

Feb.13.2005

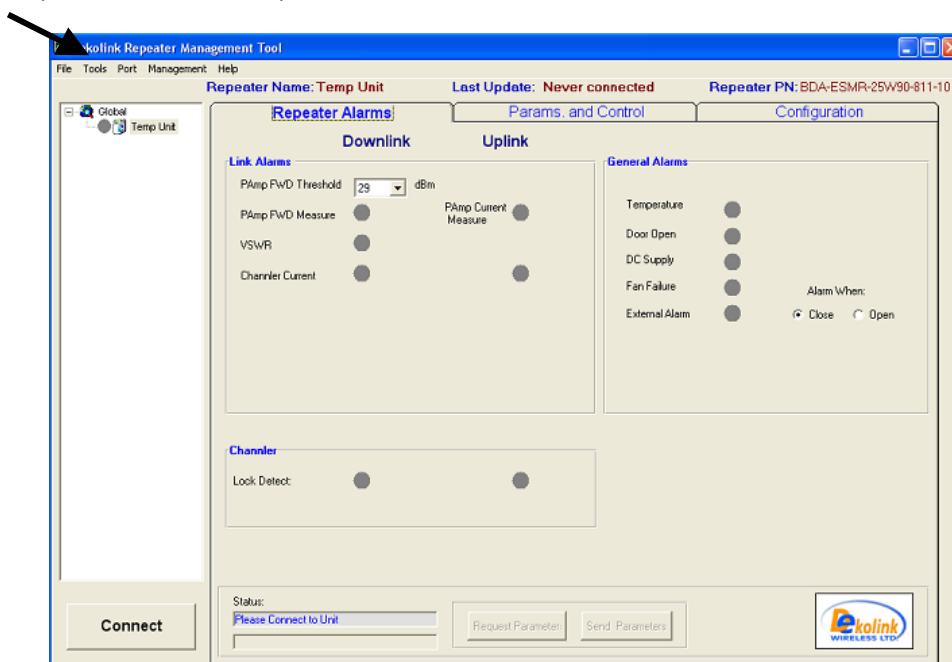
## Tune up procedure for CSR

### 1. General

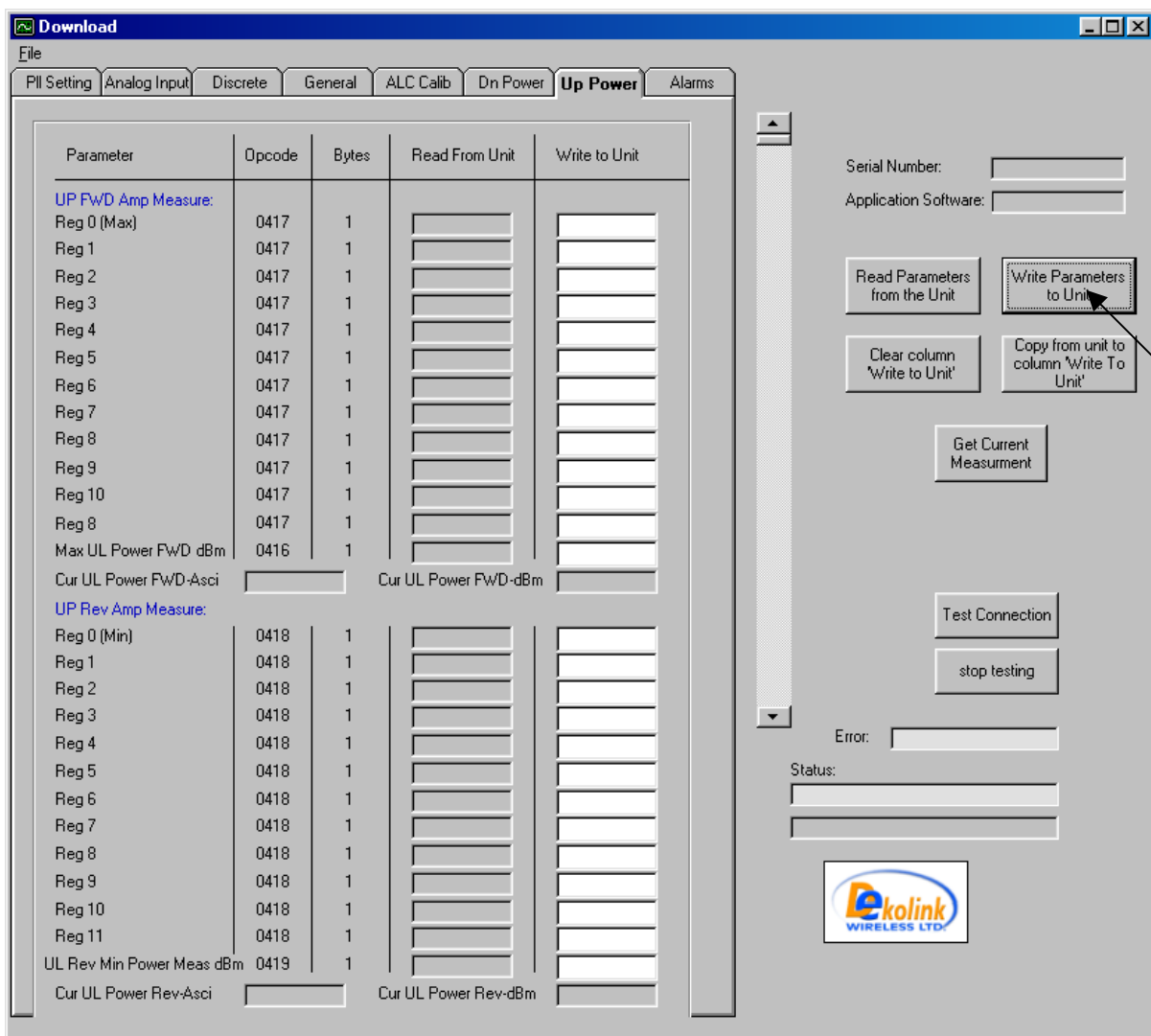
- 1.1. This Procedure is intended to calibrate the repeater so that the customer can set ALC level by assigning power value (dBm) in the “Max Power” box on the RMT, “Parameters and Control “ screen.
- 1.2. This procedure is conducted during the test procedure in the manufacturer’s premises. Customer has no access to this procedure.

