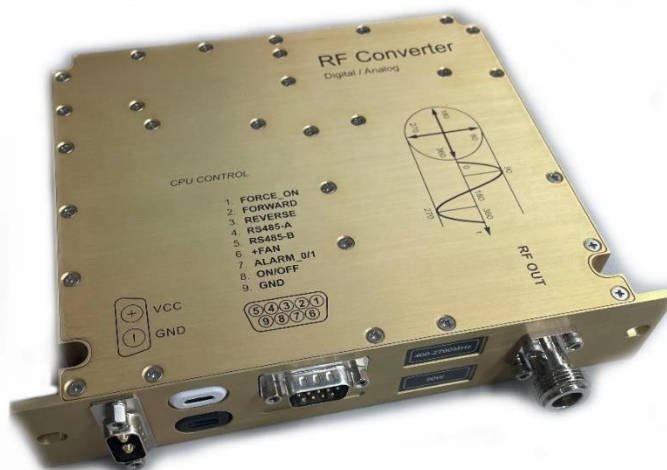


DTA-4002700 RF converter with
Direct Digital Synthesis (DDS) multi-
function reprogrammable module and
built-in high power amplifier up 90W
Psat

- Software
- Small and light weight
- DDS multifunctional system
- Inside RF Power Amplifier
- Full protection option
- Realtime monitoring voltage, current and temperature
- Fan control
- RS485/USB



1. Electrical Characteristics

Model: DTA-4002700	Symbol	min	Nom	max	Description
Control ports					
Operating voltage	DC	+22		+32	
Rs485					Pins 4,5,9
Enable/Disable	TTL	0		1	Pin 8, 0-OFF
Force	TTL	0		1	Pin1, 0-Generation
FAN out	DC	+22		+32	Pin 6
ALARM 0/1					Pin 7, error VSWR
Forward	mV	0		3300	Pin 2
Reverse	mV	0		3300	Pin 3
USB "C" white					Data transfer/BOOT
USB "C" black					BOOT
Parameters					
Frequency Range	MHz	400		2700	
Attenuator	ATT	-15		0	
Maximum width of one band	MHz			500	
Direct digital synthesis	DDS				
Chaotic frequency change "SPEED"	kHz			3400	* See description
Channel switching speed	us	1		1000000	** See description
Type of modulation	Sweep random				
Number of channels				3	
Output Power	Watts	10	50	90W Psat	
Cooling Load Current	mA	0		15000	
Harmonics 2ND	dBc	-15		-10	
Harmonics 3RD	dBc	-25		-8	
Spurious	dBc	-50		-35	
Efficiency	%	38	45	50	
Standby Current	mA		700		

Current (OFF System)	mA		0		
Relative Humidity	RH			95	
Output Impedance	Ohms			50	
Reprogramming the operating frequency via USB/TCP/IP	MHz	400		2700	
Amplitude correction	dB	-30		0	**** See description
Overload protection					
Thermal Protect	Celsius	-40		+85	
Forward Protect	mV	0		3300	
Current Protect	mA	0		22000	
Voltage Protect	mV	0		32000	
VSWR Protect	Unit	0		255	*** Conventional unit
Cooling Protect	mA	0		15000	

* "SPEED"-The rate of updating the signal phase within each band.

** "Channel switching speed" - Hold time for each channel during generation.

*** "Conventional unit" - A unit that allows you to configure VSWR protection.

Approximately corresponds to VSWR parameters:

220=vswr-1, 240=vswr-3, 255=vswr-10.

**** "Amplitude correction" - This function allows you to adjust signal amplitude.

The maximum number of adjustments is 40.

Adjustments can be made both using software and by sending commands to the module.

The module can operate independently, without software.

Previously entered frequencies are stored in the internal flash memory.

To start generation, connect the FORCE port to the GND bus.

