Instructions for Operation of Alereon Radio Evaluation Tool (RET) Software

I. Introduction

The Alereon UWB radio transmitter normally operates by intermittent transmissions. Data transfers between host and device radios is bursty by nature and this results in intermittent transmissions. The FCC requires that UWB transmitters be tested in continuous transmit mode so that instruments may determine the true transmitted PSD.

To achieve this testing requirement it is necessary to use the Alereon development software, the RET tool. These instructions provide information about how to use the RET tool to control the transmitter operation.

II. Specific instructions for the Alereon AL5730 Worldwide Wireless HDMI PC Extender transmitter test (step-by-step).

The Alereon RET software controls the Alereon UWB chipset via a USB interface. The Alereon AL5730 Worldwide Wireless HDMI PC Extender does not implement a USB interface. For testing purposes it is necessary to use a USB to UART interface board that is connected to the UART factory test port of the AL5730.

The connection between the AL5730 test specimen and the USB – UART interface is shown in the following picture:



Connection of UART interface cable from USB-UART interface board to AL5730. The factory test UART port connector is non-polarized, please observe the mark on the connector and orient the connector as in the picture.



The test PC has been configured with the RET software and the AL5730 test specimens drivers have been installed to this computer.

Please refer to Appendix B of this document for information regarding the configuration of the test PC.

1. Start the PC and wait until windows finishes loading.

2. Apply power to the AL5730 by inserting the connector of the power supply into J3.

3. Press and hold the button on the USB-UART interface board while inserting the USB connector of the cable to the USB-UART interface board into the upper USB socket at the Right-hand side near to the rear of the PC.



4. Release the button on the USB-UART interface board.

Proper installation will be indicated by the flashing Green light of the specimen.

Note: The Alereon drivers are pointed to the USB socket into which the specimen was originally installed. If it is desired or necessary to make the compliance test with the specimen in another USB socket the PC will request to install drivers pointed to that USB socket. Please refer to Appendix A of this document for information on the drivers installation process.

3. Click on the CustomerRET icon on the PC desktop to start the RET software tool.





The RET opening screen will appear after the RET software loads.

4. Select Device-MCU as the Platform type and then click CONTINUE.



When the RET program has successfully connected to the specimen and taken control of it the following **Device Config.** screen will appear.

5. Click on the **Load PHY Script** button to configure the specimen for operation. The indicator within the button will turn Green indicating a successful operation.

