

**Magnetron, 2M130, Water Cooled**

APPROVALS			REVISIONS			
	INITIALS	DATE	REV	DESCRIPTION	DATE	APPR
Drawn	JFG	09APR00	A	Production Release	09APR00	JFG
Engineering						
Manufacturing						
Marketing						

**1.0 General Description**

This document describes a water cooled version of the Hitachi 2M130 magnetron that is specially designed for installation in the GL139 line of microwave generators originally manufactured by ASTeX. The GAE version of this magnetron is a direct replacement of the ASTeX part number C12139 and C12139-1 magnetrons and provides the same performance and life.

Two assembly configurations are available. Part number 910443 is the basic magnetron for installation into new generators. Part number 910443-1 is for field replacement of the basic magnetron and includes Swagelok water connection fittings for upgrading certain older generators to the latest style fittings. Magnetron replacement instructions are also provided with the 910443-1 assembly.

**2.0 Reference Documents**

910443      Assembly Drawing, Water-Cooled 2M130 Magnetron  
940006      Technical Service Document, Magnetron Replacement Instructions

**3.0 Specifications****3.1 Absolute Maximum Ratings:**

ITEM	SYM	MIN	MAX	UNITS
Filament surge current	-	-	100	Aac
Filament voltage, Stand-by	Ef	4.4	5.0	Vac
Filament voltage, Ib = 725 mAdc	Ef	3.1	3.5	Vac
Filament warm-up	Tk	5	-	Sec
Anode voltage, peak	Ebm	-	4.3	kV
Anode current, peak	Ibm	-	2.1	A
Anode current, average	Ib	-	750	mAdc
Anode input power	Pi	-	2.6	kW
Load VSWR	$\phi L$	-	4	-
Anode core temperature	Tp	-	180	°C
Case temperature	Tcase	-	120	°C
Storage temperature	-	-30	60	°C

**3.2 Test Conditions for Electrical Characteristics:**

Power Supply Type	Single-phase, full-wave bridge rectifier without filter
Filament voltage	Ef = 4.6 Vac (stand-by), 3.3 Vac (Ib = 725 mAdc)
Average anode current	Ib = 725 mAdc
Load VSWR	$\phi L < 1.1$

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**3.3 Limits and Characteristics:**

ITEM	CONDITION	SYM	BOGIE	MIN	MAX	UNITS
Filament current, stand-by	Tk=120sec min.	If	20	18.5	21.5	Aac
Anode voltage, peak		Ebm	4.00	3.85	4.20	kVp
Output power, average		Po	1930	1750	-	W
Frequency		fe	2455	2440	2470	MHz
Stability	$\phi L < 3$	ST	-	700	-	mAdc
Breakdown voltage		Et	-	10	-	kVdc

**3.4 Mechanical:**

Cooling water connections 1/4" OD soft copper tubing with 1/4" Swagelok® tube fittings  
 Cooling water flow 0.5 gpm min. @ 35 °C max. input temperature

**4.0 Ordering Information**

Part Number	Description
910443	Magnetron assembly, 2M130 water-cooled (for installation in new generators)
910443-1	Replacement magnetron assembly (for field replacement)

**5.0 Outline Drawing**

