



Appendix D: Spurious Emission at Antenna Terminals



1 Result Table

EUT Conf.	Maximum Emission [dBm]	Verdict
1G_TM1_B	<-16	Pass
1G_TM1_M	<-16	Pass
1G_TM1_T	<-16	Pass
1G_TM2_B	<-16	Pass
1G_TM2_M	<-16	Pass
1G_TM2_T	<-16	Pass
4G_TM1_B	<-16	Pass
4G_TM1_M	<-16	Pass
4G_TM1_T	<-16	Pass
1U_TM1_B	<-16	Pass
1U_TM1_M	<-16	Pass
1U_TM1_T	<-16	Pass
4U_TM1_B	<-16	Pass
4U_TM1_M	<-16	Pass
4U_TM1_T	<-16	Pass
1L_1.4M_TM1_B	<-16	Pass
1L_1.4M_TM1_M	<-16	Pass
1L_1.4M_TM1_T	<-16	Pass
1L_3M_TM1_B	<-16	Pass
1L_3M_TM1_M	<-16	Pass
1L_3M_TM1_T	<-16	Pass
1L_5M_TM1_B	<-16	Pass
1L_5M_TM1_M	<-16	Pass
1L_5M_TM1_T	<-16	Pass
1L_10M_TM1_B	<-16	Pass
1L_10M_TM1_M	<-16	Pass
1L_10M_TM1_T	<-16	Pass
1L_15M_TM1_B	<-16	Pass
1L_15M_TM1_M	<-16	Pass
1L_15M_TM1_T	<-16	Pass
1L_20M_TM1_B	<-16	Pass
1L_20M_TM1_M	<-16	Pass
1L_20M_TM1_T	<-16	Pass
2L_5M_TM1_B	<-16	Pass
2L_5M_TM1_M	<-16	Pass
2L_5M_TM1_T	<-16	Pass
2G2U_TM1_B	<-16	Pass
2G2U_TM1_M	<-16	Pass
2G2U_TM1_T	<-16	Pass

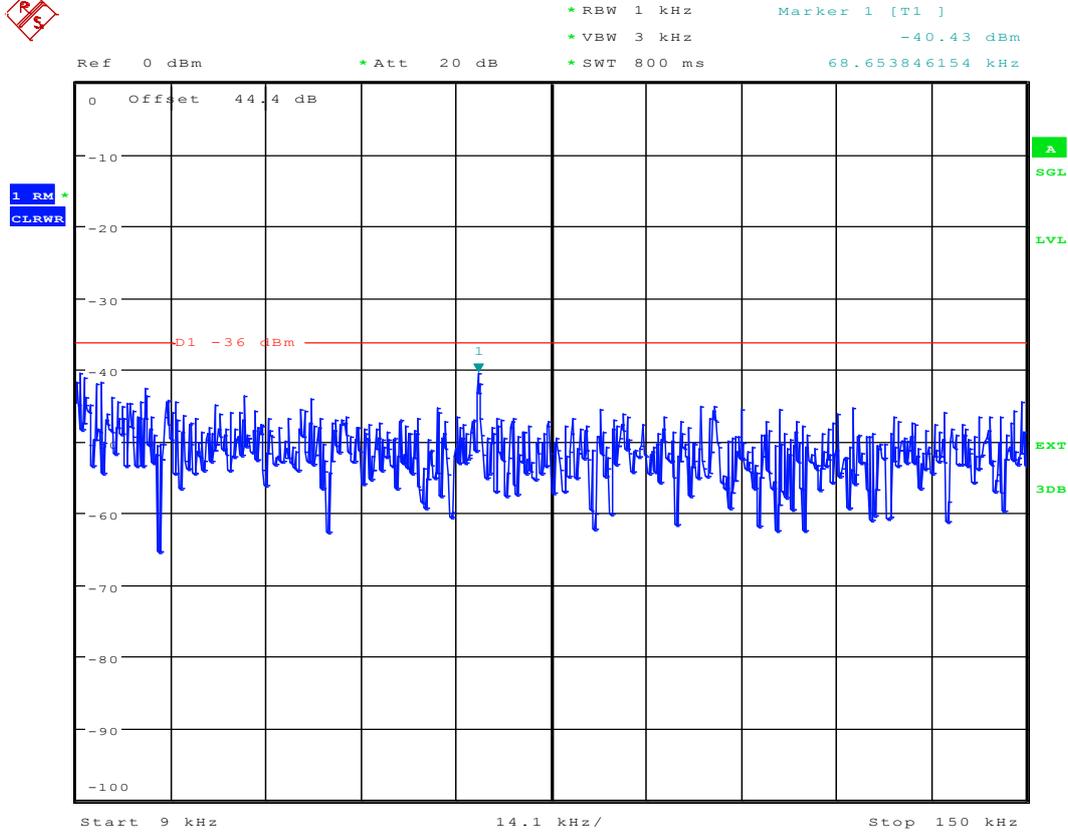


EUT Conf.	Maximum Emission [dBm]	Verdict
2G2L_TM1_B	<-16	Pass
2G2L_TM1_M	<-16	Pass
2G2L_TM1_T	<-16	Pass
2U2L_TM1_B	<-16	Pass
2U2L_TM1_M	<-16	Pass
2U2L_TM1_T	<-16	Pass

