

BCI400 – BCI400D

Bulk Current Injection Standard Systems Serie

ISO 11451-4
ISO 11452-4
RTCA DO160G Sect. 20
Generic Bulk Current Standards

OVERVIEW

Bulk Current Injection Standards for Automotive and Avionic applications require a complex system composed by several parts, which must be adequately selected and matched one to each other.

Ancillary equipment are also important to complete the system and allow closed loop and substitution method tests, as well the calibration of the injection probe.

The BCI400 family systems are the turn-key solution for Bulk Current Injection tests, and include all the needed accessories and facilities to carry on a complete test.

BCI400 SYSTEMS SERIE

The BCI400 family systems are composed by a main Rack Unit containing the generation and power monitoring instruments set.

A 4-Unit height drawer contains all the probes set, power sensors and directional coupler.



An additional 8-Units height auxiliary drawer is provided to contain cables, calibration fixture and attenuators, and User's additional accessories as well.

The system is completed by a wooden table with horizontal coupling plane and a ground plane to be laid beneath the table, to be compliant to most of the Bulk Current Standards.





SYSTEM PARTS OVERVIEW

RACK MAIN UNIT

The 27U (about 1.40m including wheels) height rack main unit containing all the generation and monitoring instrumentation, is composed by:

- **A Power Distribution Panel** with breakers and safety emergency pushbutton.
- **A RF Generator** with AM, FM and pulse modulation capabilities.
- **A RF Amplifier** with hardware safety Interlock with direct access from the back of the rack.
- **A Three-channel RF power meter** controlling three remote power probes via fibre optic.

The rack is self-powered and self-cooled by an internal cooling system. Four swivel wheels with individual brake make easy to move the rack around.

On the back, one TCP/IP Ethernet and one USB ports allow the remote control of the instrumentation.



PROBES/SENSORS DRAWER

A 4-Unit drawer with shaped foam contains the three fibre-optic power sensors, the Injection probe, the Monitoring probe and the Dual Directional Coupler.

AUXILIARY DRAWER

Underneath the probe/sensors drawer, an additional 8-Unit drawer allows to store all the remaining accessories and cables for an orderly system configuration.



WOODEN TABLE

A dielectric table made in high quality wood with standard dimensions is available to complete the system.

Minimum dimensions for the table are 1000 x 2000 x 800 mm (L x W x H). Wider or longer tables are available, upon request.

Wheels. At User's convenience, the table can be provided by four swivel wheels with brake, for an easy handling.

The total height of the table with wheels will not change and will be compliant to the Standard.

Vise. The standard table is provided by one grounding spot connector, placed in one of the corners.

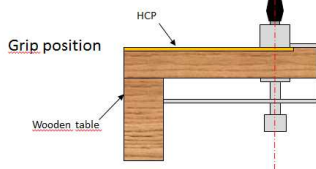
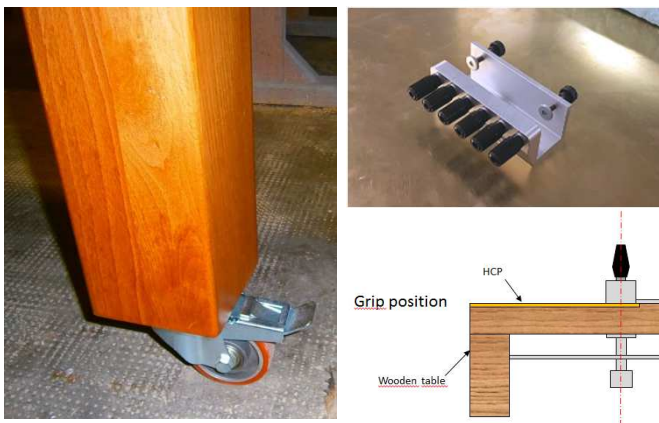
In case this is not enough, as option can be ordered a movable multi-spot grounding grip unit.

The grip is secured to the table by means of a double gripping vise.

The standard grounding grip is provided by six standard 4 mm banana jack connectors.

Grounding grips with different numbers of banana jacks are available upon request.

GRP. An aluminum ground plane can be added beneath the table when the installation location is not provided by a floor with metallic ground plate.



INJECTION PROBE CALIBRATION.