### 2.Preparations

- 2.1. Connect to unit using RMS (see Manual).
- 2.2. Press Ctrl+P and Enter Technician password.
- 2.3. Press “Tools→ Open Param Loader” to get the tune up screen  
(see arrow below):



Download screen appears:



**Download**

File | Pll Setting | Analog Input | Discrete | General | ALC Calib | Dn Power | **Up Power** | Alarms

Parameter	Opcode	Bytes	Read From Unit	Write to Unit
<b>UP FWD Amp Measure:</b>				
Reg 0 (Max)	0417	1		
Reg 1	0417	1		
Reg 2	0417	1		
Reg 3	0417	1		
Reg 4	0417	1		
Reg 5	0417	1		
Reg 6	0417	1		
Reg 7	0417	1		
Reg 8	0417	1		
Reg 9	0417	1		
Reg 10	0417	1		
Reg 8	0417	1		
Max UL Power FWD dBm	0416	1		
Cur UL Power FWD-Ascii			Cur UL Power FWD-dBm	
<b>UP Rev Amp Measure:</b>				
Reg 0 (Min)	0418	1		
Reg 1	0418	1		
Reg 2	0418	1		
Reg 3	0418	1		
Reg 4	0418	1		
Reg 5	0418	1		
Reg 6	0418	1		
Reg 7	0418	1		
Reg 8	0418	1		
Reg 9	0418	1		
Reg 10	0418	1		
Reg 11	0418	1		
UL Rev Min Power Meas dBm	0419	1		
Cur UL Power Rev-Ascii			Cur UL Power Rev-dBm	

Serial Number:

Application Software:

Read Parameters from the Unit

Write Parameters to Unit

Clear column 'Write to Unit'

Copy from unit to column 'Write To Unit'


Get Current Measurement

Test Connection

stop testing

Error:

Status:

