



EUT :	Home Gateway	Model Name :	HG532t
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE /CH01, CH06 , CH11 – Dipole Antenna		

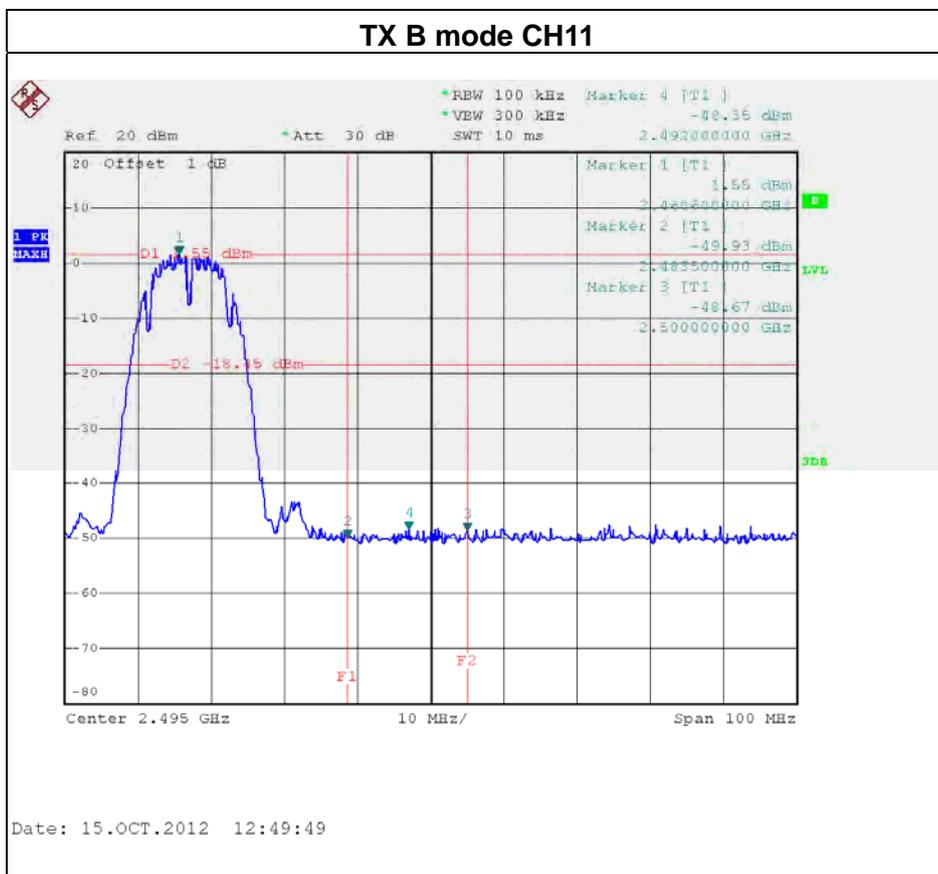
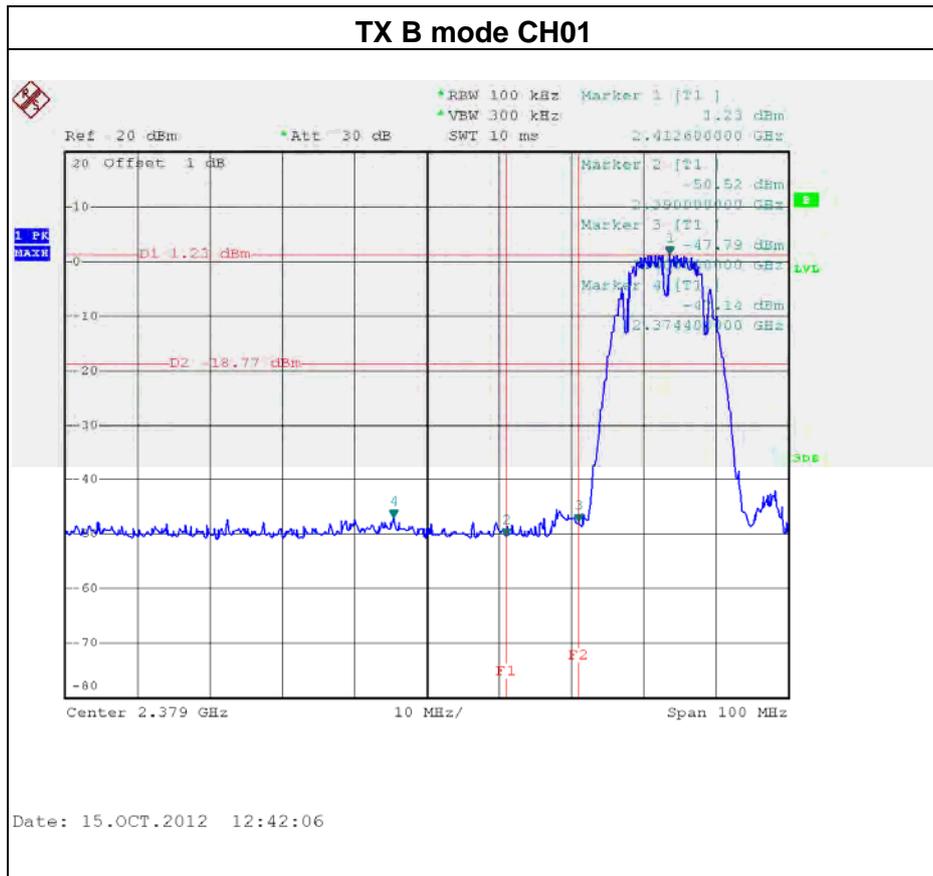
Channel of Worst Data: CH01

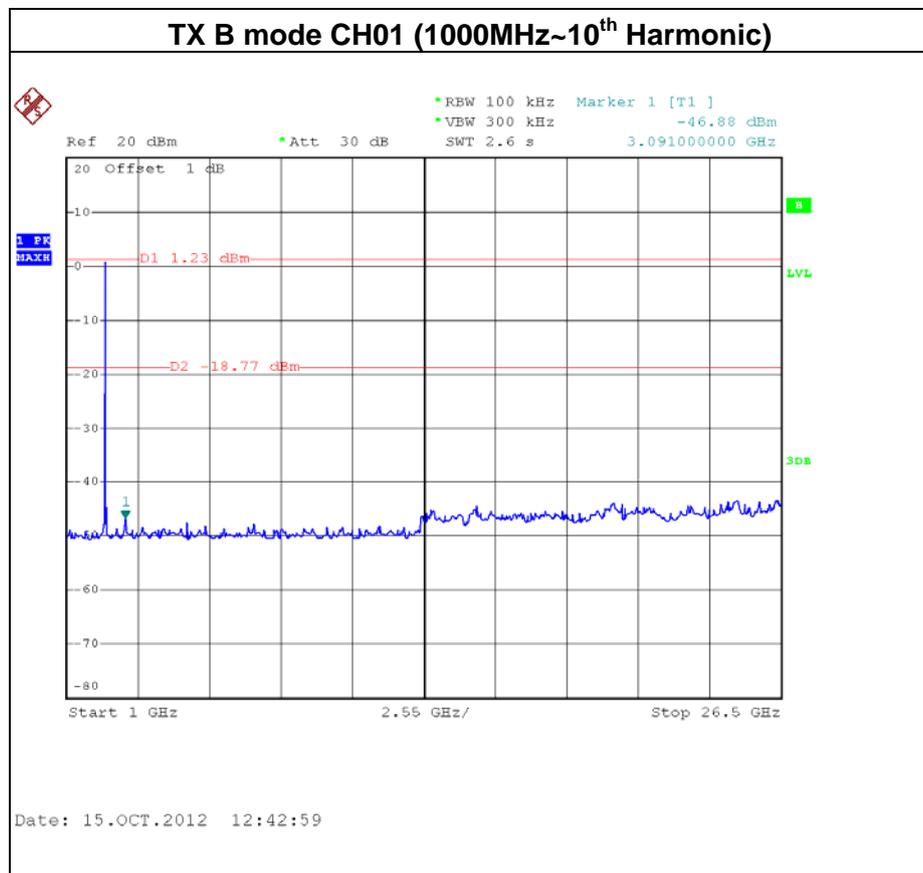
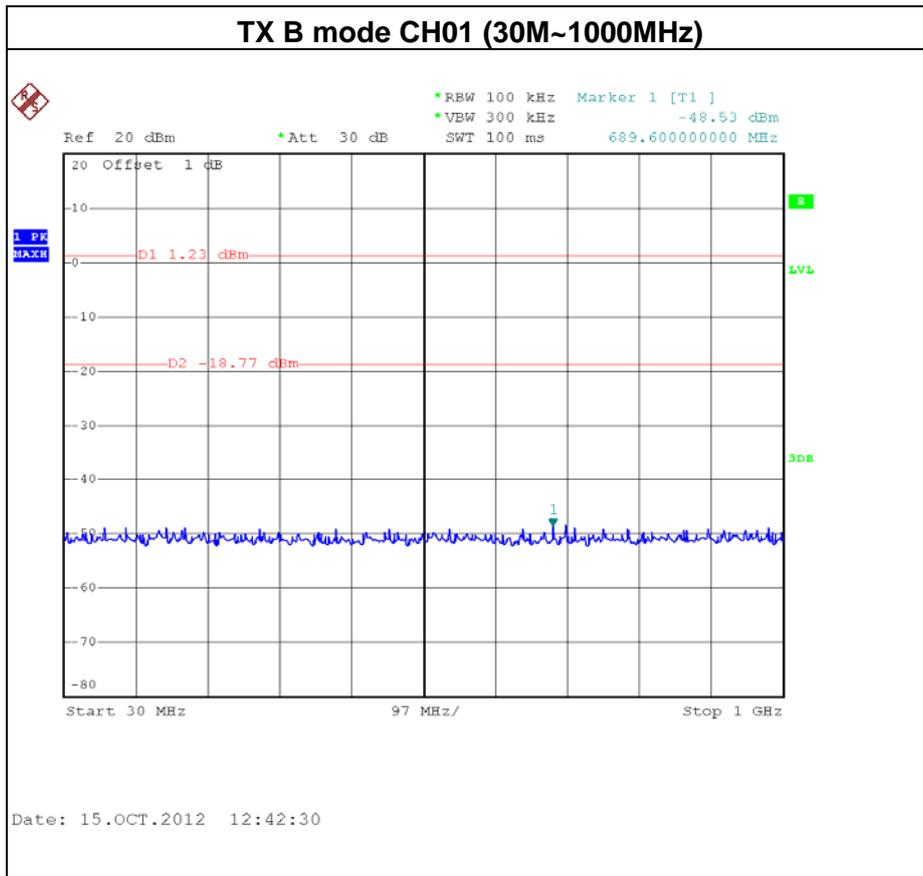
The max. radio frequency power in any 100kHz bandwidth outside the frequency band	The max. radio frequency power in any 100 kHz bandwidth outside the frequency band.
-----------------------------------------------------------------------------------	-------------------------------------------------------------------------------------

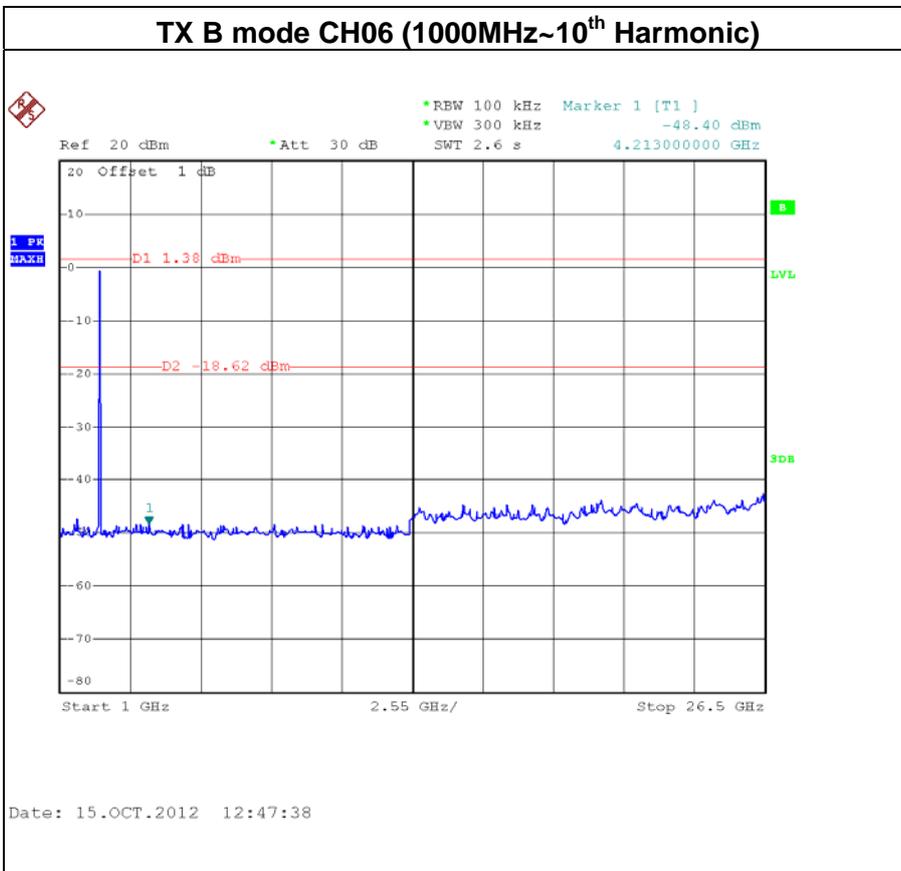
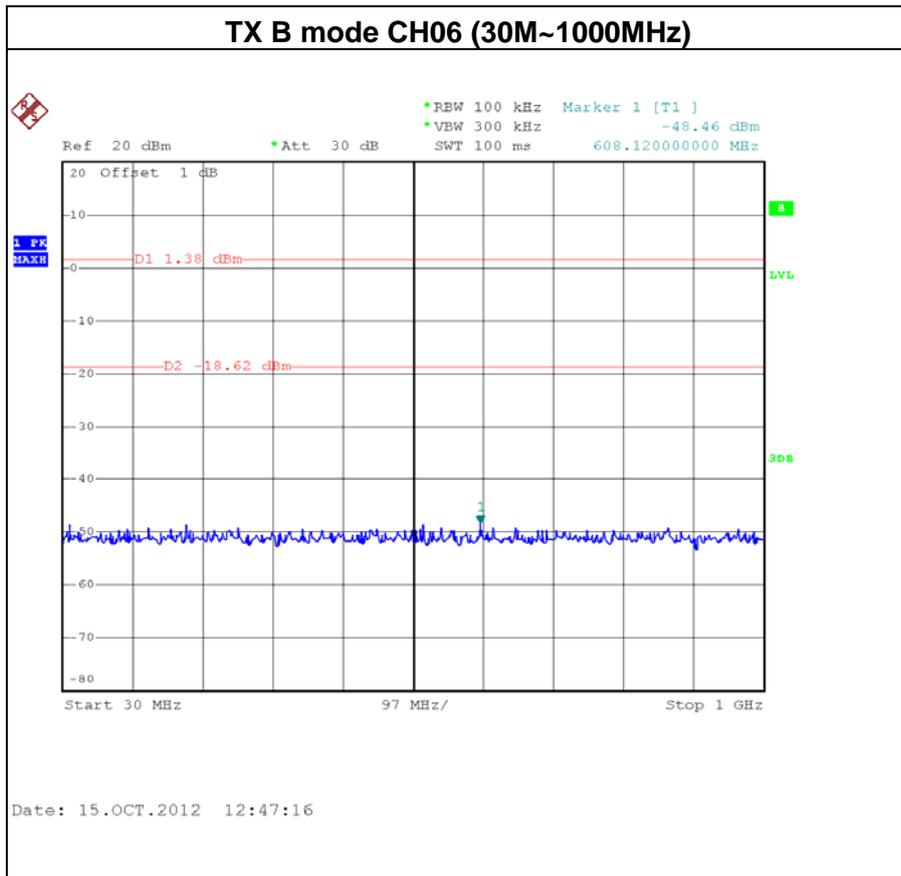
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2374.40	-47.14	2492.00	-48.35

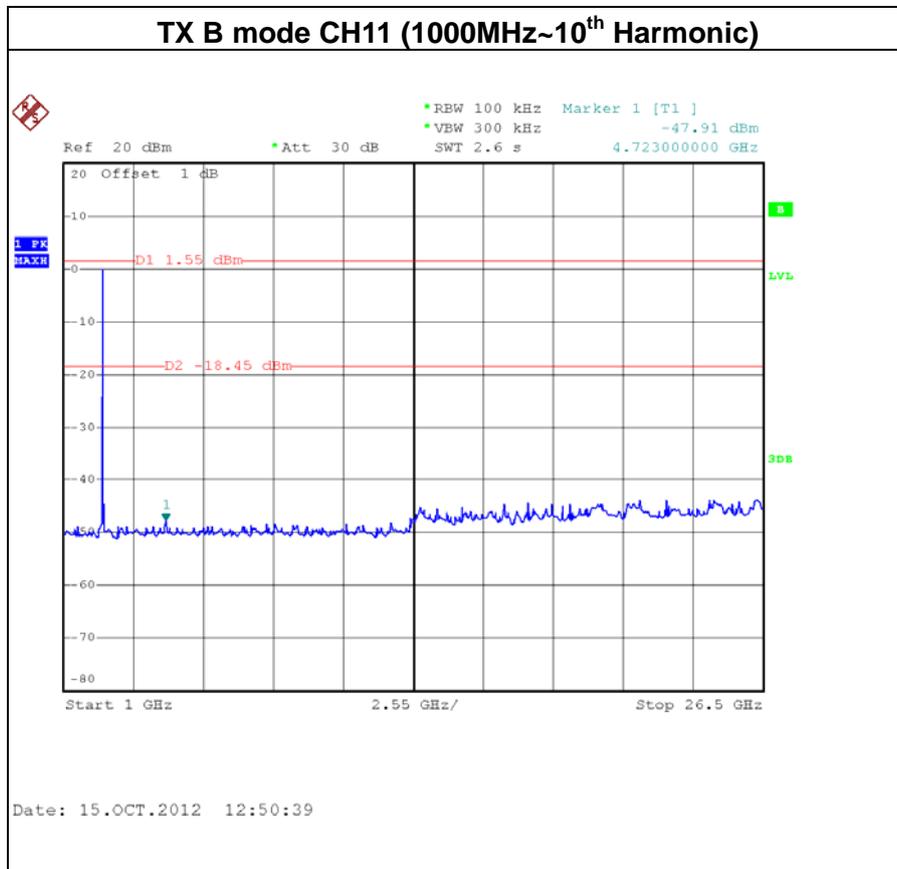
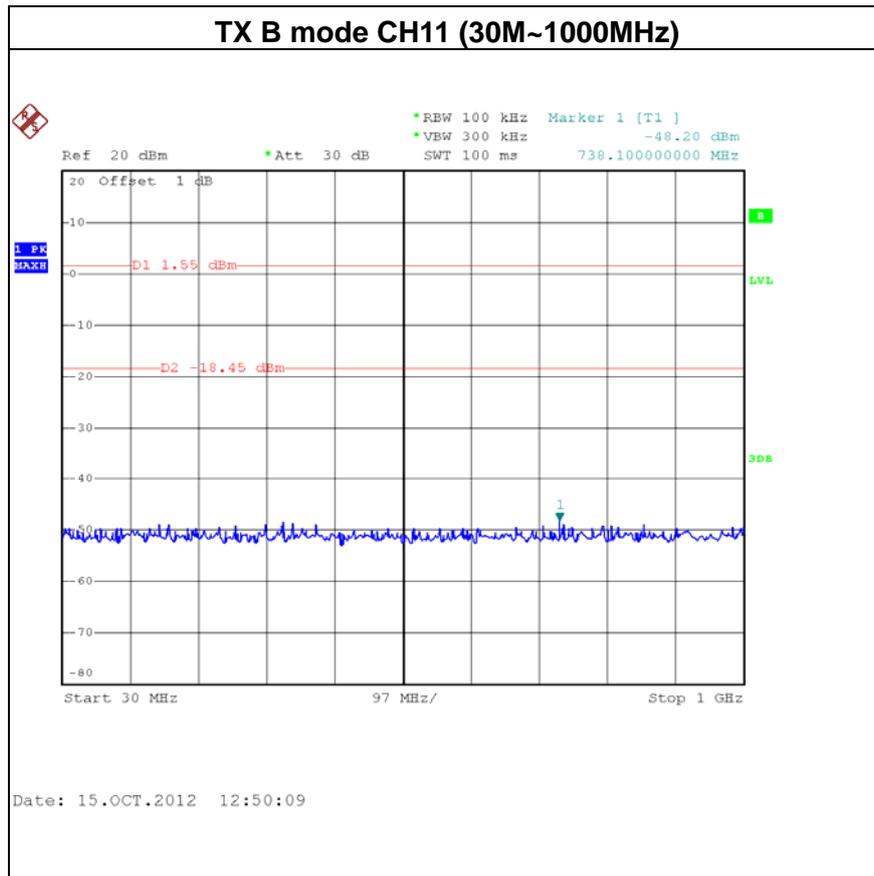
Result

In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.











EUT :	Home Gateway	Model Name :	HG532t
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE / CH01, CH06 , CH11 – Dipole Antenna		

Channel of Worst Data: CH01

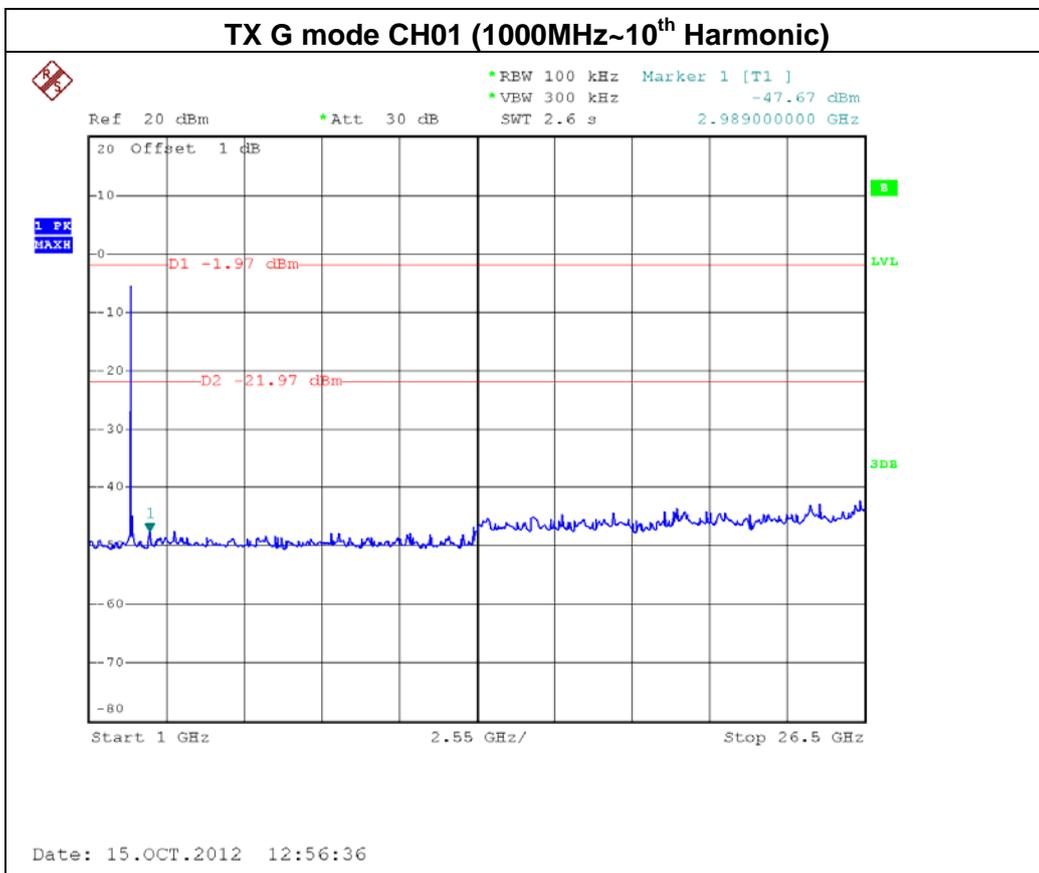
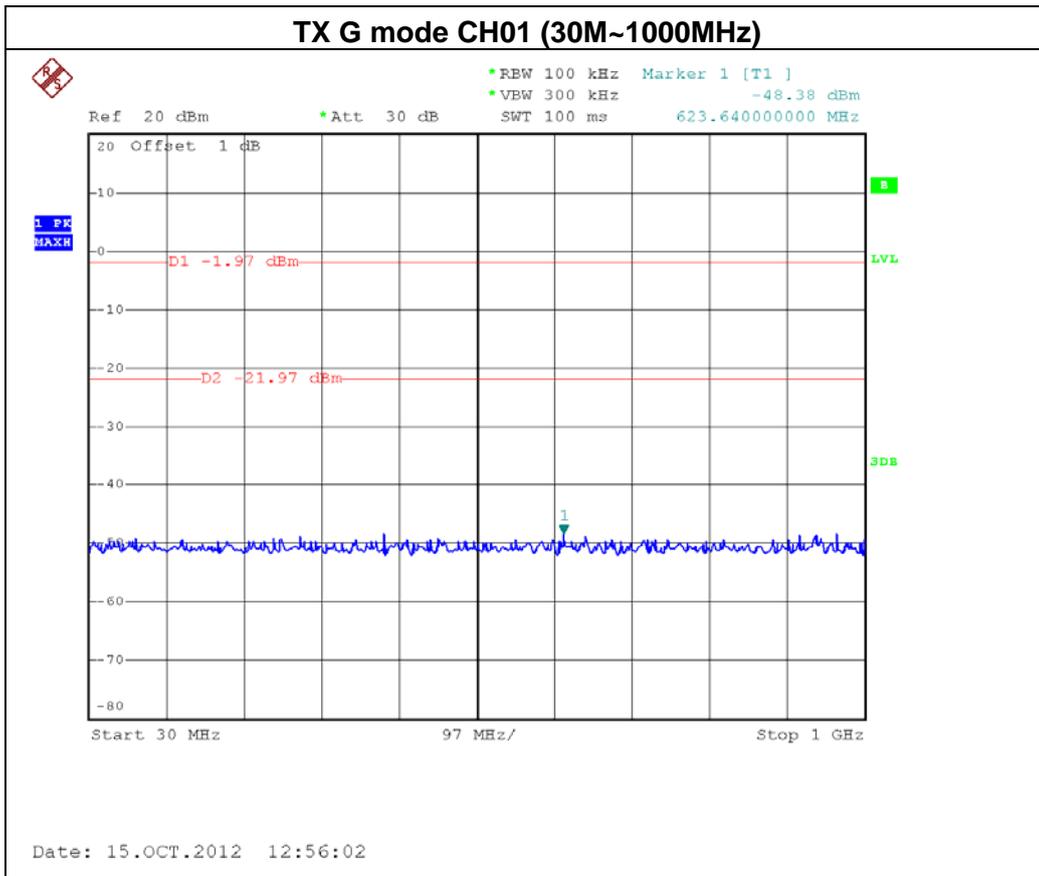
The max. radio frequency power in any 100kHz bandwidth within the frequency band	The max. radio frequency power in any 100 kHz bandwidth outside the frequency band.
----------------------------------------------------------------------------------	-------------------------------------------------------------------------------------