Commands for reprogramming the module operating frequency via a USB connection or an external TCP/IP to RS485 converter, using the supplied software or a third-party program, such as "HERCULES":

Changing the frequency:

Frequency 400-500MHz Command: **FREQ1=400000-500000**
Frequency 925-960MHz Command: **FREQ1=925000-960000**
Frequency 1805-1880MHz Command: **FREQ1=1805000-1880000**

Or

Frequency 850-894MHz Command: **FREQ1=850000-894000**
Frequency 1170-1620MHz Command: **FREQ1=1170000-1620000**
Frequency 2400-2500MHz Command: **FREQ1=2400000-2500000**
FREQ1=OFF (Completely removes the first channel settings)

Change of amplitude and phase:

CORR1=400000-500000,90,100

400000-500000 -Frequency, 90- Phase, 100- Maximum amplitude, 0- Minimum amplitude.

The maximum number of adjustments is 40 (CORR1-CORR40).

CORR1=OFF (Completely removes the first channel correction)

Commands for activating and deactivating generation:

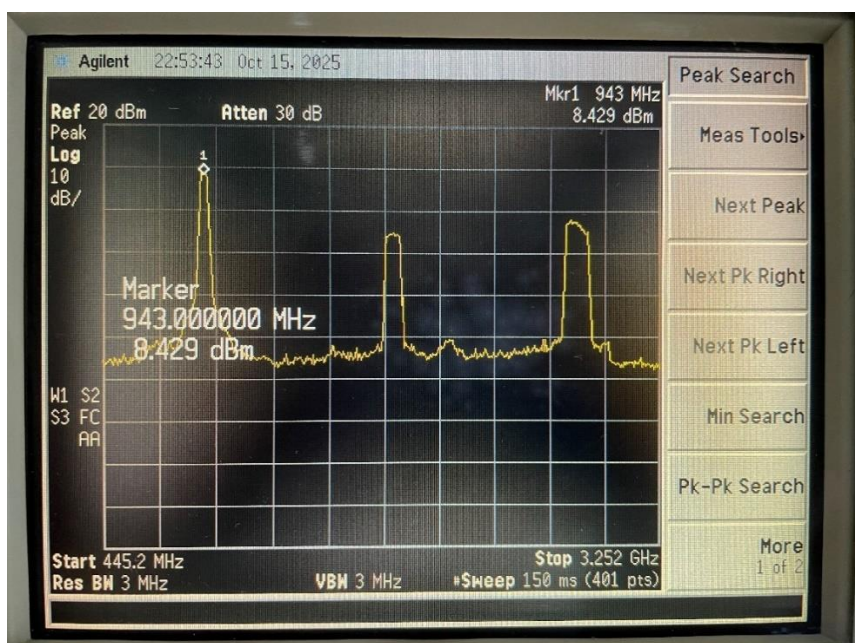
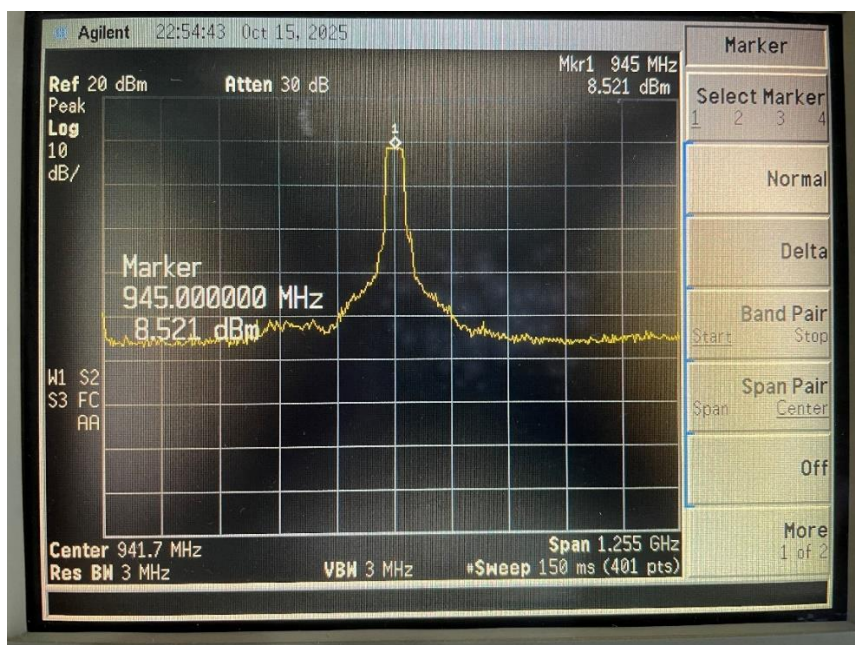
SWEEP GEN ON -Enables generation