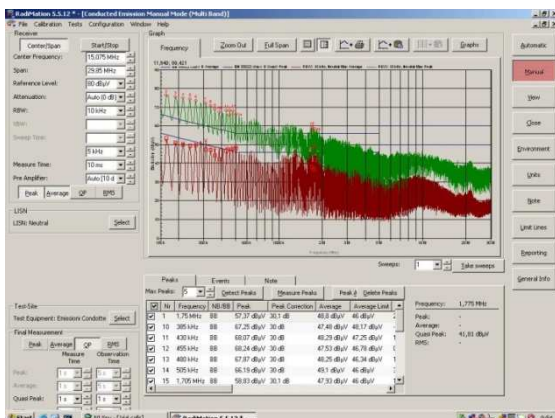
In accordance to the test to be performed, a complete set of accessories is available for calibration and verification of the Injection Probe (i.e. as per ISO 11452-4 ANNEX A or other Standards). The set is composed by:

- One Injection Probe Calibration Fixture suitable for the supplied Injection probe.
- One 30 dB High power Attenuator.
- One High power coaxial load.
- One RF Cables and adapters bundle set.

CONTROL SOFTWARE.

The hardware system is completed by a EMC test management software, able to perform and configure Bulk Current Injection test as per different International Standards.

The software can control all the instrumentation via LAN TCP/IP and/or USB for a complete Conducted Immunity Test management.



ALL-IN-ONE BOX

All the generation and measuring group usually placed on the test table, can be replaced with an all-in-one box enclosure, containing all the equipment and accessories.

The box allows an easier set-up configuration, minimizing the connections between the parts.

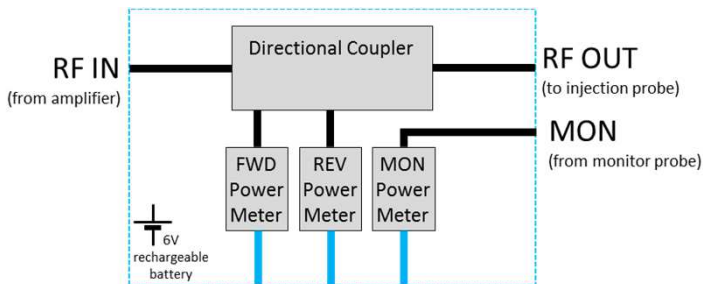


The BCI400-BOX is an EMI shielded unit, and contains the directional coupler and the three power meter channels. The BCI400-BOX can be connected via fibre optic to the MOCS-MFD.

MODULARITY AND FLEXIBILITY

The great advantage of BCI400 family system is to get a turn-key system for Bulk Current Test with modular structure, therefore highly configurable and customizable.

Further than customizing the amplifier power and the number and type of accessories, the standard basic systems can be enhanced with additional functions, such as Automotive BUS extenders, video and audio units, acquisition and/or stimulus modules, to be installed into the ten MOCS-MFD available slots, aside the power meters.



Optical Outputs

Thanks to its 1.2 amps embedded rechargeable battery, the BCI400-BOX has an autonomy of more than 20 hours of continuous operation.

MAIN OPTIONS

BCI-T	Wooden table for BCI Standard with HCP (Horizontal Coupling Plane fixed on the top of the table,
BCI-GP	Ground Plane in aluminum, to be laid underneath the table. Necessary when the table is not positioned on a conductive floor.
BCI-T-C	Wooden table for BCI Standard with HCP (Horizontal Coupling Plane fixed on the top of the table. Table is provided by wheels with individual brake
GRIP-VISE	Grounding Grip Vise, with 6 standard banana connectors
BCI400-BOX (physical dimensions 250x250x100H mm)	This option replaces the following "stand alone" components: directional coupler and 3 pcs power meters