Device Config       Receive Sensitivity Test       Transmit Tests       Receive Throughput Test       Factory Recovery         T       Device Name/Serial       Power State       Configurations for PER Testing       Swy, Looded       Swy, Looded         MAC/BBP       RFIC       AL53000       AL510000       Swy, Looded       Swy, Looded         HY Script       Ready       AL510000       Swy, Looded       Swy, Looded         PHY Script File       Configurations       Social State       Swy, Looded         Cologe an File Alercon (Customer FET)       Social State       Swy, Looded       Swy, Looded         Cable Loss Data File for PER test       Social State       Swy, Looded       Swy, Looded       Swy, Looded         CiProgram Files/Alercon (Customer FET)Test/Setup/CableLoss)       Swy, Looded       Swy, Looded       Swy, Looded         CiProgram Files/Alercon/Customer FET)Test/Setup/CableLoss)       Swy, Looded       Swy, Looded       Swy, Looded         CiProgram Files/Alercon/Customer FET)Test/Setup/CableLoss)       Swy, Looded       Swy, Looded       Swy, Looded       Swy, Looded         State Power Measurement File       State Configuration       Swy, Looded       Swy, Looded       Swy, Looded       Swy, Looded       Swy, Looded         State Power Measured(dm)       FER Cable Loos(db)	CustomerRET				6			- 0 ×
Device Config         Receive Sensitivity Test         Transmit Tests         Receive Throughput Test         Factory Recovery           FMW (100km)         File         Configurations         Single Partice         Single Partic								
Tx Device       Configurations for PER Testing       Swit_10408 M         ADD1       Ready       Image: Configurations       Swit_10408 M         ALX_OBD       RFIC       Swit_10408 M       Swit_10408 M         ALX_SSGAD       RFIC       Swit_10408 M       Swit_10408 M         ALX_SSGAD       RFIC       Swit_10408 M       Swit_10408 M         ALX_SSGAD       RFIC       Swit_10408 M       Swit_10408 M         PLY Script File       Swit_10408 M       Swit_10408 M       Swit_10408 M         Colde Loss Data File for PER test       Swit_10408 M       Swit_10408 M       Swit_10408 M         Colde Loss Data File for PER test       Swit_10408 M       Swit_10408 M       Swit_10408 M         Colde Loss Data File for PER test       Swit_10408 M       Swit_10408 M       Swit_10408 M         Colde Loss Data File for PER test       Swit_10408 M       Swit_10408 M       Swit_10408 M         Colde Loss Table       Swit_10408 M       Swit_10408 M       Swit_10408 M       Swit_10408 M         Swit_10408 M       Swit_10408 M       Swit_10408 M       Swit_10408 M       Swit_10408 M         Swit_10408 M       Swit_10408 M       Swit_10408 M       Swit_10408 M       Swit_10408 M         Swit_10408 M       Swit_10408 M       Swit_10408 M <th>Device Config</th> <th>Receive Se</th> <th>nsitivity Test</th> <th>Transmit Tests</th> <th>Rece</th> <th>eive Throughput Test</th> <th>Factory Recovery</th> <th></th>	Device Config	Receive Se	nsitivity Test	Transmit Tests	Rece	eive Throughput Test	Factory Recovery	
Tx Device         Configurations           Device Name /Serial         Power State           A001         Ready           MAC/BPP         REIC           AL5300A0         AL5100B0           Deabled         Deabled           Deabled         Deabled           Colfpogram Fles/Alereon/CustomerREIT         5           Colpogram Fles/Alereon/CustomerREIT(Test)Setup)CableLoss}         5           To Everce Power and Cable Loss Table         5           Band Group TFCode Trafower Measured(dbm) PER Cable Loss(db)         1           1         1         0.000           1         2         0.000           1         3         0.000           1         3         0.000           1         3         0.000           1         3								FMW Version