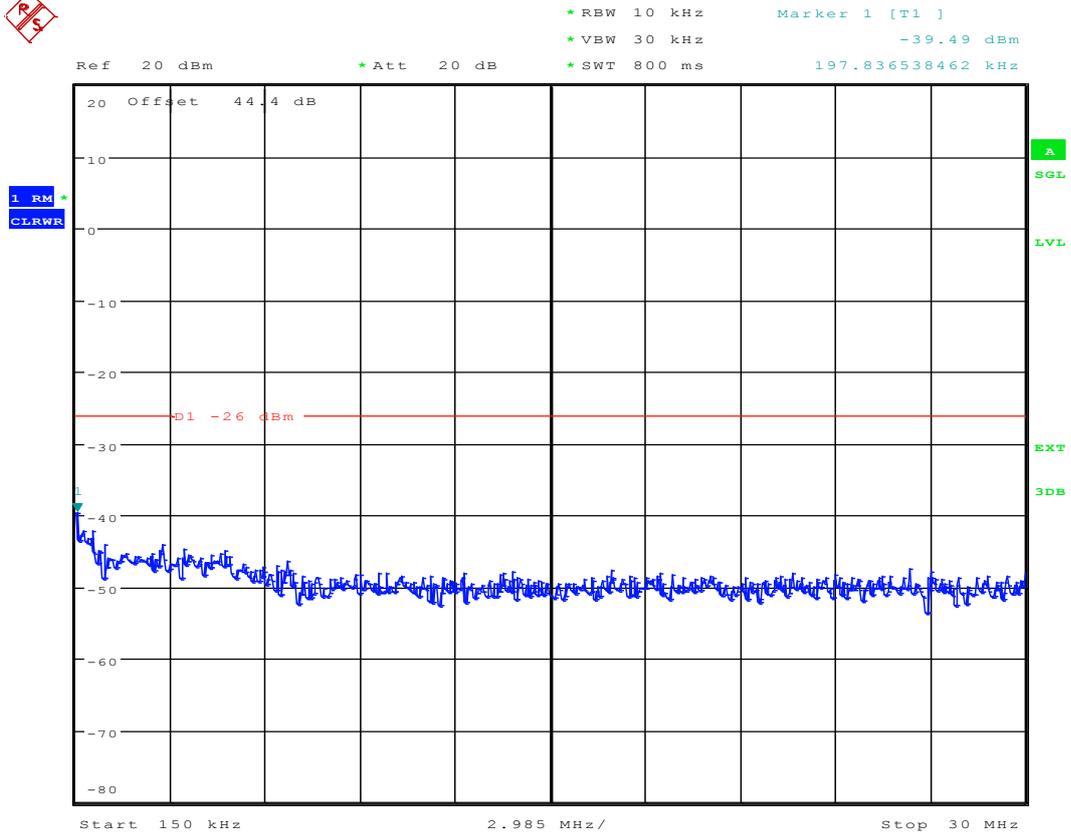


2 Test Plot

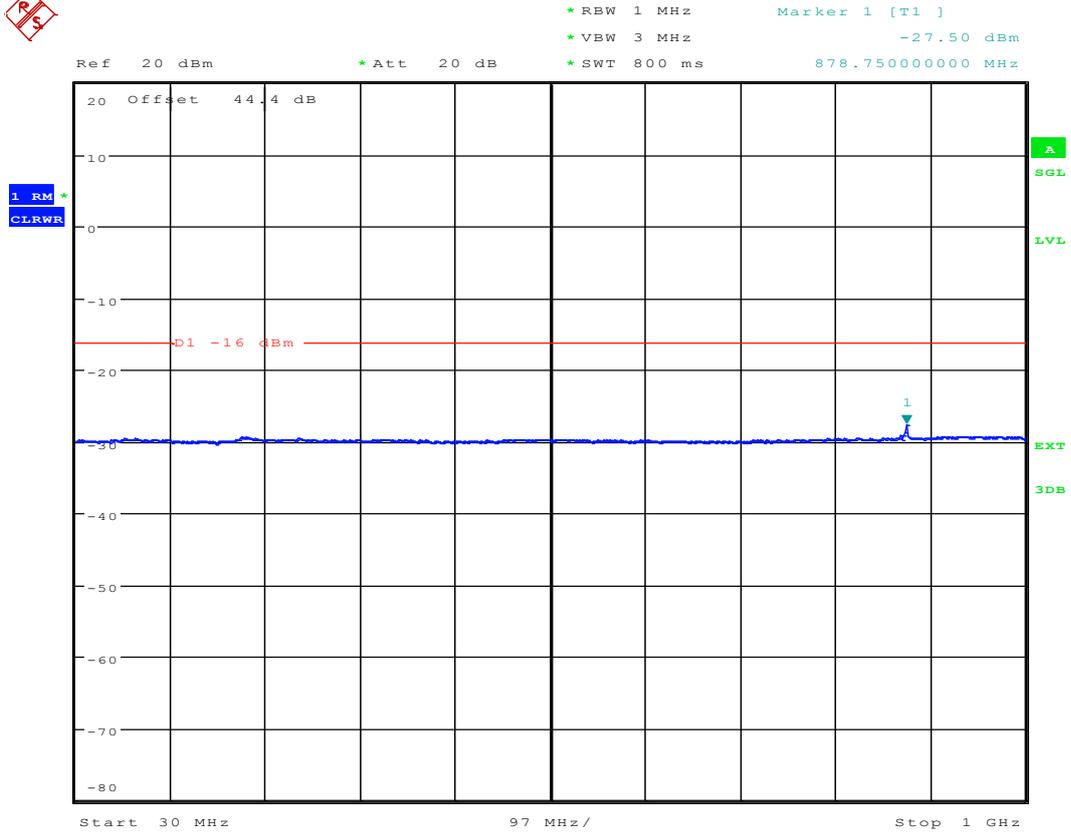
2.1 1G_TM1_B



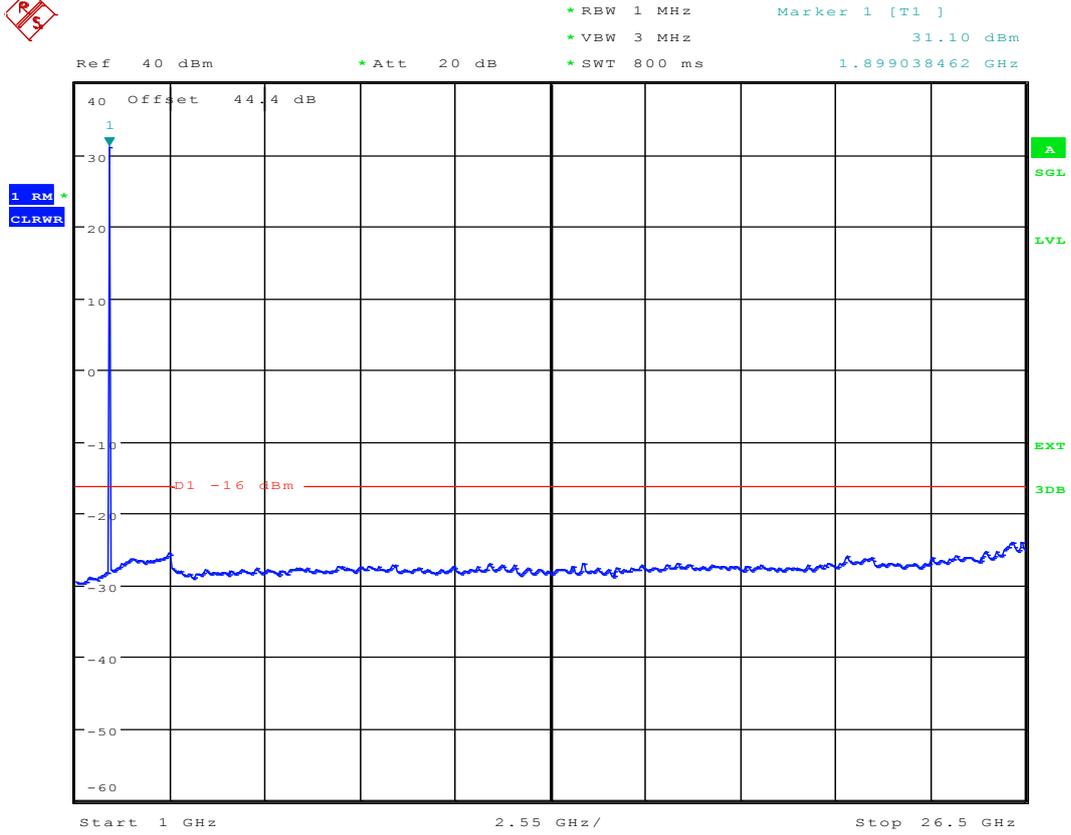
Date: 20.JAN.2015 15:52:46



Date: 20.JAN.2015 15:53:02



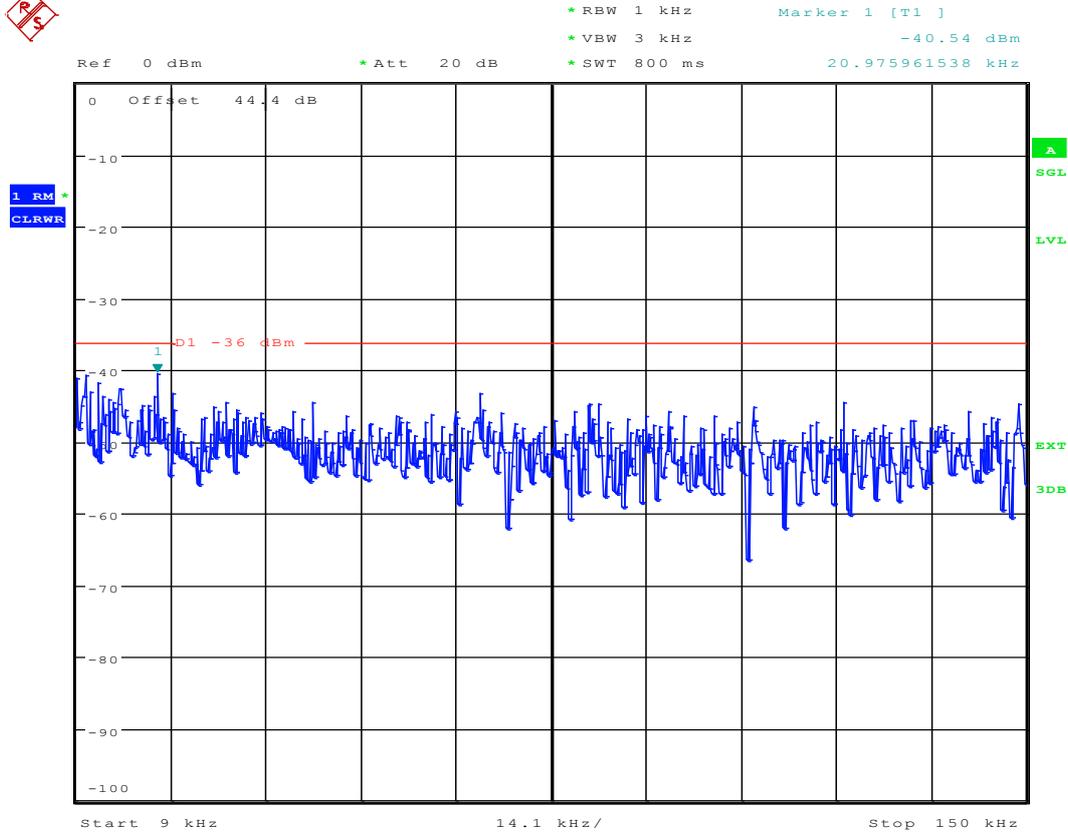
Date: 20.JAN.2015 15:53:14



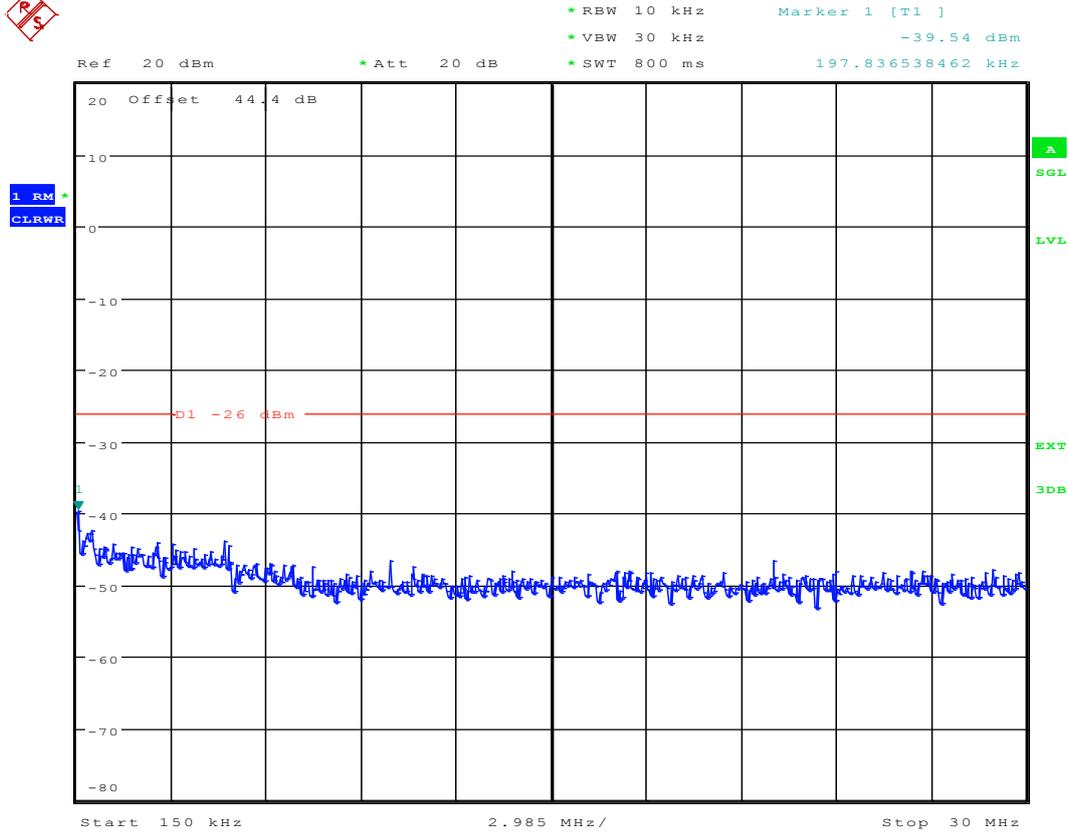
Date: 20.JAN.2015 15:53:27



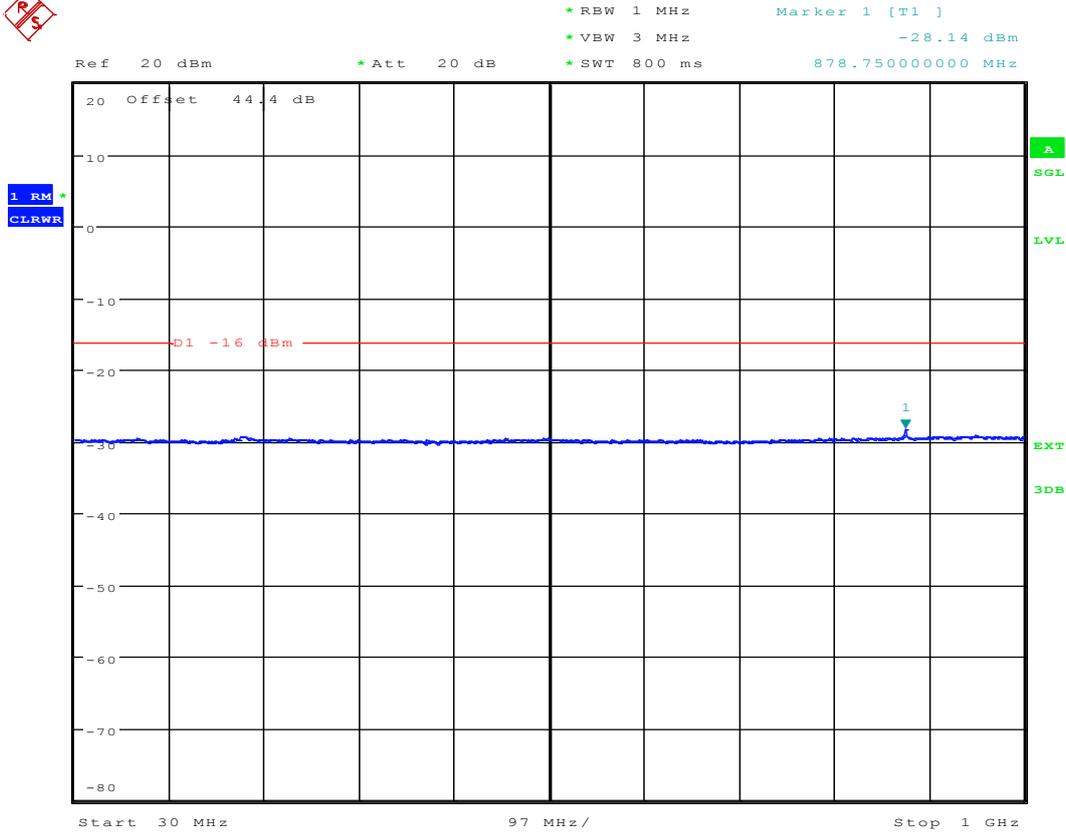
2.2 1G_TM1_M



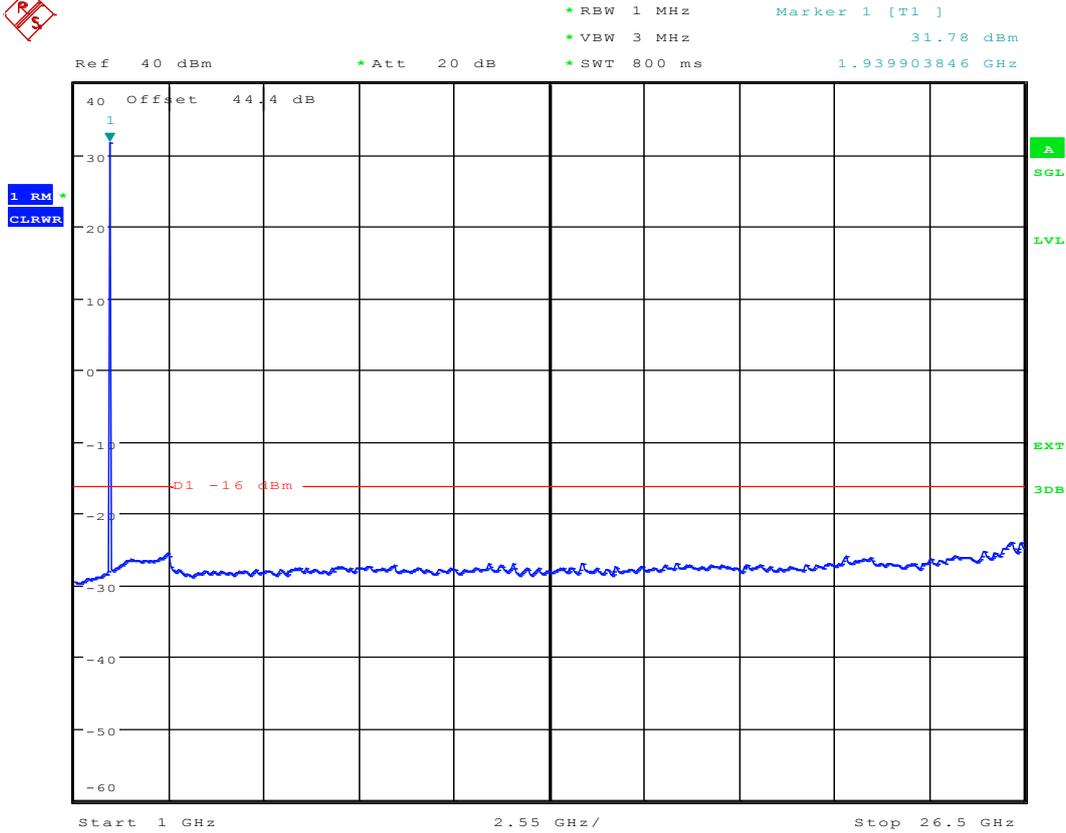
Date: 20.JAN.2015 15:55:00



Date: 20.JAN.2015 15:55:13



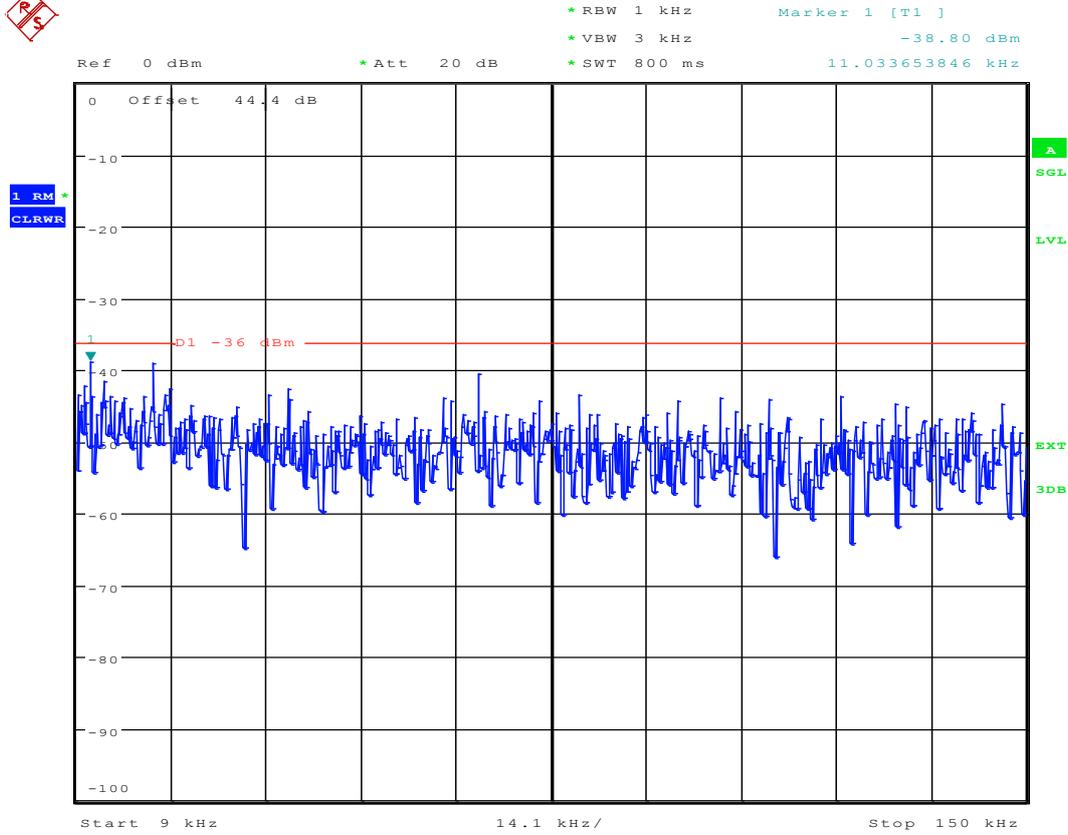
Date: 20.JAN.2015 15:55:26



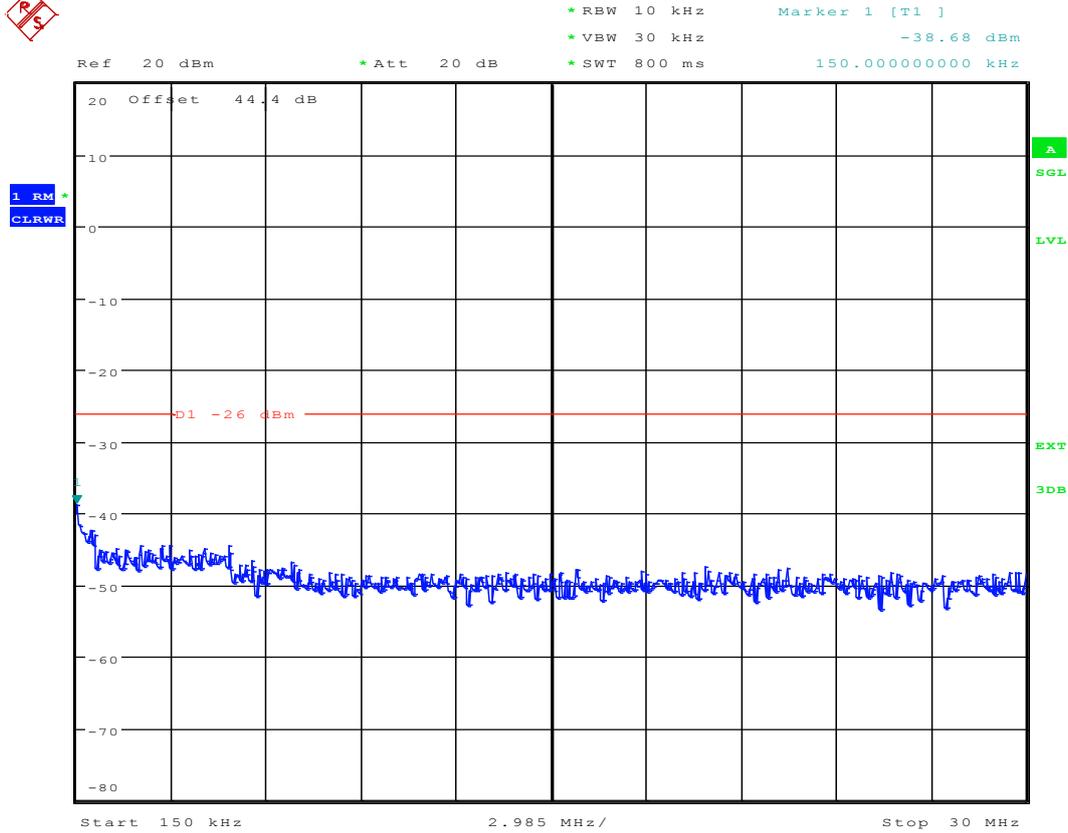
Date: 20.JAN.2015 15:55:38



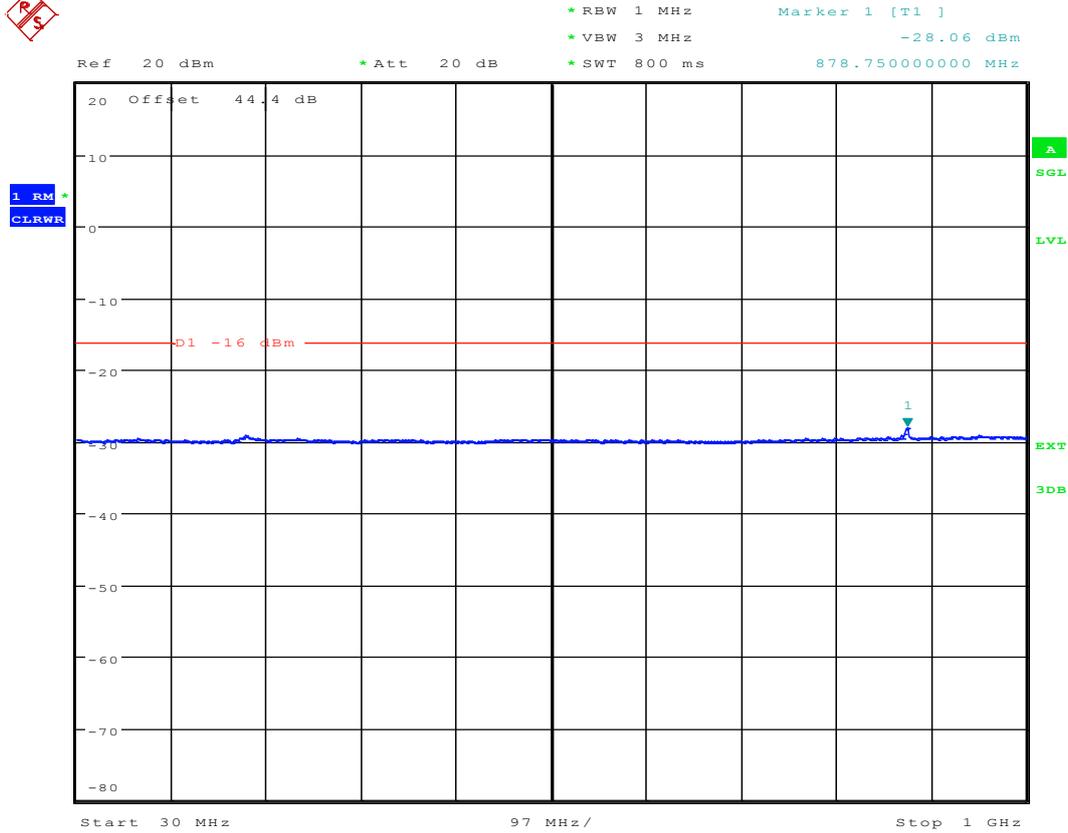
2.3 1G_TM1_T



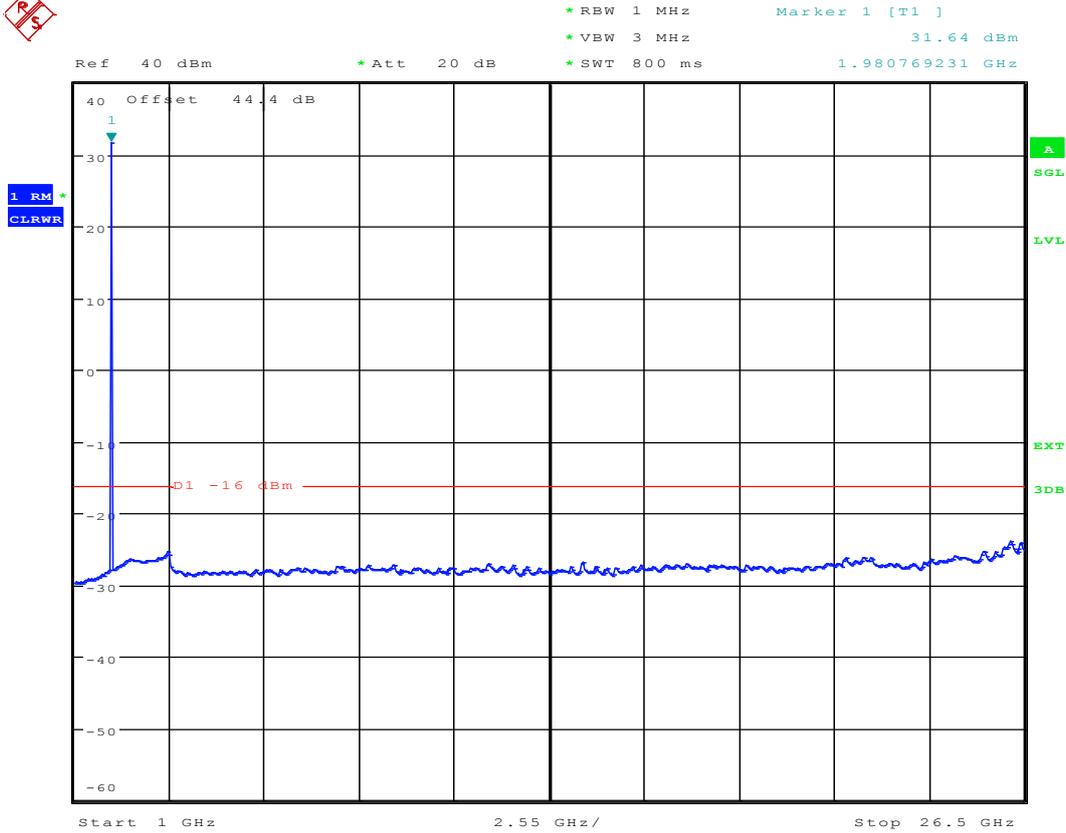
Date: 20.JAN.2015 15:57:11



Date: 20.JAN.2015 15:57:24



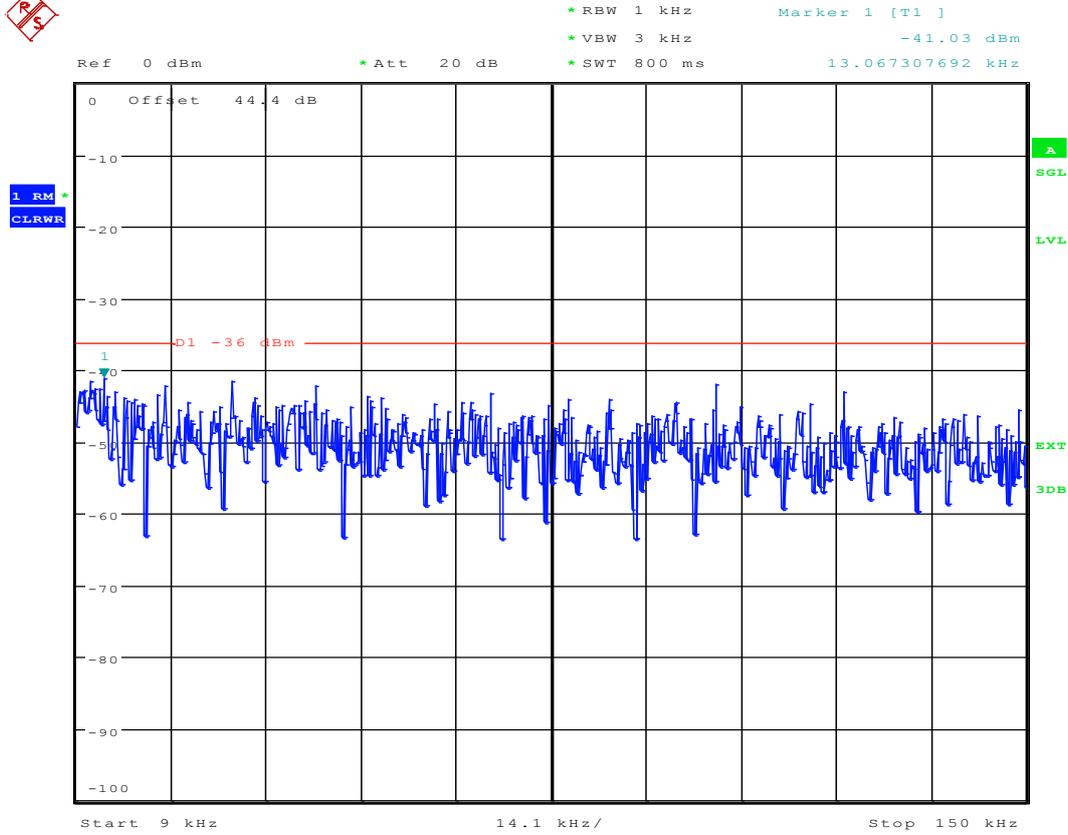
Date: 20.JAN.2015 15:57:37



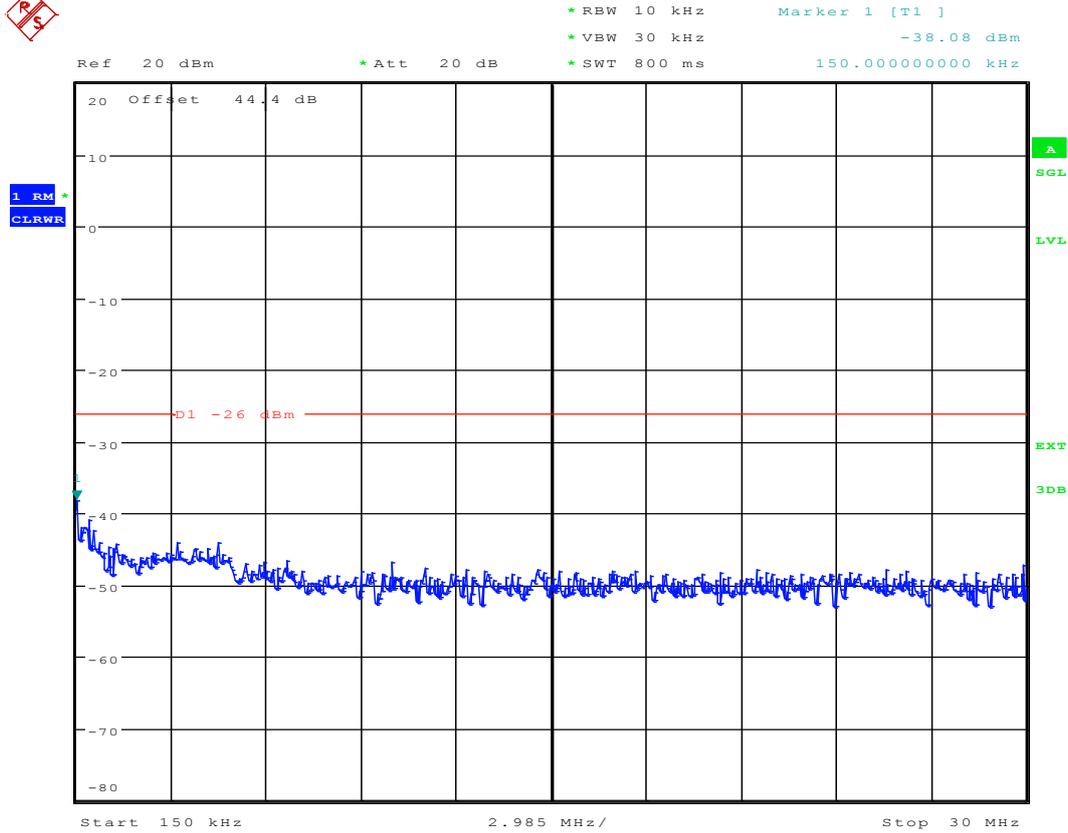
Date: 20.JAN.2015 15:57:49



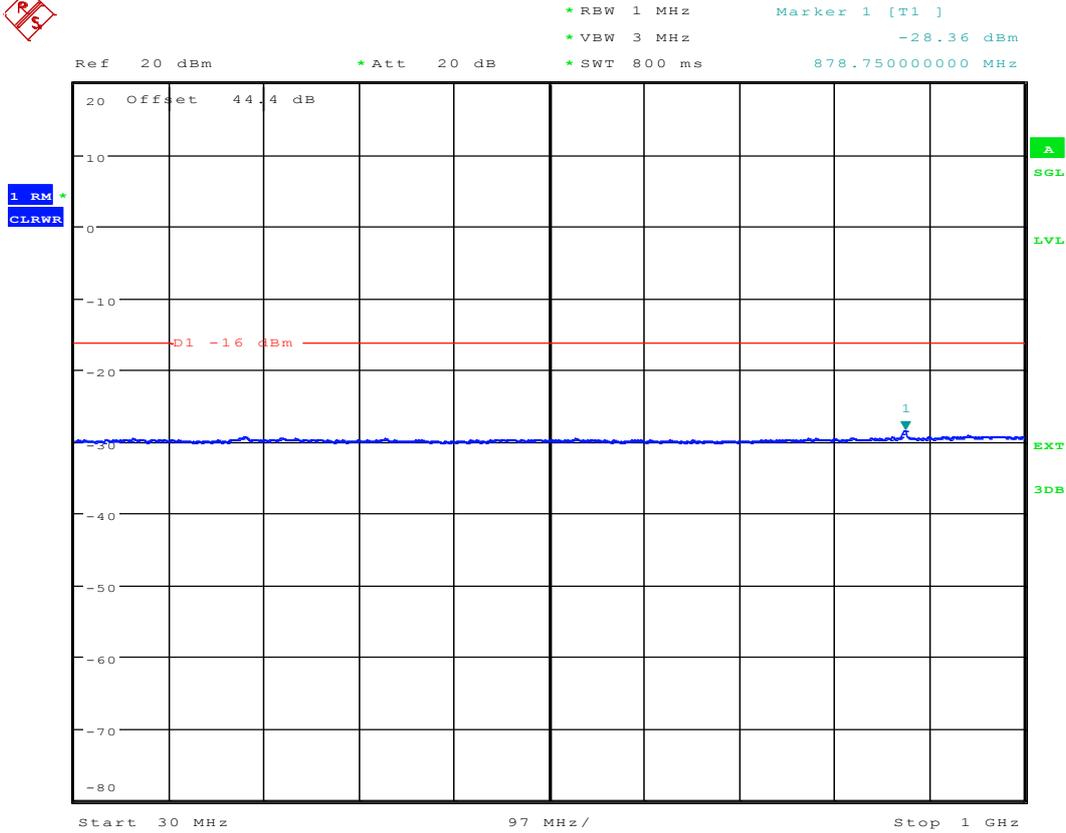
2.4 1G_TM2_B



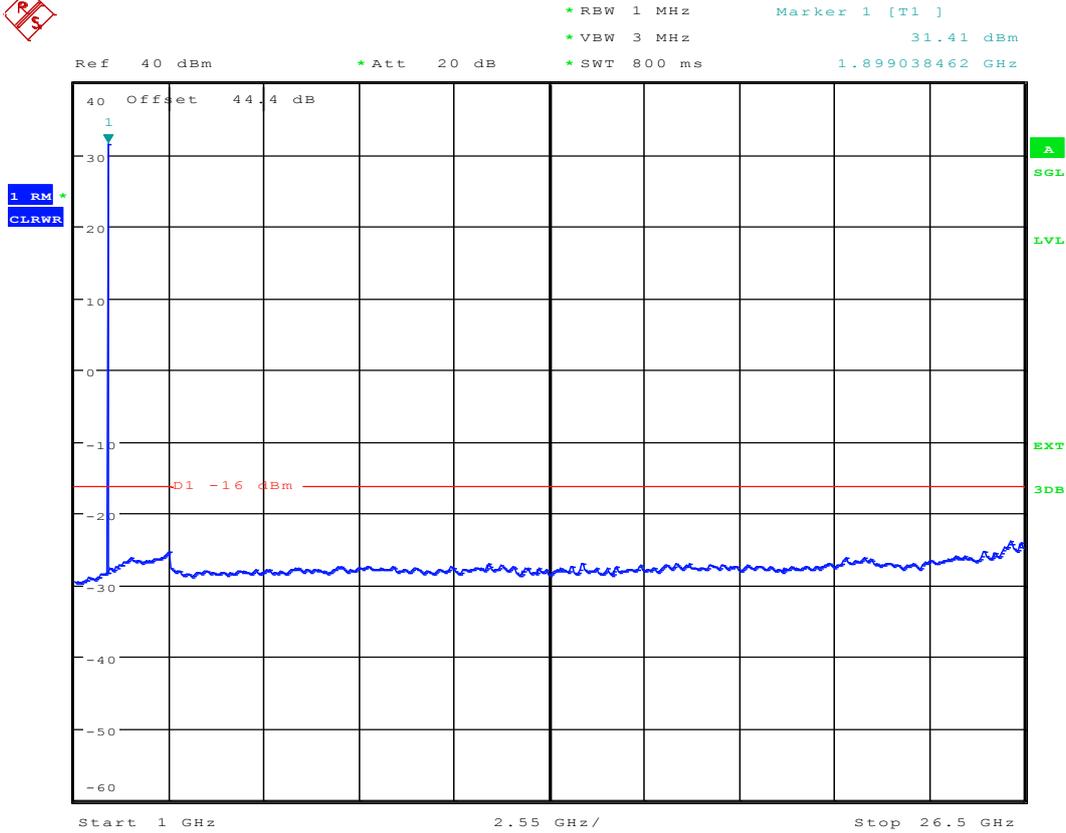
Date: 20.JAN.2015 15:59:21



Date: 20.JAN.2015 15:59:35



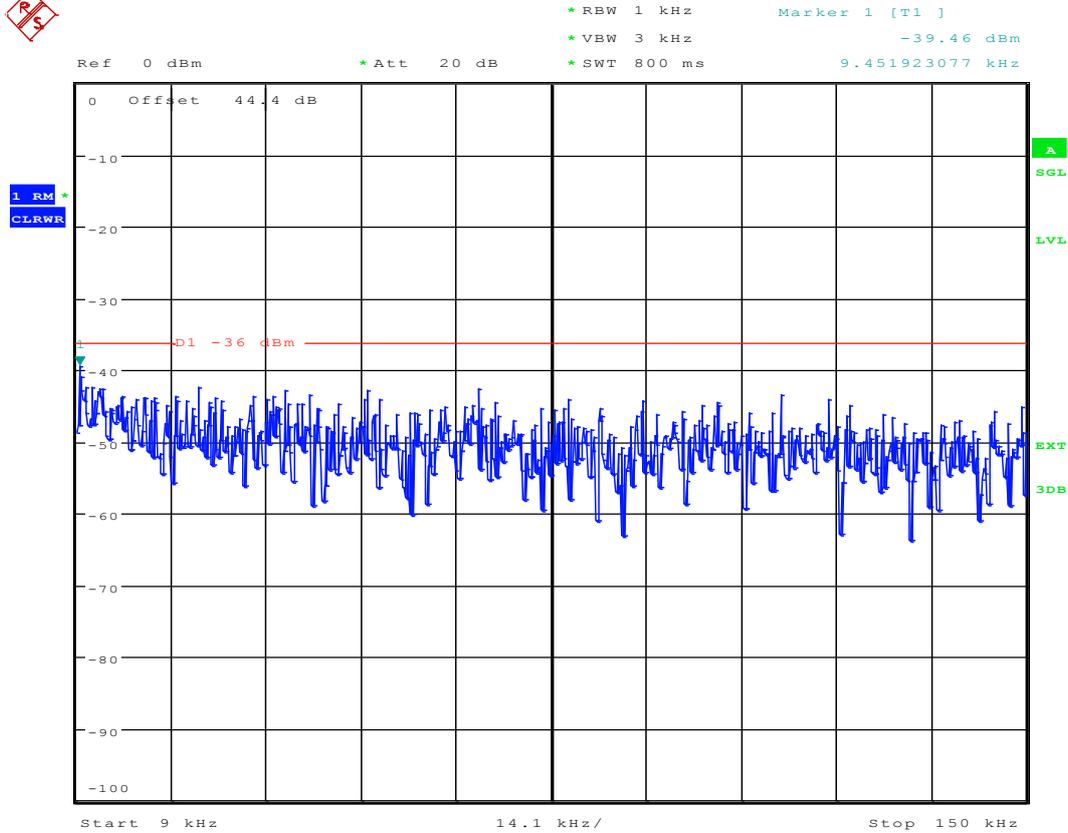
Date: 20.JAN.2015 15:59:48



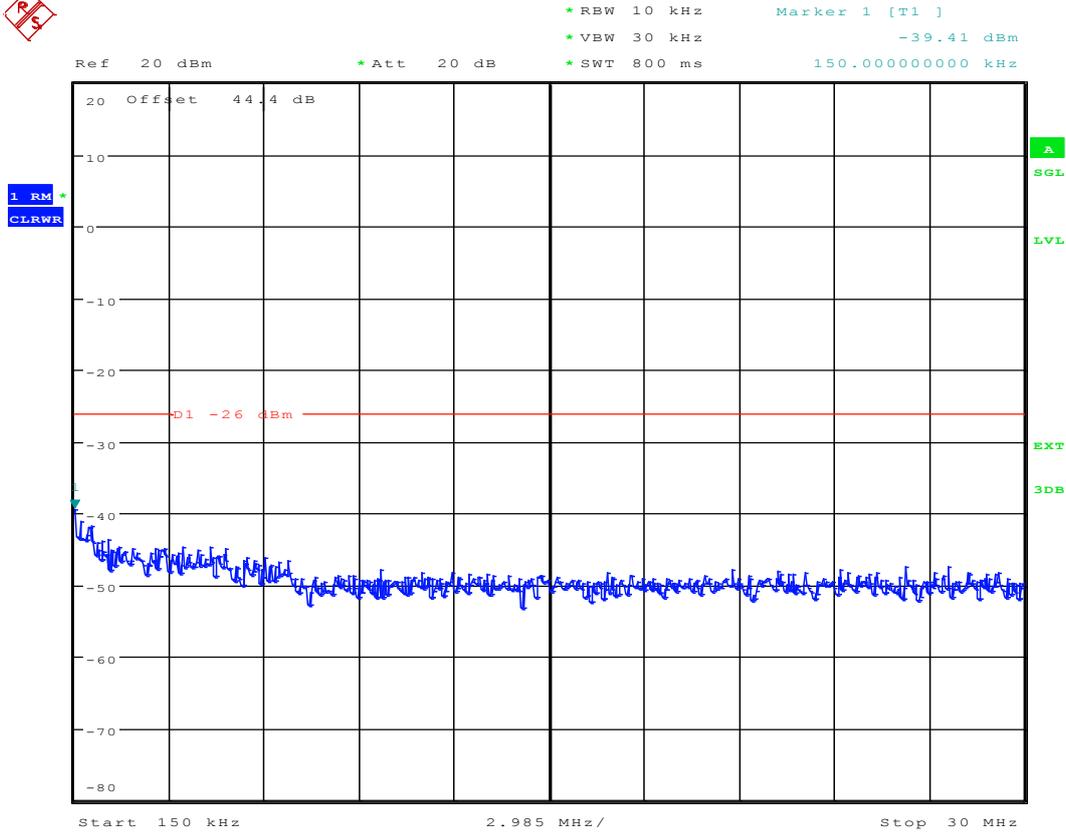
Date: 20.JAN.2015 16:00:01



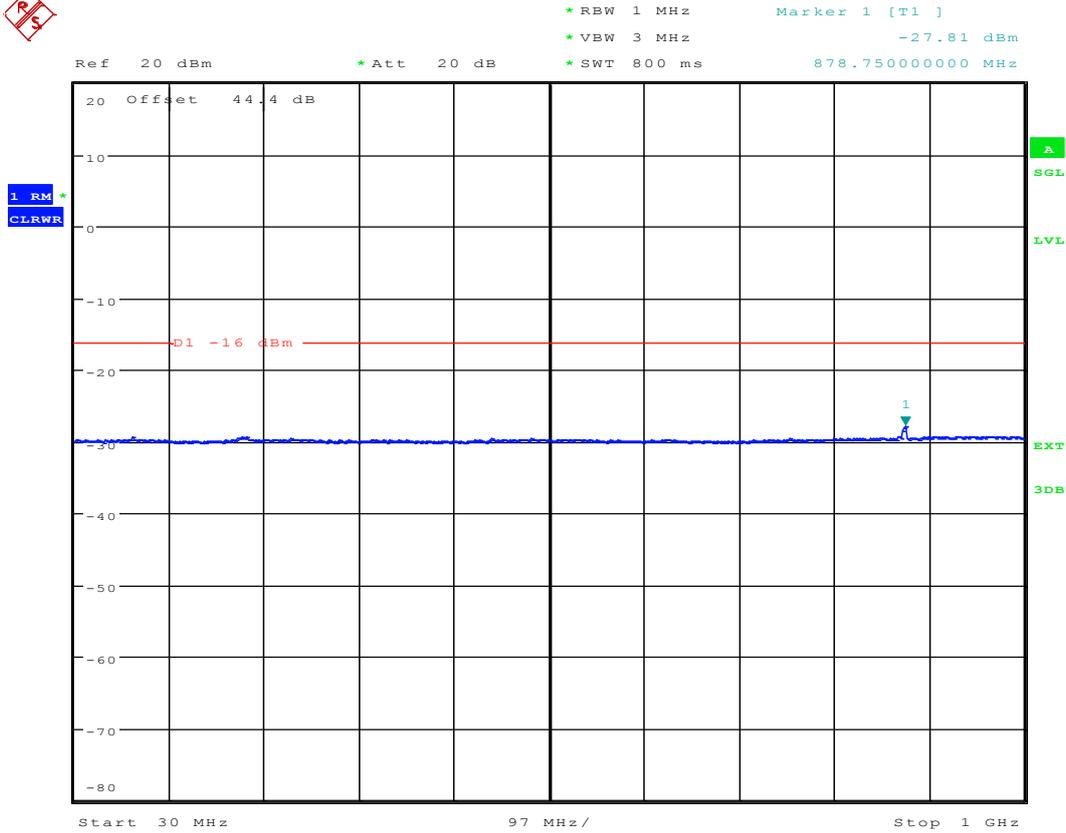
2.5 1G_TM2_M



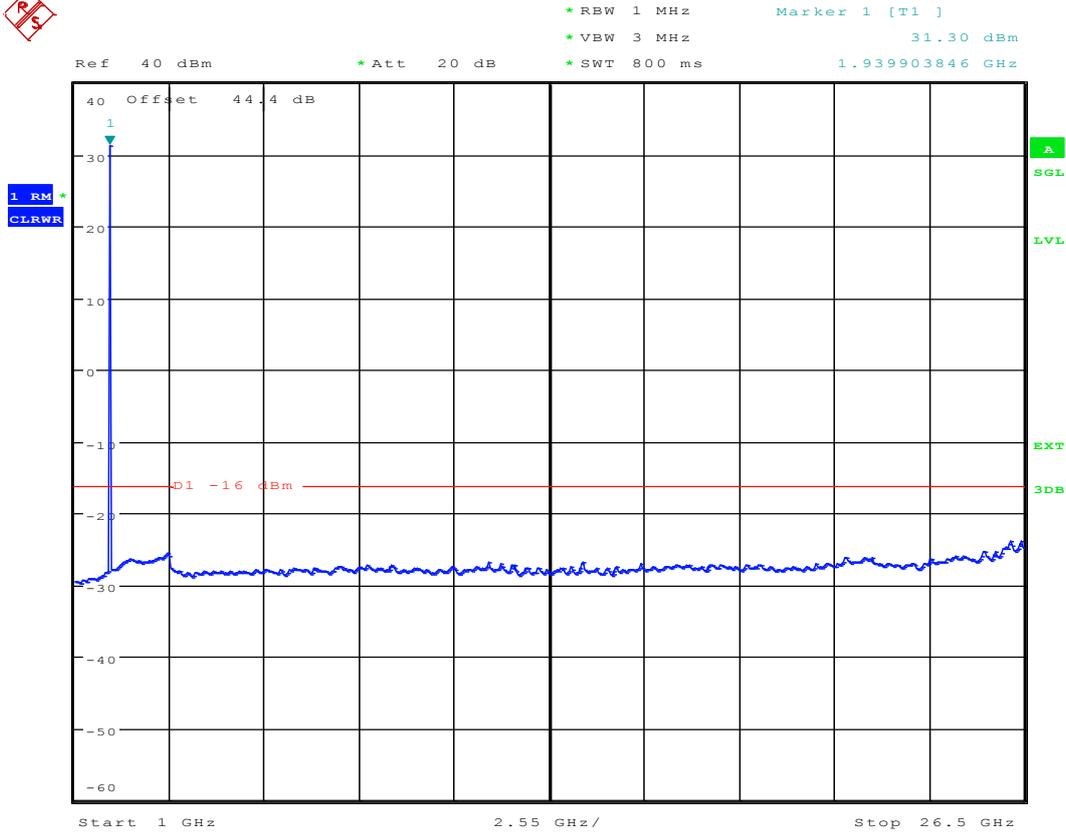
Date: 20.JAN.2015 16:01:33



Date: 20.JAN.2015 16:01:47



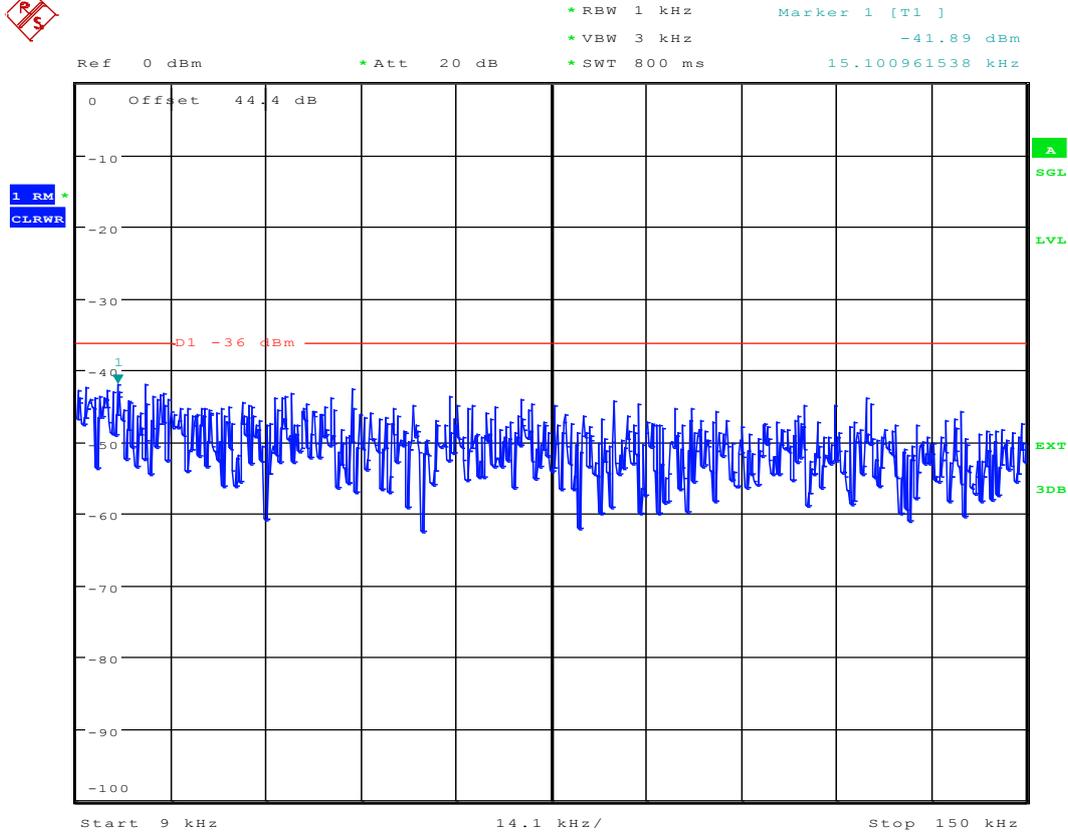
Date: 20.JAN.2015 16:02:00



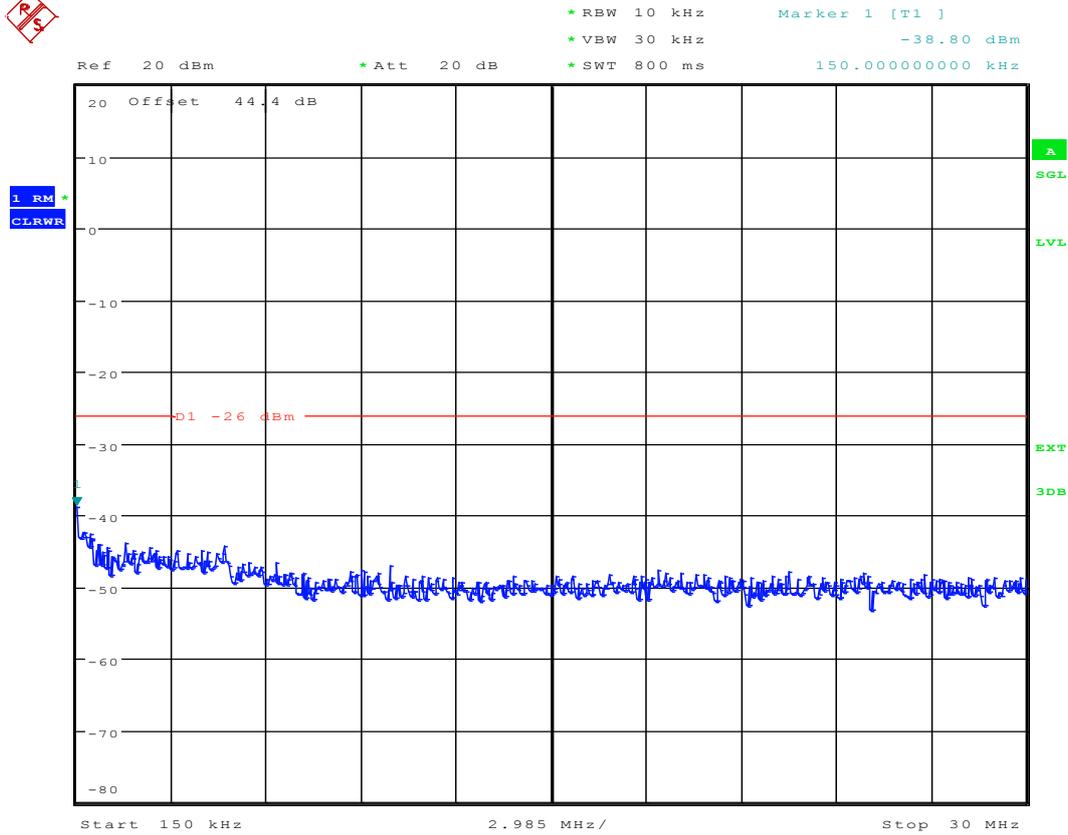
Date: 20.JAN.2015 16:02:13



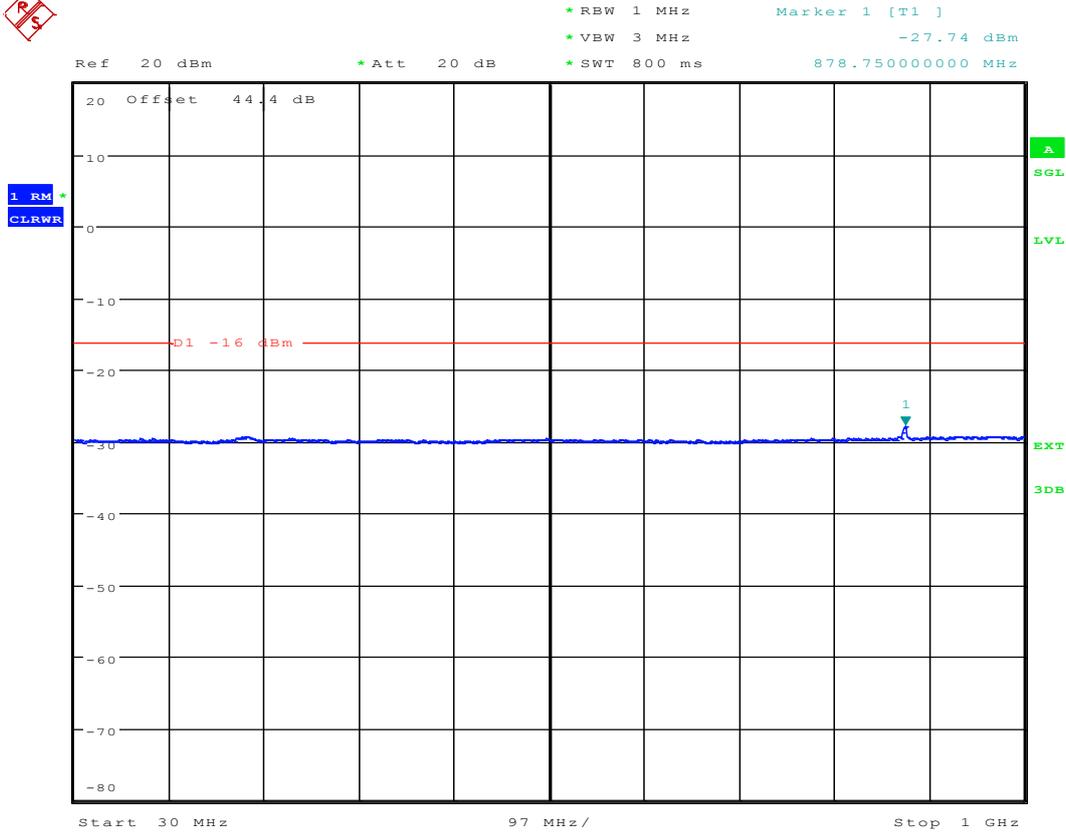
2.6 1G_TM2_T



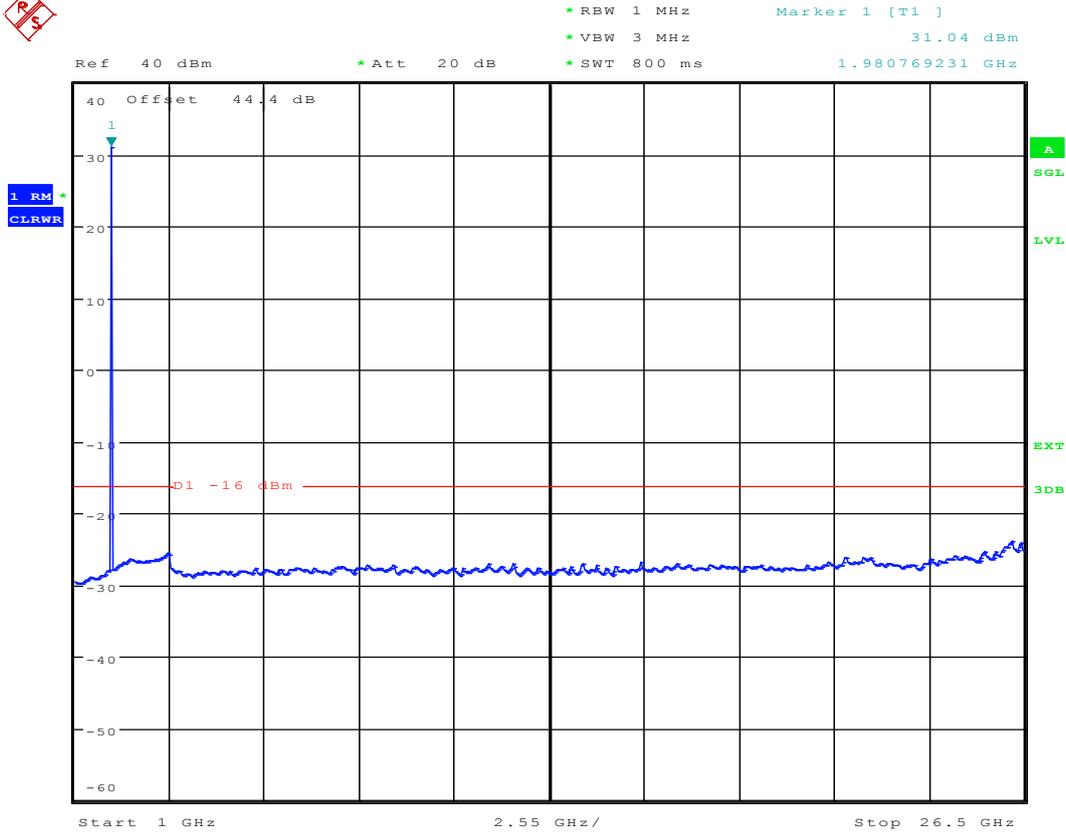
Date: 20.JAN.2015 16:03:45



Date: 20.JAN.2015 16:03:59



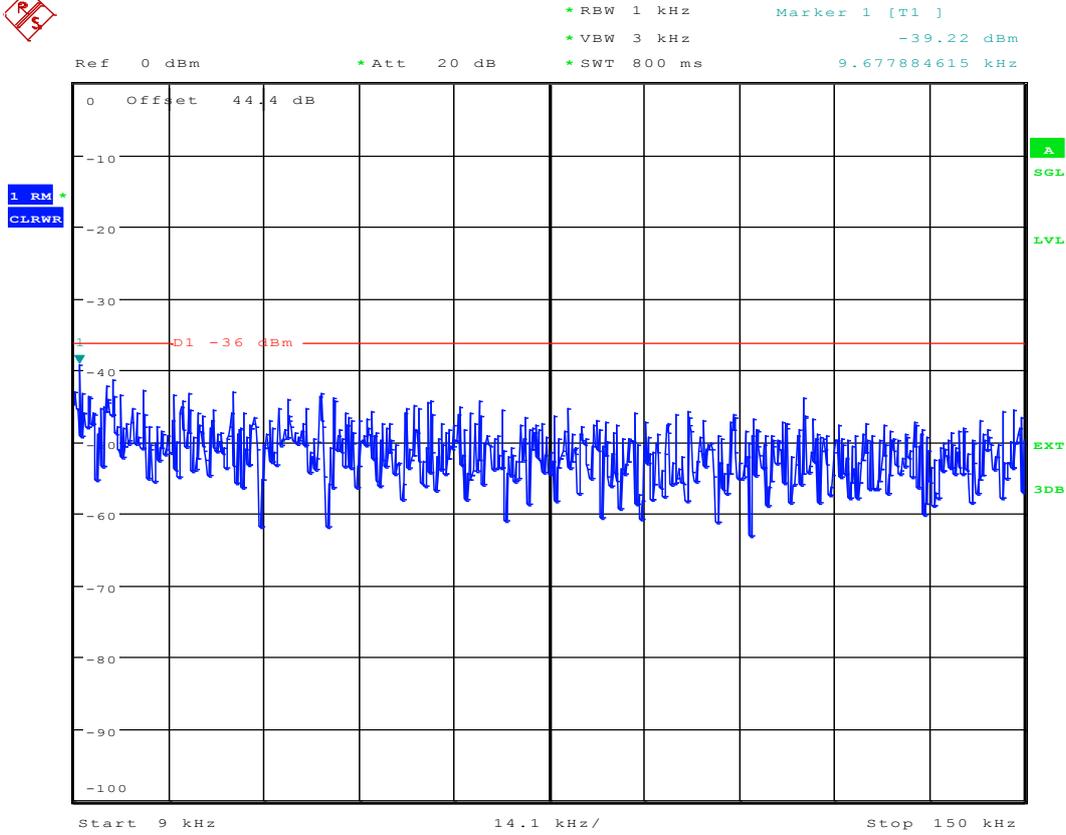
Date: 20.JAN.2015 16:04:12



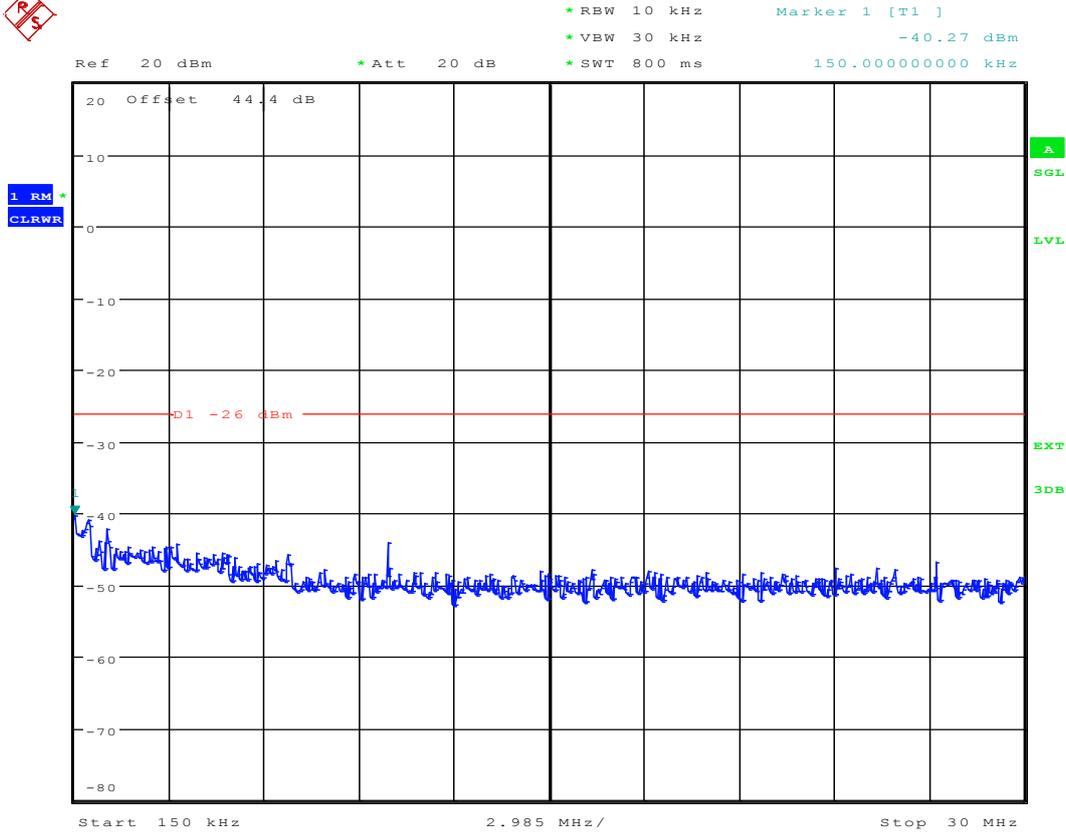
Date: 20.JAN.2015 16:04:25



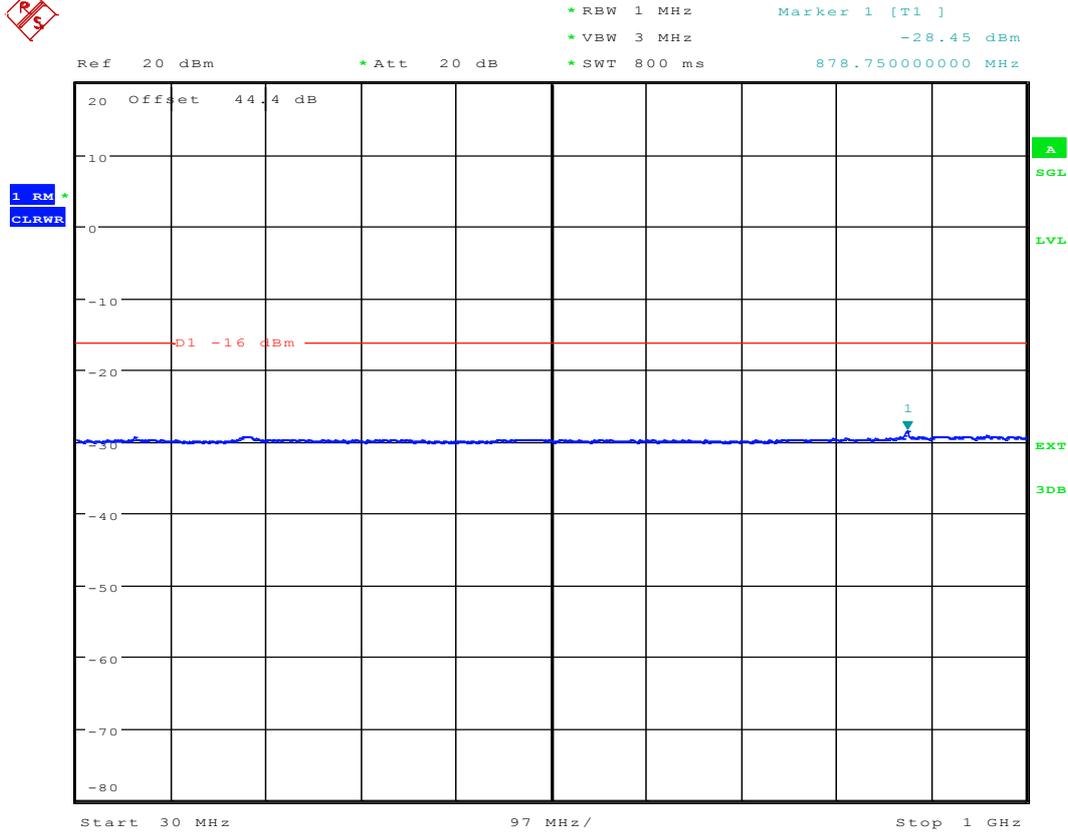
2.7 4G_TM1_B



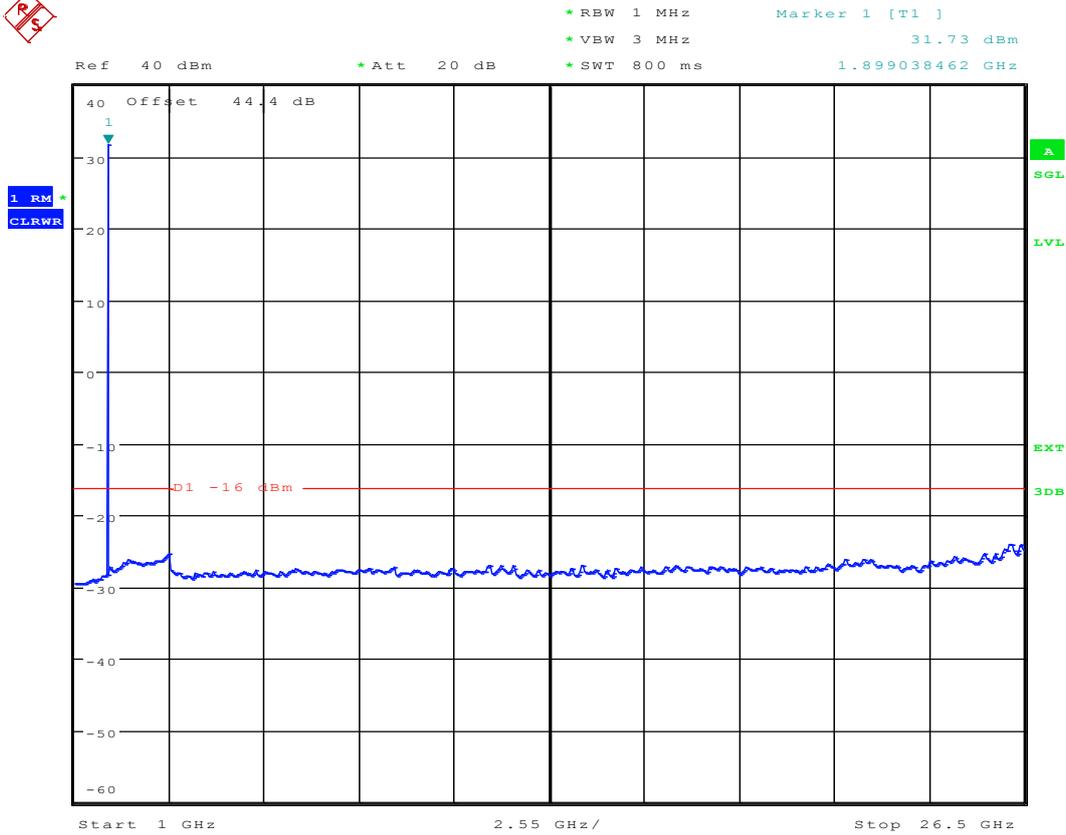
Date: 20.JAN.2015 16:08:12



Date: 20.JAN.2015 16:08:26



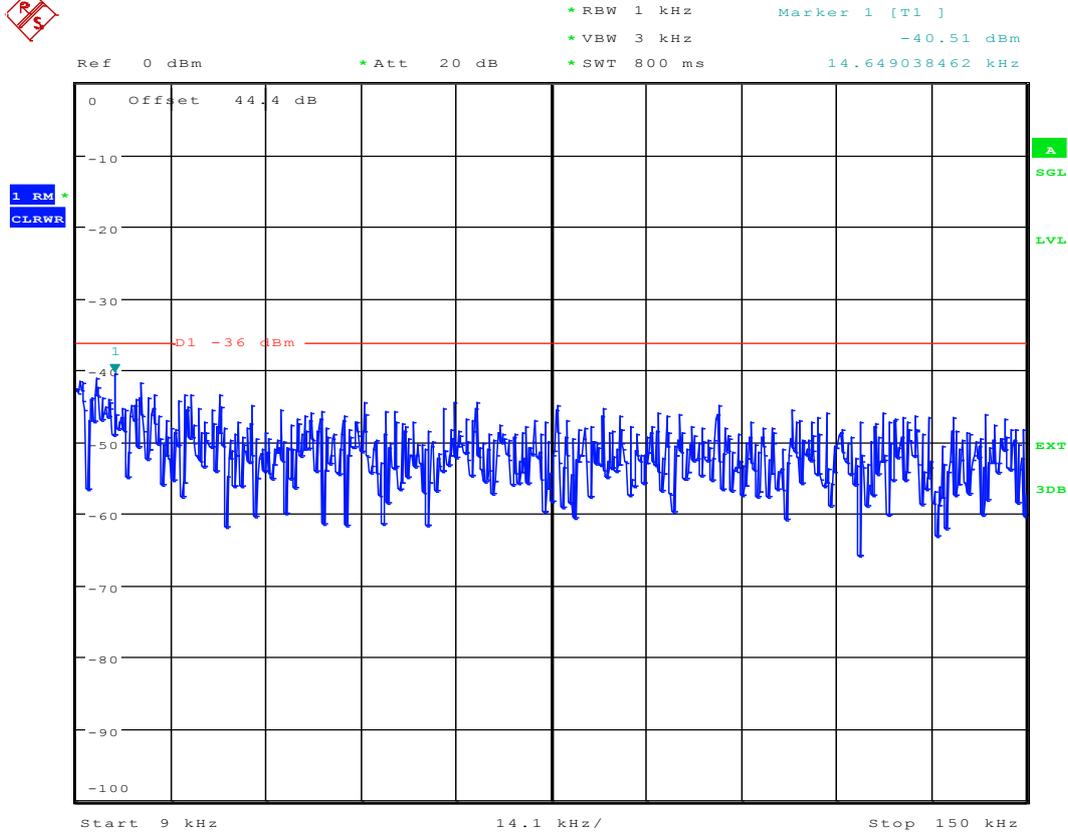
Date: 20.JAN.2015 16:08:38



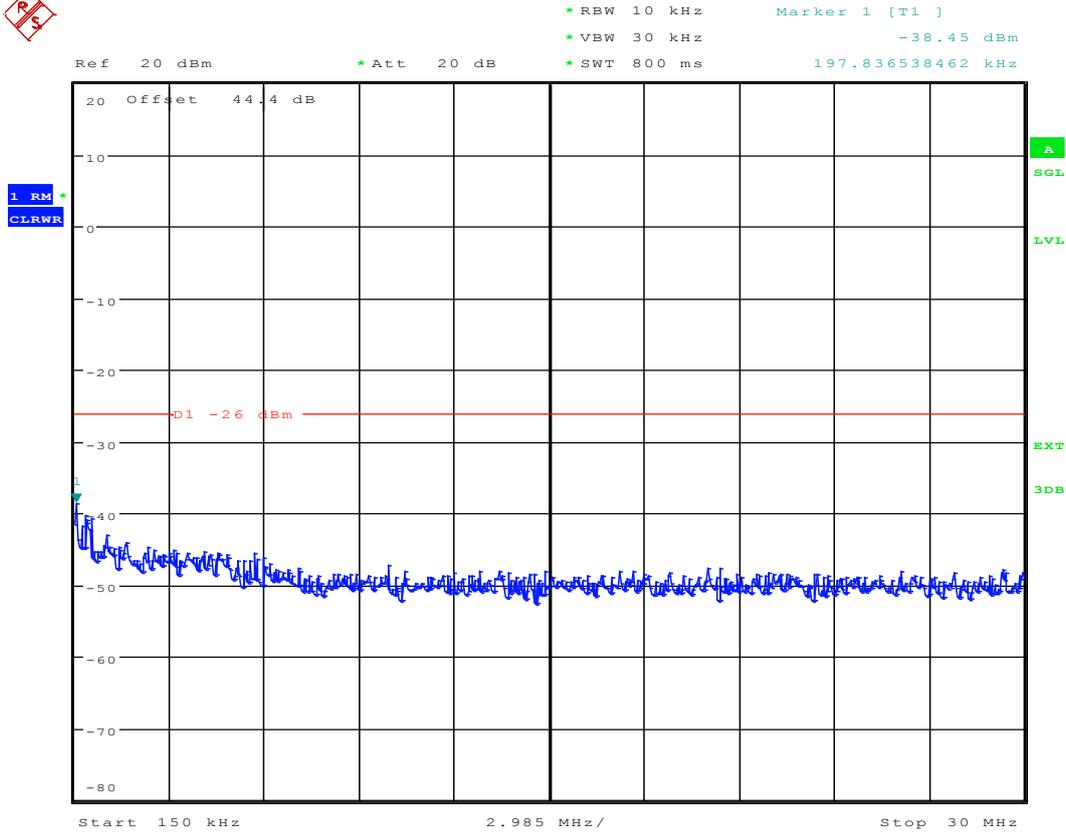
Date: 20.JAN.2015 16:08:51



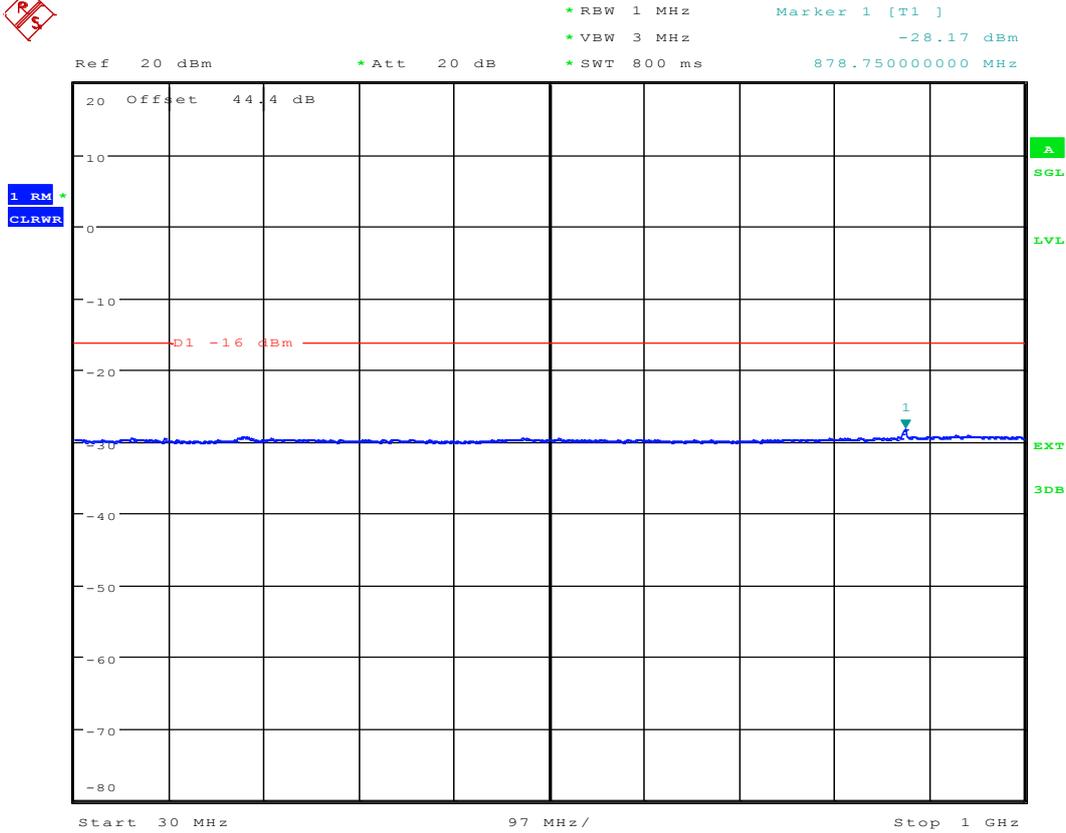
2.8 4G_TM1_M



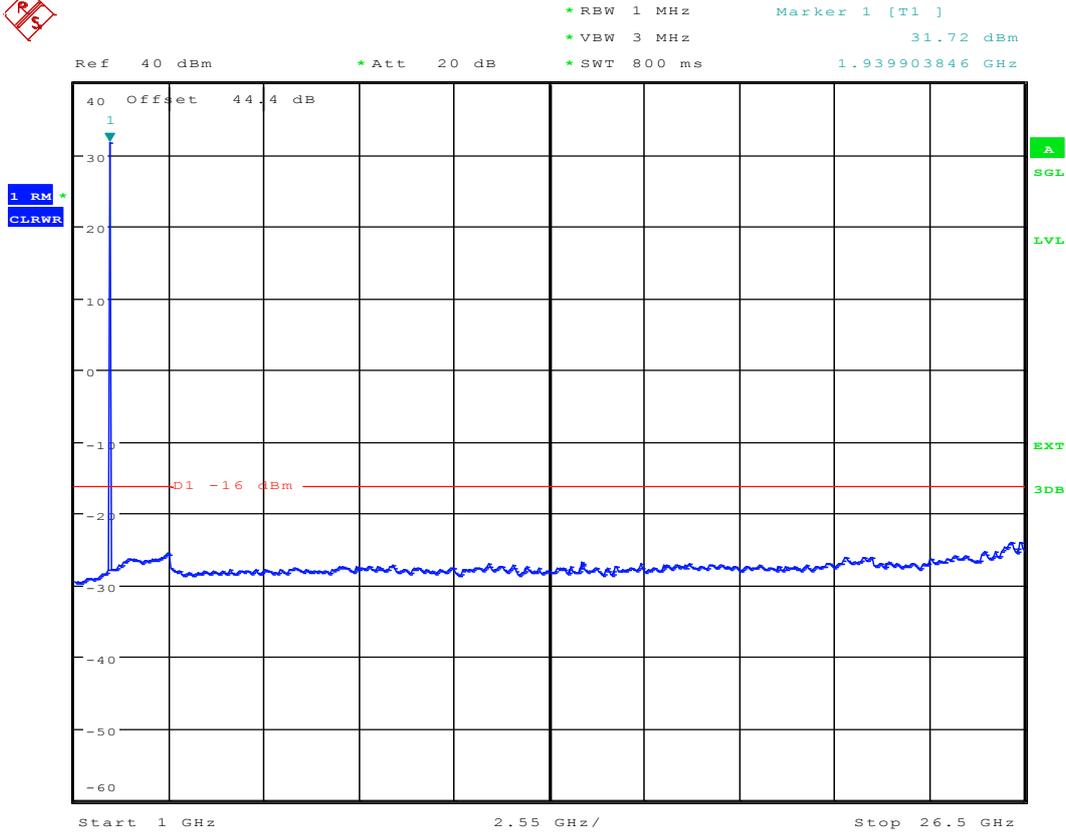
Date: 20.JAN.2015 16:12:11