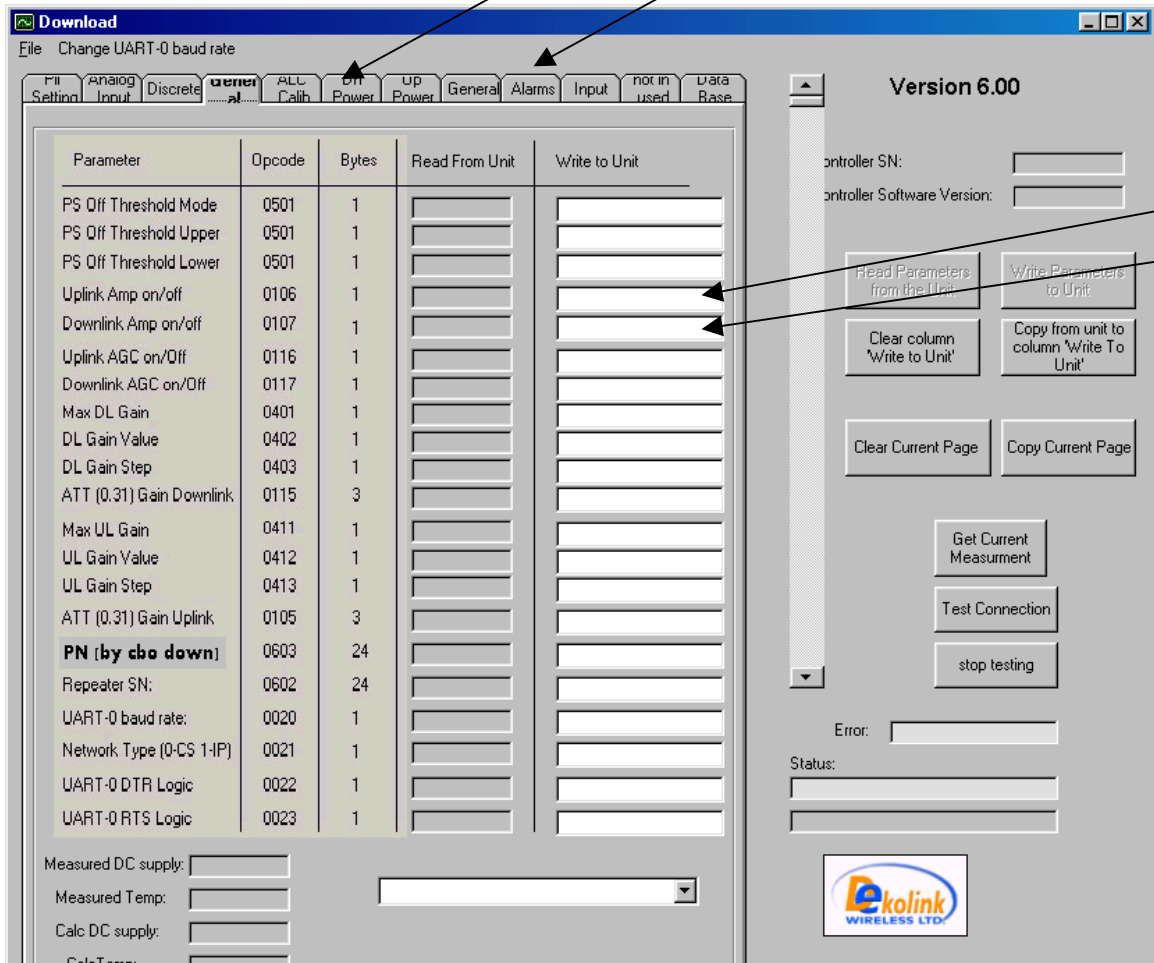


2.4. Press “ Write Parameters to Unit.” And wait for download to complete

## 2.5. Press "General" Tab

ALC

GENERAL



Parameter	Opcode	Bytes	Read From Unit	Write to Unit
PS Off Threshold Mode	0501	1		
PS Off Threshold Upper	0501	1		
PS Off Threshold Lower	0501	1		
Uplink Amp on/off	0106	1		
Downlink Amp on/off	0107	1		
Uplink AGC on/Off	0116	1		
Downlink AGC on/Off	0117	1		
Max DL Gain	0401	1		
DL Gain Value	0402	1		
DL Gain Step	0403	1		
ATT (0.31) Gain Downlink	0115	3		
Max UL Gain	0411	1		
UL Gain Value	0412	1		
UL Gain Step	0413	1		
ATT (0.31) Gain Uplink	0105	3		
<b>PN (by cbo down)</b>	0603	24		
Repeater SN:	0602	24		
UART-0 baud rate:	0020	1		
Network Type (0-CS 1-IP)	0021	1		
UART-0 DTR Logic	0022	1		
UART-0 RTS Logic	0023	1		