IX Device Name/Serial#       Power State         A001       Ready         MAC/BBP       RFIC         ALS300A       ALS100B         Load PHY Script       Image: State and Customer RE1         F(Program Files/Alereon/Customer RE1)       5         Cable Loss Data File for PER test       5         Cit/Program Files/Alereon/Customer RE1/Test/Setup/CableLoss/       5         V       Device Power mad Cable Loss Table       5         Band Group TFCode TP-Spit 1       0.000       1         1       4       -9.511       0.000         1       5       0.000       1         1       4       -9.511       0.000         1       5       0.000       1         1       4       -9.511       0.0000         1       5		Ty Davica		Configu	ations		1	SVN_10408 Nov
Device Name/Serial#         Power State           A001         Ready           MAC/BBP         RFIC           AL5300A0         AL510080           Load PHY Script File         PHY Script File           PHY Script File         5           Cohle Loss Data File for PER test         5           Cable Loss Data File for PER test         5           Cilprogram Files/Alereon/CustomerRETI/Test/Setup/CableLoss/         5           Cilprogram Files/Alereon/CustomerRETI/Test/Setup/CableLoss/         5           Cilprogram Files/Alereon/CustomerRETI/Test/Setup/CableLoss/         5           Cilprogram Files/Alereon/CustomerRETI/Test/Setup/CableLoss/         5           Cohecie Power and Cable Loss Table         5           Bend Group TFCode TxPower Measured(dbm) PER Cable Loss(db)          5           1         9.511         0.000           1         4         9.511         0.000           1         4         9.511         0.000         5           1         5         14.222         0.000         1         8           1         6         14.222         0.000         1         8         11.272         0.000           1         9         11.272         0.000         1		Tx Device		for PER	lesting			11 2009 17:11:16
AU01       Ready         MAC/BBP       RFIC         ALS3000       ALS1000         Load PHY Script File       Status         PHY Script File       Status         Configuration       Status         Cable Loss Data File for PER test       Status         Cilprogram Files/Alereon/CustomerRET/Test/Setup/CableLoss/       Status         Portice Power Measurement File       Status         Cilprogram Files/Alereon/CustomerRET/Test/Setup/CableLoss/dB)       Status         Intiments Configuration       Status         Intiments Configura	Devi	ce Name/Serial# Po	ower State	Disabled				
MAC / BBP       KPIL         ALS300A       ALS100BD         Load PHY Script He       File Script Script North Script	AUU	1	Ready					
Image: Contract of the second of the seco	1							
Load PHY Script         PHY Script File         PHY Script File         C:\Program Files\Alercon\CustomerRET\Test\Setup\CableLoss\         C:\Program Files\Alercon\CustomerRET\Test\Setup\CableLoss\         C:\Program Files\Alercon\CustomerRET\Test\Setup\CableLoss\         C:\Program Files\Alercon\CustomerRET\Test\Setup\CableLoss\         C:\Program Files\Alercon\CustomerRET\Test\Setup\CableLoss\         C:\Program Files\Alercon\CustomerRET\Test\Setup\DEVTxPwr\         C:\Program Files\Alercon\CustomerRET\Test\Setup\DEVTxPwr\         C:\Program Files\Alercon\CustomerRET\Test\Setup\DEVTxPwr\         C:\Program Files\Alercon\CustomerRET\Test\Setup\DEVTxPwr\         To Device Power and Cable Loss Table         Improve the measured(dmm) PER Cable Loss(db) \provert Percable Loss Loss Loss Loss Loss Loss Loss Los			.510000					