Date: 20.JAN.2015 16:12:24



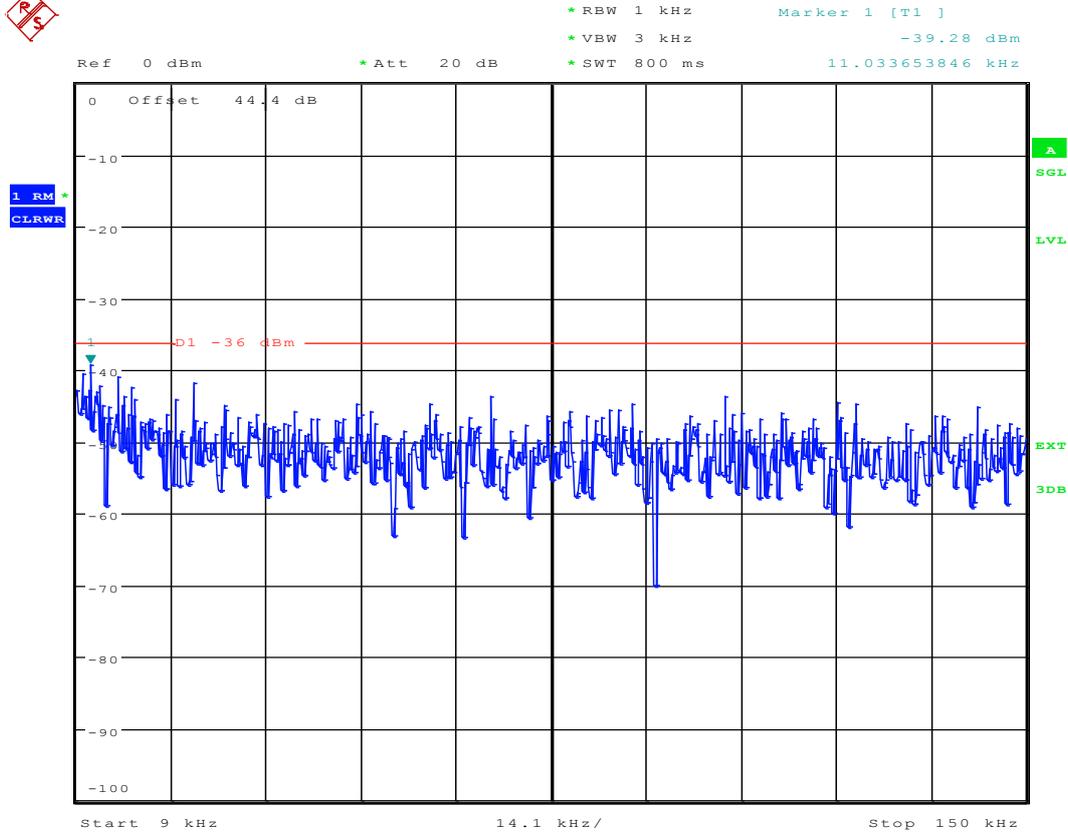
Date: 20.JAN.2015 16:12:37



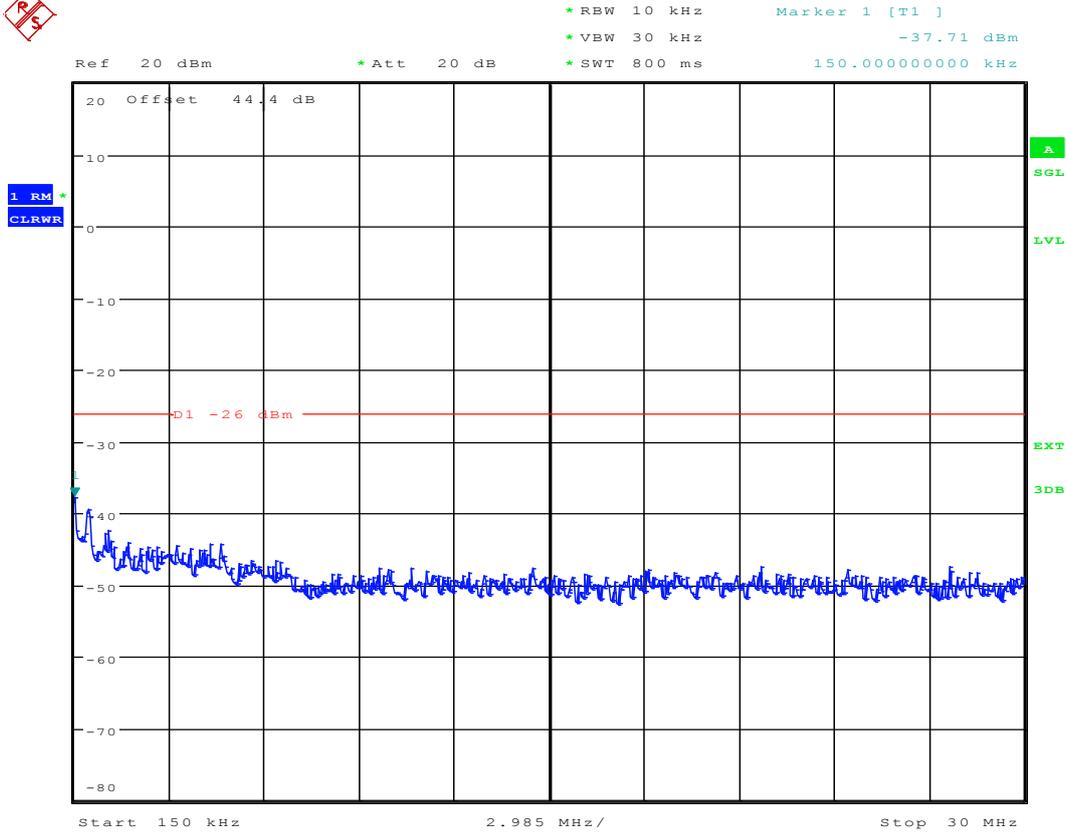
Date: 20.JAN.2015 16:12:49



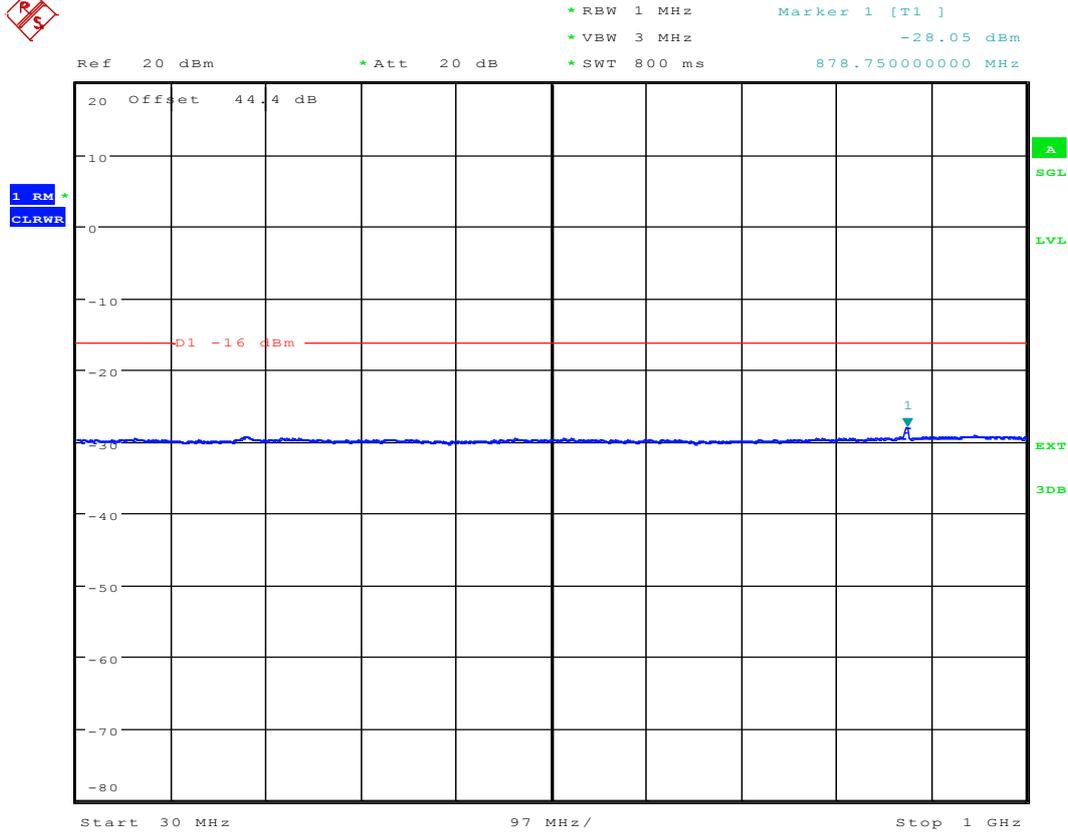
2.9 4G_TM1_T



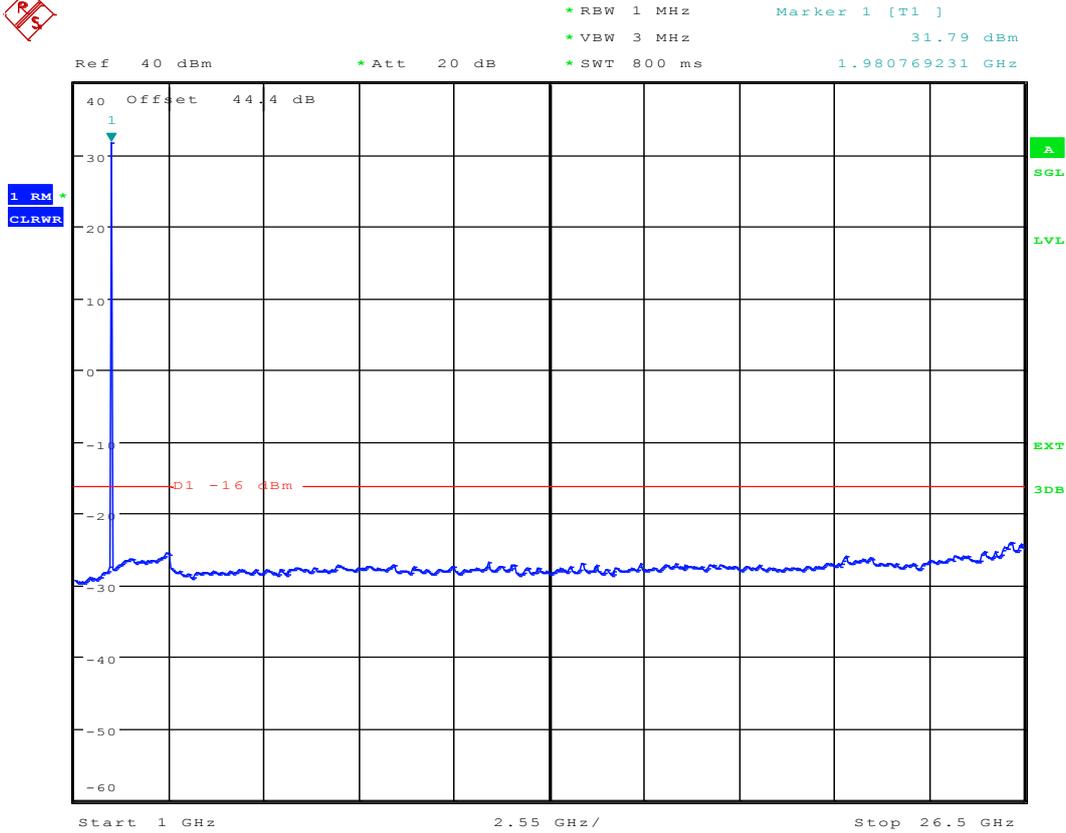
Date: 20.JAN.2015 16:16:09



Date: 20.JAN.2015 16:16:22



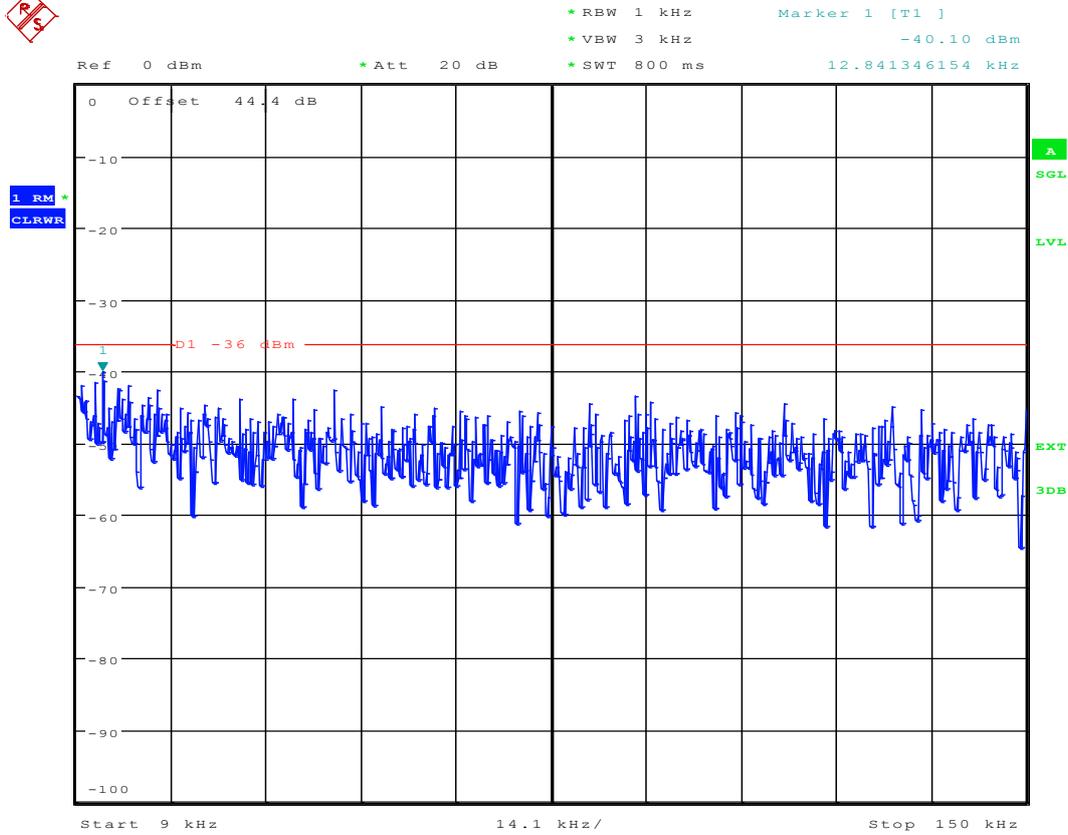
Date: 20.JAN.2015 16:16:35



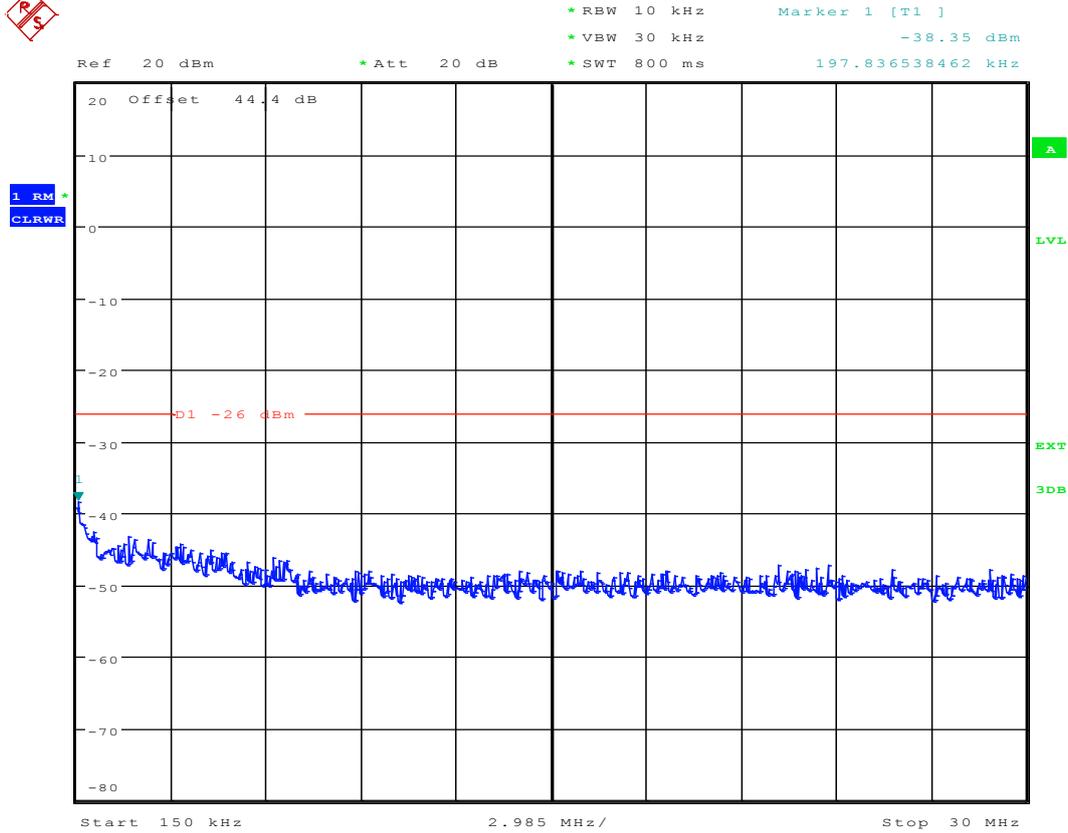
Date: 20.JAN.2015 16:16:47



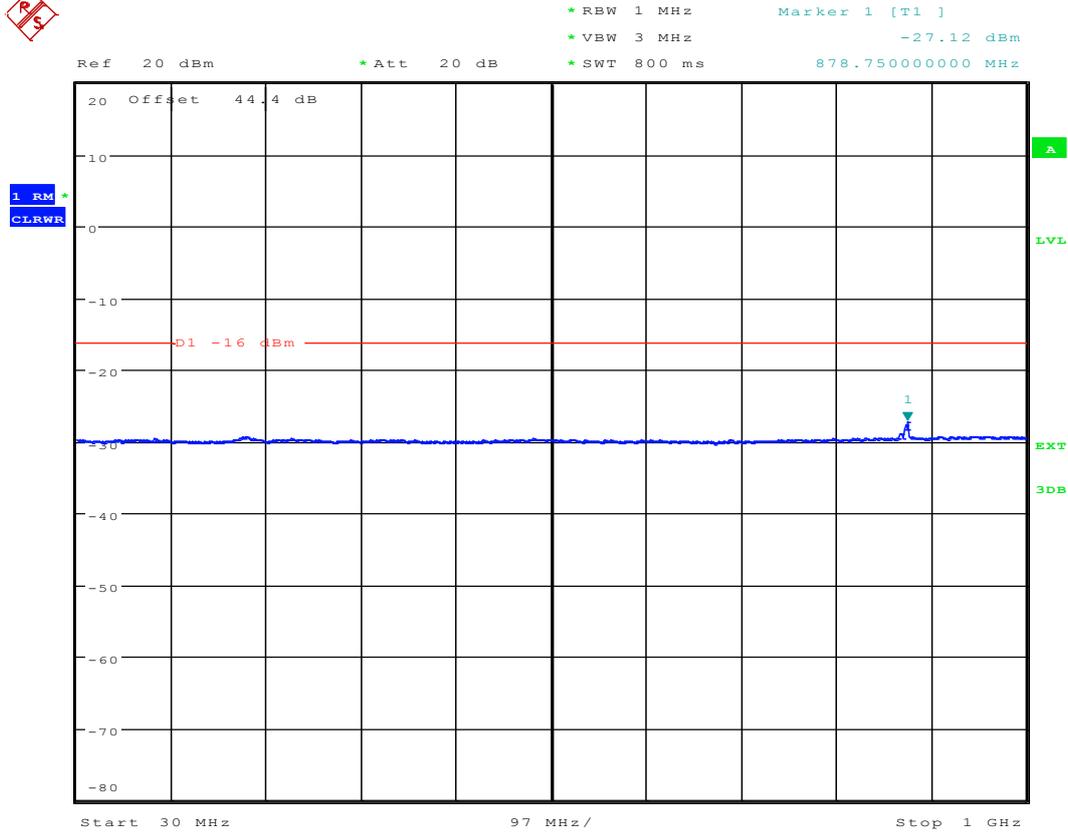
2.10 1U_TM1_B



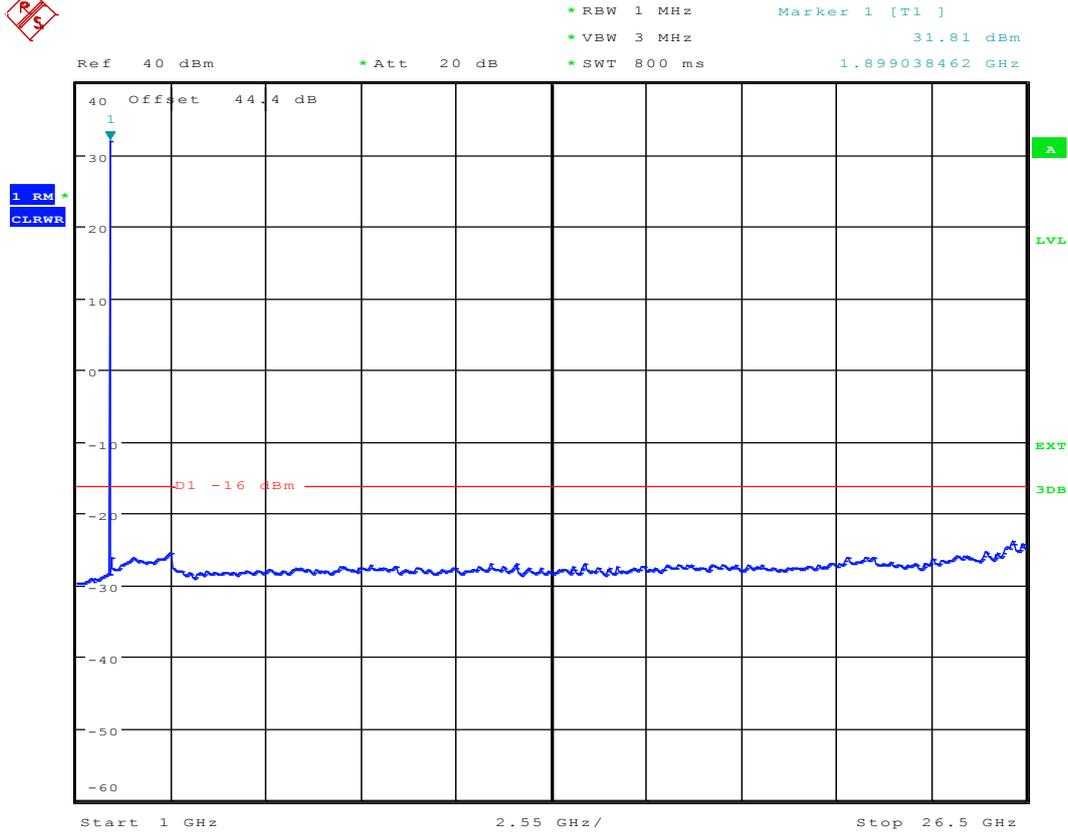
Date: 21.JAN.2015 13:55:48



Date: 20.JAN.2015 16:51:40



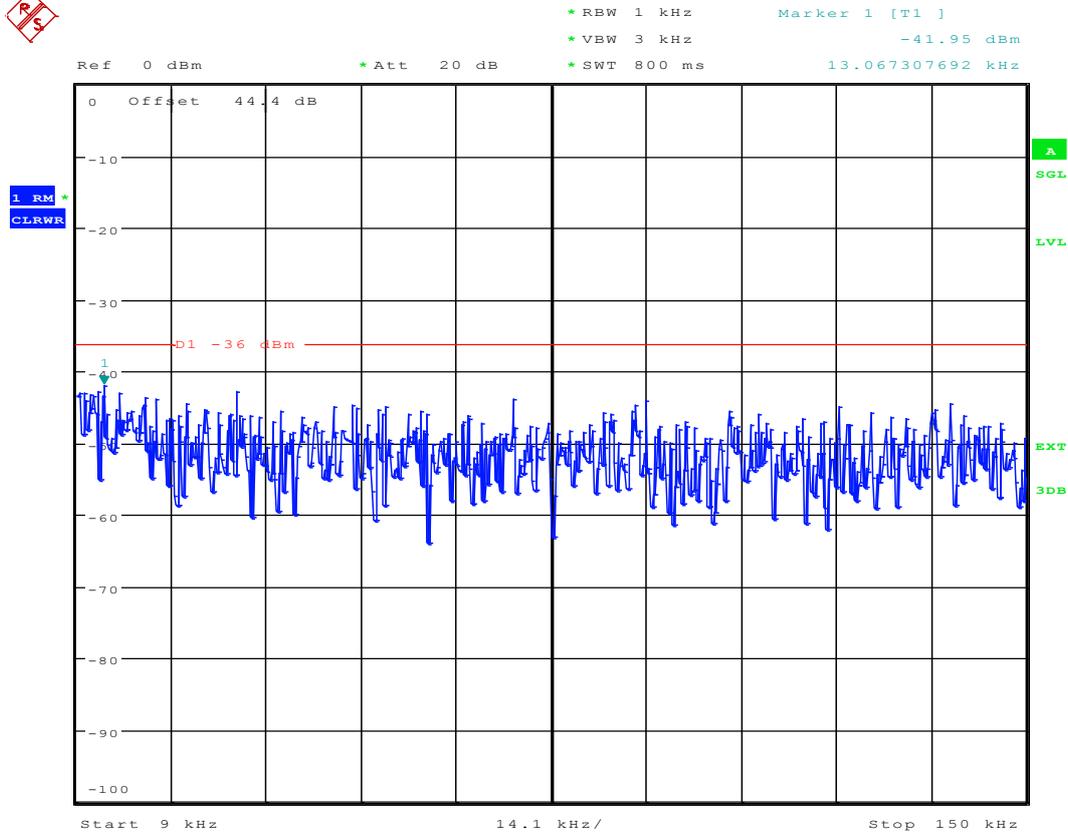
Date: 20.JAN.2015 16:51:51



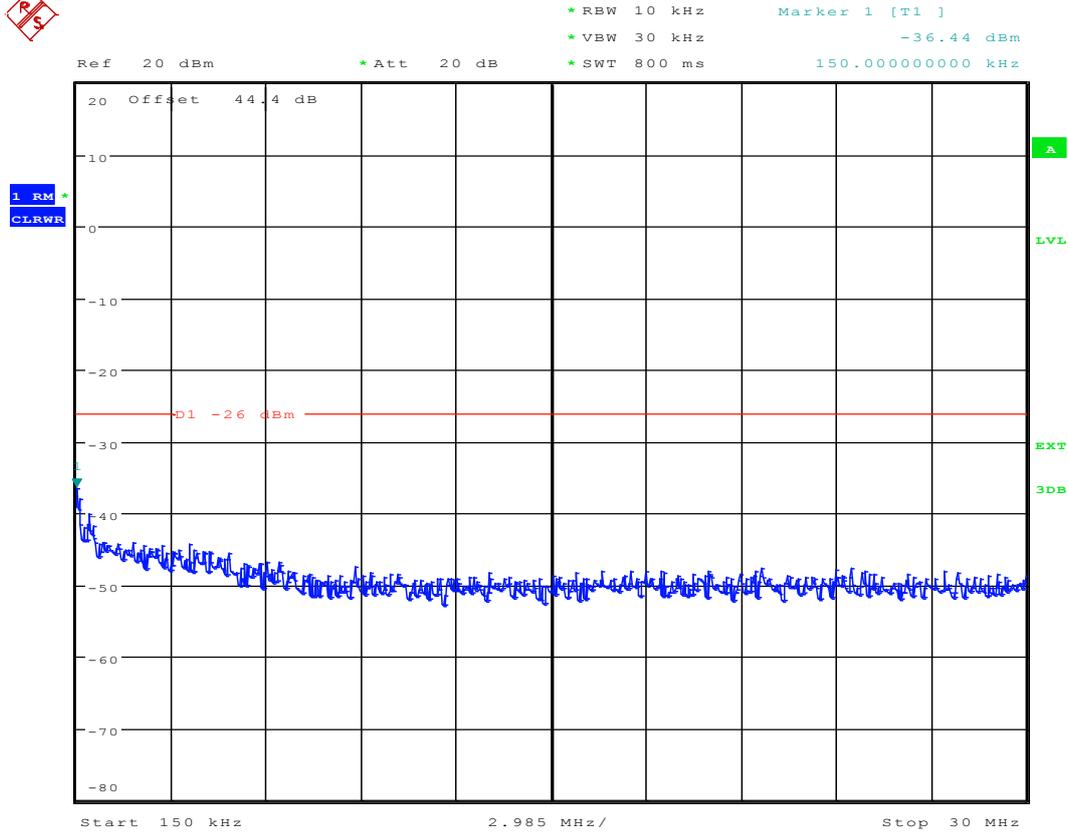
Date: 20.JAN.2015 16:52:03



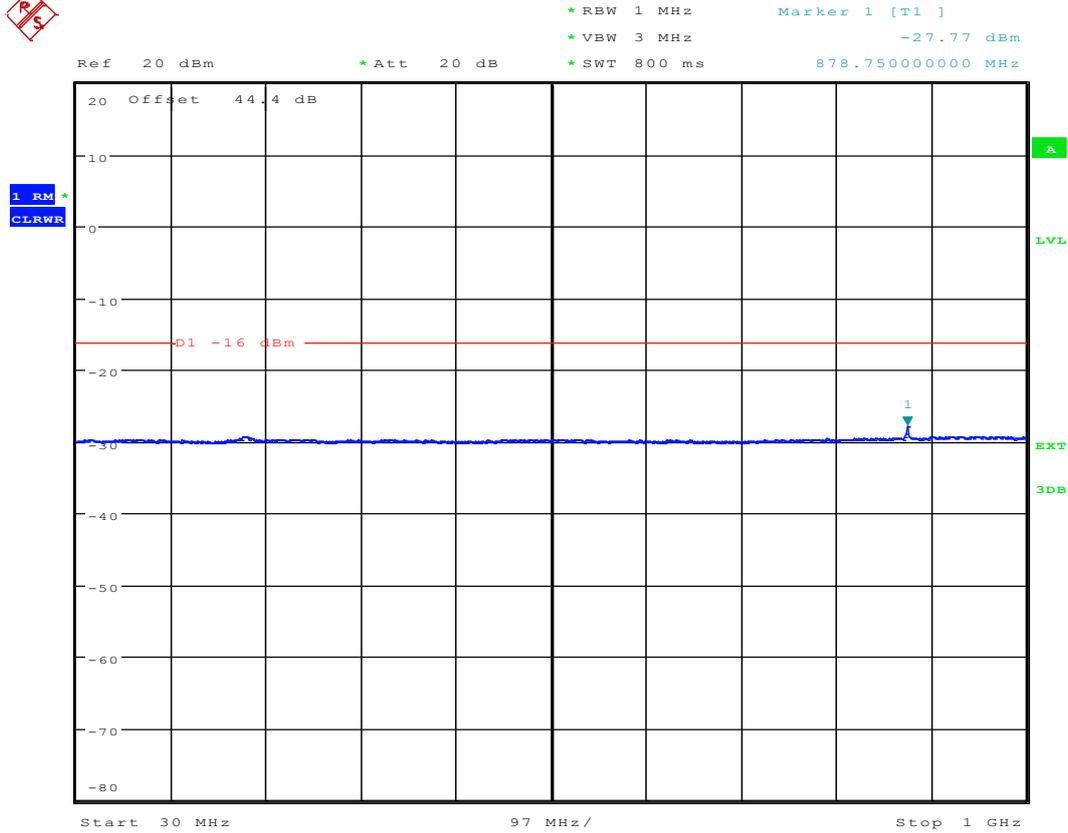
2.11 1U_TM1_M



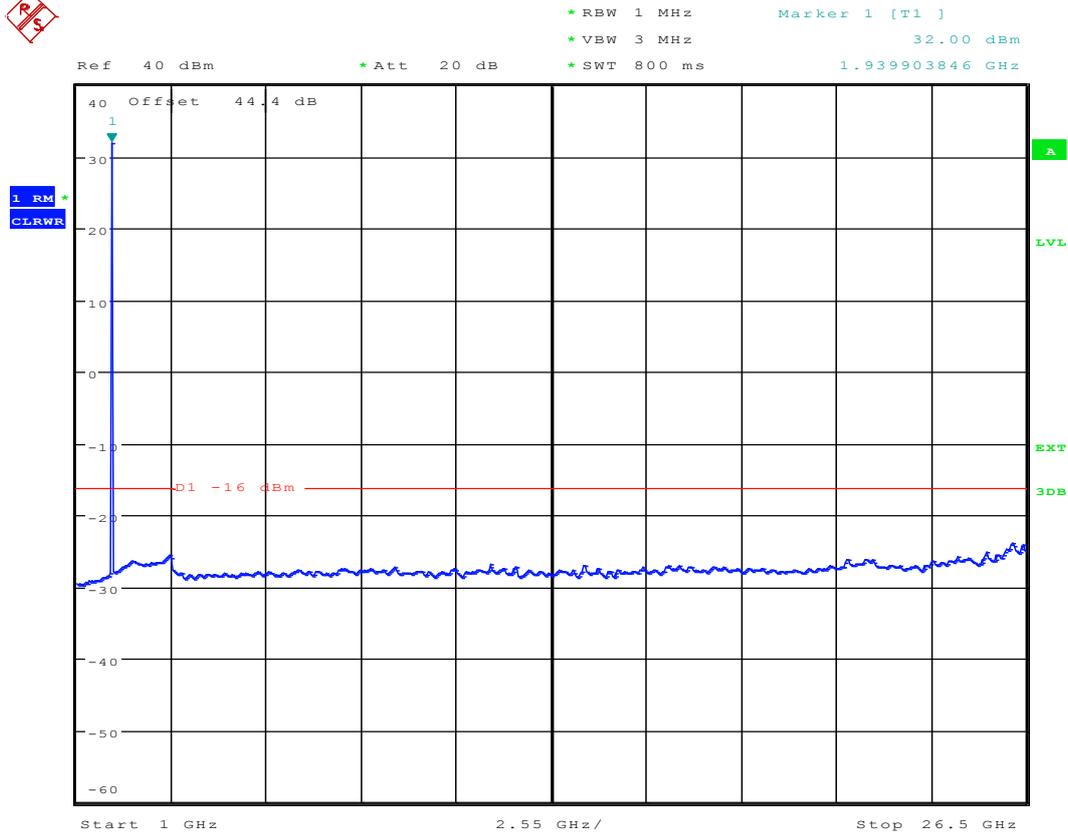
Date: 21.JAN.2015 13:56:30



Date: 20.JAN.2015 16:53:35



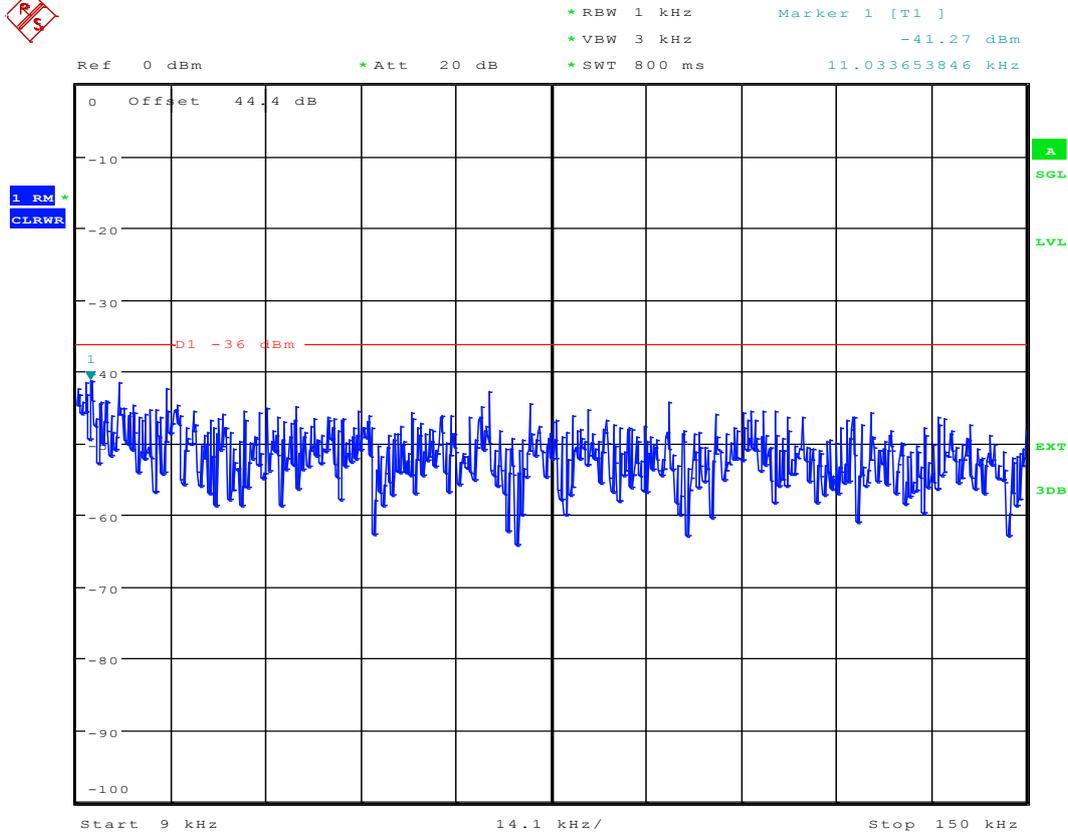
Date: 20.JAN.2015 16:53:47



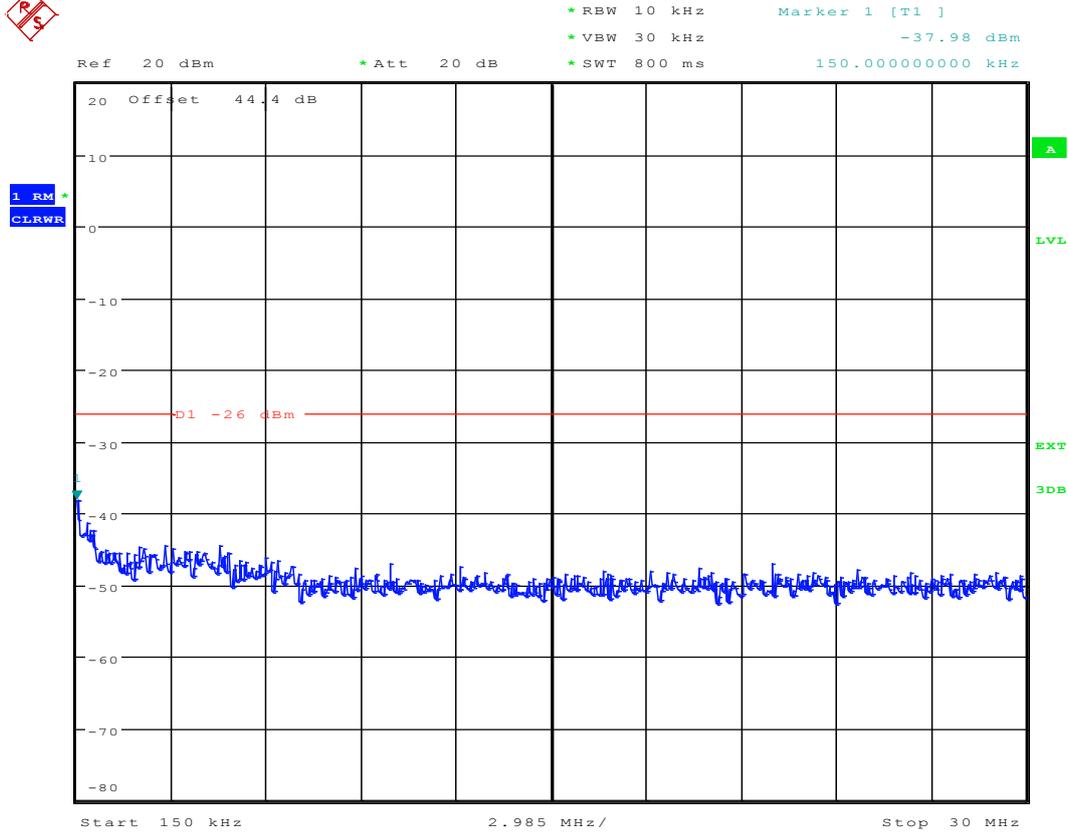
Date: 20.JAN.2015 16:53:59



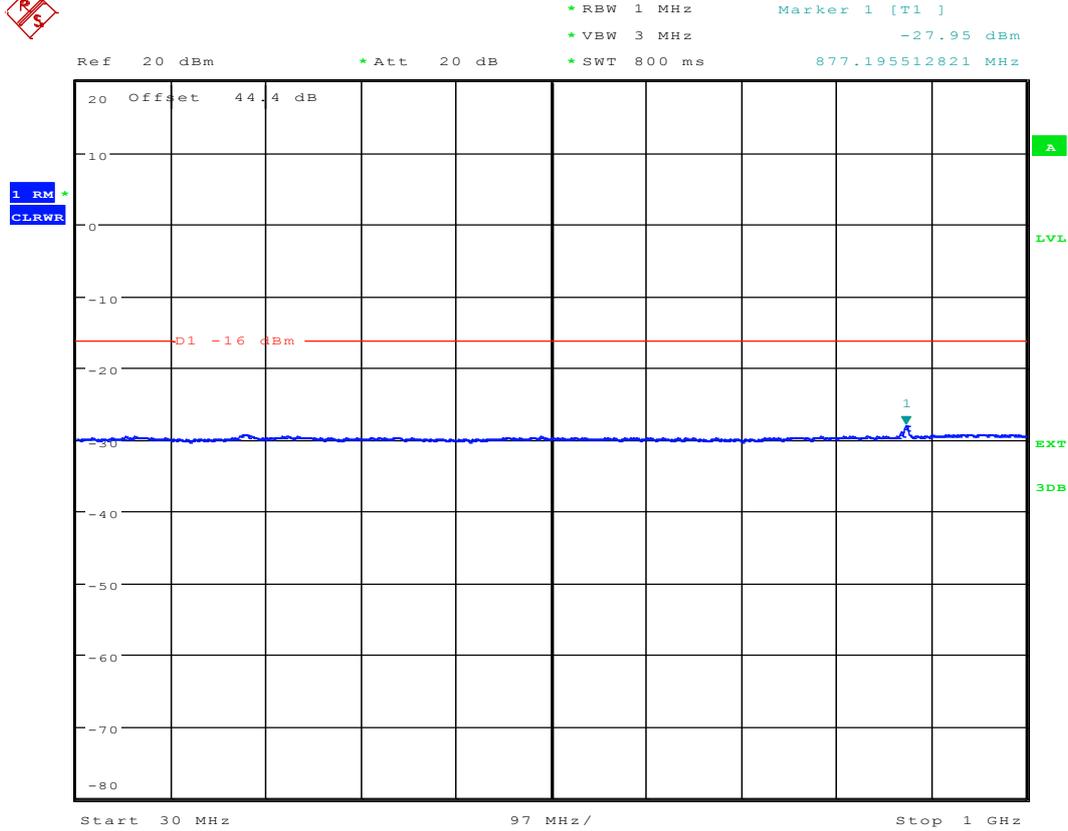
2.12 1U_TM1_T



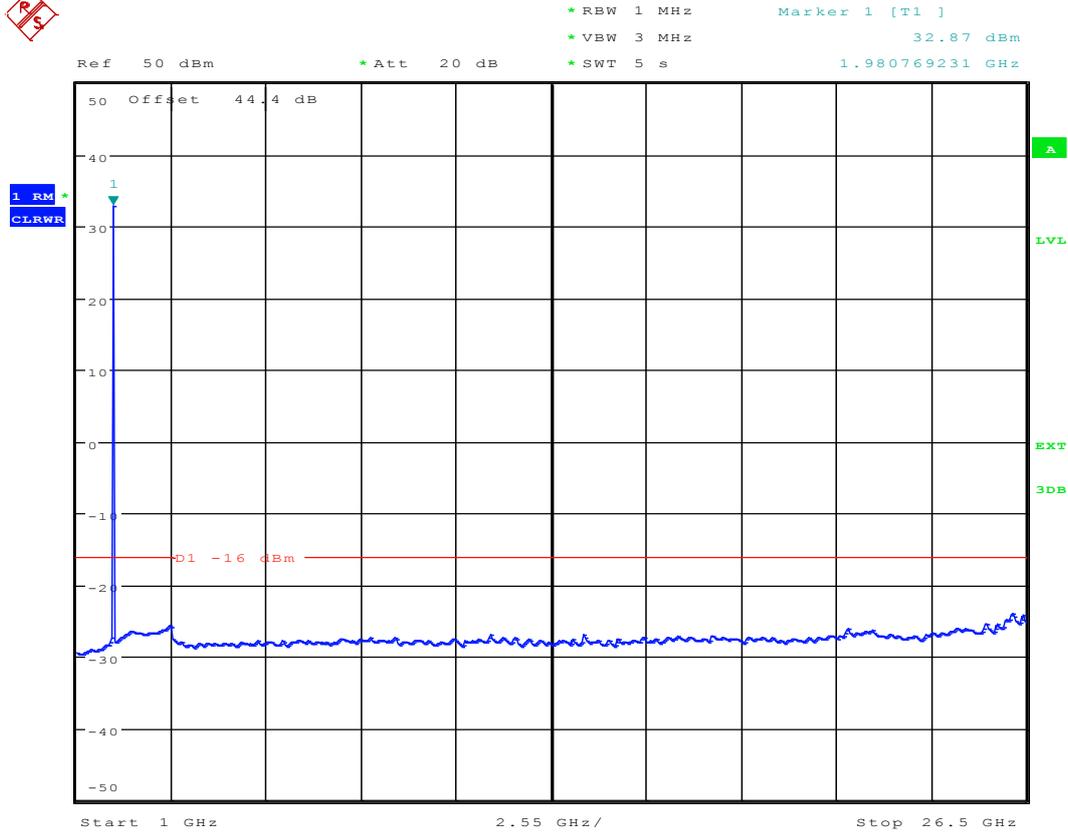
Date: 21.JAN.2015 13:57:11



Date: 20.JAN.2015 16:55:31



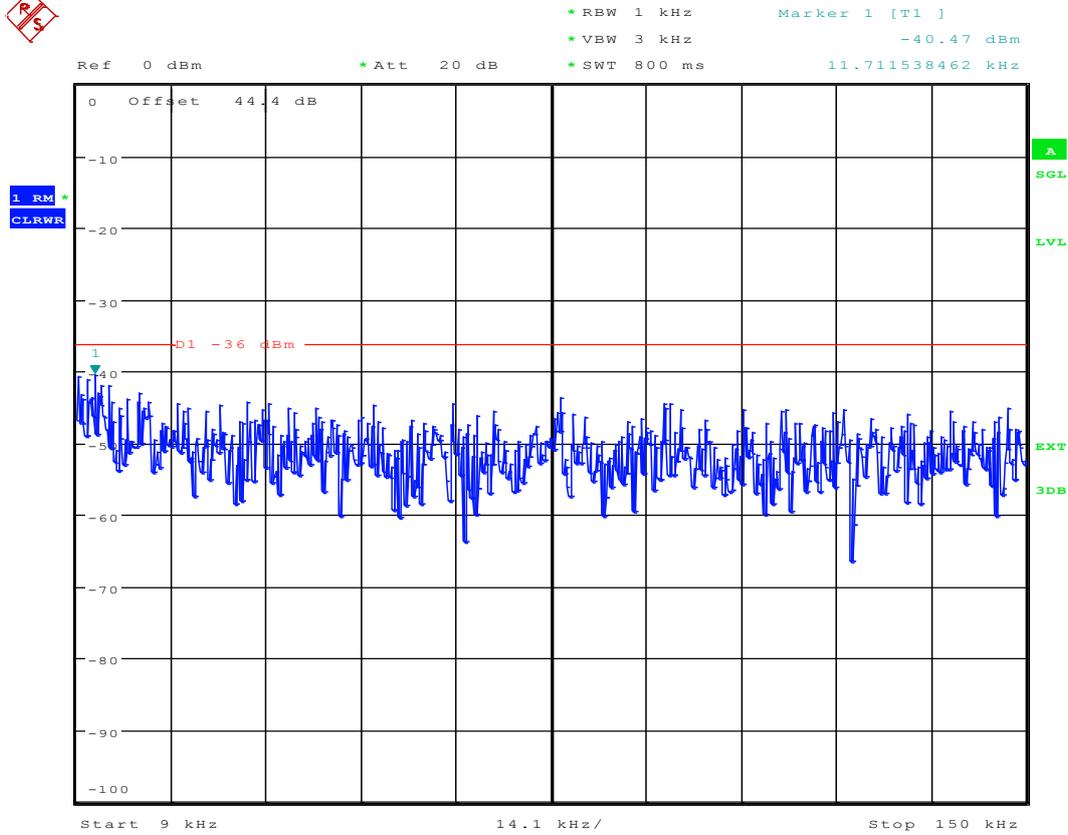
Date: 20.JAN.2015 16:55:42



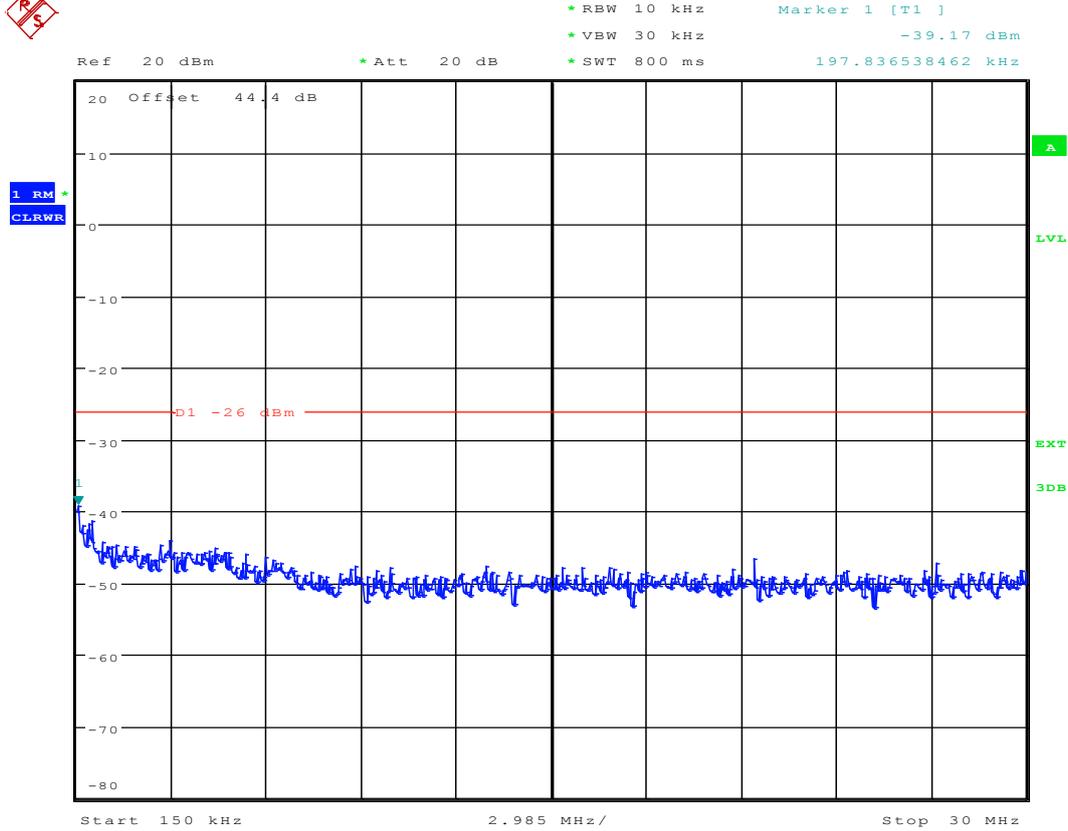
Date: 23.JAN.2015 14:30:39



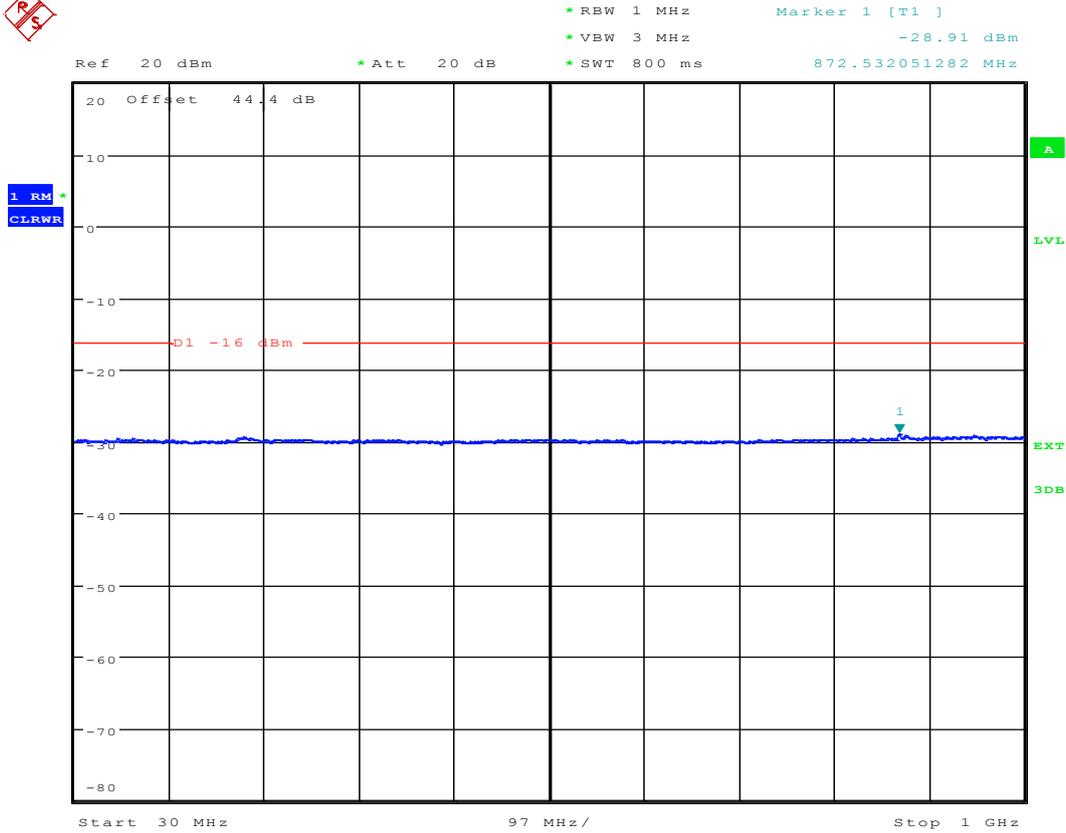
2.13 4U_TM1_B



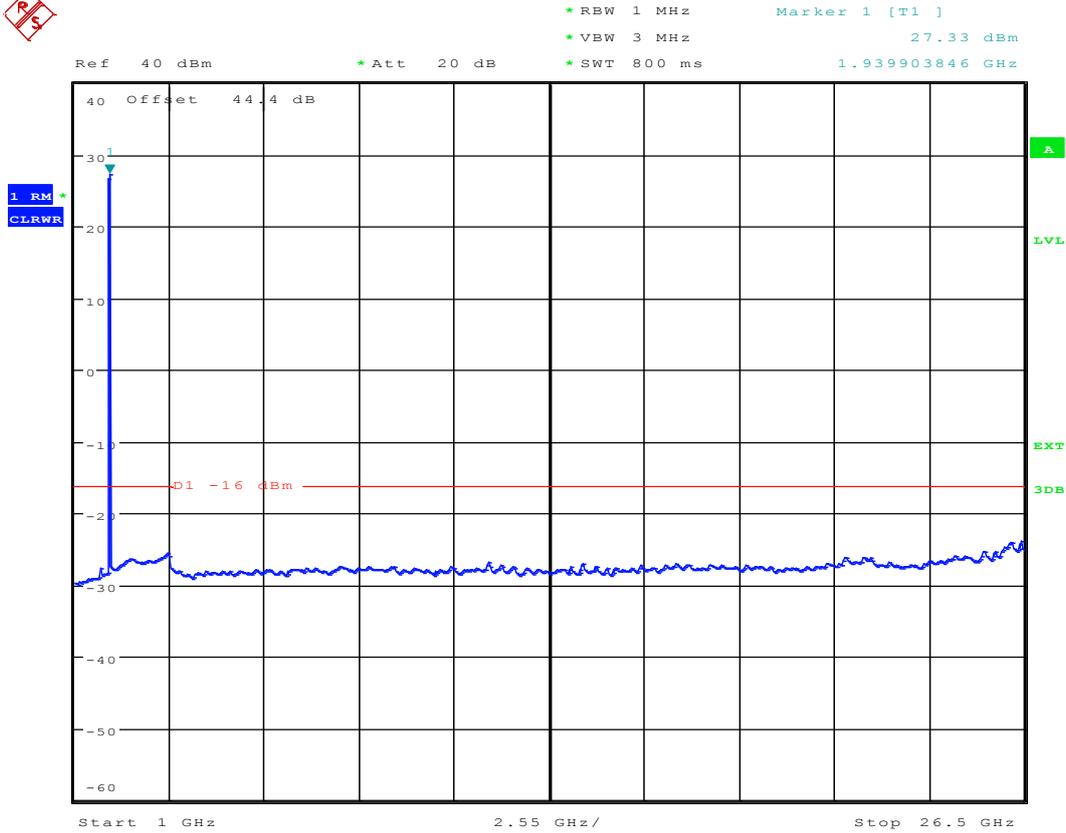
Date: 21.JAN.2015 13:58:04



Date: 20.JAN.2015 16:57:49



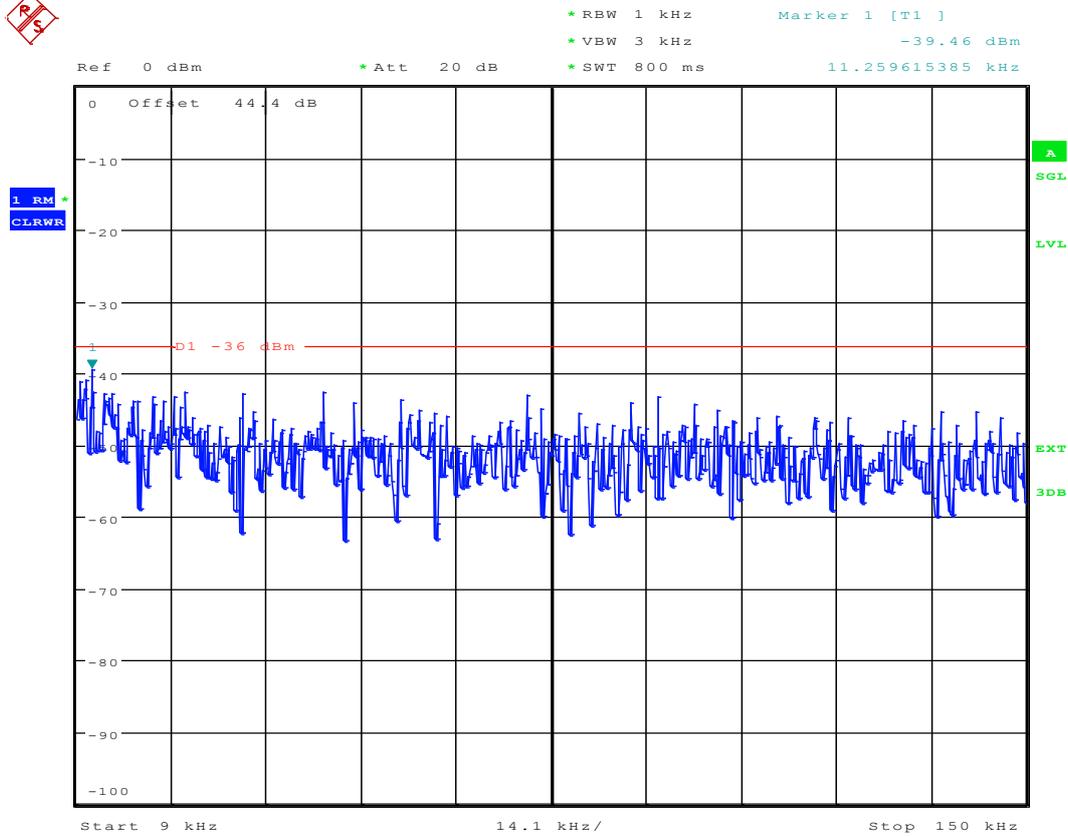
Date: 20.JAN.2015 16:58:00



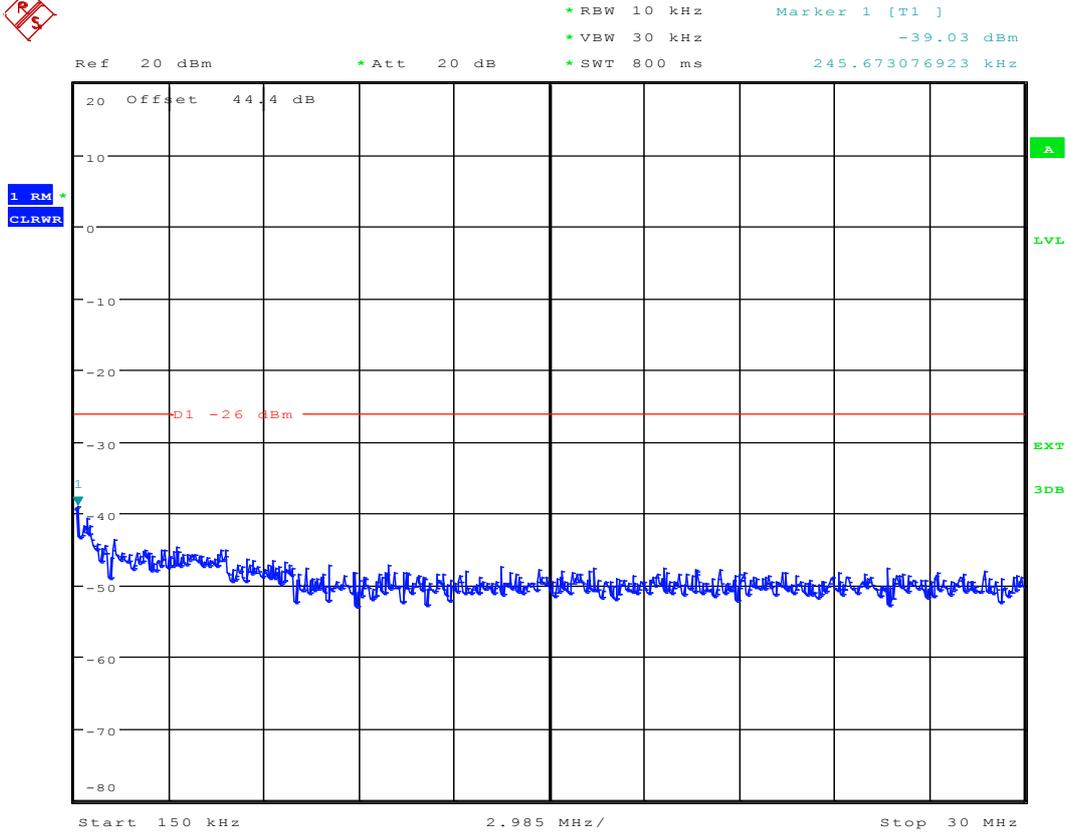
Date: 20.JAN.2015 16:58:12



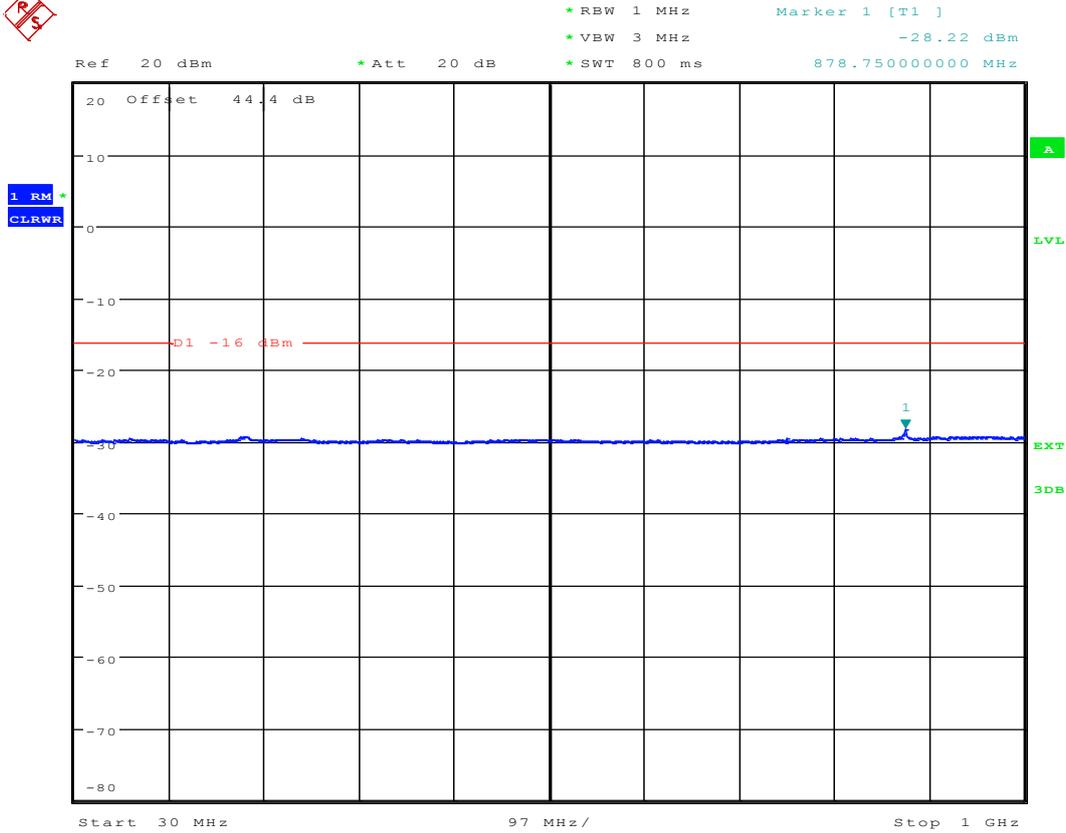
2.14 4U_TM1_M



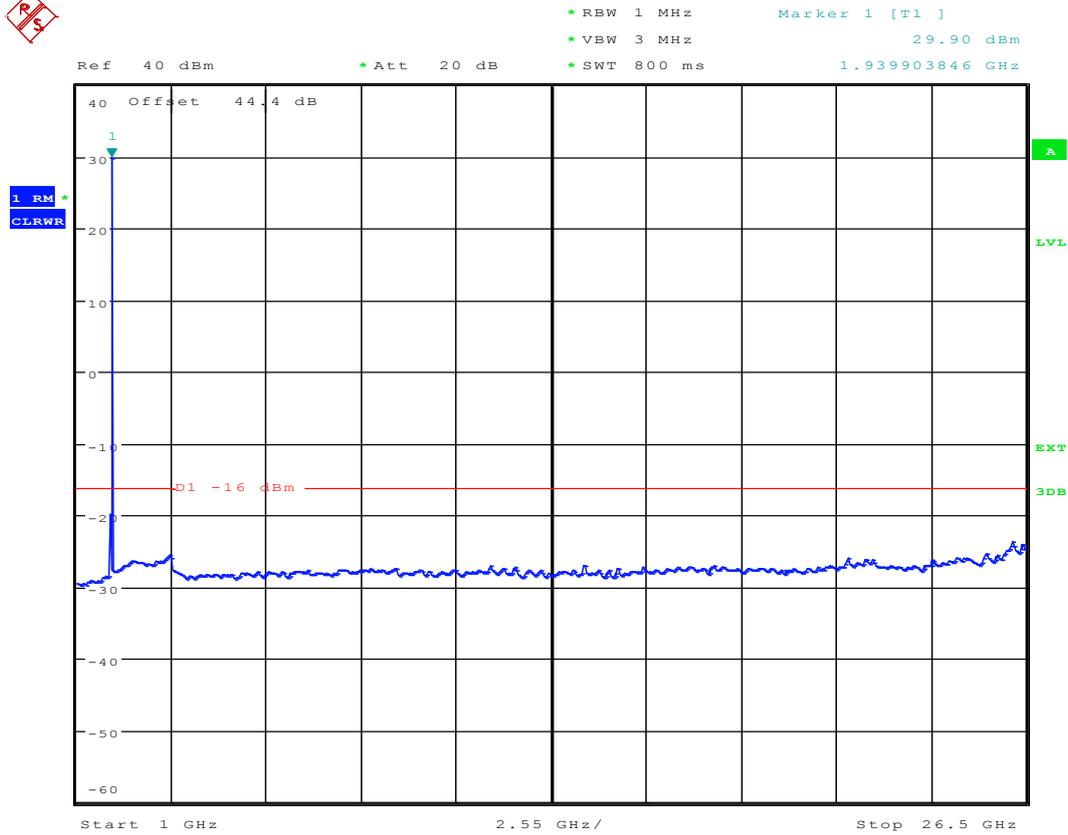
Date: 21.JAN.2015 13:59:39



Date: 20.JAN.2015 17:00:03



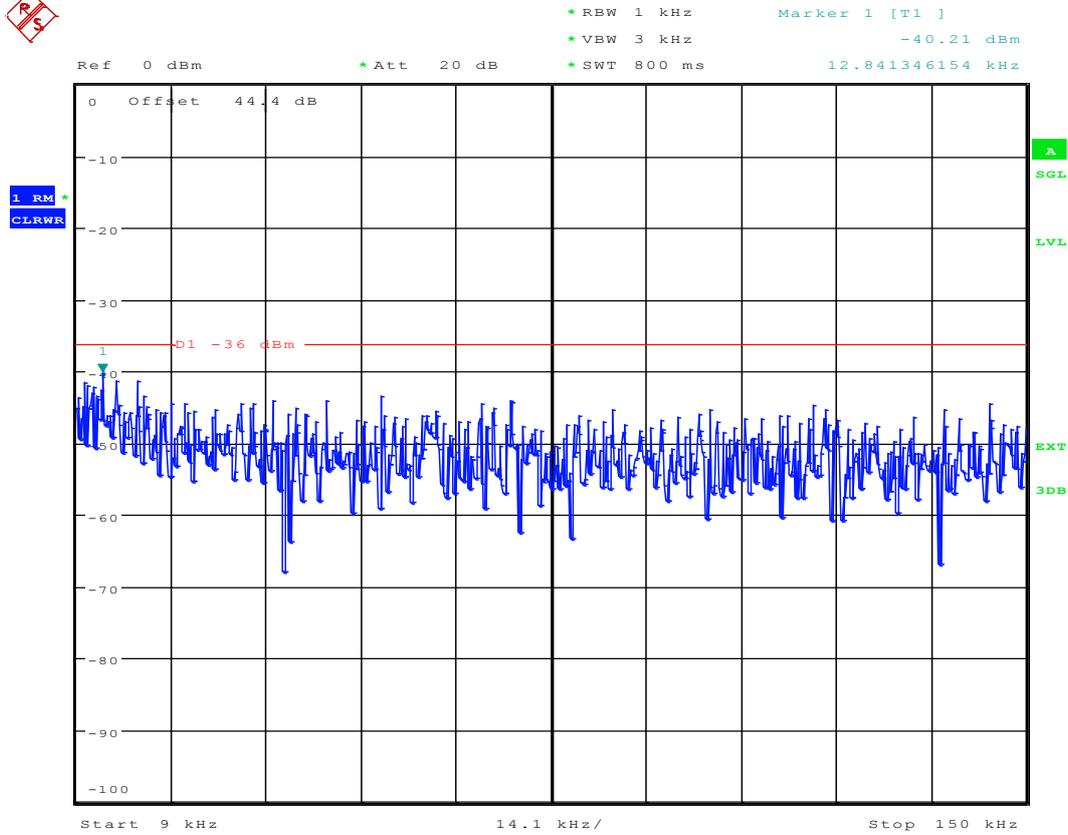
Date: 20.JAN.2015 17:00:15



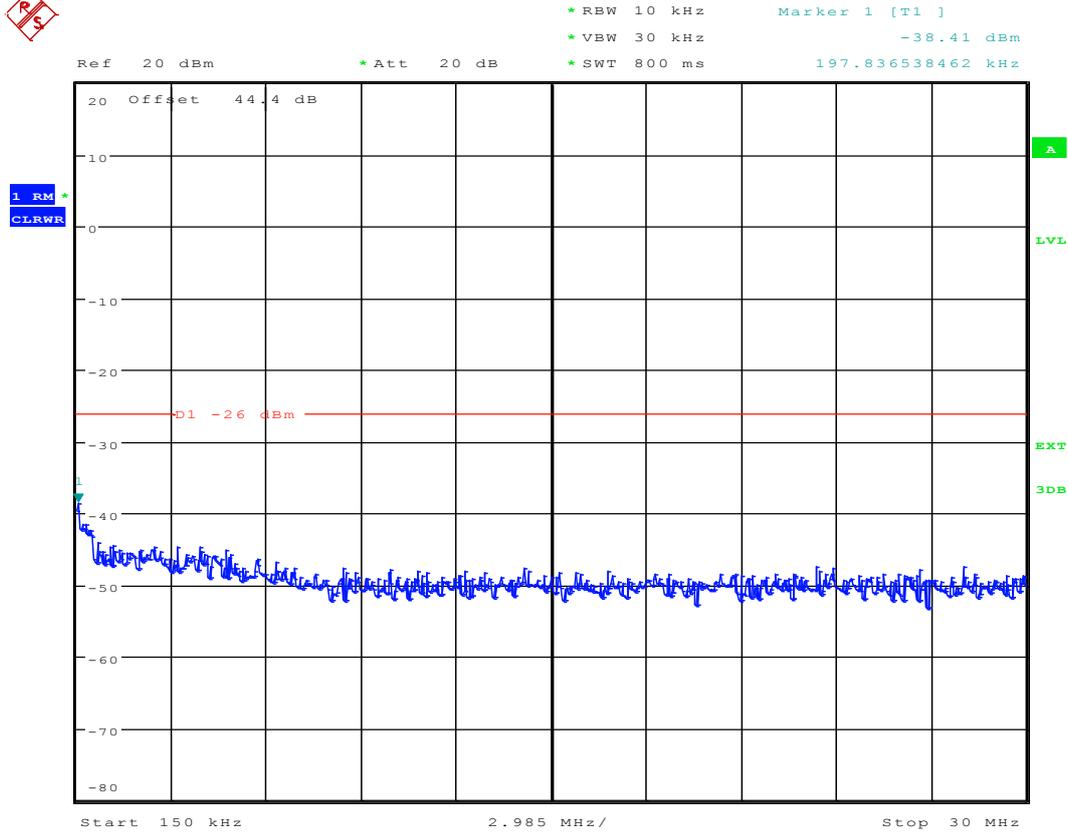
Date: 20.JAN.2015 17:00:26



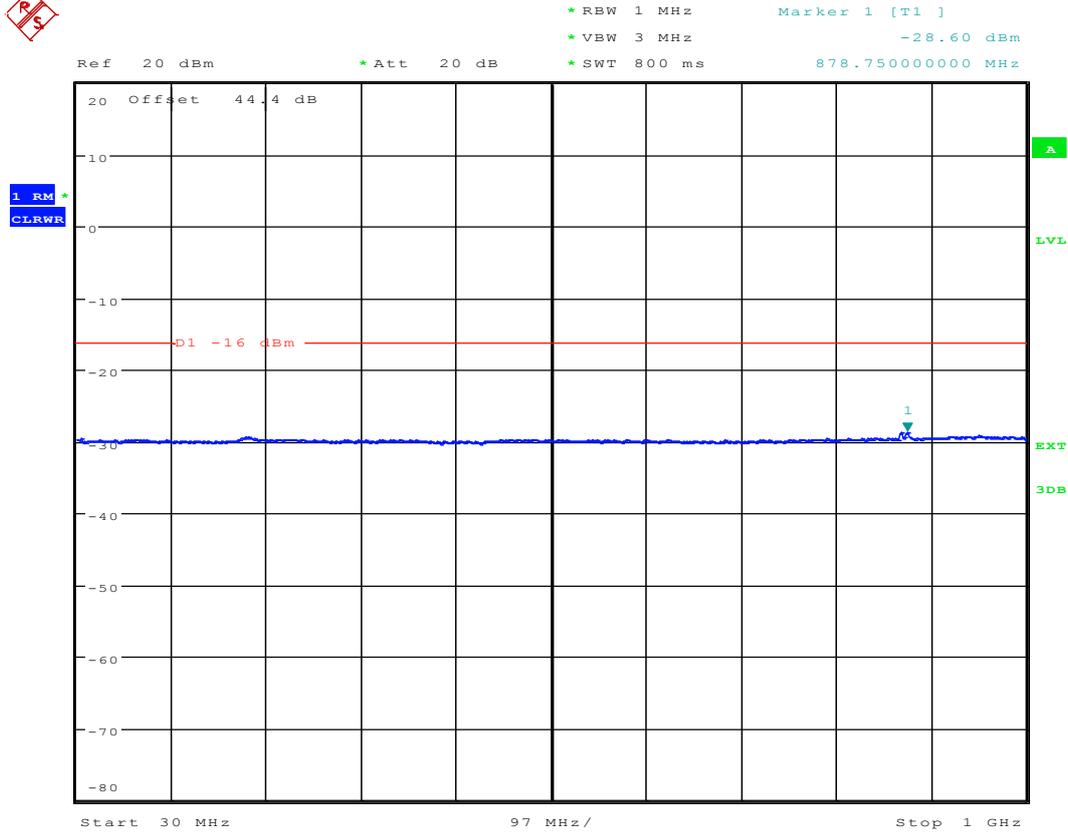
2.15 4U_TM1_T



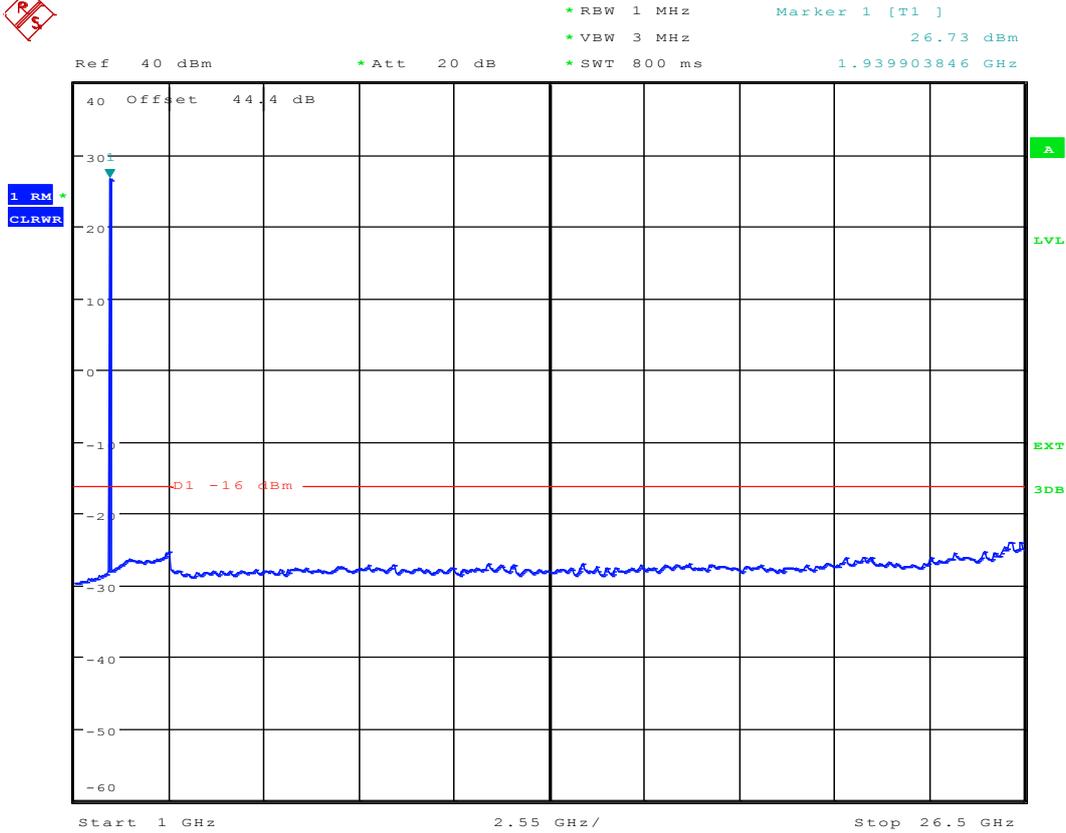
Date: 21.JAN.2015 14:00:40



Date: 20.JAN.2015 17:02:17



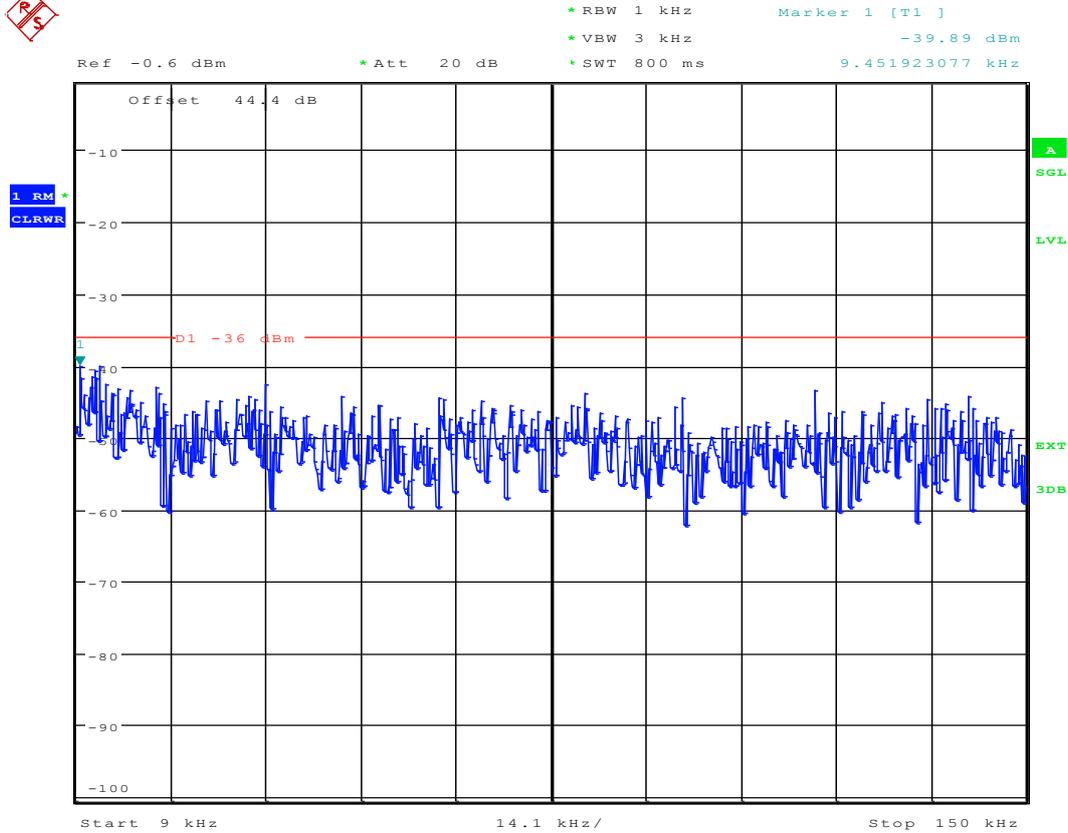
Date: 20.JAN.2015 17:02:28



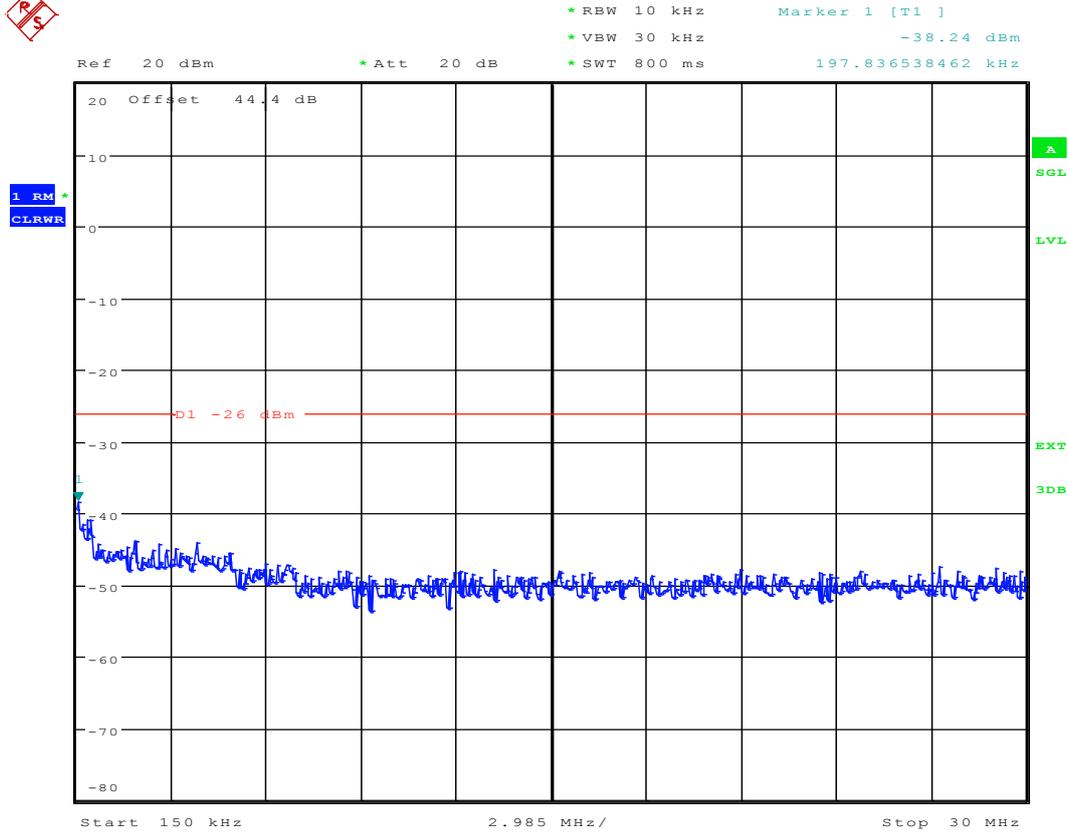
Date: 20.JAN.2015 17:02:39



