



TAKING COMMAND THROUGH THE

DEVELOPMENT
OF INNOVATIVE
ELECTRONIC WARFARE
AND RADAR
TECHNOLOGIES



*microwave
Products
Group*
a **DOVER** company



MICROWAVE PRODUCTS GROUP SPECIALIZES IN RF FILTERS, SWITCHES AND INTEGRATED MICROWAVE ASSEMBLIES (IMAS) FROM PROTOTYPES, UP TO HIGH VOLUME APPLICATIONS FOR THE ELECTRONIC WARFARE MARKET.

EW APPLICATIONS

INNOVATION IN DESIGN

THE QUEST FOR EVER HIGHER LEVELS OF PERFORMANCE AND COST COMPETITIVENESS DRIVES OUR DESIGN AND DEVELOPMENT INITIATIVES.

MPG'S NEXT GENERATION ARRAY OF PRODUCTS, LEGACY DESIGN EXPERTISE AND PRODUCTION FACILITIES ARE A MUST FOR EVER-CHANGING THREATS.



MPG DELIVERS



CORE PRODUCT EXPERTISE

- PRODUCT CUSTOMIZATION
- PREFERRED SUPPLIER
- IN-HOUSE MANUFACTURING



ADDED VALUE SOLUTIONS

- INTEGRATED MICROWAVE ASSEMBLIES (IMAS)
- MULTI-FUNCTION ASSEMBLIES
- MODULAR OPEN SYSTEM ARCHITECTURE (MOSA)



HIGHLY EXPERIENCED TEAM

- DEVELOPS NEXT GENERATION MARKET SOLUTIONS WHILE MAINTAINING AFFORDABILITY AND RELIABILITY
- CONTINUES ENHANCING PROCESSES TO IMPROVE QUALITY, RELIABILITY AND COST

CERTIFICATIONS

DOMINICAN REPUBLIC
ISO 9001:2008

WEST CHESTER
AS9100
ISO 9001:2015

SALISBURY
AS9100

YORK
ISO 9001:2015
ISO 14001:2015

VENTURA
AS9100

FILTERS



SURFACE MOUNT LUMPED ELEMENT WAVEGUIDE

SWITCHES



SURFACE MOUNT PIN DIODE COAXIAL WAVEGUIDE

INTEGRATED MICROWAVE ASSEMBLIES (IMAS)



