



# Becker Elektronik Polska

member of Becker Avionics Group

Company Profile

Established	1996 Member of Becker Avionic Systems Group
Location	Wrocław Poland, close to borders with Germany and Czech Republic
Facility	460 square meters, head office, development facilities, administration, stock, workshop
Staff	24 MS engineers, 2 technicians, 4 MS management, administration and support



# BEP Company Profile

## (according avionic standards) Capabilities

Hardware	Digital Design (MCU, DSP, FPGA), RF Design, Analog and mixed signal, Power management, PCB design
Software	ASM, C, C++, C#, Visual Basic/C, .Net Framework, DSP and Database Programs
PLD	VHDL (Xilinx, Altera), Simulators (ModelSim, Aldec)
Mechanics	PCB models, panels, enclosures, mountings, complete and formal Mechanical Design Documentation
Verification	Verification of hardware, software and tools
Qualification	Formal qualification on site and in external laboratories according to avionic and other international standards



Company is ISO9001:2008 certified.

The Quality Management System is compatible with the quality system and EASA PART21 G Procedures of our main partner Becker Germany.

Designs comply to the currently applied avionic standards:

Hardware	EUROCAE ED 14 RTCA DO 160
Software	EUROCAE ED 12 RTCA DO 178
Complex Hardware	EUROCAE ED 80 RTCA DO 254

- ❖ Transponders
- ❖ ADS-B Equipment (Receivers and Transmitters)
- ❖ VHF Transceivers
- ❖ Control Units
- ❖ Warning Tone Generators
- ❖ Search and Rescue equipment
- ❖ Adapters and interfaces
- ❖ Automatic test equipment (ATE)
- ❖ Software (airborne and supporting)



### Details about Becker Electronic Polska



- ❖ Design, development and low volume production of electronics, mainly avionic devices including Airborne Communication Transceivers, Airborne Transmitters and Receivers, Surveillance Transponders for Mode-S and ADS-B, Radio Management Units, Control Panels, Advanced Automatic Test Tools and Equipment as well as Ground Stations built around Communication Transceiver Core Modules, Transmitters and Receivers.
- ❖ Software and hardware design, development and integration.
- ❖ Qualification of the design results according to recent avionic standards prior to certification by an aviation authority.
- ❖ Preparation of documentation for certification by an aviation authority.
- ❖ Software and Tools Verification according to recent avionics standards.



- ❖ Approximately thirty highly skilled and experienced engineers plus quality control, financial, administration staff and management
- ❖ Co-operation with Technical University of Wrocław and university graded freelancers and students.
- ❖ CAD Systems, mechanical and electrical design tools (ORCAD, PRO-E).
- ❖ Software development tools for various computer languages (ASM, C, C++, C# and others) and platforms.
- ❖ On-site testing capabilities.
- ❖ Potential for co-operation with local development companies for better effectiveness and cost competitiveness.



In cooperation with local development companies:

- ❖ Development of DSP boards for VME bus.
- ❖ Development of digital systems for RWR/ESM (Radar Warning Receiver/Electronic Support Measurement) devices designed for electronic intelligence systems.
- ❖ Development of switching power supplies series (AC/DC, DC/DC), for harsh environmental conditions, including military.



### Avionics Designs capabilities:

- ❖ Design according to international standards, especially to EUROCAE and RTCA avionics standards (ED 14/ DO 160, ED 12 / DO 178 and ED 80 / DO 254).
- ❖ Complete Hardware and Software Life Cycle Management including Specification, Development, Verification, Qualification and Configuration Management according to International Avionics Standards.
- ❖ Complete Turn-Key Solution for Avionic Products.
- ❖ Automatic Test Equipment (ATE) Solutions:
  - ❖ Complete PC Based Automatic Test Equipment Design: Hardware, Software Systems.
  - ❖ PC, LabView & Intranet Based Testing - Testing of Assemblies/ Units, Including Remote Data Collection/Analysis..
  - ❖ Techniques/Tools for Online Record of Test Data.
- ❖ Custom Designs. Development of Special Hardware / Software according to customer specification.
- ❖ Technical support for product implementation

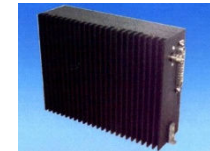


Local cooperative companies support for:

- ❖ Radiolocation Signal Processing.
- ❖ Microcomputers and Digital Signal Processors.
- ❖ Modular System Design and Integration.
- ❖ Bus Systems and Boards (VME, CPCI).
- ❖ Power Supplies and Power Systems Design.
- ❖ Real-Time Software Design (Embedded and Real Time Operating Systems control).
- ❖ Design according to military standards, especially to MIL-STD-118-125-2, MIL-STD-461
- ❖ EMC and MIL-STD-810 as environmental standard.
- ❖ Environmental and other special test facilities.



