>• Protection class IP 65</li> <li>• Cable entry 1 x M20</li> <li>• Weight 0.6 kg</li> <li>• Size 220 x 70 x 60 mm</li> </ul>	

Find explanations for symbols at:

<http://www.klippel.de/know-how/literature.html>

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