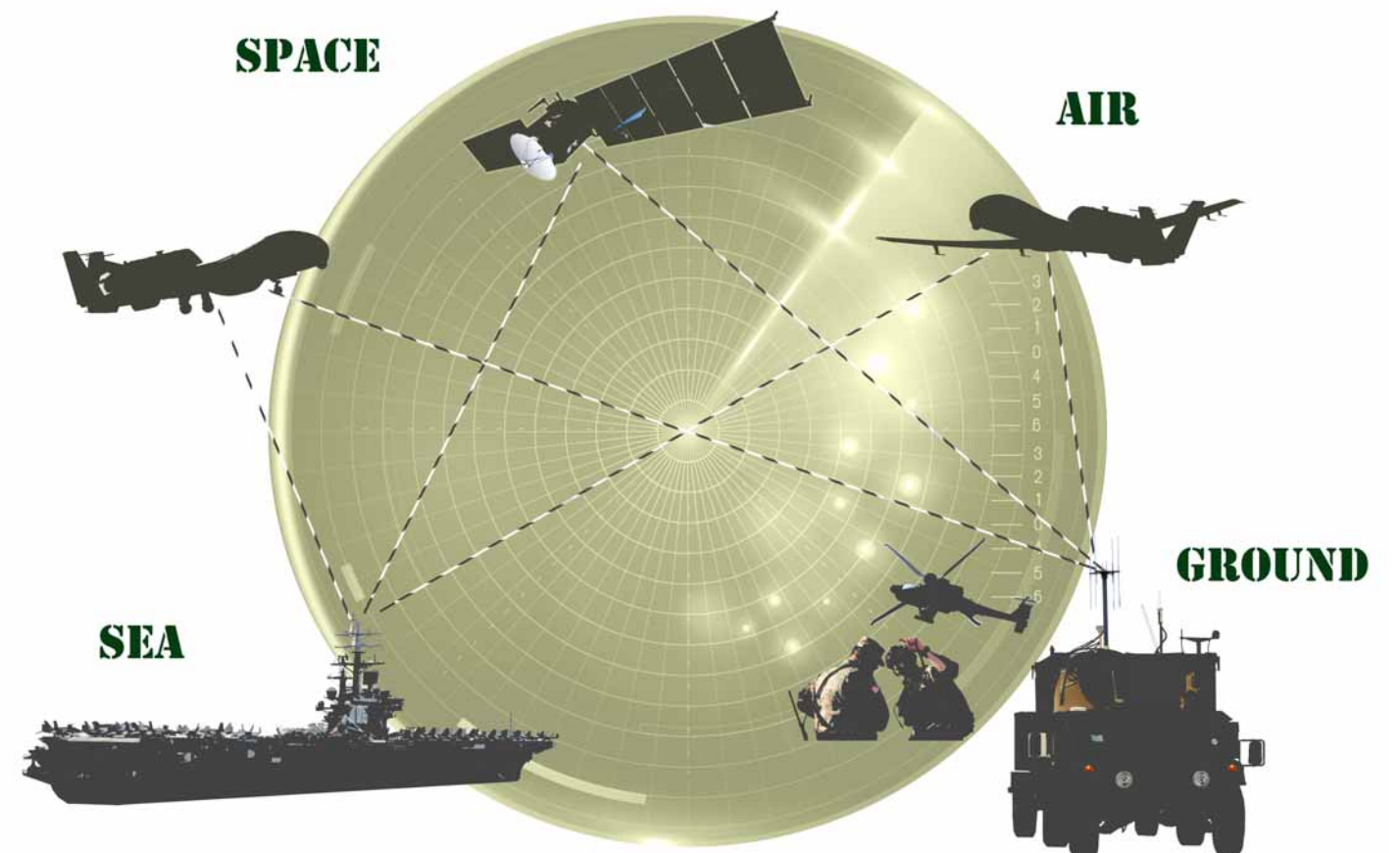
SIGNAL DISTRIBUTION UNIT 18 GHZ IMA DOWN CONVERTER W/ LNA TEST SYSTEMS

CONNECT & PROTECT

PRESENT AND FUTURE DYNAMIC THREATS

IDEAL FOR:

- * RADAR & ELECTRONIC WARFARE (EW) SYSTEMS
- * COMMAND & CONTROL VEHICLES (GROUND, NAVAL, AIRBORNE)
- * SOFTWARE DEFINED RADIOS (SDR)
- * VEHICLE AMPLIFIER ADAPTERS (VAA)



AGILE AND TUNABLE	1 MHz → 28 GHz		BW = 2% MULTI-OCTAVE
THIN FILM Q250-400	2 GHz → 18 GHz		BW = 5% MULTI-OCTAVE
HELICAL Q800-1,200	30 MHz → 1.3 GHz		BW = 0.5 - 15%
LUMPED ELEMENT Q50-300	300 KHZ → 6 GHz		BW = 1% MULTI-OCTAVE
MINI-MAX Q20-1000	20 MHz → 3 GHz		BW = 2 - 20%
CERAMIC Q150-1,000	500 MHz → 3 GHz		BW = 1 - 30%
TUBULAR Q300-700	20 MHz → 20 GHz		
COMBLINE Q500-4,000	400 MHz → 20 GHz		BW = 1 - 50%
CAVITY Q500-30,000	100 MHz → 30 GHz		BW = 0.2 - 100%
SUSPENDED SUBSTRATE Q400-600	500 MHz → 50 GHz		BW = 10% MULTI-OCTAVE
SUSPENDED SUBSTRATE PUCK Q500-4,000	4 GHz → 27 GHz		BW = 0.2 - 5%
WAVEGUIDE Q1,000-20,000	1 GHz → 100 GHz		BW = 0.5 - 10%
MULTIPLEXERS			
LUMPED ELEMENT CERAMIC CAVITY	300 KHZ → 100 GHz		BW = 1% MULTI-OCTAVE

<p>SOLID STATE PIN DIODE</p> <p>100 MHz - 18 GHz, SPDT - SP8T SWITCHING SPEED: 100 & 250 NSEC MAX. HIGH POWER OPTIONS AVAILABLE SPACE QUALIFIED OPTIONS AVAILABLE</p>	<p>L-BAND, HIGH POWER SP9T SWITCH 37 W HOT SWITCHING</p>
<p>MINIATURE MECHANICAL (IN PROCESS R&D)</p> <p>DC - 8 GHz SPDT, DPDT LATCHING ACTUATOR SPACE QUALIFIED OPTIONS AVAILABLE</p>	
<p>COAXIAL</p> <p>DC - 26.5 GHz, DC - 40 GHz SPDT, DPDT, SP3T-SP14T3 ACTUATOR: FAILSAFE, NORMALLY OPEN, LATCHING SELF CUTOFF OPTIONS: INTERNAL OR EXTERNAL TERMINATIONS SPACE QUALIFIED OPTIONS AVAILABLE</p>	
<p>RELIANT HIGH REPEATABILITY</p> <p>0.03 dB INSERTION LOSS DC - 26.5 GHz, SPDT, SPDT WITH TERMINATIONS, SP6T WITH TERMINATIONS LATCH SELF-CUTOFF ACTUATOR</p>	
<p>WAVEGUIDE</p> <p>WR62, WR75, WR90, WR112* SPTD & DPDT LATCHING ACTUATOR *OTHER OPTIONS AVAILABLE SPACE QUALIFIED OPTIONS AVAILABLE</p>	
<p>SWITCHES ARE NORMALLY CONTROLLED VIA DC POWER, TTL, OR CANBUS MESSAGING; OTHER CONTROL MAY BE AVAILABLE UPON REQUEST.</p>	

