OPTO-ELECTRONIC

Laboratory Fixed frequency driver

SmartMBxx / SmartMAxx

- Laboratory **110-230VAC** driver with fixed frequency up to 460MHz.
- High resolution **color LCD Display**.
- **USB remote control**.
- Amplitude adjustments.
- **Forward and Reverse power** display.
- **External AM inputs** analog + digital.
- **Internal Signal generator** (CW, Sine, Triangle, Rectangle up to 5 MHz).
- **Temperature and VSWR display**.

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Product Overview

These laboratory drivers based on fixed frequency quartz, produce fixed stable and accurate RF frequency signals for AO modulators/shifters and deflectors. Their design with "on the edge" technology offers unique performance in term of **accuracy, speed and stability thanks to their low noise and high linearity design.**
The built in amplifiers deliver the necessary RF power to drive the acousto-optic devices, with reduced power consumption.
The RF power can be modulated with external signals (Digital and/or Analog) or remote controlled through USB, or manually adjusted with the front panel knob.

For Laboratory purposes, the front panel knob and display will allow user to easily adjust and visualize adjustments' mode and power level. For dynamic operation, internal signal generators on both digital and Analog inputs, enable the user to generate CW, sine, triangle or rectangular modulation signals up to 5 MHz.
At last, user can monitor temperature of the driver, forward and reverse power**. Some output signals allow user to create trig in signals for synchro purposes.**

SPECIFICATIONS (T=25°C)

Parameter	Specifications
Frequency	Any fixed in [10 – 460] MHz
Frequency stability	Nom +/-1 ppm/°C
Frequency accuracy	Nom 1 KHz
Power supply	110-230 VAC (AC-C converter & Power cord supplied)
Rise time / Fall time	< 20 ns @40 MHz, < 10 ns @80 MHz < 8 ns @110 MHz < 5 ns @180 MHz, < 3 ns @F>200MHz
Modulation input controls / External (AM)	Dual (Analog + TTL): 0-5V/1kΩ + TTL/1kΩ for F< 150 MHz 0-1V/50Ω + TTL/1kΩ for F> 150 MHz Other on request
Modulation controls / Internal (AM)	Sine / Square / Triangle up to 5MHz (analog Input, Internal Mode) Square up to 5MHz (TTL Input, Internal Mode)
Rise/fall time (10-90%) (@<4W versions)	< 20ns @40 MHz, < 10ns @80 MHz < 8ns @110 MHz, < 5ns @180 MHz, < 3ns @F>200MHz
Output RF power (1dB compression)	[0, 22, 27, 30, 34, 36, 38] dBm total, adapted to AO device
RF power setting	Knob from front panel, USB
Extinction ratio	Nom 45dB (option Digital >75dB up to 110MHz)
Output impedance	50 Ω
V.S.W.R.	< 1.2/1
Remote control	USB communication PC software provided (GUI) + SDK for Third Party Interface
Output	0 dBm output for frequency monitoring / Signal generators TRIG
Displays	Forward power*, Reverse power*, Temperature, VSWR *Indication with tolerance+/-5% typ
Size	199 x 192.5 x 74 mm^3
Weight	1200 g
Heat exchange	Standalone, fan + internal heatsink
Operating temperature	0 to 40°C
Storage temperature	-40 to +70°C non condensing

