

## EMGS marine EM source systems overview

	Conventional	Deep Xpress	Shelf Xpress	Deep Blue
E field @ 1m distance	11V/m	7V/m	6V/m	7V/m
Dipole antenna current	1250A	1500A	7200A	10000A
Electrode length	7.5m	15m	75m	100m
Dipole moment (dipole length)	350kAm (280m)	420kAm (280m)	2 160kAm (300m)	3 600kAm (360m)
	Dipole antenna is modular and length is adjustable for all systems			
Current measurement precision	<2%	<1%	<1%	<1%
Current measurement sampling rate	200Hz	2kHz	2kHz	2kHz
Output Bandwidth	0-10Hz	0 to 25Hz 0 to 50Hz (reduced output)	0 to 12Hz 0 to 50Hz (reduced output)	0 to 7Hz 0 to 50Hz (reduced output)
Power electronics	THYRISTOR	IGBT	IGBT	IGBT
Zero crossing wait state	80ms	N/A	N/A	N/A
Timing accuracy	1000 $\mu$ s	<100 $\mu$ s	<100 $\mu$ s	<100 $\mu$ s
Timing distribution system	PPS/NMEA	IEEE 1588	IEEE 1588	IEEE 1588
Electric power consumption, vessel	160kW	160kW	1200kW	1800kW
Umbilical voltage	3.5kV	3.5kV	N/A	24kV
Antenna output power	115kW	110kW	1100kW	1350kW
Operational depth	10 to 3500m	10 to 4000m	10 to 700m  (surface towed only)	10 to 4000m
Operational water temperature	<30°C	<30°C	<40°C	<40°C
Towing speed (dependent on sea currents and depths)	<4 knot	<5 knot	<5 knot	<5 knot
Tow Array Positioning	iUSBL	iUSBL	RGPS	iUSBL

IGBT – Isolated-gate Bipolar Transistor  
 RGPS – Relative GPS  
 GPS – Global Positioning System

FPGA – Field Programmable Gate Array  
 GUI – Graphical User Interface

THD – Transient Harmonic Distortion  
 DSP – Digital Signal Processor