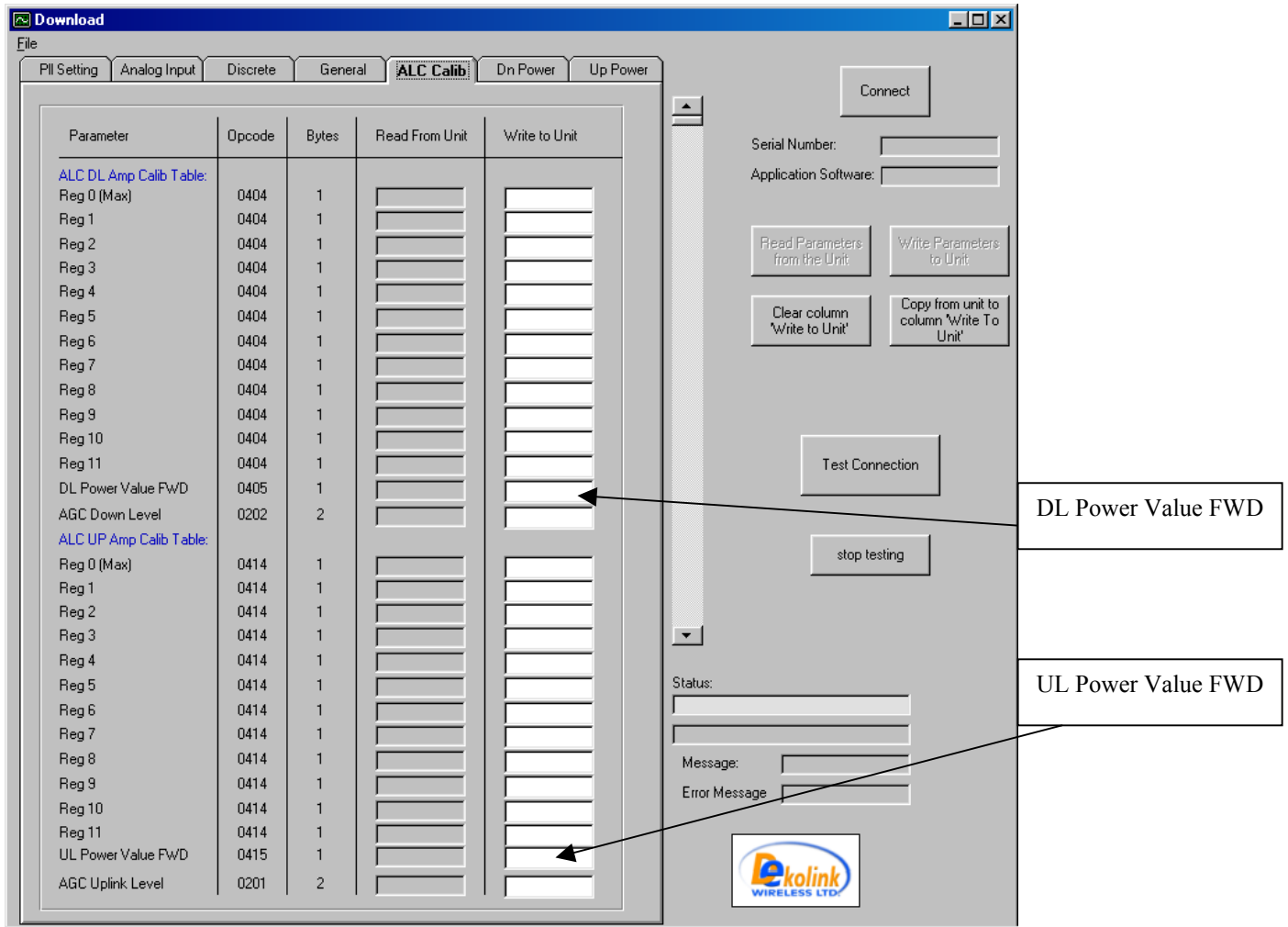
Annotations in the image:

- ALC (points to the 'GENERAL' tab)
- GENERAL (points to the 'GENERAL' tab)
- Uplink AGC (points to the 'Uplink AGC on/Off' row)
- Downlink AGC (points to the 'Downlink AGC on/Off' row)
- Read Parameters from the Unit (points to the button)
- Write Parameters to Unit (points to the button)

2.5.1. Set Downlink ALC On/Off to "0"

2.5.2. Set Uplink ALC On/Off to "0"

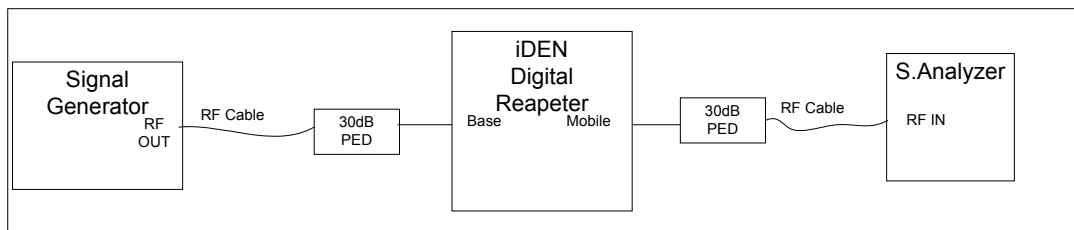
2.5.3. Press "ALC Calib" tab, the following window appears:



