



Company Profile



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EMC Consultancy & Electrical Engineering



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Company

WEMEC is an EMC and Electrical Engineering consultancy providing specialist services to all industries globally from our base in the UK. We pride ourselves on the fast and effective engineering solutions we deliver through;

- Long practical engineering experience
- Strong theoretical background in EMC and Electrical Engineering
- Commitment to the industry

WEMEC's 'turn-key' solutions, which the company delivers as part of a broad portfolio, allows us to offer a multitude of engineering and engineering-related services delivered through knowledge and experience.



WEMEC has been involved in many commercial and government RF / EMC and Electrical design programmes for both supplier and end users. We offer a range of unique specialist services ranging from integration and design guidance, advice on certification routes and approval. Using our vast portfolio of test equipment, we are also able to perform a wide variety of RF / EMC assessments at customer premises, accredited facilities or real application environments.

Technology areas range from 5G communication, CUAV, defence platforms, automotive sub-systems and vehicles, commercial systems, large industrial power installations, marine power systems, covert government systems, large agricultural machinery, defence communication and surveillance systems and many more. Visit the case studies section for some typical examples.

Our consultants have direct experience of the scoping, planning, and management of test programmes at project and organisational level. Our team systematically review, analyse, and enhance existing policies, test requirements and / or processes within the clients' organisations to increase the efficiency and profitability of the test programme.

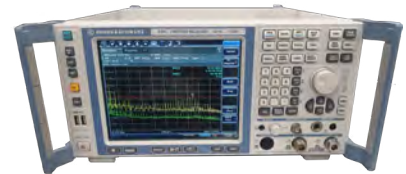


EMC HIRE

WEMEC Ltd offers EMC consultancy as part of the partnership with EMC Hire Ltd with a mission to offer an EMC turnkey solution to enable our customers a central hub for all EMC-related needs. Including Consultancy, Equipment hire, Test and measurement solutions, Chamber Design, Training, and Equipment procurement.



Our History



2014 - 2015

- 2014 WEMEC Ltd formed
 - 2014 moved to offices in Rugby
- With over 50 years EMC experience between them, directors Carl Wayland and Andy Mead identified a gap in the market for EMC consultancy, so created WEMEC.
- 2015 gained ISO 9001 accreditation
 - 2015 first £1 million contract
 - Gained CE+ Certification

2016 - 2019

- Acquisition of EMC Hire Ltd
- In October 2016 the company bought EMC Hire Ltd and entered a partnership. This partnership seeks to improve the services of both WEMEC and EMC Hire and provide a central hub for all things EMC related.
- Started an apprenticeship scheme
 - Employed a number of project managers and technical specialists
 - Entered into the Government Aurora Engineering Partnership (EDP)

2020 - 2022

- 2021 Moved location to Bedfordshire
- After a recent relocation, WEMEC is now situated with partner company EMC Hire in Shefford.
- Heavy Investment into test equipment for offsite testing.
 - Completed a number of large government contracts
 - New facility built at Shefford premises
 - New 5G policies developed for the communication industry
 - Entered into the government Future Labs Framework



Our Partners

In October 2016, the company entered a partnership with EMC Hire Ltd.

EMC HIRE

EMC Hire Ltd is the UK's largest hire company of specialist RF and EMC test equipment in the UK and has been trading for over 50 years. They provide an extensive range of equipment from signal generators, antennas, receivers (DC - 40 GHz), transient equipment, ESD and test systems, allowing us to cater for a range of sectors. They provide equipment for hire from many of the world's top manufacturers, with the latest technology available to accommodate all testing requirements, from common everyday use to specialist industry specific needs.

EMC Hire's business model provides customers with the opportunity to meet the demands of testing requirements, whilst benefiting from the advantages of hiring equipment and not having a large capital expenditure. This in turn reduces project overheads and delivers a more profitable outcome.

A Central Hub for all EMC related needs.

This partnership seeks to improve the service and efficiency provided to new and existing customers of WEMEC and EMC Hire, and hopes to further catapult this partnership as the foremost EMC service provider in the industry today.

WEMEC and EMC Hire have offices situated in Shefford, Bedfordshire. This contributes to the aim of providing a central hub for all EMC related needs within the UK and Global markets.



Our Services

All our services are bespoke to your specific requirements.

WEMEC offers a range of services, each bespoke to your testing requirements. We work closely with our customers to ensure we provide the best outcome for each project.



EMC Consultancy

WEMEC's Consultancy Team has an extensive breadth of skills and expertise allowing us to offer a comprehensive range of services and solutions to ensure that all things EMC will be managed efficiently, accurately and in a cost effective manner.

