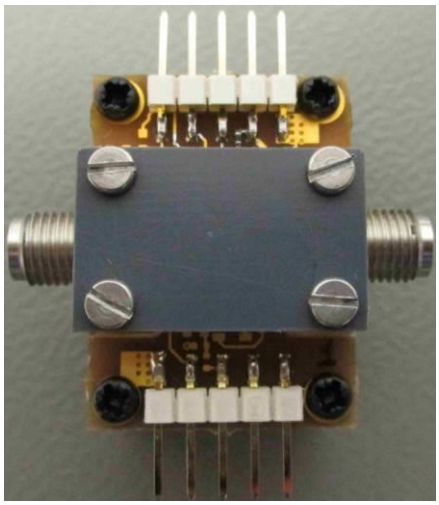
APPLICATION NOTE

Evaluation Board : P/N VWA 0000920 AB

Die : VWA5000062AA

Wideband Distributed Amplifier Evaluation Board



	Writer	Controller	Approving
Name	CTU	DLB	
Date	23/05/2017	29/05/2017	
Signature	OK	OK	

I. HISTORIC

Edition	Date	Description of changes	
1.0	23/05/2017	Creation	

II. REFERENCE DOCUMENTS

Document Title	Reference Document	Date	Edition

III. SUMMARY

IV. INTRODUCTION

IV-1. Description

The VWA0000920AB is a Wideband Distributed Amplifier "evaluation board". It is working in the DC-40 GHz frequency bandwidth. It uses the VWA5000062AA die.

The evaluation board is composed by 2 mains parts:

- A Wideband Distributed Amplifier die VWA5000062AA (1)
- A test structure support : Mechanic, PCBs, decoupling components, Input DC-block, Output DC-Block, Output bias-tee and K connectors (2)

This document describes the way to use the evaluation board VWA0000920AB.

RF features and results are not included.