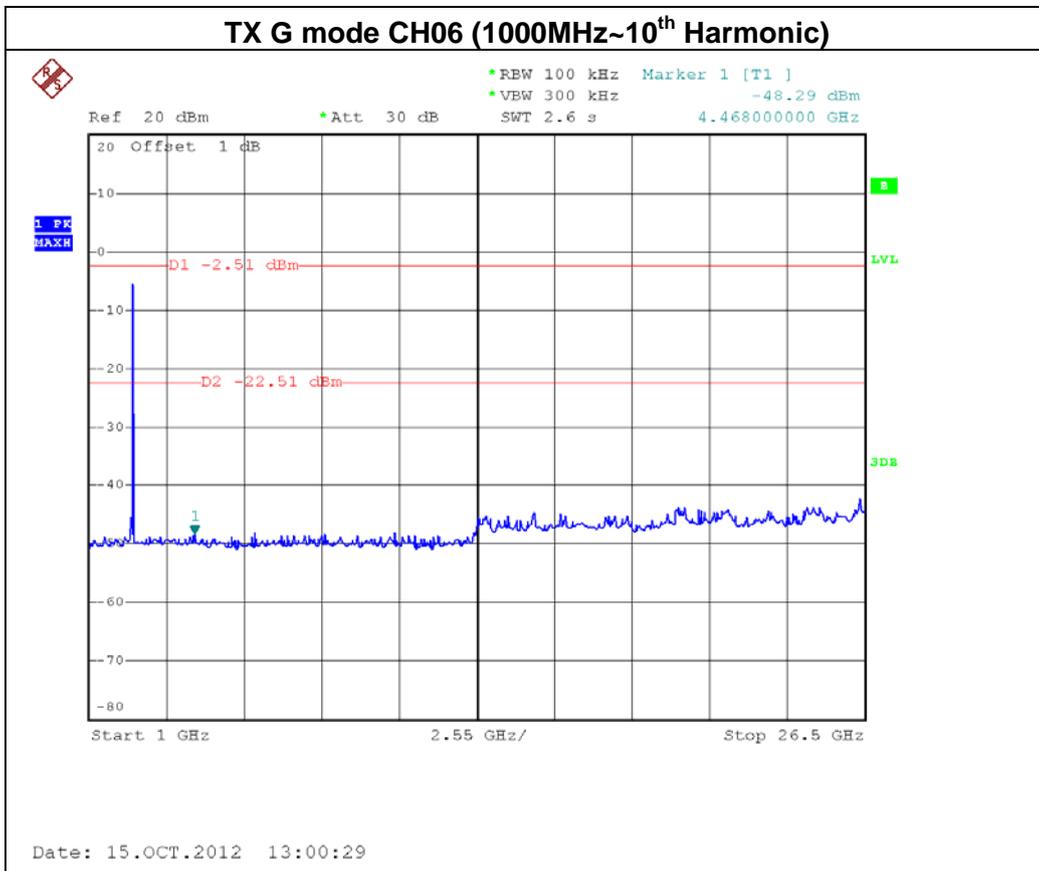
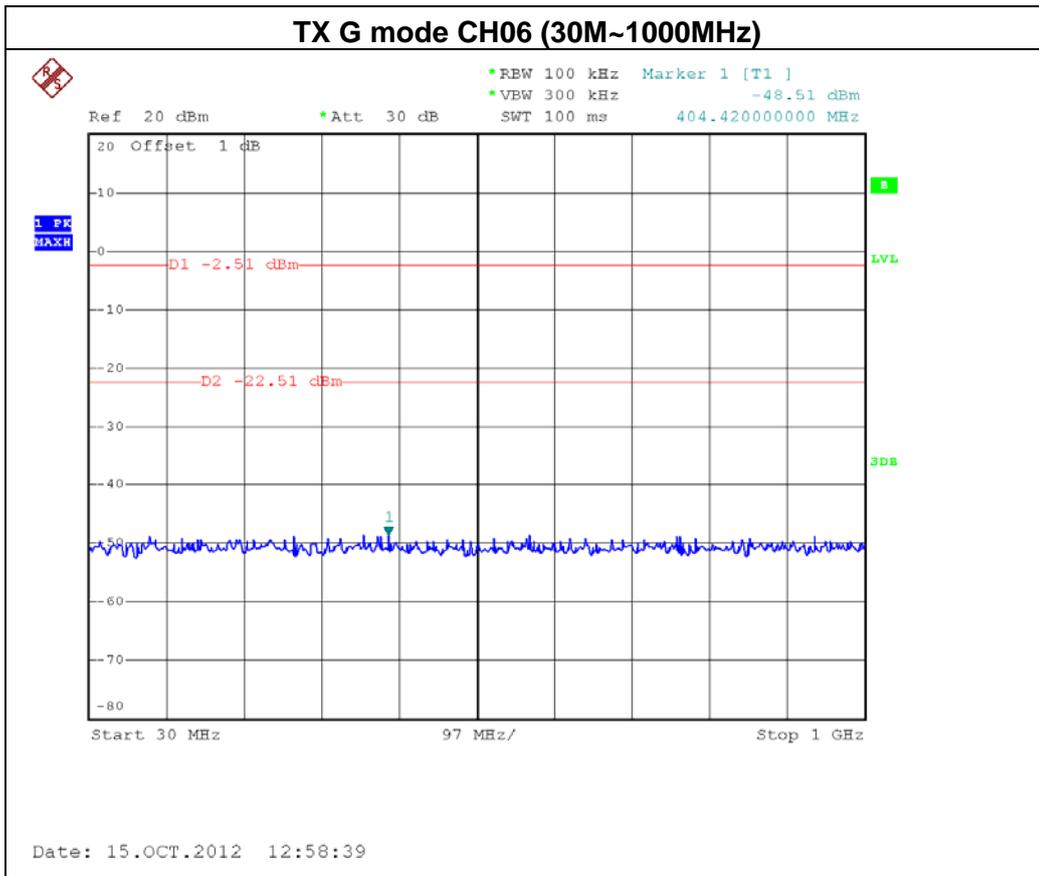
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-41.17	2485.80	-48.58

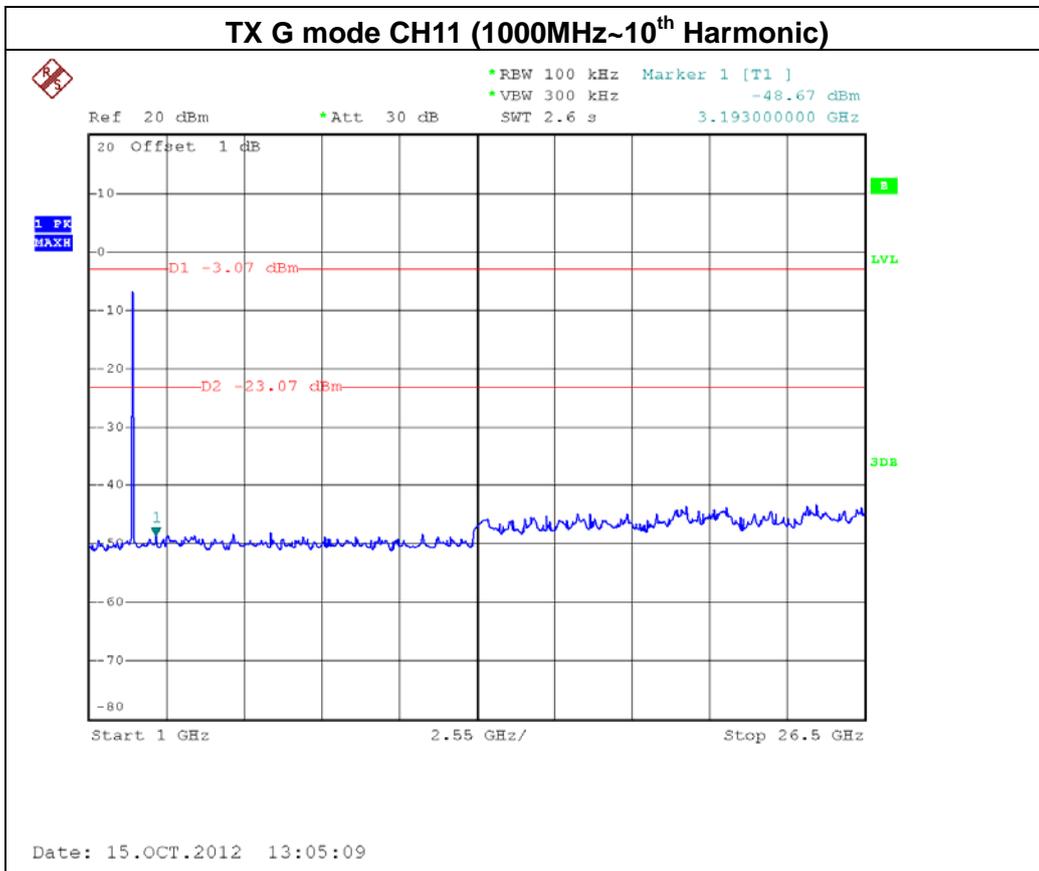
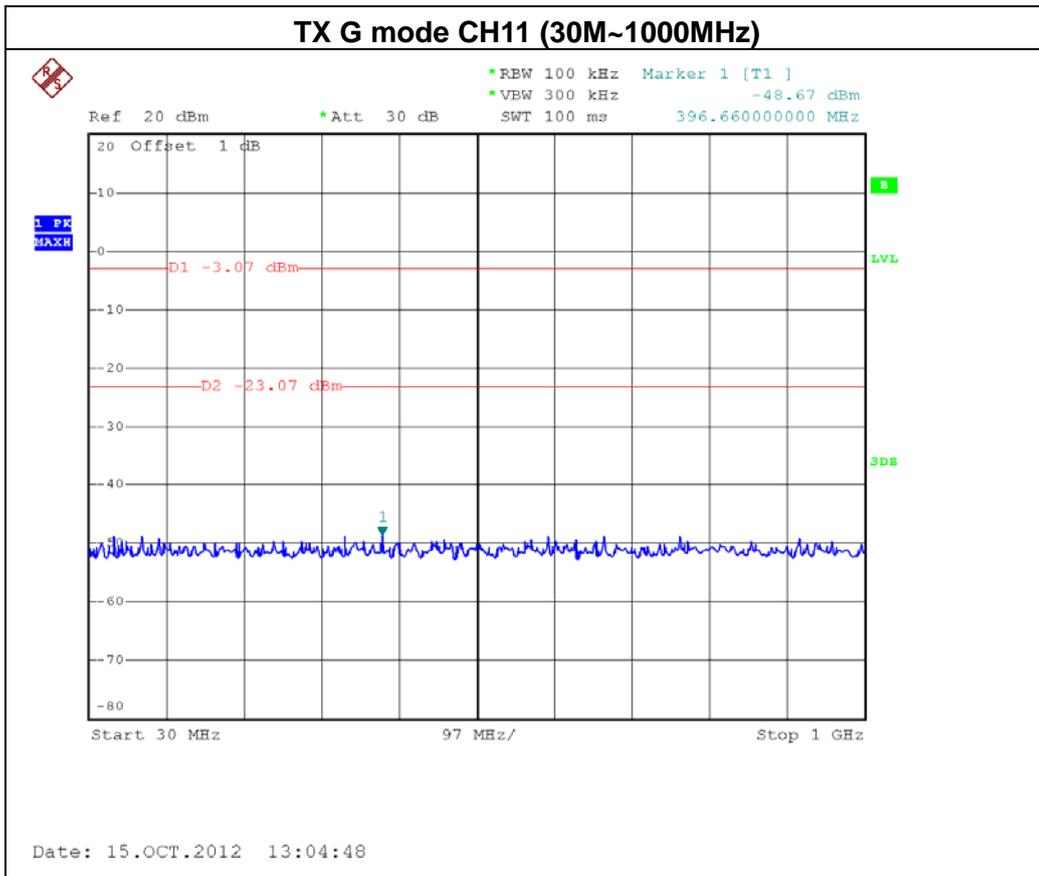
Result

In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.





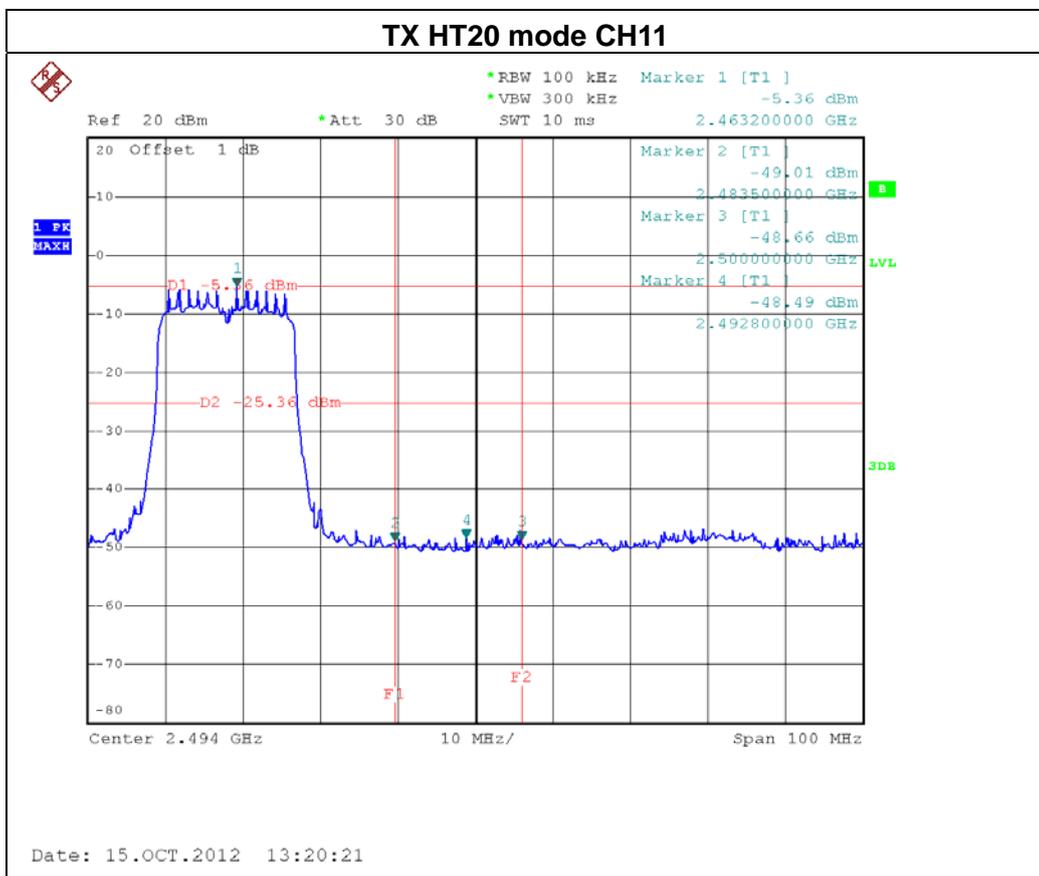
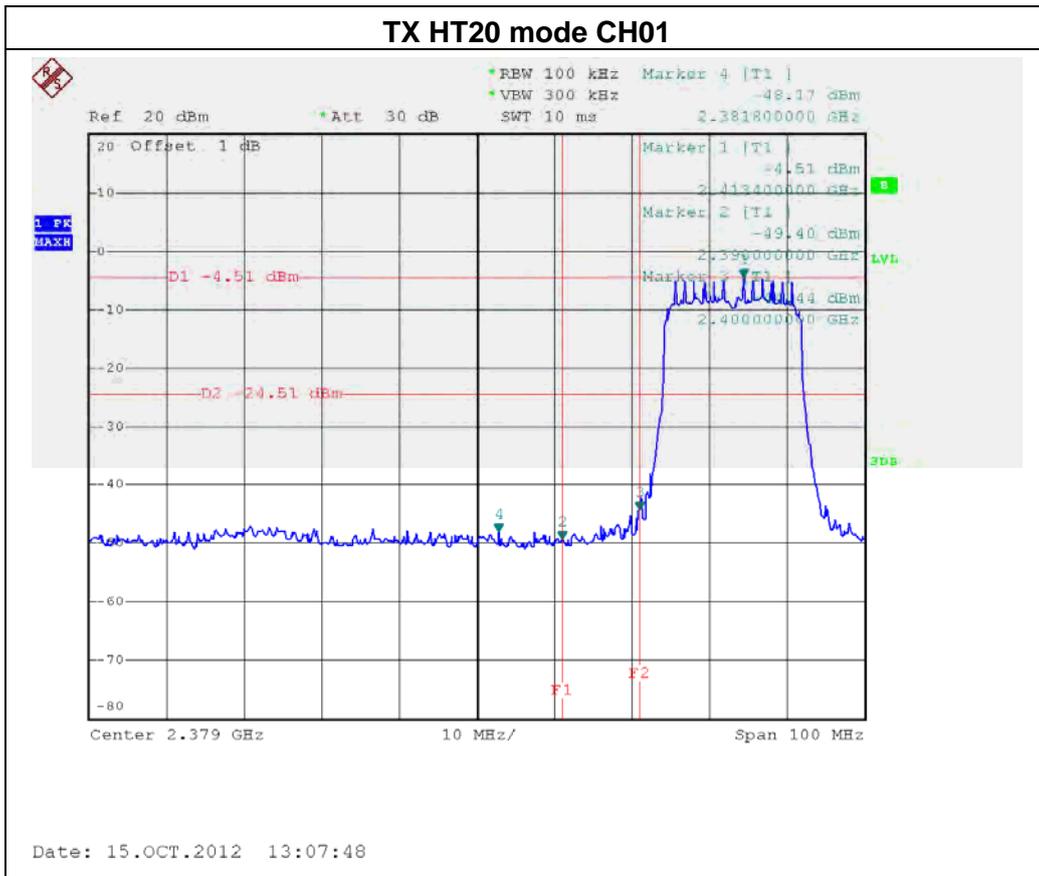


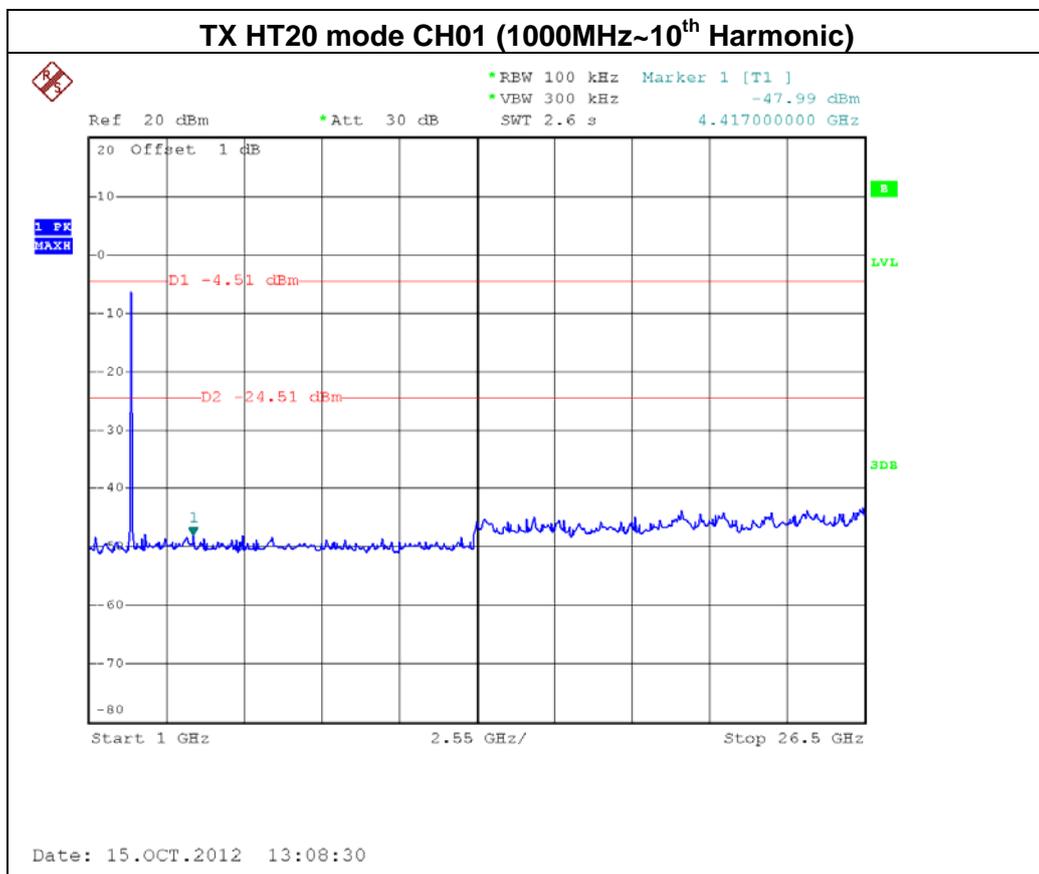
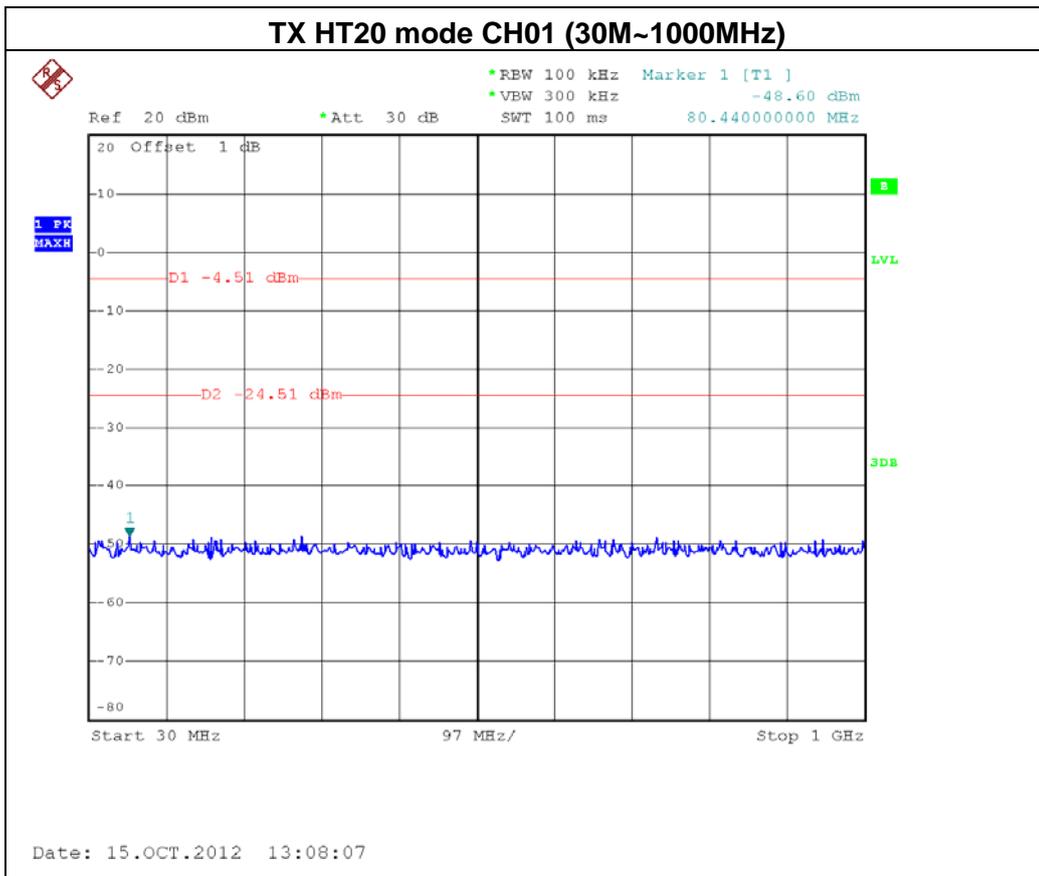


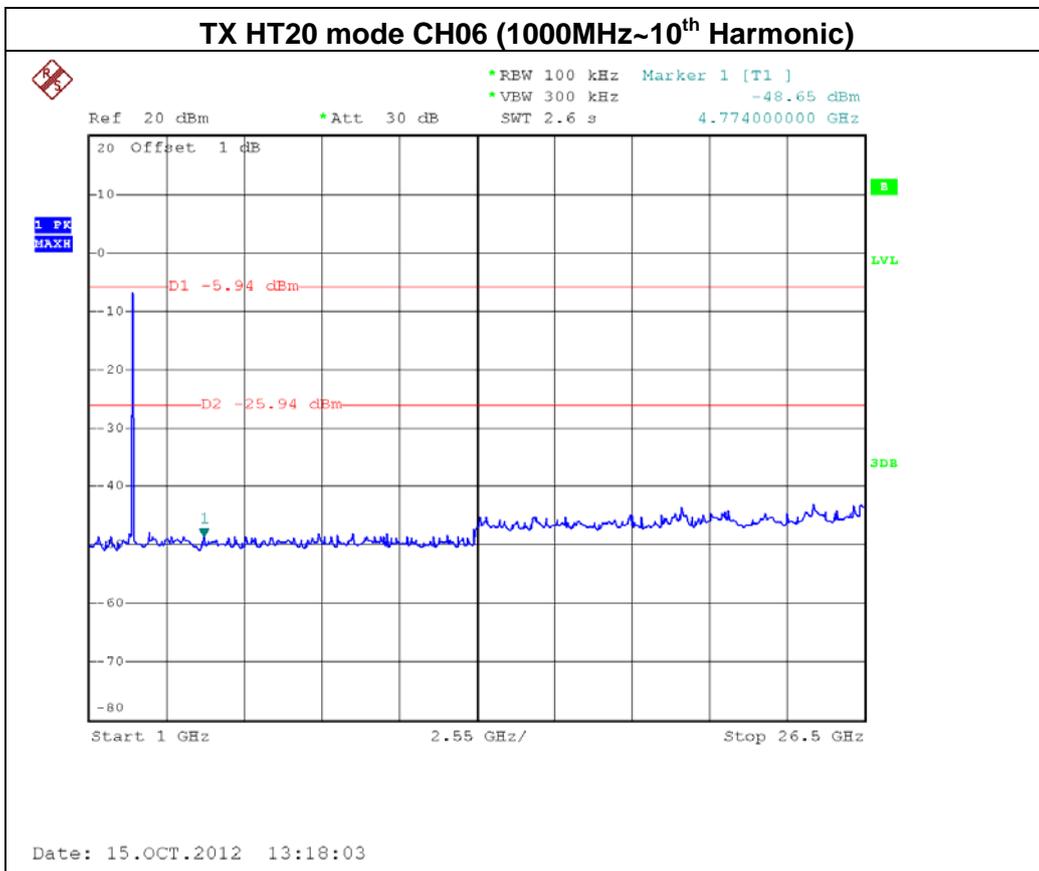
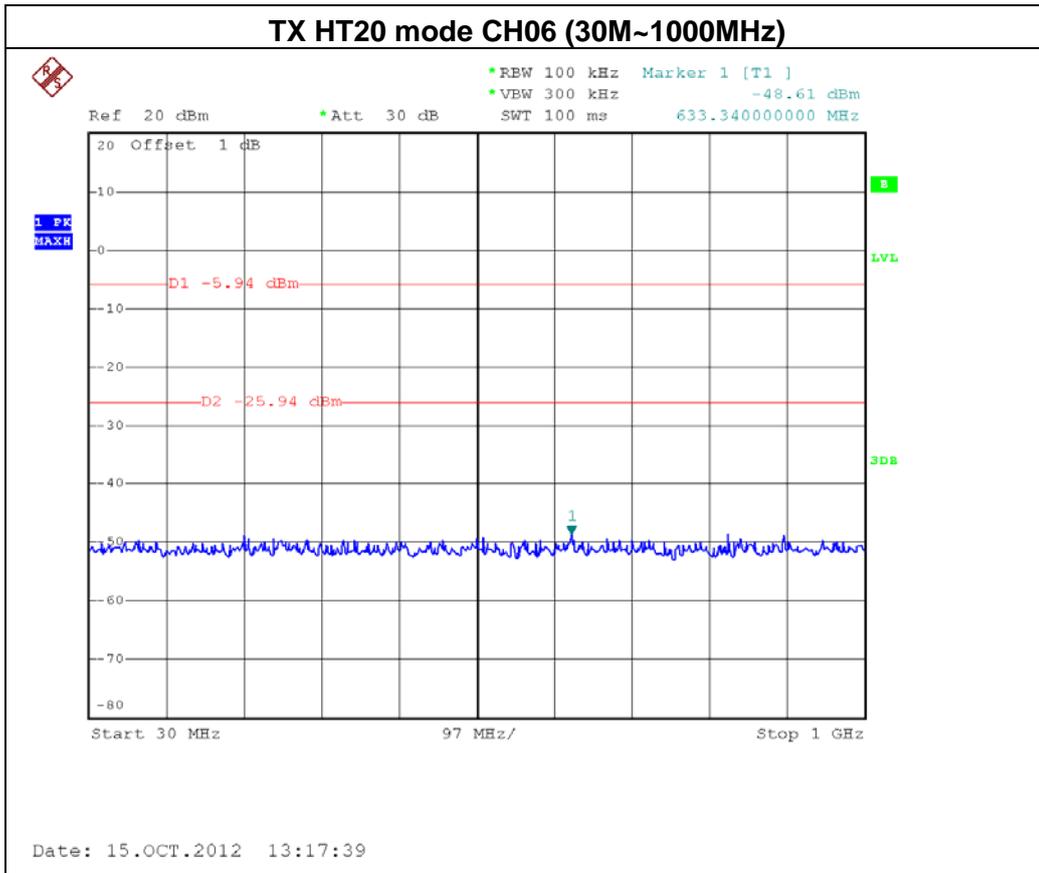


