



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.

FILTERS



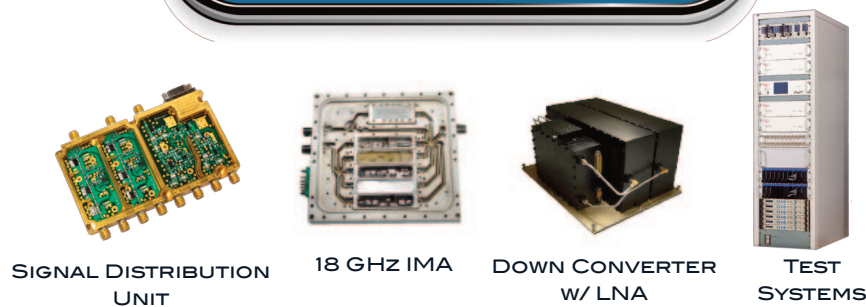
SURFACE MOUNT LUMPED ELEMENT WAVEGUIDE

SWITCHES



SURFACE MOUNT PIN DIODE COAXIAL WAVEGUIDE

INTEGRATED MICROWAVE ASSEMBLIES (IMAS)



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

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	

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.

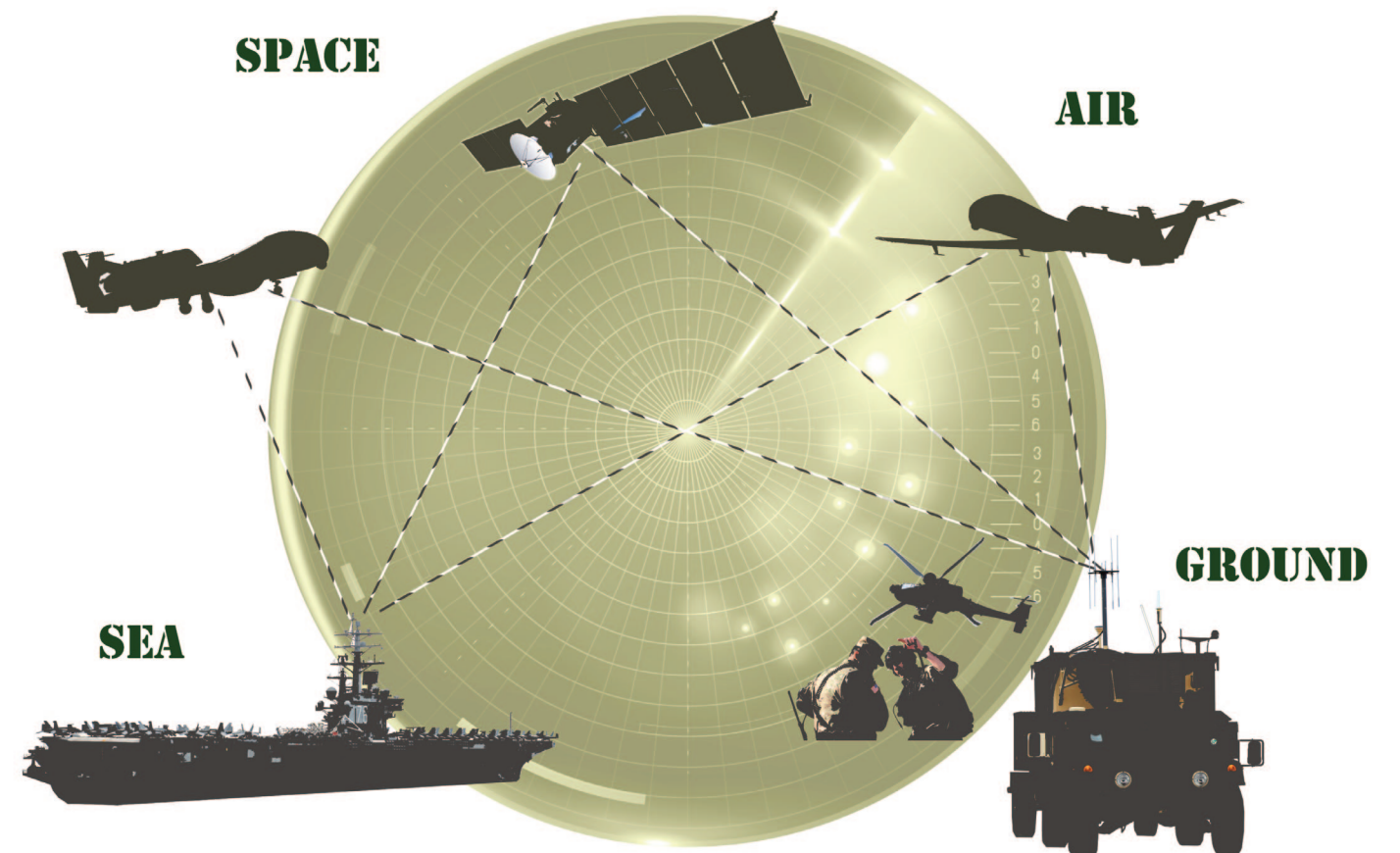


CONNECT & PROTECT

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

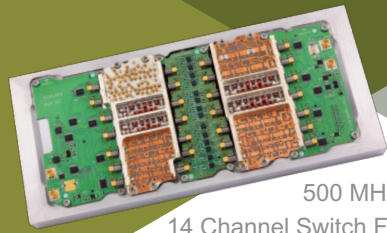


Enabling Communication and Signal Control

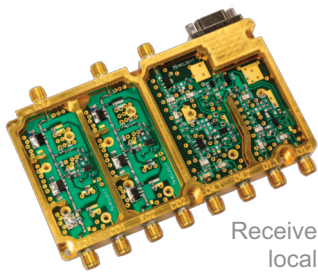


Count on us for mission critical support