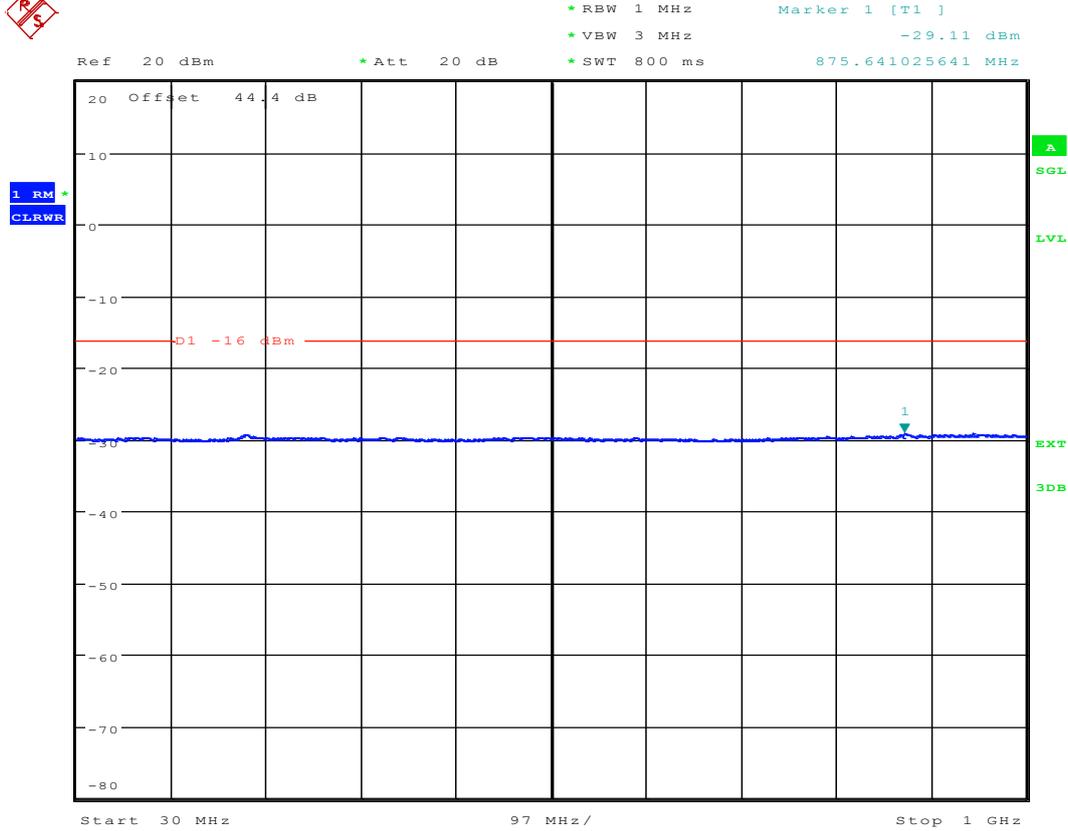
2.16 1L_1.4M_TM1_B



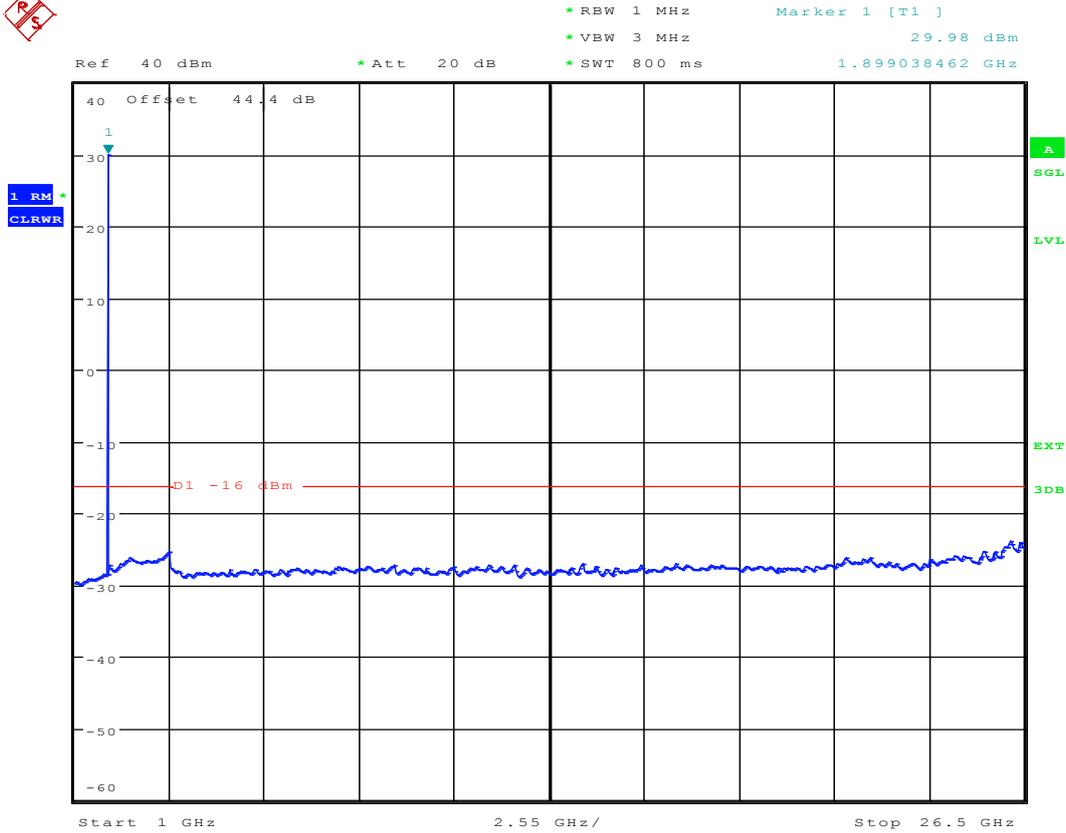
Date: 20.JAN.2015 11:13:19



Date: 20.JAN.2015 11:13:39



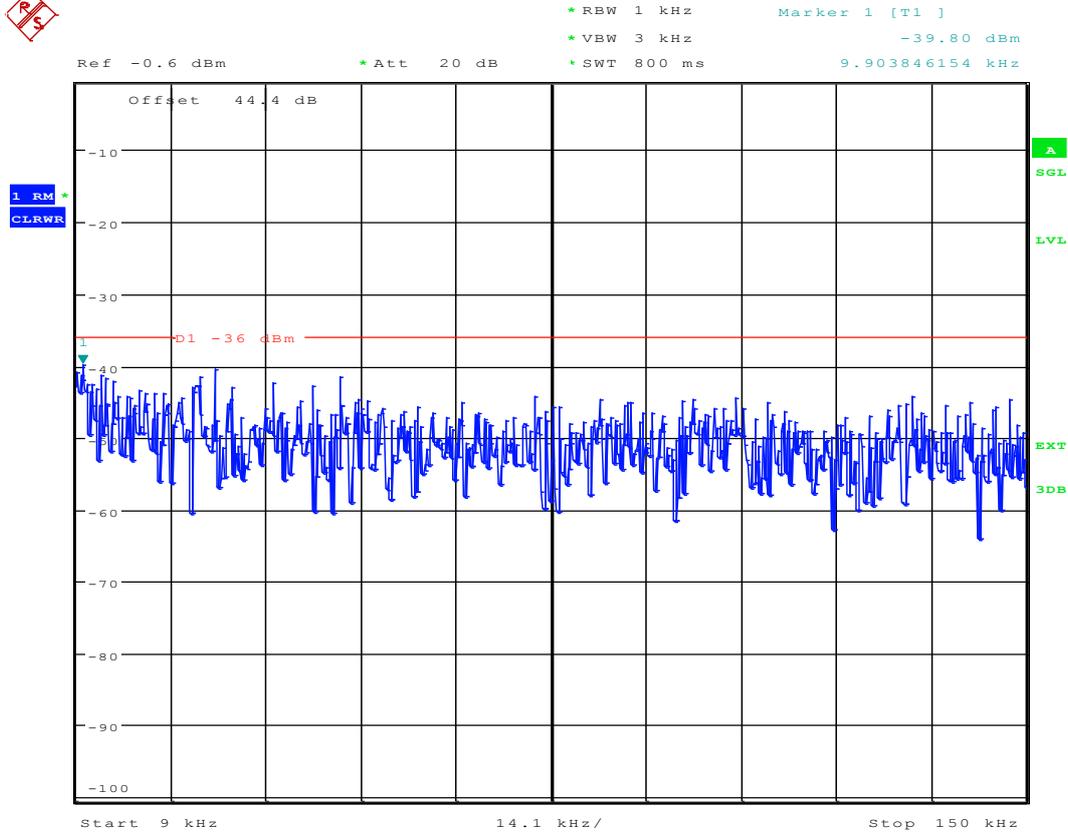
Date: 20.JAN.2015 11:13:59



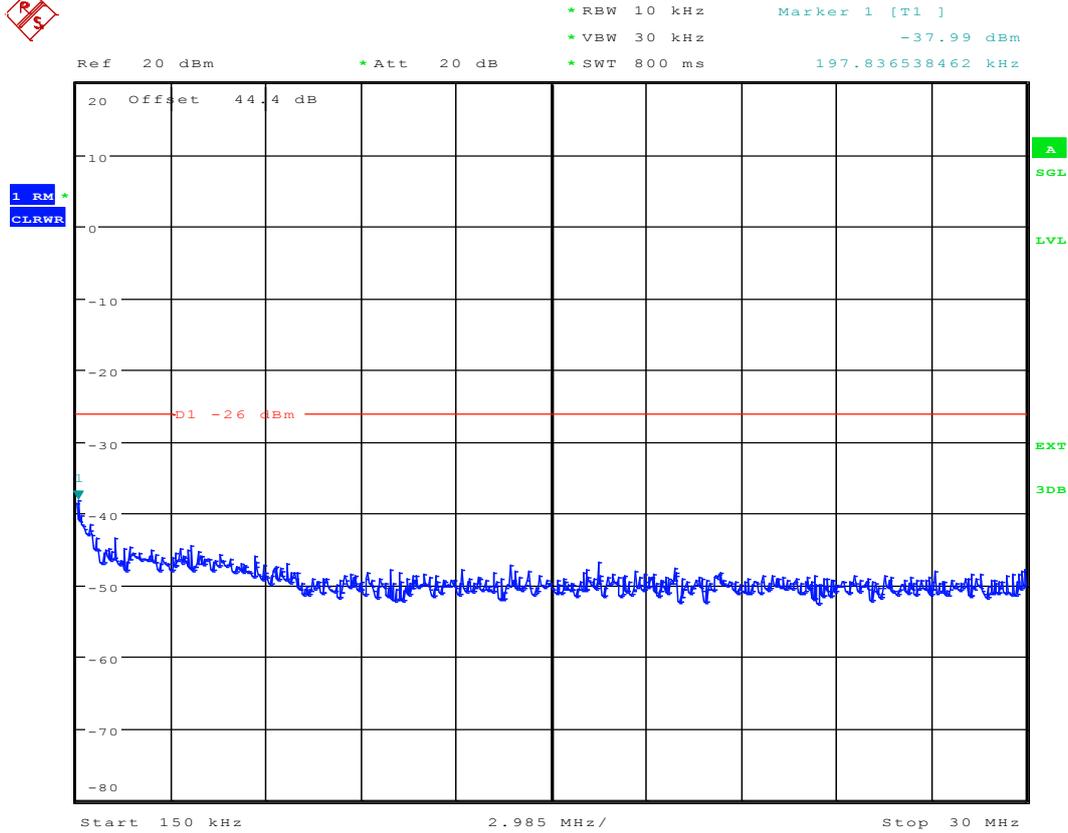
Date: 20.JAN.2015 11:14:18



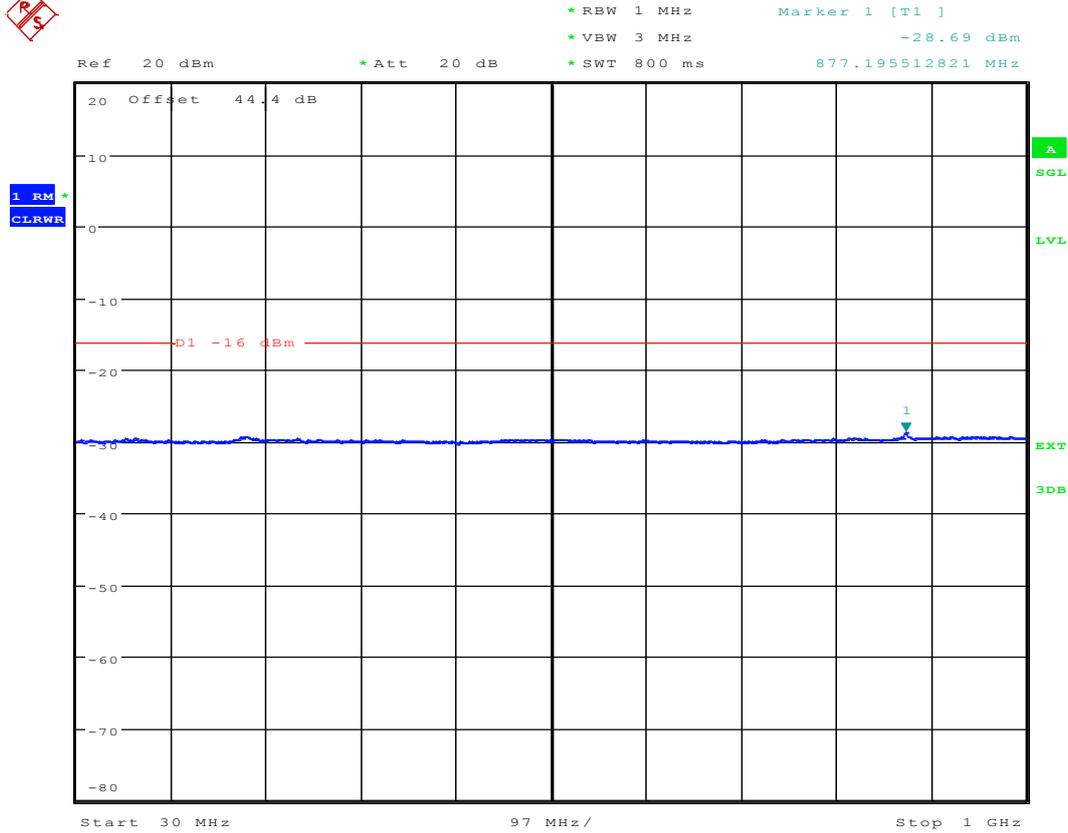
2.17 1L_1.4M_TM1_M



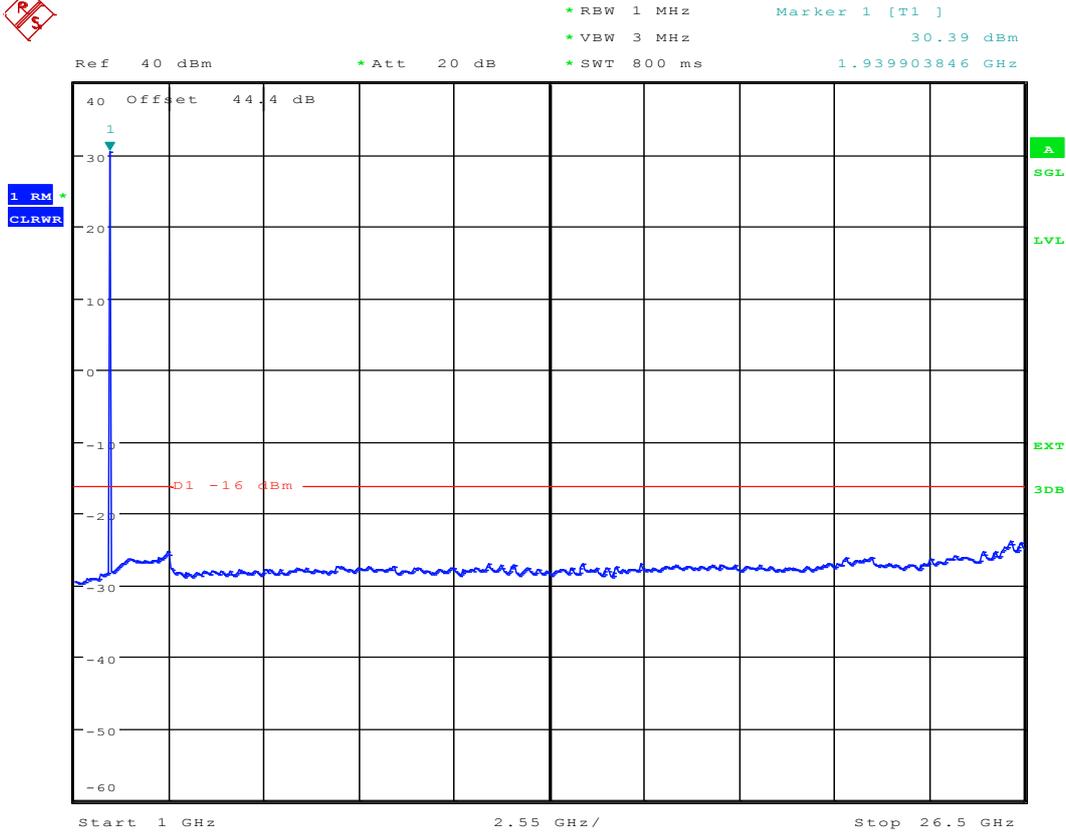
Date: 20.JAN.2015 11:15:52



Date: 20.JAN.2015 11:16:12



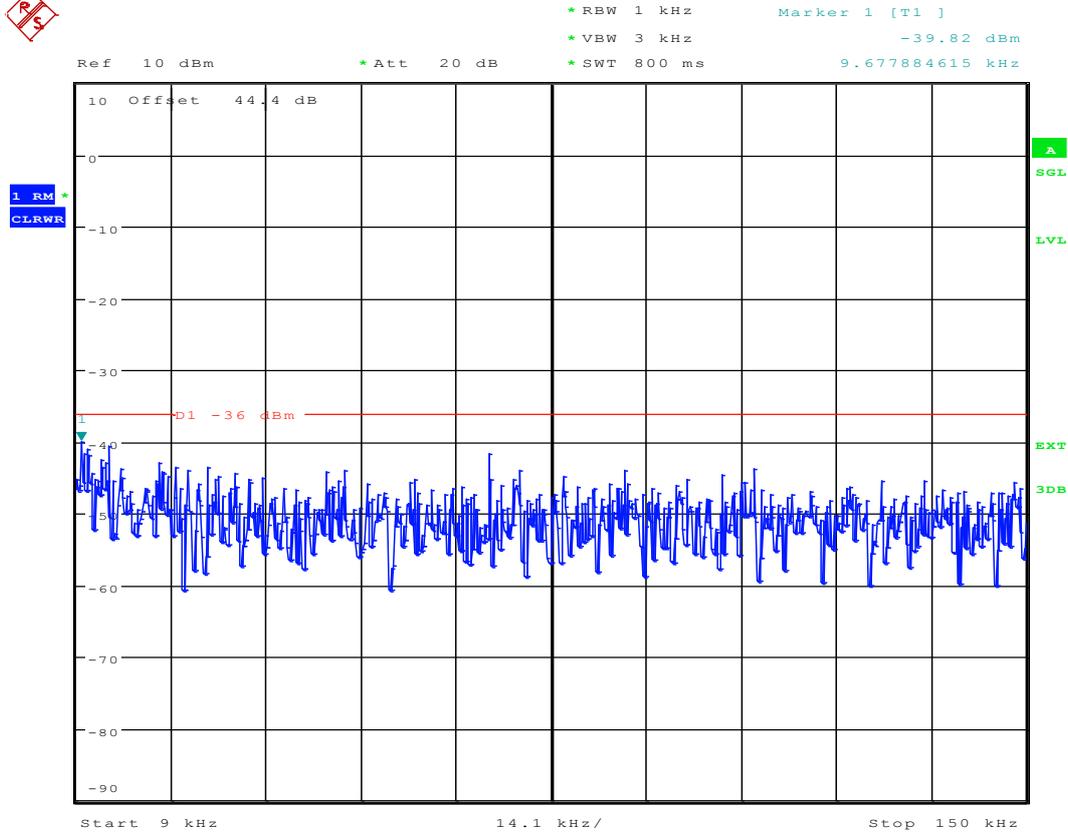
Date: 20.JAN.2015 11:16:31



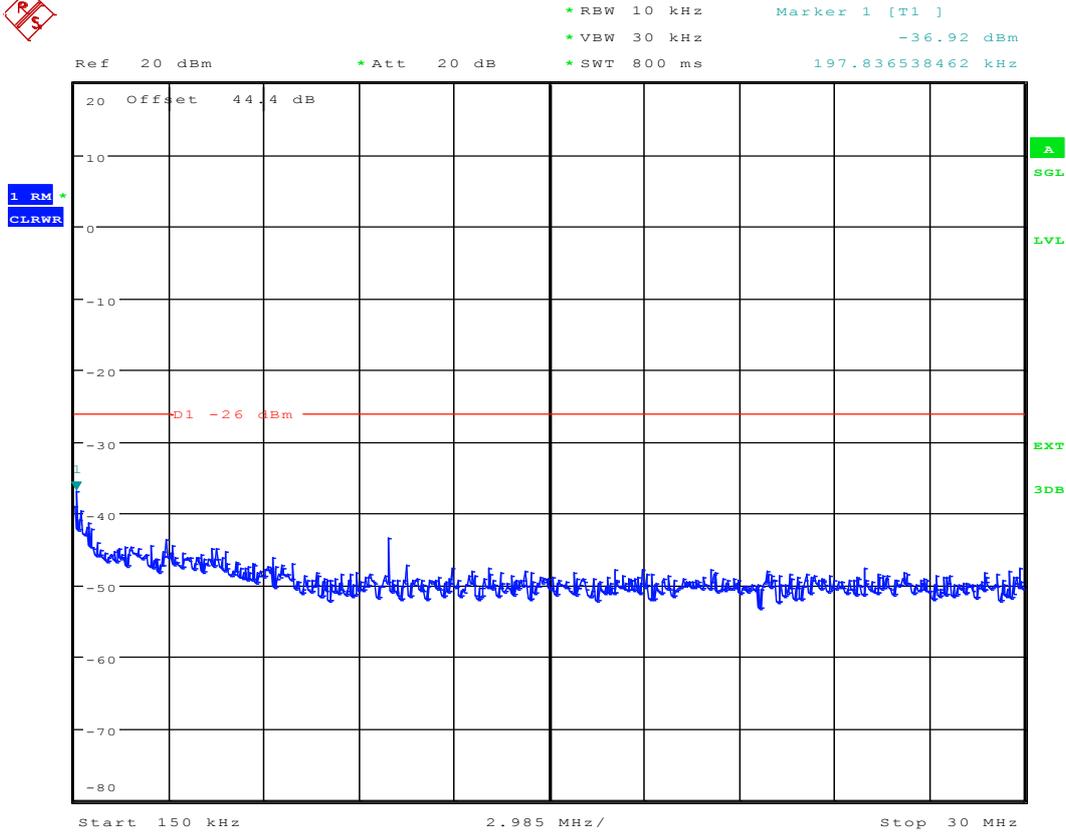
Date: 20.JAN.2015 11:16:51



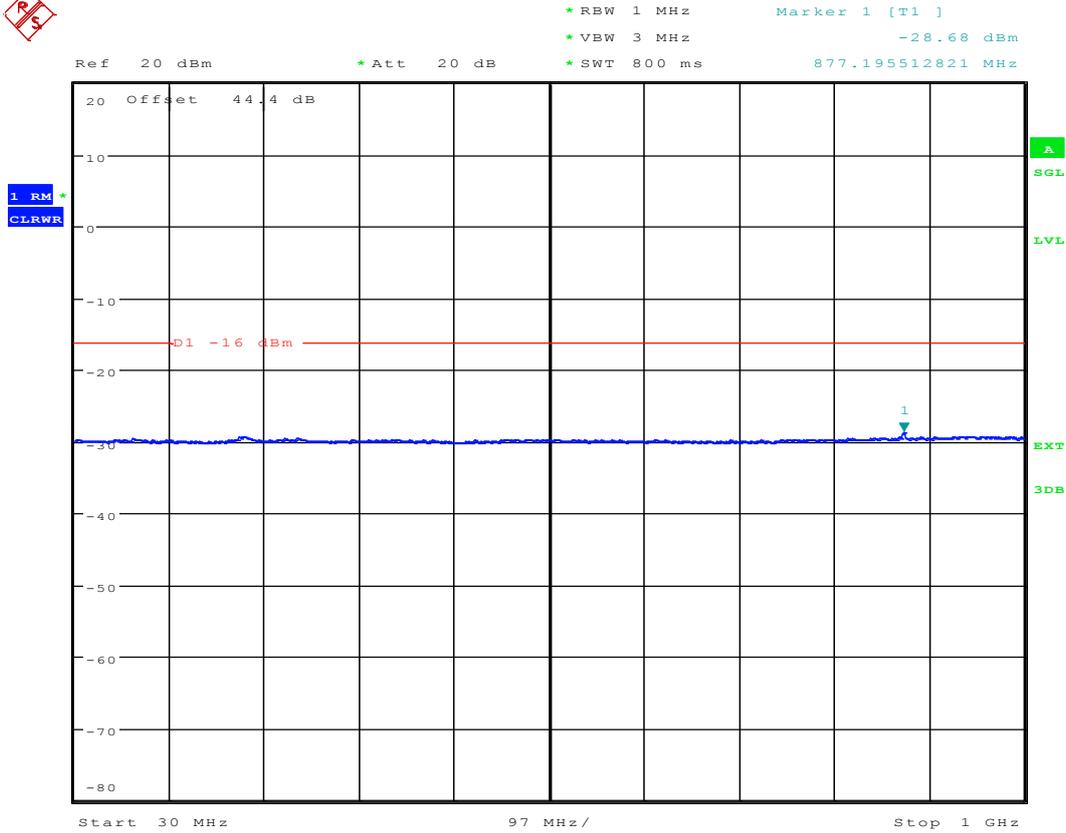
2.18 1L_1.4M_TM1_T



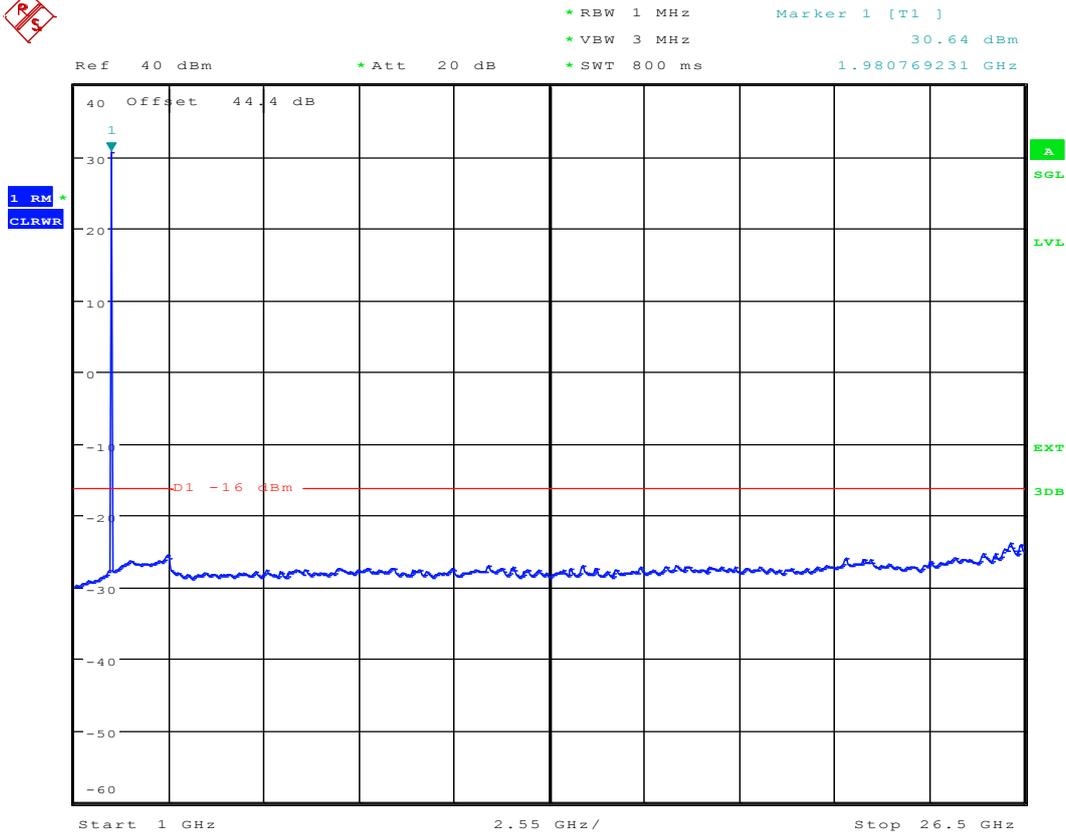
Date: 23.JAN.2015 14:33:26



Date: 20.JAN.2015 11:18:44



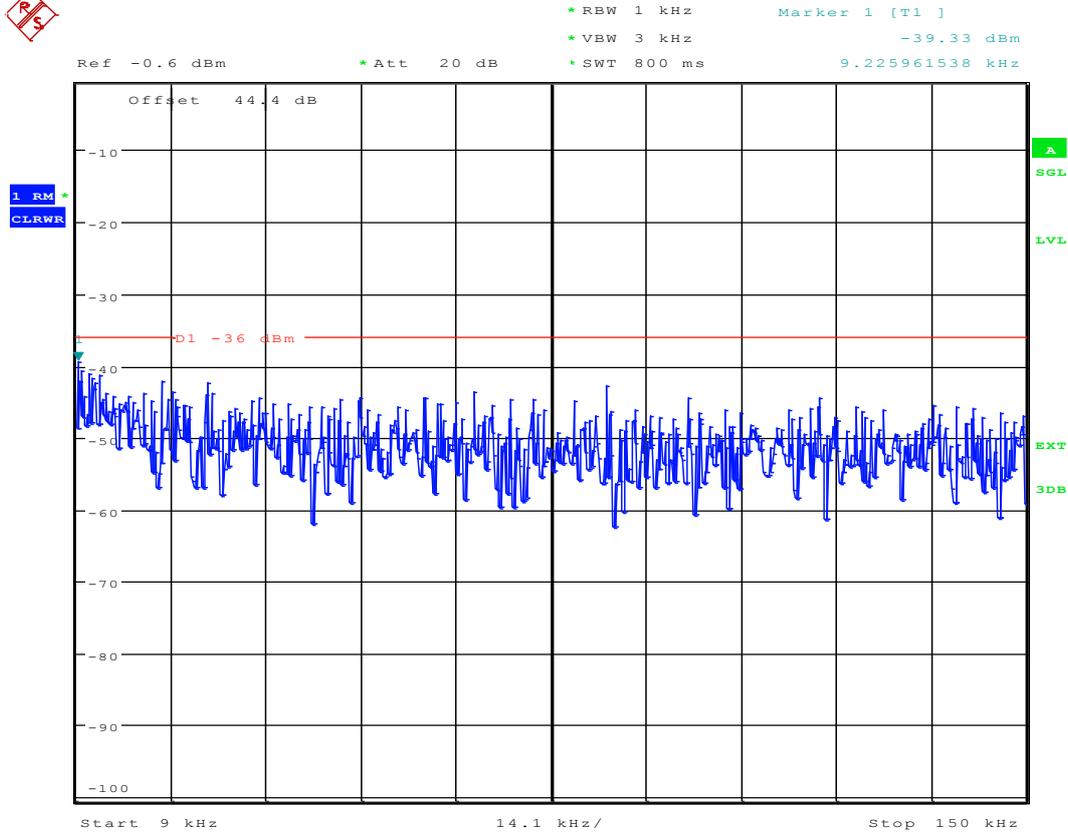
Date: 20.JAN.2015 11:19:03



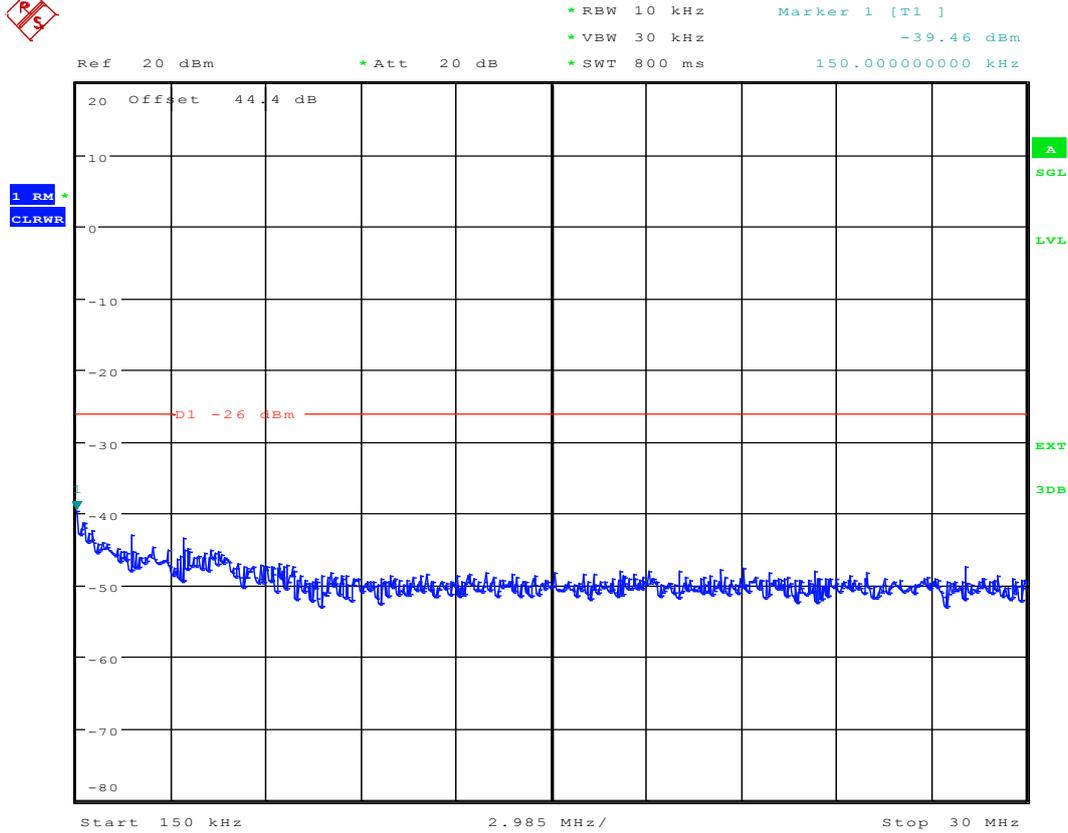
Date: 20.JAN.2015 11:19:23



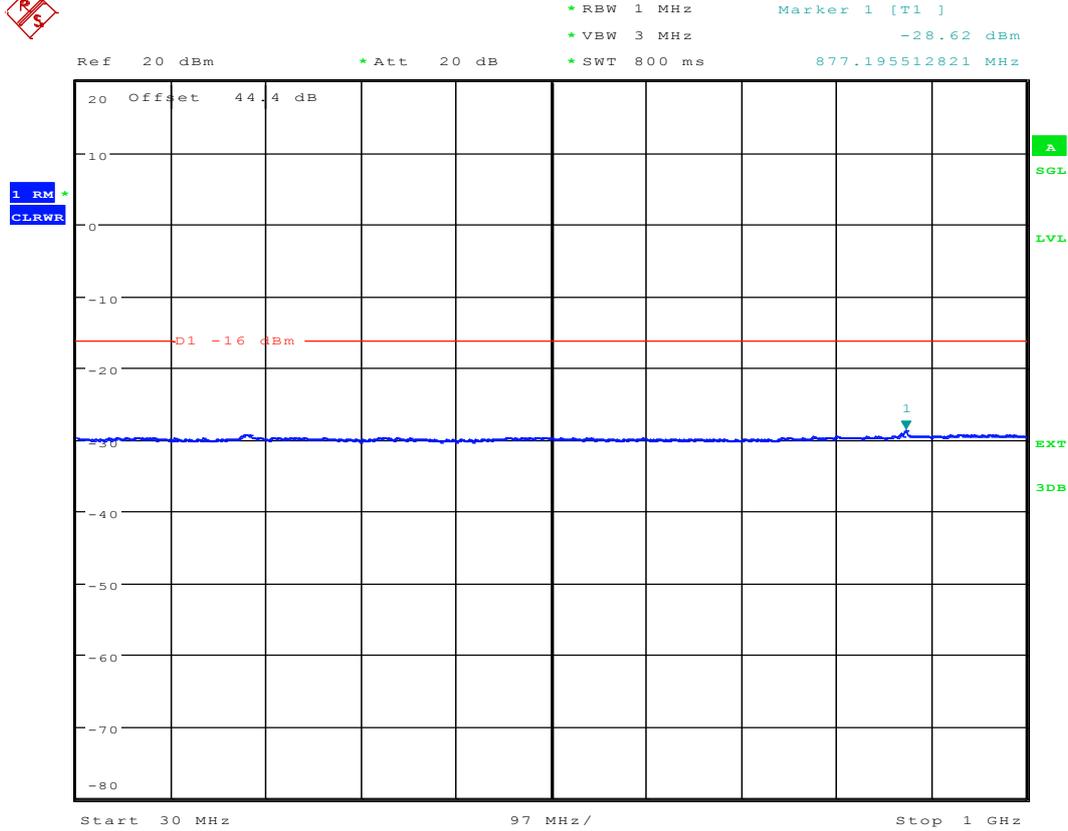
2.19 1L_3M_TM1_B



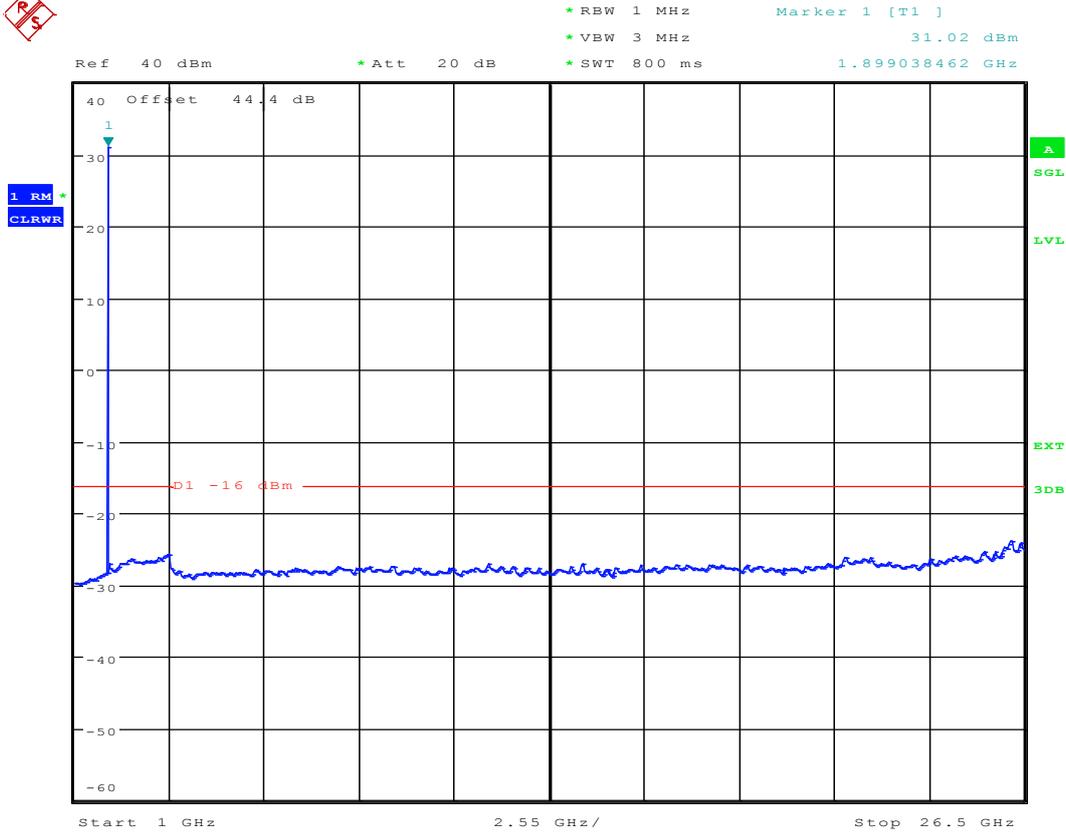
Date: 20.JAN.2015 11:25:27



Date: 20.JAN.2015 11:25:48



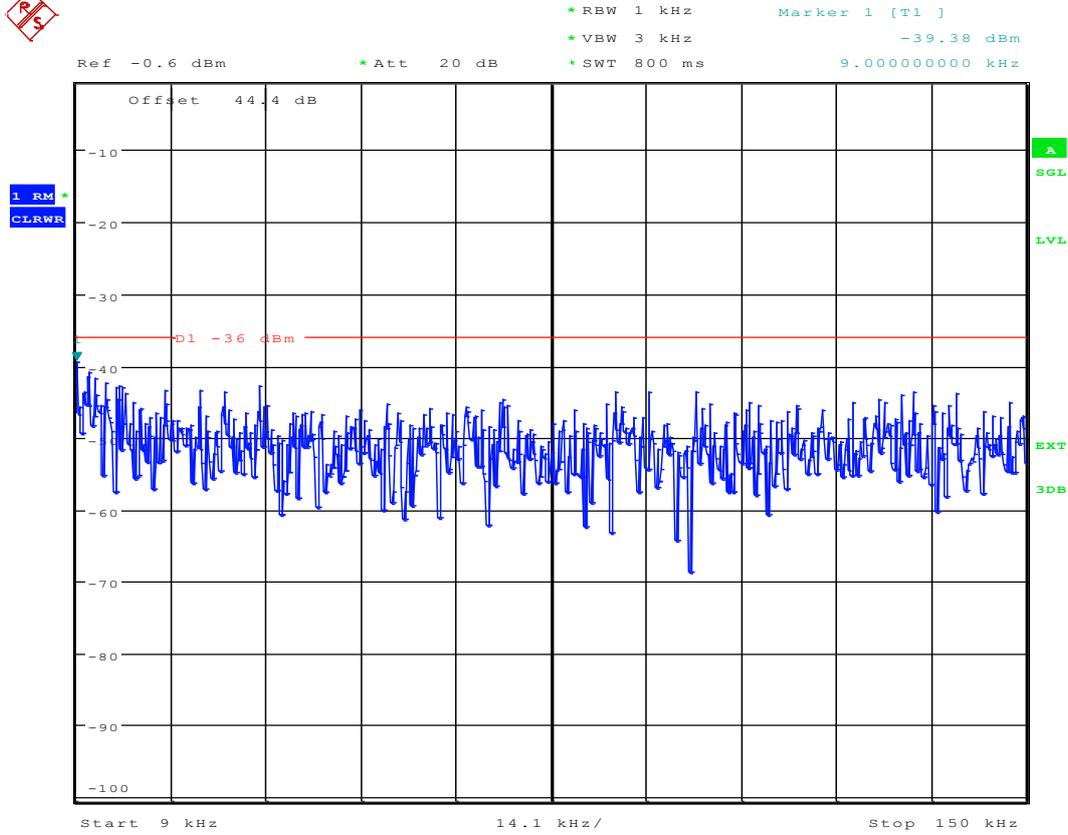
Date: 20.JAN.2015 11:26:07



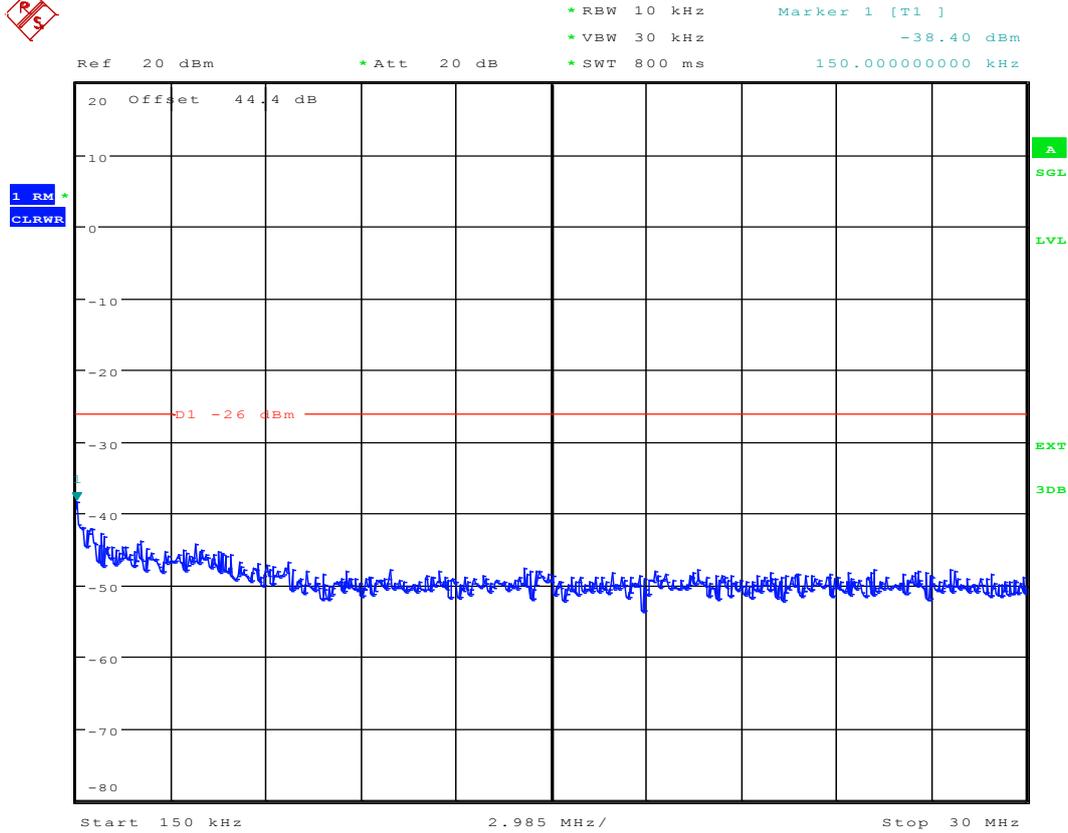
Date: 20.JAN.2015 11:26:26



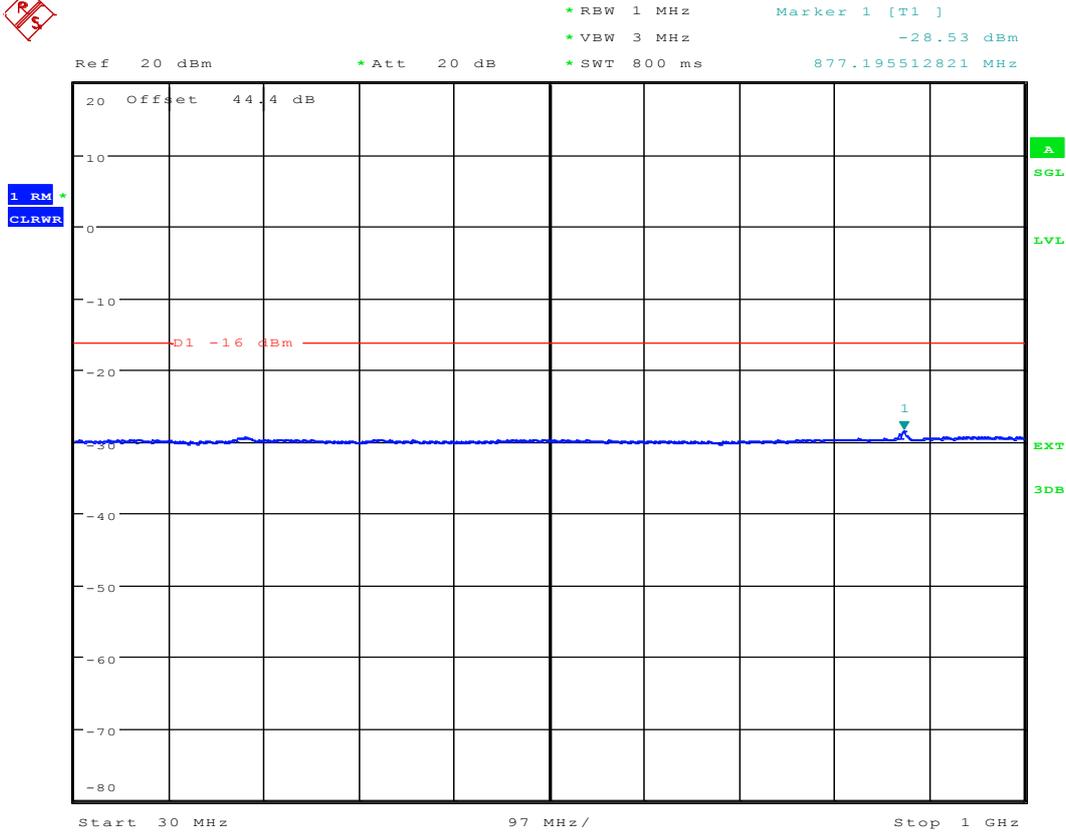
2.20 1L_3M_TM1_M



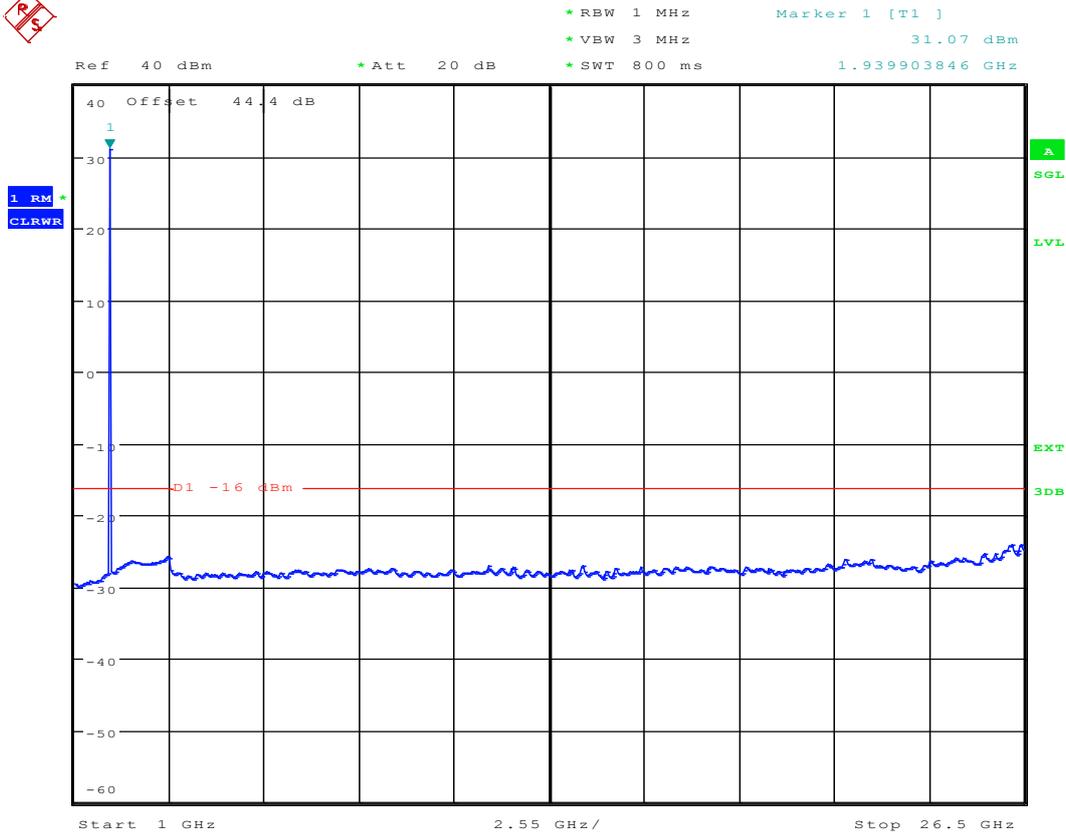
Date: 20.JAN.2015 11:28:00



Date: 20.JAN.2015 11:28:21



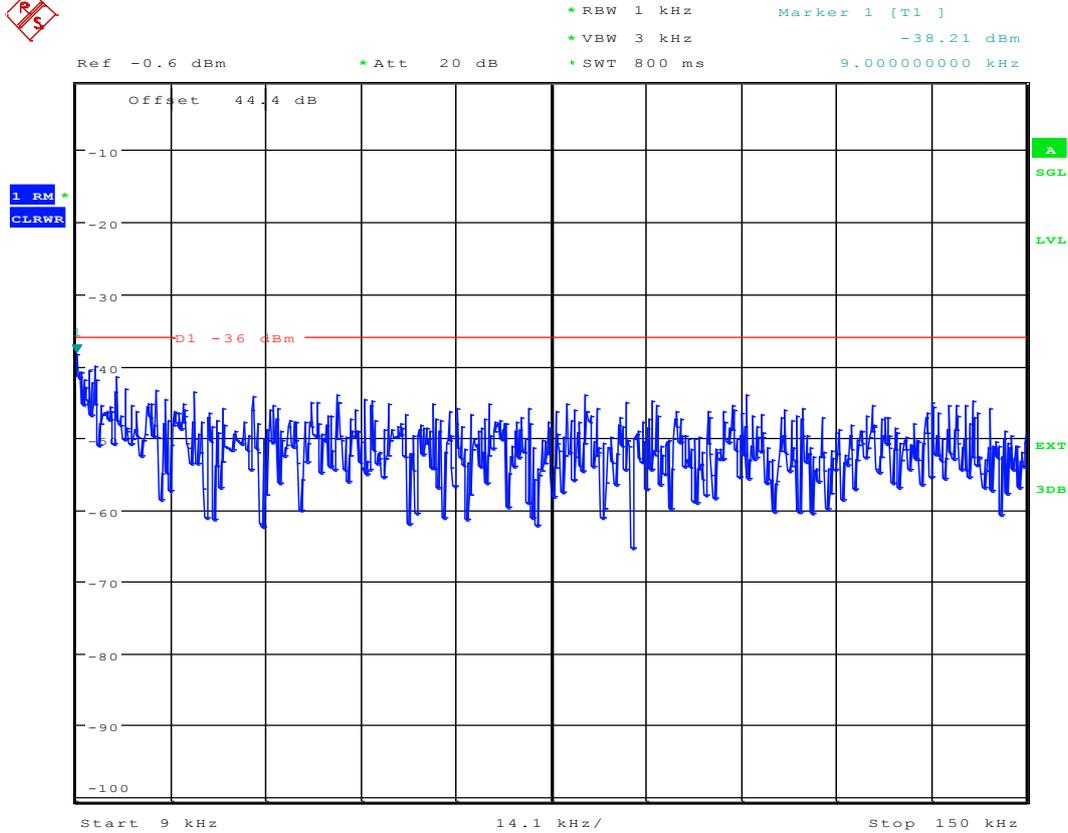
Date: 20.JAN.2015 11:28:40



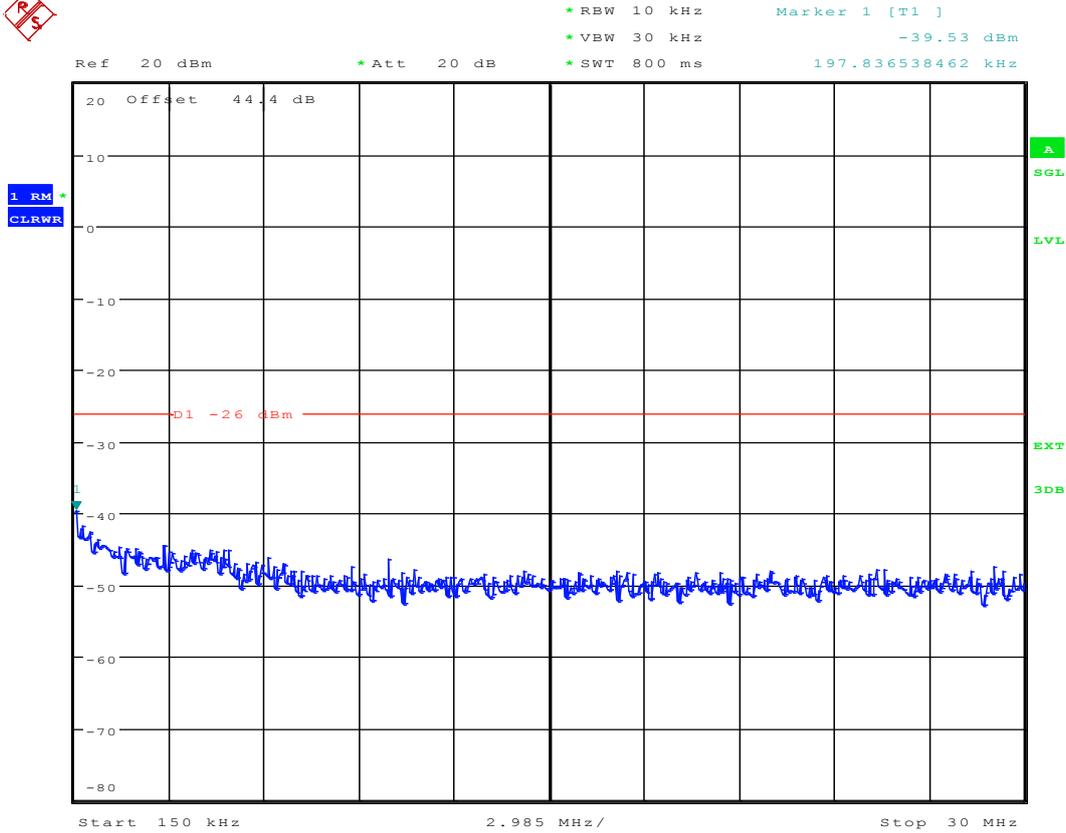
Date: 20.JAN.2015 11:28:59



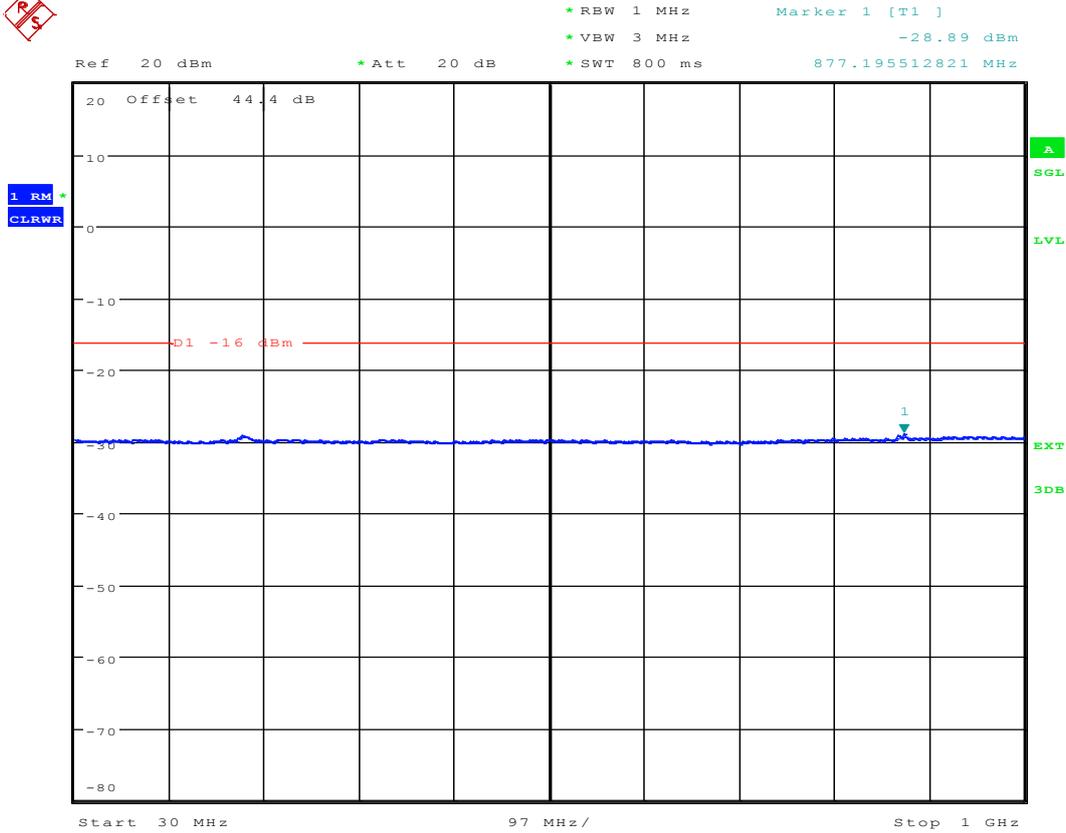
2.21 1L_3M_TM1_T



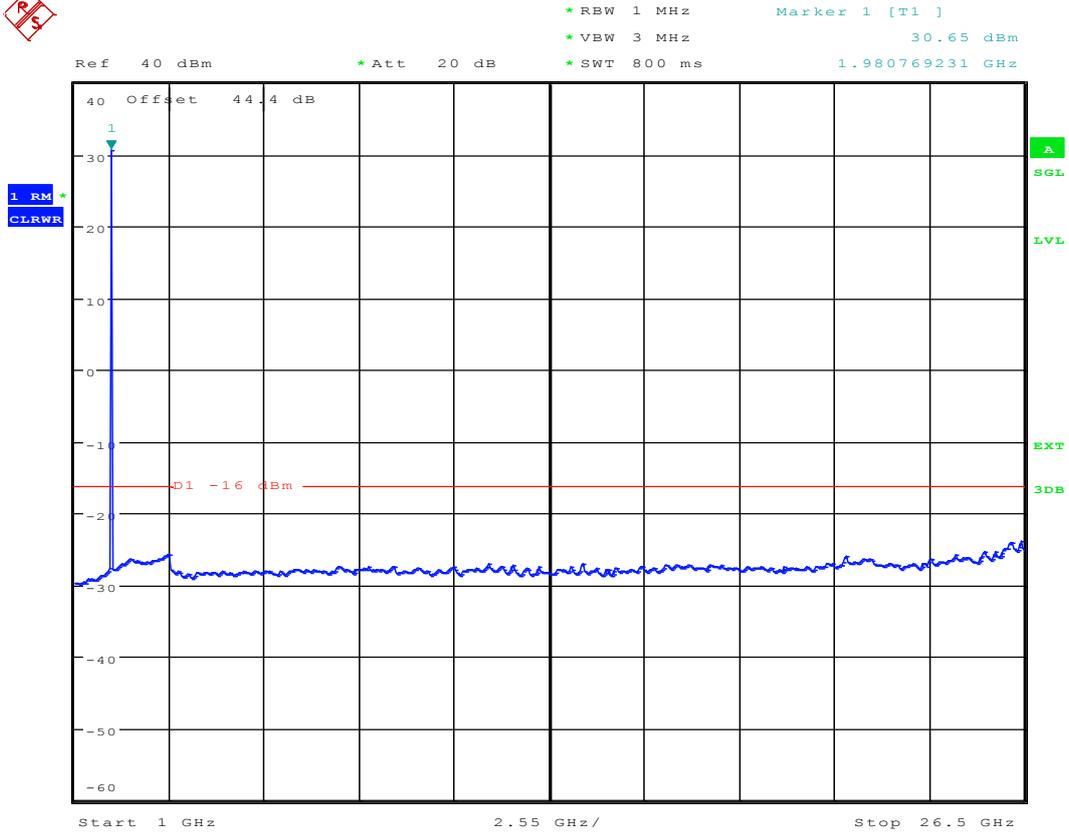
Date: 20.JAN.2015 11:30:32



Date: 20.JAN.2015 11:30:52



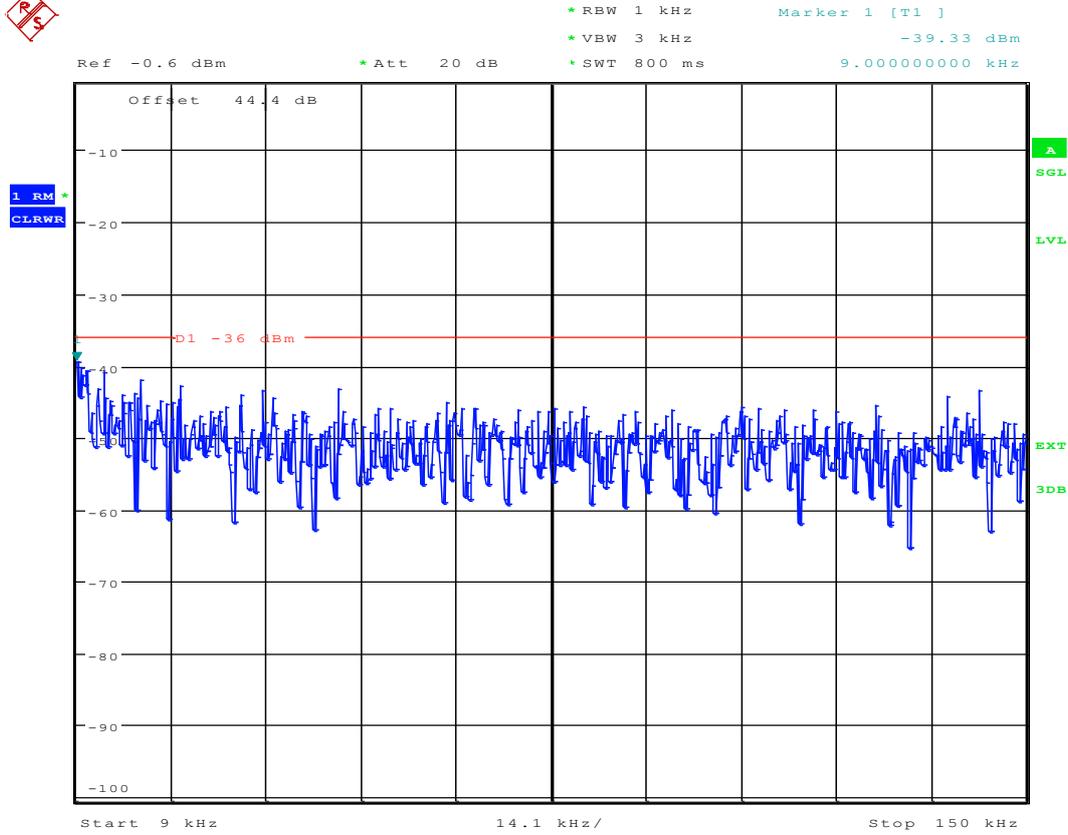
Date: 20.JAN.2015 11:31:11



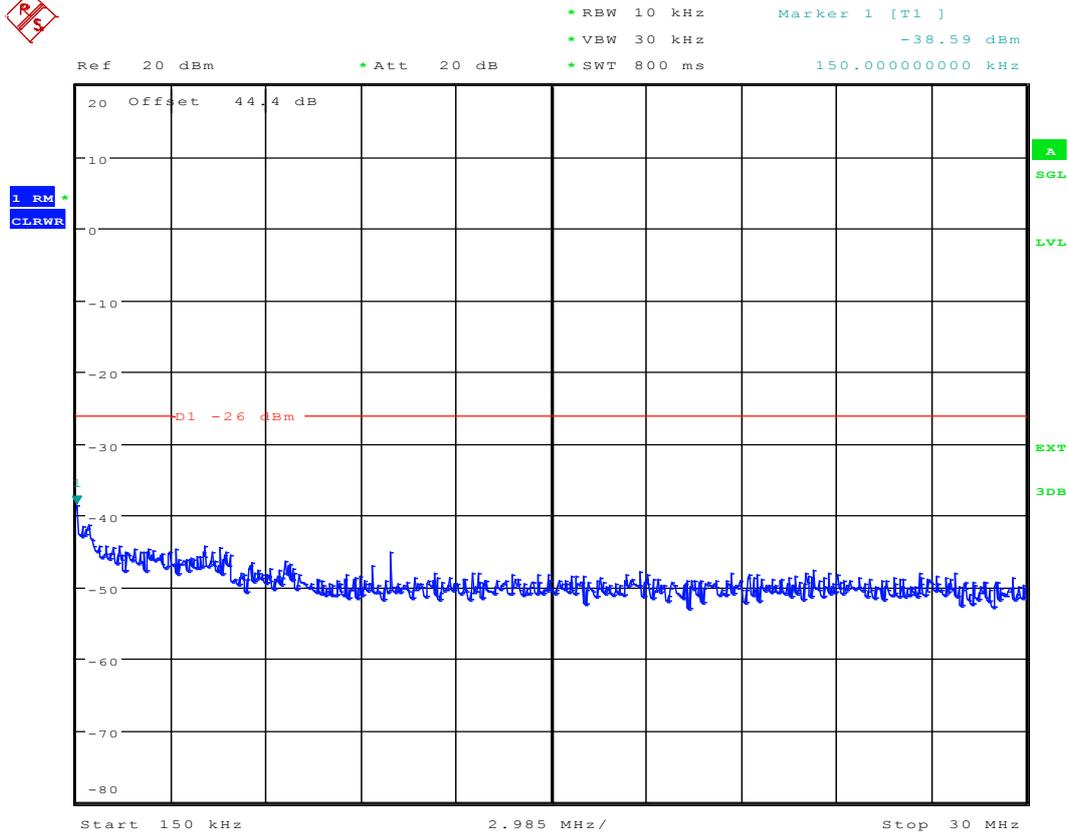
Date: 20.JAN.2015 11:31:30



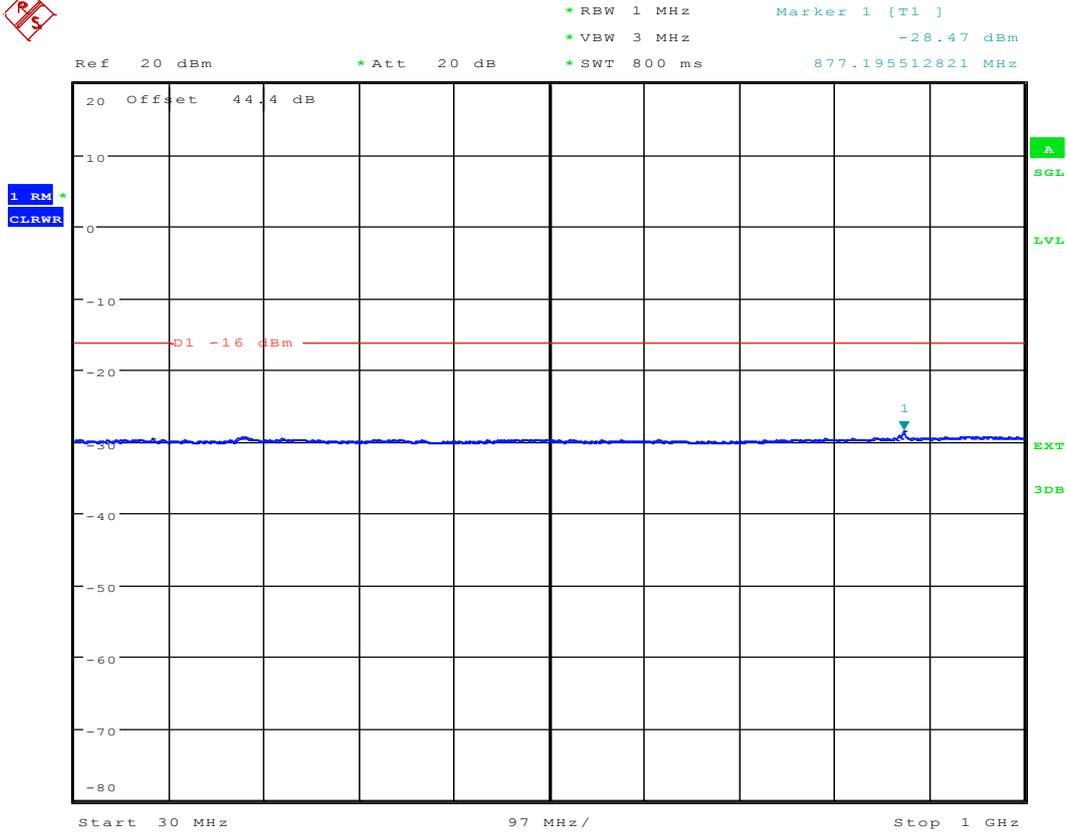
2.22 1L_5M_TM1_B



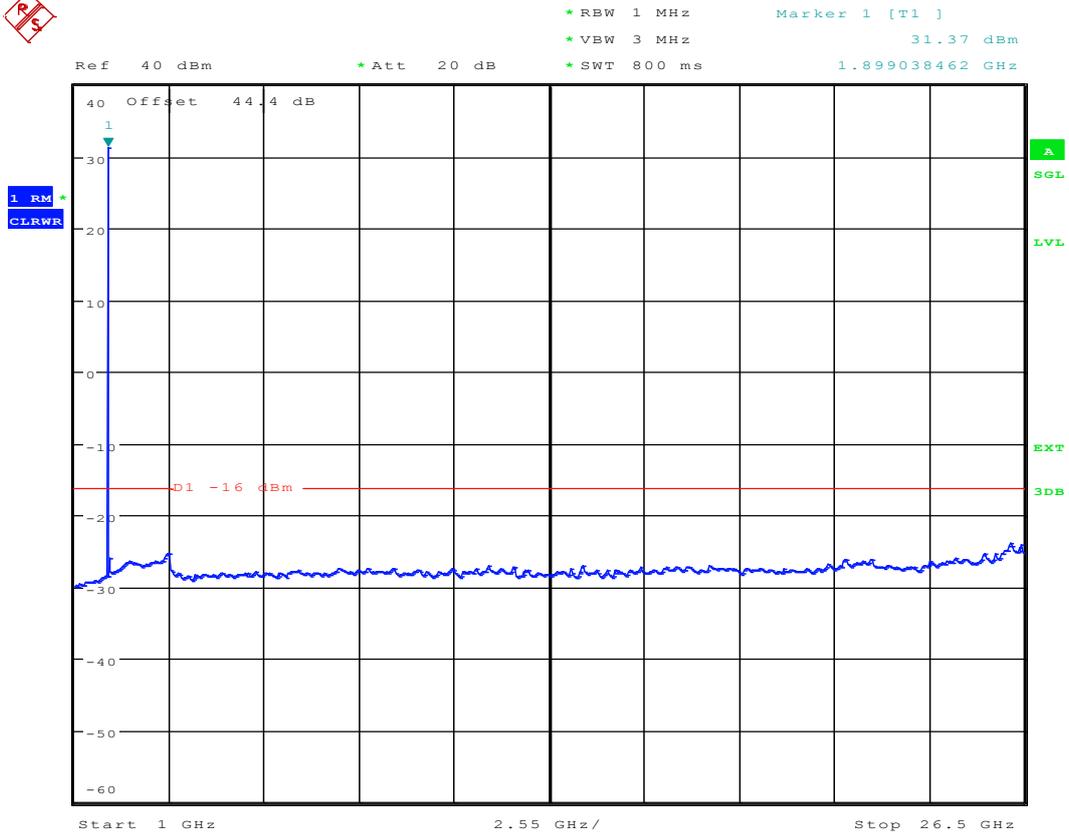
Date: 20.JAN.2015 11:33:24



Date: 20.JAN.2015 11:33:45



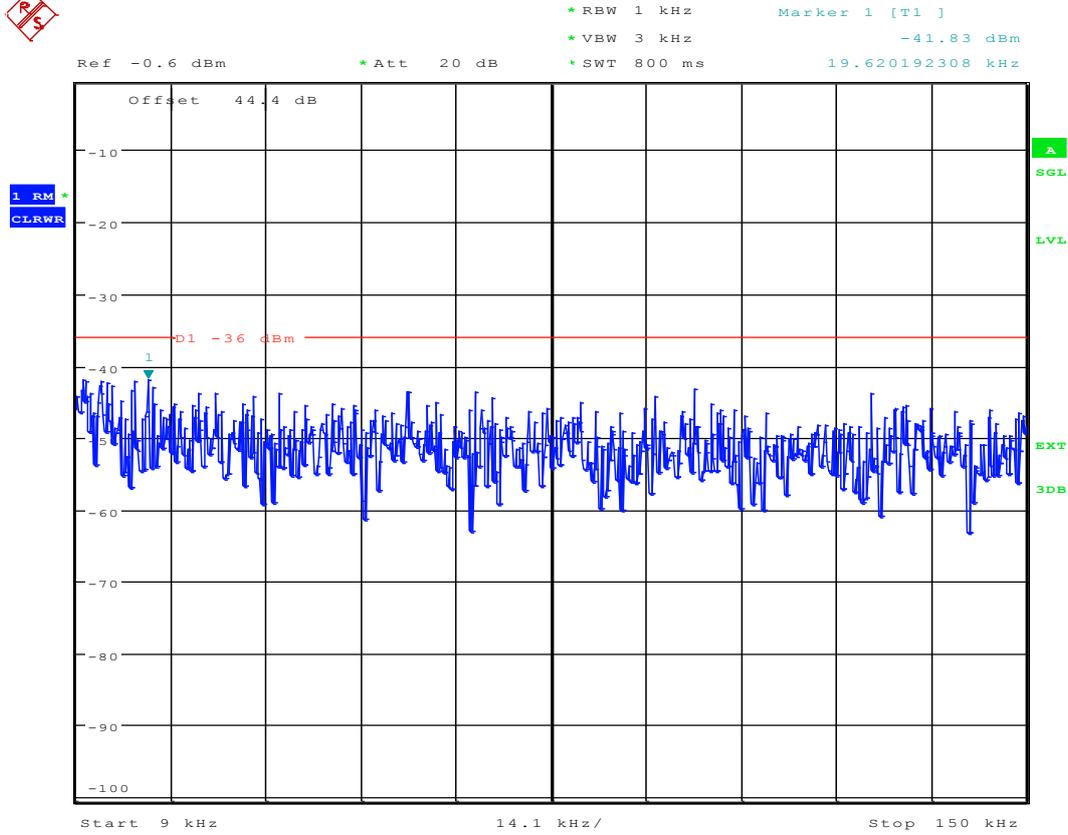
Date: 20.JAN.2015 11:34:04



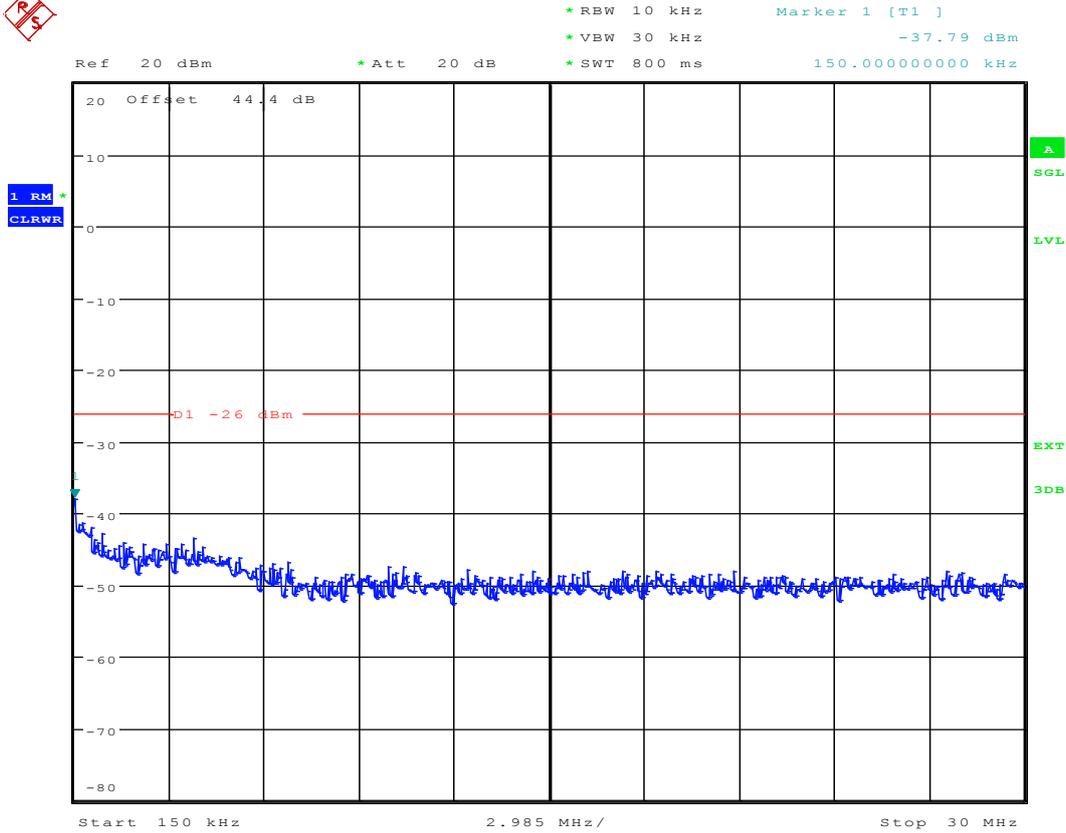
Date: 20.JAN.2015 11:34:23



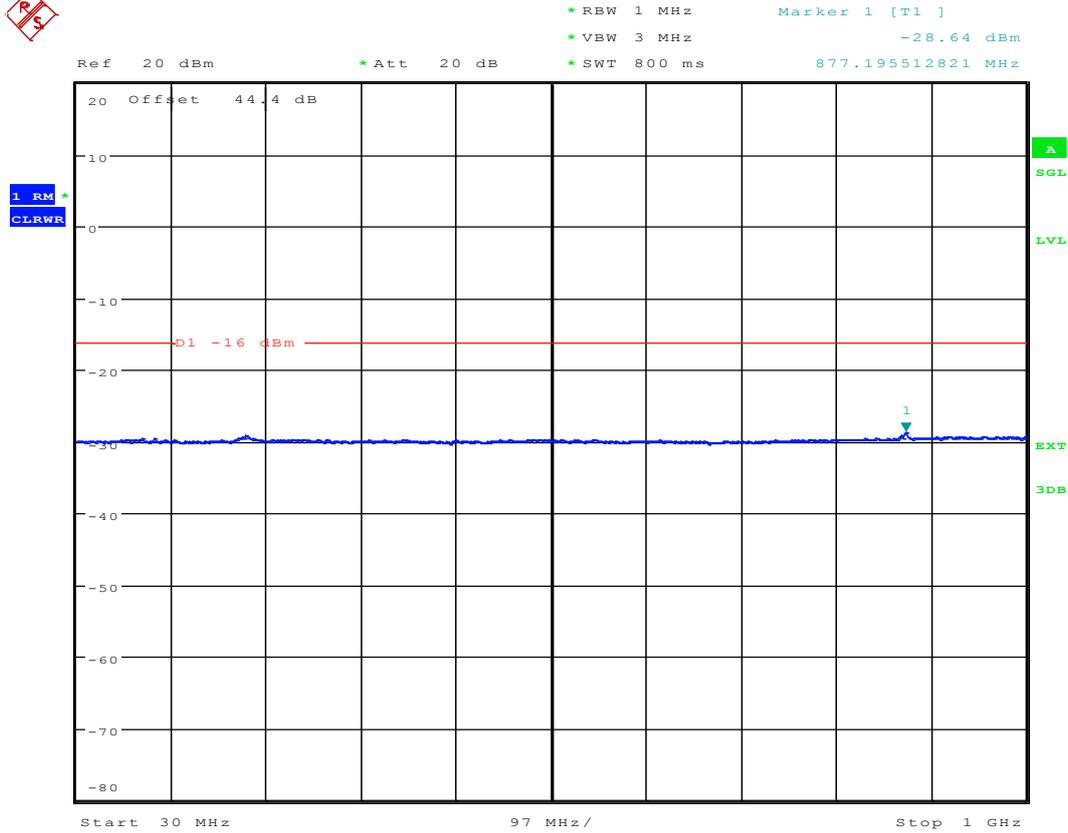
2.23 1L_5M_TM1_M



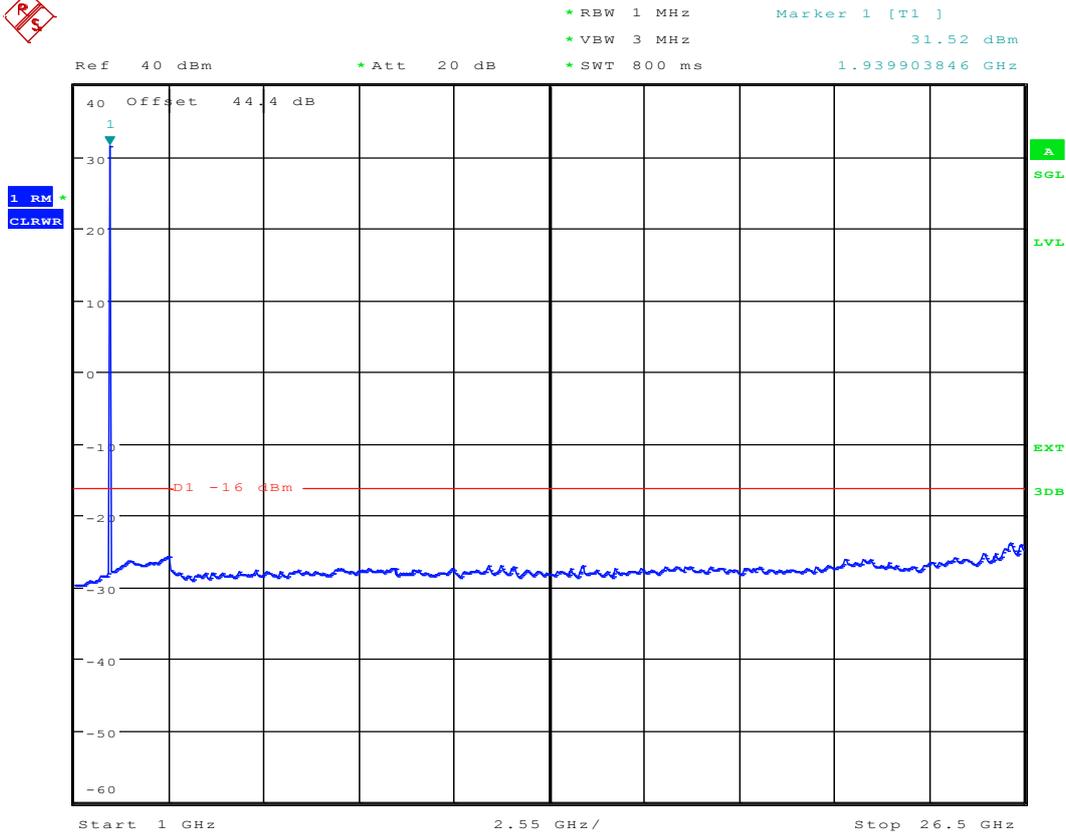
Date: 20.JAN.2015 11:35:56