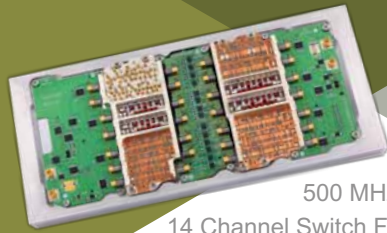


Enabling Communication and Signal Control

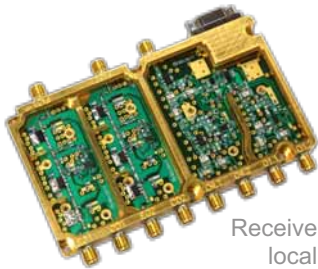
Count on us for mission critical support



INTEGRATED MICROWAVE ASSEMBLIES (IMAS)



500 MHz - 3 GHz
14 Channel Switch Filter Bank
Front ends software defined radio
Tx & Rx functions Dynamic range
shifting gain control



6-18 GHz, Radar Warning
Receiver Building Block For RF and
local oscillator signal distribution

MAXIMIZING INTEGRATION IS KEY TO OFFERING THE BEST POSSIBLE PERFORMANCE IN A SMALL FORM FACTOR. WE OFFER INNOVATIVE LOW RISK SOLUTIONS, BY UTILIZING OUR EXPERTISE IN INTEGRATED SMALL MULTIFUNCTION, MODULAR SUB-SYSTEMS.

AS FILTER & SWITCH EXPERTS, MPG HAS BUILT ON A HISTORIC REPUTATION OF QUALITY AND PERFORMANCE BY ADDING ACTIVE CAPABILITY AROUND OUR PASSIVE RF DEVICES. MULTIPLE FUNCTIONS CAN BE CARRIED OUT BY A SINGLE SELF-CONTAINED BLOCK INCORPORATING AMPLIFICATION/GAIN CONTROL, TEMPERATURE COMPENSATION AND OFFSETS, WE PROVIDE DIGITAL FUNCTIONALITY USING FPGA CONTROL & CALIBRATION.

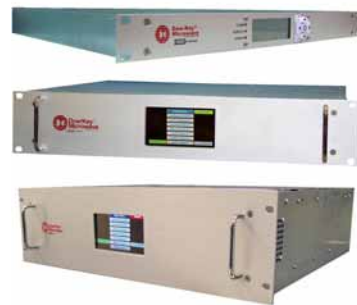


2-18 GHz, Preselector Reconfigurable
Filter Bank for ESM receivers
8 independent switchable channels, allowing user to
dynamically change the passband performance on a
pulse by pulse basis.

RELIABLE. FASTER. MODULAR.

NEXT GENERATION INTEGRATION MICROWAVE ASSEMBLIES

- HIGHLY SCALABLE AND MODULAR
- TROUBLE-FREE MAINTENANCE FOR FIELD UPGRADES & REPAIR
- 1RU/2RU/3RU/4RU RACK MOUNTABLE ENCLOSURES
- LCD/KEYPAD OR TOUCH SCREEN MANUAL CONTROL
- REMOTE CONTROLS: ETHERNET (TCP/IP) WITH HTTP SERVER OR SNMP V1/V2 OR GPIB & RS-232 AND USB



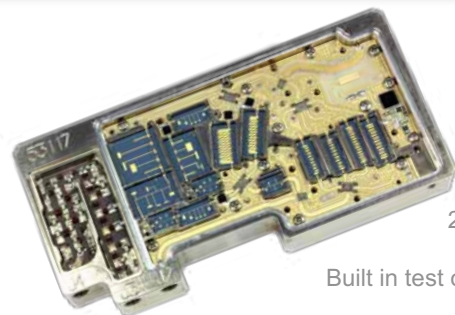
Switch Boxes (Matrix Systems)



High Power Switch Filter Banks
100W+ VHF/UHF Bands
50W L Band / S Band



Systems are fully controlled through controller module(s) with Windows based PC and removable hard drive.