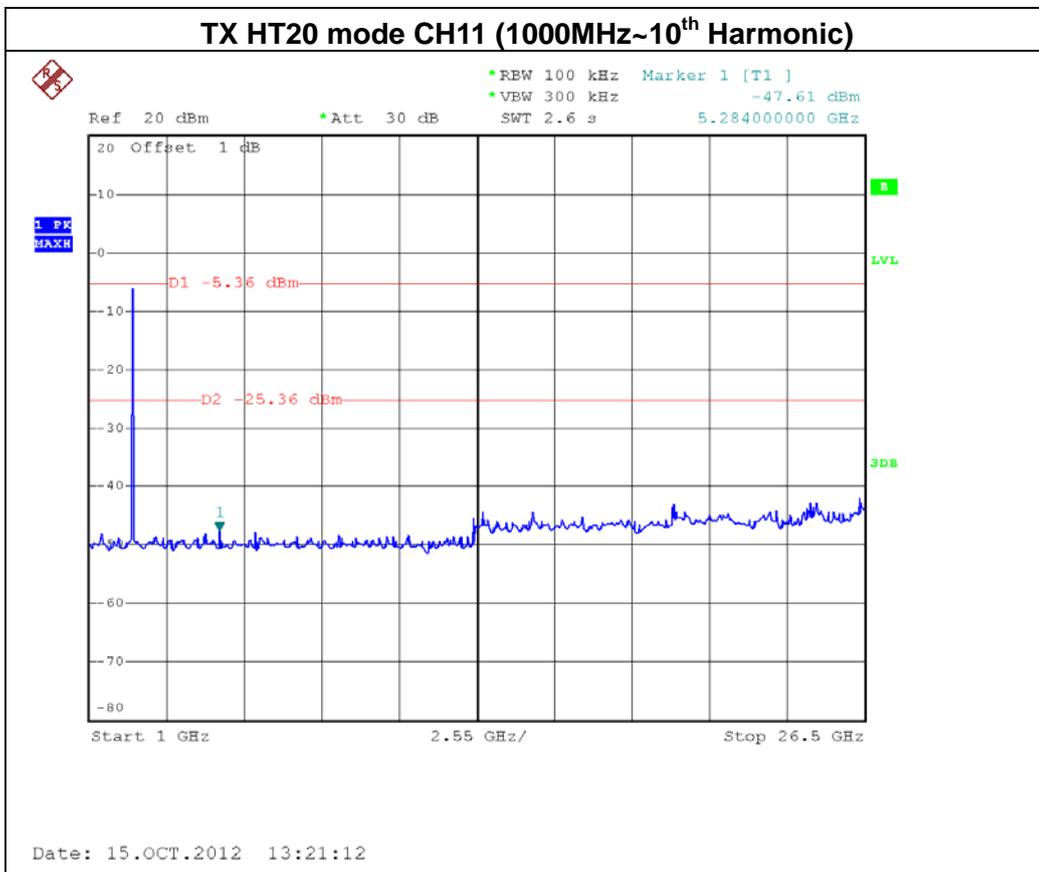
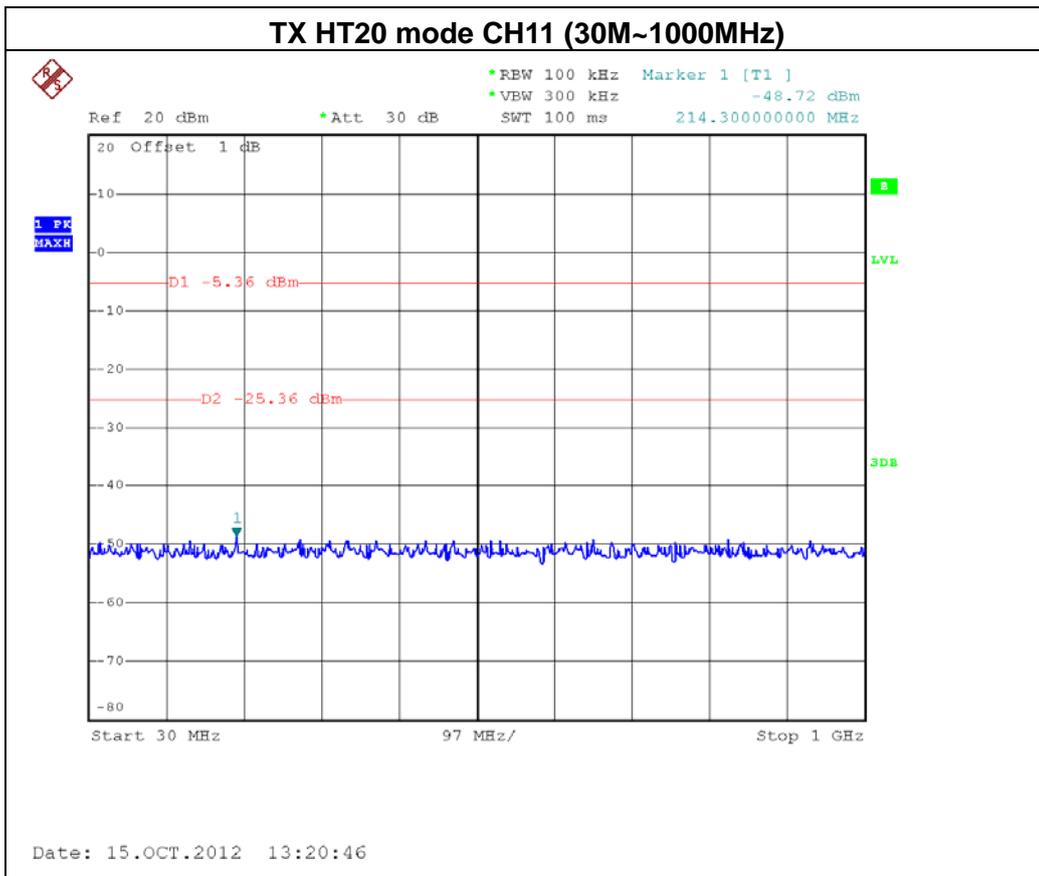
EUT :	Home Gateway	Model Name :	HG532t
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE / CH01, CH06 , CH11 --ANT 1 – Dipole Antenna		

Channel of Worst Data: CH01			
The max. radio frequency power in any 100kHz bandwidth within the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-44.44	2492.80	-48.49
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.			







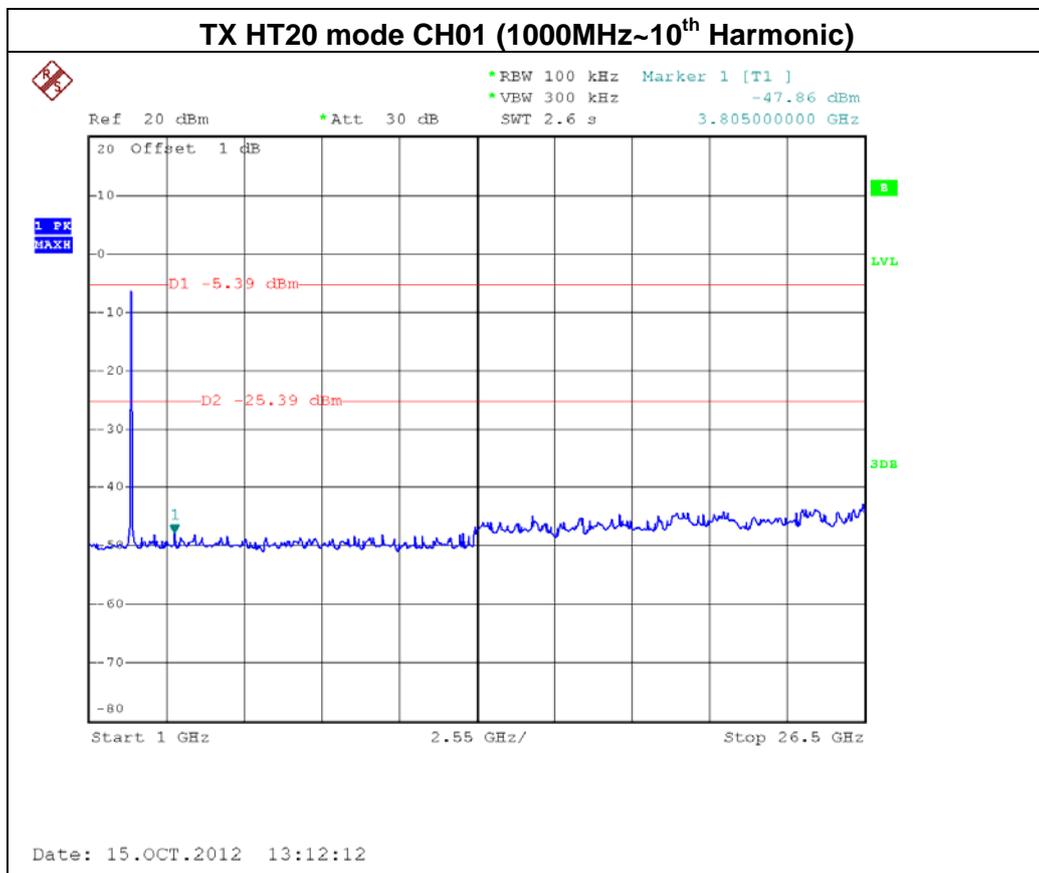
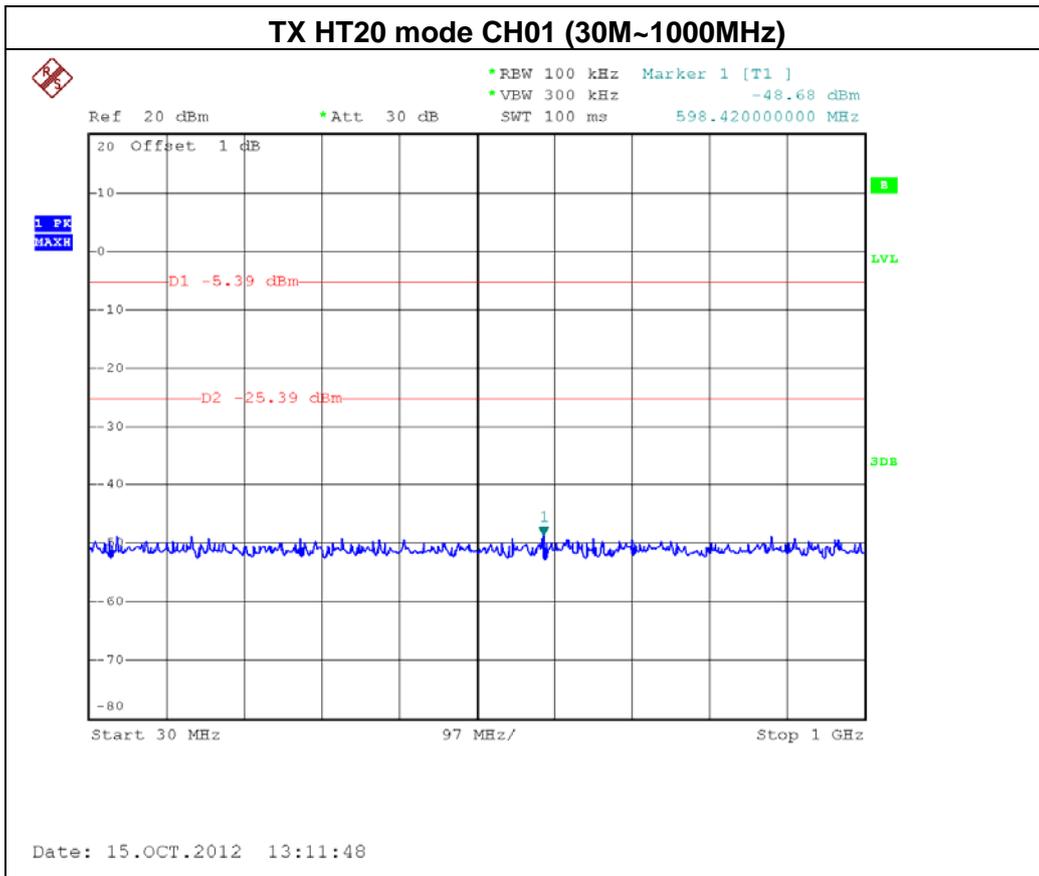


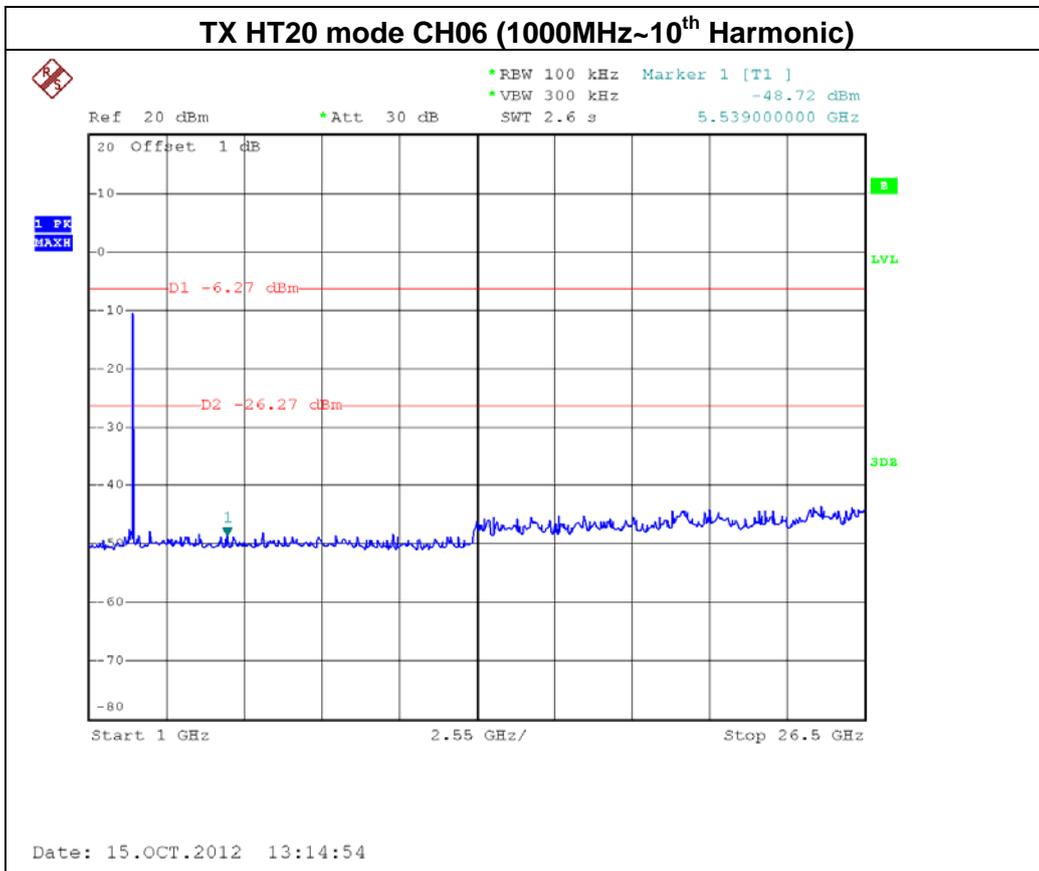
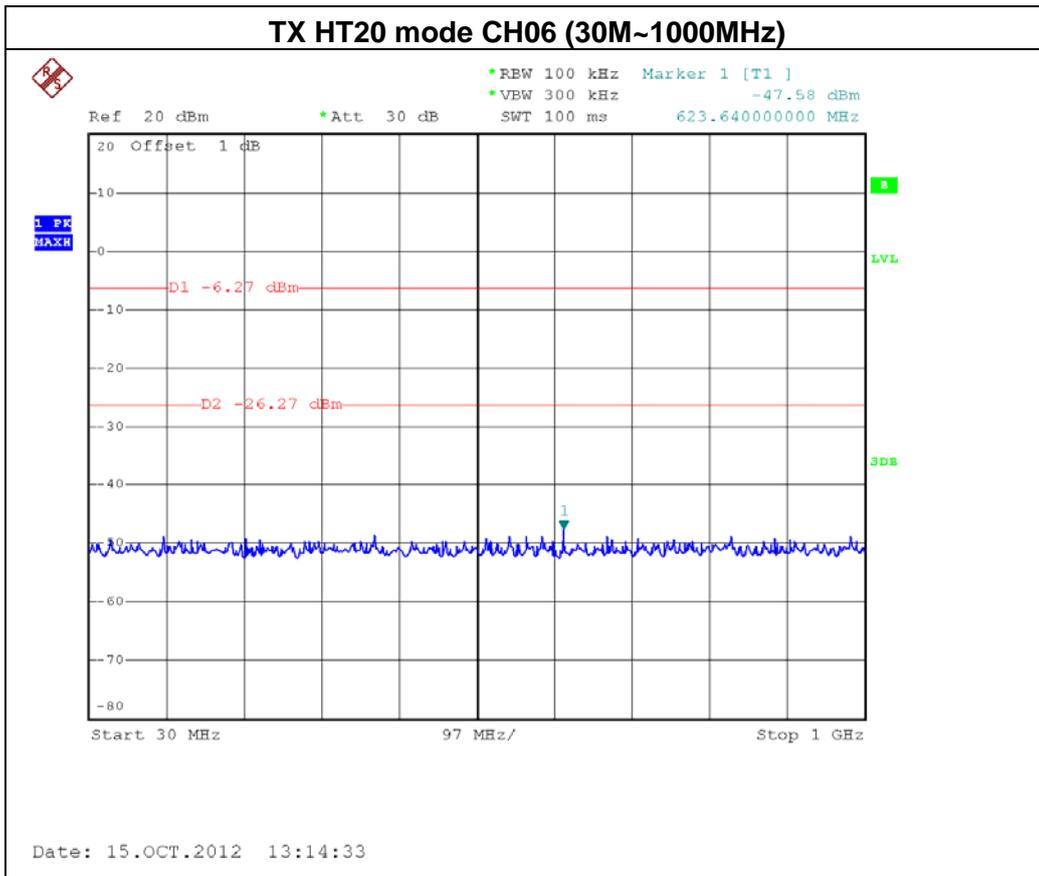


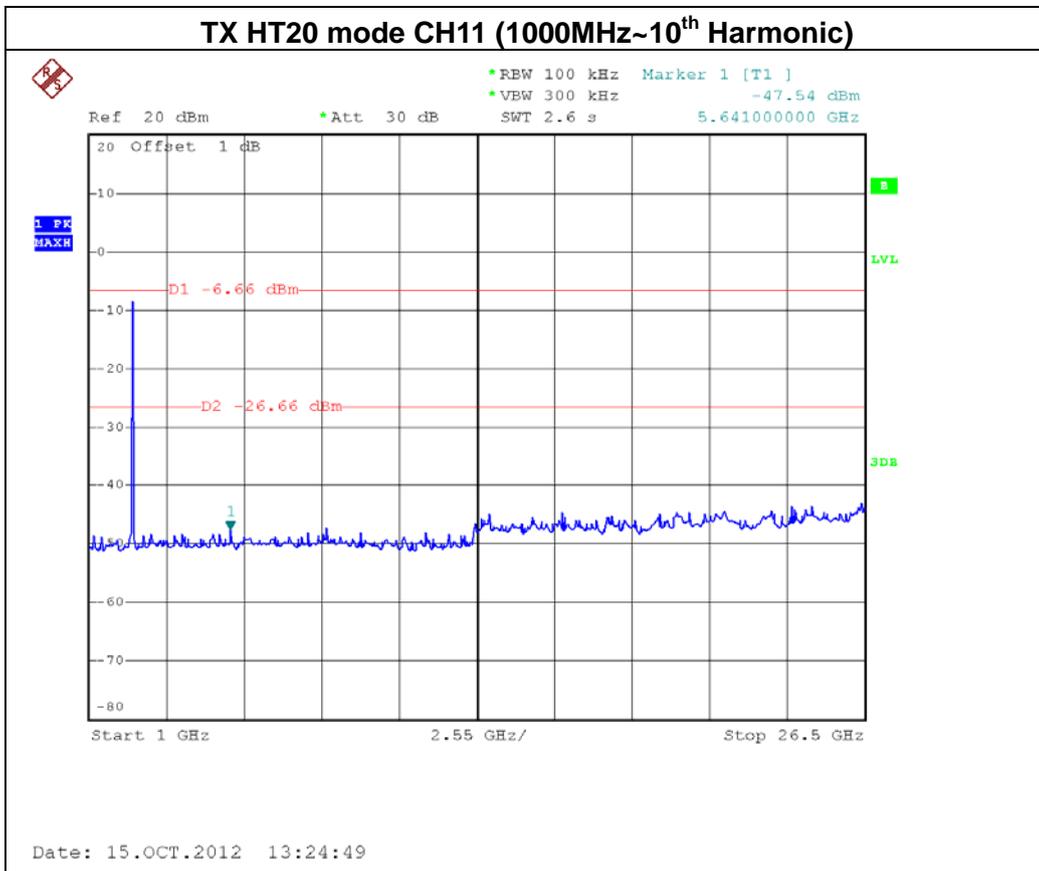
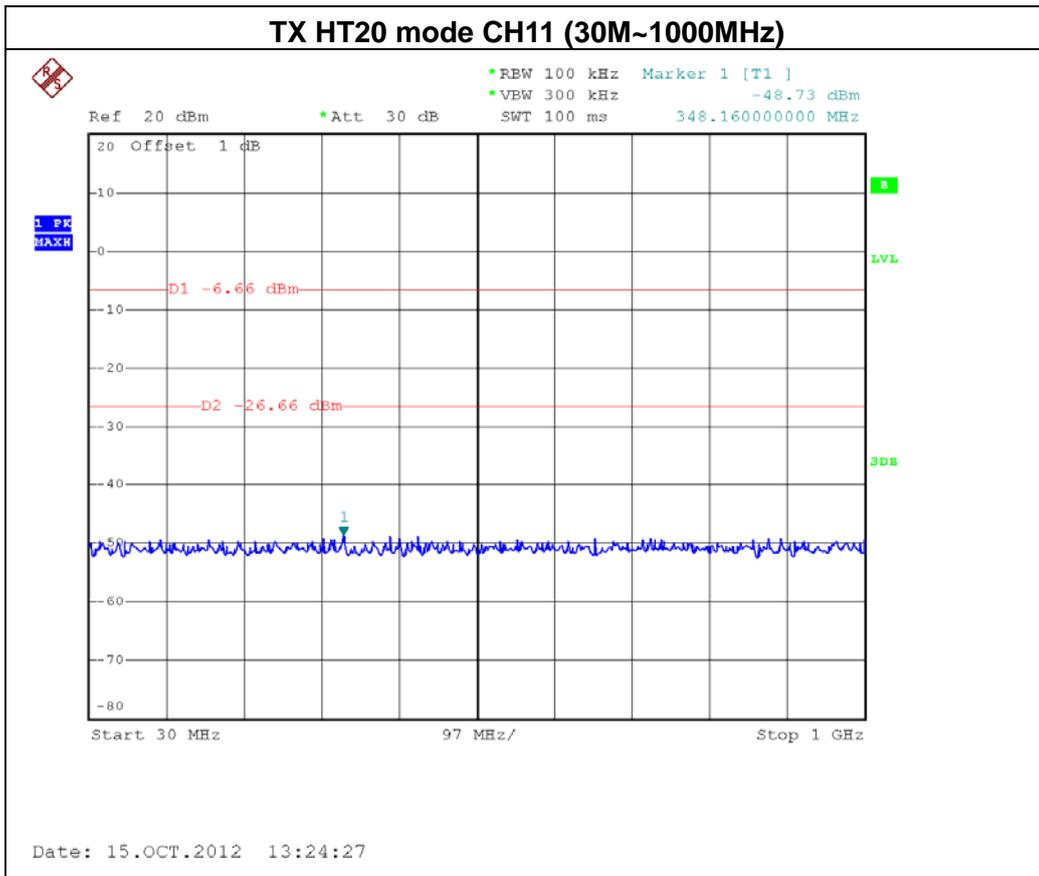
EUT :	Home Gateway	Model Name :	HG532t
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE / CH01, CH06 , CH11 --ANT 2 – Dipole Antenna		

Channel of Worst Data: CH01			
The max. radio frequency power in any 100kHz bandwidth within the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-43.91	2493.80	-48.30
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.			