STANDARD MODELS MAIN SPECIFICATIONS

BCI400		BCI400D	
Standards	ISO 11451-4 ISO 11452-4	Standards	RTCA DO160G Section 20 – Cat. Y
Frequency Range	1MHz – 400 MHz (usable down to 100kHz)	Frequency Range	9kHz – 400 MHz
Output RF Power	150W CW minimum 200 W CW typical	Output RF Power	200 W CW minimum 250 W CW typical
Interlock	Hardware, D-sub 15 pins Located on the rear	Interlock	Hardware, D-sub 15 pins Located on the rear
Fibre Optic Length	5 meters (standard) Other lengths upon request	Fibre Optic Length	5 meters (standard) Other lengths upon request
RF Cables Length	5 meters (standard) Other lengths upon request	RF Cables Length	5 meters (standard) Other lengths upon request
Remote Interfaces	Ethernet LAN USB 2.0	Remote Interfaces	Ethernet LAN USB 2.0
Software minimum requirements	Microsoft™ Windows™ Vista, 7, 8, 10	Software minimum requirements	Microsoft™ Windows™ Vista, 7, 8, 10
Temperature	Operating: 0° to 45° Storage: -10° to 55°	Temperature	Operating: 0° to 45° Storage: -10° to 55°
Dimensions (WxDxH)	575 x 740 x 1440 mm	Dimensions (WxDxH)	575 x 740 x 1440 mm
Weight	Approx. 170kg	Weight	Approx. 170kg

Here the parts composing the basic systems and the optional accessories

BASIC SYSTEMS PARTS

BCI400	BCI400D
Rack chassis unit, 19" standard, 27U height	Rack chassis unit, 19" standard, 27U height
RF generator 10kHz-3GHz with AM modulation	RF generator 10kHz-3GHz with AM modulation
RF Power Amplifier, 100kHz-400MHz, 150W minimum	RF Power Amplifier, 10kHz-400MHz, 200W minimum
Digital Controller with power meter	Digital Controller with power meter
3 pcs Power sensors, battery powered	3 pcs Power sensors, battery powered
3 pcs battery chargers for power sensors	3 pcs battery chargers for power sensors
Injection probe	Injection probe
Current Monitor Probe	Current Monitor Probe
Dual Directional Coupler	Dual Directional Coupler
Calibration Fixture for Injection Probe	Calibration Fixture for Injection Probe
High power termination	High power termination
High power Attenuator	High power Attenuator
Adapters and RF Jumper cables Set	Adapters and RF Jumper cables Set
Fibre Optic Cables set (5 meters length)	Fibre Optic Cables set (5 meters length)
RF Coaxial Cables set (1 pc 5 meters; 2 pcs 1 meter length)	RF Coaxial Cables set (1 pc 5 meters; 2 pcs 1 meter length)
Measurement Software	Measurement Software

BUILD-UP YOUR WORLD AROUND THE BCI400

Further than the core for Bulk Current Injection test, TESEO is available to design and configure the complete turn-key BCI test laboratory, with all the additional needed accessories and services.



STANDARD TEST TABLES



FIBRE OPTIC AUTOMOTIVE BUS EXTENDERS



ARTIFICIAL NETWORKS & LISNS



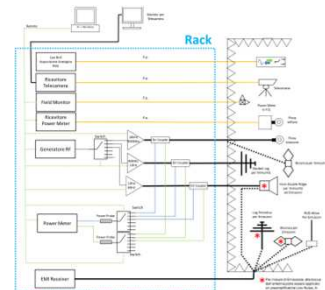
FIBRE OPTIC MONITORING SYSTEMS



ON-SITE OR LAB PERFORMED PERIODICAL CALIBRATION & VALIDATION SERVICES



DC POWER SUPPLIES



INTEGRATION INTO EXISTING SYSTEMS



SHIELDED ENCLOSURES & SHIELDED TENTS



ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

TESEO S.p.A. designs, manufactures and distributes: EMC and RF Turn-key Systems, EMI shielded Optical links, Field probes, CW and Pulse RF Amplifiers, Amplifiers and preamplifiers modules, 2-quadrant and 4-quadrant LF amplifiers, Antennas, Anechoic and shielded chambers, TEMPEST chambers, Antenna Test Range and RCS chambers, Reverberation chambers, RF absorbers, EMC and RF accessories, Coaxial cables, LISNs, CDNs, Attenuators, Couplers, Injection and Absorbing clamps and probes, ESD and Pulse equipment, EMC Measuring Systems, EMC turntables, Antenna Mast and Positioners, EMC measurement Software, ISO17025 Accredited Calibration Services, Customized and Standard Test Benches for EOL, R&D, HIL, CM applications

For:

Automotive and Transportation, Naval, Industrial, Avionic, Space, Medical, Military, Telecom applications