We have the knowledge, skill set and tools to support programs from initial concept through to delivery.



Contractual & Legislative EMC Approval

WEMEC offers a full analysis of all EMC and Electrical related contractual and legislative documentation ensuring all requirements have been identified and understood.

Our EMC consultants have vast experience in interpreting requirements and producing technical documentation including technical files, control plans, test plans and test reports to meet your obligations.

We can generate reports and presentations to demonstrate compliance to the user and ensure all necessary legislative documentation, such as Technical Files, are prepared ready for submission to the appropriate authority.



EMF Safety & RF Hazards

WEMEC offers consultancy upon the implementation of the Physical Agents Electromagnetic Fields Directive 2013/35/EU and Control of Electromagnetic Fields at Work regulations (CEMFAW) SI 2016/588, along with Defence regulations including JSP 392 leaflet 35.

To comply with the CEMFAW Regulations, employers must ensure that employees are not exposed to EMF levels exceeding these limits by undertaking an EMF exposure assessment. Following the assessment, an action plan may be needed to reduce employees' exposure to EMFs.

We can assist with the exposure assessment, measurements and action plan and polices to ensure the employer is fully compliant.



System Design & Integration



EMC is a key aspect in ensuring functionality when integrating multiple components into a vehicle or large system with multiple functions. Further complication is added when intentional RF devices are added in terms of interoperability. WEMEC has the necessary skills, equipment and experience to de-risk the design at concept and continually analyse through the life of the project to ensure first time compliance whilst maintaining the required functionality.

Management Services



WEMEC provide a flexible and comprehensive Project, Programme and Portfolio Management (P3M) service, working closely with the customer to fully understand and assess their needs in order to provide a friendly, pragmatic, efficient and effective service to deliver the desired objectives.

The role we undertake can be tailored to many applications ranging from short term tasks to programmes containing multiple distinct projects. Due to the wealth of experience & knowledge which the Project Management team have, we are able to efficiently adapt to the customers' (often changing) needs.

EMC Pre-Compliance & Risk Mitigation



There are many risks associated with gaining EMC compliance to a product or system. WEMEC is experienced in identifying these risks, quantifying the impact, and implementing design changes to minimise them. The techniques implemented by WEMEC ensure confidence is gained in the EMC performance before commencement of compliance testing.

WEMEC offers and maintains risk tools such as risk registers to manage the EM risks associated with large project system engineering.

On-site Assessments



EMC testing cannot always be performed in a screened room due to technical issues such as size, support equipment or ensuring representative functionality. Testing large complex systems or fixed installations is technically challenging to ensure requirements are maintained and the test methods / approach is technically correct.

WEMEC has the ability and equipment to perform on-site trials in a wide range of environments including but not limited to production facilities, offices, laboratories, offshore vessels, large platforms, remote locations.



Industry Sectors

WEMEC has a breadth of experience in multiple sectors of industry including Defence, Marine, Automotive and Commercial. Our experience has been gained with consultants averaging over 25 years in the field of EMC engineering,

Commercial

WEMEC prides itself on its extensive knowledge, experience and ability to provide a service for all manufacturers that supply either apparatus or fixed installations of electronic devices which are legally required to meet the legislative requirements prior to being placed on the market within the European Economic Area (EEA). Sectors include but are not limited to:

- Industrial equipment
- Consumer electronics
- Defence equipment
- Laboratory equipment
- IT and office equipment
- Rail Infrastructure

We work with the manufacturers and suppliers to understand the requirements and set out routes to design and compliance. By performing in-house pre-compliance testing, we will increase product reliability and ultimately reduce costs in final compliance and possible re-testing.

The EMC directive (2014/30/EU) or UKCA (SI 2016/1091) are designed to encapsulate the vast majority of electrical products. The directive requires that products must not emit unwanted electromagnetic pollution (interference) and must be immune to a normal level of interference. Compliance is demonstrated by testing to product specific standards, which in some cases call upon the harmonised standards. This testing, in conjunction with a Technical File (TF), provides evidence of compliance.

Defence

WEMEC has extensive experience in supporting both the user and supplier in meeting the stringent requirements specified in Defence Standards. With our knowledge and expertise in the Defence Sector, we provide a cost effective and efficient service to ensure compliance to the relevant standards and ensure interoperability when in operation.

WEMEC is well versed in how to meet the following standards:

- Defence Standard 59-411
- AECTP 500 /250 Series
- Mil Std 461
- Defence Standard 61-5
- Defence Standard 59-114
- Mil Std 1275

We also specialises in on-site trials. These trials are a key tool for our client to understand performance before undertaking compliance trials. On-site trials allow the supplier to understand performance and validate design changes efficiently at the supplier's location without the added cost of test facilities and time.