- ❖ Development of RT5202 20 Watt VHF AM Communication Transceiver for airborne and ground station systems. Software and Hardware verified according ED12B (DO 178B) level C and ED 80 (DO 254) DAL C.



- ❖ Development of the transmitter, complex hardware (FPGA) and embedded software for ATC4401 A/C Mode Transponder. ETSO and TSO certified. DAL C.



- ❖ Development of BXP640x Mode S Transponder Family and CU6401 Control Unit. ETSO, TSO certified. DAL C.



- ❖ Development of the complex hardware (FPGA) and power supplies for MSU and SSU control units of a SP 1450/N-E military helicopter intercommunication system, STC certified.



- ❖ Development of a RMU5000 Radio Management Unit to control airborne ATC equipment. ETSO and TSO certified. DAL C.



# BEP Company Profile

## Project references

- ❖ Development, qualification and manufacturing of a Warning Tone Generator Unit for helicopter intercom systems (8 warnings).
- ❖ SW verification for DVCS6100 first Digital Intercom ED12B (DO 178B) for DAL C. ETSO and TSO certified.
- ❖ HW verification for external customer according to DO 254 (ED 80) DAL C.
- ❖ Development of custom, efficient Tools for Action Tracking and Problem Reporting for a BEP Project Management System.
- ❖ Development of 1090 MHz ADS-B IN receivers family (sensitivity from -87 dBm)
- ❖ Development of a AR620x VHF AM Communication Transceivers Family for airborne and ground station systems. ETSO DAL D certified ED12B (DO 178B)
- ❖ Co-development of TG560 ATC Station (w. RT5202). Certified DFS D-0012/2005 DAL AL3 (ED-109).



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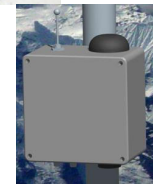
# BEP Company Profile

## other Project references

- ❖ Development and low volume production of FMCW Radar Altimeter HF Heads
- ❖ Co-development of test and programming equipment PPE 509 SAR PLB MR509
- ❖ Development of Reverse Mode-S Transponder System
- ❖ SW Modifications of Mission Moving Map Computer
- ❖ Development of automatic test environment for verification of Mode S Transponder ADS-B Out functionality.
- ❖ Protection unit for older DO160D equipments VL3200

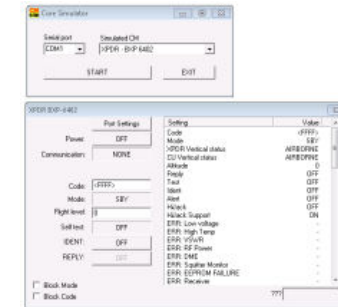


- ❖ Development and low volume production of BAV6201 ADS-B OUT Vehicle Device for situation awareness improvement on the airport surface
- ❖ Development of a family of 1090 MHz ADS-B Receiving Subsystems (BAR6215, BAR6216 and BAR 6217) units intended for installation as a supporting ground equipment in airport areas with moderate air traffic.
- ❖ Development of a family of remote controlled BXT65xx XPDR-DME, Mode-S, ADS-B IN/OUT, Diversity Transponder Equipments with extended temperature ranges.
- ❖ Development of BD406 SAR beacon receiver
- ❖ Development of ADS-B OUT extension for BXP640x Level 2 Mode-S transponder



# BEP Company Profile

## other Project references



- ❖ Software tools supporting DO-178 process including Software Code Coverage Testing tools
- ❖ PC software tools supporting various interfaces (CAN-Terminal, I2C Terminal, GPIB Server, SPI-Terminal and many more)
- ❖ PC Simulators of all developed control units and core modules
- ❖ GPS receivers Simulators

- ❖ Concept development of PA 6500 Passenger Address Amplifier
- ❖ Concept development of VOR/LOC Receiver/Converter
- ❖ Concept development and feasibilities for Software Defined Radio COM/NAVs/ADF
- ❖ Concept development VHF Class 1 linear transmitters family for VDL II, VDR and Link2000+ applications
- ❖ Preparation of support developments for VDL II for CPDLC and VDR supporting of Link 2000+ & FANS1 Programmes
- ❖ Concept development Light Mode-S ADS-B Out Transponder + BE
- ❖ Concept development Light VHF COM for General Aviation



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- Company registration data:
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- KRS (Registration Number): 0000116067
- Sąd Rejonowy dla Wrocławia Fabrycznej, VI Wydział Gospodarczy Krajowego Rejestru Sądowego  
(Regional Court for Wrocław-Fabryczna in Wrocław, VI. Economical Division of the National Trade Register)
- REGON (Statistical Number): 930878211
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- Share capital: 1.000.000 PLN
- 
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- EURO Account (IBAN): PL 96 1910 1064 0004 2316 4121 0002
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