Date: 20.JAN.2015 11:36:16



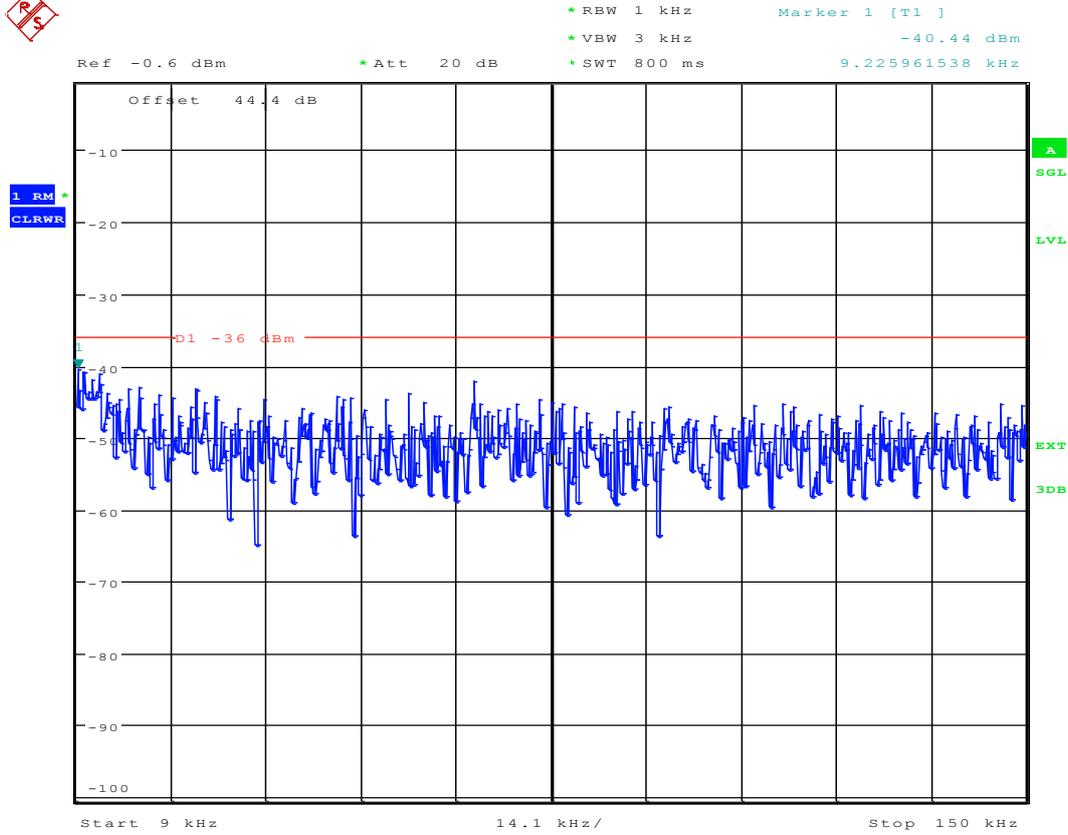
Date: 20.JAN.2015 11:36:35



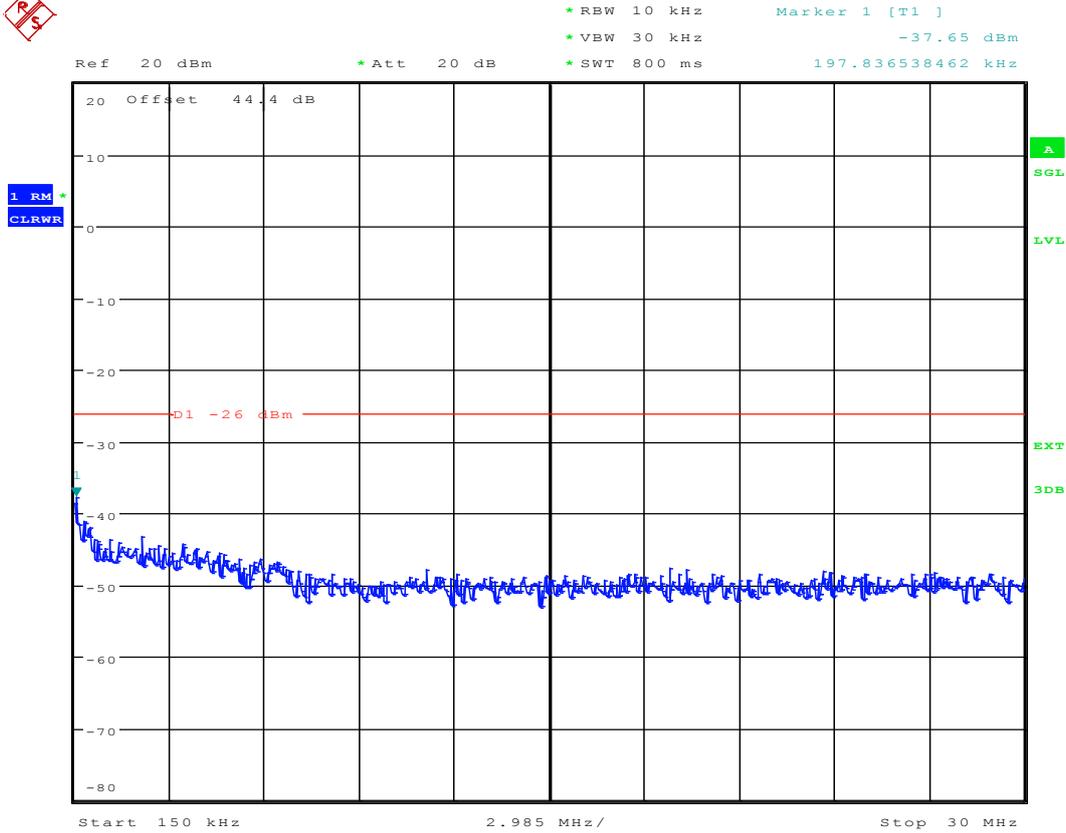
Date: 20.JAN.2015 11:36:55



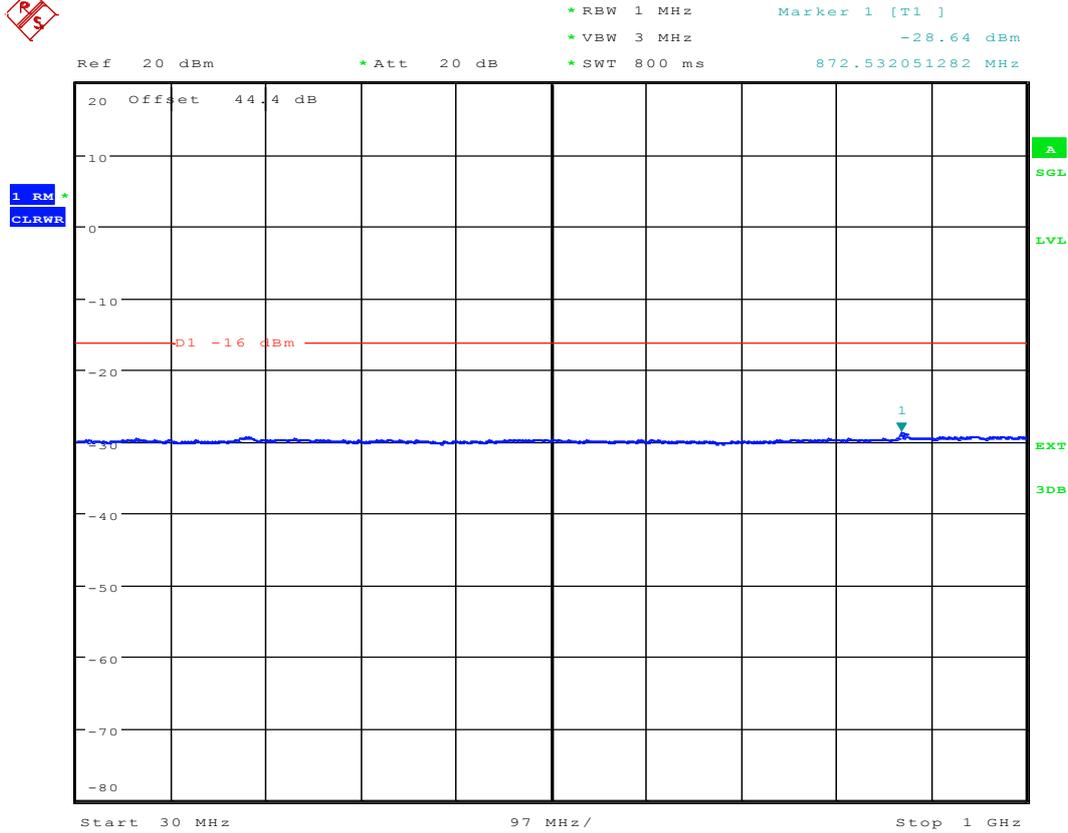
2.24 1L_5M_TM1_T



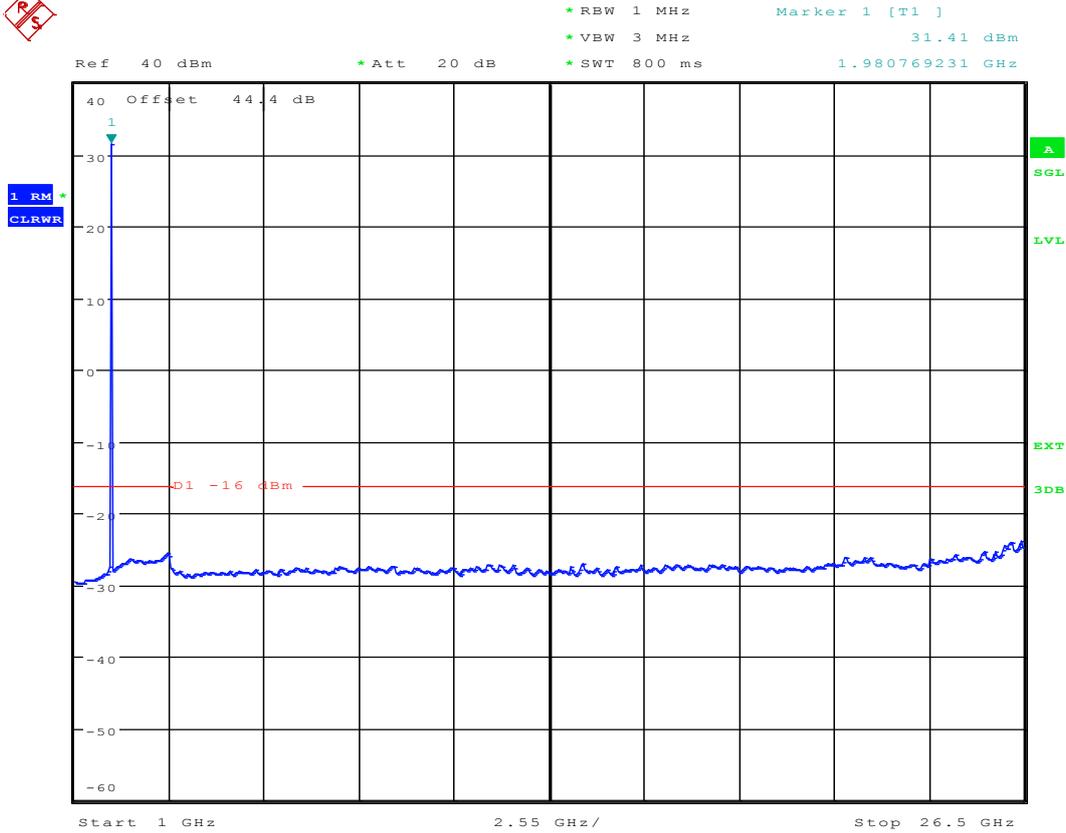
Date: 20.JAN.2015 11:38:32



Date: 20.JAN.2015 11:38:52



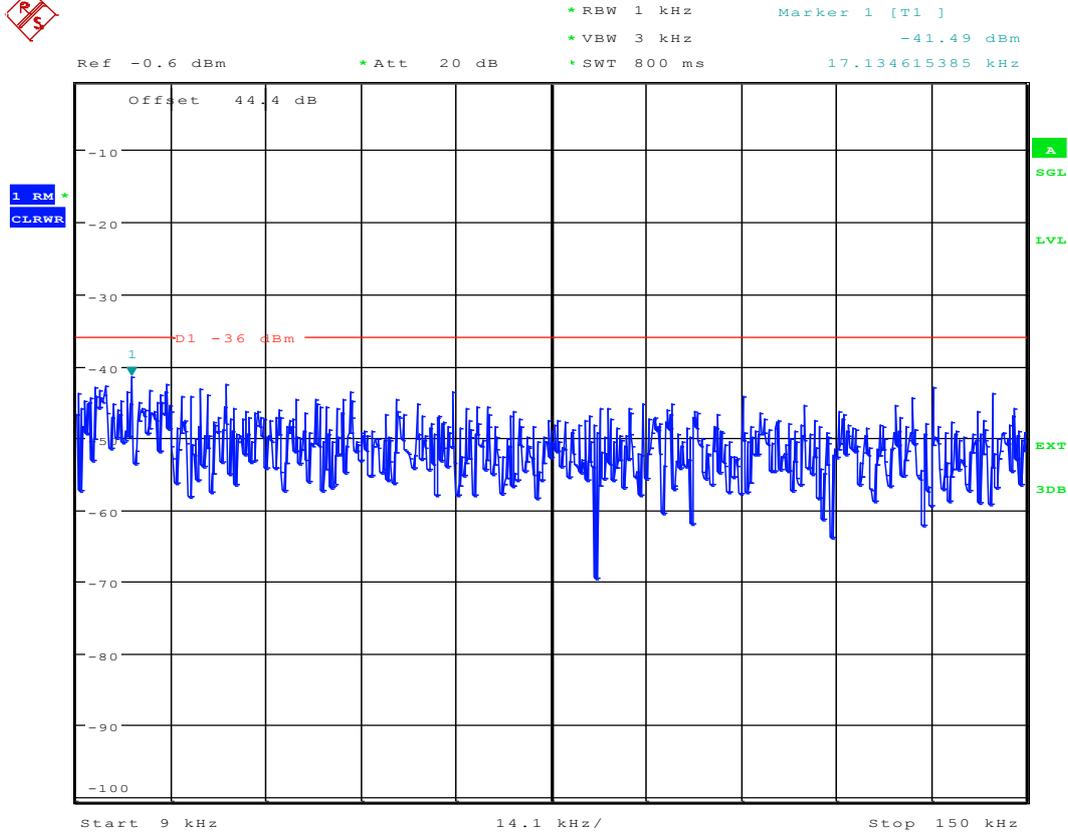
Date: 20.JAN.2015 11:39:11



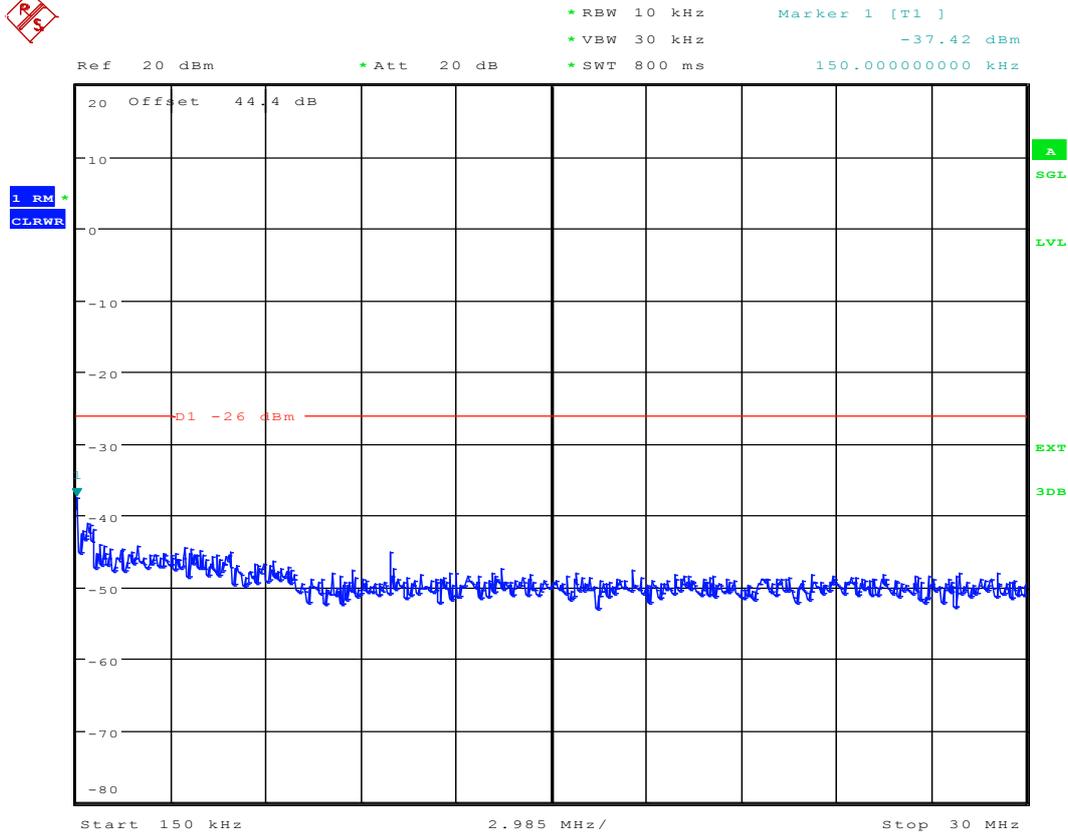
Date: 20.JAN.2015 11:39:30



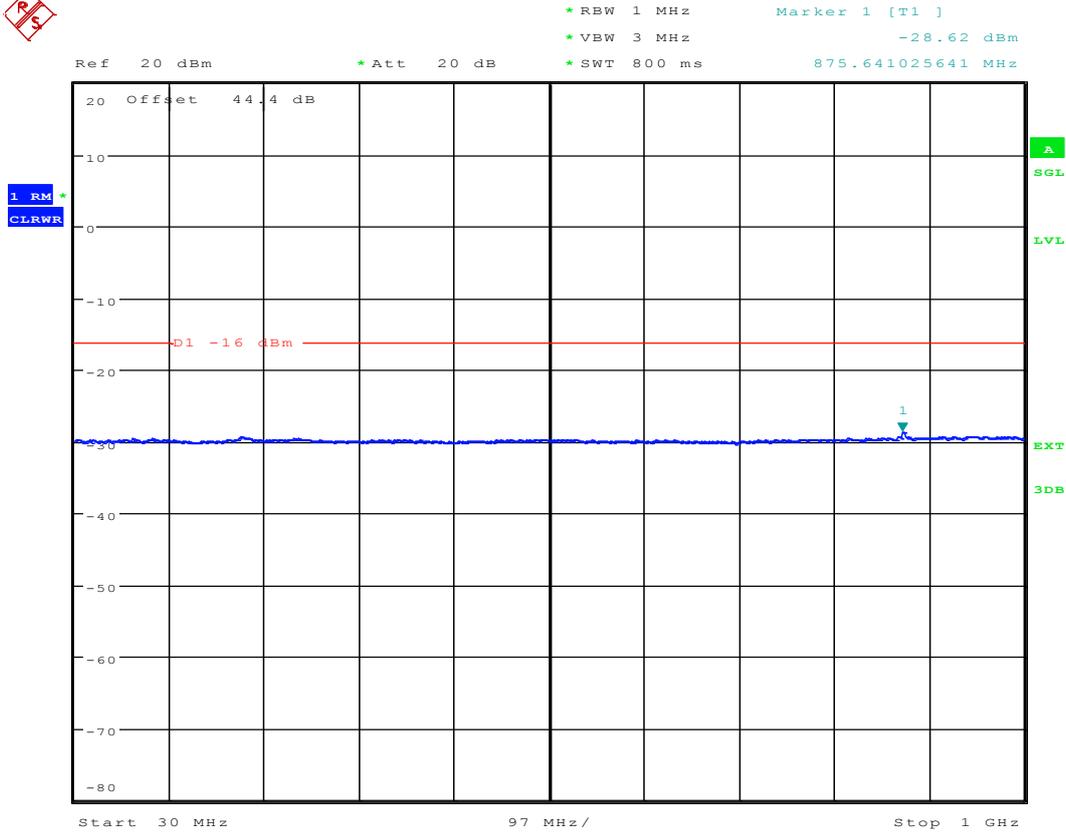
2.25 1L_10M_TM1_B



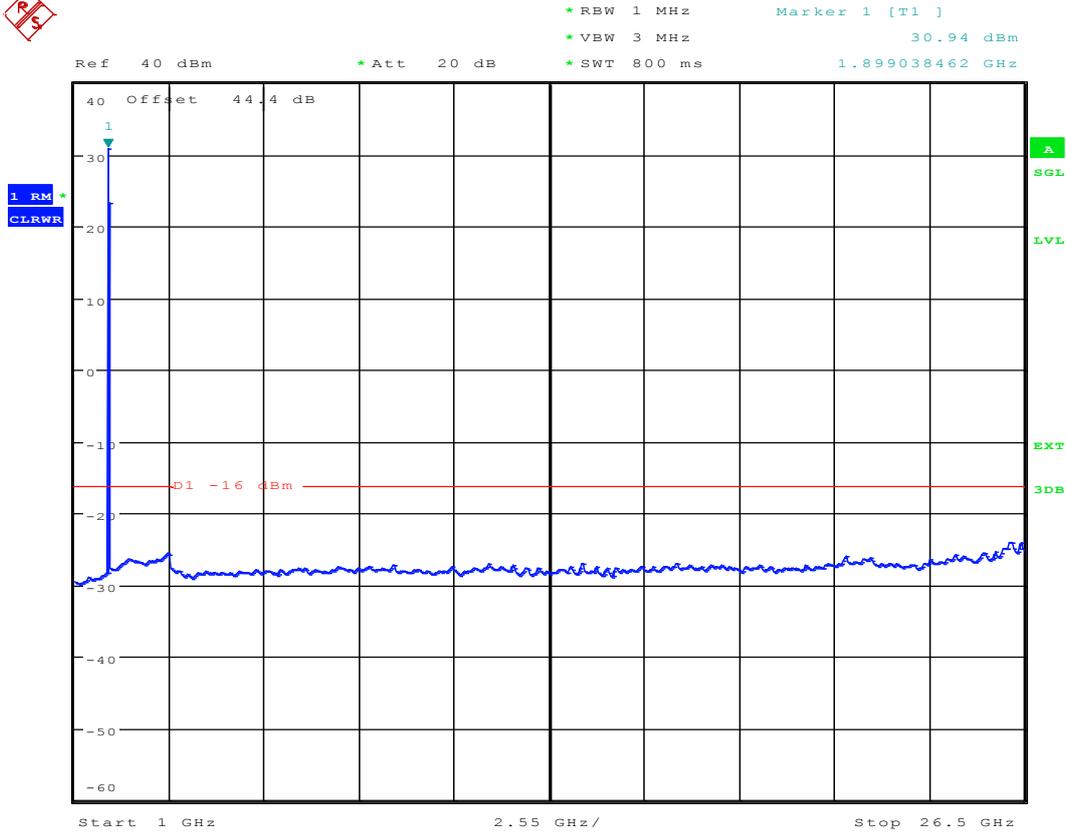
Date: 20.JAN.2015 11:41:37



Date: 20.JAN.2015 11:41:57



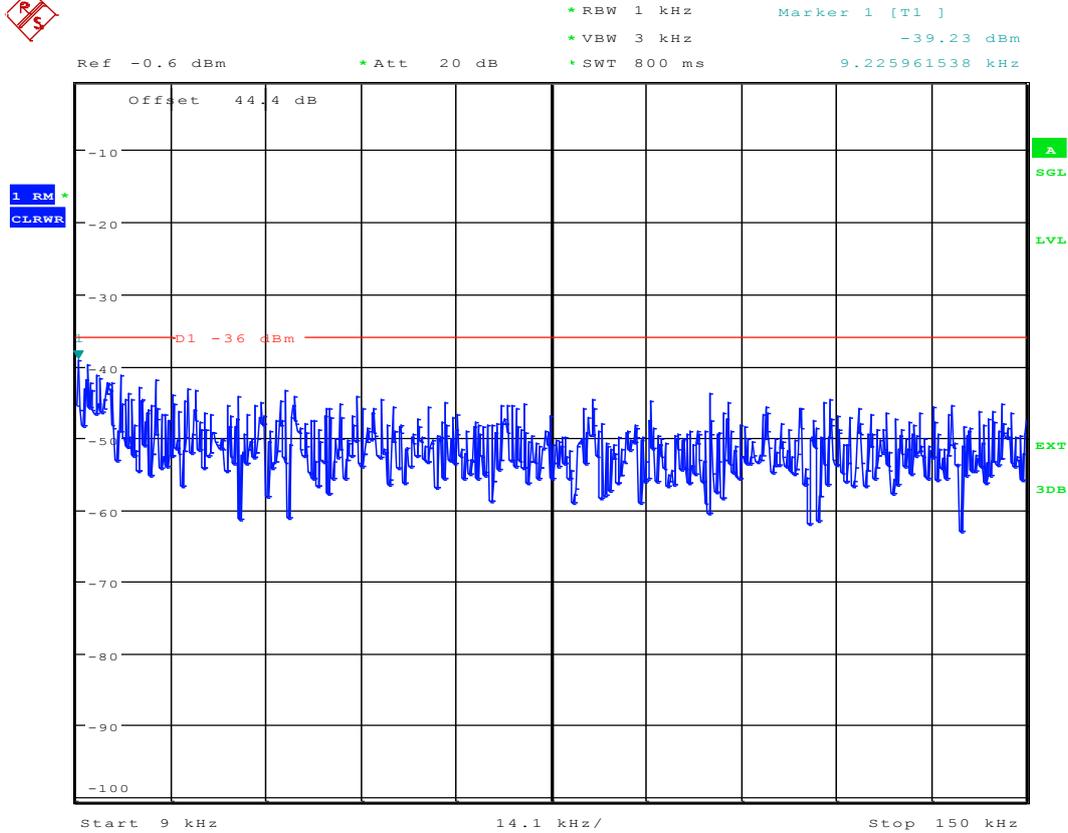
Date: 20.JAN.2015 11:42:16



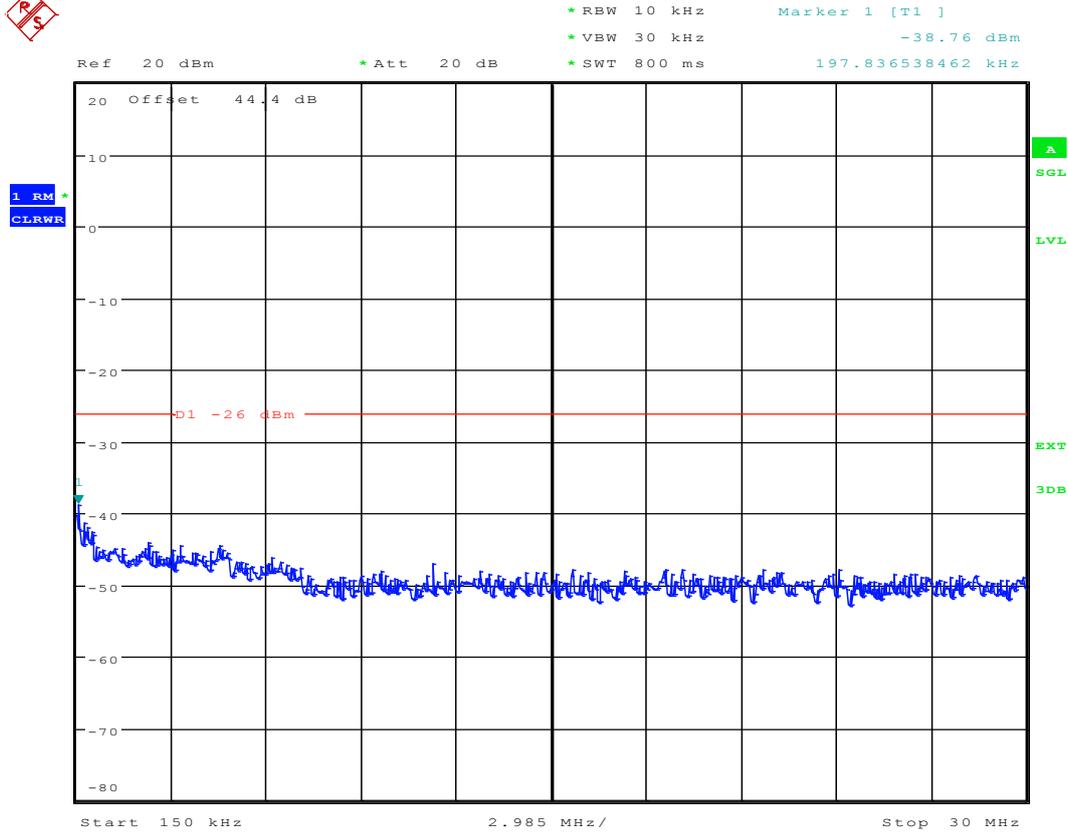
Date: 20.JAN.2015 11:42:36



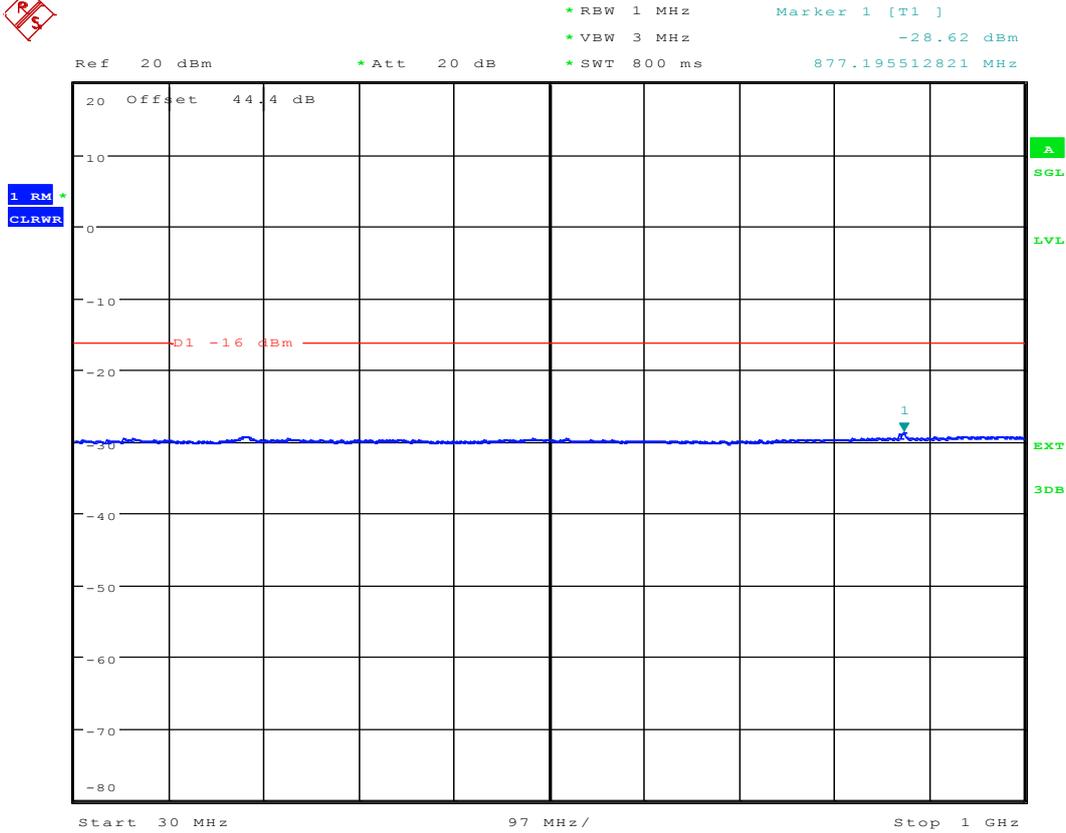
2.26 1L_10M_TM1_M



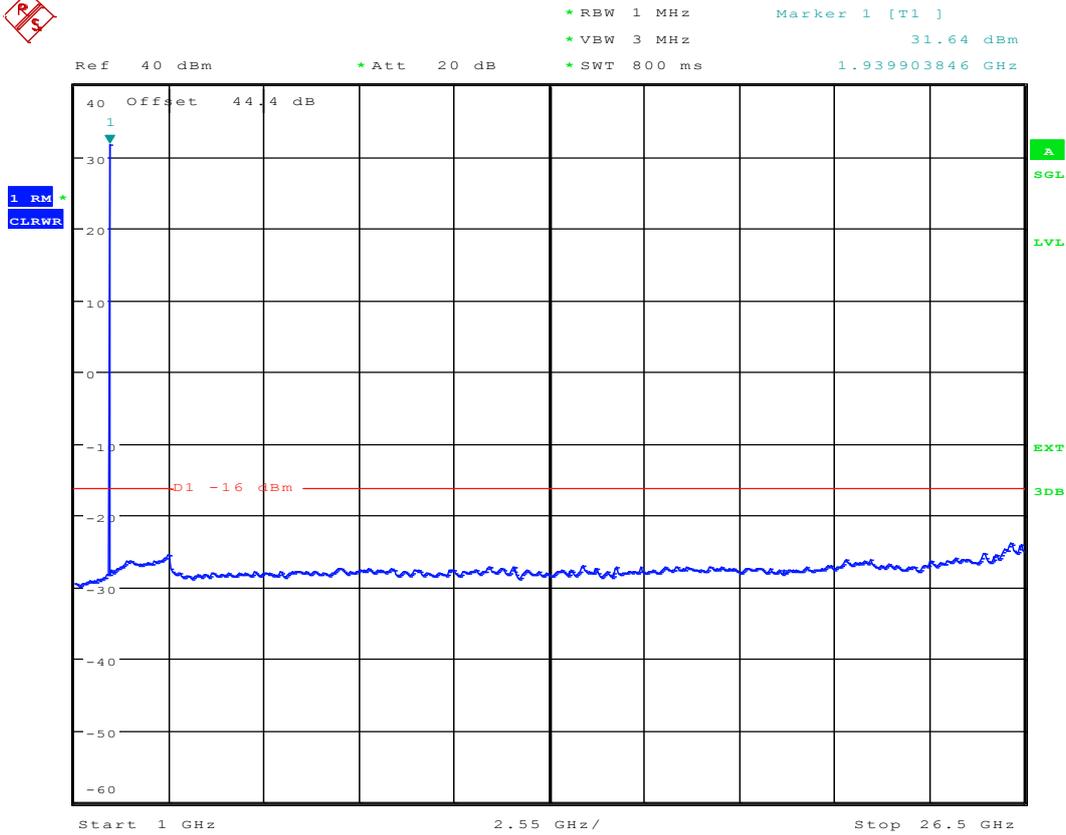
Date: 20.JAN.2015 11:44:13



Date: 20.JAN.2015 11:44:33



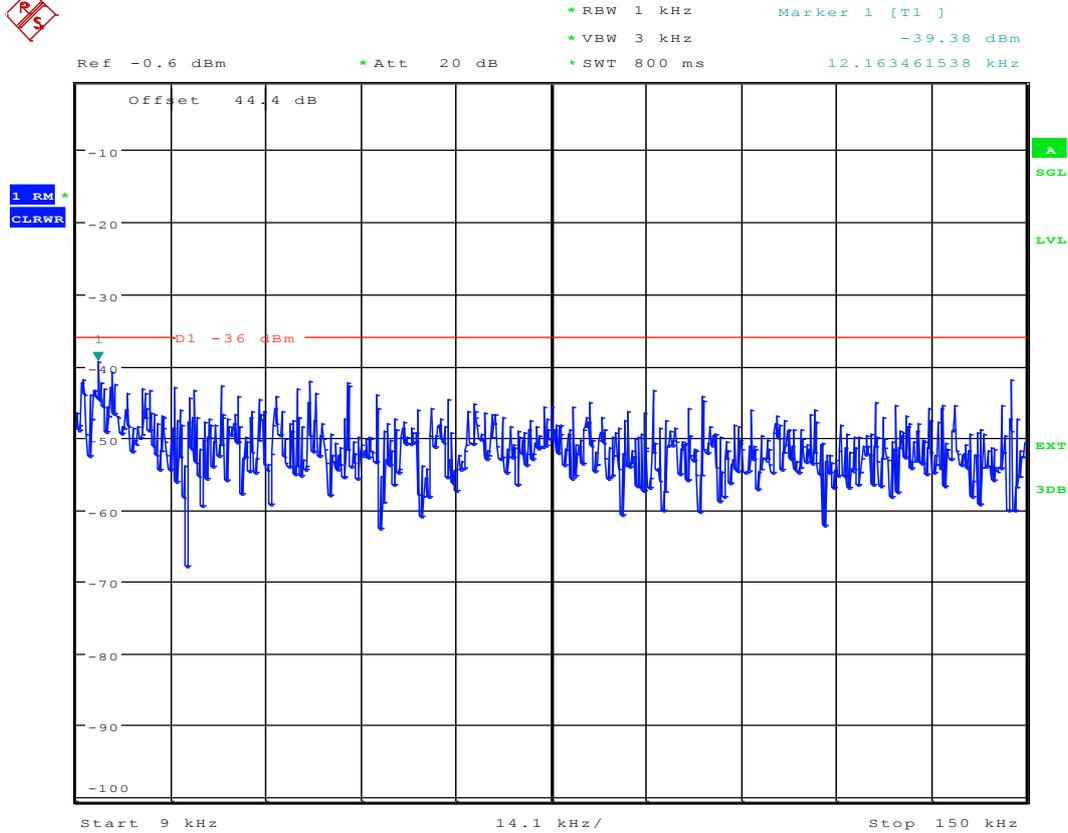
Date: 20.JAN.2015 11:44:52



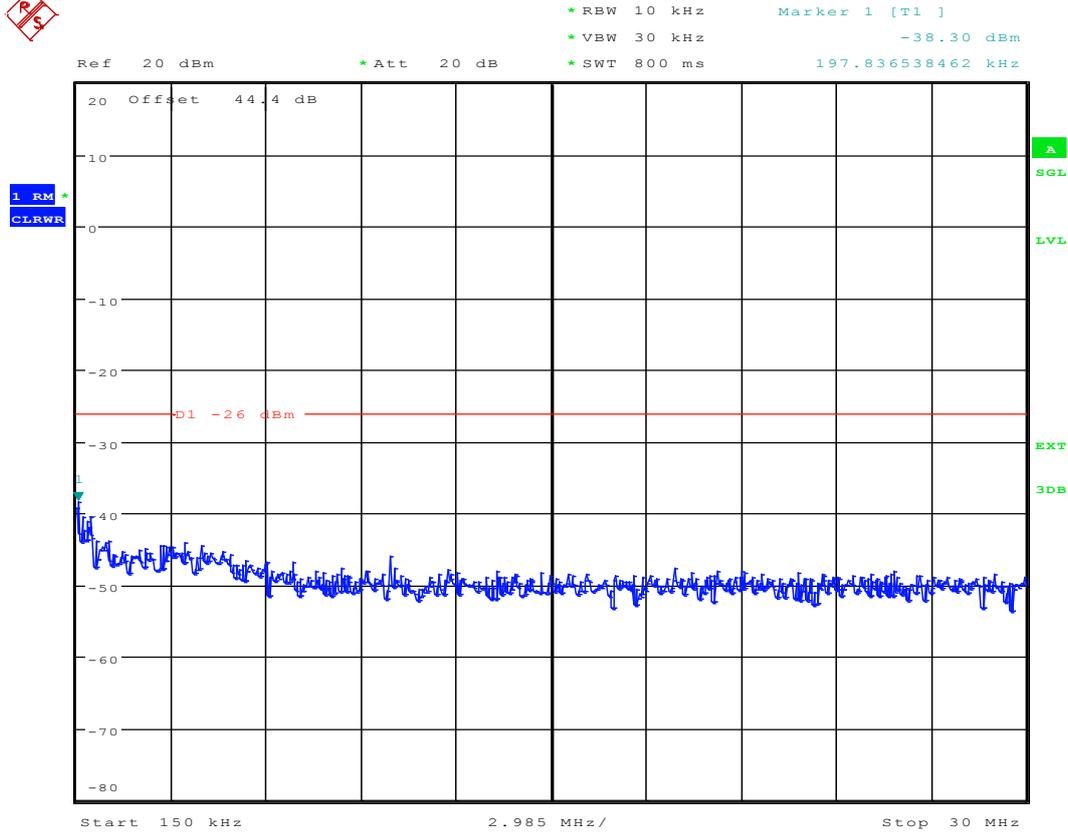
Date: 20.JAN.2015 11:45:11



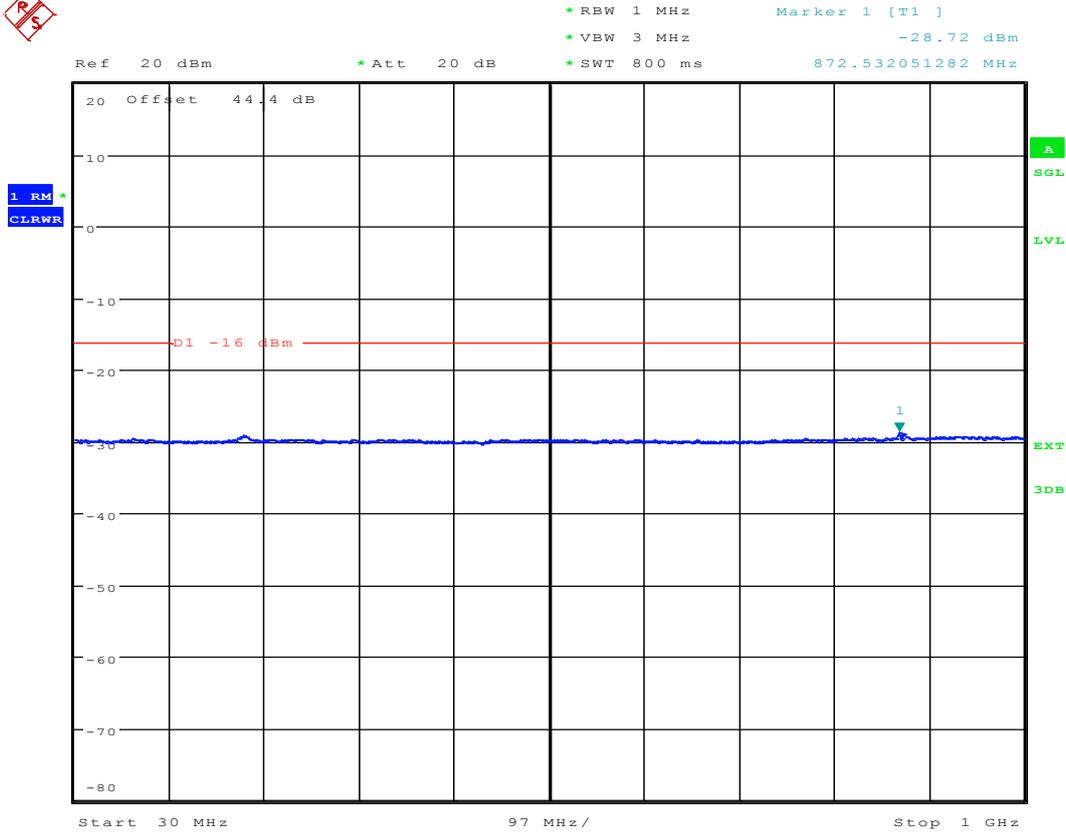
2.27 1L_10M_TM1_T



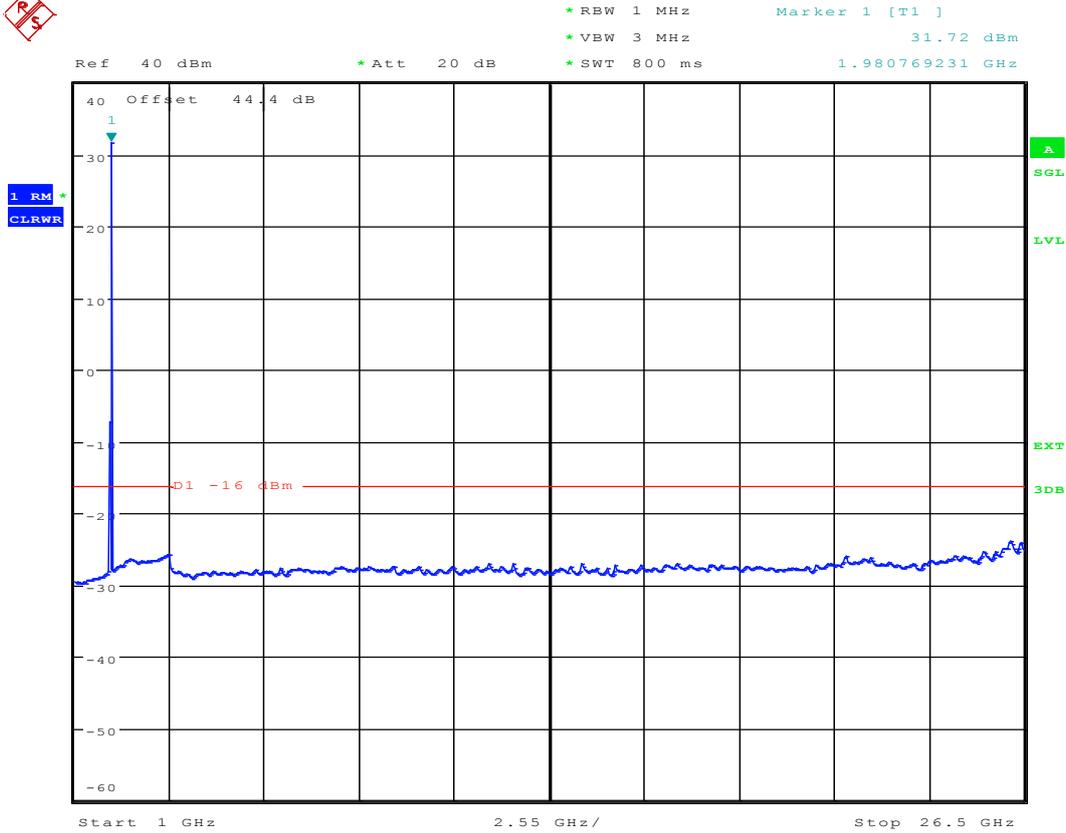
Date: 20.JAN.2015 11:46:48



Date: 20.JAN.2015 11:47:08



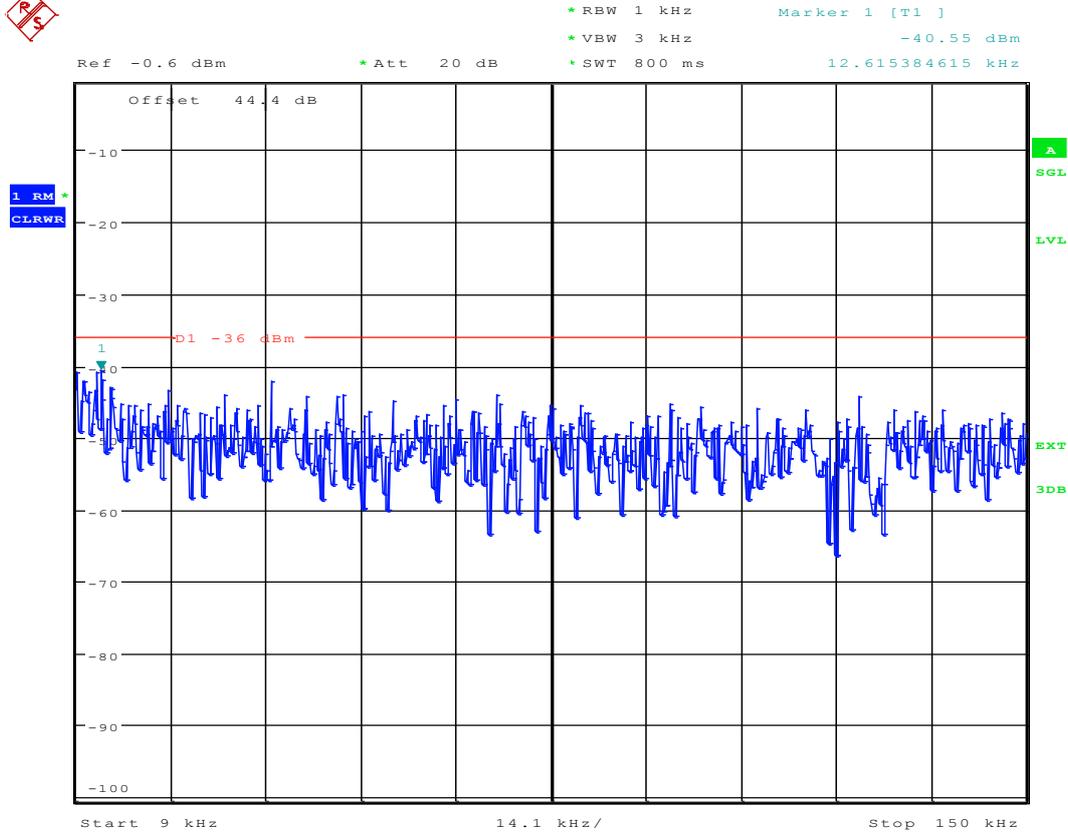
Date: 20.JAN.2015 11:47:28



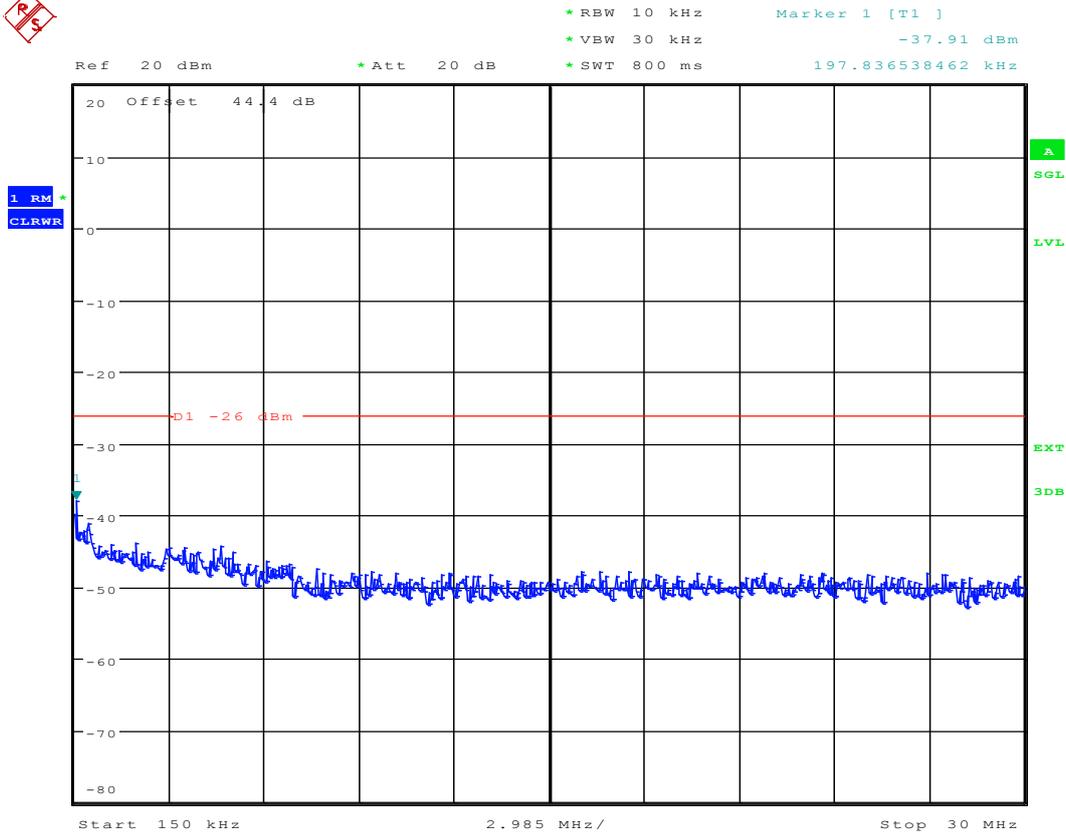
Date: 20.JAN.2015 11:47:47



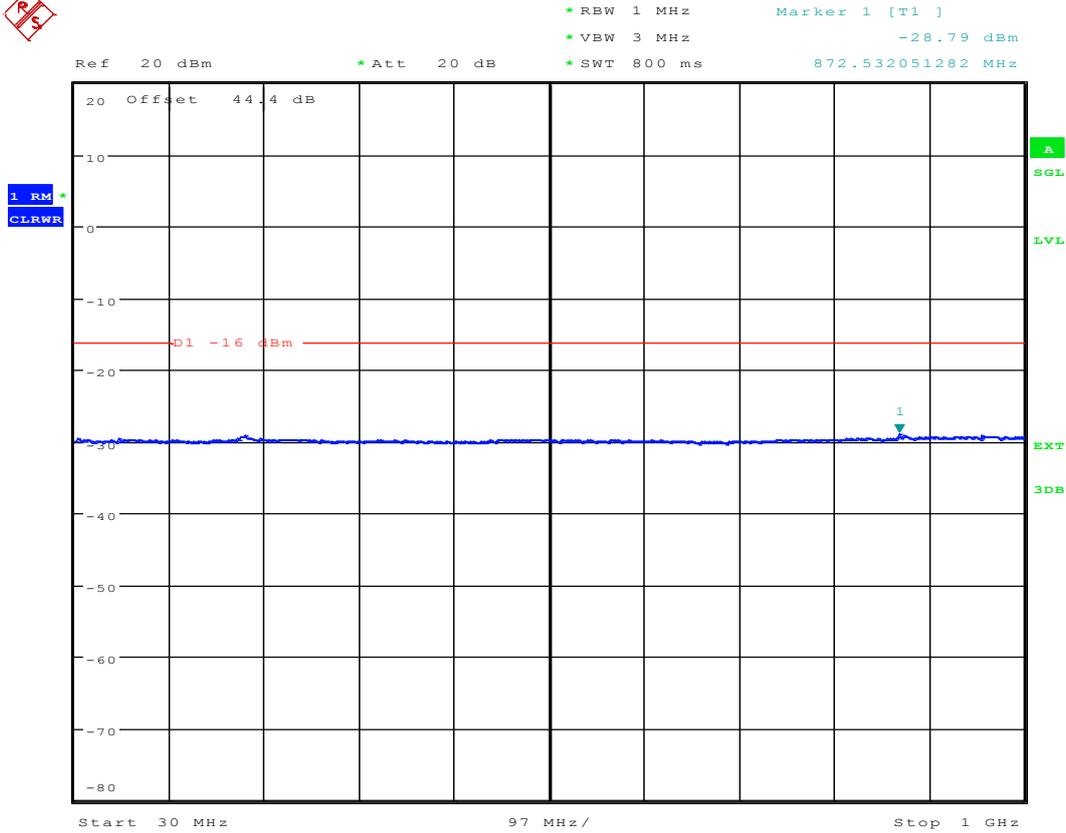
2.28 1L_15M_TM1_B



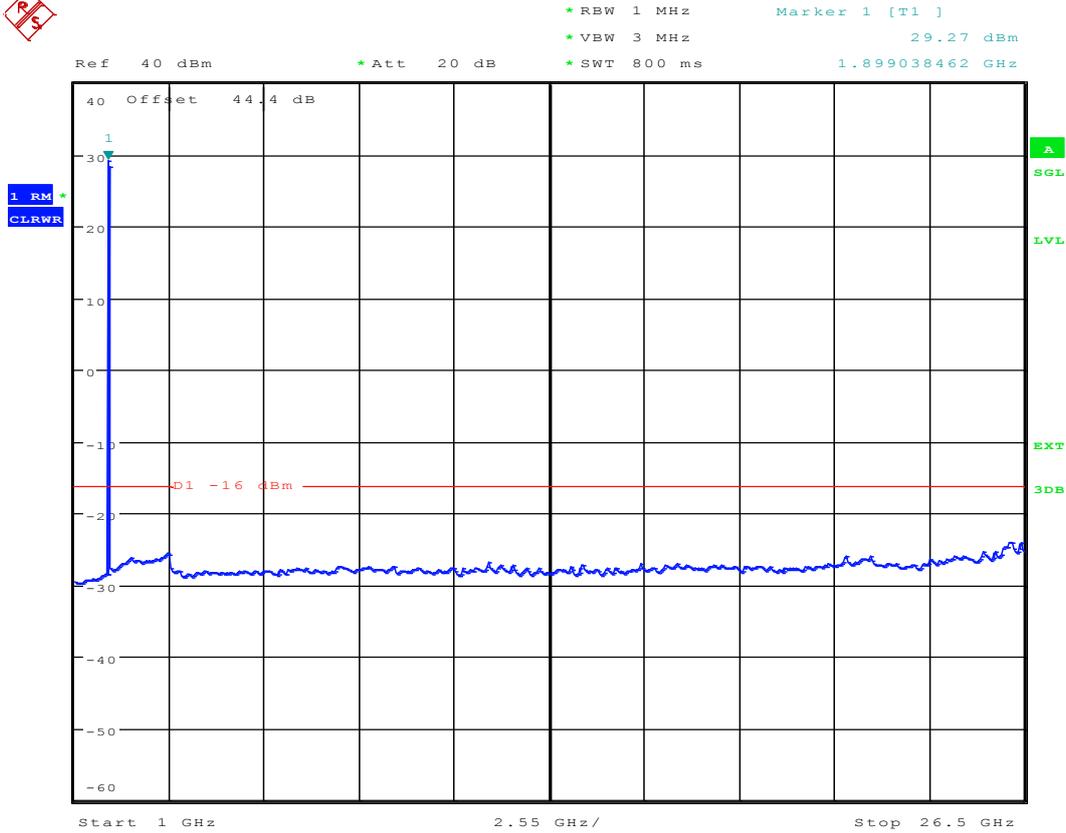
Date: 20.JAN.2015 11:49:48



Date: 20.JAN.2015 11:50:08



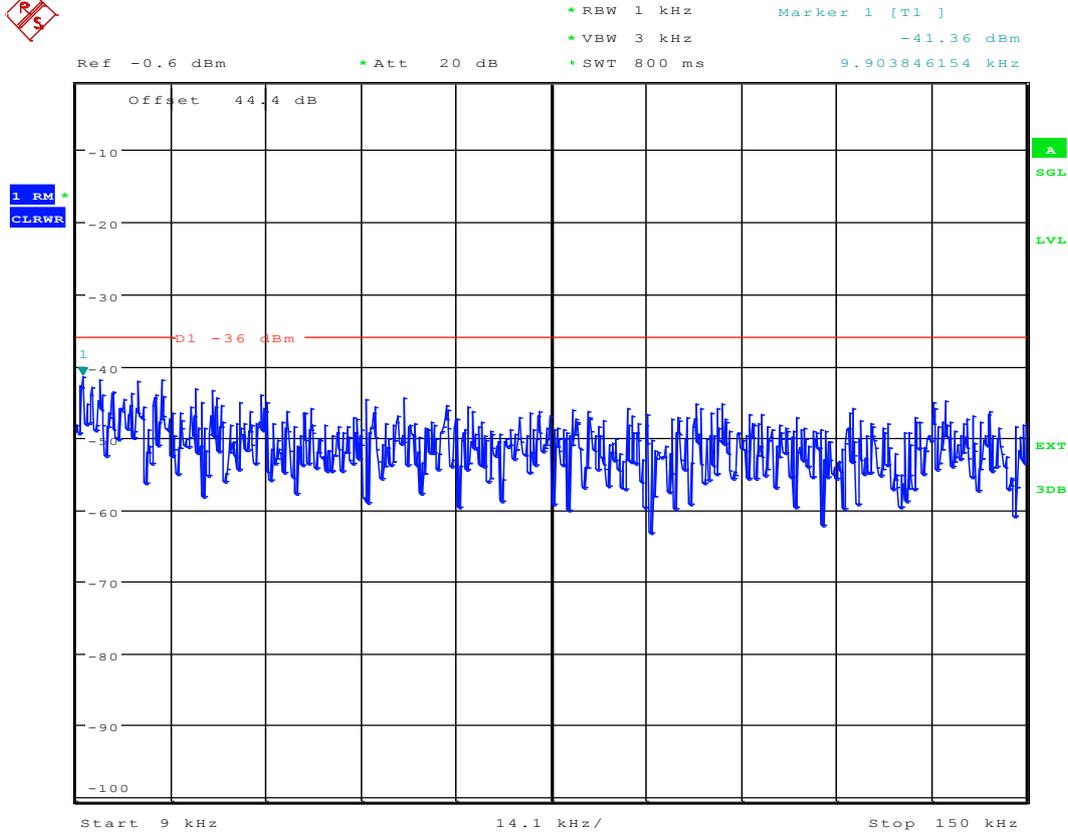
Date: 20.JAN.2015 11:50:28



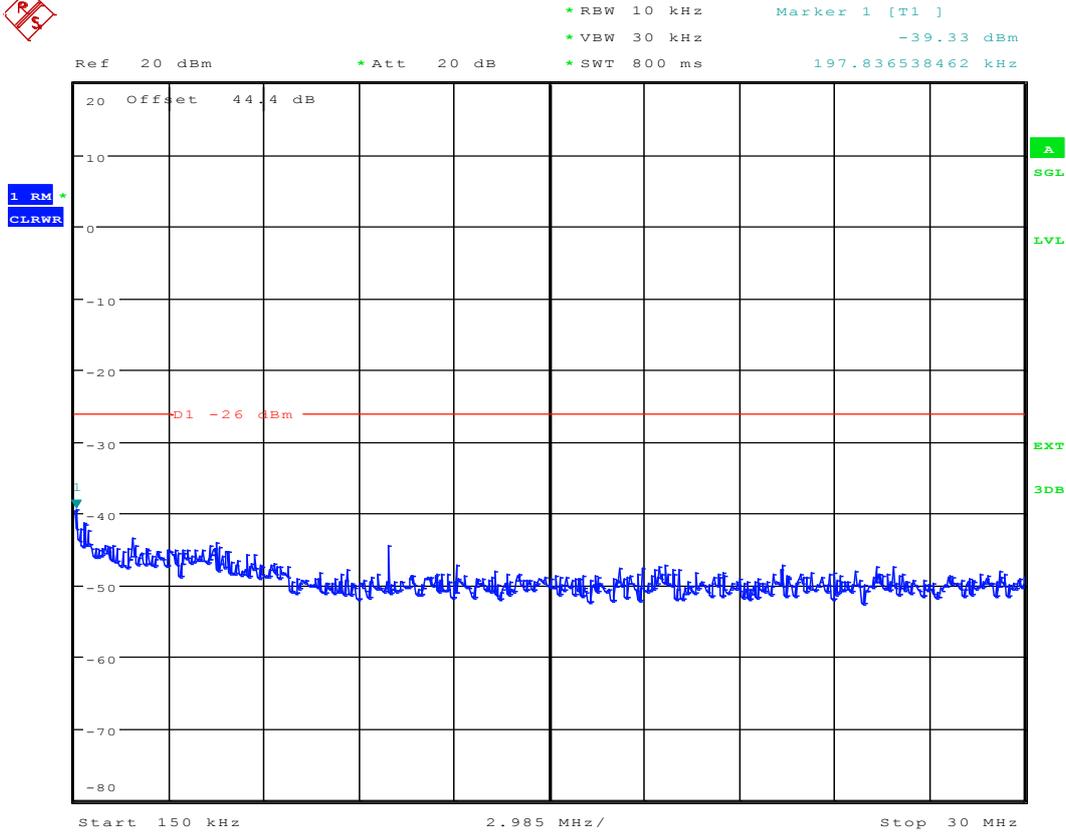
Date: 20.JAN.2015 11:50:47



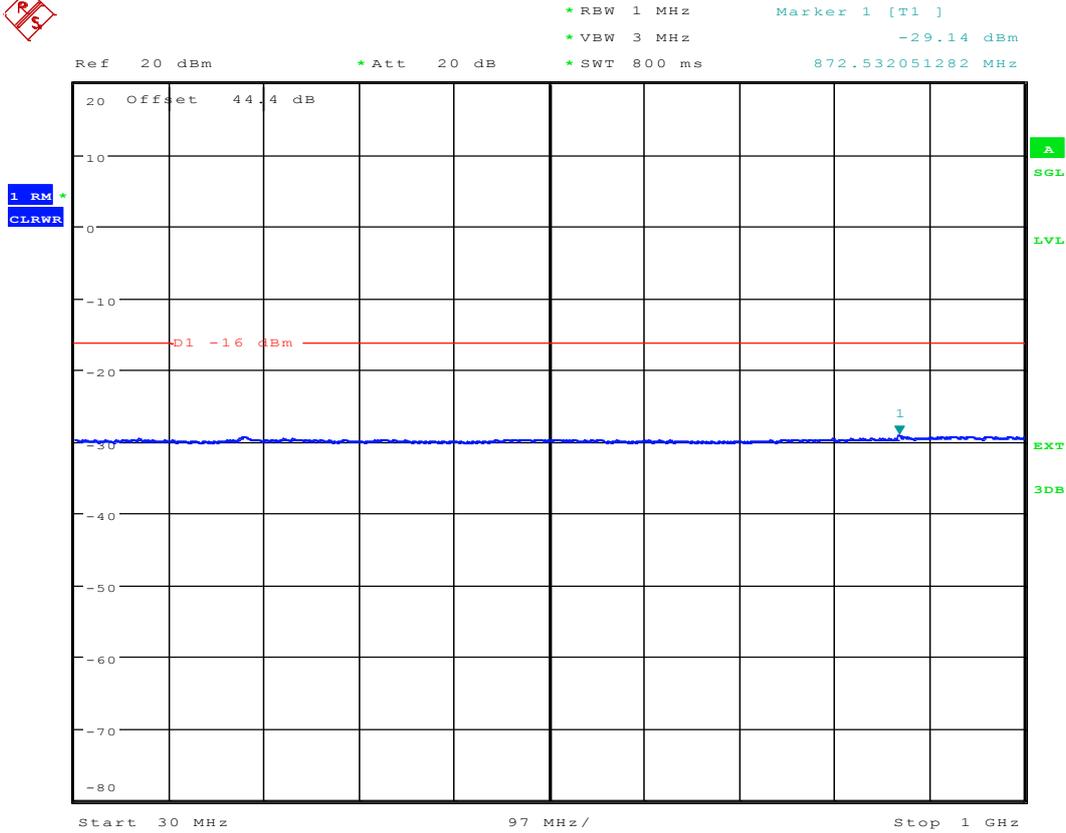
2.29 1L_15M_TM1_M



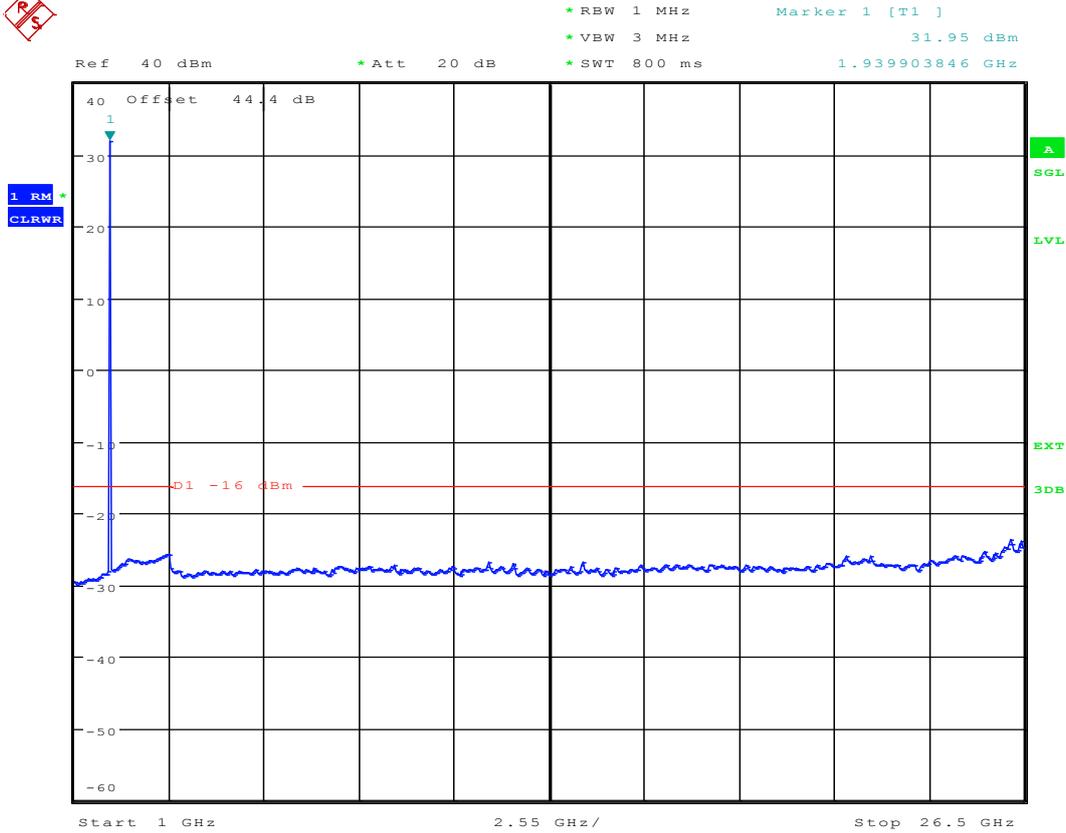
Date: 20.JAN.2015 11:52:23



Date: 20.JAN.2015 11:52:44



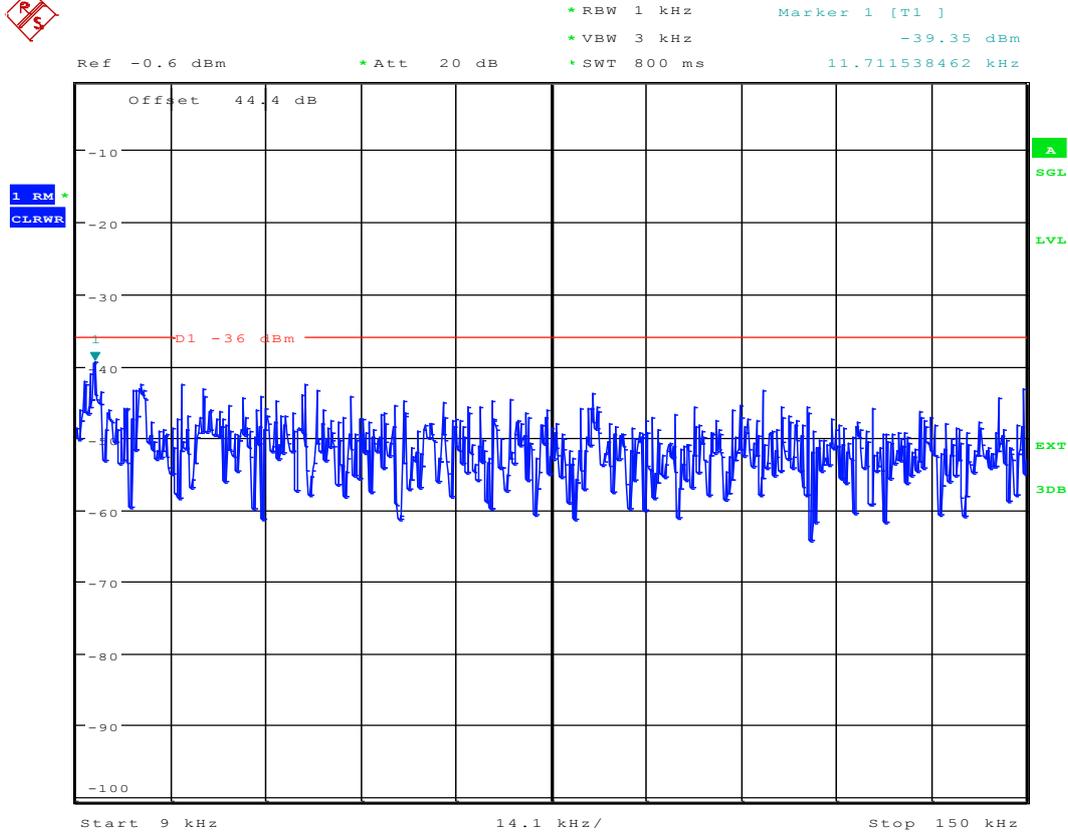
Date: 20.JAN.2015 11:53:03



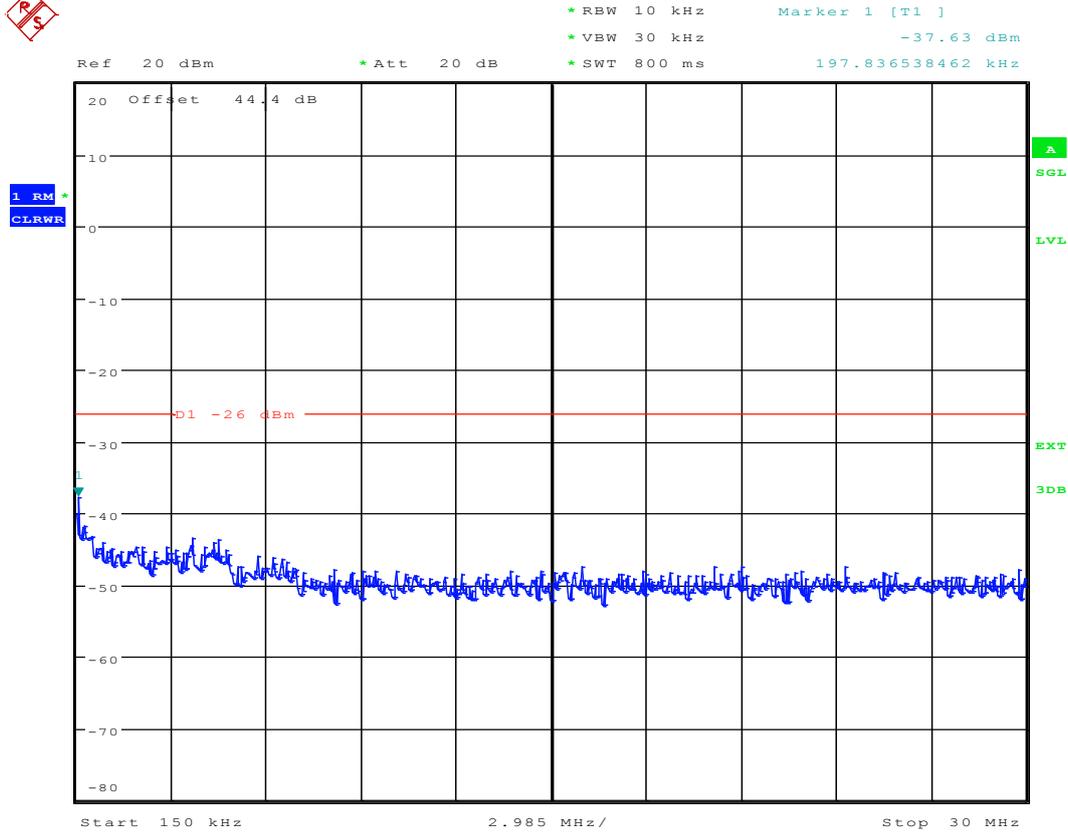
Date: 20.JAN.2015 11:53:22



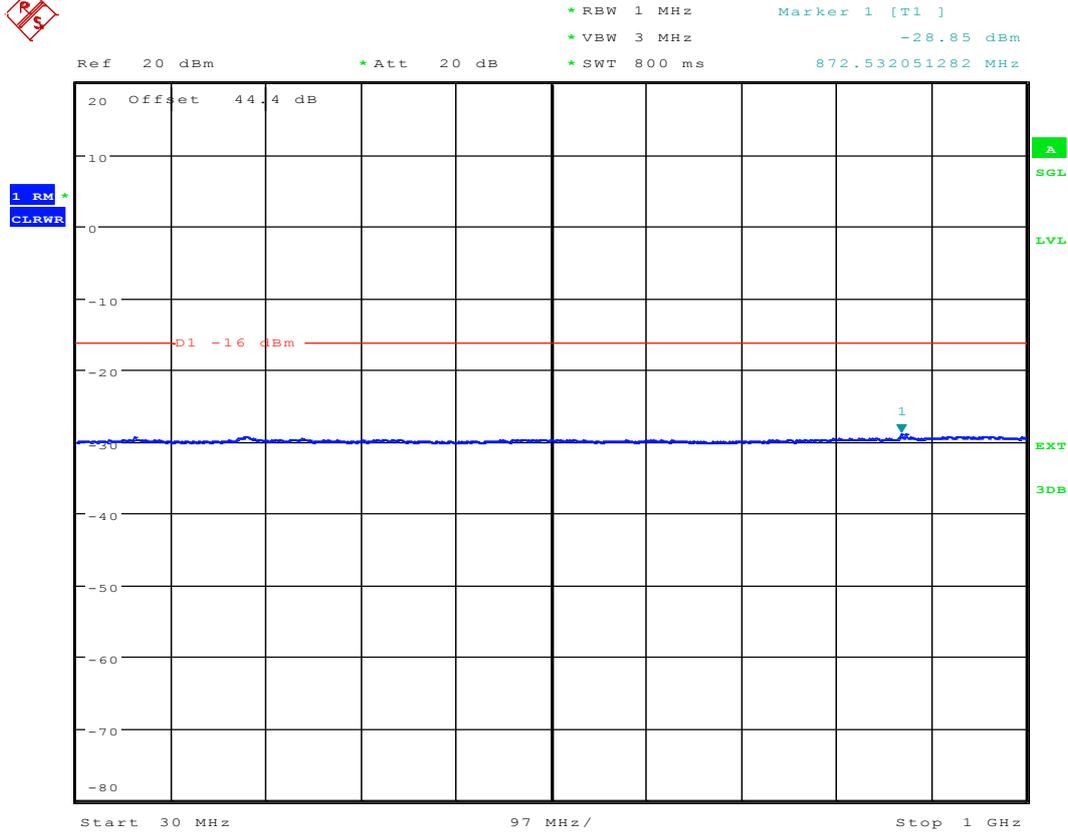
2.30 1L_15M_TM1_T



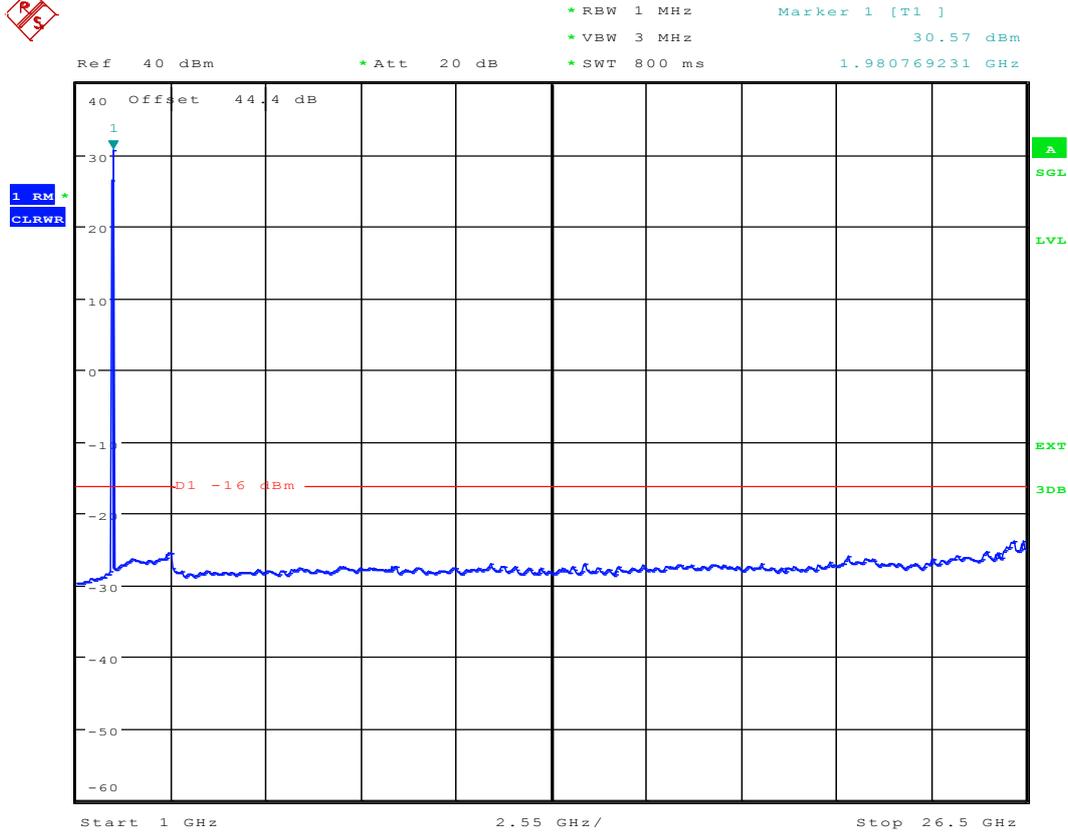
Date: 20.JAN.2015 11:54:59



Date: 20.JAN.2015 11:55:19



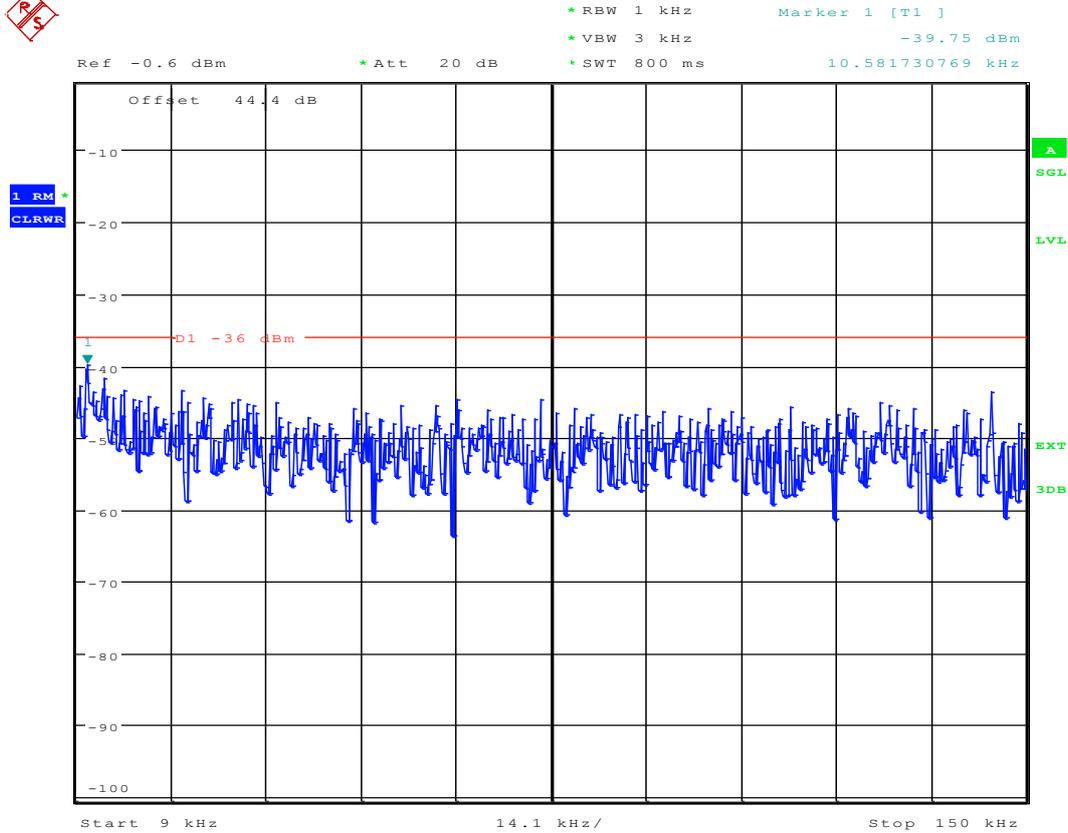
Date: 20.JAN.2015 11:55:38



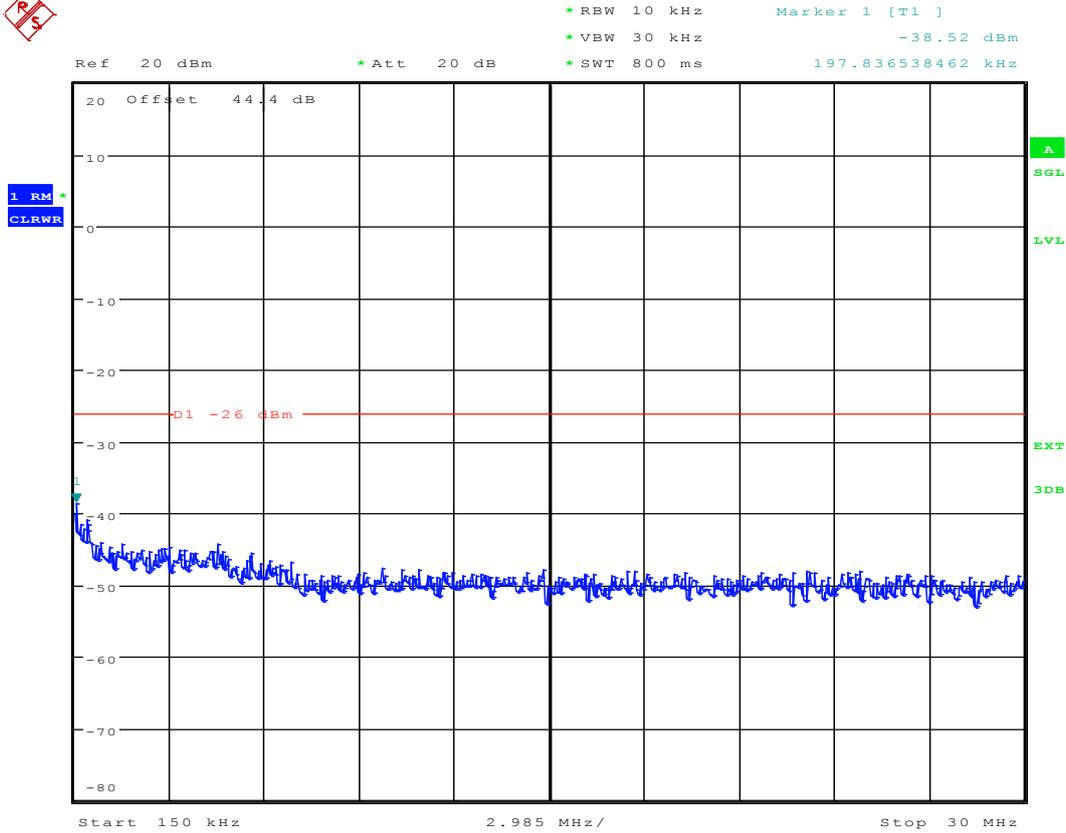