Military equipment is often required to meet both Defence Standards and European legislation. With our in-depth knowledge of both sets of requirements, WEMEC can formulate a test plan and gap analysis containing tailored test methods and limits ensuring all requirements are met in the most cost and time efficient way possible.

WEMEC staff are active on a number of Working Groups supporting Defence Standards and acted as the Technical Lead on Def Stan 61-5 Issue 6 (2009) and provided technical expertise during the writing of Def Stan 61-5 Issue 7 (2020).



Marine

WEMEC can ensure that fully integrated systems get tested in their intended environment to minimise unreliability of propulsion and navigation equipment or loss of communication systems. Using harmonised standards such as BS EN 60533 and BS EN 60945, we can ensure full compliance with the Marine Equipment Directive (2014/90/EU) or EMC Directive (2014/30/EU).

EMC Marine Services provided by us include:-

- Product EMC design analysis and risk mitigation affecting product design at initial design validation stage. This results in a low risk end solution.
- EMC test planning, test support, report analysis. Successful EMC testing is possible through effective EMC test plan generation. This, along with support during the test programme and final report analysis, ensures our clients avoid increased cost and delays in programme delivery.
- Construction of Technical Files. The construction of the mandatory “Technical File” can be delivered efficiently by working with the relevant Notified / Approved Bodies and Flag States.
- EMC component to vessel integration analysis. Identifying equipment’s EMC limitations and threats from the vessel. Identifying specific environments with worst case risk analysis dependant on single failure. Generate risk registers to dictate best practice solutions and management.
- RADHAZ surveys. Assessing RF hazards and identifying safe working zones in the presence of communication, navigational or any other intentional transmitters; e.g. VHF, HF, Radisense, Satcom, Radar (X or S Band).
- Communication range trials. Allowing for theoretical range performance combined with sea trials to ensure effective clear communication with minimised interference. Antenna type, location and installation are assessed along with collocated sources of potential interference.
- EMC Sea Acceptance Trials (SAT) and Harbour Acceptance Trials (HAT). Key activities which allow for the compliance of systems and bespoke equipment in situ. Full system evaluation are completed by looking at individual sub-system integration. Possible failure mechanisms are recreated with a solution to prevent real life occurrence.

Automotive

With ever increasing EMC threats, including radio signals and transients in the automotive environment, combined with reliance on technology for performance and safety and an ever-increasing requirement to implement wireless systems and communications, it is essential that EMC is designed and tested for.

WEMEC has extensive experience in supporting the vehicle manufacturers and suppliers with these tasks, including over 10 years of working on national and international standards committees such as BSI, CISPR and ISO. We engage with design teams at the beginning of a product cycle to help reduce the costs of EMC testing and reduce the risk of failures during compliance tests and in the field.

We have experience with the following manufacturers, covering direct technical assistance to the vehicle manufacturer and liaison between the suppliers and the vehicle manufacturer. Jaguar Land Rover(JLR), Ford Motor Company, General Motors (GM), McLaren, Aston Martin, BMW, Renault, Peugeot(PSA), Nissan, Daimler Chrysler, Bentley, Volvo and many more.

More details

For more details on the sectors we provide for visit www.wemec.co.uk, call +44 (0)1462 816044, or email help@wemec.co.uk



Case Studies

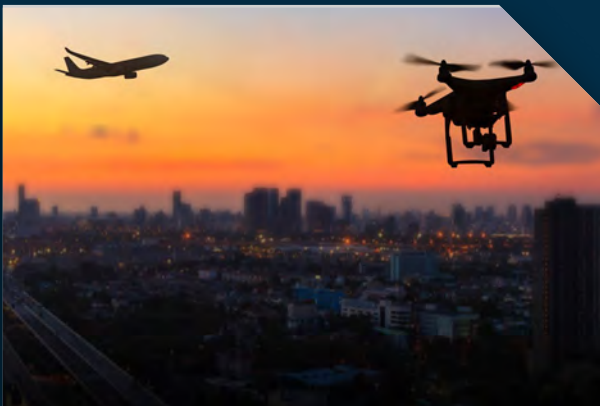
Latest Case Studies

WEMEC have been involved in a wide range of projects, each providing a diverse perspective on EMC Consultancy. This has enabled us to build an extensive portfolio using its specialist experience and knowledge to meet a wide variety of EMC management and testing requirements. Each project is comprised of bespoke services, meaning that all deliverables are specific to the requirements of the customer and the project.