IV-2. Evaluation Board PHOTO

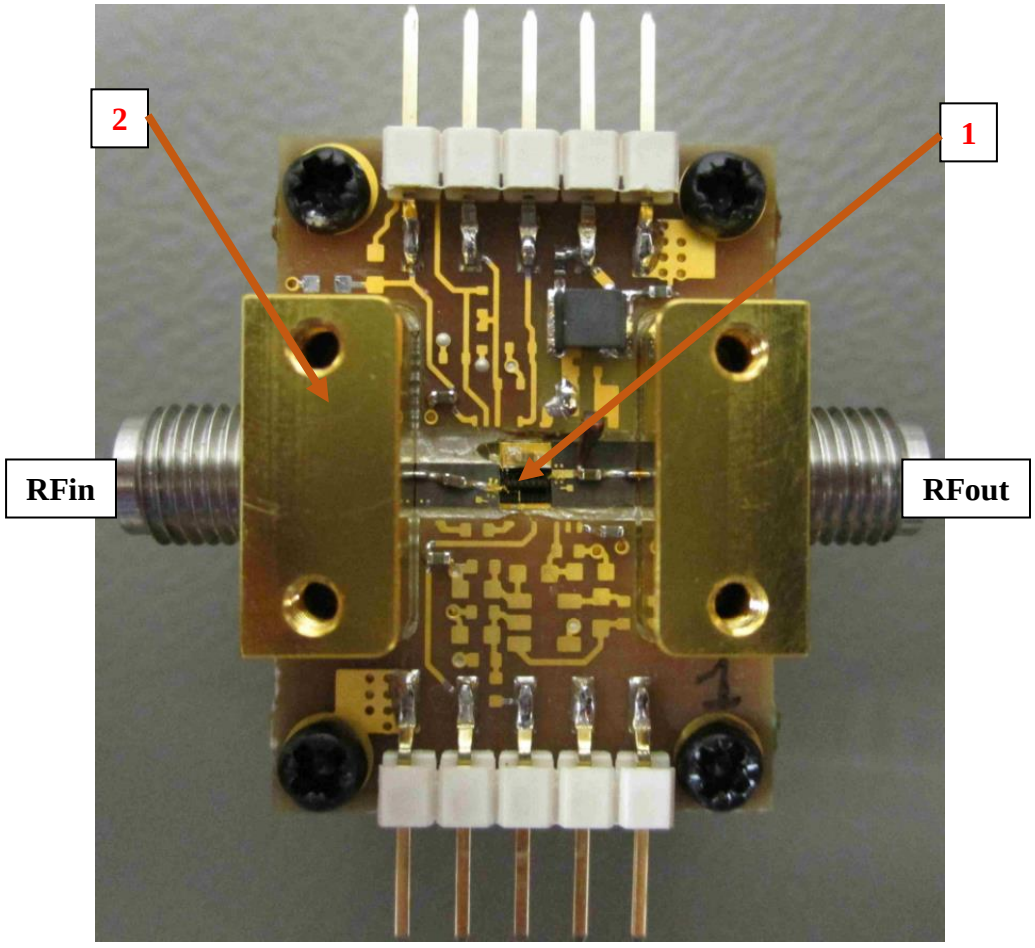


Figure 1: Evaluation board VWA0000920AB photo

V. INTERFACE AND COMPONENTS

V-1. Evaluation board VWA 0000920 AB Interface

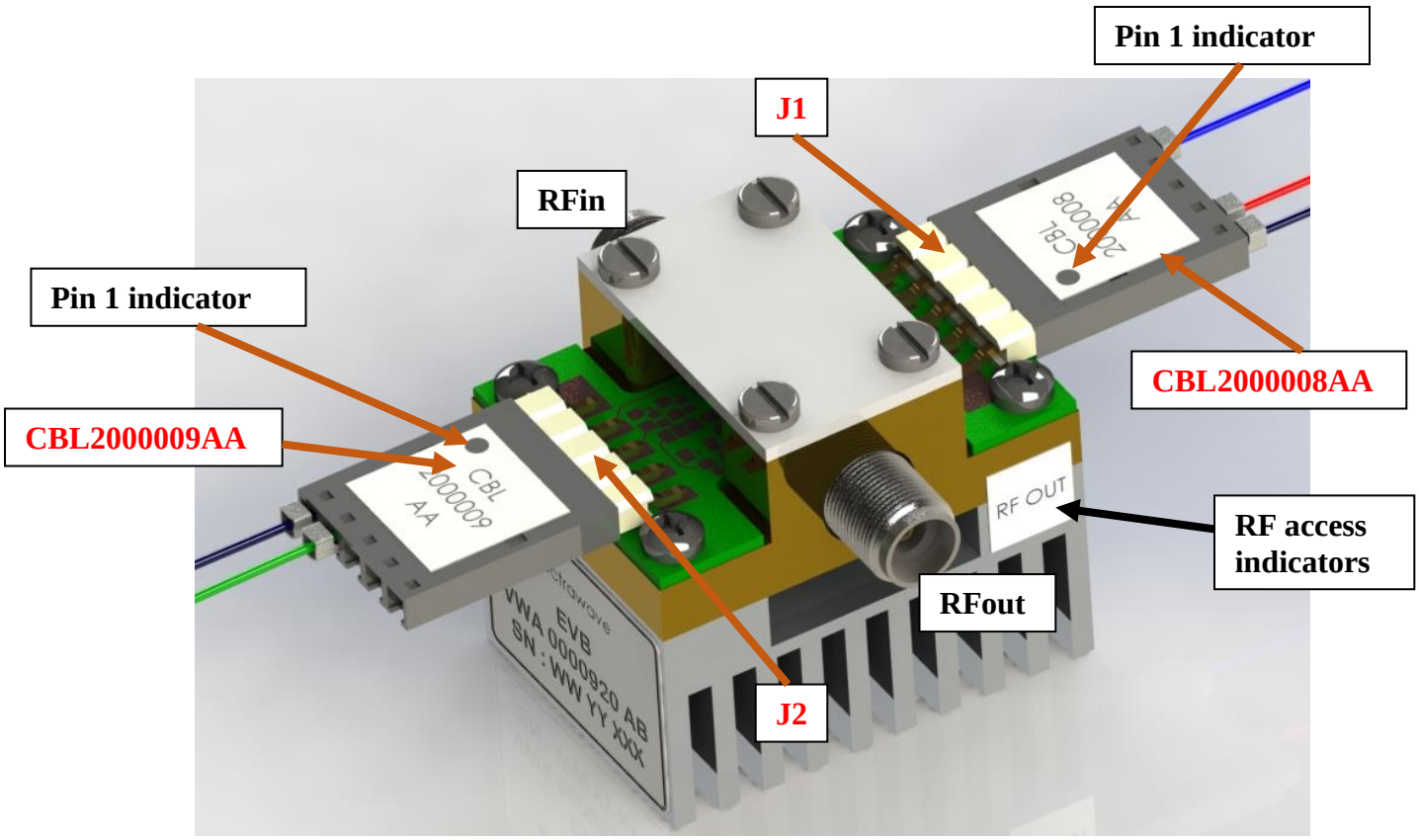


Figure 2: Evaluation board VWA0000920AB interface

Connector	Type	Allocation
J1	MOLEX 50-57-9005	Connect to CBL2000008AA cable : VBIAS, VG2 power supply and GND.
J2	MOLEX 50-57-9005	Connect to CBL2000009AA cable : VG1 power supply and GND