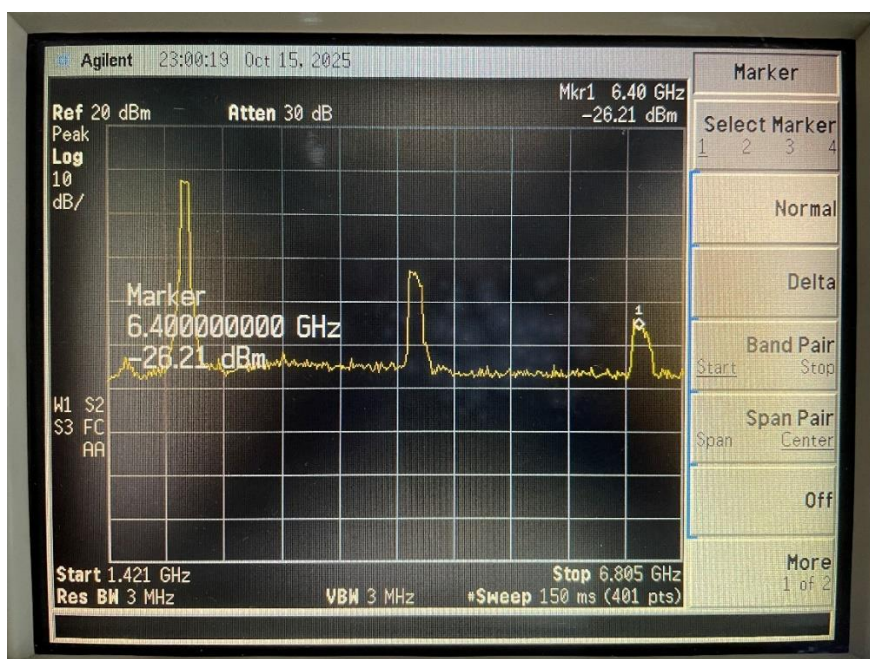
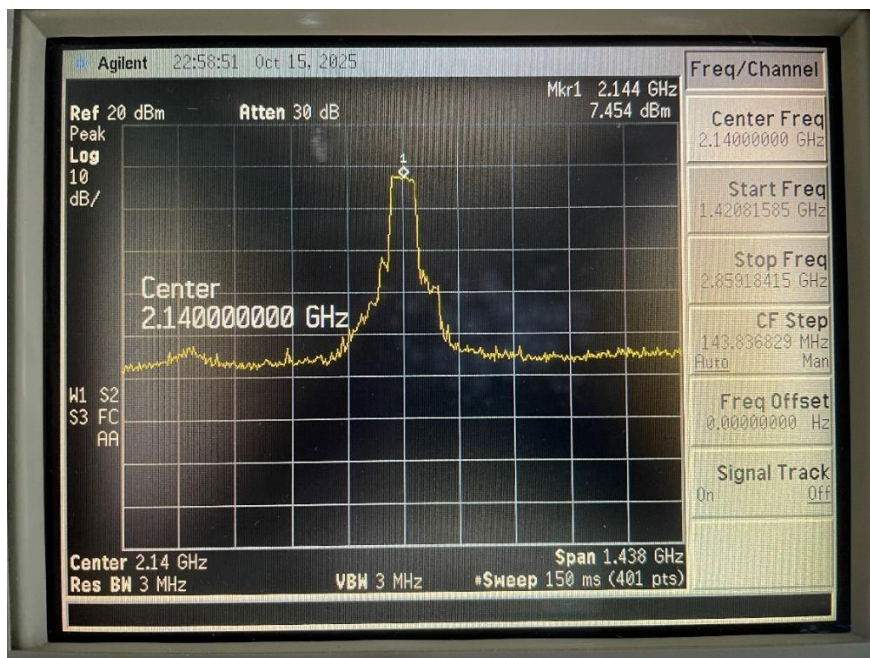
SWEEP GEN OFF - Turns off generations