PHY Script File         C:\Program Files\Alereon\CustomerRET\Test\Setup\CableLoss\       5         Cable Loss Data File for PER test       5         C:\Program Files\Alereon\CustomerRET\Test\Setup\CableLoss\       5         C:\Program Files\Alereon\CustomerRET\Test\Setup\CableLoss\       5         C:\Program Files\Alereon\CustomerRET\Test\Setup\CableLoss\       5         C:\Program Files\Alereon\CustomerRET\Test\Setup\CableLoss\       5         To Device Power Measurement File       5       6         Band Group TFlcode TxPower Measured(dBm) PER Cable Loss(dB) \program Files\Alereon\CustomerRET\Test\Setup\DevTxPwr\       6         1       2       9511       0.000       1         1       2       9511       0.000       1         1       2       9511       0.000       1         1       2       9511       0.000       1         1       3       9511       0.000       1       1       0.000       1         1       6       -14.282       0.000       1       6       1.222       0.000       1         1       6       -11.272       0.000       1       6       -11.272       0.000       1         1       9       -11.272       0	Loa	l PHY Script 🕖 🔊						
C:\Program Files\Alereon\CustomerRET\         Cable Loss Data File for PER test         C:\Program Files\Alereon\CustomerRET\Test\Setup\CableLoss\         C:\Program Files\Alereon\CustomerRET\Test\Setup\CableLoss\         C:\Program Files\Alereon\CustomerRET\Test\Setup\CableLoss\         C:\Program Files\Alereon\CustomerRET\Test\Setup\CableLoss\         C:\Program Files\Alereon\CustomerRET\Test\Setup\CableLoss\         P       C:\Program Files\Alereon\CustomerRET\Test\Setup\CableLoss\         P       C:\Program Files\Alereon\CustomerRET\Test\Setup\CableLoss\         P       C:\Program Files\Alereon\CustomerRET\Test\Setup\CableLoss\         P       C:\Program Files\Alereon\CustomerRET\Test\Setup\CableLoss\Setup\DEVTxPwr\         P       C:\Program Files\Alereon\CustomerRET\Test\Setup\DEVTxPwr\         P       C:\Program Files\Alereon\CustomerRET\Test\Setup\CustomerRET\Test\Setup\CustomerRET\Test\Setup\CustomerRET\Test\Setup\CustomerRET\Test\Setup\CustomerRET\Test\Setup\CustomerRET\Test\Setup\CustomerRET\Test\Setup\CustomerRET\Test\Setup\CustomerRET\Test\Setup\CustomerRET\Test\Setup\Custom	PHY Script	File						
Confiduration/PHYScriptIARE DiffyscriptS.5.0.0.txt       C         Cable Loss Data File for PER test       C:[Program Files/Alereon]CustomerRET]Test]Setup]CableLoss]         TX Device Power Measurement File       C:[Program Files/Alereon]CustomerRET]Test]Setup]CableLoss]         C C:[Program Files/Alereon]CustomerRET]Test]Setup]CDEVTxPwr]       C         TX Device Power and Cable Loss Table       C         Band Group TFCode TxPower Measured(dBm) PER Cable Loss(dB) •       C         1       1       -9.511       0.000         1       2       -9.511       0.000         1       5       -14.282       0.000       C         1       6       -14.282       0.000       C         1       7       -14.282       0.000       C         1       8       -11.272       0.000       C	C:\Progra	m Files\Alereon\Customeri	RET					
Cable Loss Data File for PER test         C:\Program Files\Alereon\CustomerRET\Test\Setup\CableLoss\         C:\Program Files\Alereon\CustomerRET\Test\Setup\DEVTxPwr\         Devtrop model.csv         T Devtce Power and Cable Loss Table         Band Group TFCode TxPower Measured(dBm) PER Cable Loss(dB) \[ 1 & 1 & -9.511 & 0.000 & 0.000 & 0	Configura	tion\PHYScript\ARETphysc	ript5.5.0.0.txt	5				