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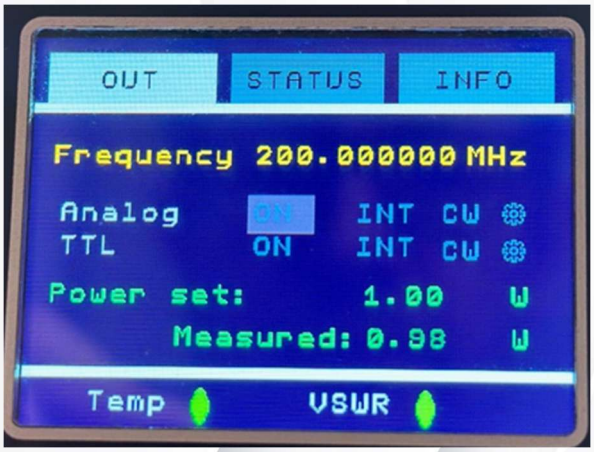
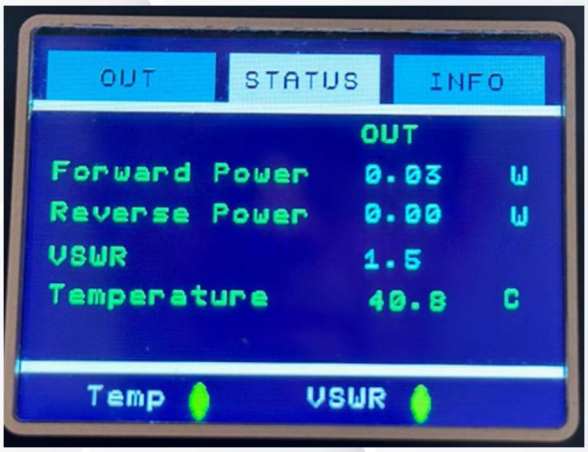
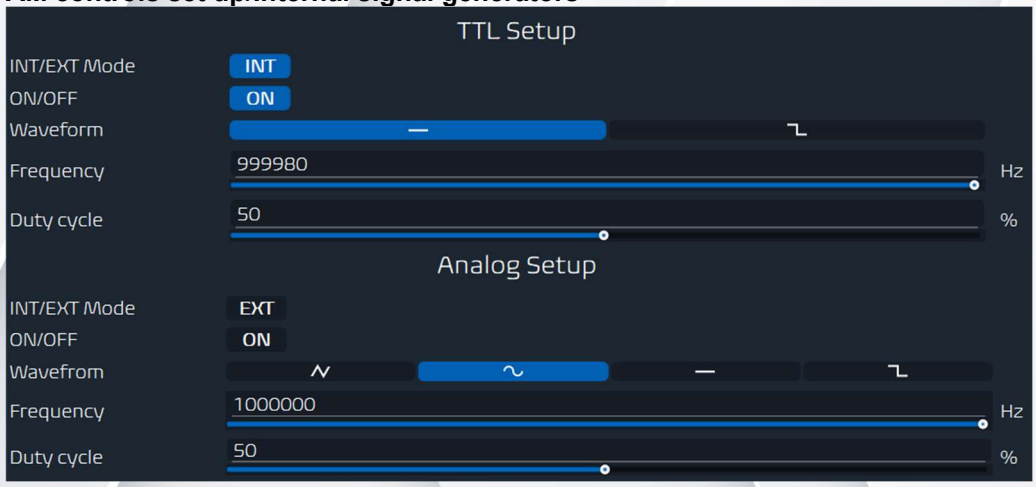
FRONT PANEL DISPLAY





PC SOFTWARE & SDK

AM controls set up/Internal signal generators



Power adjustment

Power/Reverse Power display

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CONNECTIONS

1: Power switch (pushed= ON, released = OFF)

2: 24Vdc power input, type : DC power Jack (Center Pin diam : 2.0mm, Outer diam : 5.7mm, Insertion depth: 8.4mm); Center pin is V+, Outer is GND

3: USB-C connector, USB operation, NOT INTENDED FOR POWER SUPPLY

4: SMA (fem), Clock input – NOT CONNECTED

5: BNC (fem), Analog Channel 1 can act as an input or output, see more details in operating manual

6: BNC (fem), TTL Channel 1 can act as an input or output, see more details in operating manual