Information is not knowledge. The only source of knowledge is *Experience*.
You need *Experience* to gain wisdom.' - Albert Einstein

Counter UAV Design Assessment



WEMEC have been working in the Counter-UAV arena, assisting with design and assessment of mobile and fixed C-UAV systems. Our focus has been on both system effectiveness as well as the impact to the surrounding environment, including collateral damage, RF fratricide, and EMF exposure.

Safety is of critical importance and is high risk due to the complex RF environment of operation. WEMEC have assisted in the design of CUAV systems and assessed performance, surveyed installation sites and performed collateral damage impact assessments against European & UK requirements for support of safety cases.

COTS to MOTS

A common scenario we are frequently requested to undertake, is to qualify COTS (Commercial of the Shelf System) to a defence or military standard and make the system MOTS (Military of the Shelf System).

WEMEC's highly experienced team has successfully applied the process for many years, either working in conjunction with the supplier's design team or leading activities on behalf of the supplier. The process and experience of our staff ensures the requirements are met in the most cost and time efficient way possible, whilst achieving compliance.

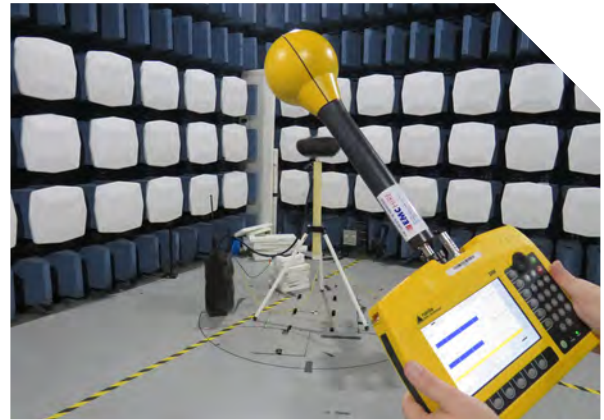




EMF Directive Policy

WEMEC have recently completed the development & production of the “International Commission on Non-Ionizing Radiation Protection Policy Document for in-building Distributed Antenna Systems” on behalf of a leading independent provider of shared, wholesale wire-less infrastructure.

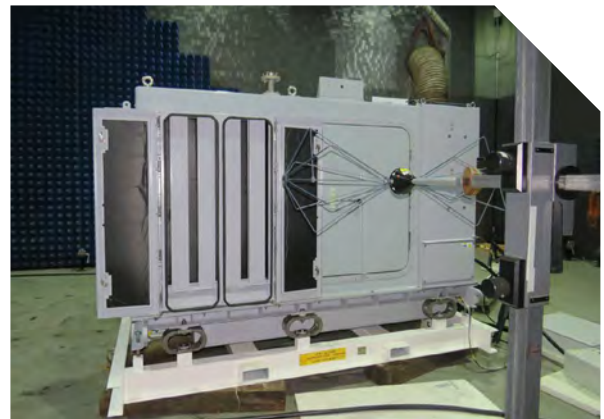
This policy document provides a specific policy detailing the necessary steps in ensuring the customer meets legislative requirements, ensuring design and maintenance processes are followed throughout all activities, including any Installation and Commissioning (I&C) houses used during the site design and implementation. The policy is designed to cover the requirements of exposure of electromagnetic fields (EMF) to the occupational worker and members of the public.



Royal Navy Minehunters

Finning Power Systems (Finning) and BAE Systems, supported by WEMEC Ltd are more than halfway through a six-year project to refit eight Royal Navy Hunt Class minehunters with new engines, hydraulic systems and control and monitoring system tailored to deal with the unique electromagnetic challenges posed by their role.

WEMEC were contracted to support Finning for the Electrical integration along with the certification required to meet contractual and legislative obligations including the Low Voltage Directive (LVD) 2013/30/EU and EMC design in accordance with Def Stan 59-411 and IEC 60533 as well as MoD/Royal Navy policies relating to EMC, Environmental, electrical engineering and safety.



ISTAR Systems

WEMEC has extensive experience of ISTAR systems and have been responsible for the modification and compliance of a number of systems when moving from Urgent Operation Requirements (UOR) into Core. The standards needed for Core equipment are more stringent than for UOR and our role was to assess, rectify and achieve the desired EMC performance for Core use of the systems.

Coupled with our knowledge and experience with ISTAR systems, WEMEC has a full understanding of the expected RF environments of operation both on the battlefield and in training areas. WEMEC achieved the desired standard requested by the Defence customer and the Programme was deemed as a success.