Cable Loss Data File for PER test         C:\Program Files\Alereon\CustomerRET\Test\Setup\CableLoss\         CableLossIdeal.csv         C:\Program Files\Alereon\CustomerRET\Test\Setup\DEVTxPwr\         C:\Program Files\Alereon\CustomerRET\Test\Setup\DEVTxPwr\         C:\Program Files\Alereon\CustomerRET\Test\Setup\DEVTxPwr\         C:\Program Files\Alereon\CustomerRET\Test\Setup\DEVTxPwr\         C:\Program Files\Alereon\CustomerRET\Test\Setup\DEVTxPwr\         C:\Program Files\Alereon\CustomerRET\Test\Setup\DEVTxPwr\         DevtxPwrtdeal.csv         TS Device Power and Cable Loss Table         Mark Group TFCode TxPower Measured(dBm) PER Cable Loss(dB) \u000          1       1         2       -9.511         0.000         1       2         1       -9.511         0.000         1       5         1       -9.511         0.000         1       6         1       6         1       7         1       7         1       7         1       8         1       9         1       9         1       7         1       9         1       9<								
Cable Loss Data File for PER test         C:\Program Files\Alereon\CustomerRET\Test\Setup\CableLoss\         C:\Program Files\Alereon\CustomerRET\Test\Setup\DEVTxPwr\         TX Device Power and Cable Loss Table         Band Group TFCode TxPower Measured(dBm) PER Cable Loss(dB) \(1 & 2 & -9.511 & 0.000 & 1 & 0.000 & 1 & 1 & -9.511 & 0.000 & 0.000 & 0.0000 & 0.000 & 0.000 &								
Cable Loss Data Files (Alereon) CustomerRET(Test(Setup) CableLoss)         CableLossIdeal.csv         TX Device Power Measurement File         C:(Program Files)(Alereon) CustomerRET(Test(Setup)DEVTxPwr)         Device Power and Cable Loss Table         Band Group TF-Code TxPower Measured(dBm) PER Cable Loss(dB) (1 2 - 9.511 0.000         1 2 - 9.511 0.000         1 2 - 9.511 0.000         1 3 - 9.511 0.000         1 4 - 9.511 0.000         1 5 - 14.282 0.000         1 6 - 14.282 0.000         1 7 - 14.282 0.000         1 8 - 11.272 0.000         1 9 - 11.272 0.000								
CillProgram Hies/Nerron(LustomerRE I/Test/Setup)(CableLoss)         CillProgram Files/Nerron(CustomerRE TiTest/Setup)(DEVTxPwr)         CillProgram Files/Nerron(CustomerRE TiTest/Setup)(DEVTxPwr)         Partice Power and Cable Loss Table         Band Group TFCode TxPowerd(dBm) PER Cable Loss(dB) (1 2 - 9,511 0.000         1       2 - 9,511 0.000         1       2 - 9,511 0.000         1       5 - 14,282 0.000         1       6 - 14,282 0.000         1       7 - 14,282 0.000         1       8 - 11,272 0.000	able Loss Data File	for PER CESC						
Instruments Configuration         Instruments Configuration         C:\Program Files\Alereon\CustomerRET\Test\Setup\DEVTxPwr\         Image: Colspan="2">Image: Colspan="2"         Image: Colspan="2"       Image: Colspan="2"       Image: Colspan="2"       Image: Colspan="2"         Image: Colspan="2"       Image: Colspan="2"       Image: Colspan="2"       Image: Colspan="2"       Image: Colspan="2"       Image: Colspan="2"       Image: Colspan="2"       Image: Colspan="2"       Image: Colspan="2"       Image: Colspan="2"	C:\Program Files\Aler CableLossIdeal.csv	eon(CustomerRET)Test(Se	etup)(CableLoss)					
TX Device Power Measurement File         C:\Program Files\Alereon\CustomerRET\Test\Setup\DEVTxPwr\         DevTxPwrideal.csv         Instruments Configuration         Band Group TFCode TxPower Measured(dBm) PER Cable Loss(dB) •         1       1       -9.511       0.000         1       2       -9.511       0.000         1       3       -9.511       0.000         1       5       -14.282       0.000         1       6       -14.282       0.000         1       7       -14.282       0.000         1       8       -11.272       0.000         1       9       -11.272       0.000								
C:\Program Files\Alercon\CustomerRET\Test\Setup\DEVTxPwr\         DevTxPwrideal.csv         Band Group TFCode TxPower Measured(dBm) PER Cable Loss(dB) ▲         1       1         2       -9.511         0.000         1       2         3       -9.511         0.000         1       3         1       1         5       -14.282         0.000         1       6         1       -14.282         0.000         1       7         1       -14.282         0.000         1       -14.282         0.000         1       -14.282         0.000         1       -14.282         0.000         1       -14.282         0.000         1       -14.282         0.000         1       -11.272         0.000         1       -11.272         0.000	X Device Power Me	asurement File						