Date: 20.JAN.2015 11:55:57



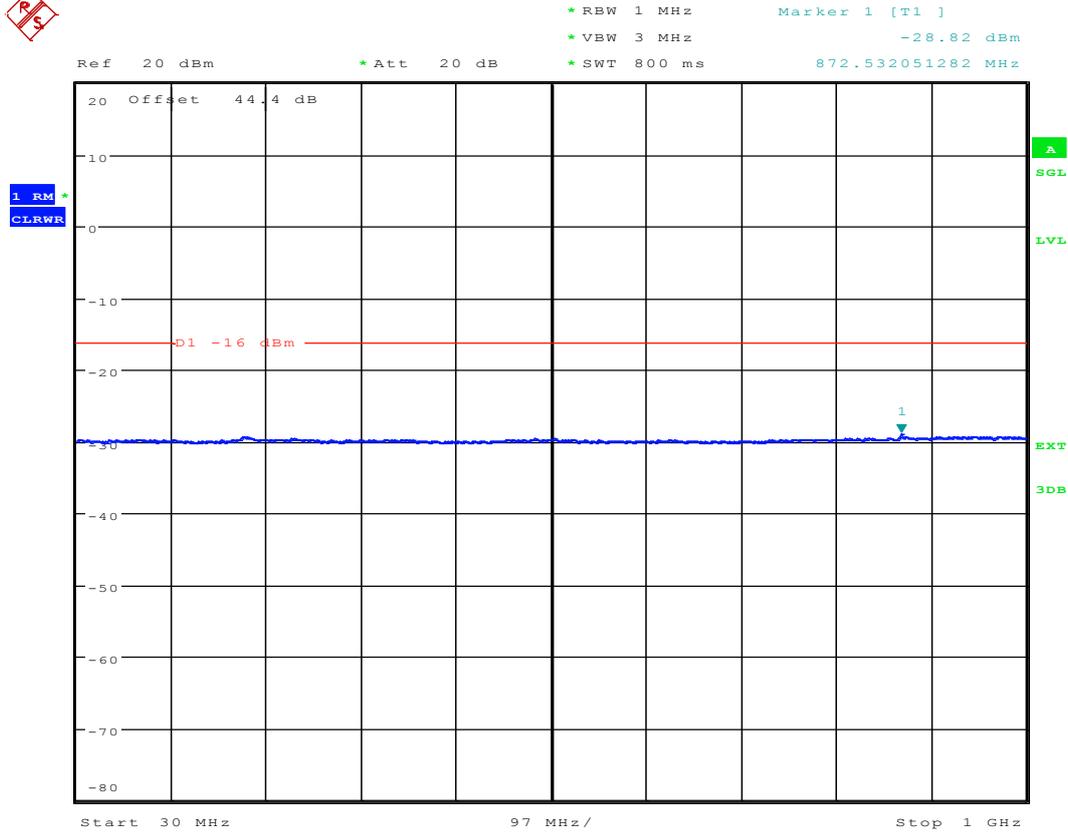
2.31 1L_20M_TM1_B



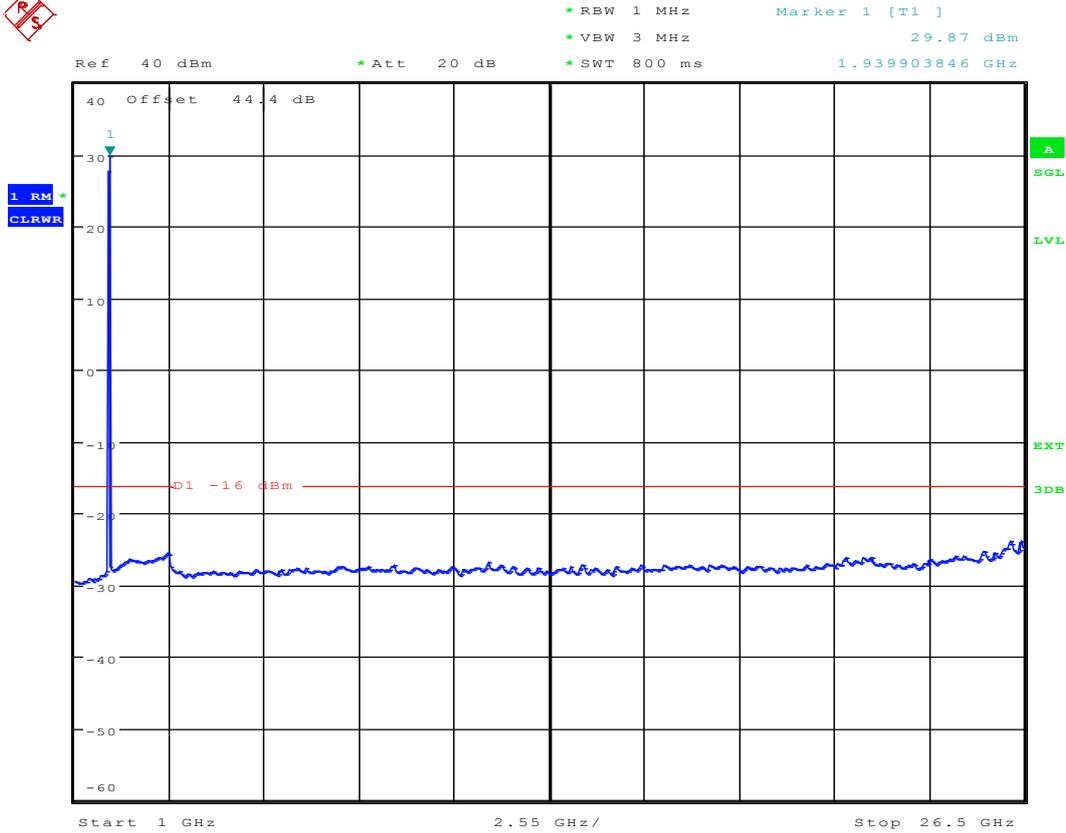
Date: 20.JAN.2015 11:57:59



Date: 20.JAN.2015 11:58:19



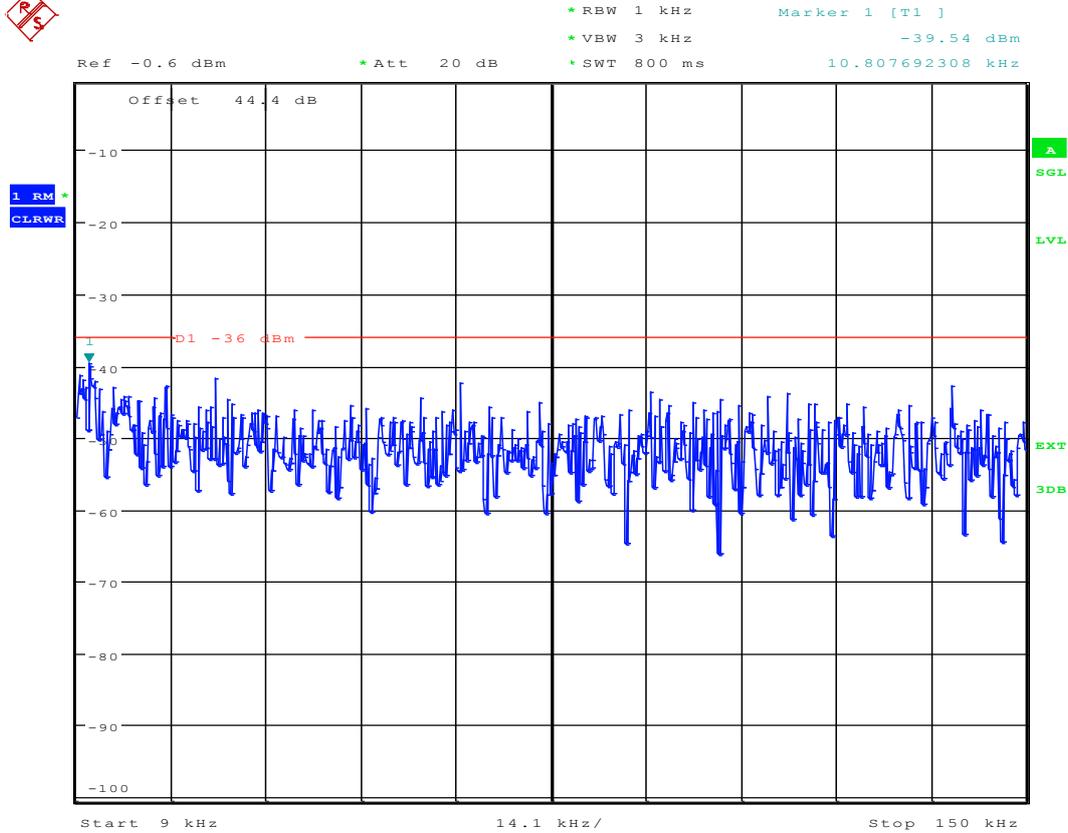
Date: 20.JAN.2015 11:58:39



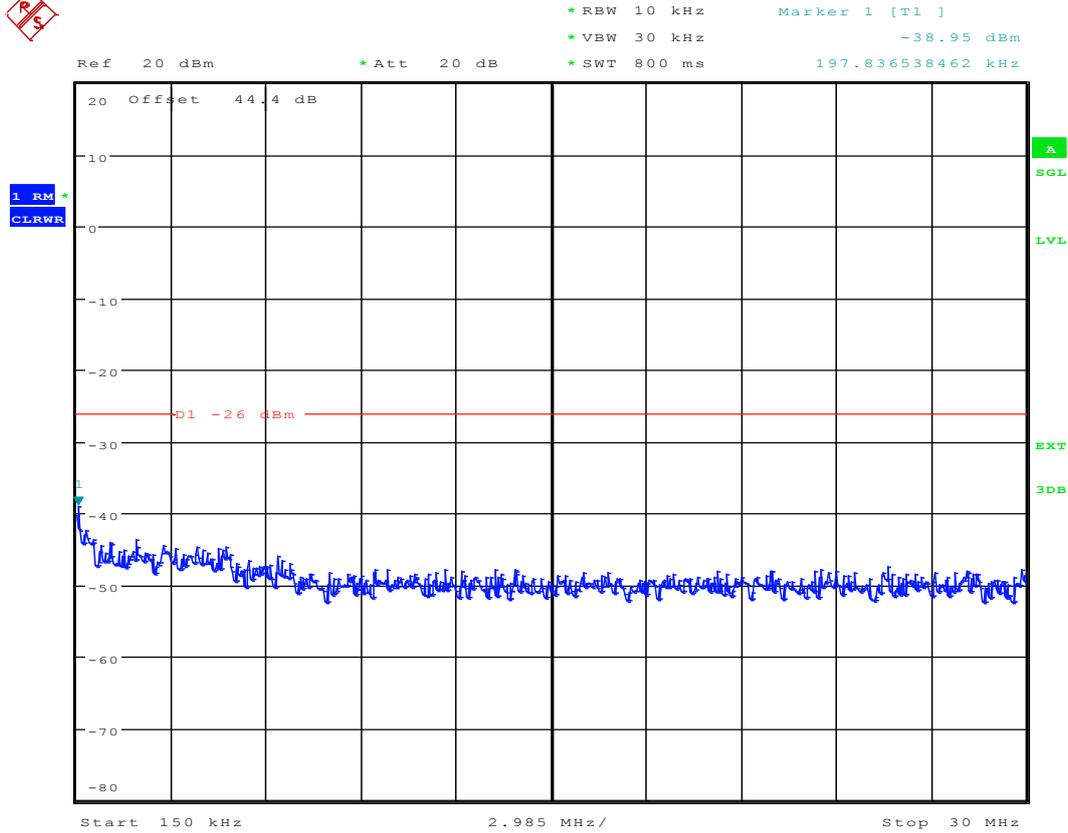
Date: 20.JAN.2015 11:58:58



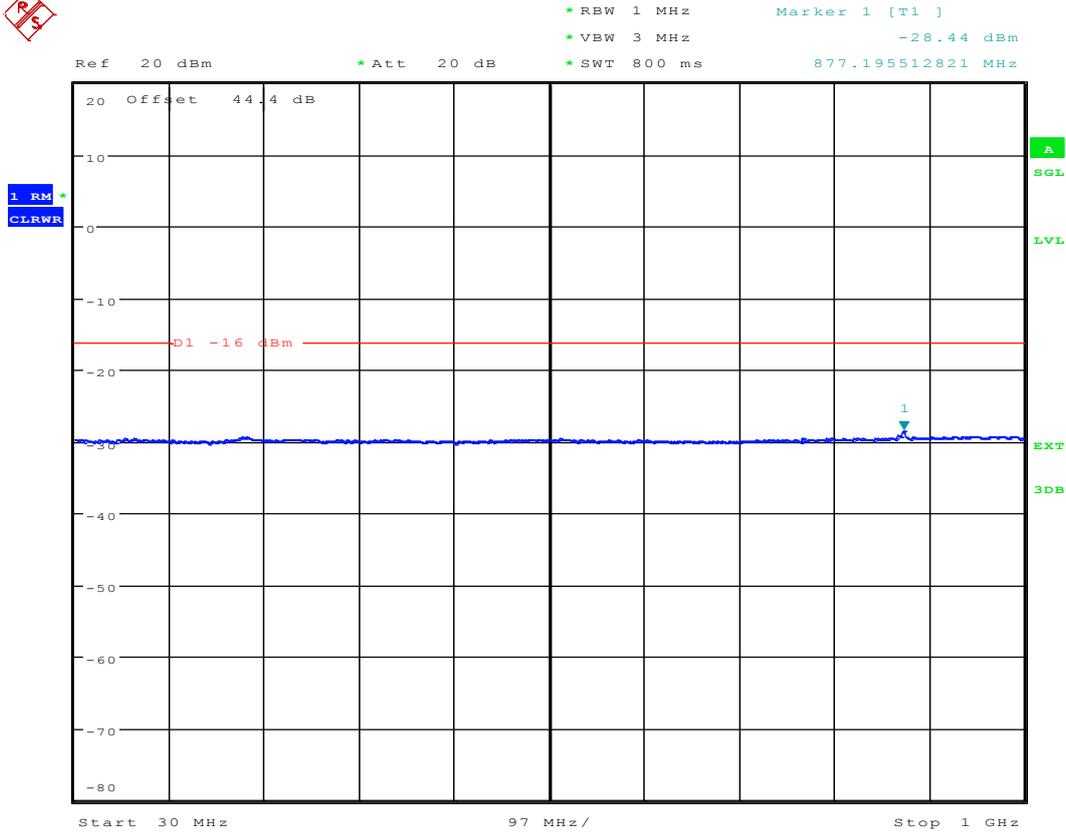
2.32 1L_20M_TM1_M



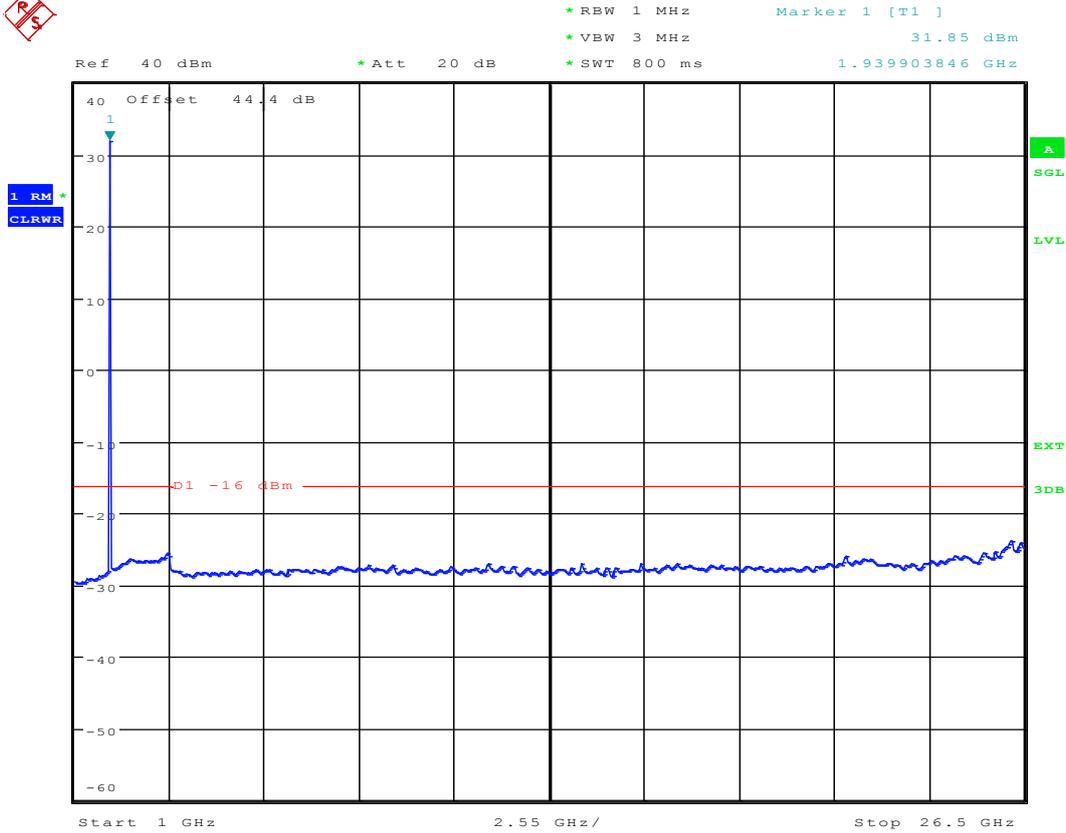
Date: 20.JAN.2015 12:00:35



Date: 20.JAN.2015 12:00:55



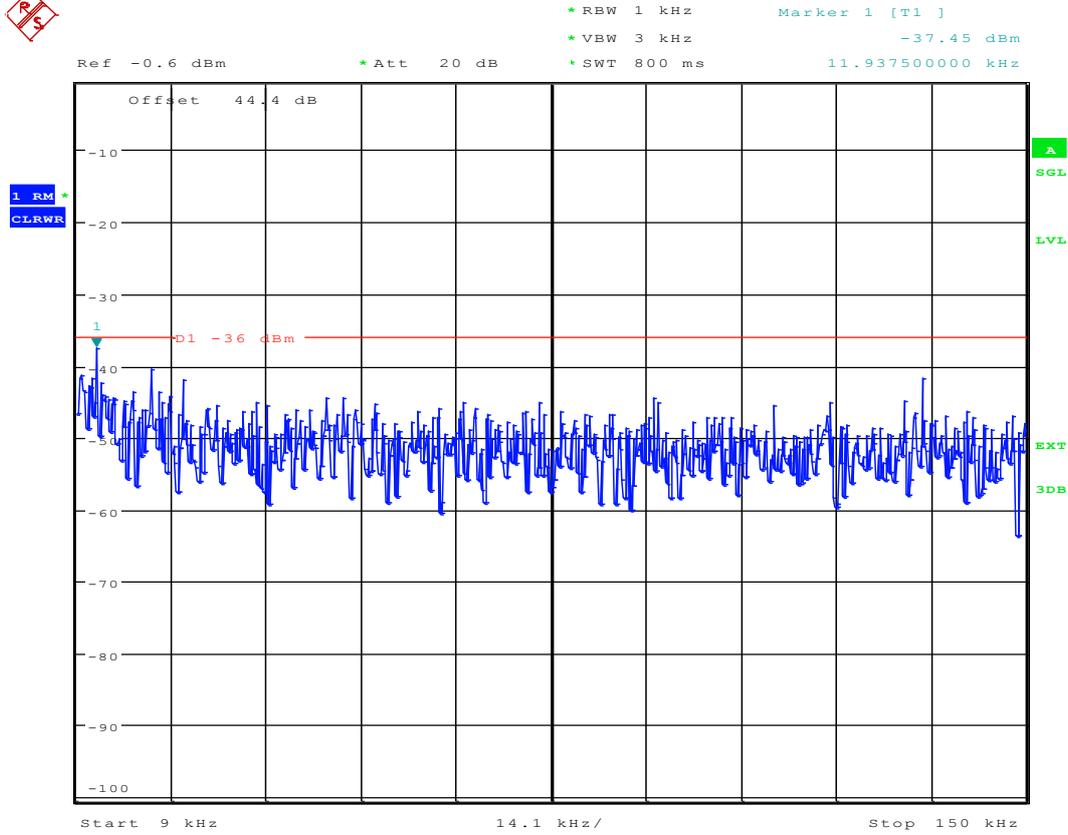
Date: 20.JAN.2015 12:01:15



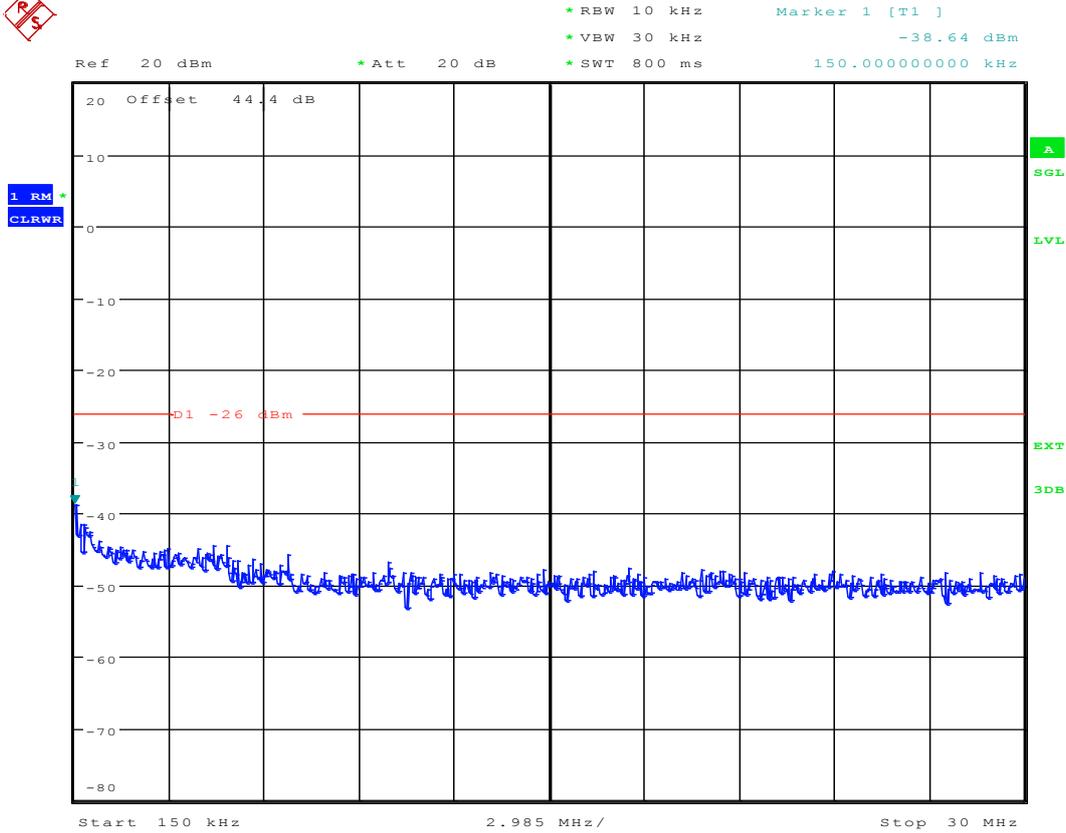
Date: 20.JAN.2015 12:01:34



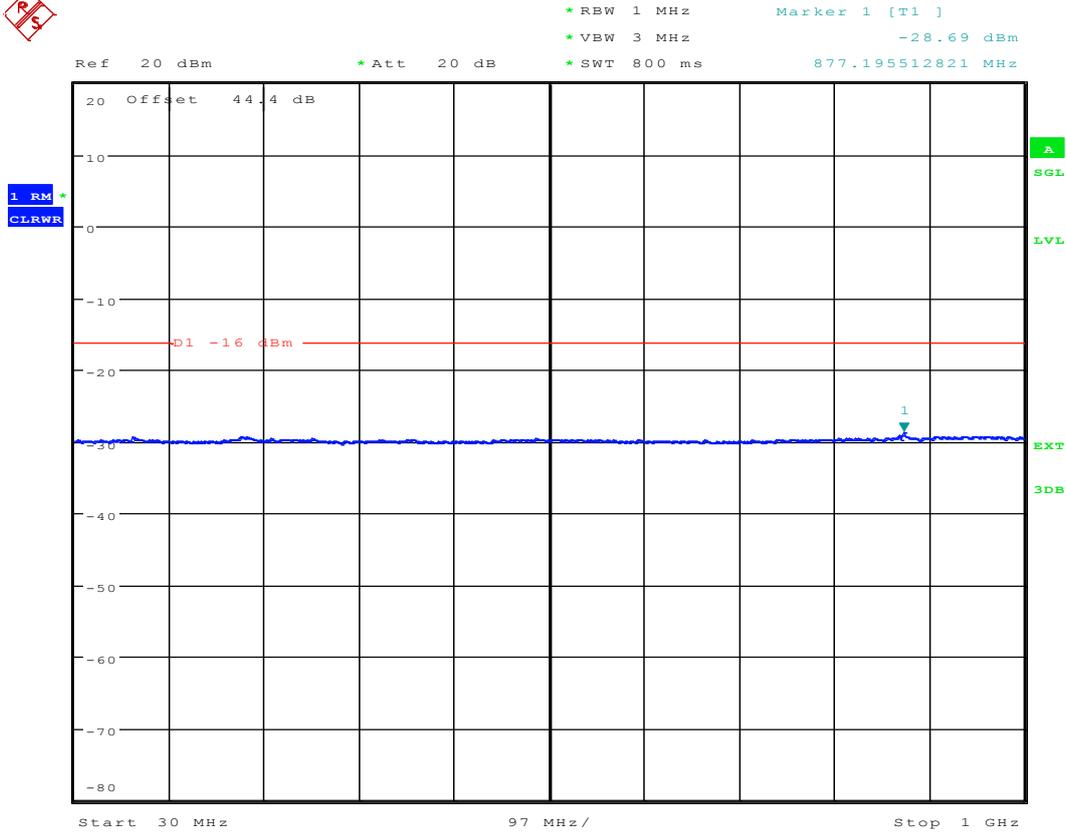
2.33 1L_20M_TM1_T



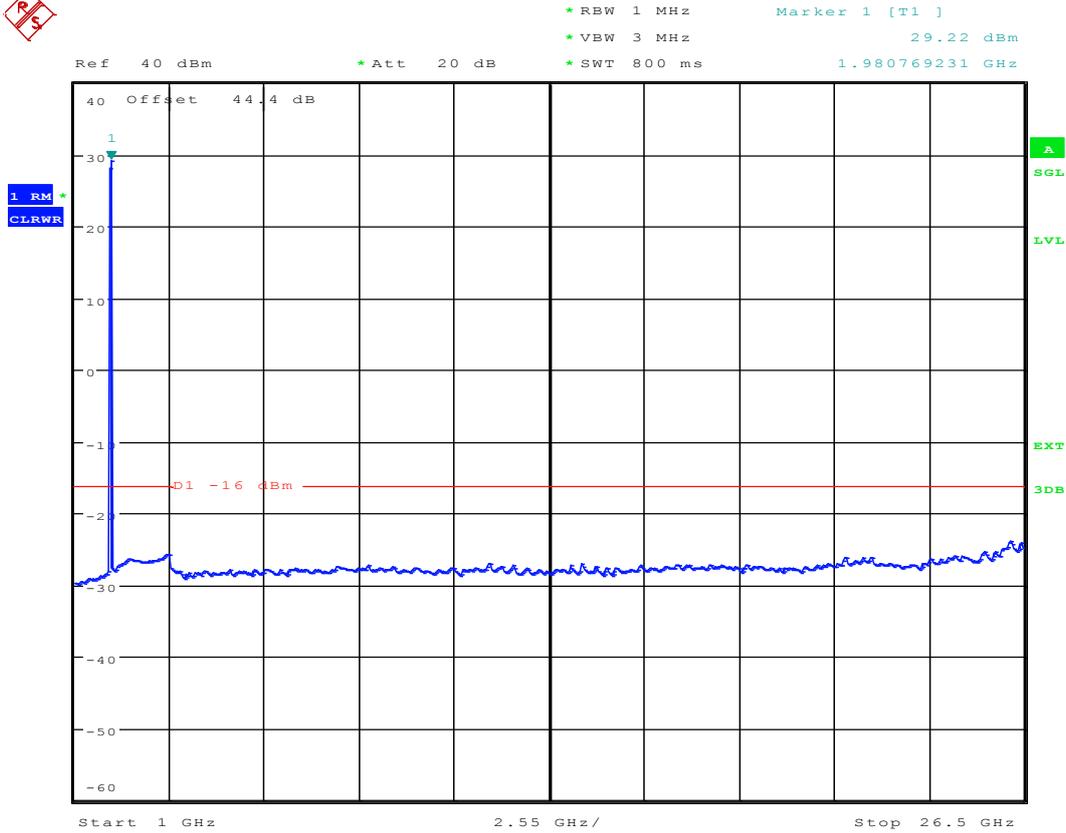
Date: 20.JAN.2015 12:03:11



Date: 20.JAN.2015 12:03:31



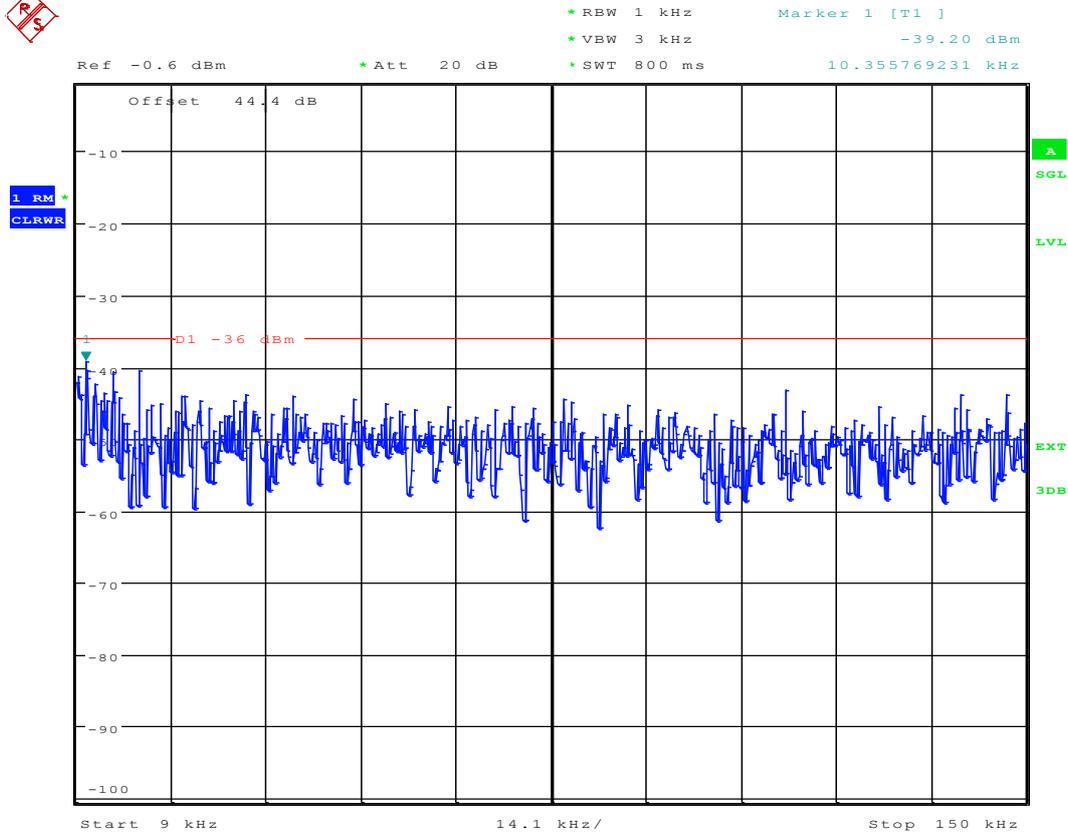
Date: 20.JAN.2015 12:03:50



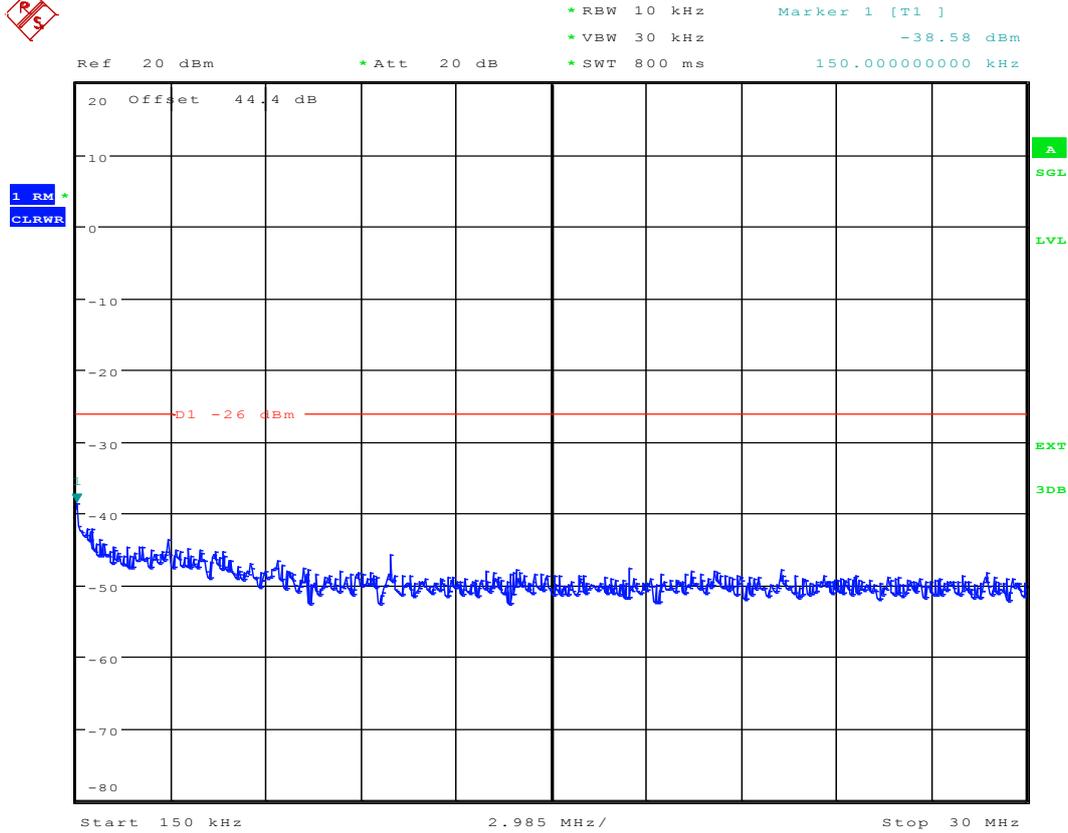
Date: 20.JAN.2015 12:04:10



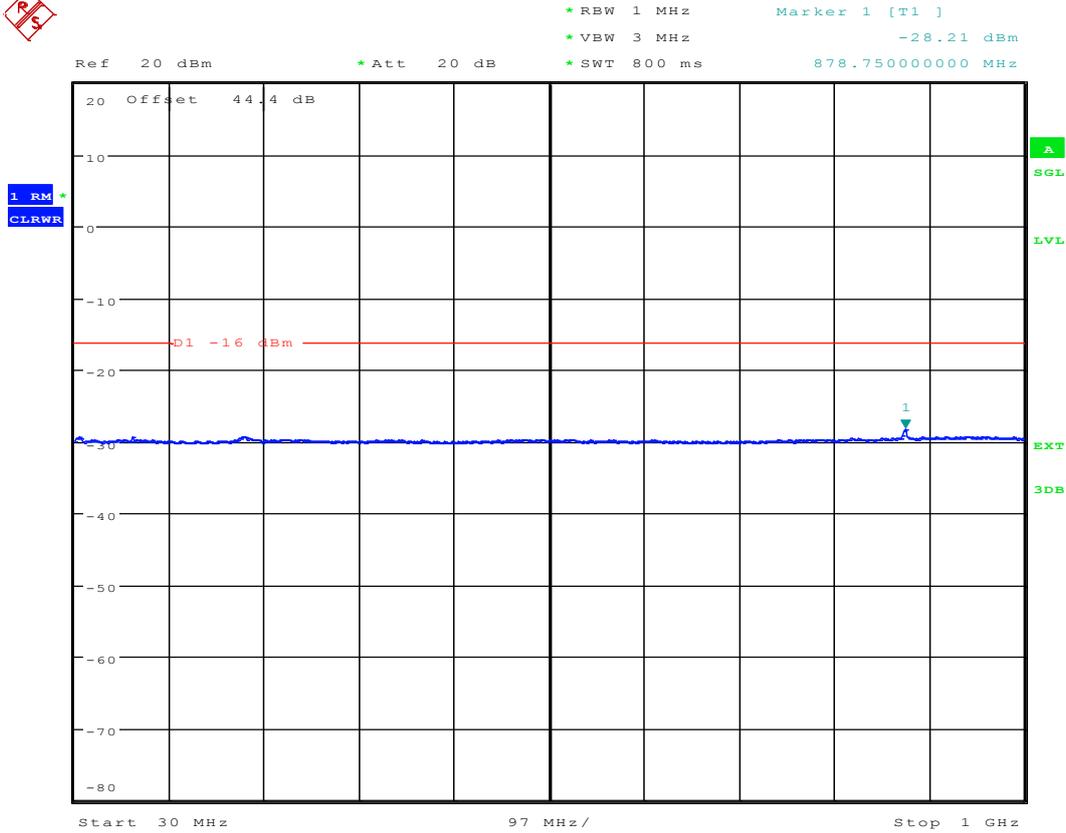
2.34 2L_5M_TM1_B



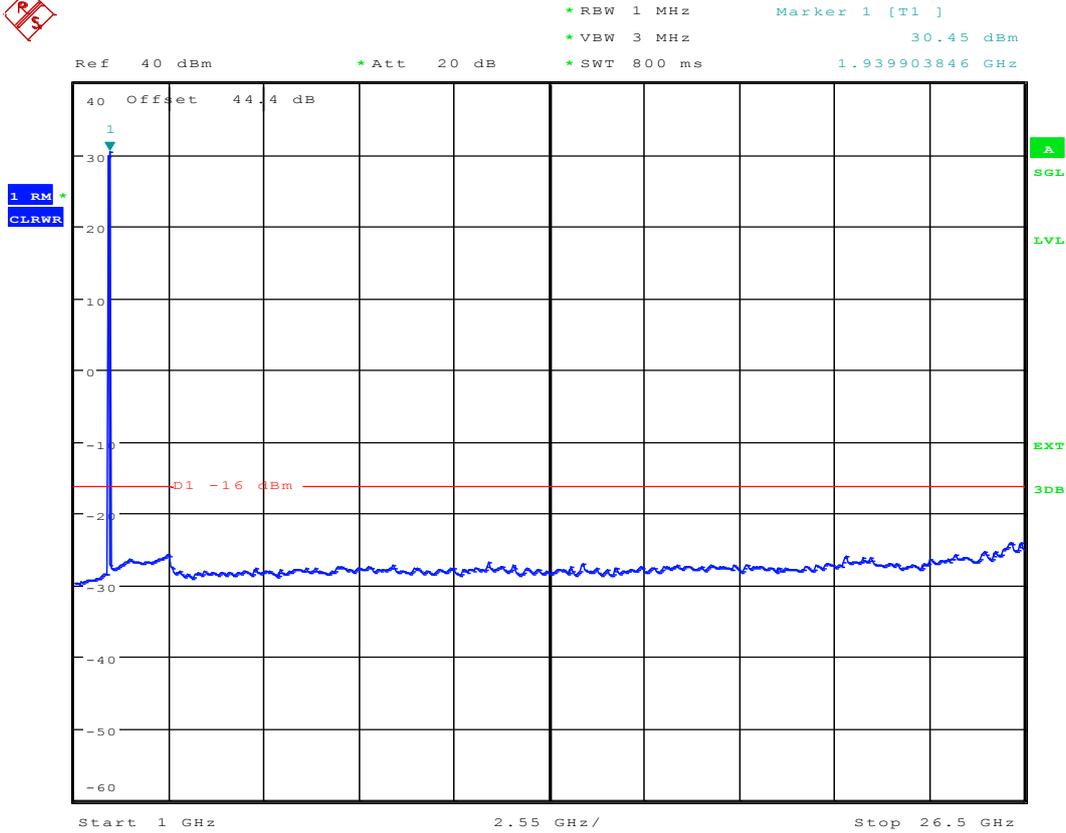
Date: 20.JAN.2015 18:04:27



Date: 20.JAN.2015 18:04:48



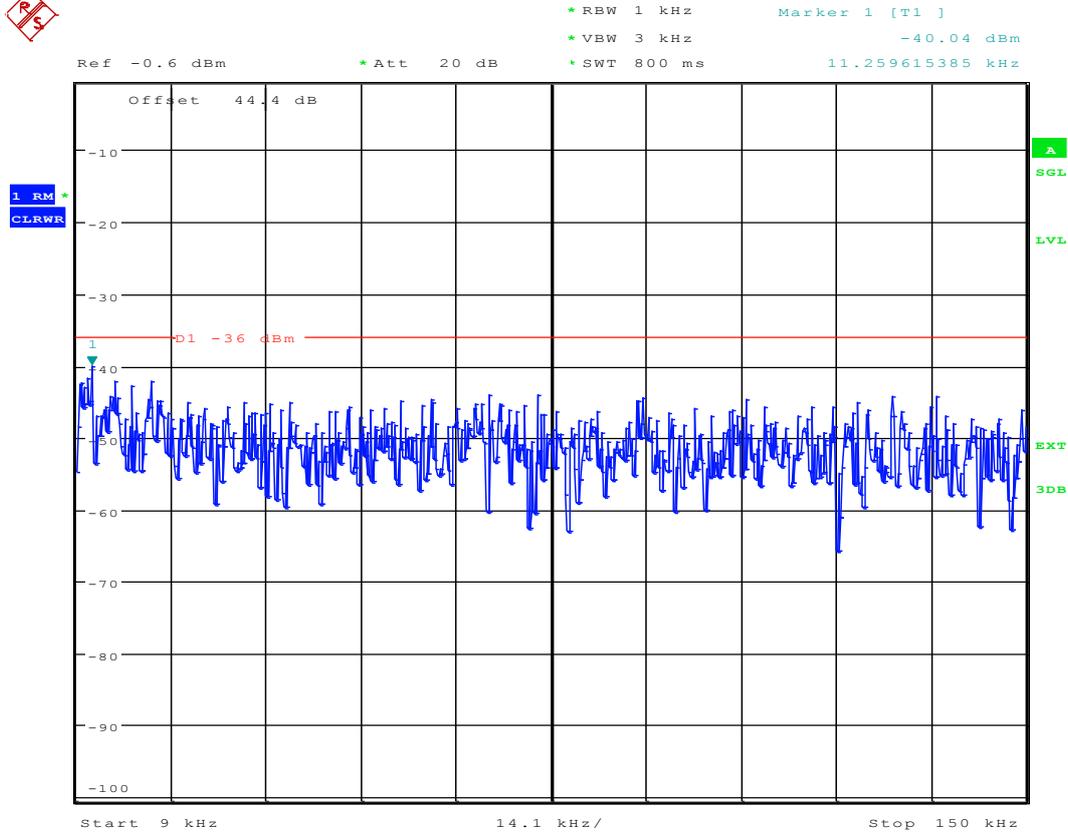
Date: 20.JAN.2015 18:05:08



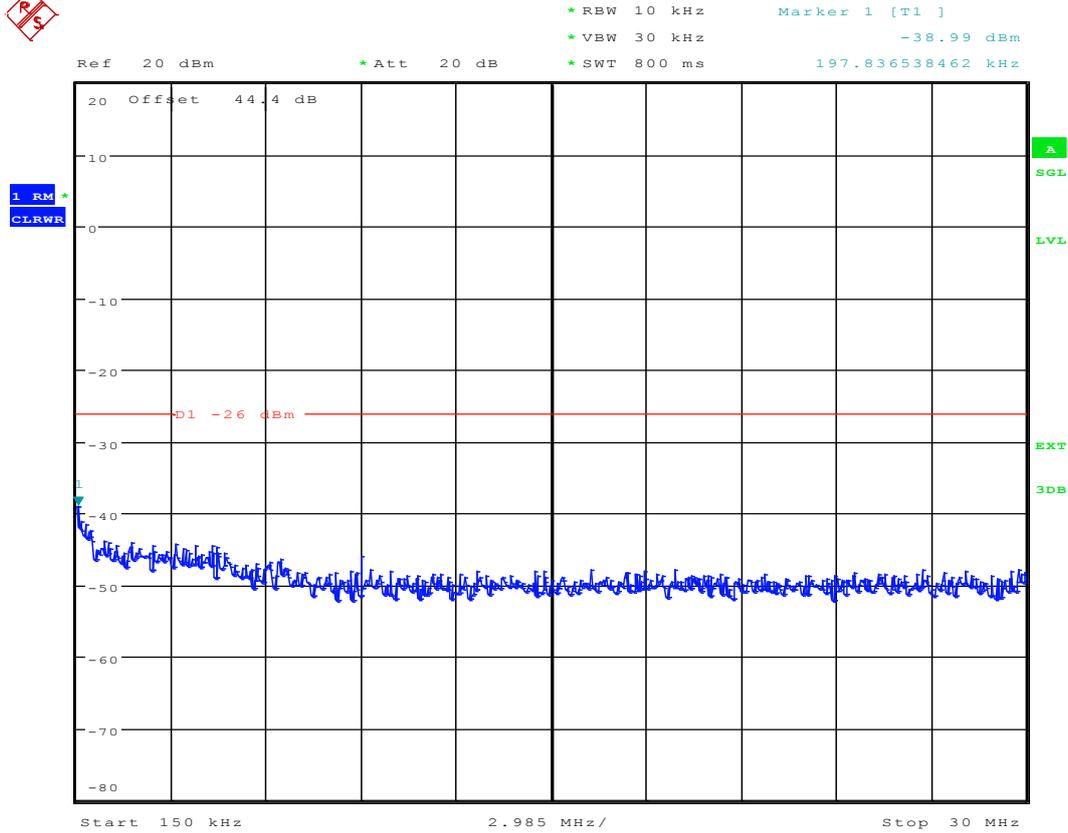
Date: 20.JAN.2015 18:05:27



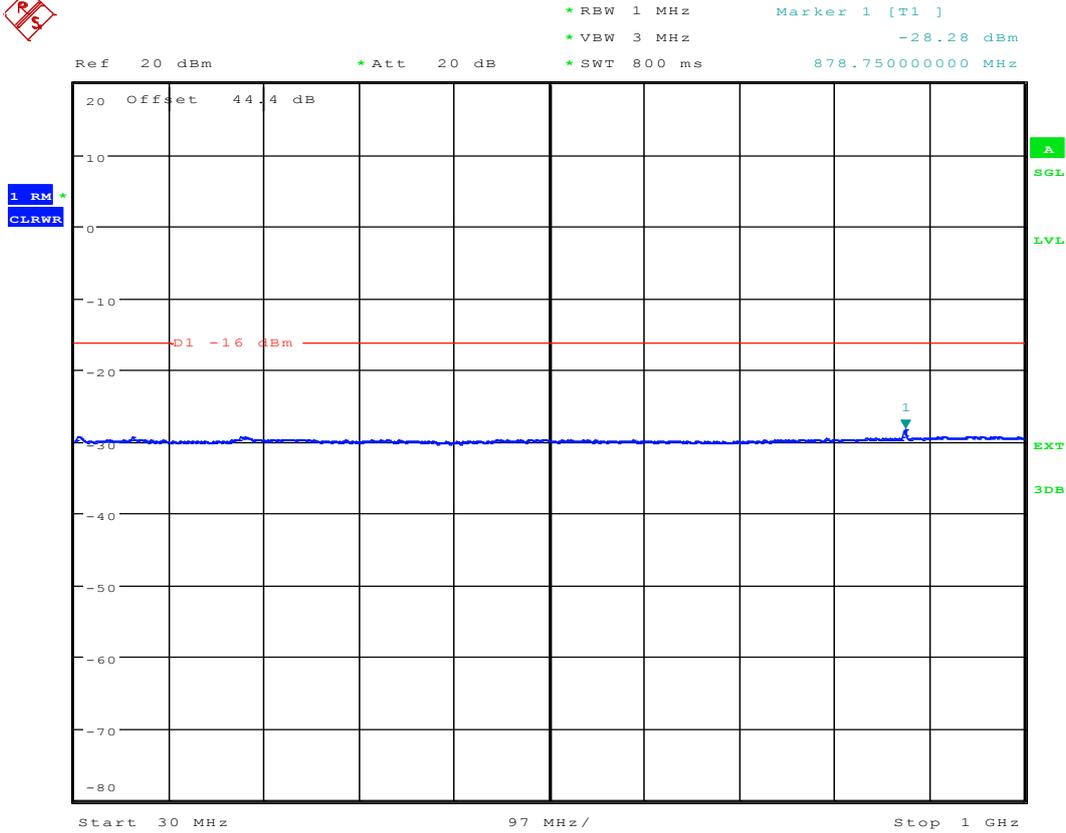
2.35 2L_5M_TM1_M



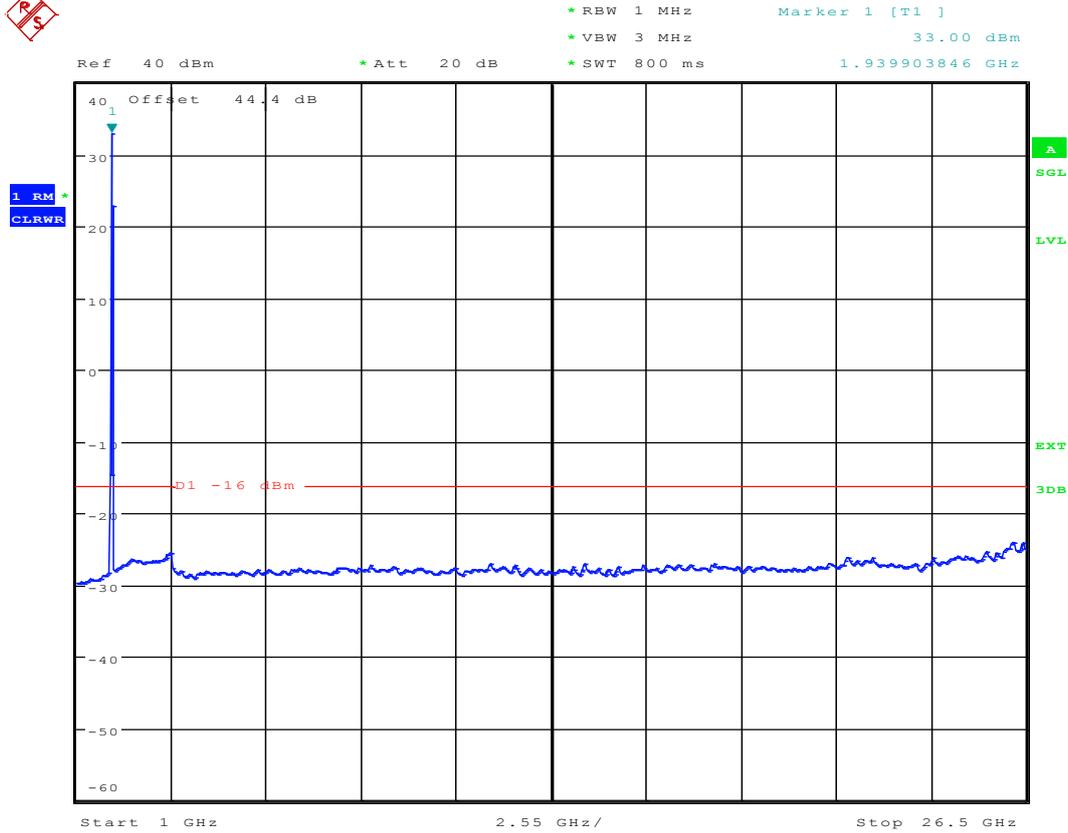
Date: 20.JAN.2015 18:07:05



Date: 20.JAN.2015 18:07:25



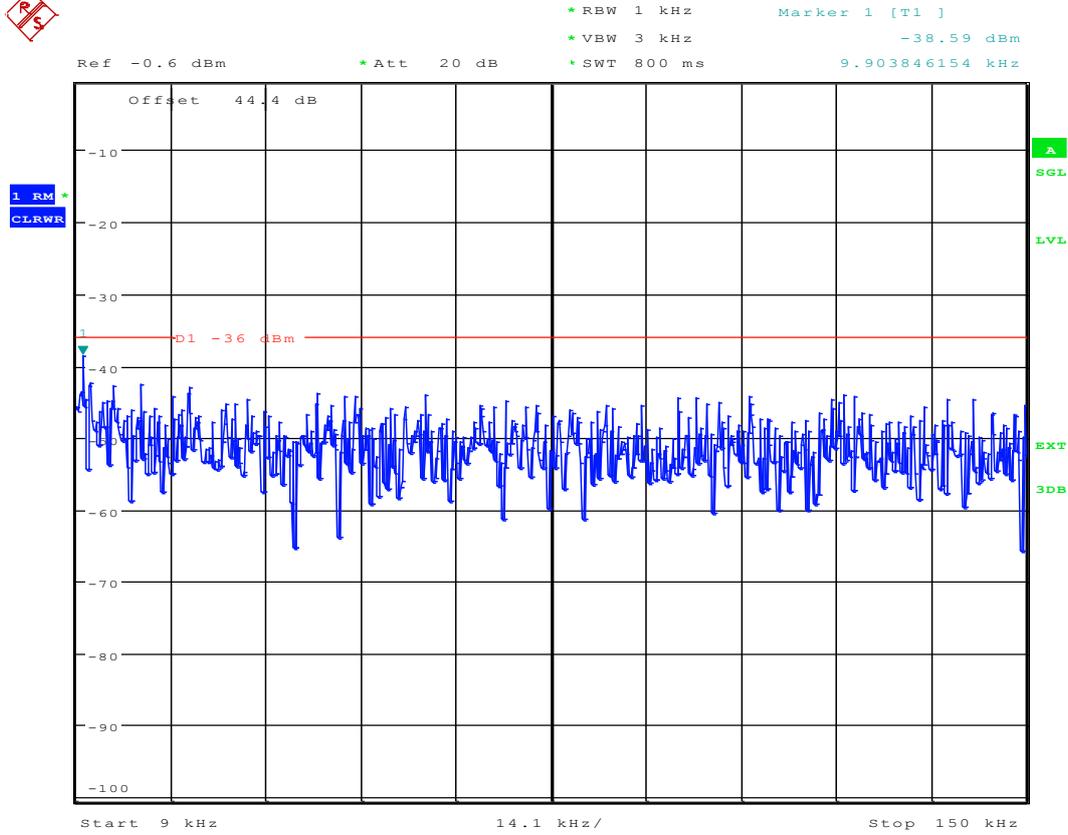
Date: 20.JAN.2015 18:07:45



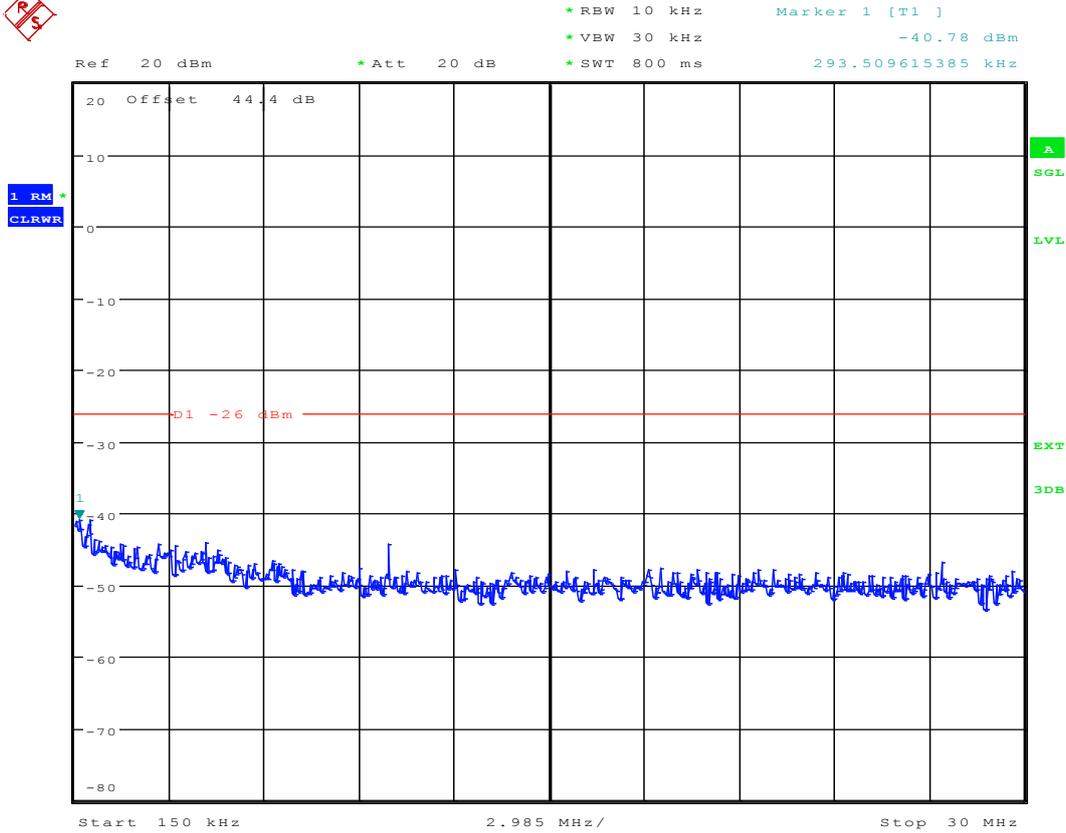
Date: 20.JAN.2015 18:08:04



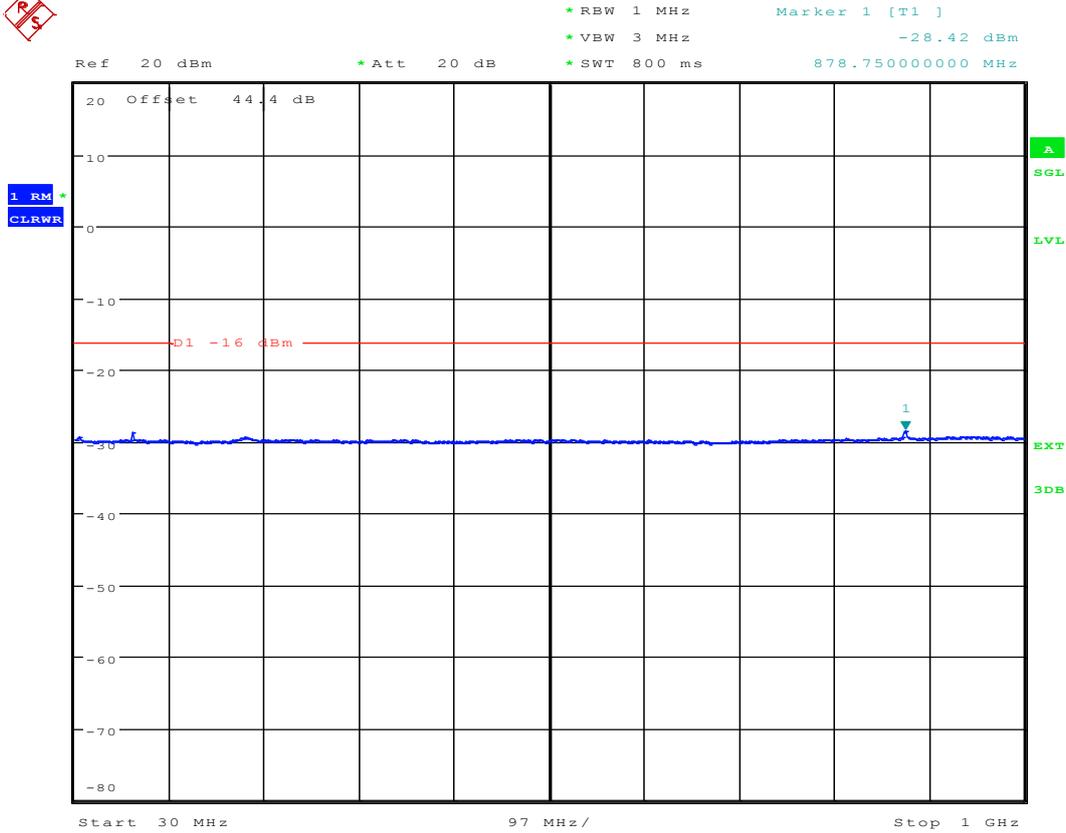
2.36 2L_5M_TM1_T



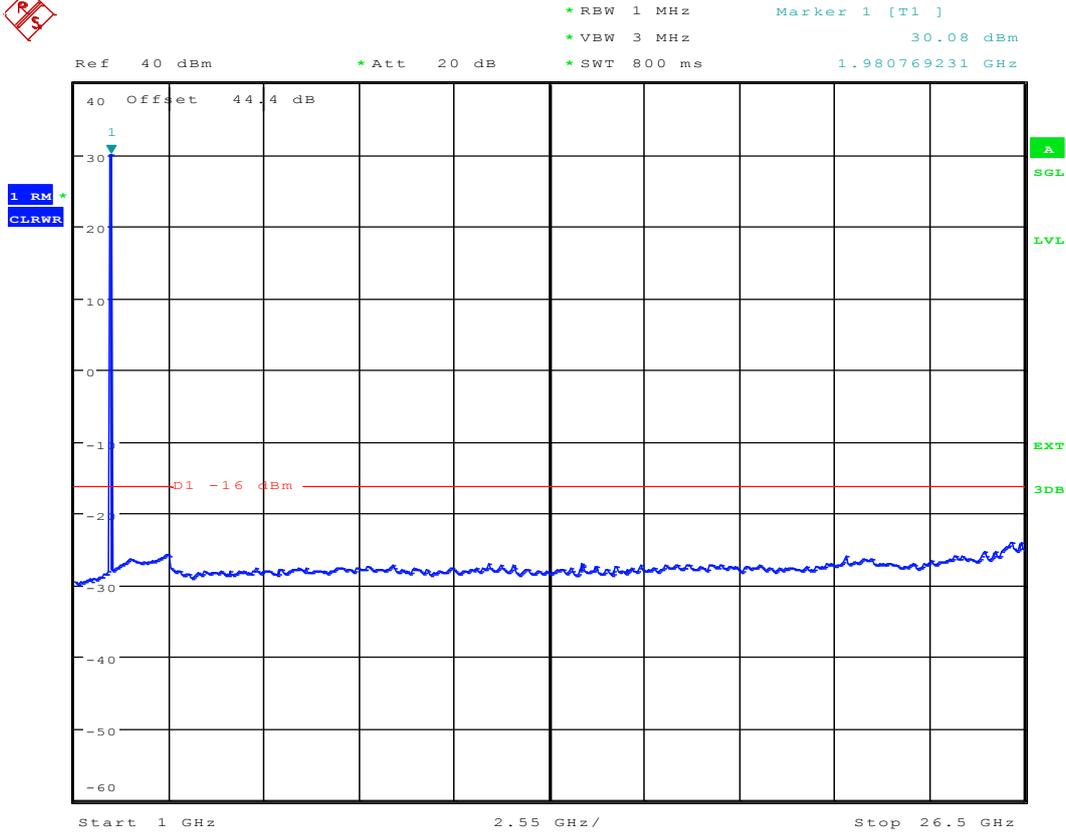
Date: 20.JAN.2015 18:09:39



Date: 20.JAN.2015 18:09:59



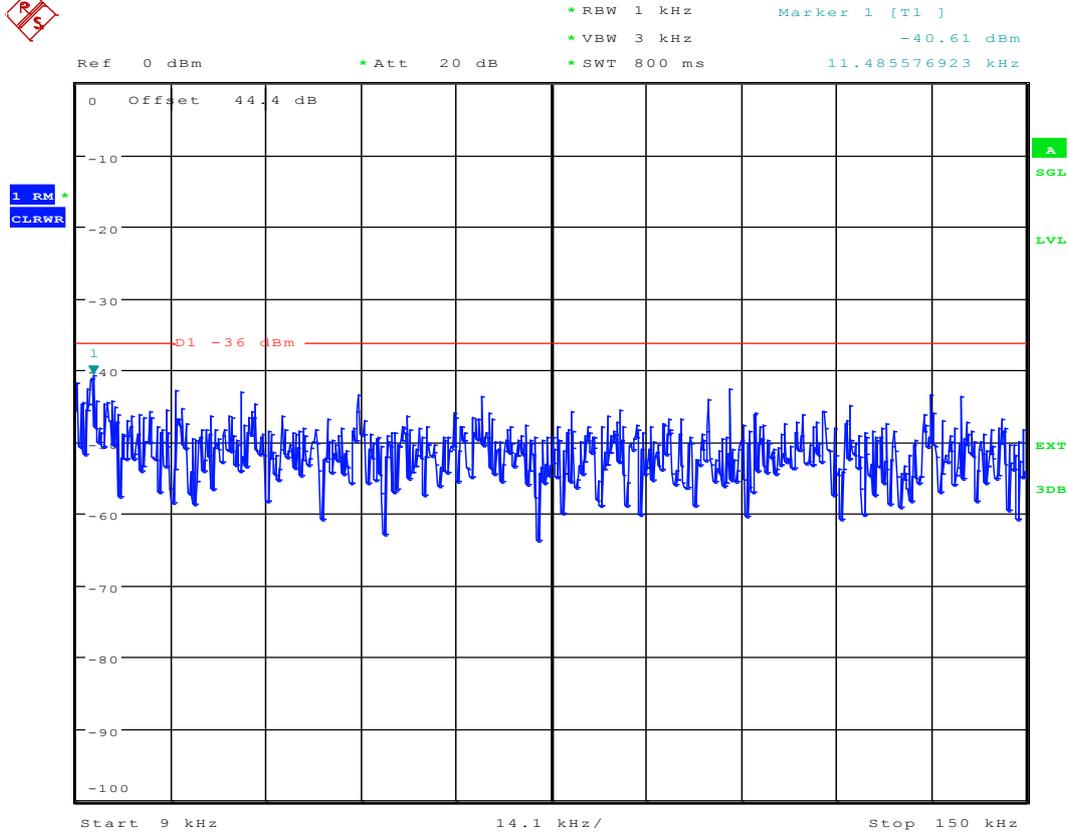
Date: 20.JAN.2015 18:10:18



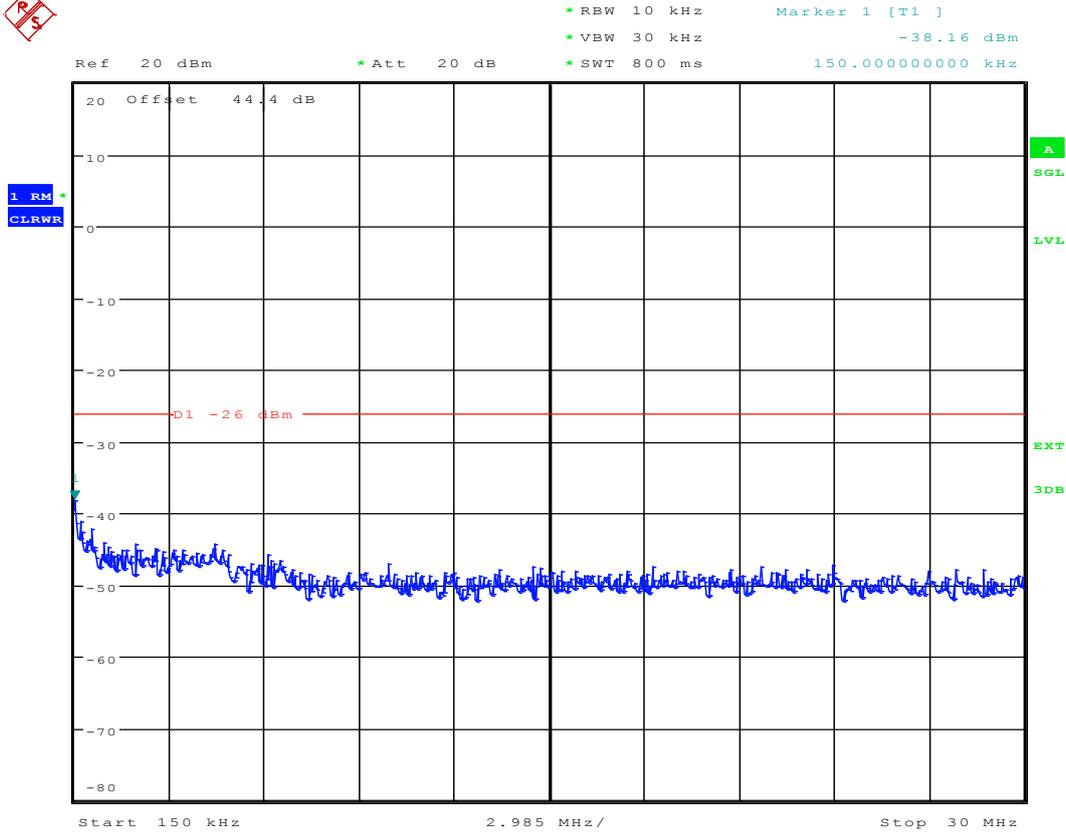
Date: 20.JAN.2015 18:10:38



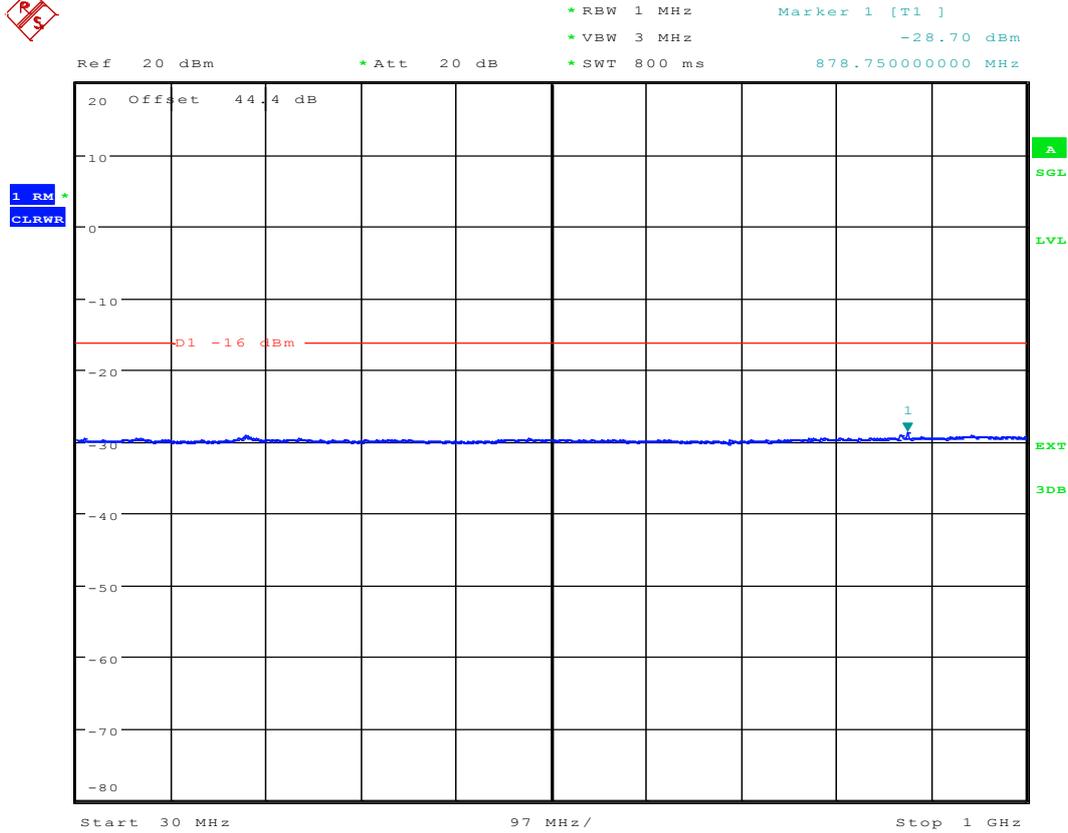
2.37 2G2U_TM1_B



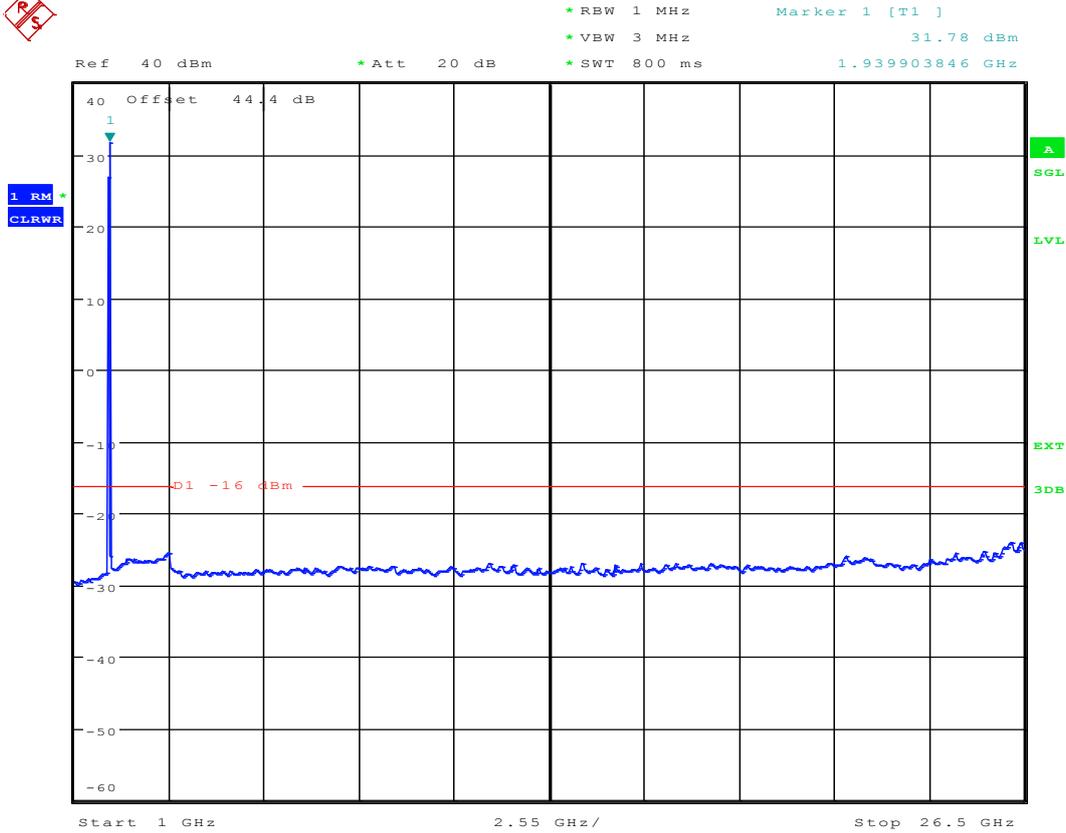
Date: 20.JAN.2015 18:44:49



Date: 20.JAN.2015 18:45:03



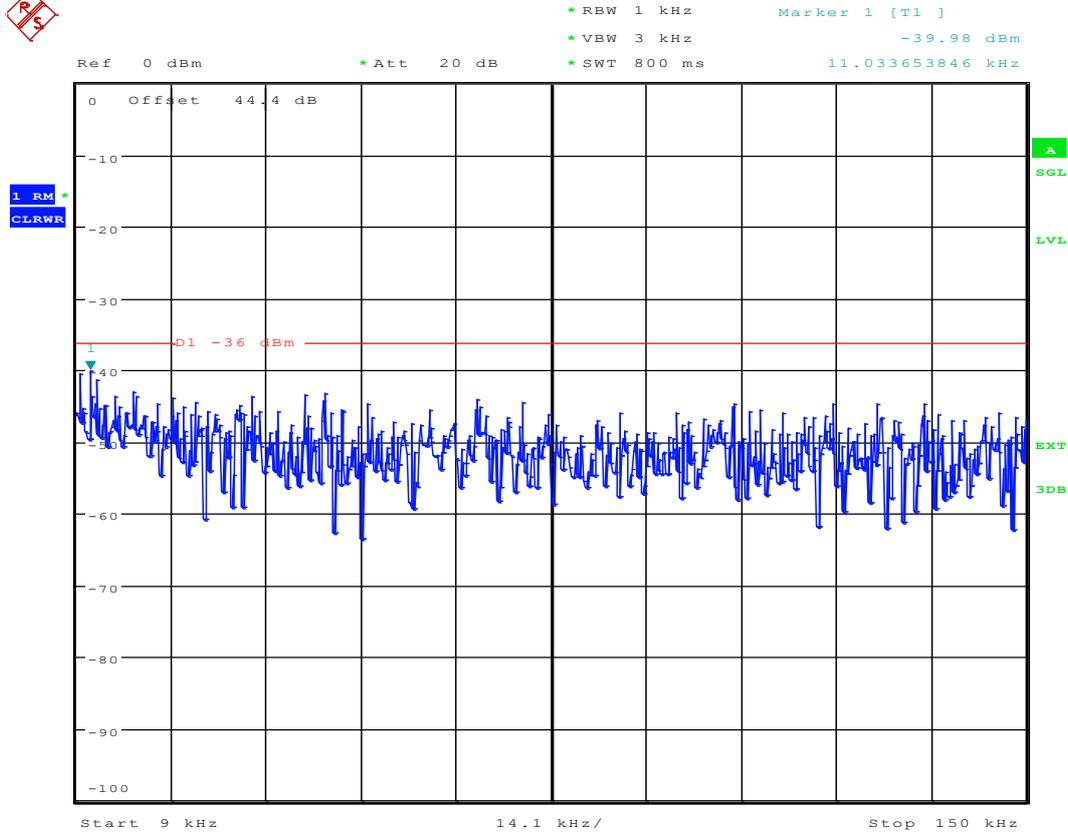
Date: 20.JAN.2015 18:45:15



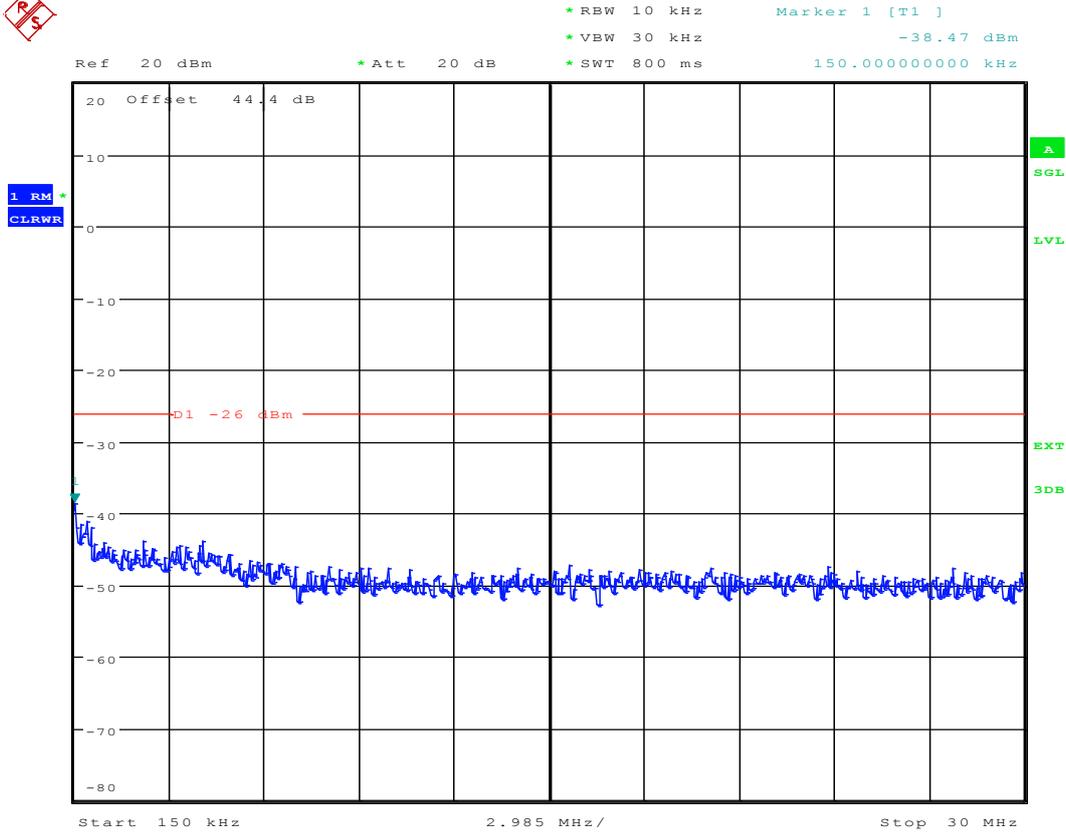
Date: 20.JAN.2015 18:45:27



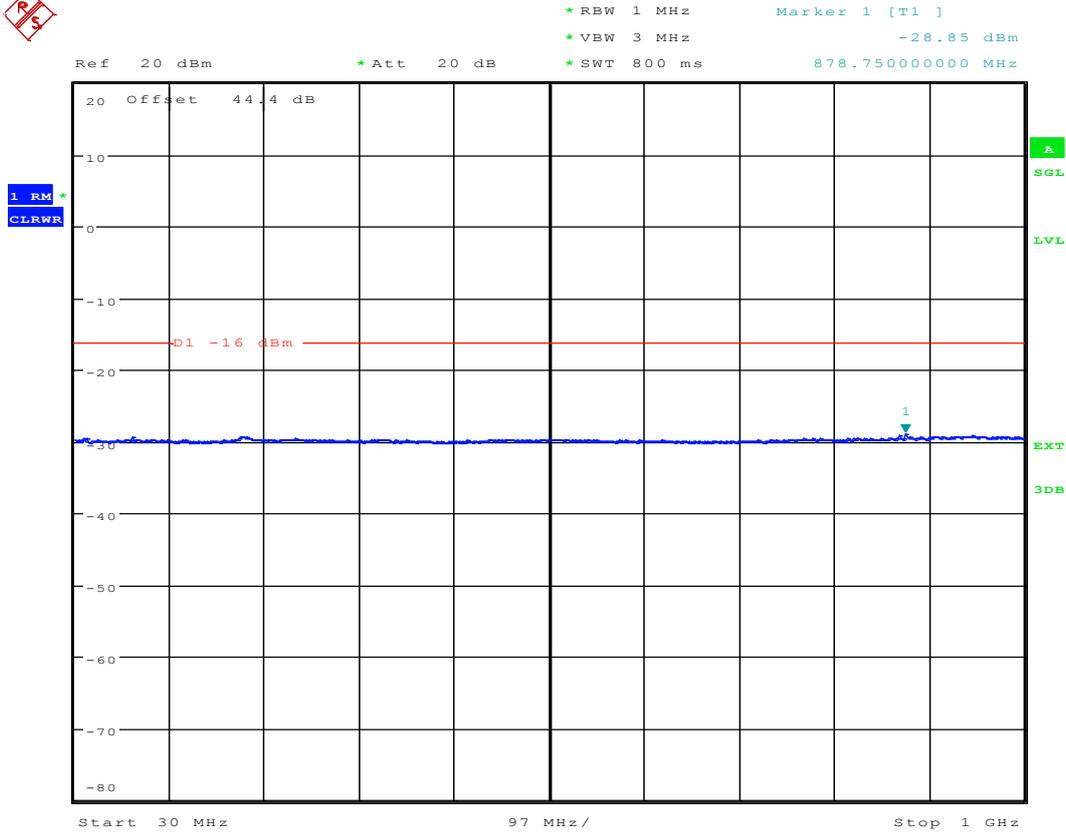
2.38 2G2U_TM1_M



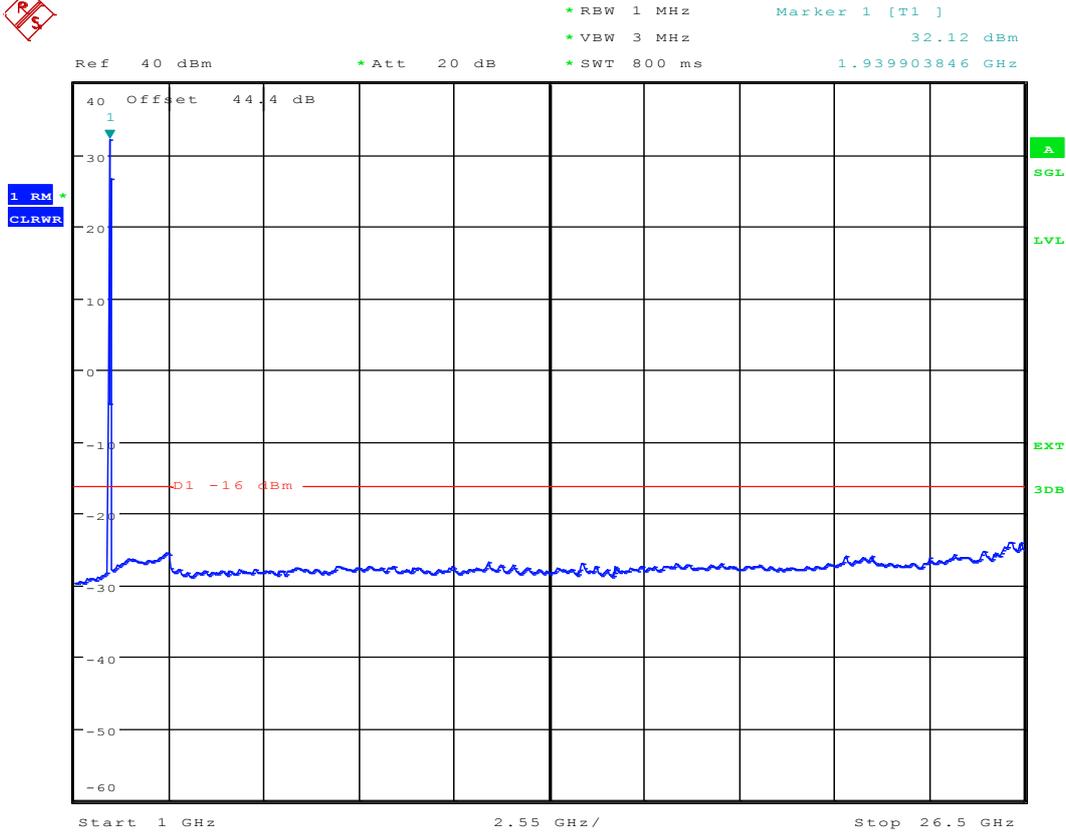
Date: 20.JAN.2015 18:47:58