Using an external module to create a connection
via Converter TCP/IP to Rs485:



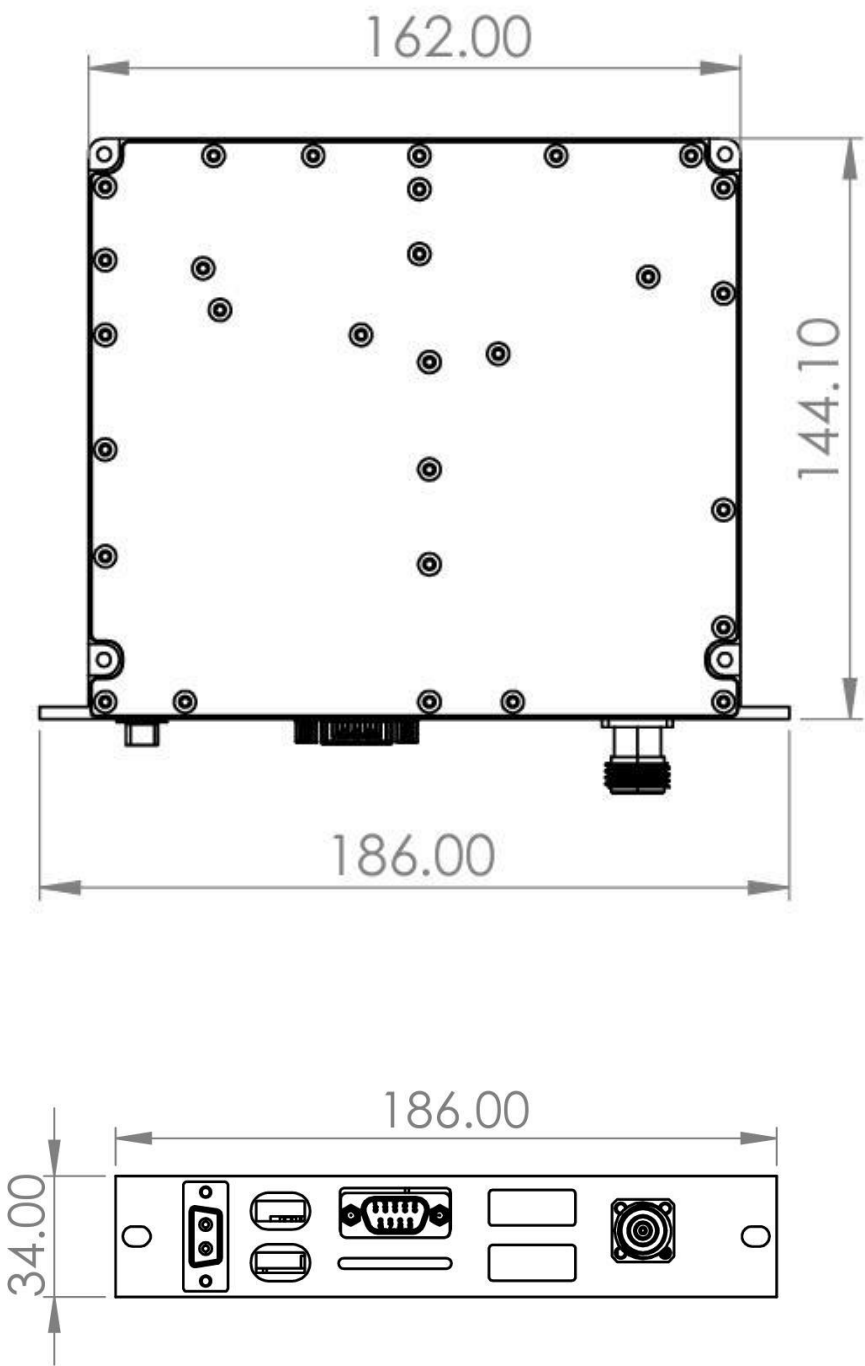
General view of the conventionally established fundamental and harmonic signals