Band Group       TFCode       TxPower Measured(dBm)       PER Cable Loss(dB)         I       1       9-511       0.000         I       2       -9.511       0.000         I       3       -9.511       0.000         I       5       -14.282       0.000         I       6       -14.282       0.000         I       7       -14.282       0.000         I       8       -11.272       0.000	C:\Program Files\Ale	eop\CustomerRET\Test\Se	tuniDEVTyPouri			· ··		
ATT1       GPIB0::11::INSTR       Not Initialized         Band Group       TFCode       TxPower Measured(dbm)       PER Cable Loss(db)         1       1       9.511       0.000         1       2       -9.511       0.000         1       3       -9.511       0.000         1       4       -9.511       0.000         1       5       -14.282       0.000         1       6       -14.282       0.000         1       7       -14.282       0.000         1       8       -11.272       0.000         1       9       -11.272       0.000	DevTxPwrIdeal.csv	concescononcerrescio	Add the second s		Instruments Lo	ntiguration		
TX Device Power and Cable Loss Table         Band Group       TFCode       TxPower Measured(dBm)       PER Cable Loss(dB)       Image: Cable Loss(dB) <thimage: cable="" loss(db)<="" th="">       I</thimage:>					ATT1	GPIBO::11::INSTR	Not Initialized	
Band Group         TFCode         TxPower Measured(dBm)         PER Cable Loss(dB)           1         1         -9.511         0.000           1         2         -9.511         0.000           1         3         -9.511         0.000           1         4         -9.511         0.000           1         5         -14.282         0.000           1         6         -14.282         0.000           1         7         -14.282         0.000           1         8         -11.272         0.000           1         9         -11.272         0.000	X Device Power and	l Cable Loss Table						
I         I <thi< th=""> <thi< th=""> <thi< th=""> <thi< th=""></thi<></thi<></thi<></thi<>	Band Group   TFCode	TxPower Measured(dBm)	PER Cable Loss(c	B) 🔺		GPIBU::13::INSTR	Not Initialized	
1         3         -9.511         0.000           1         4         -9.511         0.000           1         5         -14.282         0.000           1         6         -14.282         0.000           1         8         -11.272         0.000           1         9         -11.272         0.000	1 1	-9.511	0.000	- 1.	RSFSP	GPIB0::20::INSTR	Not Initialized	
	1 3	-9.511	0.000					
1         5         -14.282         0.000           1         6         -14.282         0.000           1         7         -14.282         0.000           1         8         -11.272         0.000           1         9         -11.272         0.000	1 4	-9.511	0.000	- 2				
1         6         -14.282         0.000           1         7         -14.282         0.000           1         8         -11.272         0.000           1         9         -11.272         0.000	1 5	-14.282	0.000					
1         7         -14.282         0.000           1         8         -11.272         0.000           1         9         -11.272         0.000	1 6	-14.282	0.000					
1         8         -11.272         0.000           1         9         -11.272         0.000	1 7	-14.282	0.000	_				
1 9 -11.272 0.000	1 8	-11.272	0.000	_				
1 10 -11 272 0.000	1 9	-11.272	0.000	-0.				
3 1 .0.511 0.000 I	3 1	.0 511	0.000	<b>T</b>				
Save Test Config							Say	e Test Configuration
								-
Load Test Configura							Load	Test Configuration File
								-
3								
								Exit
								Exit