Date: 20.JAN.2015 18:48:12



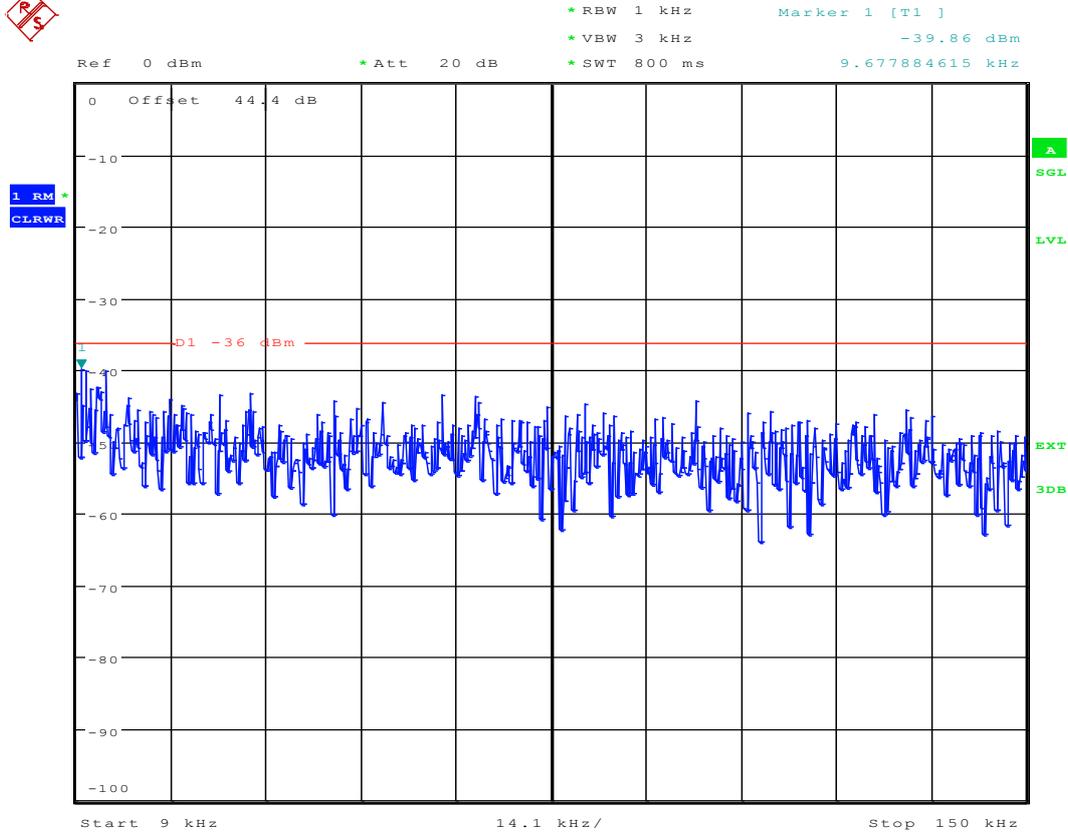
Date: 20.JAN.2015 18:48:24



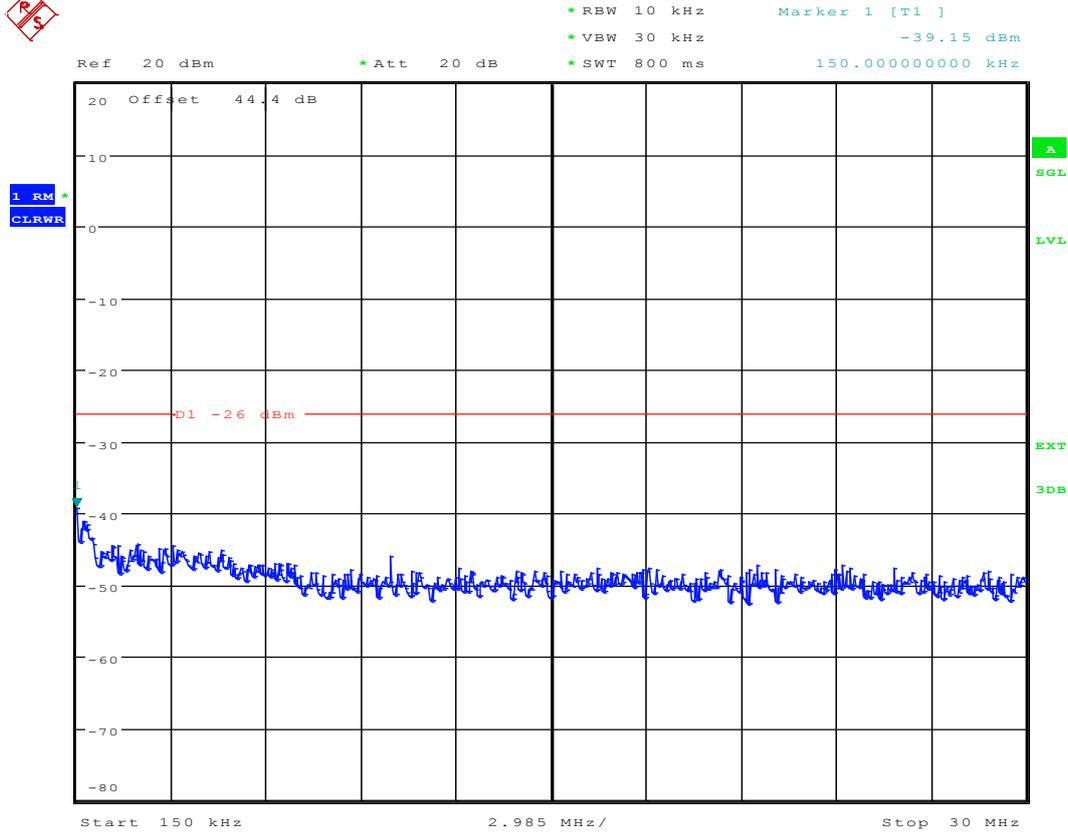
Date: 20.JAN.2015 18:48:37



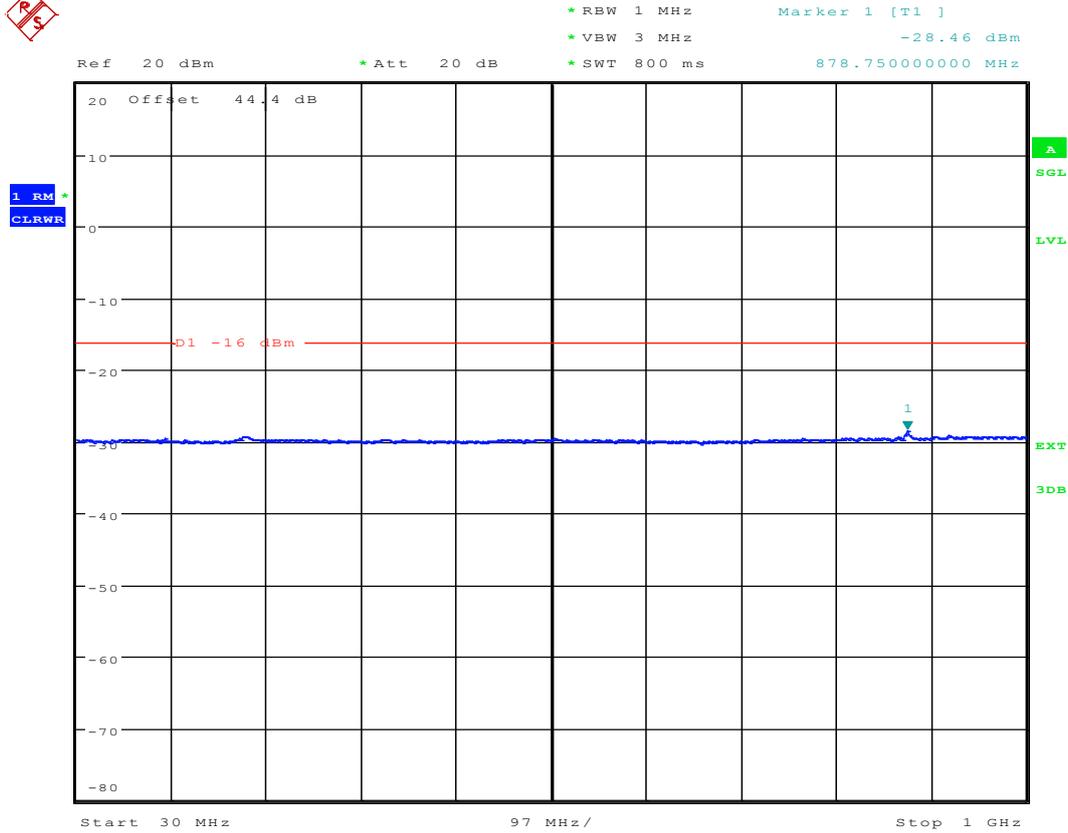
2.39 2G2U_TM1_T



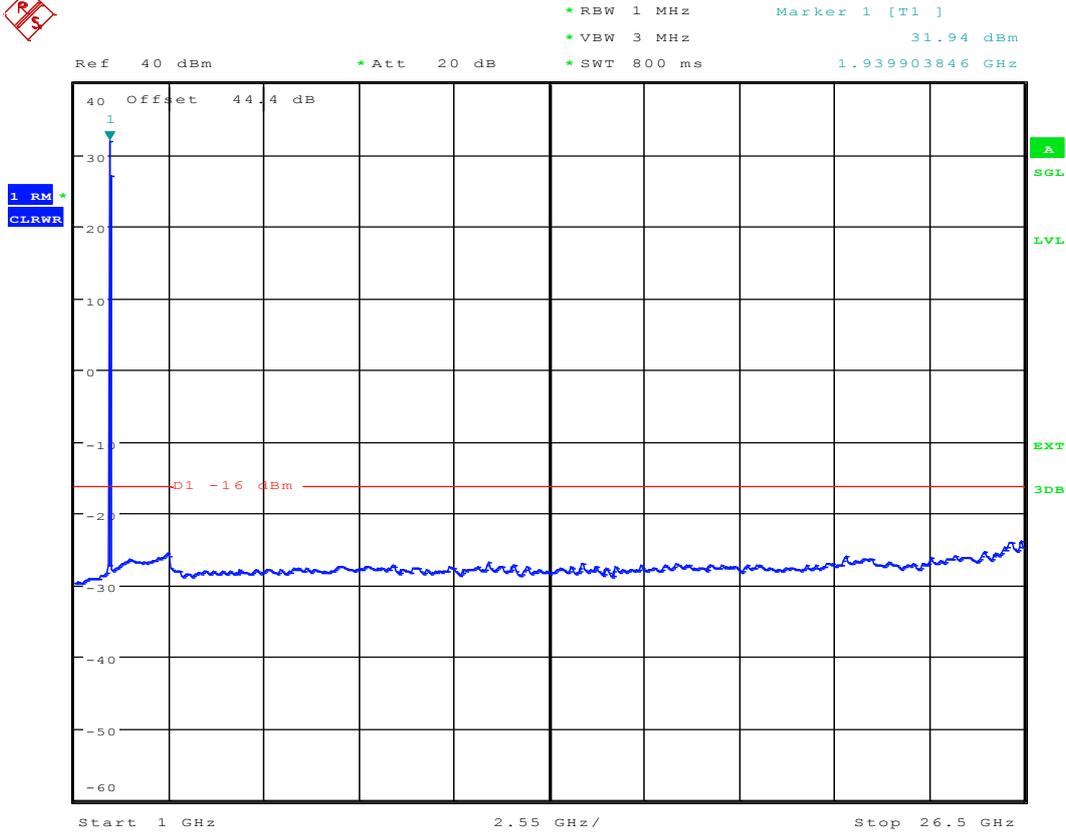
Date: 20.JAN.2015 18:51:11



Date: 20.JAN.2015 18:51:25



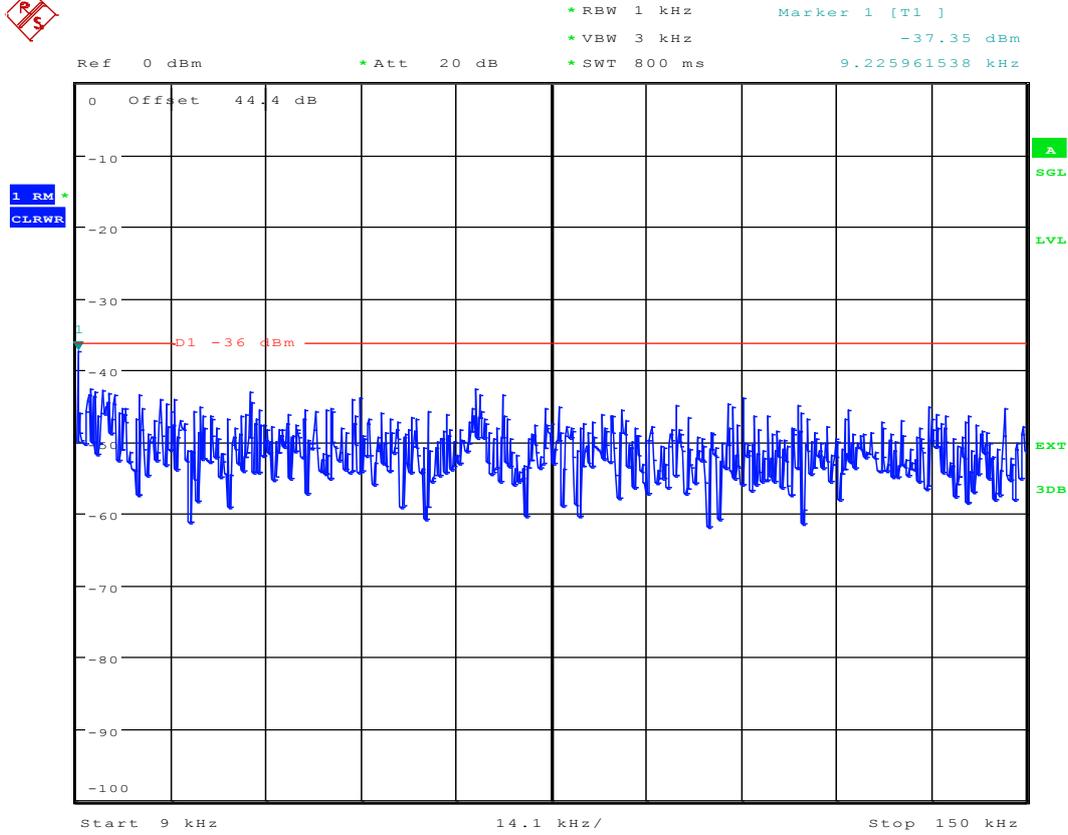
Date: 20.JAN.2015 18:51:37



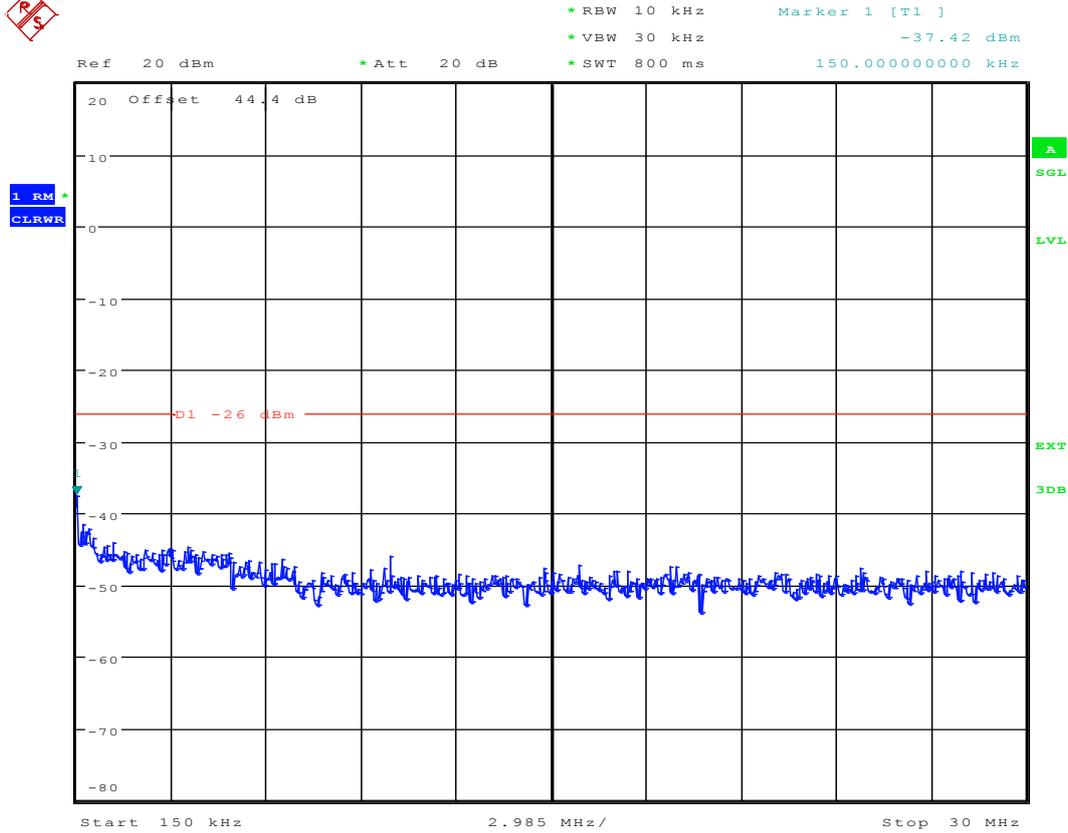
Date: 20.JAN.2015 18:51:50



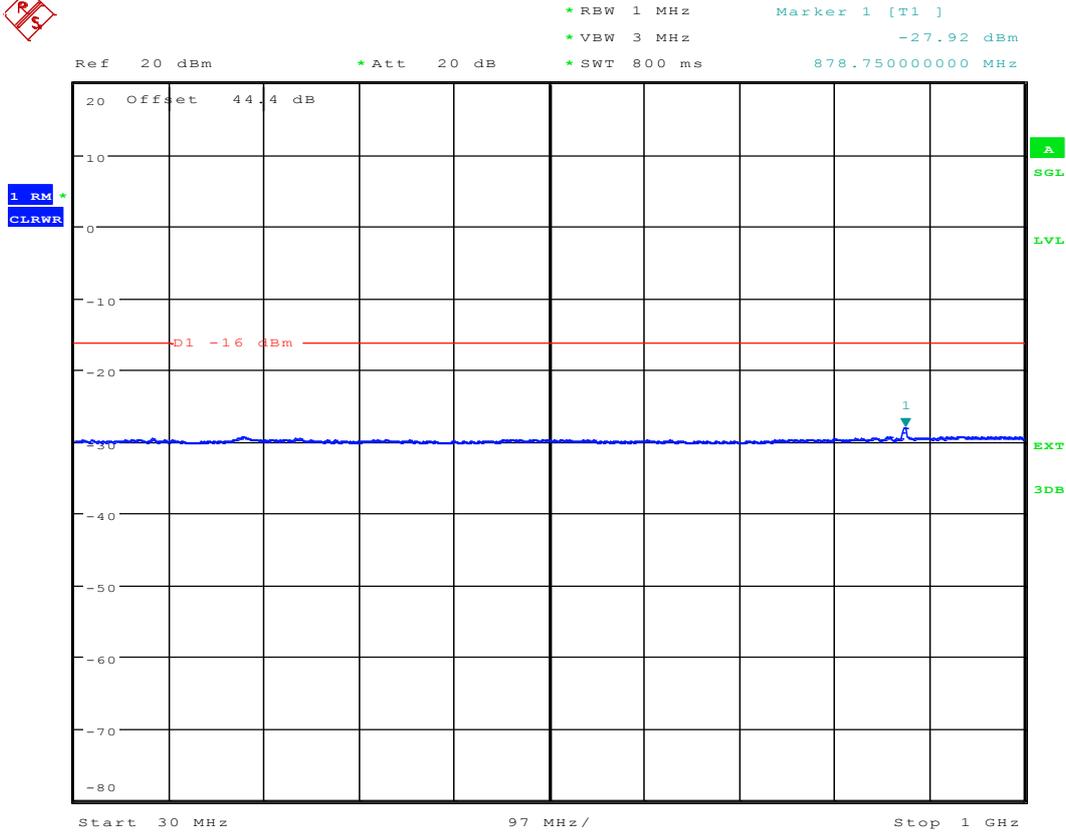
2.40 2G2L_TM1_B



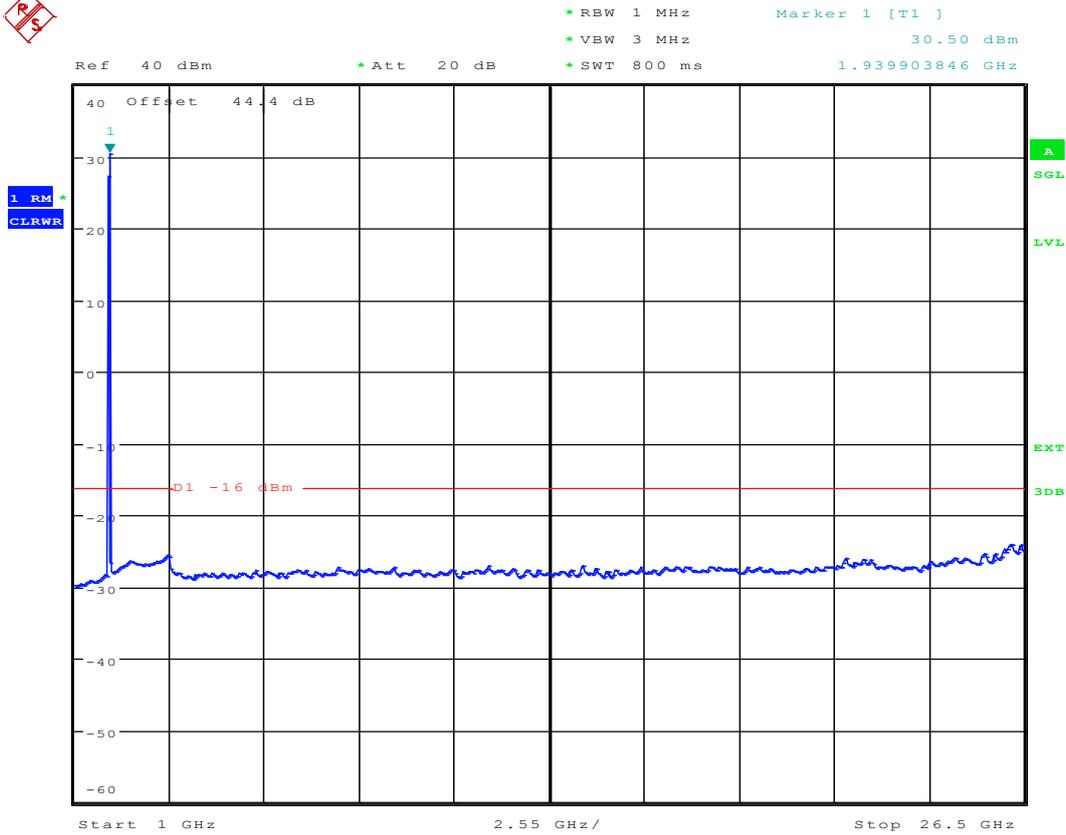
Date: 21.JAN.2015 09:19:27



Date: 21.JAN.2015 09:19:41



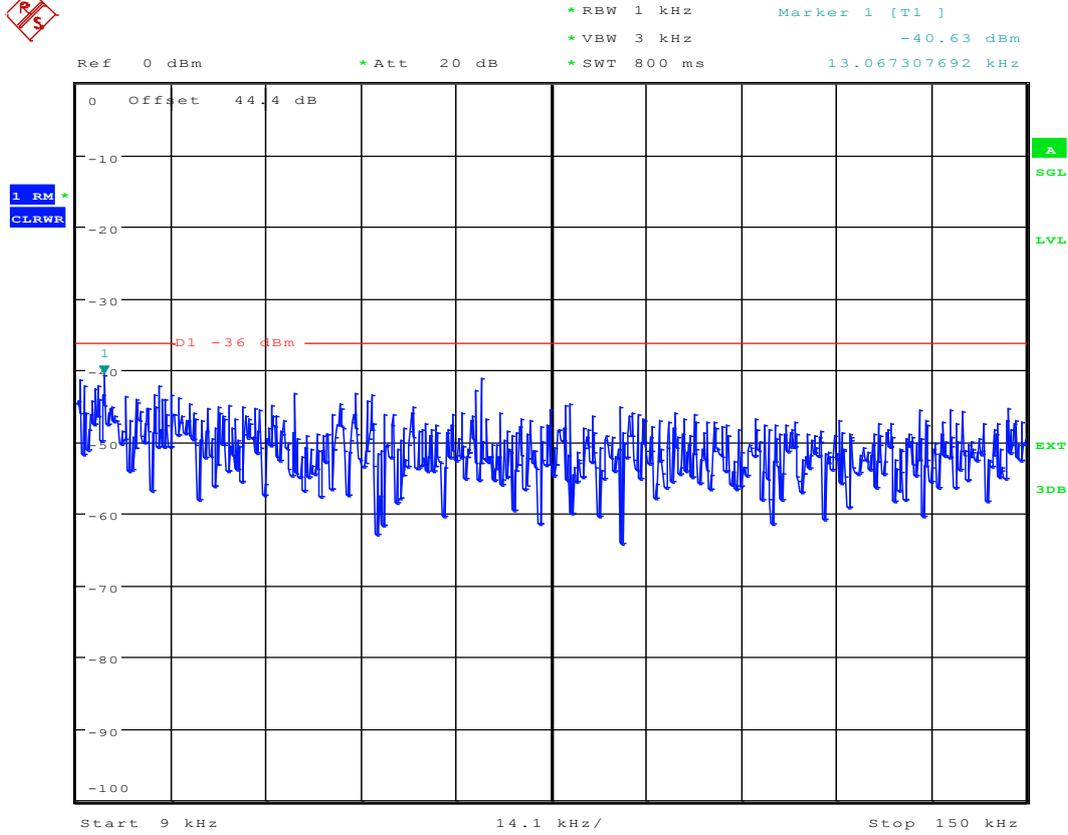
Date: 21.JAN.2015 09:19:53



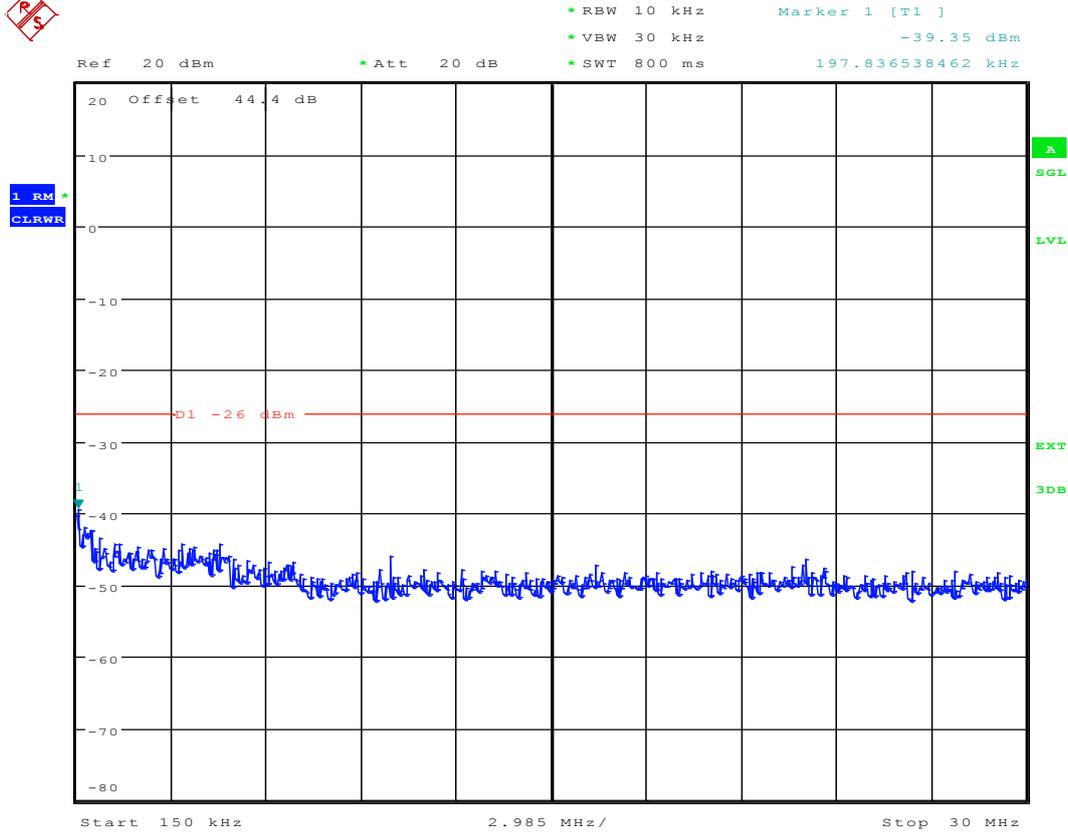
Date: 21.JAN.2015 09:20:05



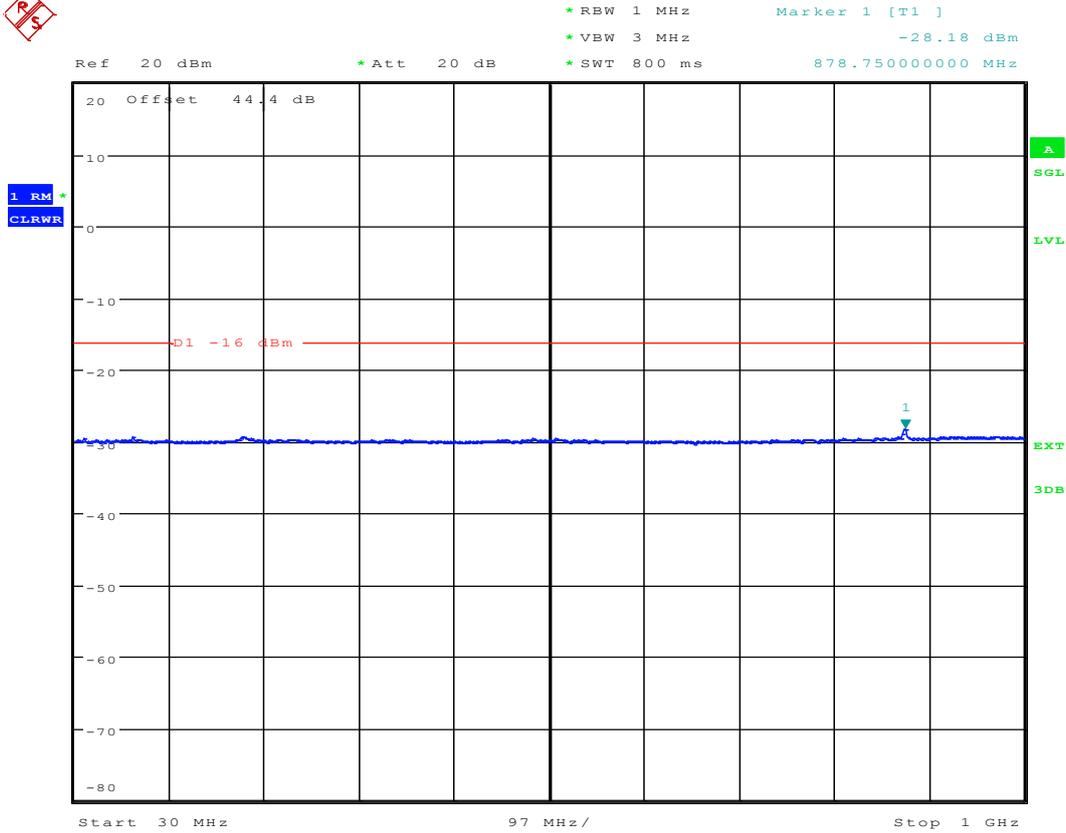
2.41 2G2L_TM1_M



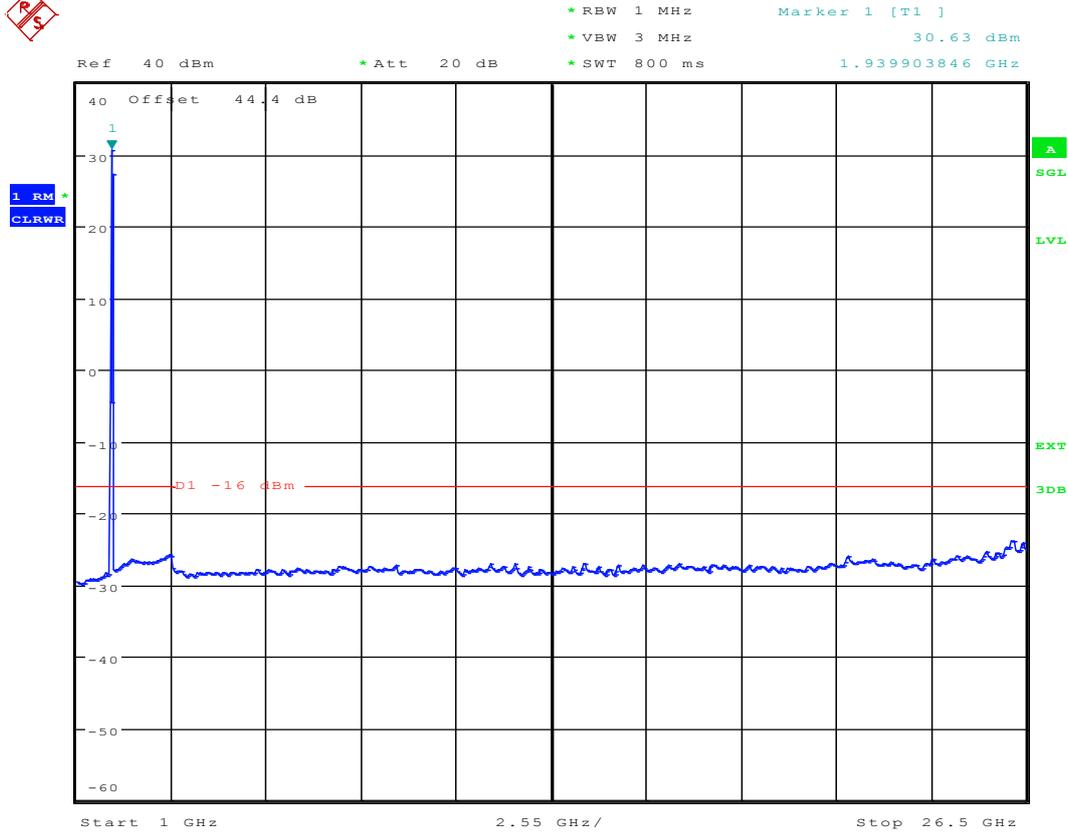
Date: 21.JAN.2015 09:22:20



Date: 21.JAN.2015 09:22:33



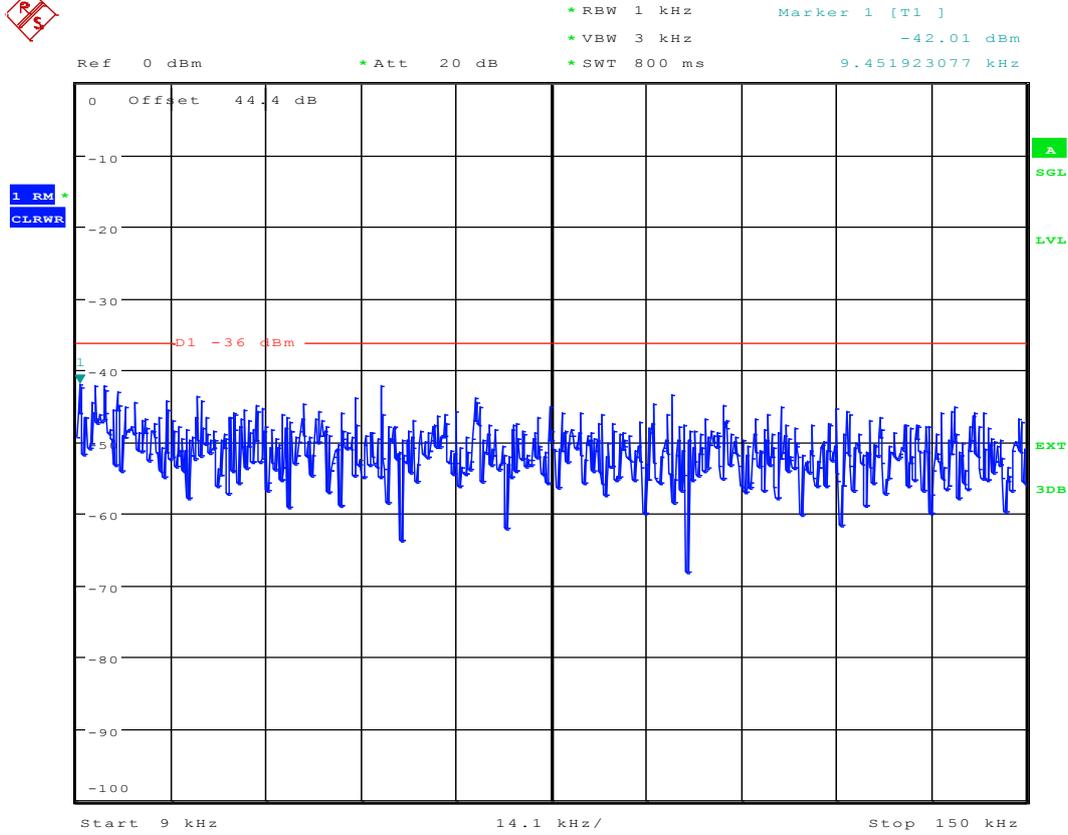
Date: 21.JAN.2015 09:22:45



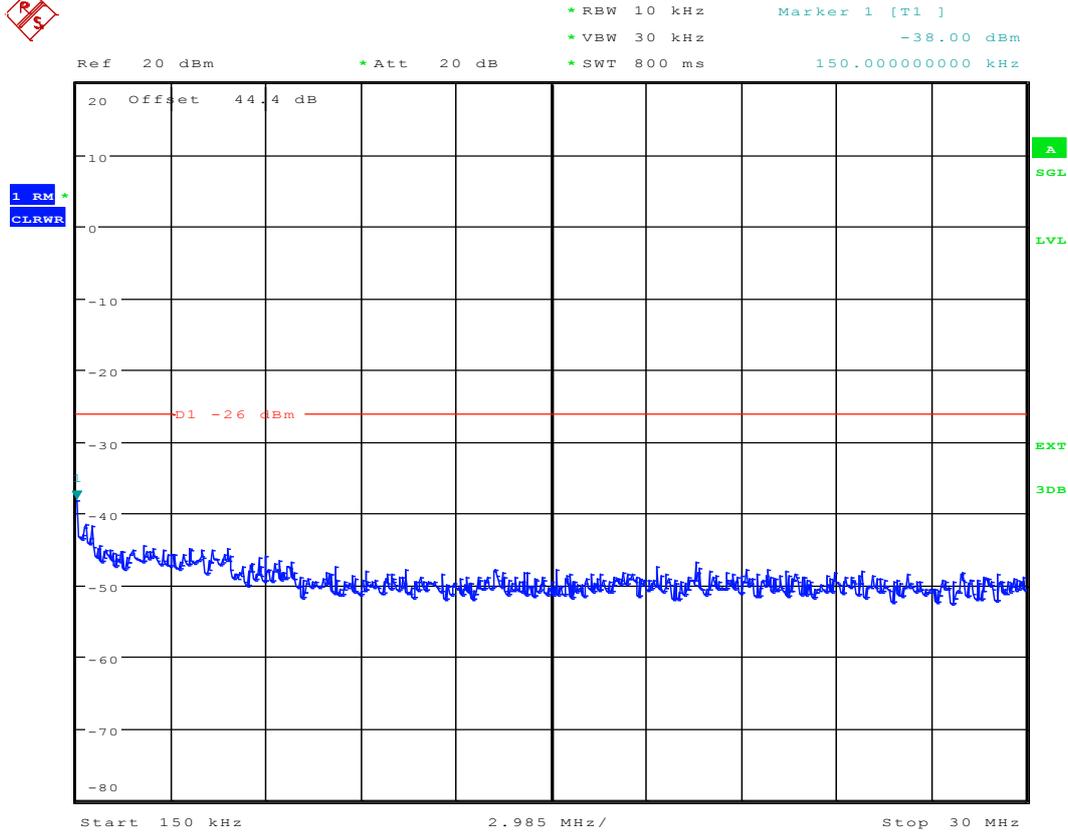
Date: 21.JAN.2015 09:22:58



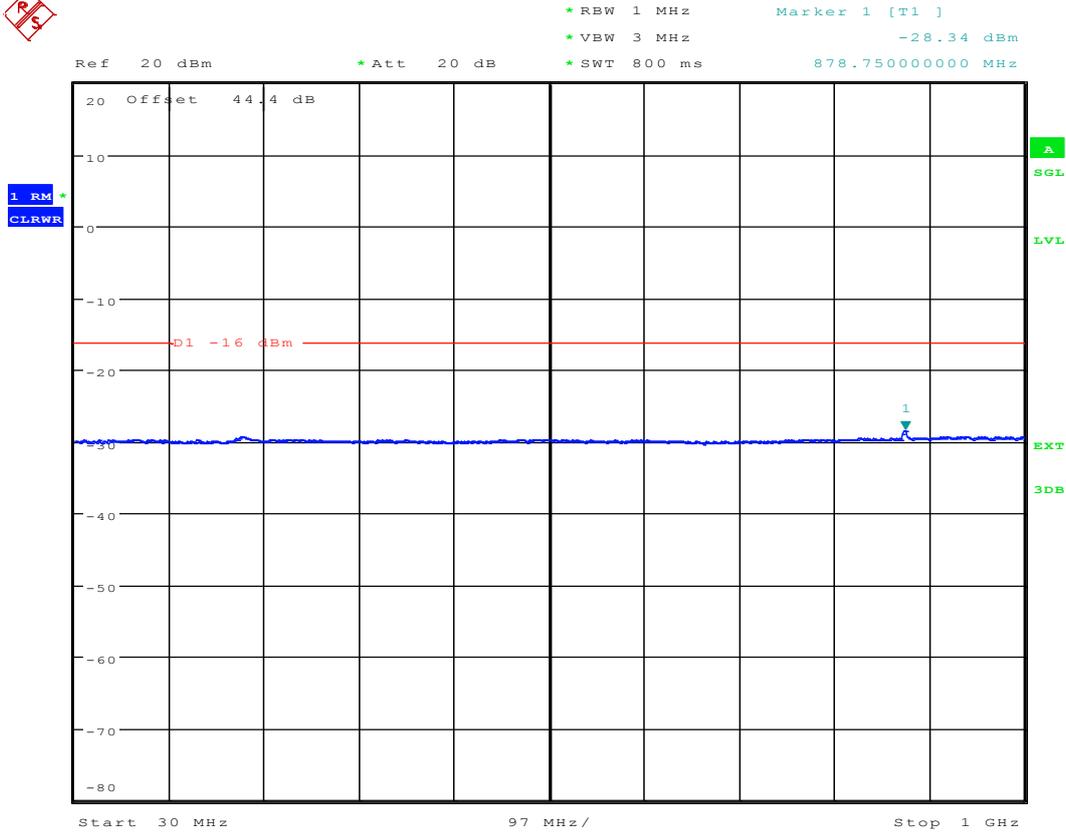
2.42 2G2L_TM1_T



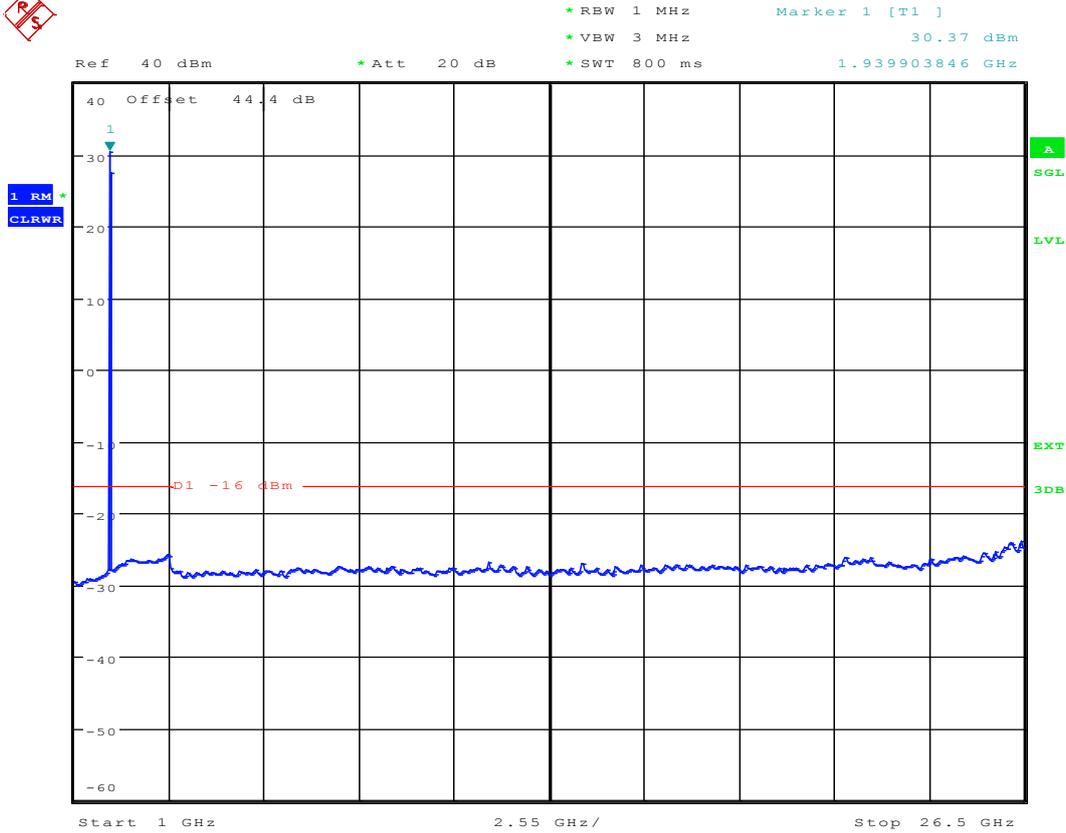
Date: 21.JAN.2015 09:25:29



Date: 21.JAN.2015 09:25:43



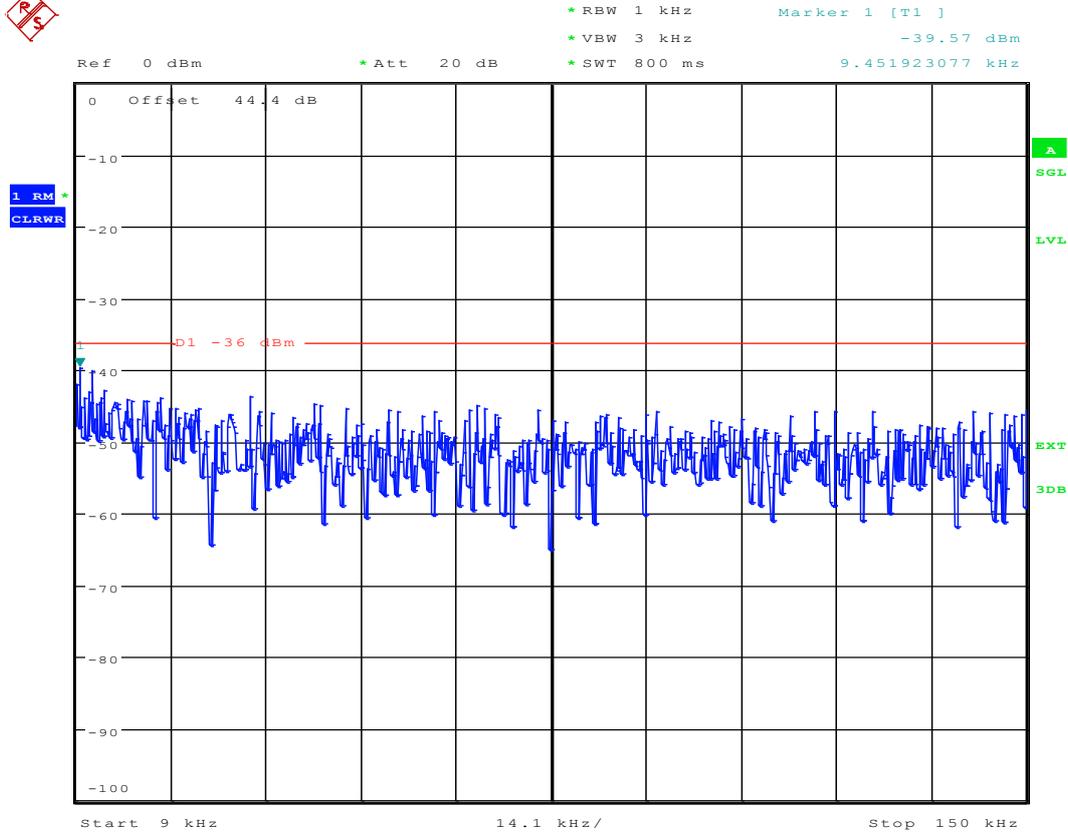
Date: 21.JAN.2015 09:25:55



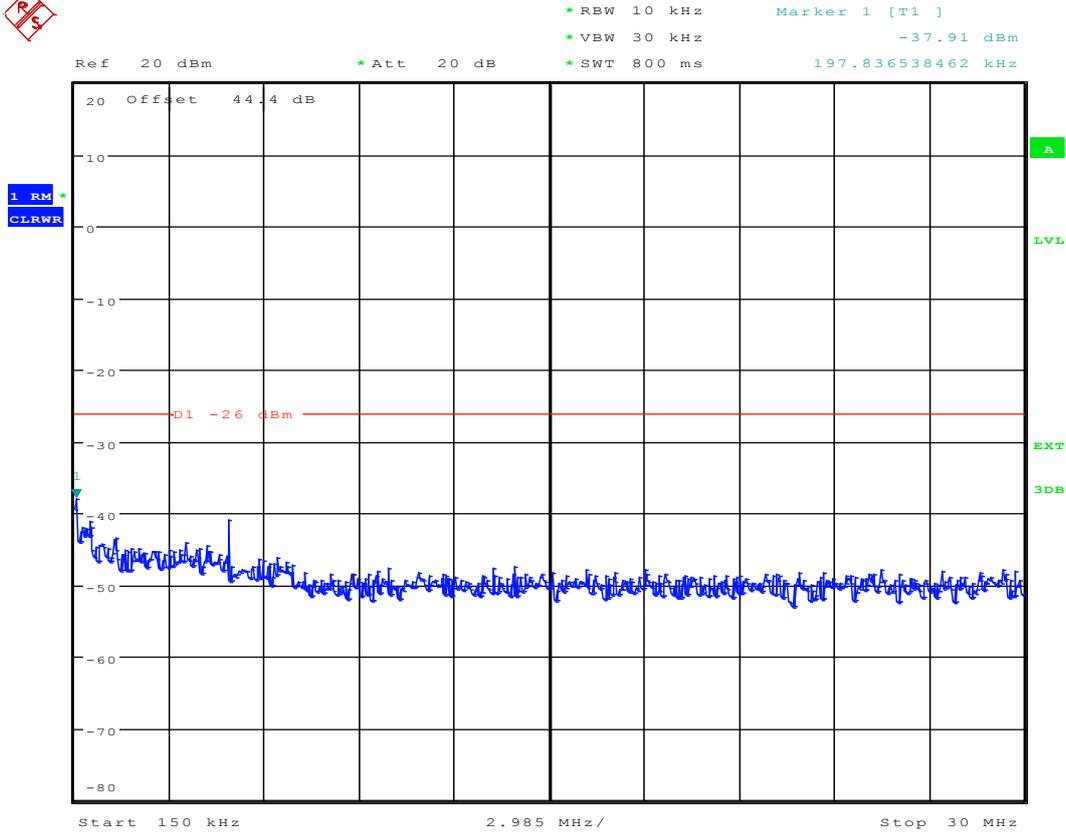
Date: 21.JAN.2015 09:26:07



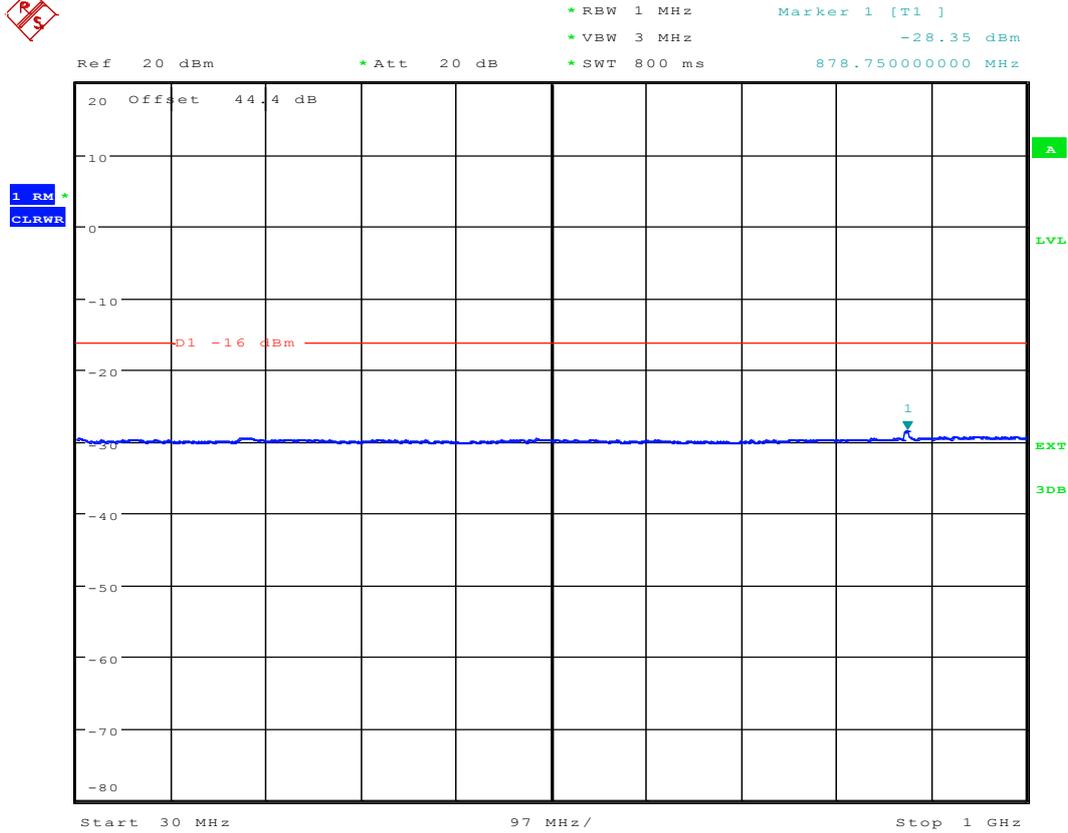
2.43 2U2L_TM1_B



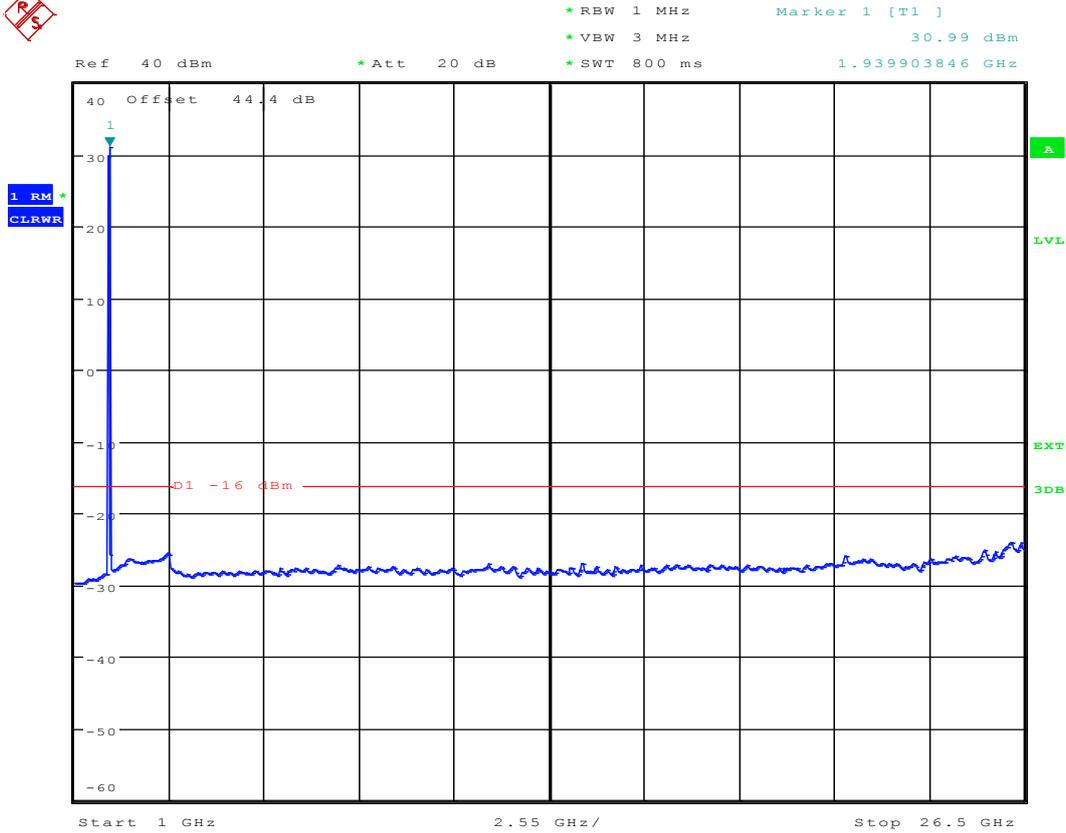
Date: 21.JAN.2015 13:46:03



Date: 21.JAN.2015 09:28:26



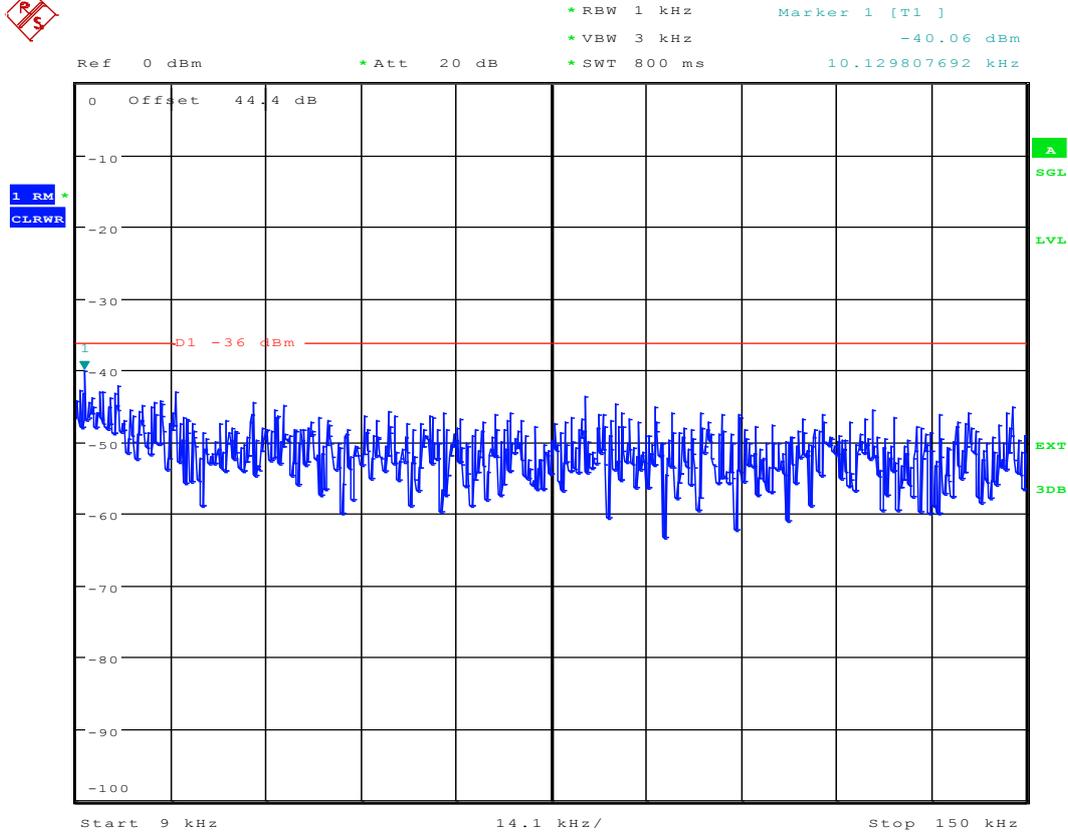
Date: 21.JAN.2015 09:28:37



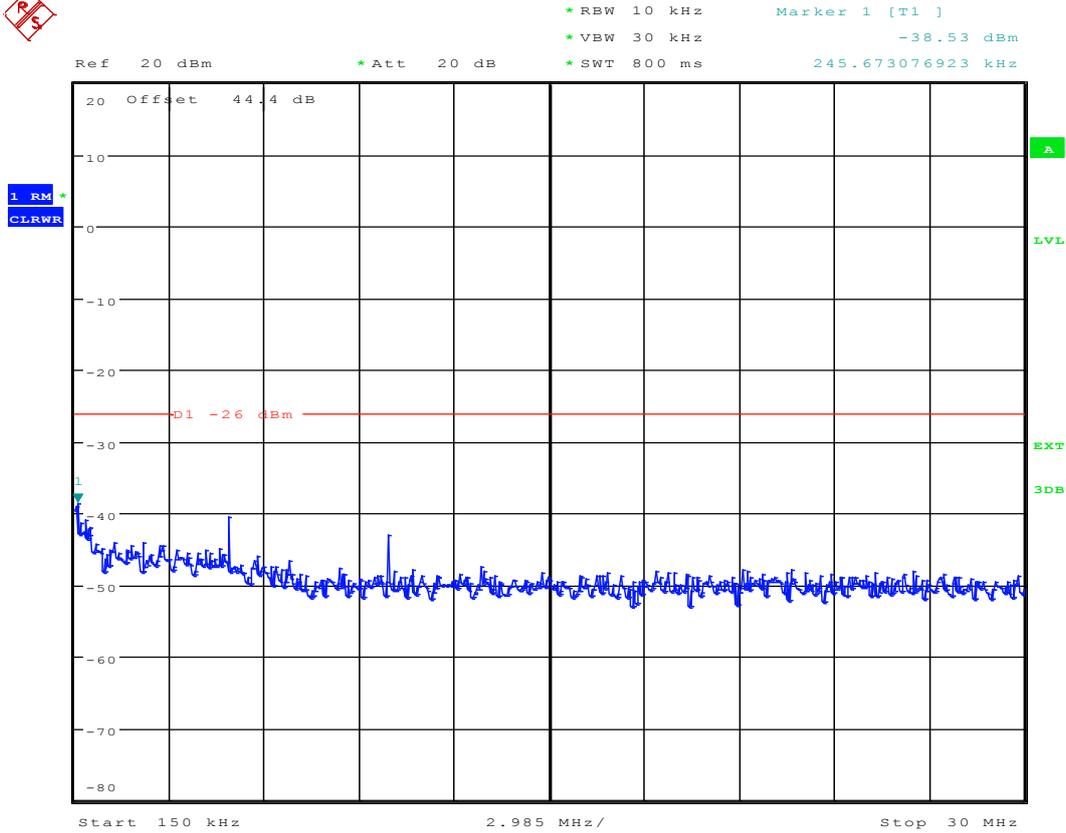
Date: 21.JAN.2015 09:28:48



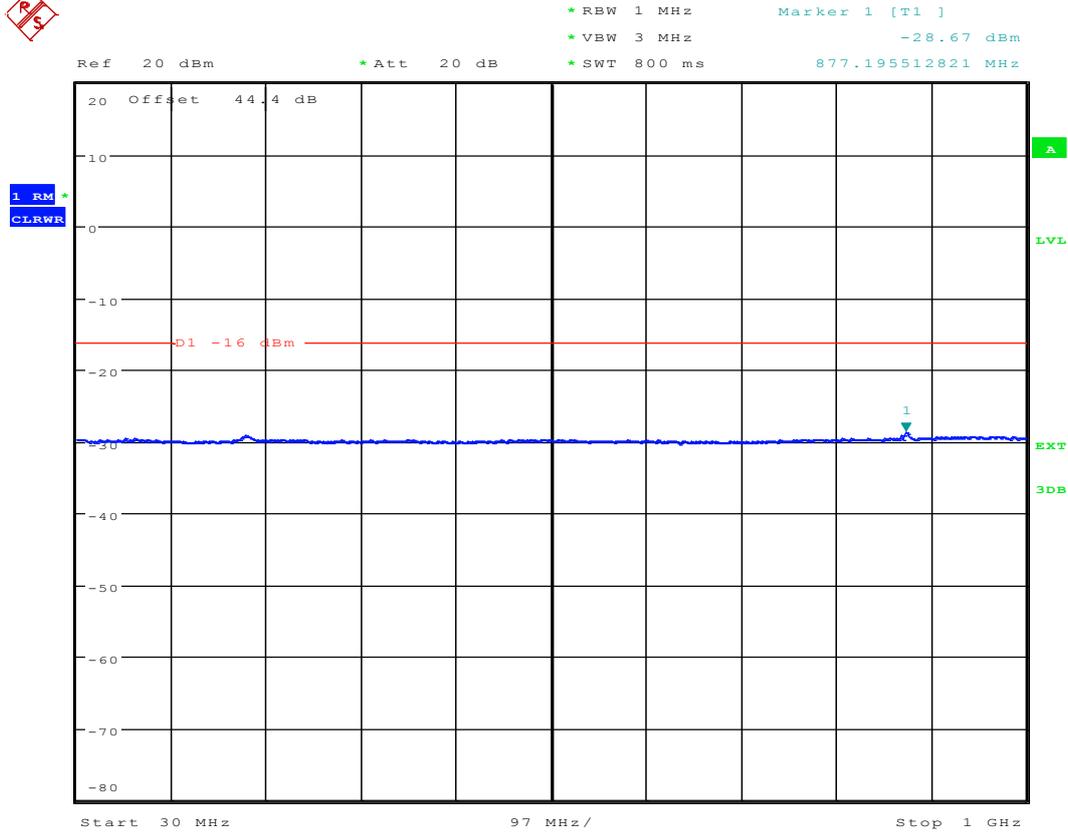
2.44 2U2L_TM1_M



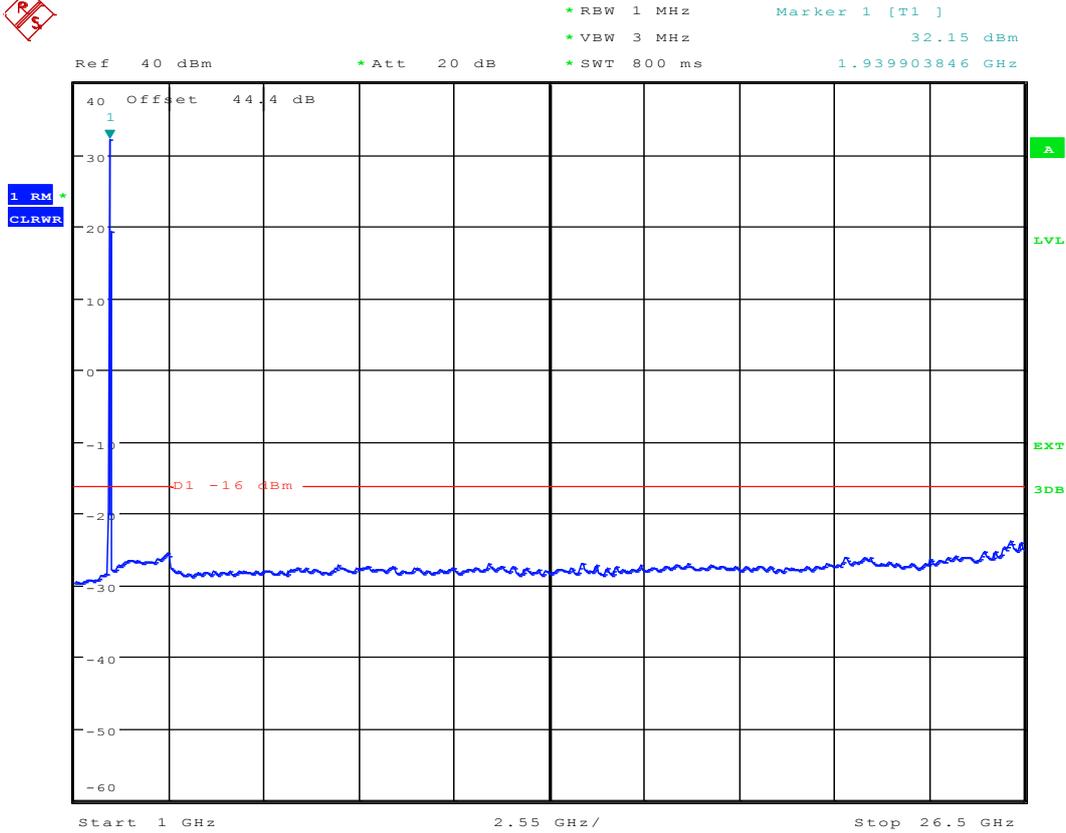
Date: 21.JAN.2015 13:48:20



Date: 21.JAN.2015 09:30:29



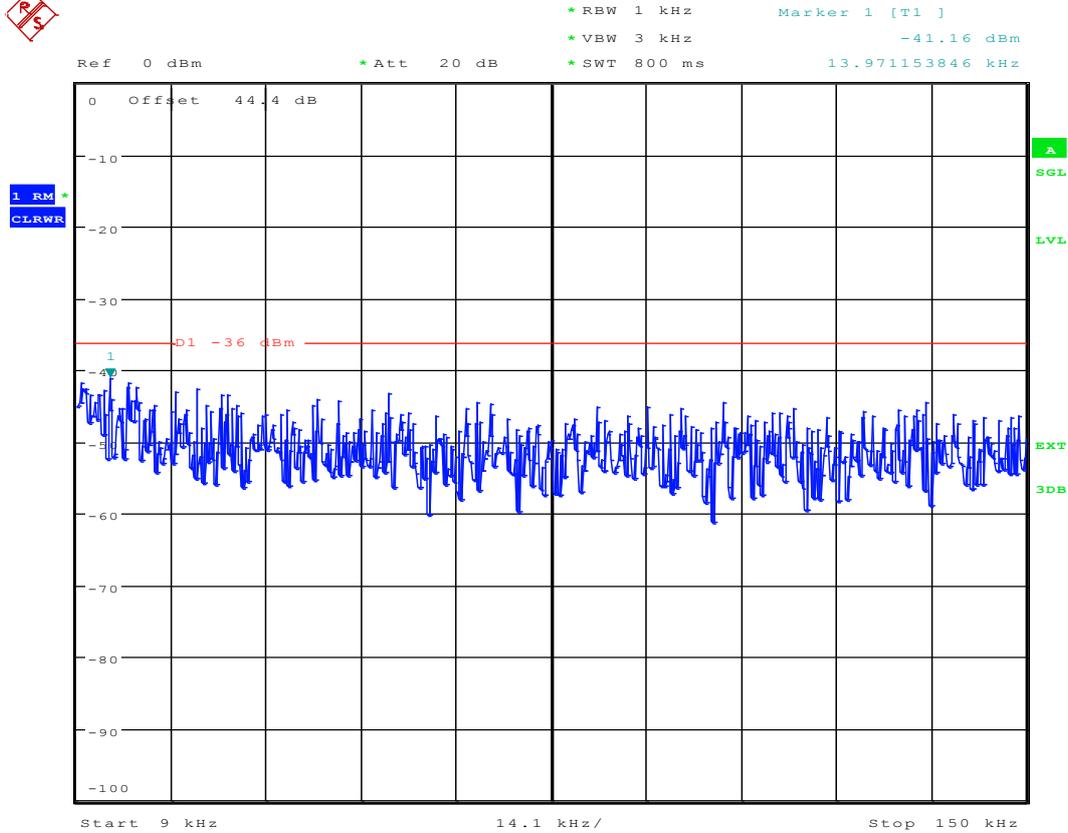
Date: 21.JAN.2015 09:30:40



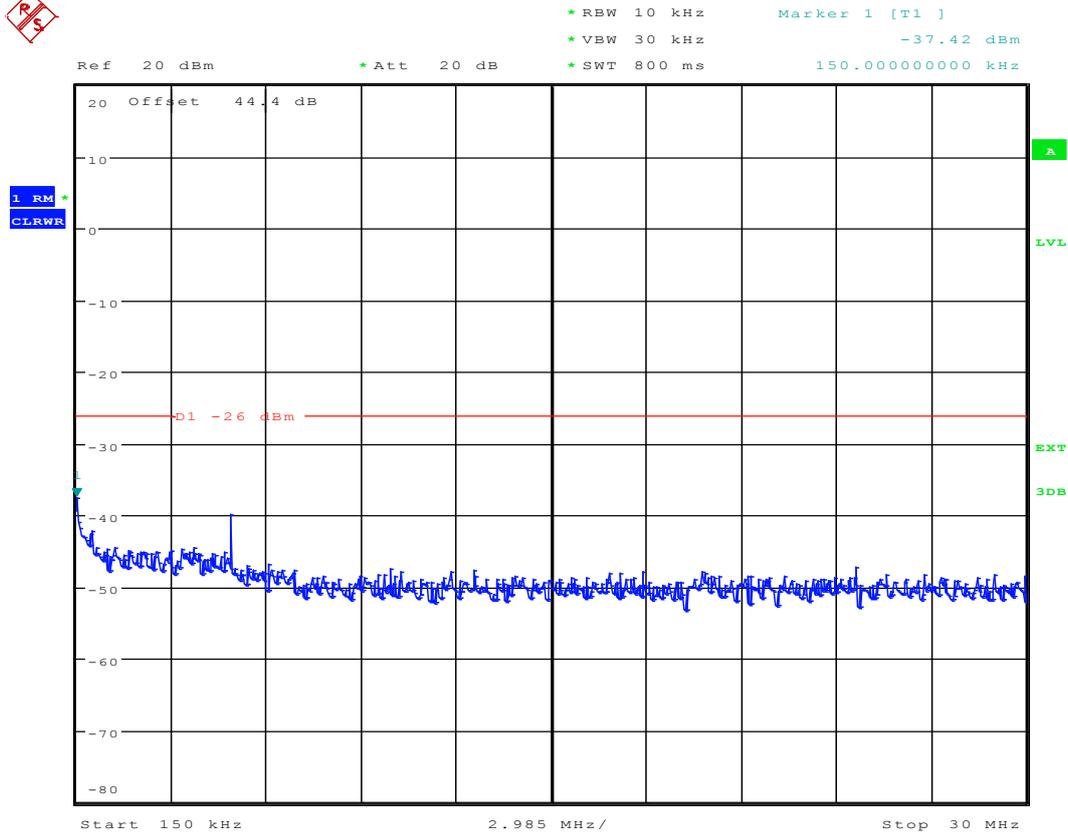
Date: 21.JAN.2015 09:30:50



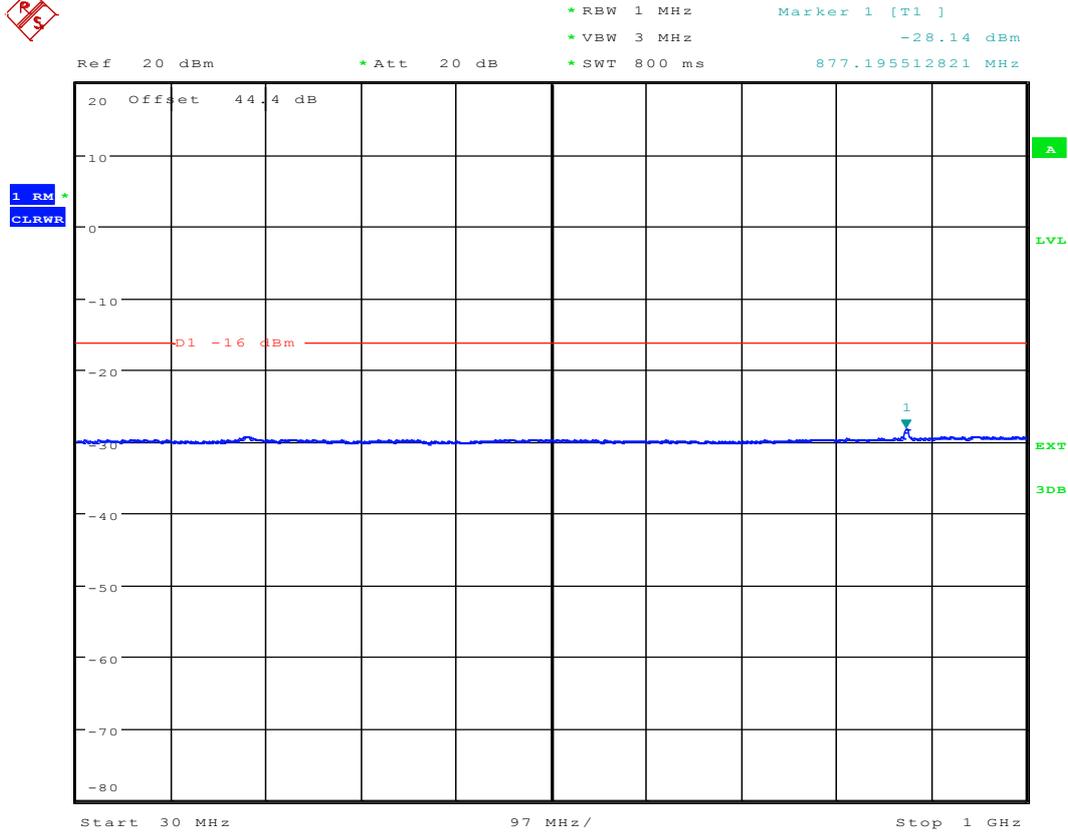
2.45 2U2L_TM1_T



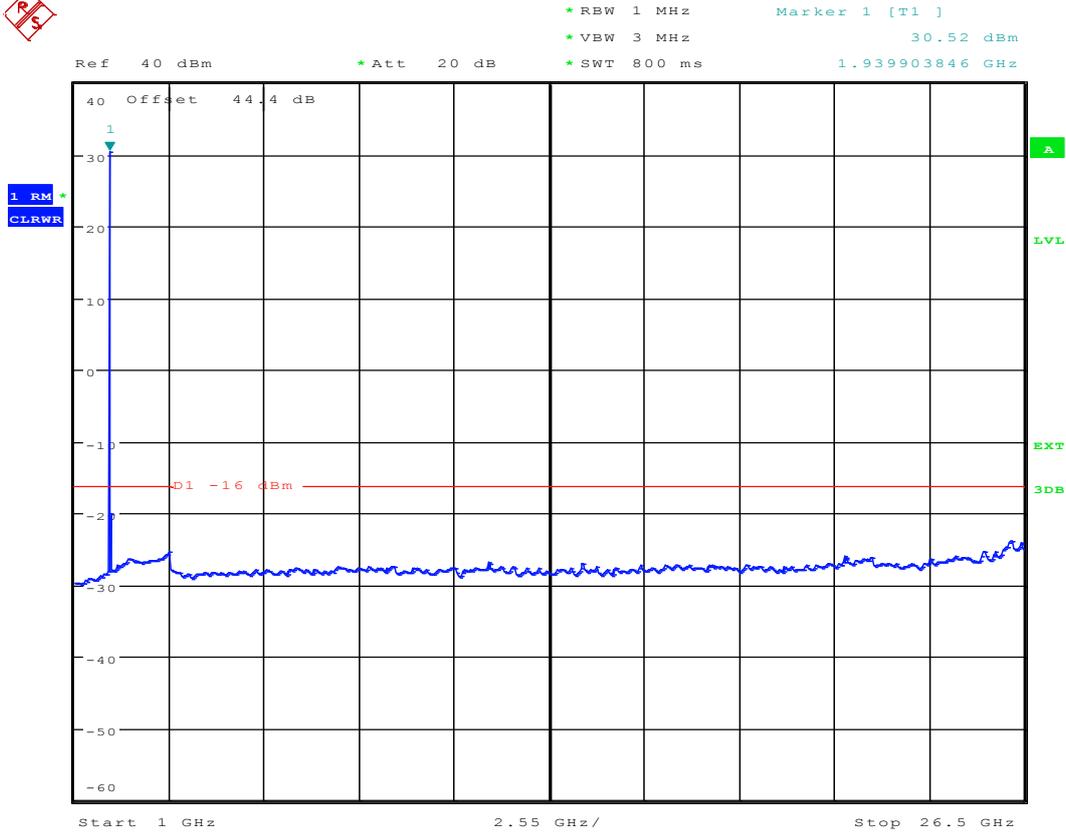
Date: 21.JAN.2015 13:49:27



Date: 21.JAN.2015 09:32:25



Date: 21.JAN.2015 09:32:36



Date: 21.JAN.2015 09:32:46



Appendix E: Field Strength of Spurious Radiation / Radiated Spurious Emissions