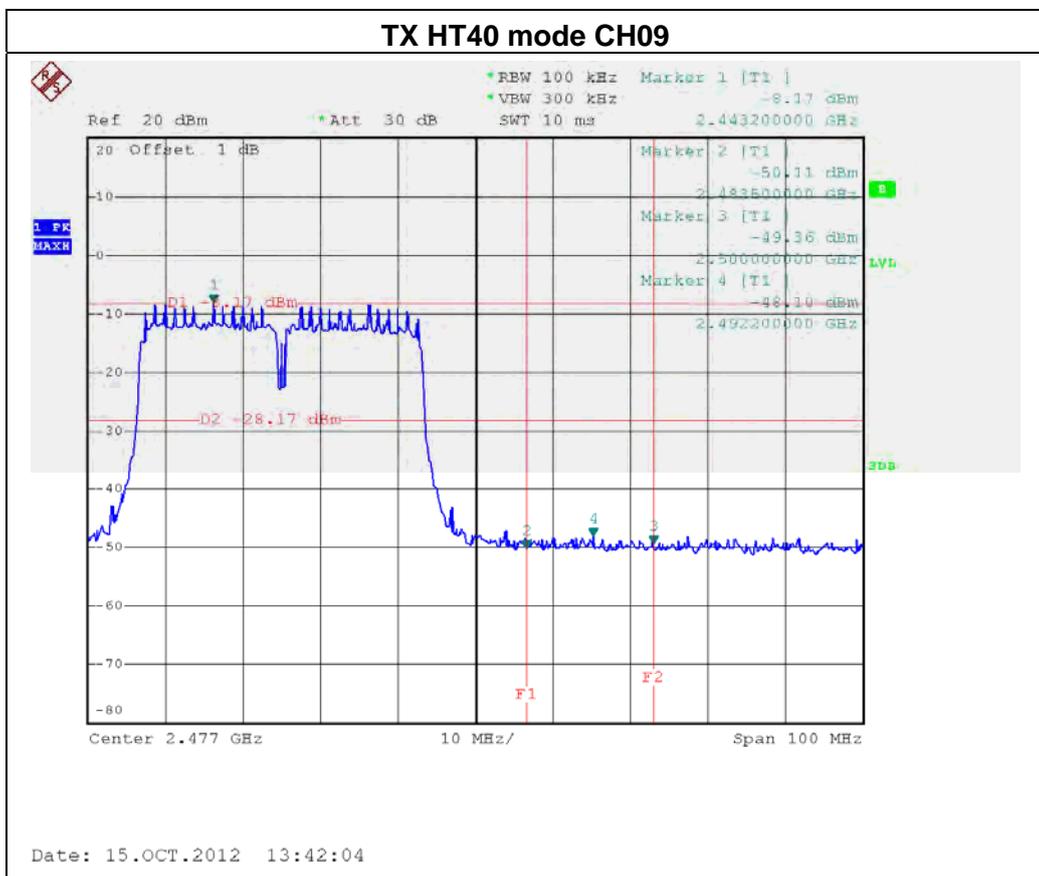
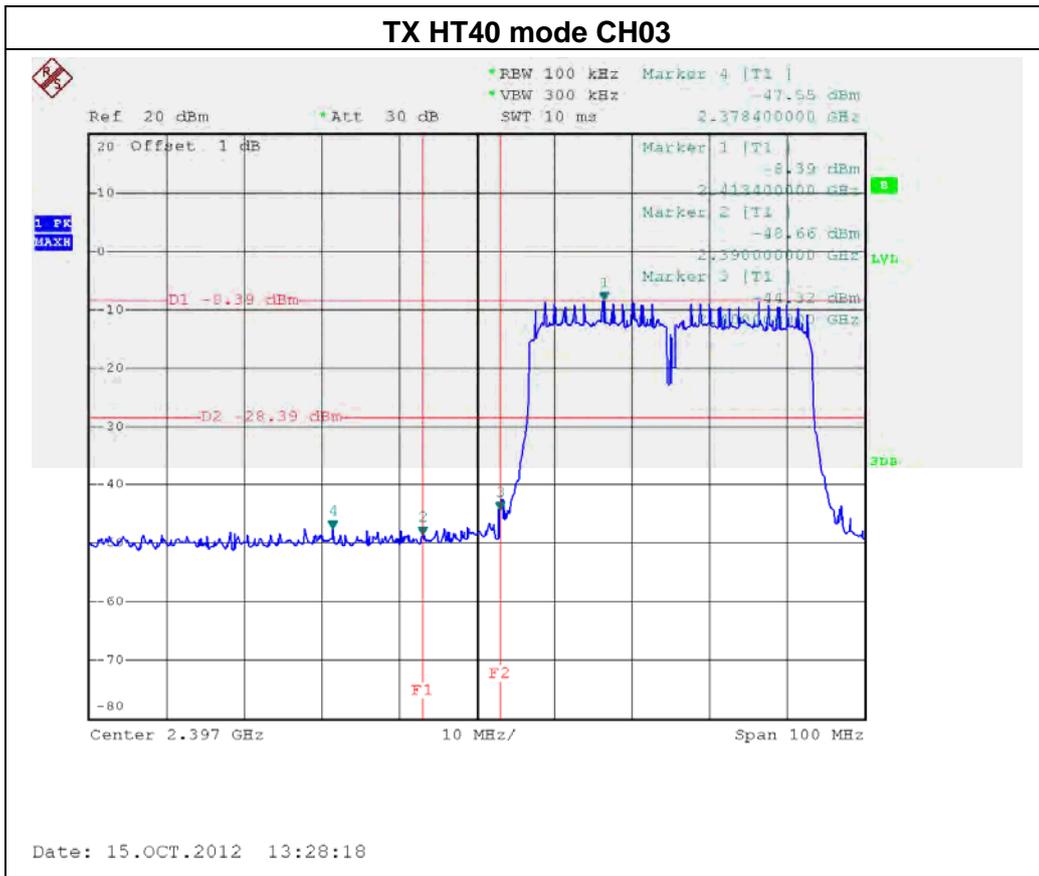


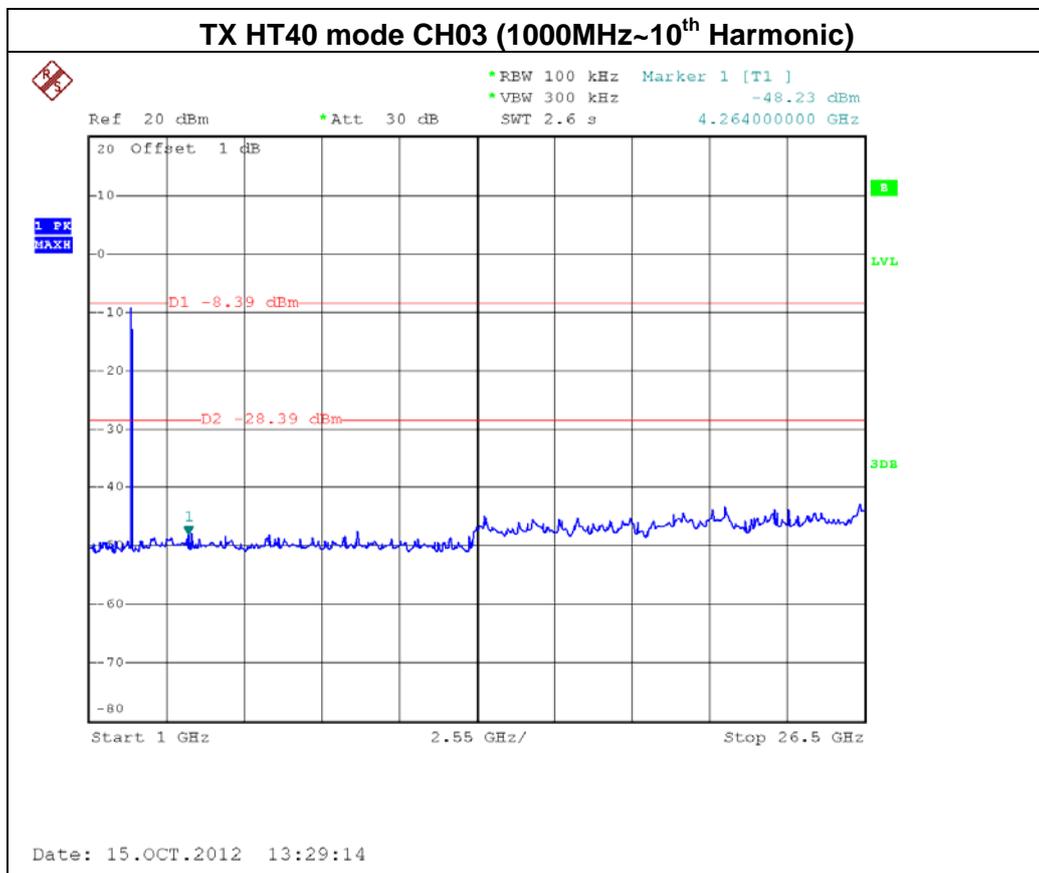
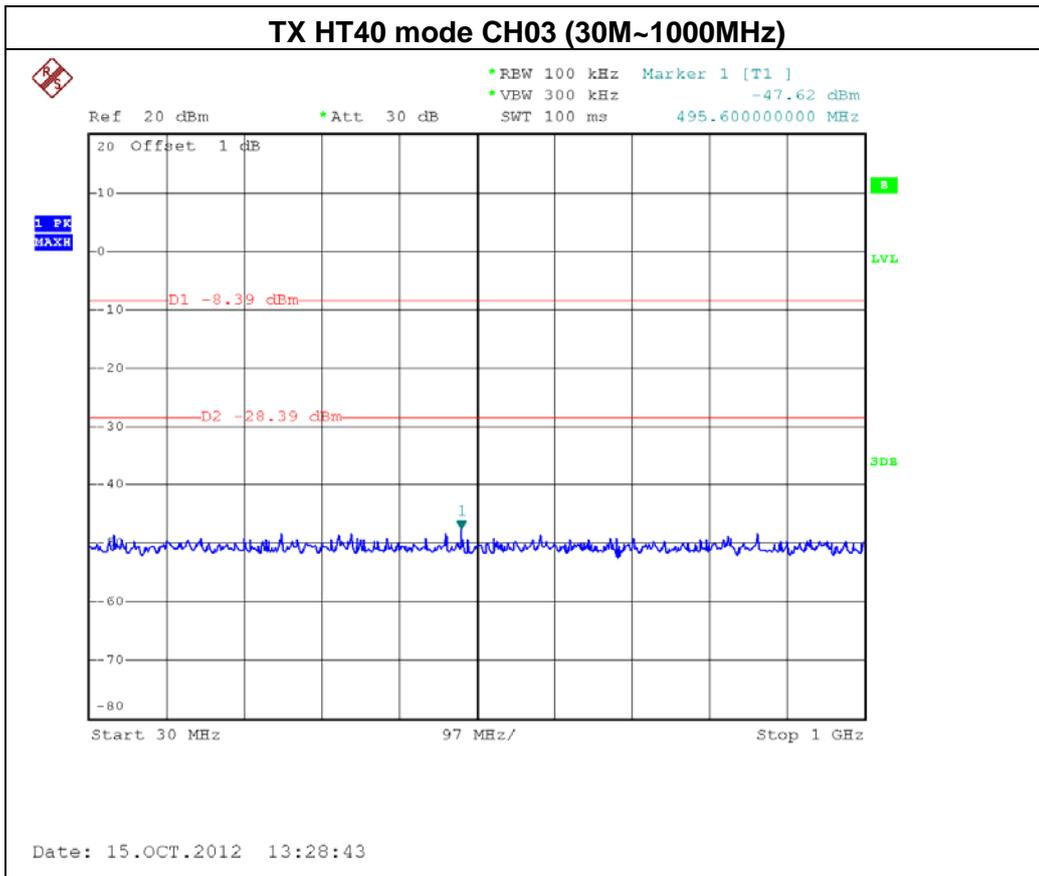


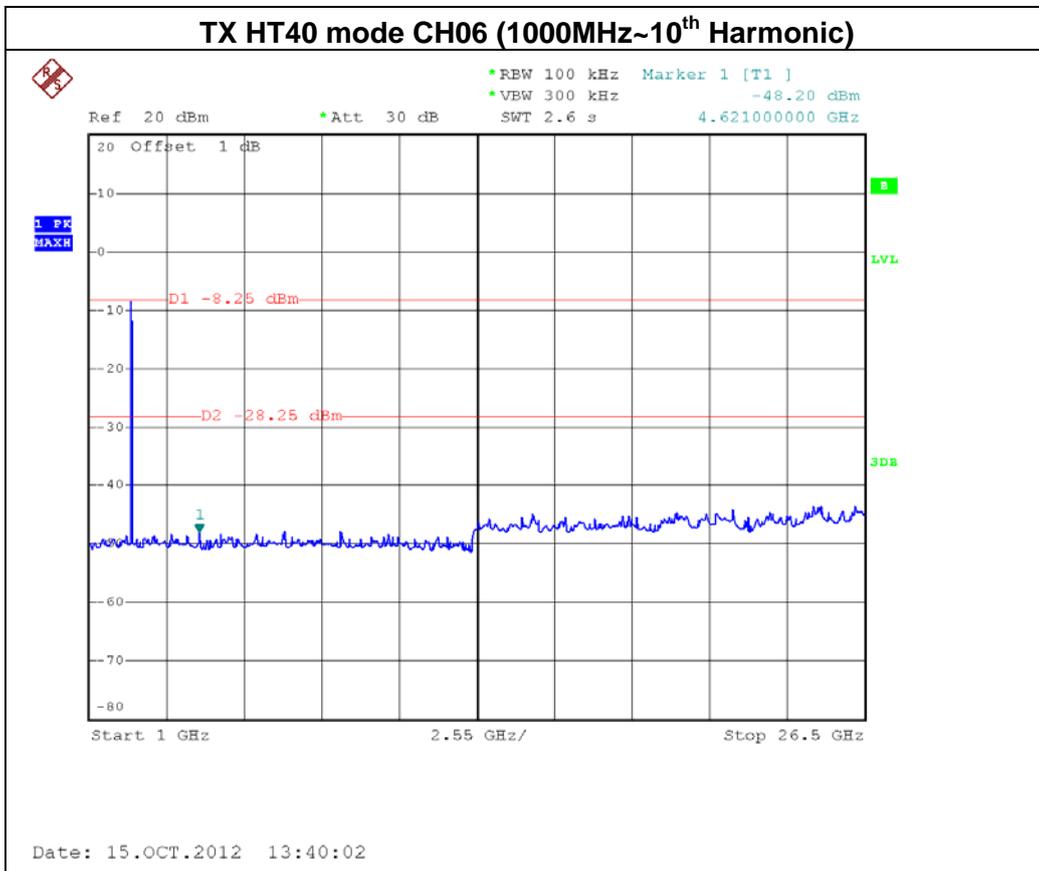
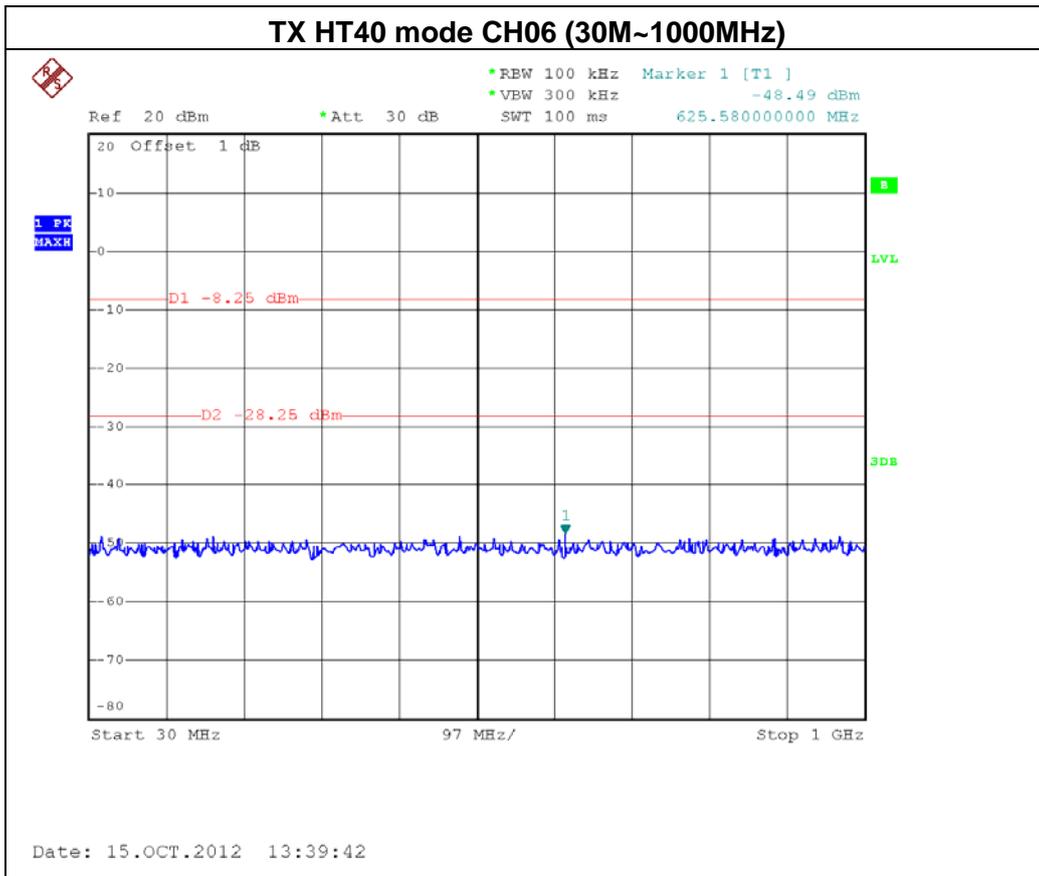


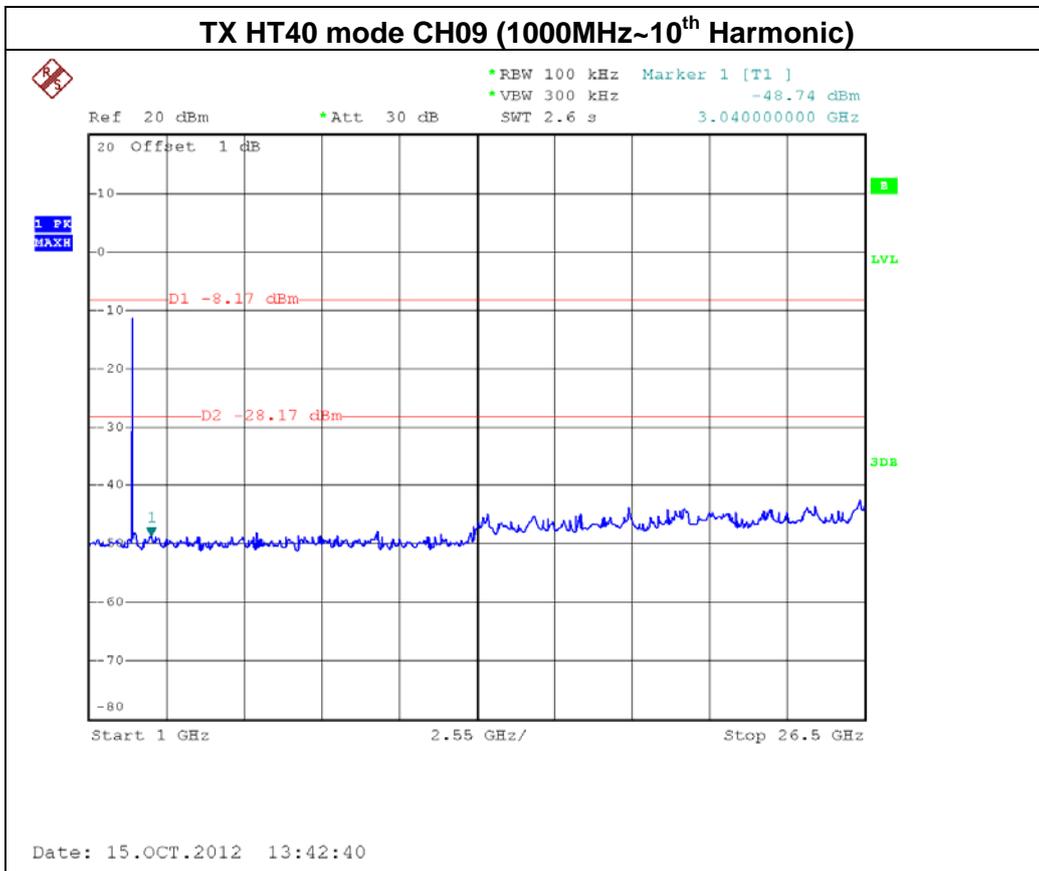
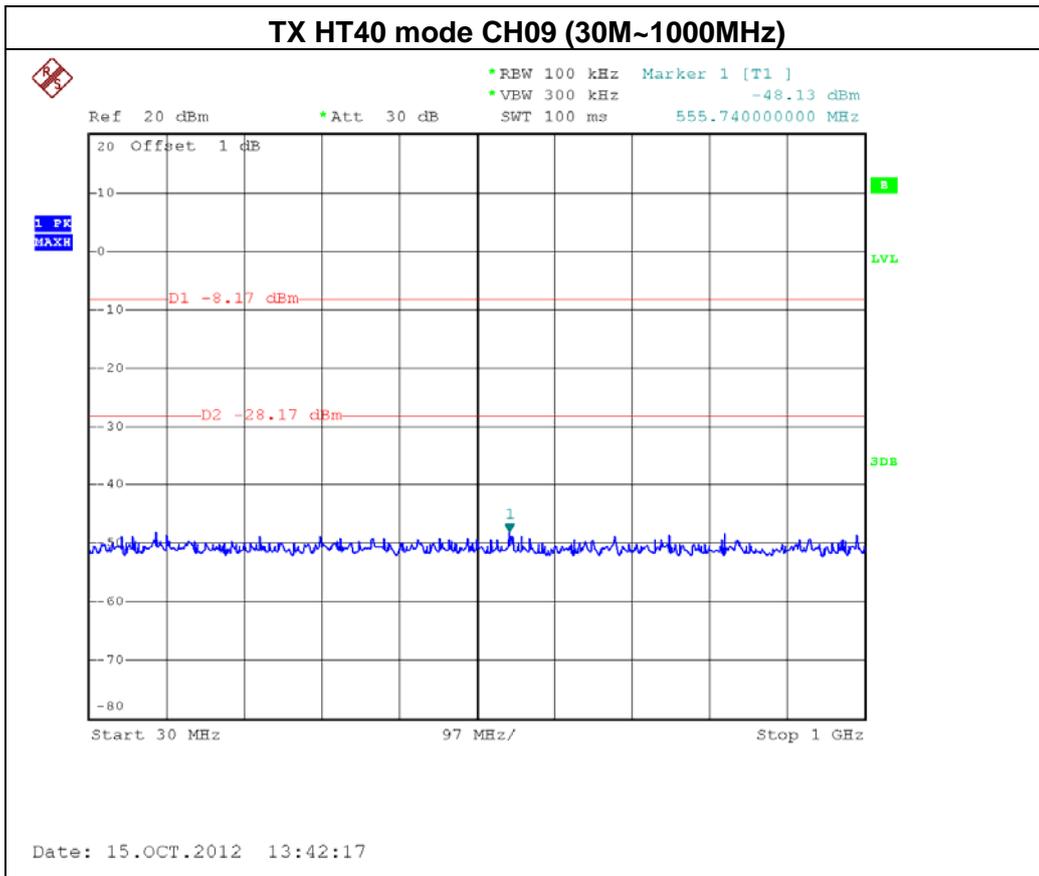
EUT :	Home Gateway	Model Name :	HG532t
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE / CH03, CH06 , CH09 --ANT 1 – Dipole Antenna		

Channel of Worst Data: CH03			
The max. radio frequency power in any 100kHz bandwidth within the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-44.32	2492.20	-48.10
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.			