These steps conclude configuring the specimen for RET control.

6. Click on the **Transmit Tests** tab at the top of the Device Config. Screen. This will open the transmitter control screen. From this screen transmitter operating parameters may be selected as required for testing. The following are possible to control:

**Band Group**; click on the desired band group: 1, 3 or 6 the active band group is indicated with a check mark and after selection is completed the button will indicate the selection.

**Note:** Being a universal test tool for all products, the factory test allows access to all band groups. The product configuration of the AL5730 will restrict operation to BG#1 only. This restriction is accomplished by the device configuration firmware loaded at factory test.

CustomerRET		
Device Config	Receive Sensitivity Test	Transmit Tests
Band Group Channel	✓1 3 6	
PHY Rate	53 Mbps 🗸	
Payload Length	3584 🕘 As Entered	
Number of Packets	10 🔷 As Entered	
Burst Number	1	
Burst Policy	0	
Interframe Spacing	10 µs	
MAC TPC	0	
	Start Test	

**Channel**; click on the desired channel. Channel TFC1 is the 1-2-3 hop code sequence and is normally used for compliance testing.

**Note:** Being a universal test tool for all products, the factory test allows access to all channeld. The product configuration of the AL5730 will restrict operation to TFC1, 2, 3 and 4 (the hopping codes) only. This restriction is accomplished by the device configuration firmware loaded at factory test.

a CustomerRET	
Device Contig	Receive Sensitivity Test Transmit Tests
	1
n-de-	
Band Group	
Channel	✓ TFC 1
	TFC 2
	TFC 4
	TFC 5
	TFC 6
	TFC 7
PHY Rate	TFC 8
Payload Length	TFC 10 As Entered
Number of Packets	10 As Entered
Burst Number	1
Burst Policy	0
Interframe Spacing	10 µs
MAC TPC	0
	Start Test
	Stop Test

**PHY Rate**; click on the desired PHY Data Rate, 200 Mbps is QPSK modulated and is normally used for compliance testing as this is a more complex modulation than the lower rates and produces the longest data sequences for the test.

Device Config	Receive Sensitivity Test Transmit Tests
Band Group Channel	1 ▽ 1 TFC 1 ▽
PHY Rate	_ 200 Mbps _ 🗸
Payload Length	3584 S Entered
Number of Packets	10 As Entered
Burst Number	1
Burst Policy	0
Interframe Spacing	10 µs
MAC TPC	0 \(\nabla\)
	Start Test

The boxes below the PHY Rate button accept typed entries, the entries that are present at starting are the normal default values which should be used for the compliance test.

To the right of the second box (**Number of Packets**) is a Green button, click on this button to change it to **Continuous Transmit**.

LustomerRET	
Device Config	Receive Sensitivity Test Transmit Tests
Band Group	
Channel	TFC 1 🗸
PHY Rate	200 Mbps
Payload Length	3584 🔷 As Entered
Number of Packets	10 Ocntinuous Transmit
Burst Number	1
Burst Policy	0
Interframe Spacing	10 µs
MAC TPC	0 \(\nabla\)
	Start Test
	Stop Test

**MAC TPC**; to the right of the MAC TPC box, click on the **Auto TPC** button.

Band Group		
Channe	TFC 5 V	
PHY Rate	53 Mbps 🗸	
Payload Length	3584 As Entered	
Number of Packets	10 S Entered	
Burst Number	1	
Burst Policy	0	
Interframe Spacing	10 µs	
МАС ТРС	0 TAuto TPC	
	Start Test	

This will change the control to Manual TPC.

a CustomerRET	
Device Config	Receive Sensitivity Test Transmit Tests
Band Group Channe	1 ∇ TFC 5 ∇
PHY Rate Payload Length	53 Mbps
Number of Packets	10 As Entered
Burst Number	1
Burst Policy	0
Interframe Spacing	10 µs
	Manual TPC
1dB Step DAC TPC	-14 (- Start Test
	Stop Test

**DAC TPC**; select -14dB.

evice Config	Receive Se	nsitivity Test	Transmit Tests
Band Group	] 1 ▽		
Channel	TFC 5 🗸		
	0 (0.000dB)		
	-1 (-0.946dB)		
DHV Pate	-2 (-2.009dB)		
THINK	-3 (-2.9000B)	-	
Payload Length	-5 (-5 016dB)	As Entered	
Number of Packets	-6 (-5.854dB)	As Entered	
	-7 (-6,781dB)	in Linci cu	
Burst Number	-8 (-7.820dB)		
Burst Policy	-9 (-8.999dB)		
•	-10 (-9.655dB)		
Interframe Spacing	-11 (-11.137dB)		
	-12 (-11.985dB)	Manual TPC	
	-13 (-12.925dB)		
1dB Sten DAC TPC	✓ -14 (-13.979dB)	RFIC TP	C 0 dB 🗸
	Start Test		

RFIC TPC; select -4dB.

vice Config	Receive Sensitivity Test	Transmit Tests
Band Grou	P \	
Channe		
PHY Rate	53 Mbps 🗸	
Payload Length	3584 🕥 As Entered	
Number of Packets	10 S Entered	
Burst Number	1	
Burst Policy	0	
Interframe Spacing	10 µs	2 dB
	Manual TPC	0 dB
		-2 dB
1dB Step DAC TPC	-14(-	-6 dB
	Start Test	-8 dB
	and a second s	-10 dB