1 Result Table

NOTE: If applicable, according to FCC KDB 971168 §5.8.3, for the requirement of a fixed limit (e.g. -13 dBm), the power limit can be mathematically converted to an equivalent field strength limit. The relationship is:

(1) $E \text{ [dB}\mu\text{V/m]} = \text{EIRP [dBm]} - 20 \cdot \lg(D) + 104.8$; where D is the measurement distance in meters.

(2) $\text{EIRP [dBm]} = \text{ERP [dBm]} + 2.15$.

Also according to FCC §2.1053(a), emissions are assumed radiated from halfwave dipole antennas, so the power limit refer to the ERP.

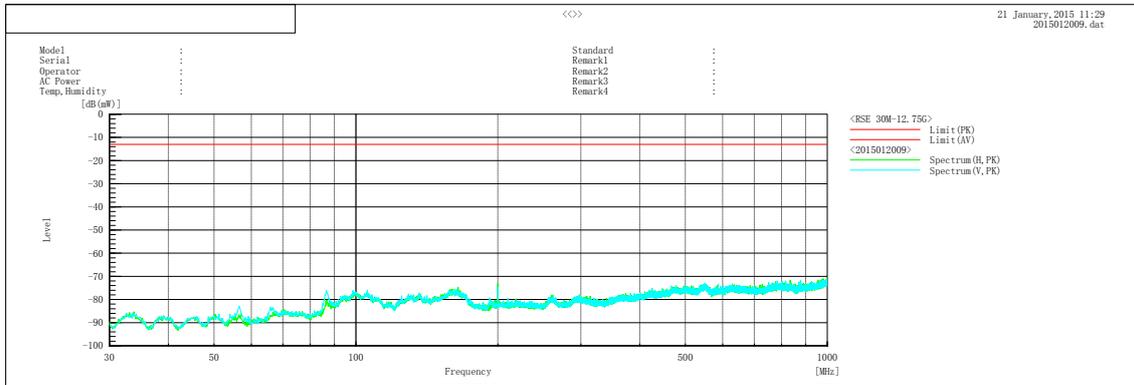
(For example, the fixed power limit -13 dBm can be converted to the field strength limit 84.4 dB μ V/m at 3 m measurement distance, and to 93.95 dB μ V/m at 1 m measurement distance assuming in the far-field region of both the transmit and receive antennas.)

EUT Conf.	Test Range	Maximum Emission	Verdict
1G_TM1_M	30 MHz to 1 GHz	<-13	Pass
	1 GHz to 18 GHz	<-13	Pass
	18 GHz to 26.5 GHz	<-13	Pass



2 Test Plot

2.1 Test range of "30 MHz to 1 GHz"

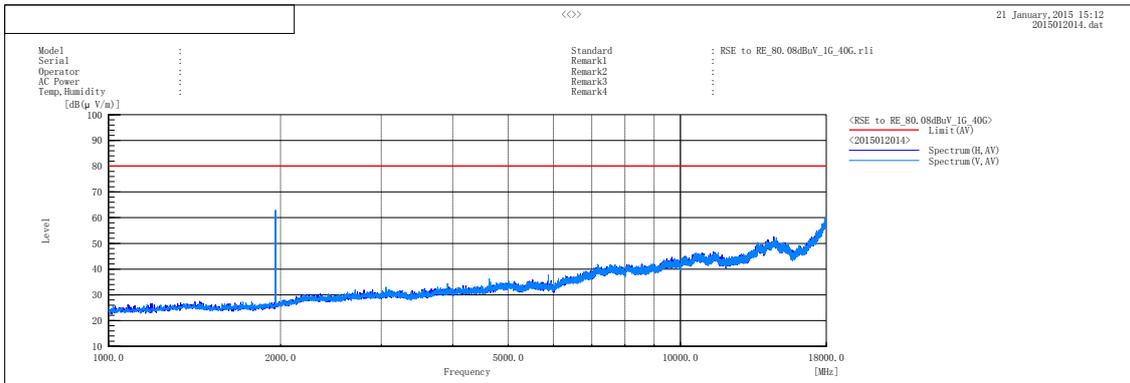


Final Result

No.	Frequency (P) [MHz]	c. f [dB]	Height [cm]	Angle [°]	Remark
-----	------------------------	--------------	----------------	--------------	--------



2.2 Test range of “1 GHz to 18 GHz”

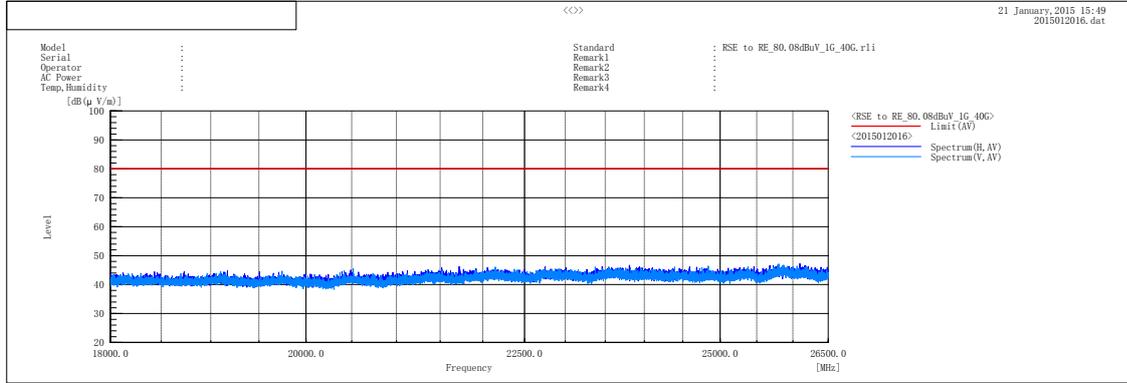


Final Result

No.	Frequency (P)	c. f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	



2.3 Test range of “18 GHz to 26.5 GHz”





Appendix F: Frequency Stability



1 Result Table

1.1 1Frequency Error

EUT Conf.	Temperature	Voltage	Freq. Error, f(offset) [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Verdict
1L_5M_TM1_M	-30 °C	100%	7.56	0.00385714	0.00385714	Pass
	-20 °C	100%	5.84	0.00297959	0.00297959	Pass
	-10 °C	100%	4.12	0.00210204	0.00210204	Pass
	0 °C	100%	2.52	0.00128571	0.00128571	Pass
	+10 °C	100%	2.33	0.00118877	0.00118877	Pass
	+20 °C	85 %	4.11	0.00209693	0.00209693	Pass
	+20 °C	100 %	2.45	0.00125	---	Pass
	+20 °C	115 %	2.55	0.00265625	0.00265625	Pass
	+30 °C	100%	2.58	0.00131632	0.00131632	Pass
	+40 °C	100%	2.81	0.00143367	0.00143367	Pass
	+50 °C	100%	3.32	0.00169387	0.00169387	Pass

1.2 Frequency Range

Not applicable.



Appendix G: Receiver Spurious Emissions



Not applicable.

END