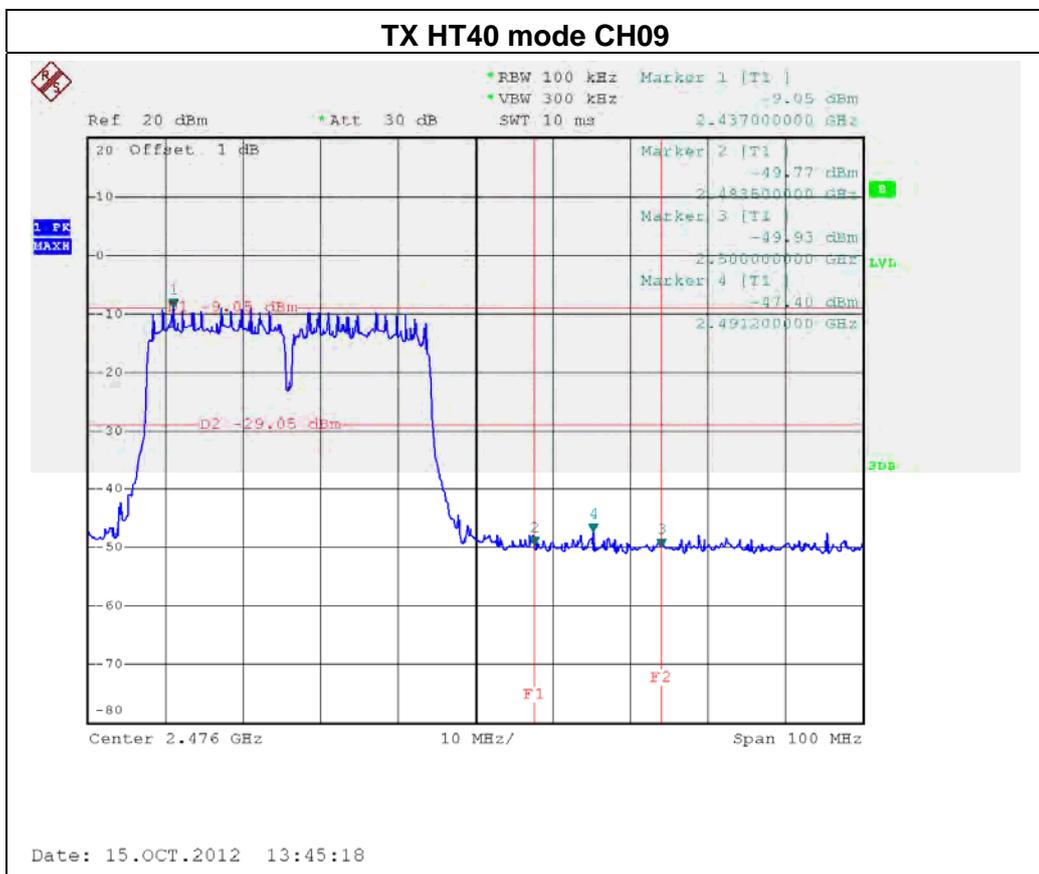
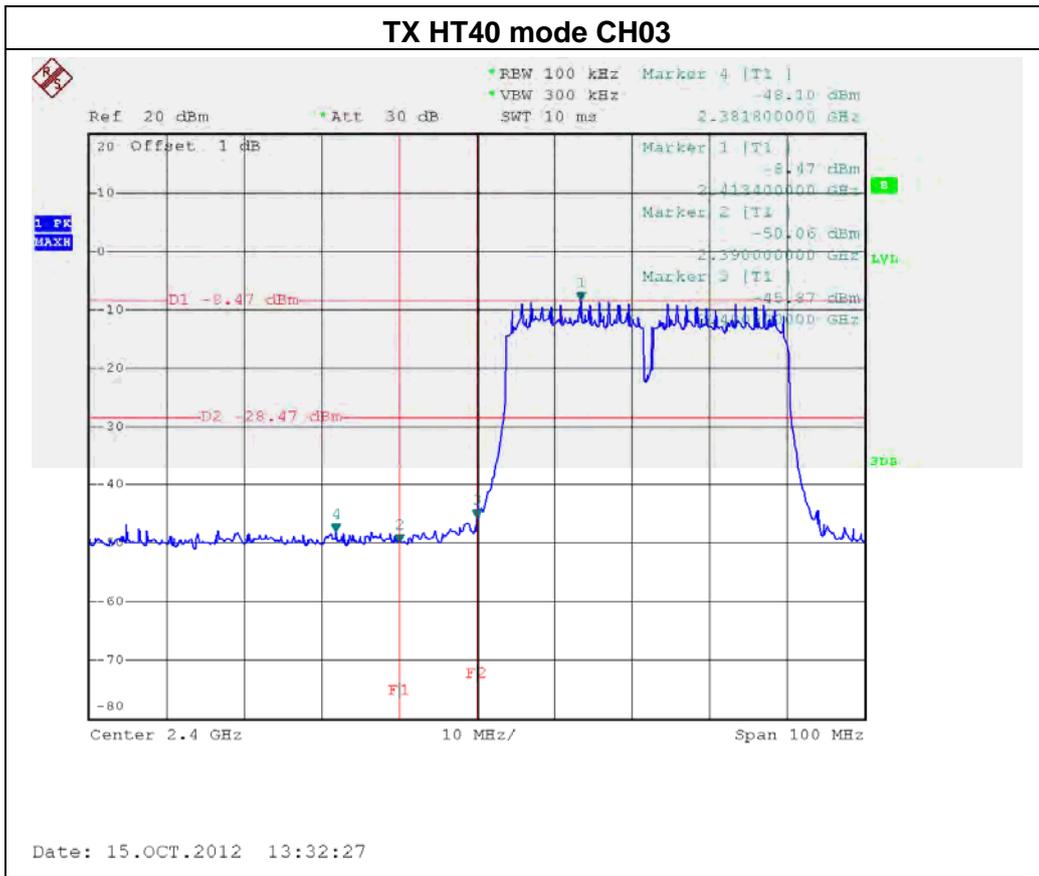


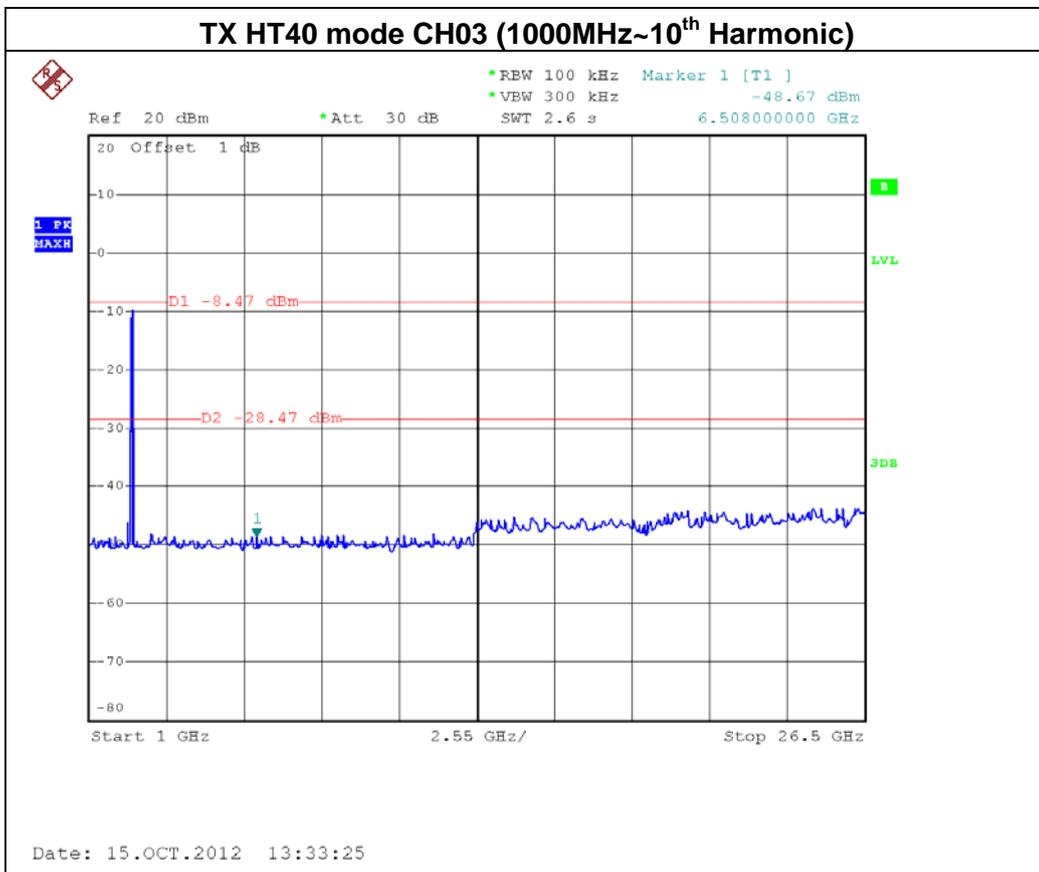
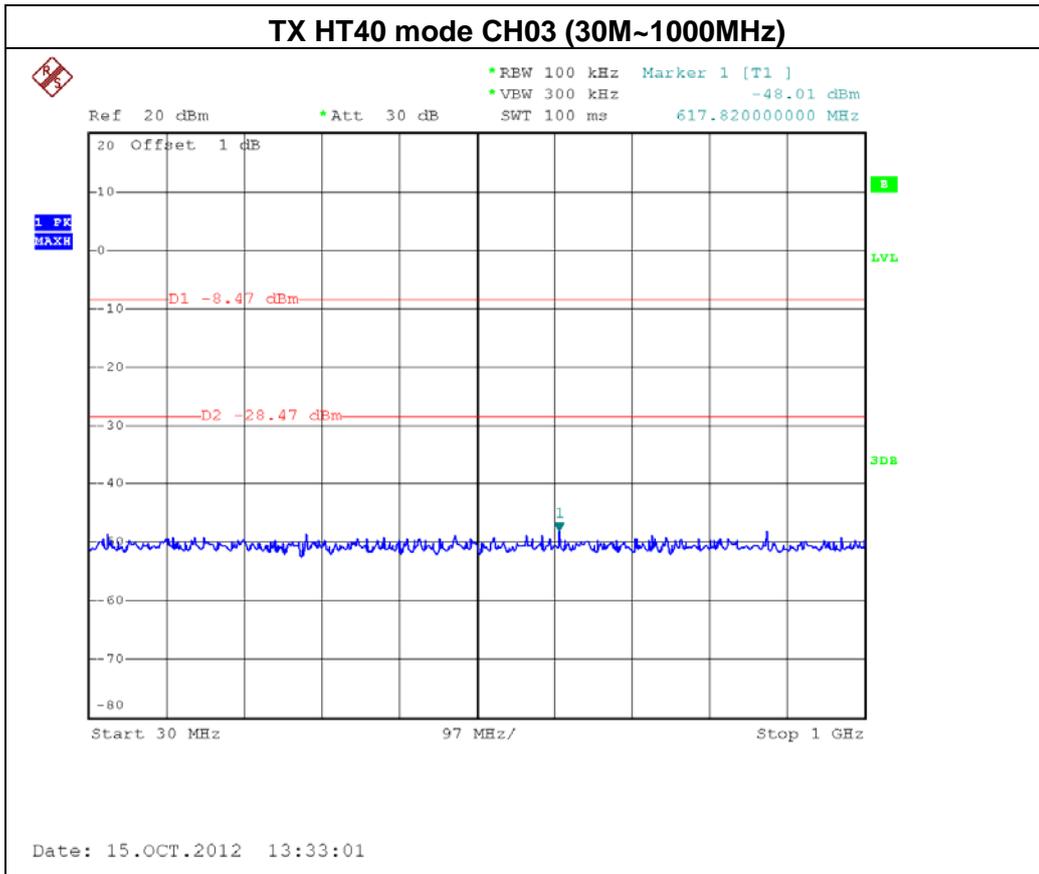


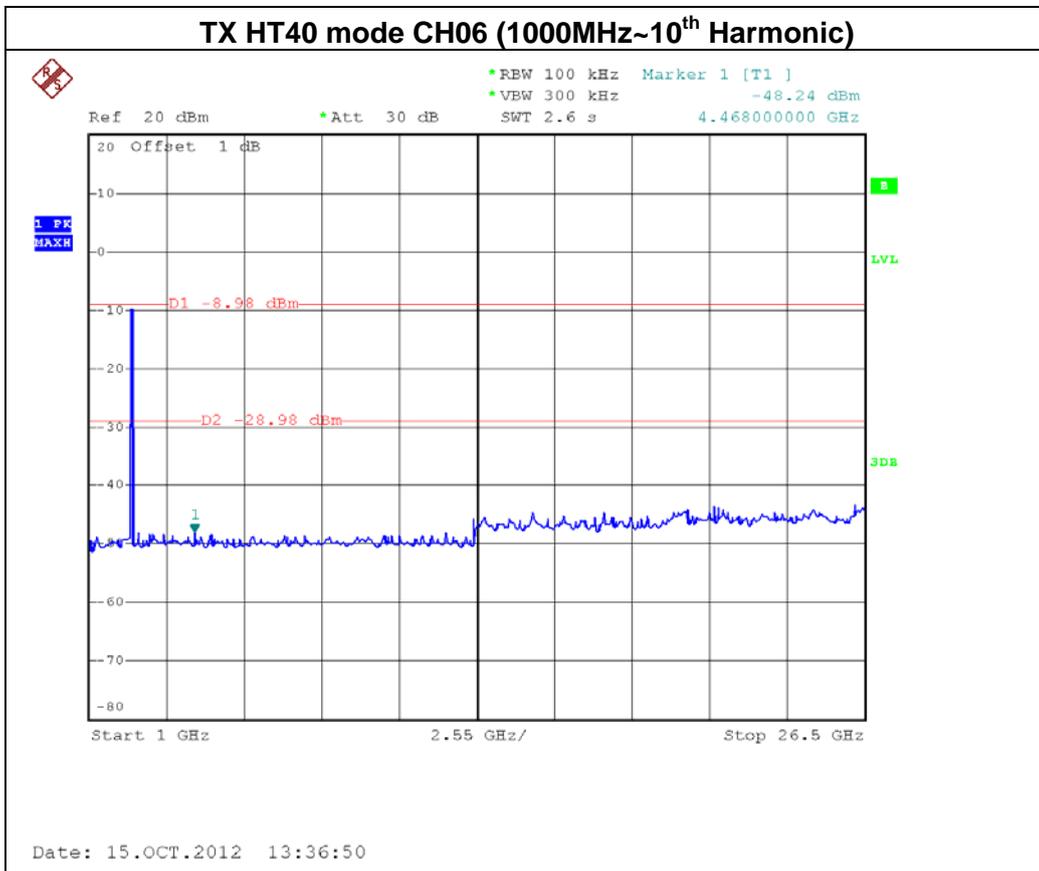
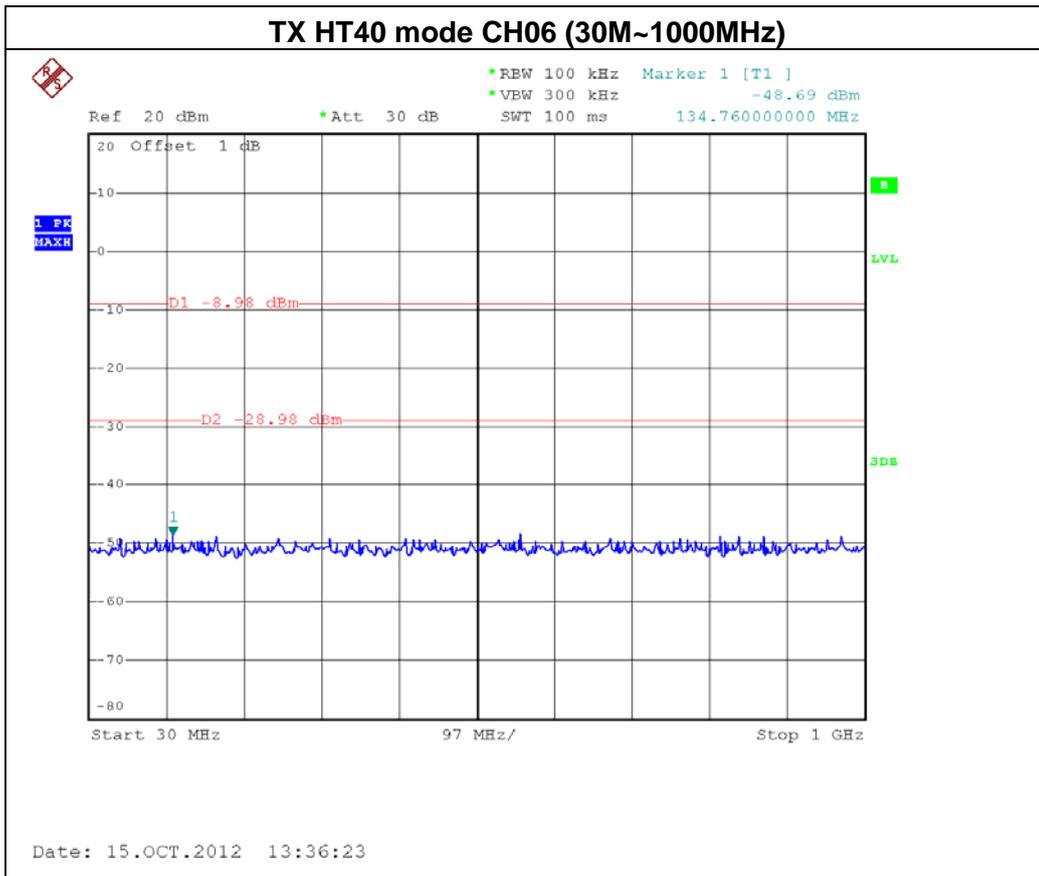


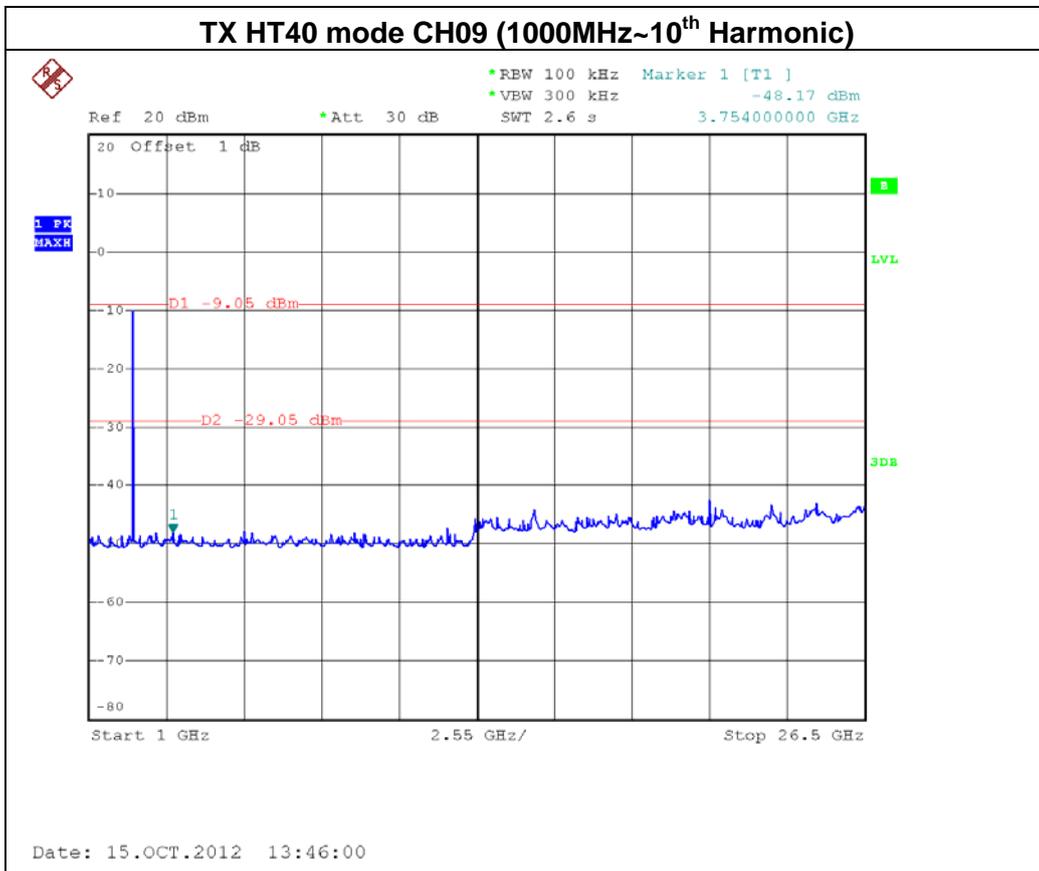
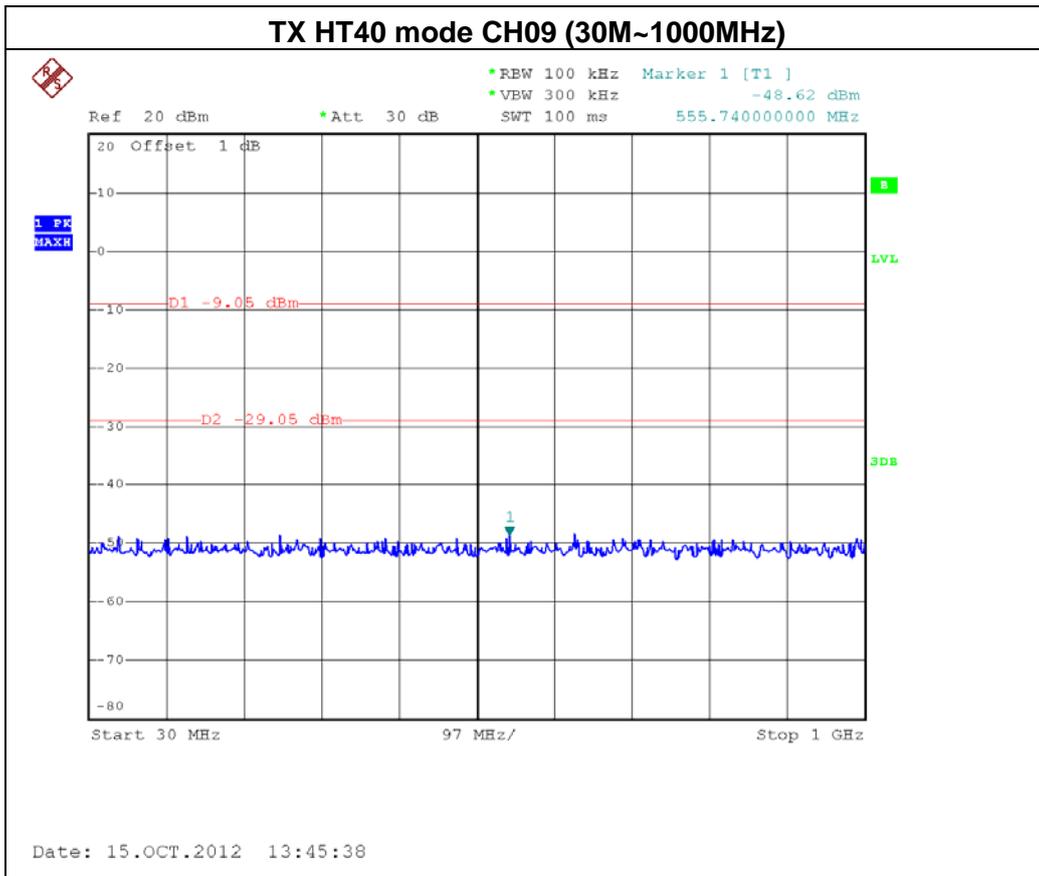
EUT :	Home Gateway	Model Name :	HG532t
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE /CH03, CH06, CH09--ANT 2 – Dipole Antenna		

Channel of Worst Data: CH03			
The max. radio frequency power in any 100kHz bandwidth within the frequency band		The max. radio frequency power in any 100 kHz bandwidth outside the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-45.87	2491.20	-47.40
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.			











**8. POWER SPECTRAL DENSITY TEST**

**8.1 Applied procedures / limit**

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(e)	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

**8.1.1 MEASUREMENT INSTRUMENTS LIST**

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Next Calibration
1	Spectrum Analyzer	R&S	FSP_40	100185	Nov.26.2011	Nov.25.2012

Remark: "N/A" denotes no model name, serial no. or calibration specified.

**8.1.2 TEST PROCEDURE**

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- b. Spectrum Setting : RBW=100KHz, VBW=300 KHz, Sweep time = 2.5ms.

**8.1.3 DEVIATION FROM STANDARD**

No deviation.

**8.1.4 TEST SETUP**



**8.1.5 EUT OPERATION CONDITIONS**

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

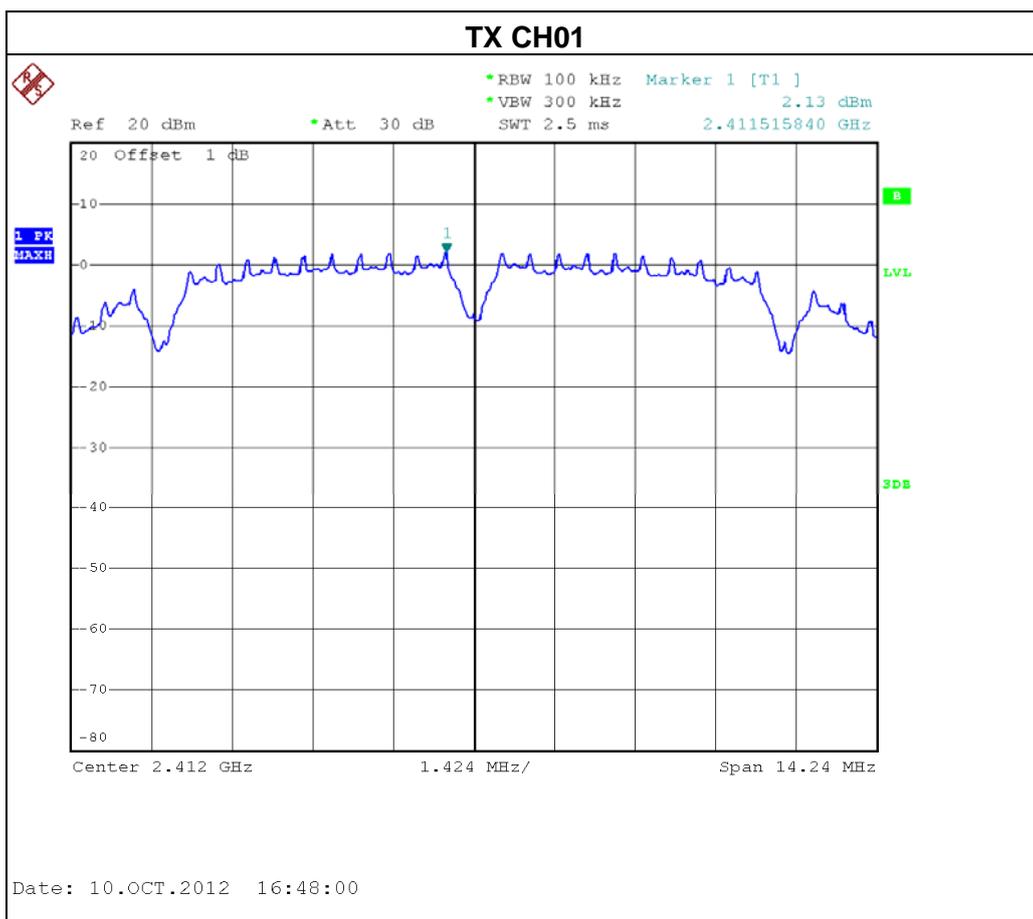


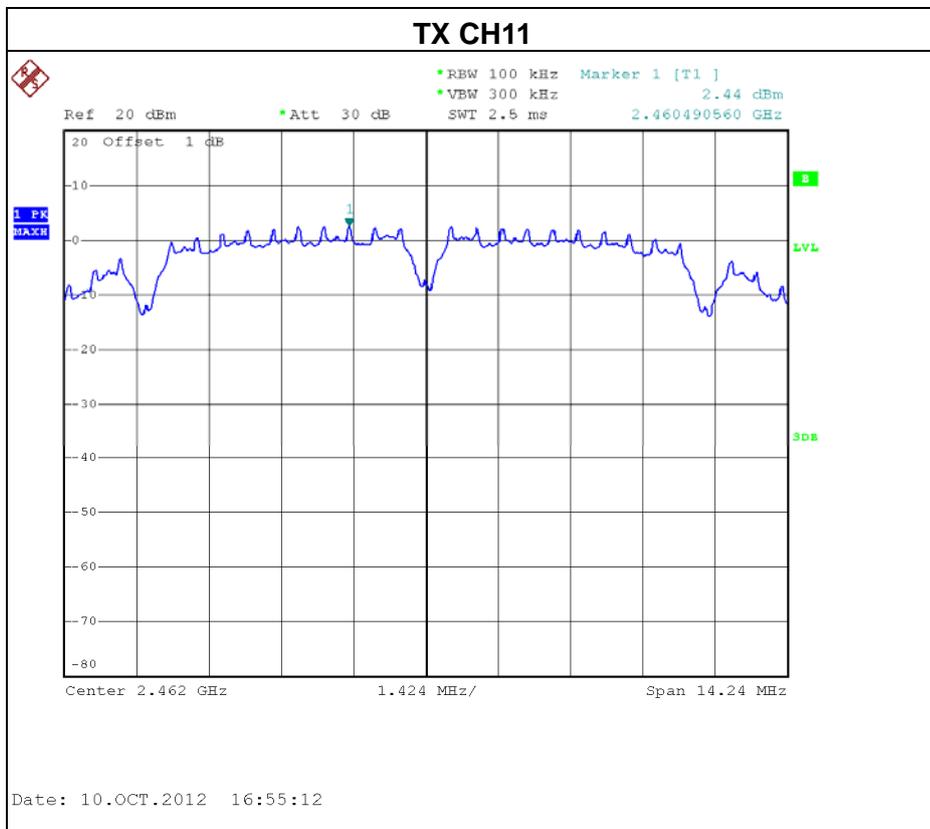
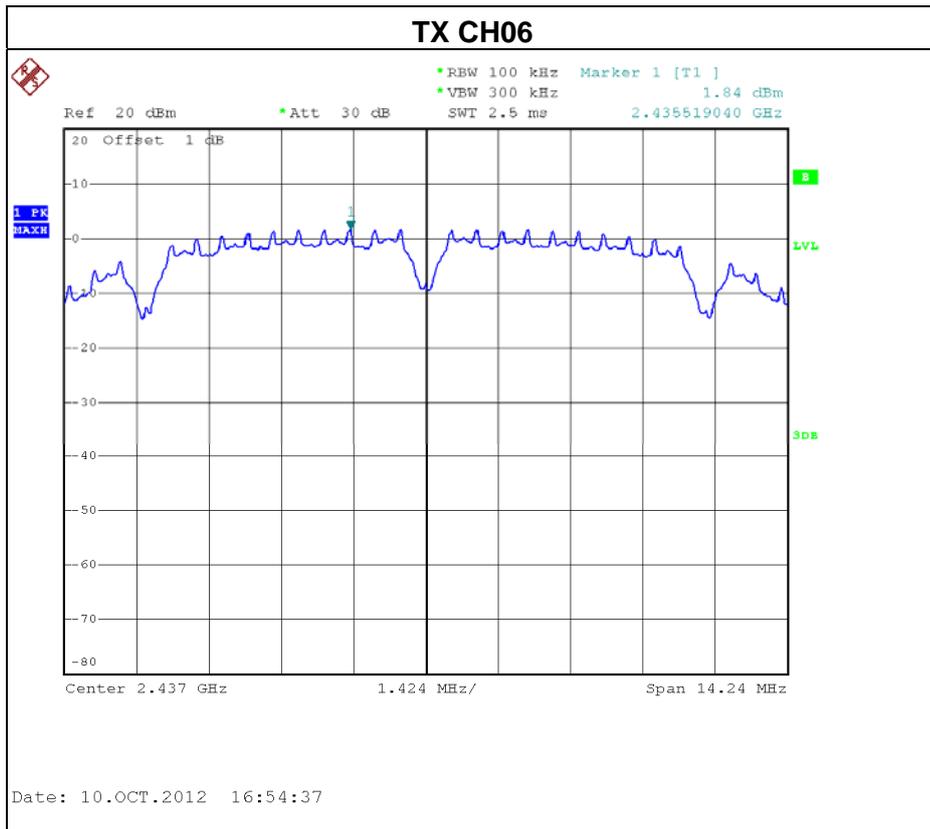
**8.1.6 TEST RESULTS**

EUT :	Home Gateway	Model Name :	HG532t
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE /CH01, CH06, CH11 – Integral Antenna		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412 MHz	-13.07	8
CH06	2437 MHz	-13.36	8
CH11	2462 MHz	-12.76	8

Note: Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where  $BWCF = 10\log(3\text{ kHz}/100\text{kHz}) = -15.2\text{ dB}$ .