After all of the desired parameters have been chosen, click on the Blue **Start Test** button, the transmitter will be active under the chosen parameters and will operate continuously until the Red **Stop Test** button is clicked.

evice Config	Receive Sensitivity Test Transmit Tes	ts
Band Group		
Channel	TFC 5 🗸	
PHY Rate	53 Mbps 🗸	
PHY Rate Payload Length	53 Mbps 3584 S As Entered	
PHY Rate Payload Length Number of Packets	53 Mbps 3584 As Entered 10 As Entered	
PHY Rate Payload Length Number of Packets Burst Number	53 Mbps 3584 As Entered 10 As Entered 1	
PHY Rate Payload Length Number of Packets Burst Number Burst Policy	53 Mbps 3584 As Entered 10 As Entered 1 0	
PHY Rate Payload Length Number of Packets Burst Number Burst Policy Interframe Spacing	53 Mbps 3584 10 1 0 10 ↓ s	
PHY Rate Payload Length Number of Packets Burst Number Burst Policy Interframe Spacing	53 Mbps 3584 As Entered 10 As Entered 1 0 10 µs Manual TPC	
PHY Rate Payload Length Number of Packets Burst Number Burst Policy Interframe Spacing	53 Mbps 53 Mbps 53 S84 As Entered 10 0 10 µs ● Manual TPC 0 (0.000dB) ■ RFIC TPC 0 dB 7	-
PHY Rate Payload Length Number of Packets Burst Number Burst Policy Interframe Spacing 1dB Step DAC TPC	53 Mbps 53 Mbps 5384 As Entered 10 10 µs Manual TPC 0 (0.000dB) RFIC TPC 0 dB 0 dB	~

When a test is completed, to change any of the parameters it is necessary to click the **Stop Test** button, change the necessary parameter(s) and then click on the **Start Test** button to re-activate the transmitter with the newly chosen parameters.

Appendix A.

Drivers installation. If it is desired or necessary to use a USB socket of the test PC other than the one originally configured, the PC will request to load the drivers pointed to that socket. Insert the specimen into the desired socket, the screen below will appear. Select <u>Yes</u>, this time only and click Next >.

Found New Hardware Wizard	
	Welcome to the Found New Hardware Wizard
	Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission). <u>Read our privacy policy</u>
	Can Windows connect to Windows Update to search for software?
	⊙ Yes, this time only
	O Yes, now and every time I connect a device
	C No, not this <u>t</u> ime
	Click Next to continue.
	< <u>B</u> ack <u>N</u> ext > Cancel

At the next screen allow the default to remain and click **Next >**.

Found New Hardware Wizard
If your hardware came with an installation CD         If your hardware came with an installation CD         If your want the wizard to do?         Install the software automatically (Recommended)         Install from a list or specific location (Advanced)         Click Next to continue.
< <u>B</u> ack <u>N</u> ext > Cancel

The installation of the DFU driver will start, at some time the warning window below will appear, click on **Continue Anyway**.



When the completed screen appears, click **Finish**.



The PC will now request to install a second driver. Select <u>Y</u>es this time only and click Next >.



At the next screen allow the default to remain and click Next >.



When the completed screen appears, click Finish.



Please restart the test PC to enable the new drivers installation and proceed with RET operation.

## Appendix B.

Test PC power options configuration.

The power options of the test PC have been set to support long running tests by selection of power options that do not allow the PC to detect keyboard or mouse inactivity and go to a sleep or shut-down state. Accordingly, when testing is concluded and mains power is to be removed from the PC please exit the RET software and execute a normal shut down of the PC so that it does not exhaust its battery and crash. Do not attempt to perform long running test sequences on PC battery power.