Parameter	Opcode	Bytes	Read From Unit	Write to Unit
<b>ALC DL Amp Calib Table:</b>				
Reg 0 (Max)	0404	1		
Reg 1	0404	1		
Reg 2	0404	1		
Reg 3	0404	1		
Reg 4	0404	1		
Reg 5	0404	1		
Reg 6	0404	1		
Reg 7	0404	1		
Reg 8	0404	1		
Reg 9	0404	1		
Reg 10	0404	1		
Reg 11	0404	1		
DL Power Value FWD	0405	1		
AGC Down Level	0202	2		
<b>ALC UP Amp Calib Table:</b>				
Reg 0 (Max)	0414	1		
Reg 1	0414	1		
Reg 2	0414	1		
Reg 3	0414	1		
Reg 4	0414	1		
Reg 5	0414	1		
Reg 6	0414	1		
Reg 7	0414	1		
Reg 8	0414	1		
Reg 9	0414	1		
Reg 10	0414	1		
Reg 11	0414	1		
UL Power Value FWD	0415	1		
AGC Uplink Level	0201	2		

### 3. Downlink ALC Calibration

3.1. Connect the unit to Test equipment as follows:



\* A Power Meter may be connected instead of Spectrum Analyzer

3.2. Set the input power to receive 38 dBm at the repeater's MOBILE output.

3.3. Set DLPower Value FWD to 37.

Set REG 0 (upper list) to 230 (approximate value for 37 dBm output). Read the output power, if output power is higher then 37 dBm, decrease the number in the register, if the power is lower, increase the number. Repeat until 37 dBm output power is achieved.

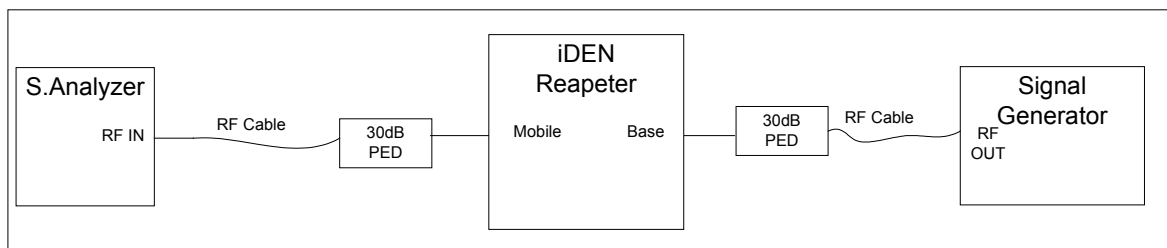
3.4. Set DLPower Value FWD to 36.

Set REG 1 to the same number achieved in REG 0 (approximate value for 36 dBm output). Read the output power, if output power is higher then 36 dBm, decrease the number in the register, if the power is lower, increase the number. Repeat until 36 dBm output power is achieved.

3.5. Repeat the above procedure for DL Power Value FWD of 35, 34, to 26 related to REG 2 to REG 11 accordingly, for output power 35 to 26 dBm respectively.

## 4. . Uplink ALC Calibration

4.1. Connect the unit to Test equipment as follows:



\* A Power Meter may be connected instead of Spectrum Analyzer

4.2. Set the input power to receive 25 dBm at the repeater's BASE output.

4.3. Set ULPower Value FWD to 24.

Set REG 0 ( lower list) to 130 (approximate value for 24 dBm output). Read the output power, if output power is higher then 24 dBm, decrease the number in the register, if the power is lower, increase the number. Repeat until 30 dBm output power is achieved.

4.4. Set ULPower Value FWD to 23.

Set REG 1 to the same number achieved in REG 0 (approximate value for 23 dBm output). Read the output power, if output power is higher then 23 dBm, decrease the number in the register, if the power is lower, increase the number. Repeat until 23 dBm output power is achieved.

4.5. Repeat the above procedure for UL Power Value FWD of 22, 21, to 13 related to REG 2 to REG 11 accordingly, for output power 22 to 13 dBm respectively.