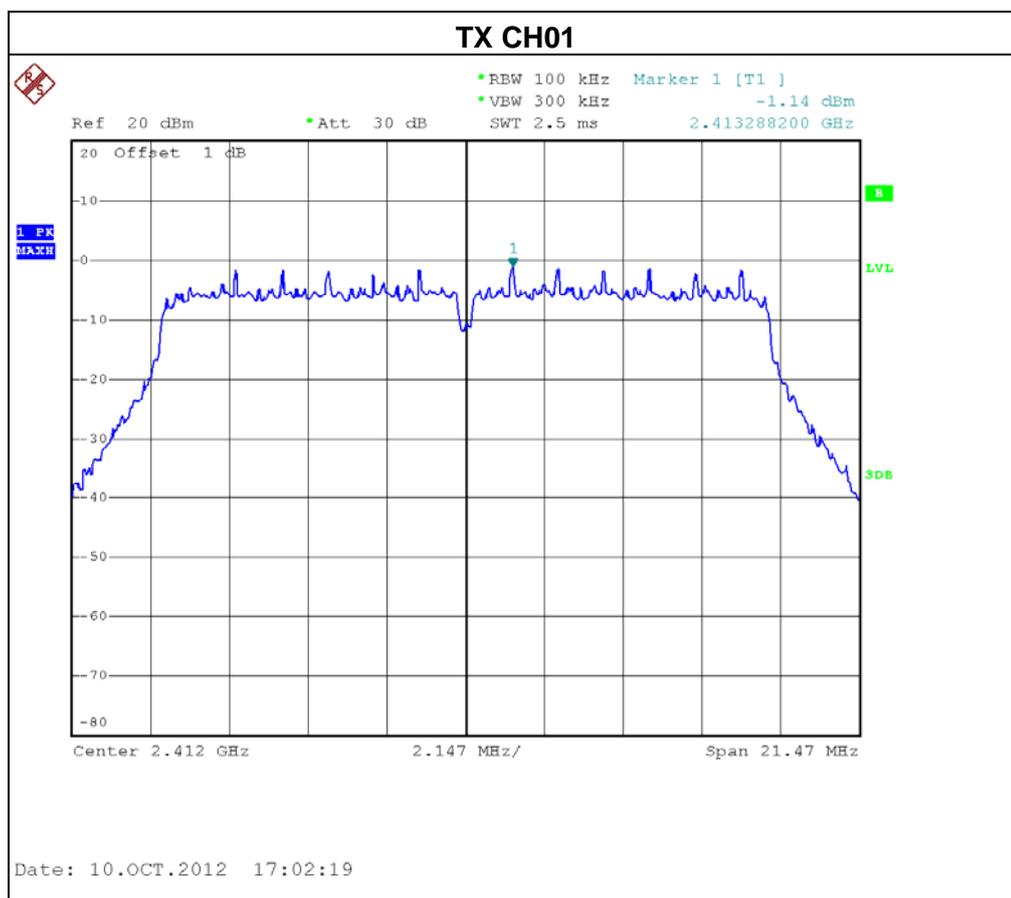


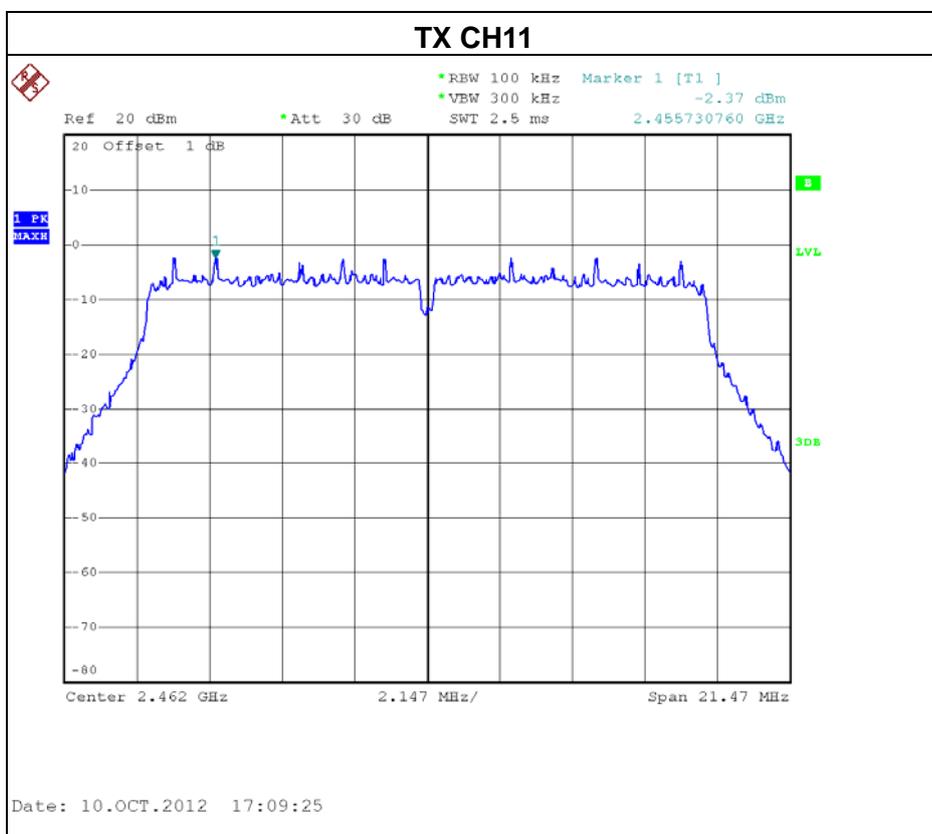
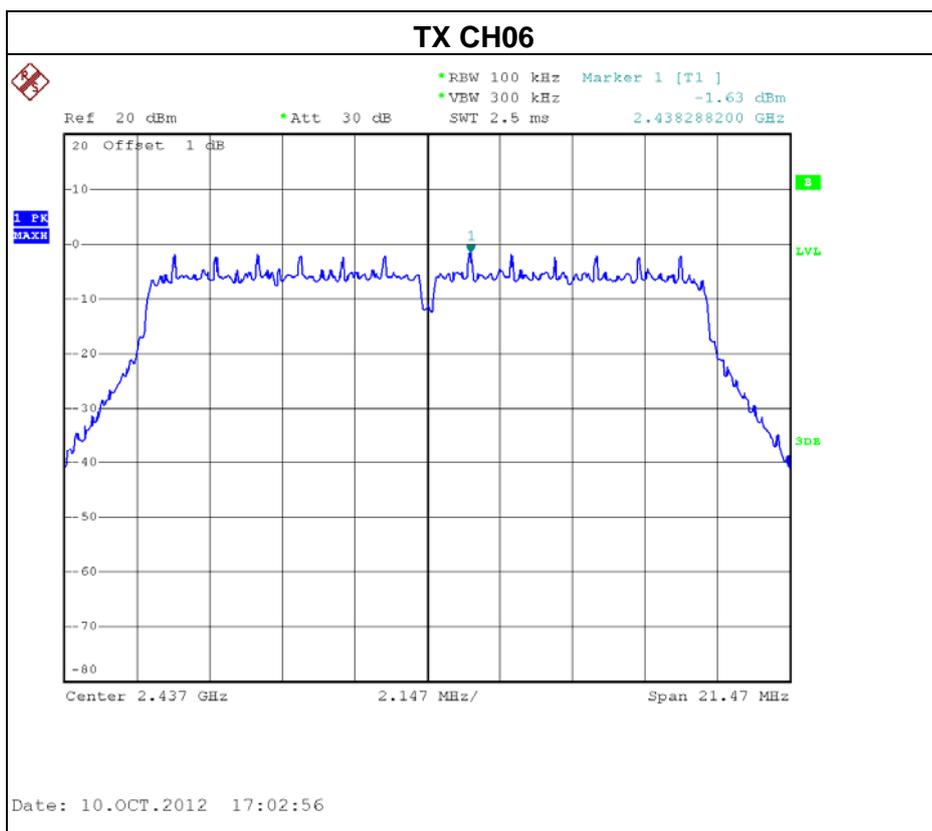


EUT :	Home Gateway	Model Name :	HG532t
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE /CH01, CH06, CH11 – Integral Antenna		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412 MHz	-16.34	8
CH06	2437 MHz	-16.83	8
CH11	2462 MHz	-17.57	8

Note: Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where  $BWCF = 10\log(3\text{ kHz}/100\text{ kHz}) = -15.2\text{ dB}$ .



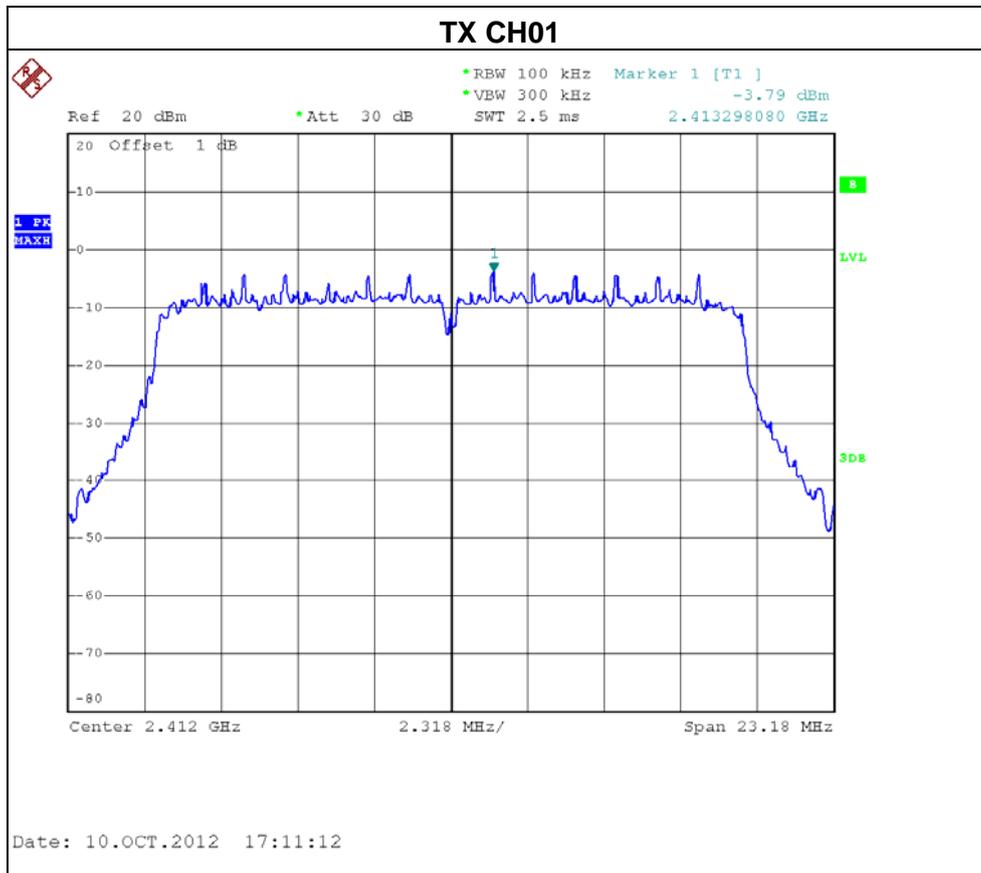


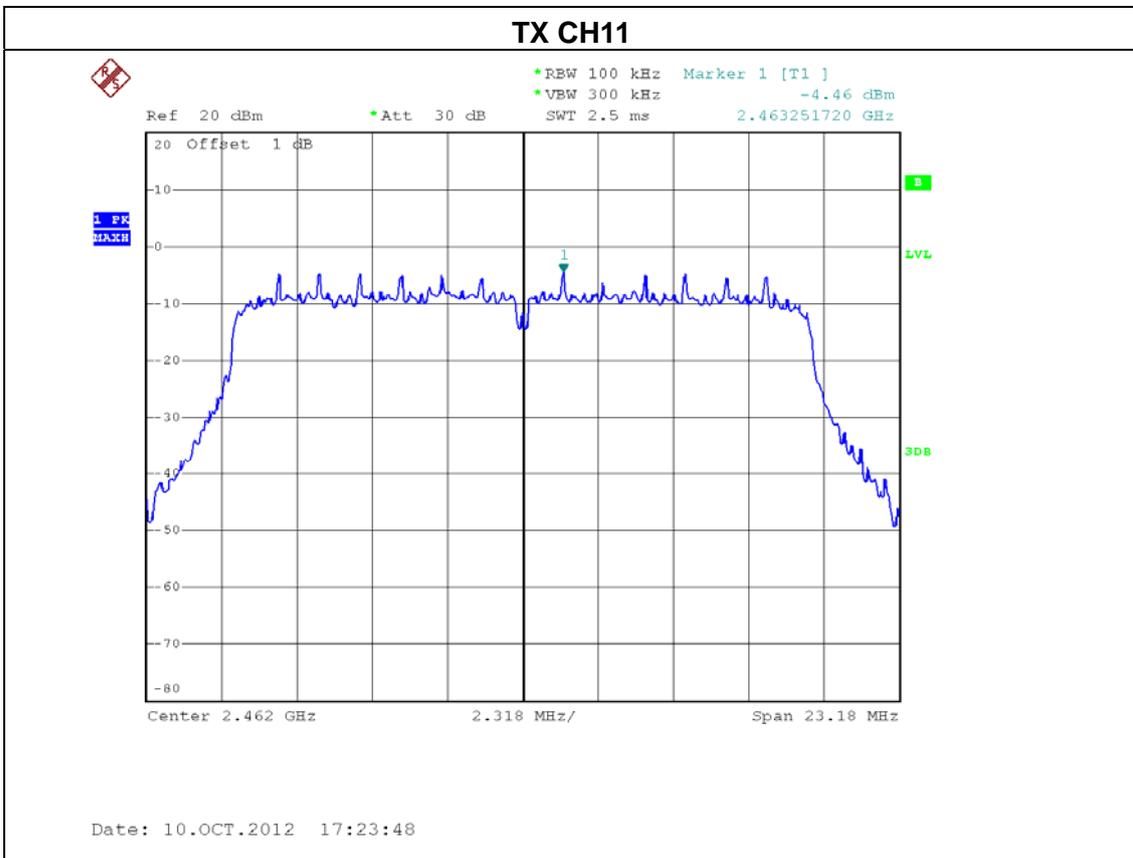
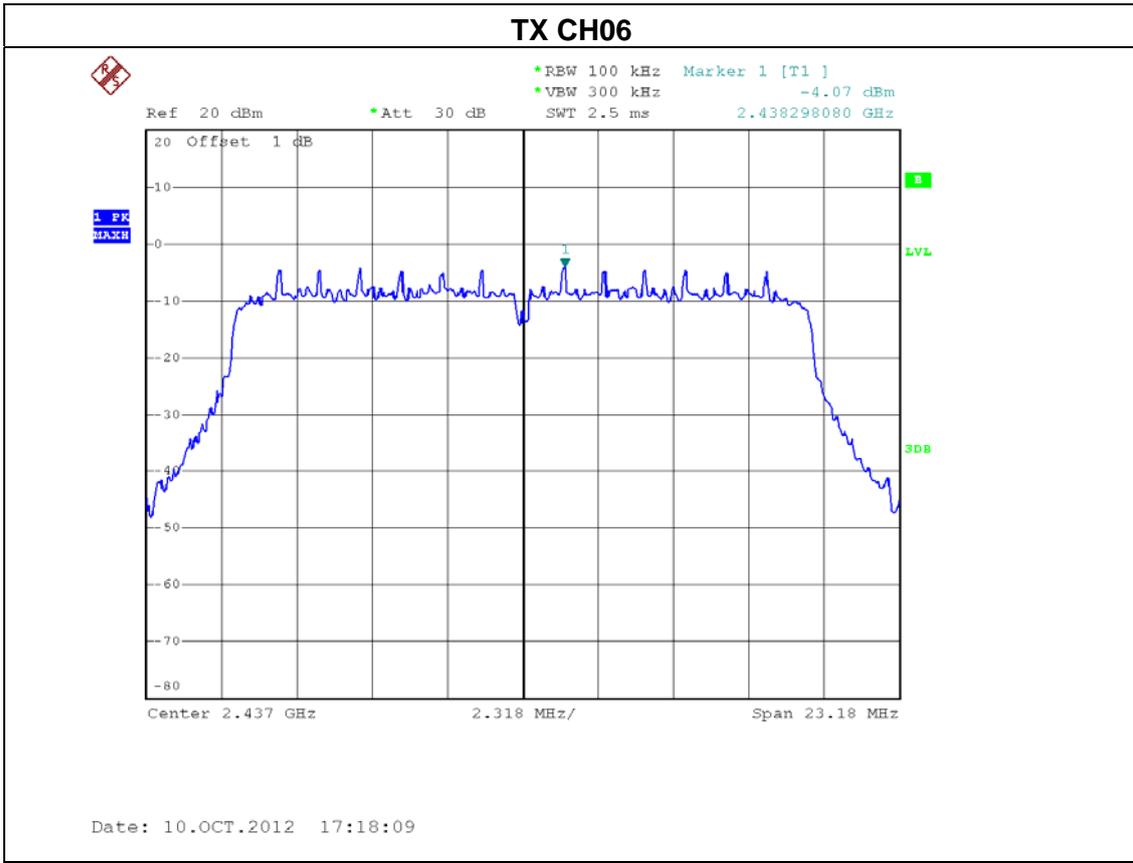


EUT :	Home Gateway	Model Name :	HG532t
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-20MHz /CH01, CH06, CH11 --ANT 1 – Integral Antenna		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412 MHz	-19.17	8
CH06	2437 MHz	-19.27	8
CH11	2462 MHz	-19.66	8

Note: Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where  $BWCF = 10\log(3\text{ kHz}/100\text{ kHz}) = -15.2\text{ dB}$ .



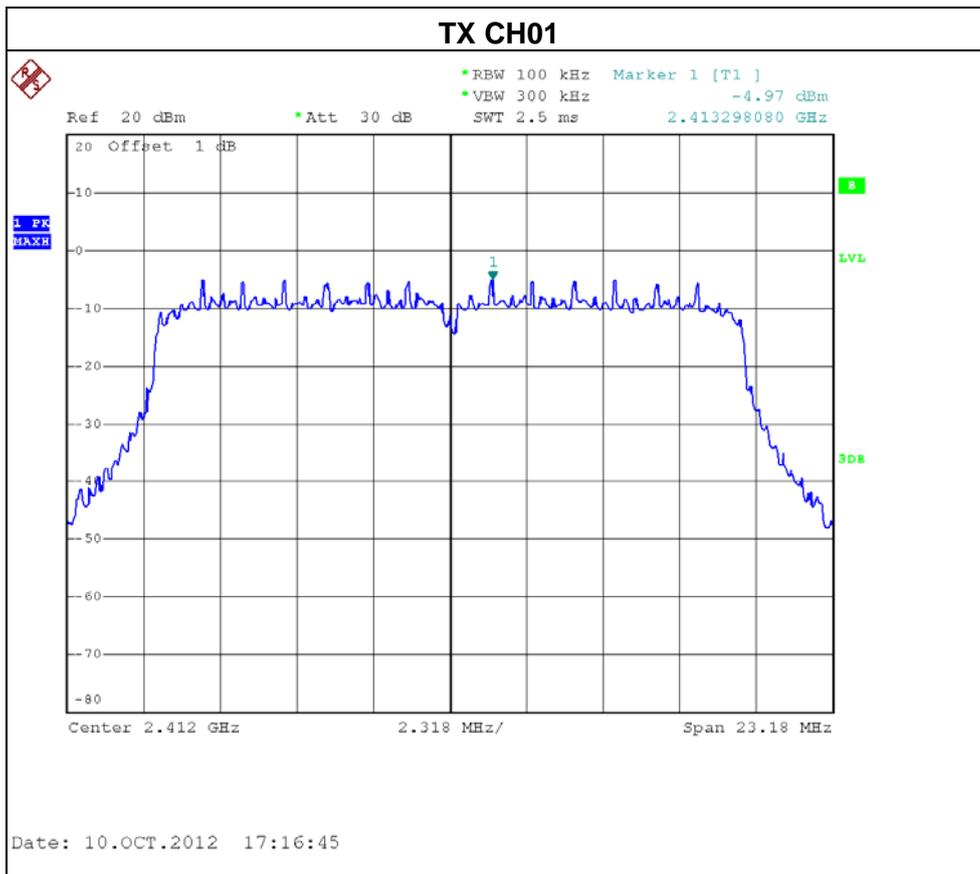


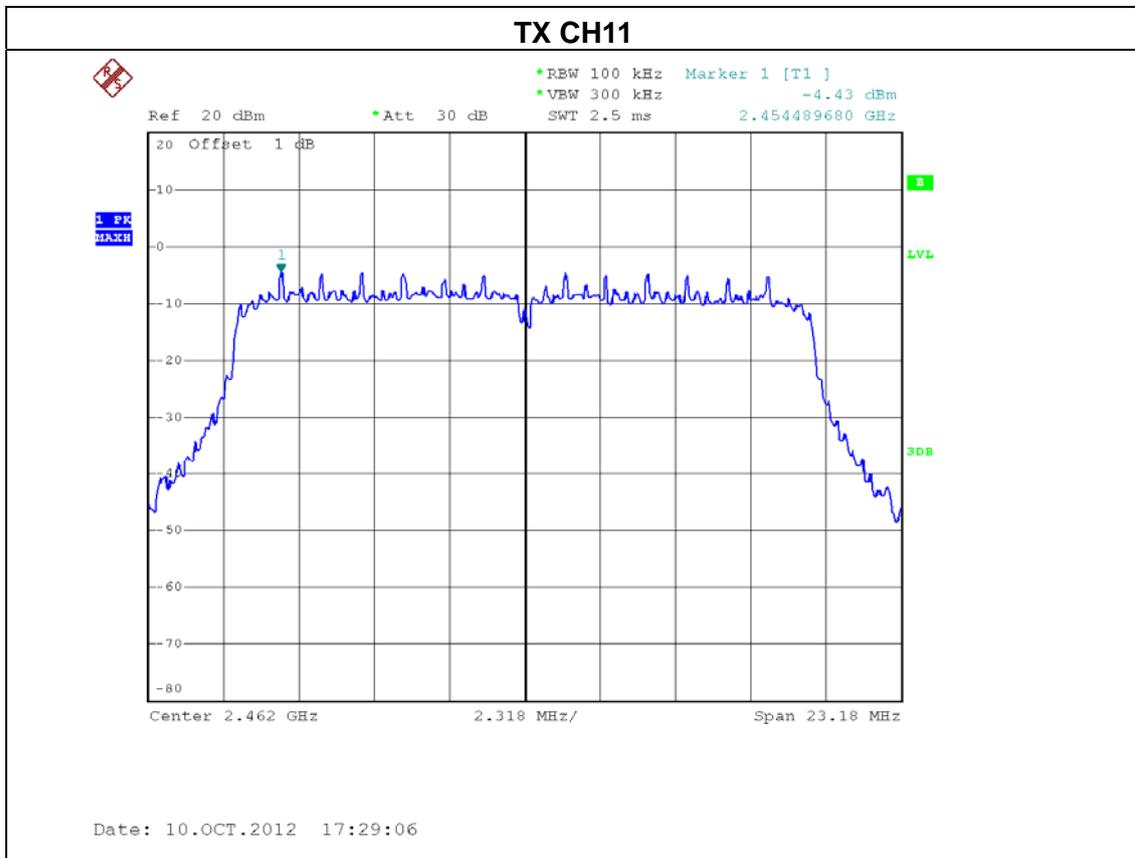
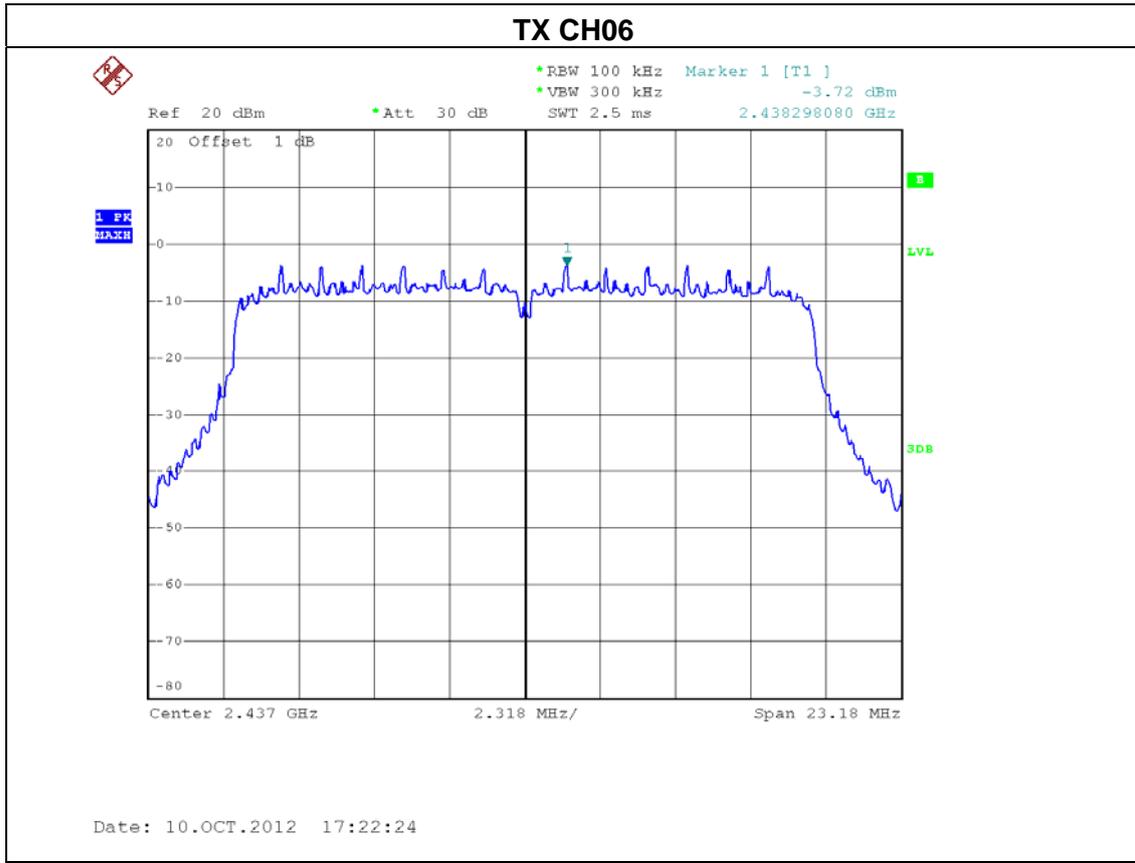


EUT :	Home Gateway	Model Name :	HG532t
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-20MHz /CH01, CH06, CH11 --ANT 2 – Integral Antenna		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412 MHz	-20.17	8
CH06	2437 MHz	-18.92	8
CH11	2462 MHz	-19.63	8

Note: Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where  $BWCF = 10\log(3\text{ kHz}/100\text{ kHz}) = -15.2\text{ dB}$ .