2-18 GHz, Switch Filter Bank for ESM System
Preselector 8-channels 50n sec switch time.
Built in test oscillator to ensure all channels are functional

EXTREME SELECTIVITY AND OUTPHASING



TUNABLE FILTERS



INTEGRATED COSITE EQUIPMENT (ICE)

COSITE COMMUNICATION INTERFERENCE SOLUTIONS

IDEAL FOR SIGINT & COMINT APPLICATIONS, ABOARD SHIPS AND ISR AIRCRAFT, DF (DIRECTION FINDING) SYSTEMS AND OTHER SENSITIVE RF SYSTEMS.

MPG IS THE PREMIER PROVIDER OF SOLUTIONS FOR COMMUNICATIONS CHALLENGES ARISING FROM RF INTERFERENCE. OUR PRODUCTS ENABLE MILITARY PLATFORMS TO SIMULTANEOUSLY OPERATE MULTIPLE RADIOS ON THE SAME PLATFORM WITHOUT DEGRADATION IN PERFORMANCE, RANGE OR COMPROMISES IN CON-OPS. OUR INTEGRATED COSITE EQUIPMENT (ICE) LINE OF PRODUCTS ARE INCORPORATED BETWEEN RADIOS AND ANTENNAS TO ENABLE SIMULTANEOUS OPERATION OF ALL YOUR COMMUNICATIONS, RADAR, SIGINT/COMINT AND OTHER RF SYSTEMS.

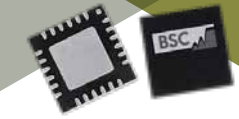
TODAY'S ELECTROMAGNETIC (EM) ENVIRONMENT HAS PROVOKED NEW TECHNOLOGIES.

- MULTI-ROLE DEVICES AND PLATFORMS
- SMALLER, LIGHTER, COST EFFECTIVE SOLUTIONS

COSITE ANALYSIS & SYSTEM INTEGRATION

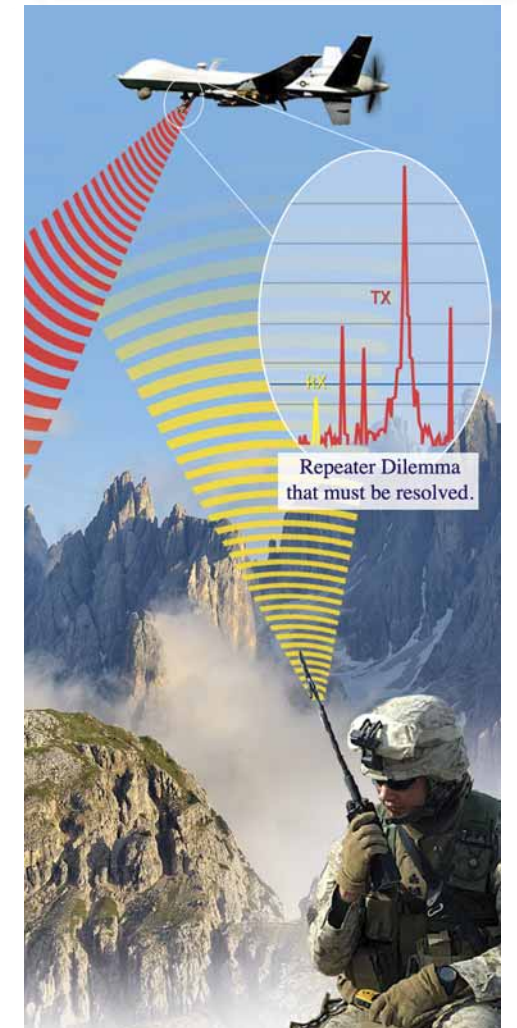


COSITE MITIGATION AT ALL LEVELS



QFN- EXTREMELY HIGH Q

- L-BAND (1 - 2 GHz)
- S-BAND (2.4 - 3.5 GHz)
- X-BAND (7 - 12 GHz)
- X-BAND NOTCH (7 - 12 GHz)





Enabling Communication
and Signal Control



MICROWAVE PRODUCTS GROUP UNIFIES THE HERITAGE,
PRODUCT LEADERSHIP AND INNOVATION OF FOUR WORLD CLASS BRANDS
TO ENABLE COMMUNICATION, PROVIDE SIGNAL CONTROL AND TAKE COMMAND
OF ELECTRONIC WARFARE AND RADAR TECHNOLOGY DEVELOPMENT

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