RFin	K female	RF Input
RFout	K female	RF Output

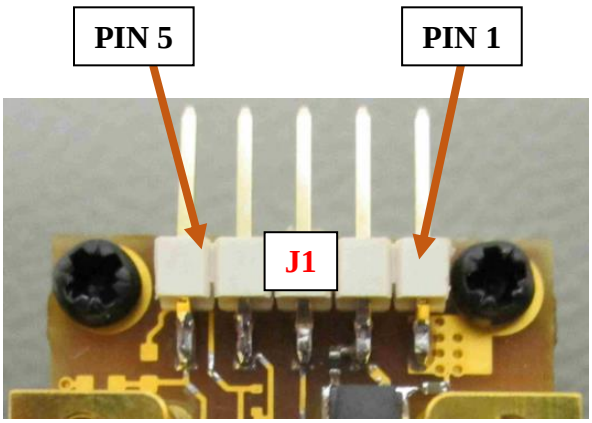


Figure 3: J1 PINOUT

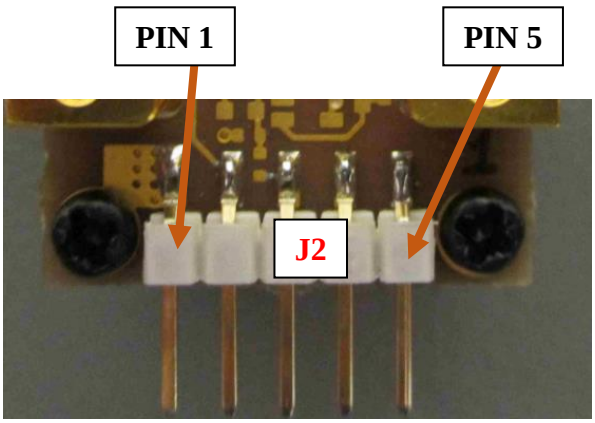


Figure 4: J2 PINOUT

PIN	J1 Identification	J2 Identification
1	GND	GND
2	VBIAS	VG1
3	NC	NC
4	NC	NC
5	VG2	NC

Figure 5: J1 and J2 PINOUT identification

V-2. Interface cable overview

Evaluation board VWA0000920AB interface cable:

- CBL2000008AA on J1 (VBIAS, VG2 power supply and GND)
- CBL2000009AA on J2 (VG1 power supply and GND)