EUT :	Home Gateway	Model Name :	HG532t
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-20MHz /CH01, CH06, CH11 –ANT1+ANT2 – Integral Antenna		

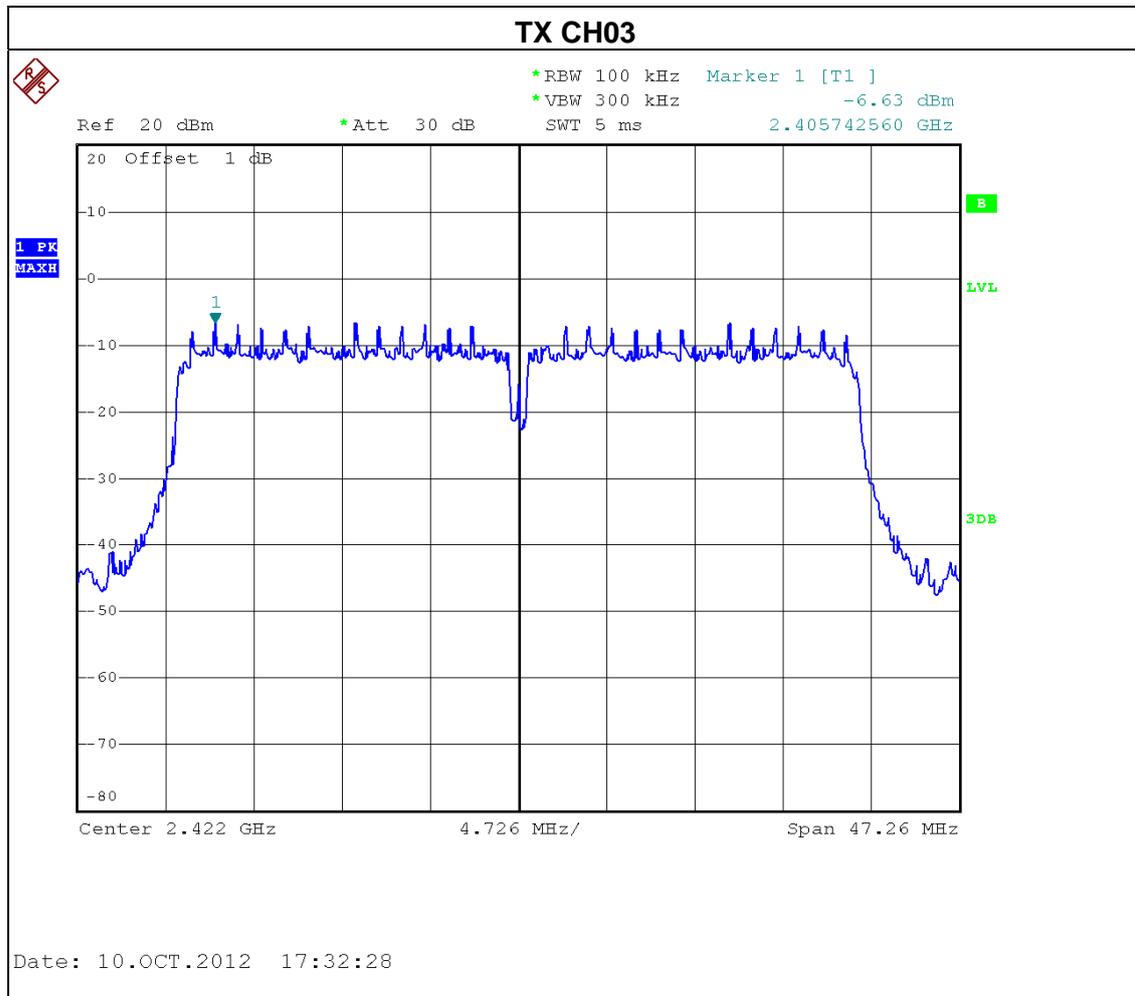
Total (Ant 1 + Ant 2)					
Test Channel	Frequency (MHz)	Power density (dBm) (mW)		LIMIT (dBm)	PASS/FAIL
CH01	2412	-16.63	0.02	8	PASS
CH06	2437	-16.08	0.02	8	PASS
CH11	2462	-16.63	0.02	8	PASS

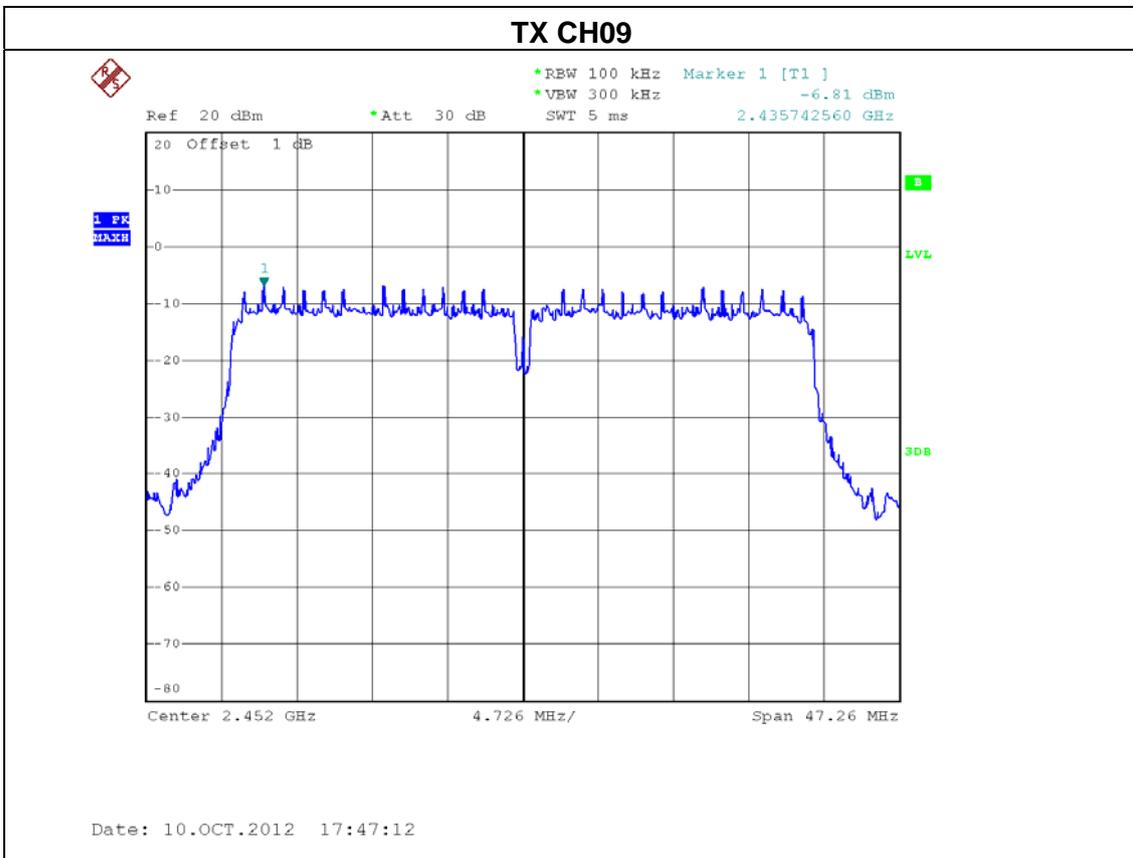
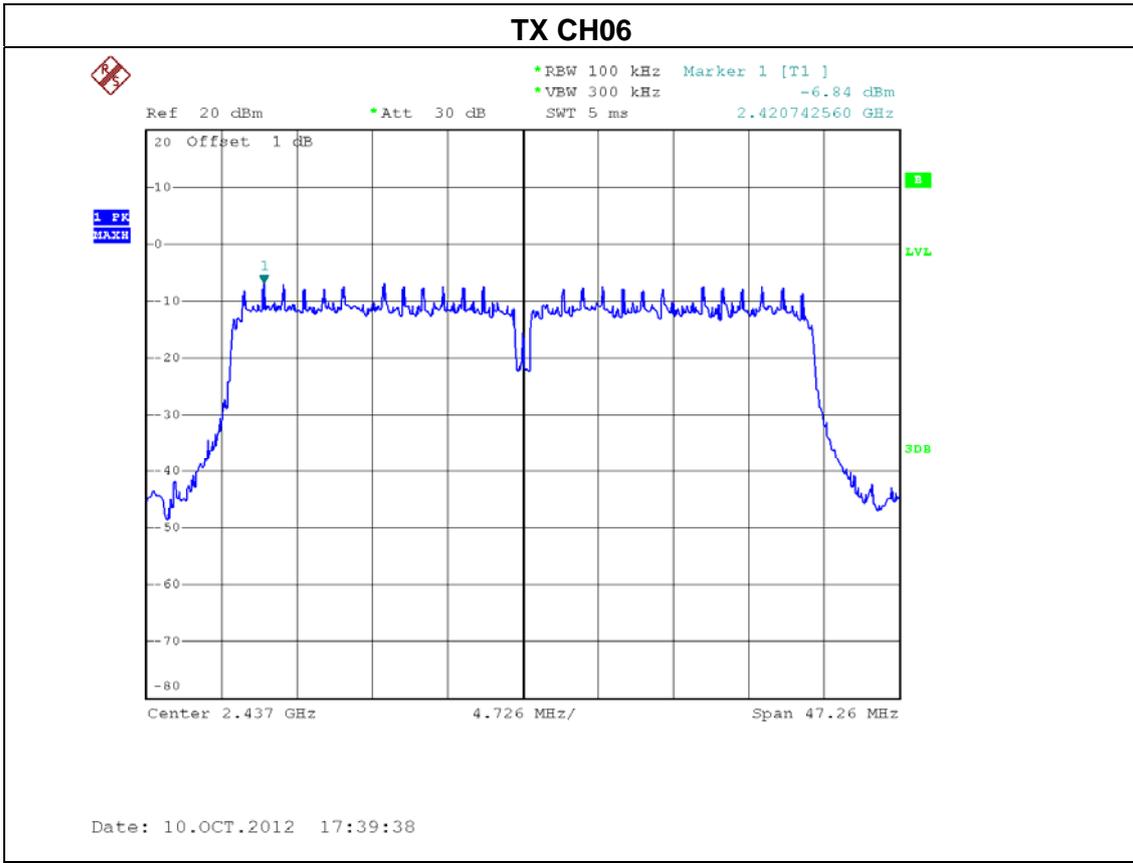


EUT :	Home Gateway	Model Name :	HG532t
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-40MHz /CH03, CH06, CH09—ANT 1 – Integral Antenna		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH03	2422 MHz	-21.83	8
CH06	2437 MHz	-22.04	8
CH09	2462 MHz	-22.01	8

Note: Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where  $BWCF = 10\log(3\text{ kHz}/100\text{ kHz}) = -15.2\text{ dB}$ .



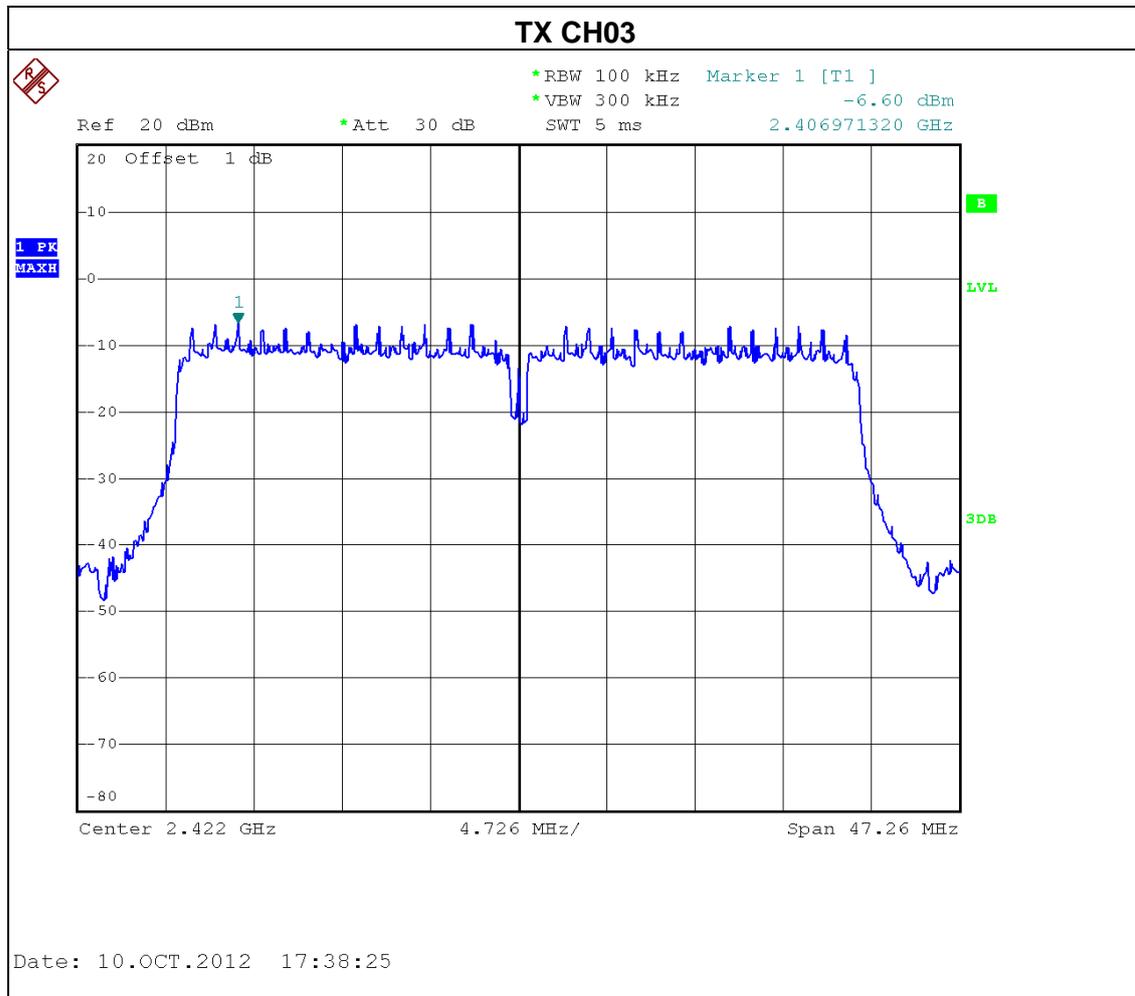


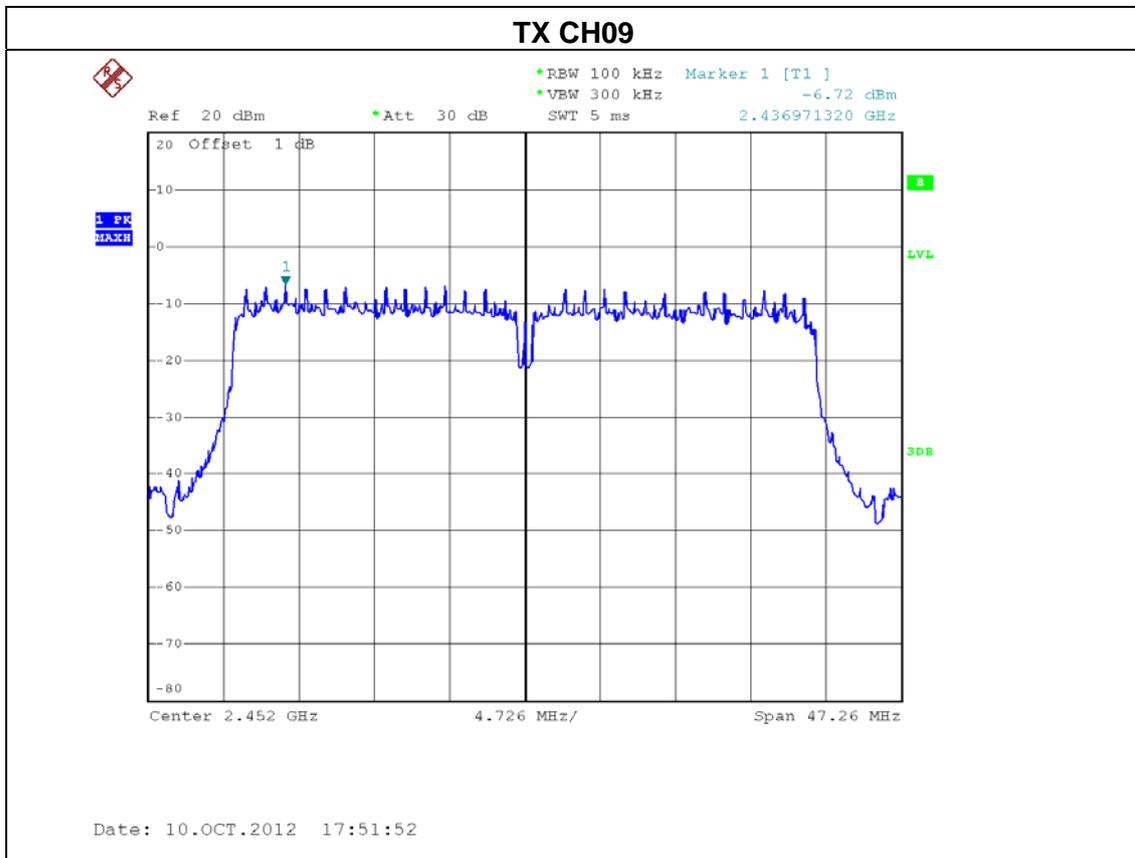
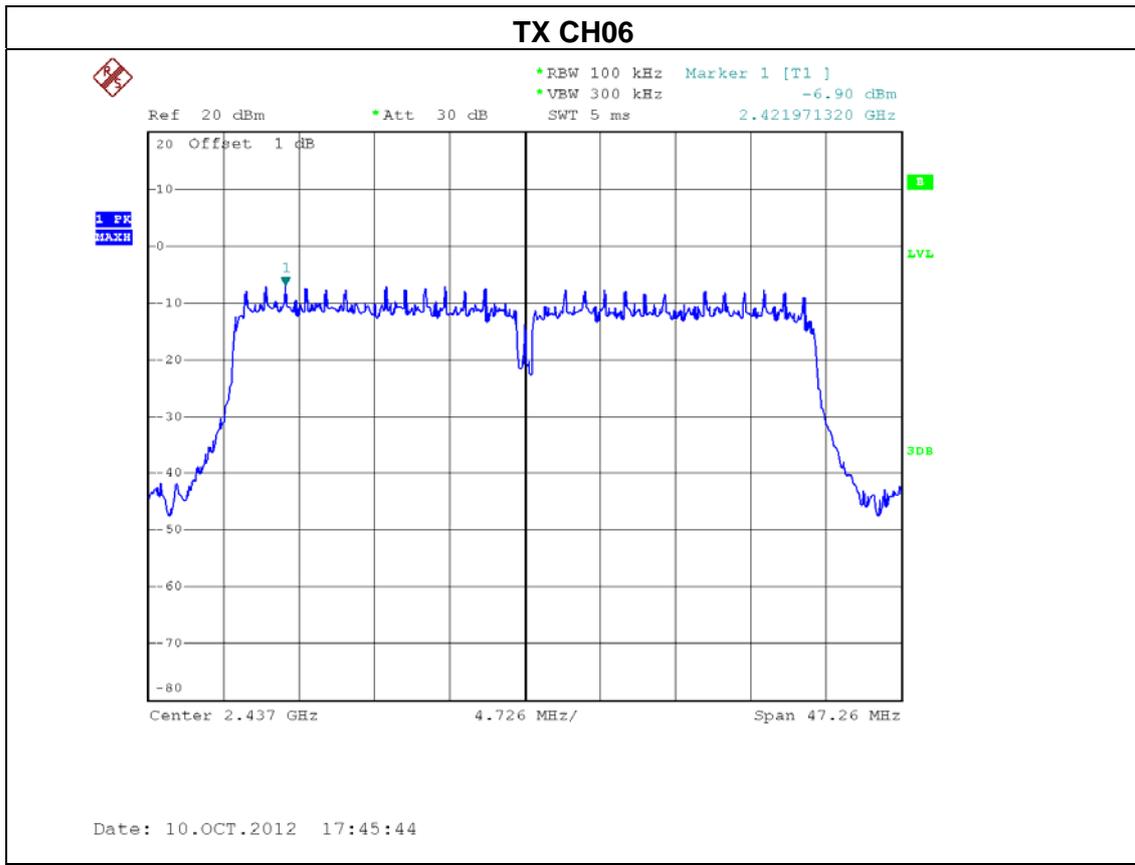


EUT :	Home Gateway	Model Name :	HG532t
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-40MHz /CH03, CH06, CH09—ANT 2 – Integral Antenna		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH03	2422 MHz	-21.80	8
CH06	2437 MHz	-22.10	8
CH09	2462 MHz	-21.92	8

Note: Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where  $BWCF = 10\log(3\text{ kHz}/100\text{ kHz}) = -15.2\text{ dB}$ .







EUT :	Home Gateway	Model Name :	HG532t
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-40MHz /CH03, CH06, CH09—ANT 1+ANT 2 – Integral Antenna		

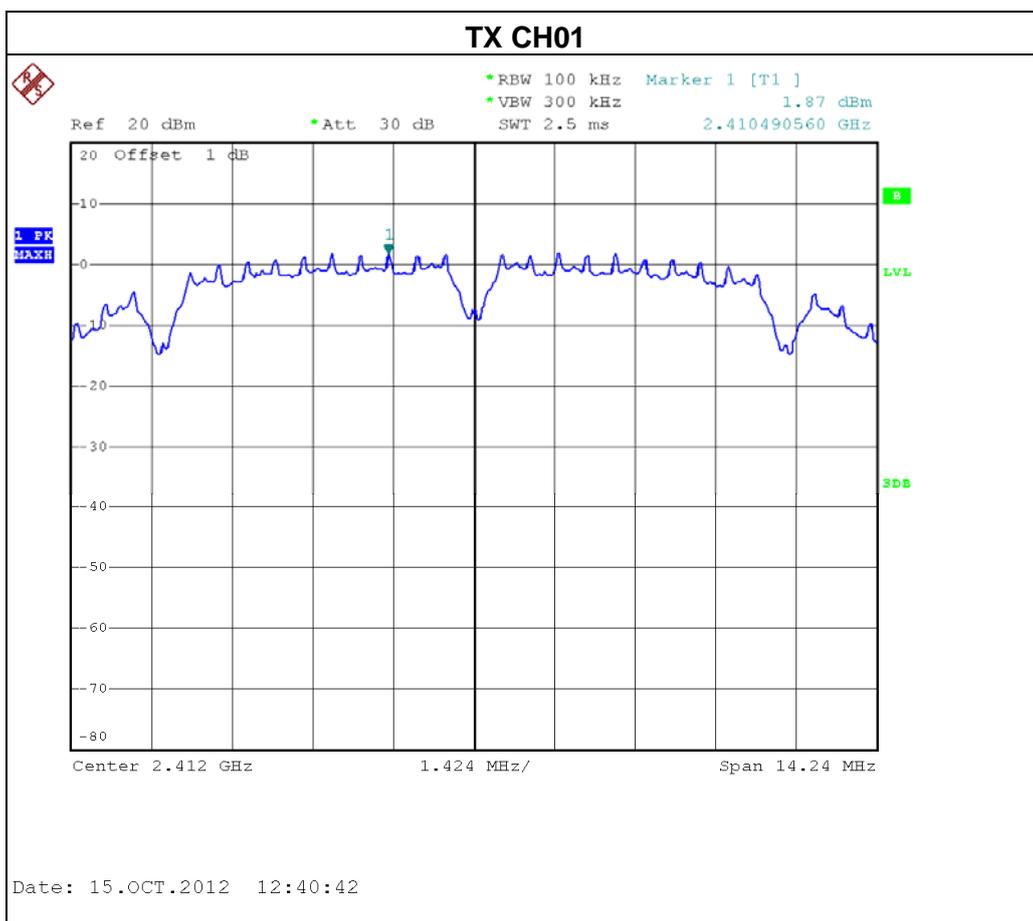
Total (Ant 1 + Ant 2)					
Test Channel	Frequency (MHz)	Power density		LIMIT (dBm)	PASS/FAIL
		(dBm)	(mW)		
CH03	2422	-18.80	0.01	8	PASS
CH06	2437	-19.06	0.01	8	PASS
CH09	2452	-18.95	0.01	8	PASS

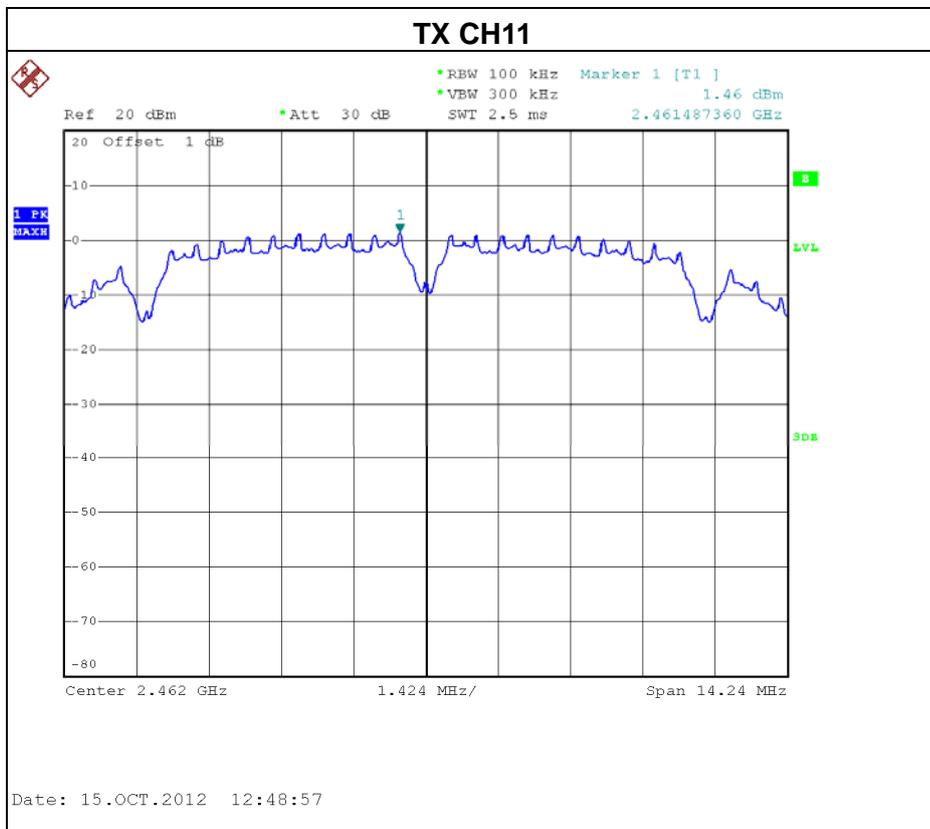
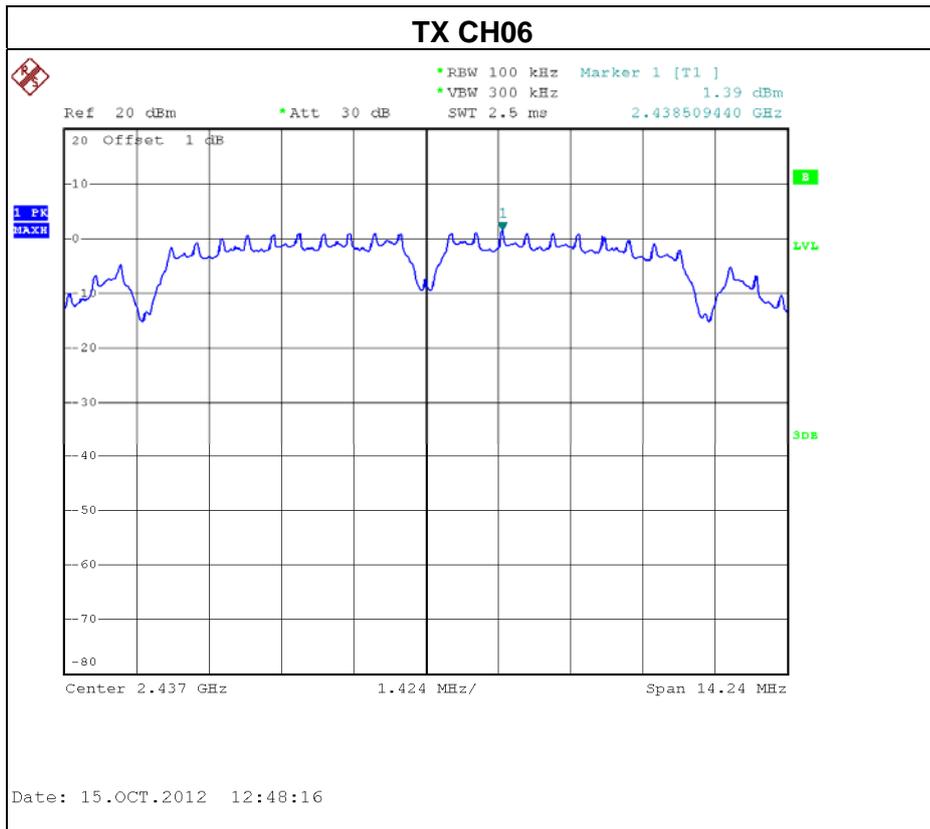


EUT :	Home Gateway	Model Name :	HG532t
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE /CH01, CH06, CH11 – Dipole Antenna		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412 MHz	-13.33	8
CH06	2437 MHz	-13.81	8
CH11	2462 MHz	-13.74	8

Note: Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where  $BWCF = 10\log(3\text{ kHz}/100\text{kHz}) = -15.2\text{ dB}$ .