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.

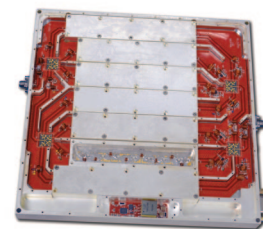
RELIABLE. FASTER. MODULAR.

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



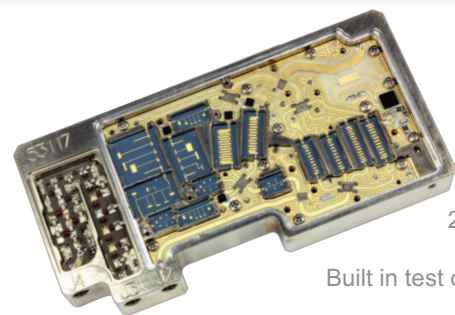
Switch Boxes (Matrix Systems)



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.

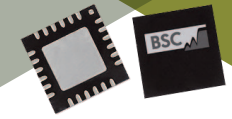
TODAY'S ELECTROMAGNETIC (EM) ENVIRONMENT HAS PROVOKED NEW TECHNOLOGIES.

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

COSITE ANALYSIS & SYSTEM INTEGRATION

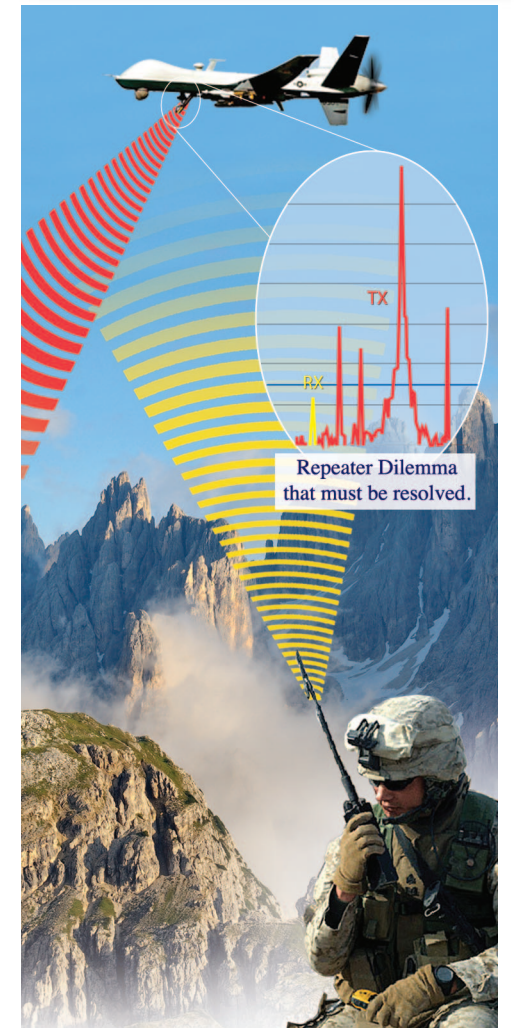


COSITE MITIGATION AT ALL LEVELS



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

WWW.DOVERMPG.COM • SUPPORT@DOVERMPG.COM