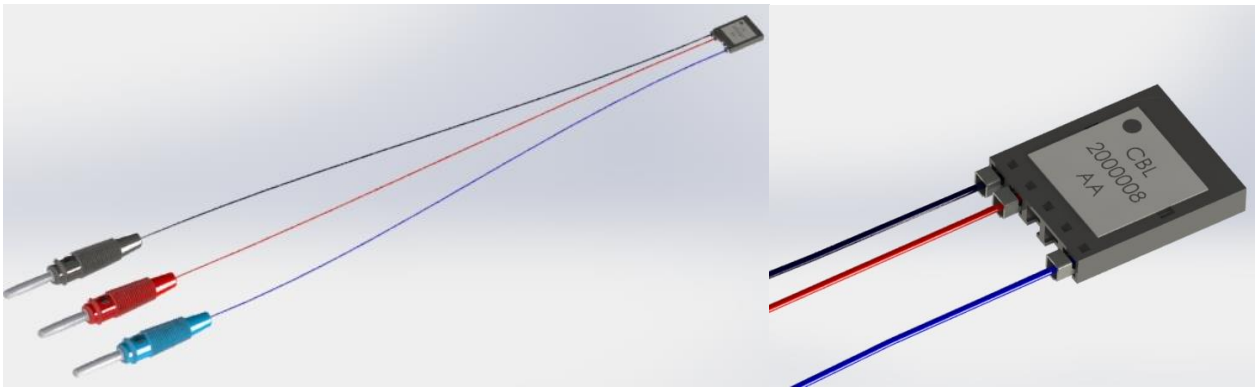


Figure 6: CBL2000008AA

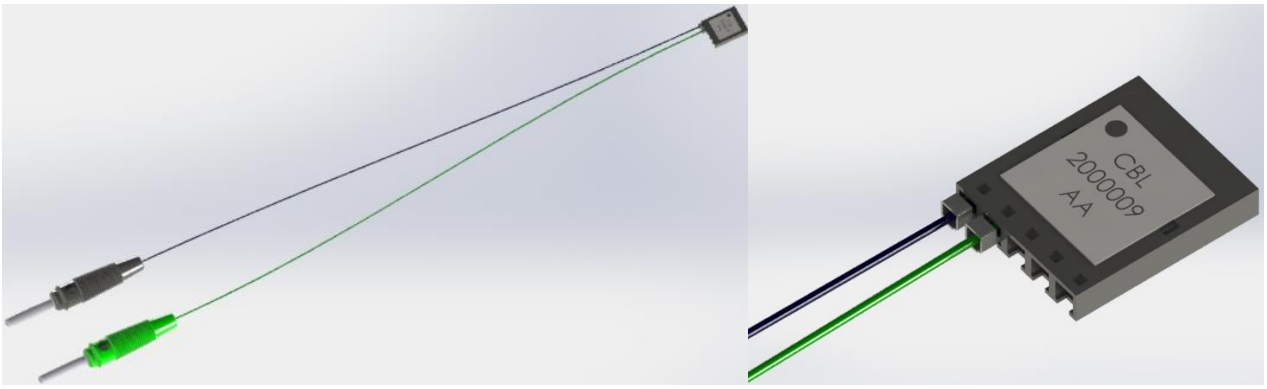


Figure 7: CBL2000009AA

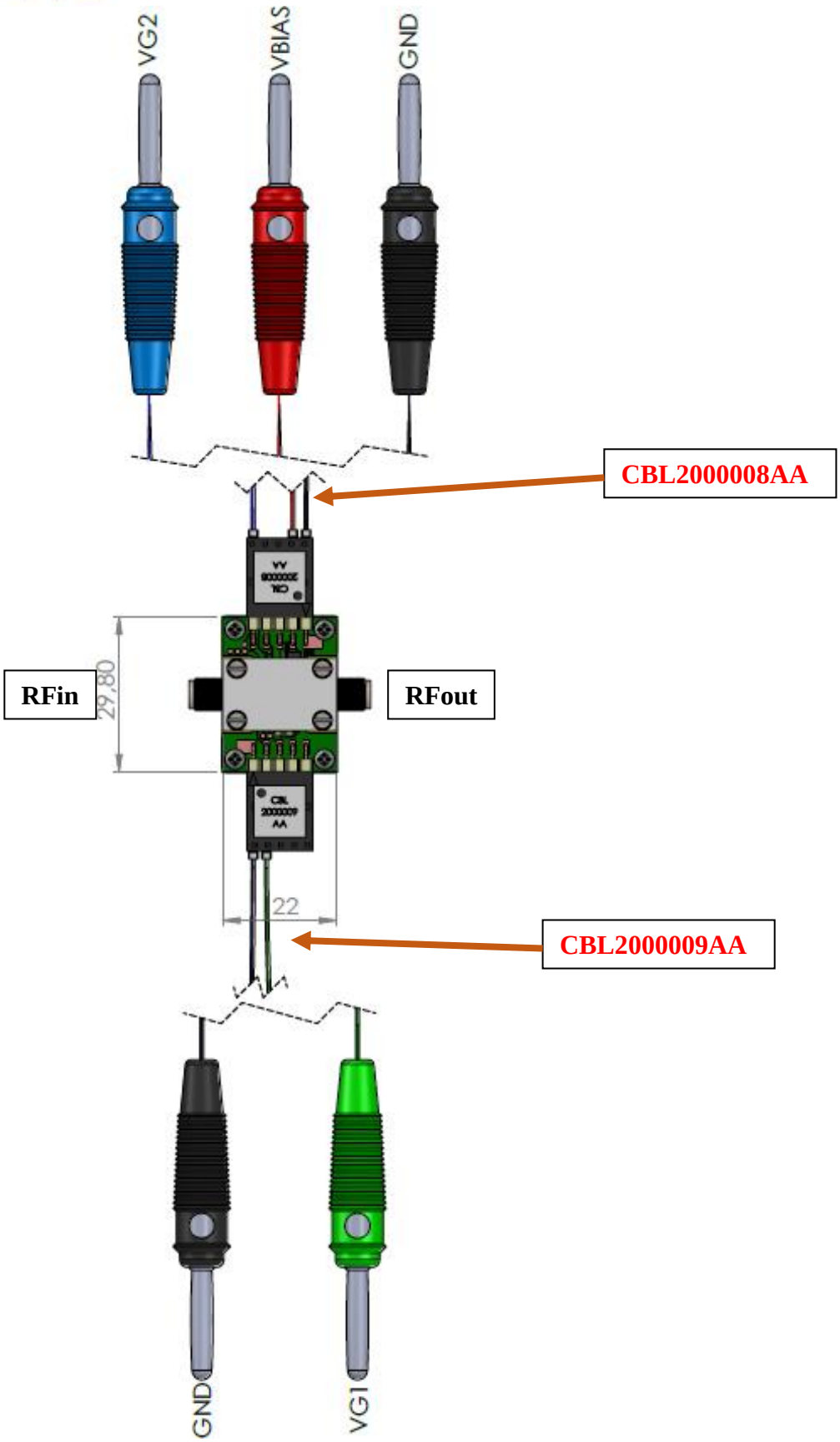
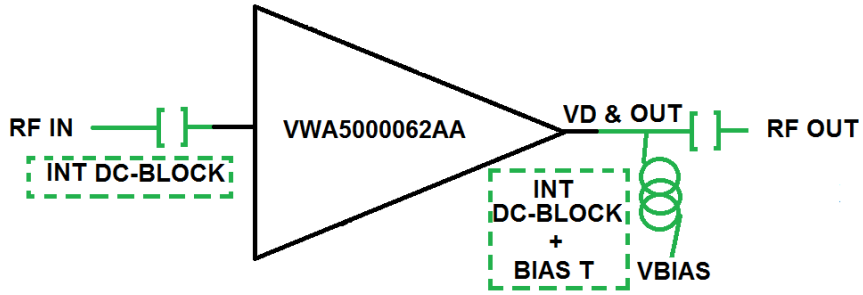


Figure 8: Cable interface

VI. BIASING PROCEDURE AND OPERATING CONDITIONS

An RFout Bias Tee is included in the VWA0000920AB module
An RFin DC block is included in the VWA0000920AB module



Electrical operating conditions

VBIAS = +6.5V

VG2 = 2V

VG1 = 0V

Biasing procedure

Switch on

1. Set VG1 to 0V
2. Set VBIAS to +6.5V
3. Set VG2 to +2.5V
4. Turn RF ON

VG2 can be tune to adjust linear Gain and Psat.

VG1 can be adjust (from 0V to -11V) to tune the operating point of the amplification line.

Switch off

1. turn RF OFF
2. Set VG1 to 0V
3. Set VG2 to 0V
4. Set VBIAS to 0V

VII. ABSOLUTE MAXIMUM RATINGS

Maximum ratings	Symbols	Min	Max	Units
VBIAS Voltage	VBIAS		+9	V
Cross point control	VG1	-11	+0.15	V
Output amplitude control	VG2	-1	VBIAS/2	V
CW Input Power	Pin		+20	dBm
Junction temperature	Tj		+150	°C
Tstg	Storage Temperature	-55	+125	°C

Operation of this device above any of these parameters may cause permanent damages.

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