7: BNC (fem), Analog Channel 2 – NOT CONNECTED

8: BNC (fem), TTL Channel 2 – NOT CONNECTED

9: SMA (fem), RF1 output, 50 Ohm, must be connected to AO device or 50 Ohm load

10: SMA (fem), RF1 0dBm output, 50 Ohm – for frequency control

11: SMA (fem), RF2 output – NOT CONNECTED

12: SMA (fem), RF2 0dBm output – NOT CONNECTED

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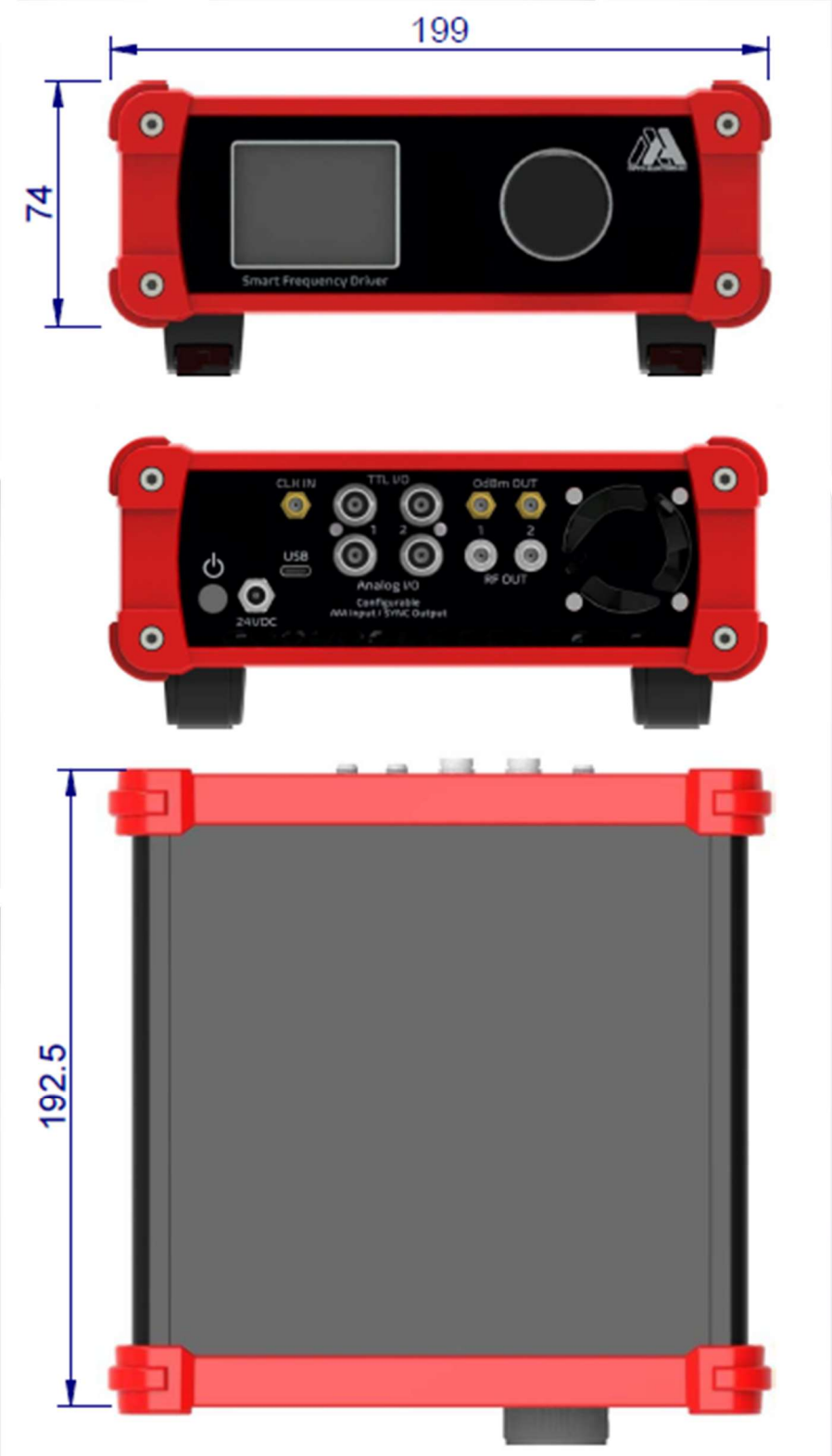
OUTLINE DRAWING (mm)



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