“We are delighted to receive the JOSCAR Accreditation which demonstrates our commitment to providing the highest standard of service.” - Andy Mead - Director at WEMEC

Experience

WEMEC has been involved in many commercial and government RF / EMC and Electrical design programmes for both supplier and end user. WEMEC offers a range of unique specialist services ranging from integration and design guidance, advice on certification routes and approvals. We pride ourselves on the level of experience, commitment and technical know-how we can bring to a programme through its team of technical specialists.

Technology areas range from 5G communication, CUAV, defence platforms, automotive sub-systems and vehicles, commercial systems, large industrial power installations, marine power systems, covert government systems, large agricultural machinery, defence communication and surveillance systems and many more. Visit the case studies section for some typical examples.

Our consultants have direct experience of the scoping, planning, and management of test programmes at Project / Programme and Organisational level, in accordance with various ISO / BS EN Standards and customer-specific requirements. Our team systematically review, analyse and enhance existing policies, test requirements and / or processes within the clients' organisations to increase the efficiency and profitability of the test programme.

Our engineering management staff have conducted Through Life Management services across the engineering spectrum and system lifecycle on behalf of the Ministry of Defence (MoD).

The team members at WEMEC have many combined years of RF / EMC and Electrical experience, typically a technical specialist has over 25 years in the industry.

Accreditation

WEMEC Ltd is accredited to ISO9001:2015 and, as such, always ensures a consistently high quality is maintained for all services and products delivered to our clients. We take the security of clients' data seriously and are approved to Cyber Essentials Plus, the government Cyber Security standard.

WEMEC Ltd have been approved to join the Joint Supply Chain Accreditation Register (JOSCAR) which enables companies in the Aerospace, Defence, Security & Space sectors to identify qualified suppliers. The accreditation mark is valued by some of the largest purchasers in the defence community and indicates that WEMEC Ltd have been through the process and have demonstrated commitment and appropriate credentials. JOSCAR covers company capability, accreditations, information security, corporate social responsibility, financial history, and ethical operations.

In joining JOSCAR, WEMEC reaffirm their commitment to provide high quality solutions and deliver first class service to their customers while complying with the latest regulations in industries.



Testimonials



Ensuring that our customers receive outstanding knowledge and support is the forefront of each service we provide. Working closely with our customers allows us to continue to work towards our goal of seeking and building long term relationships.



"WEMEC have supported our product development journey with the on-going provision of practical, relevant advice and recommendations to improve the performance of our systems to conform to the strict requirements of UK Defence Standards. Without their support and guidance, we would have struggled to attain the product performance standards that we offer today. Their knowledge and experience of testing and taking measurements to the highest standards is second to none. Highly recommended."
- **Rupert English / SteelRock Technologies**

"The overall service provided by the WEMEC team was outstanding from start to finish of the programme." - **Patrick Green - Nautilus International Risk Consultants Ltd**

"WEMEC have provided excellent technical support to me and my colleagues of a worldwide team. The team comprises highly experienced individuals that are renowned in their activities. Between us we provide decision support tools to manage the risk of oil related offshore activities. Especially the risk of a loss of position of a Dynamically Positioned vessel. WEMEC are a key member of that team and are subject matter lead for all things EMC." - **Doug Phillips / CEO DPexpertise**

"I have worked with the staff of WEMEC over the last 15 years and they have always demonstrated an in-depth knowledge in the field of EMC. They have excellent understanding of EMC management and testing across a range of industries and use these links to ensure they remain up to date with new technology and EMC requirements." - **Peter Phillips / EMC Manager - Jaguar Land Rover**

"WEMEC have provided their professional EMC consultancy services over the last 10+ years, to aid our technical delivery within several sectors to include Automotive, Maritime, Defence and Domestic sectors. I consider their expertise, approach and delivery as being market leading within the realm of EMC, where no task seems beyond their team of subject matter experience. Their input throughout the programmes they have supported us with have ensured that we either meet, or exceed, customer contractual requirements. I would therefore not hesitate to recommend them or their work to anyone who requires the highest level of EMC consultancy to support their needs" - **Richard Harrison / Horiba Mira**

"WEMEC has supported our business for a number of years assisting in the modelling and implementation of our practices concerning EMF. Through that time WEMEC has continued to demonstrate high levels of expertise, excellent standards, and more importantly, provide industry leading guidance." - **Peter Hughes / Wireless Infrastructure Group**

"Thankyou WEMEC for you contribution to the program. WEMEC certainly demonstrated your knowledge which allowed us to recover from a tricky situation" - **Dave Sanderson**

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- **Nick Clarke / NJC Power Systems**



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