2. Outline Drawing

Parameter	Value	Unit			
Weight	<1.3	Kg			



3. Software

Parameter					
OS Windows					

DDS_SYSTEM

GENERATION CONNECTION BIAS CHANNELS CALIBRATION

STATUS

OK

GENERATION

ON

GENERATION

DDS_SYSTEM

GENERATION CONNECTION BIAS CHANNELS CALIBRATION

TCP/IP Control

Server IP

10

.

0

.

0

.

201

Port

3333

Connected

1100C91001AB3422AA
11C900100100000CE113741F60024B020670D4011A00F000130002000200098D8422AA

BIAS COM-port Control

USB

RS485-to-USB

COM PORT

OPEN

CLOSE

OFF

GENERATION

DDS_SYSTEM

GENERATIONCONNECTIONBIASCCHANNELSCALIBRATION

N° Band	Start Frequency, MHz	Stop Frequency, MHz	Phase, Degree	Amplitude, %
1	400	2,700	90	100

Read from module

Read from file

Save to file

Band Correction

Fstart0MHzFstop0MHz

ApplyDelete All

PHASE 90 Degree

AMPLITUDE 100 %

GENERATION

DDS_SYSTEM

GENERATIONCONNECTIONBIASCCHANNELSCALIBRATION

Voltage / RF Power Control

Negative (mV)

GV1-2400GV2-5000GV3-1720GV4-5000

Voltage (mV)

+3.3V3297+5.0V4980+8.0V8031+VCC28881

Current (mA)

I119I23I32I49

Current Protect (mA) (Max)

DC112000DC22000DC34000DC42000

Address Module

0

Change address module

Positive (mV)

GV50GV60GV70GV80

RF Forward282mVRF Reverse239mV

Temperature51.8C

Voltage Protect (mV)

min033000max

POT [0..255]

VSWR220

Temperature Protect (C)

min-2075max

AutoStart

Time1Minutes

FAN Control (C)

min4085max

Reset BIAS

STATUS

OK

APPLY

OPEN

SAVE

Write new BIAS SW via USB

CONNECTION via TCP/IP

TX: 6860RX: 117553

GENERATION

DDS_SYSTEM

GENERATIONCONNECTIONBIASCCHANNELSCALIBRATION

CH

Fstart (MHz)

Fstop (MHz)

1

400

500

2

1170

1620

3

2400

2500

4

0

0

5

0

0

6

0

0

7

0

0

8

0

0

9

0

0

10

0

0

11

0

0

12

0

0

13

0

0

14

0

0

15

0

0

16

0

0

ApplyDelete All

Read from moduleRead from fileSave to file

Speed (10-3400kHz)

2800Update

Switch delay (1-1000000us)

10Update

Attenuator (0-15)

0Update

STATUS

OK

TX: CORR1=400000-500000.90,25Send

RX: 11C900100100000CE113731F5F024A020670DA011A00F00011110003000000094EC322AA

GENERATION