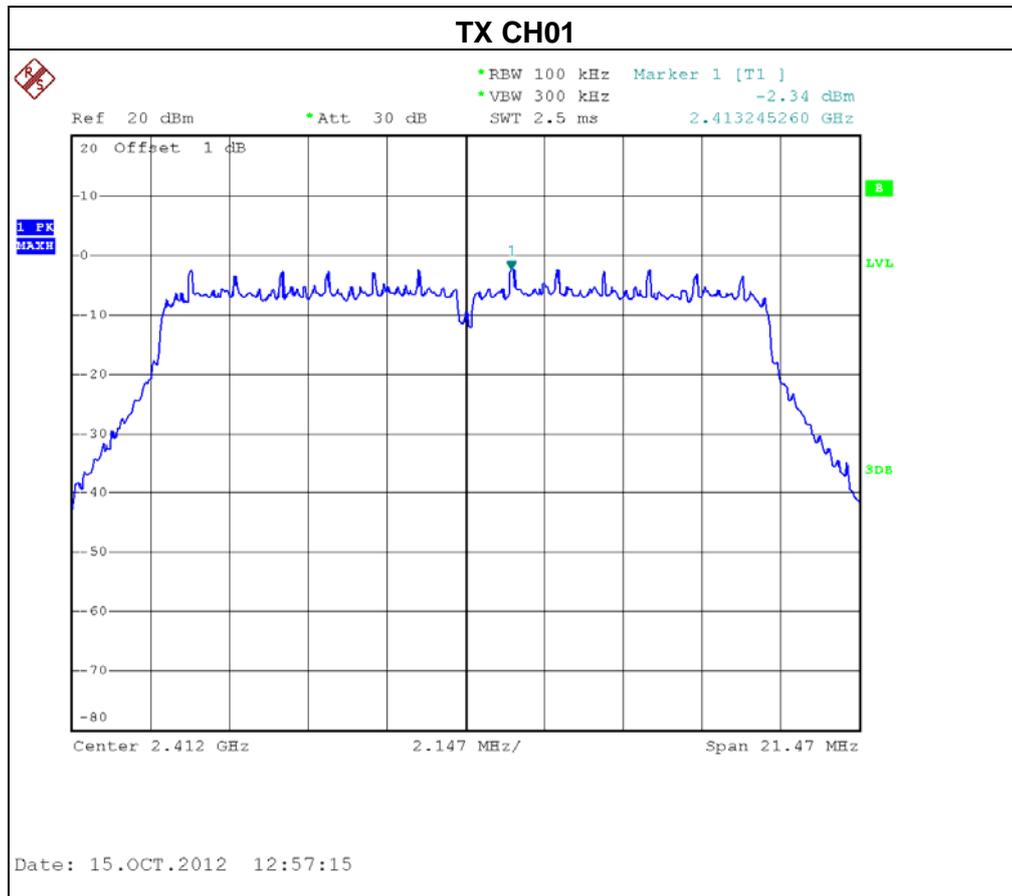


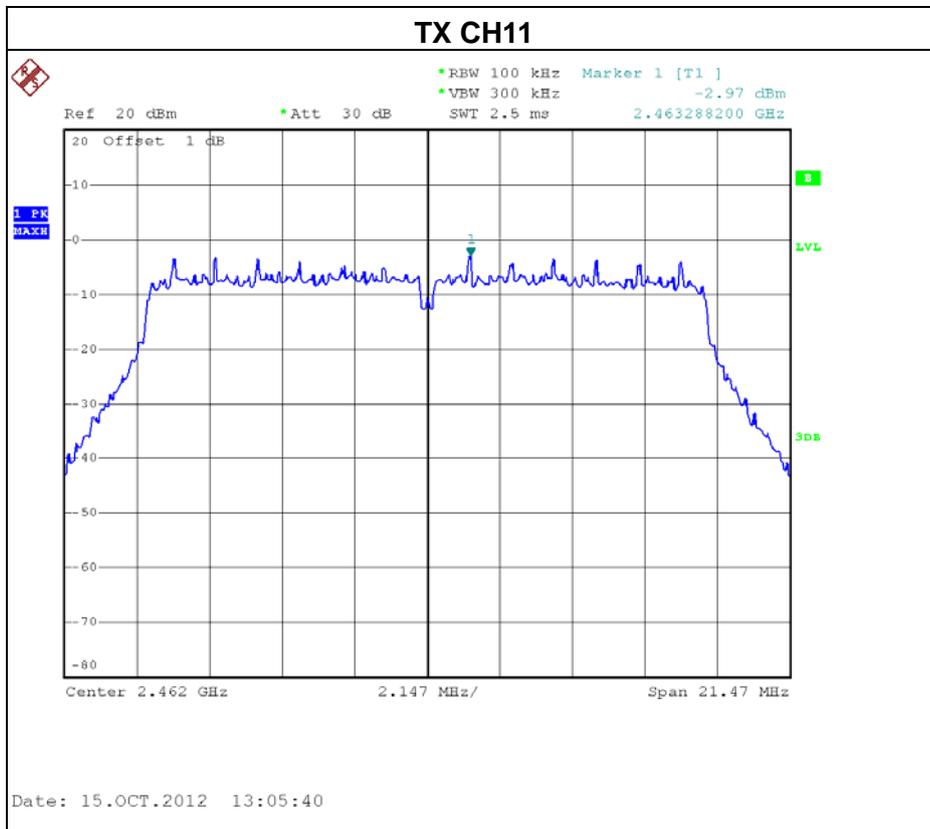
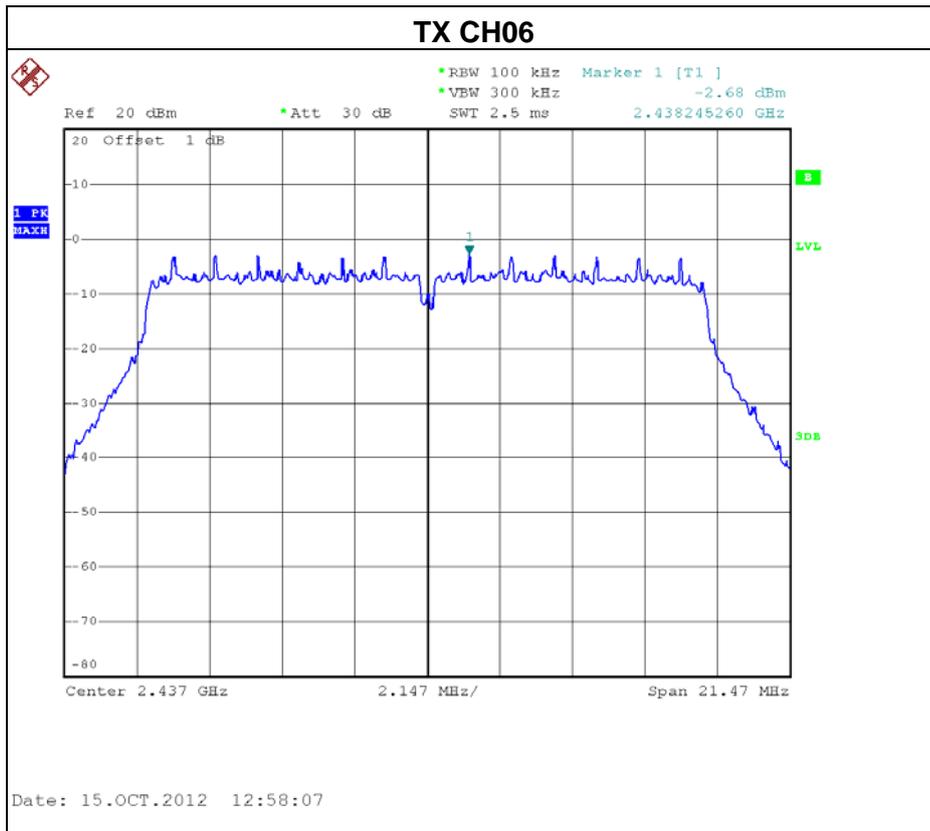


EUT :	Home Gateway	Model Name :	HG532t
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE /CH01, CH06, CH11 – Dipole Antenna		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412 MHz	-17.54	8
CH06	2437 MHz	-17.88	8
CH11	2462 MHz	-18.17	8

Note: Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where  $BWCF = 10\log(3\text{ kHz}/100\text{ kHz}) = -15.2\text{ dB}$ .



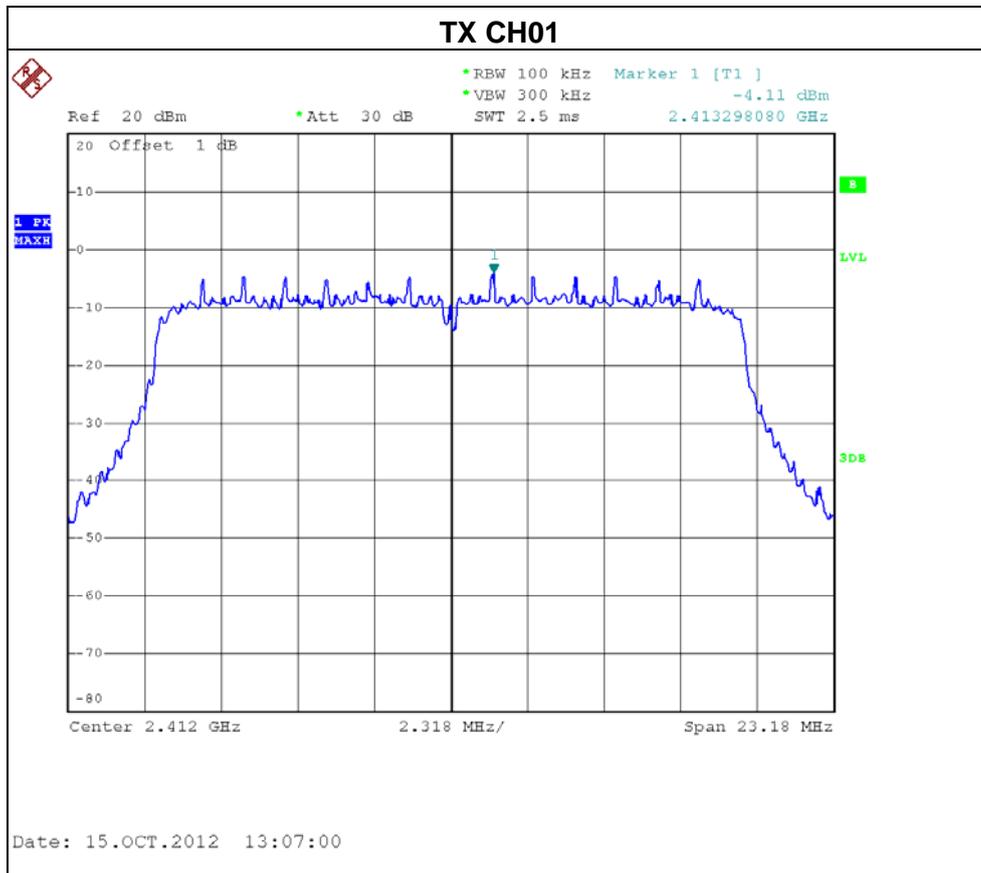


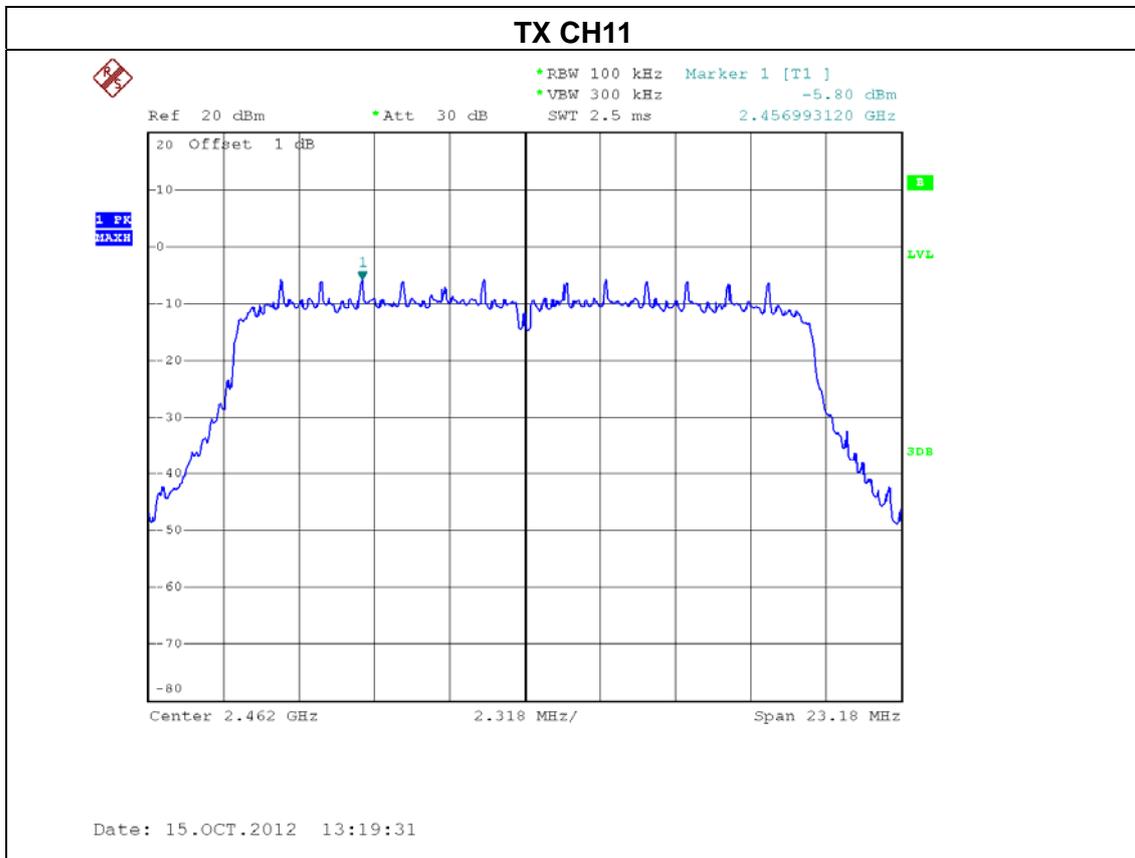
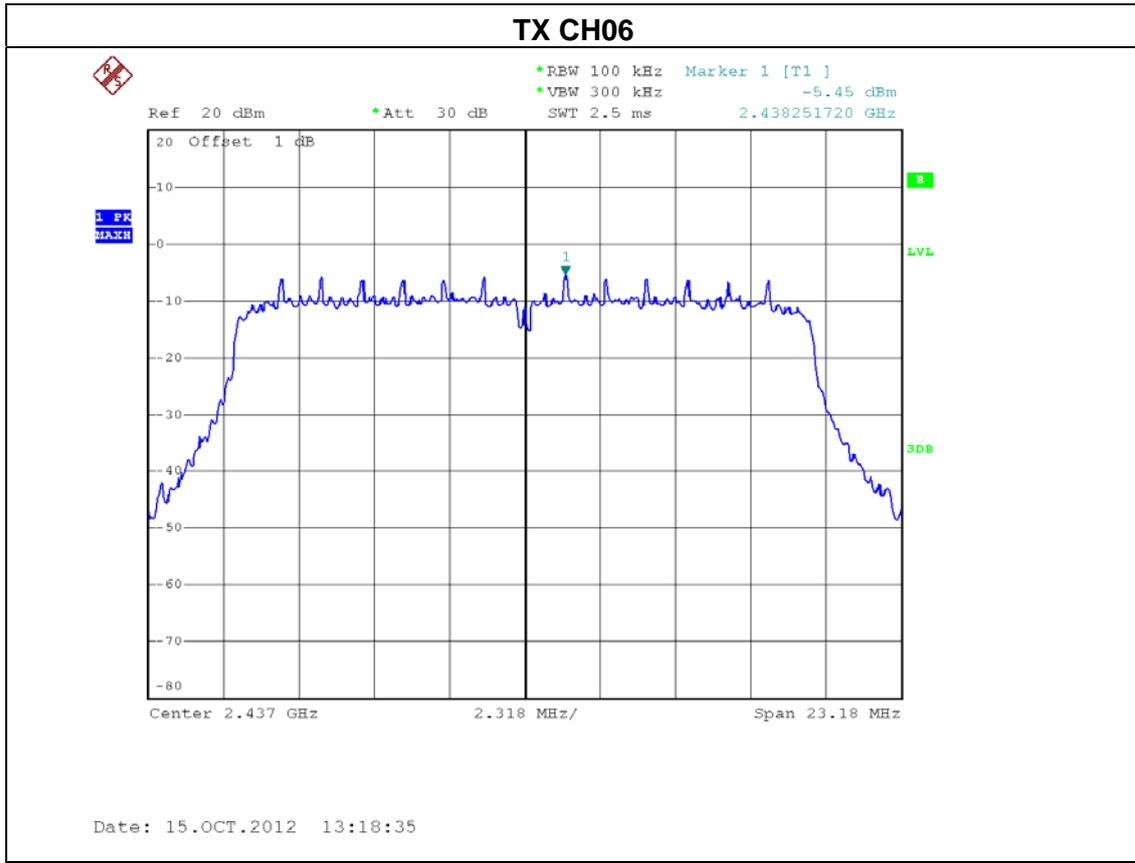


EUT :	Home Gateway	Model Name :	HG532t
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-20MHz /CH01, CH06, CH11 --ANT 1 – Dipole Antenna		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412 MHz	-19.31	8
CH06	2437 MHz	-20.65	8
CH11	2462 MHz	-21.00	8

Note: Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where  $BWCF = 10\log(3\text{ kHz}/100\text{ kHz}) = -15.2\text{ dB}$ .



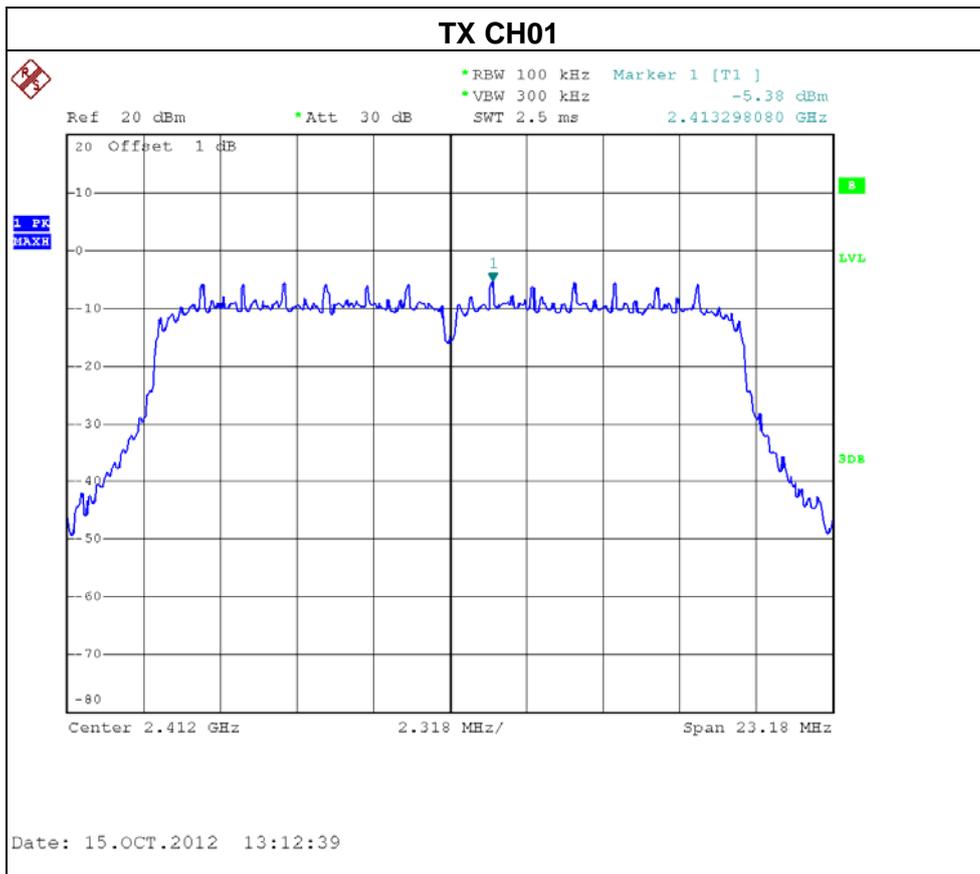


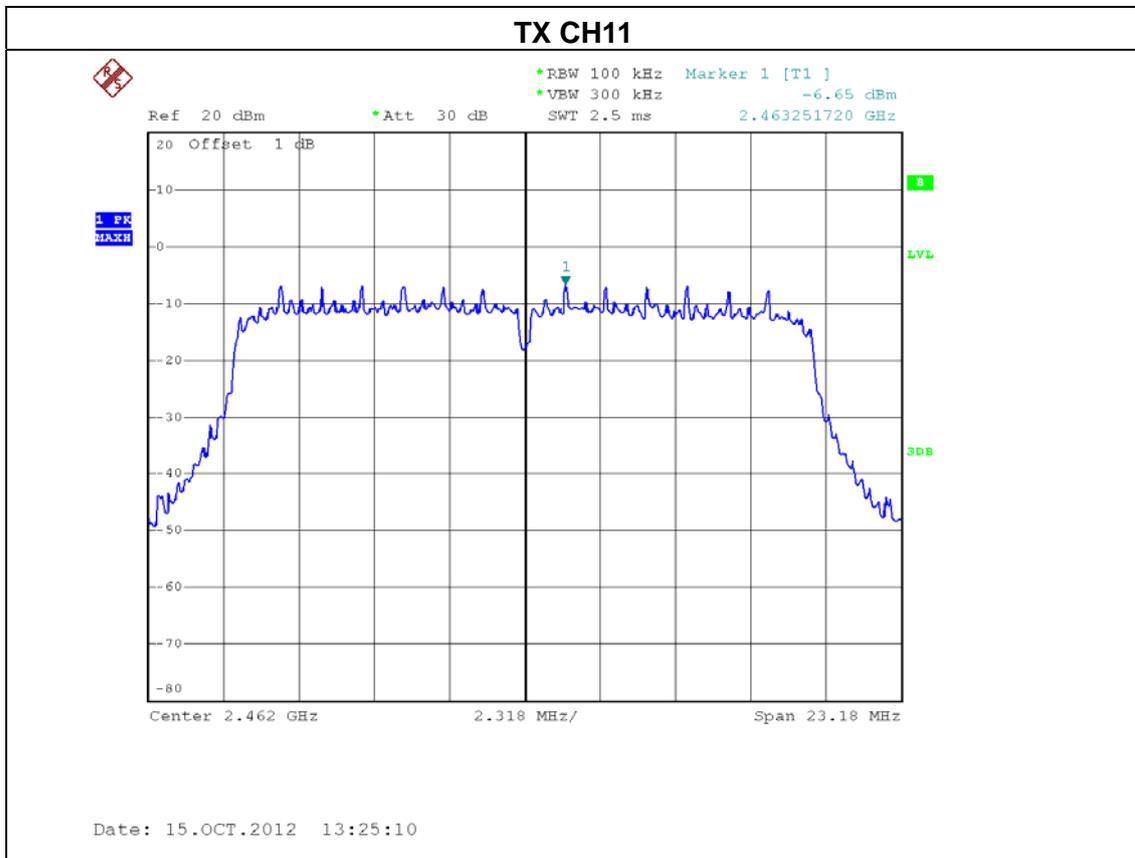
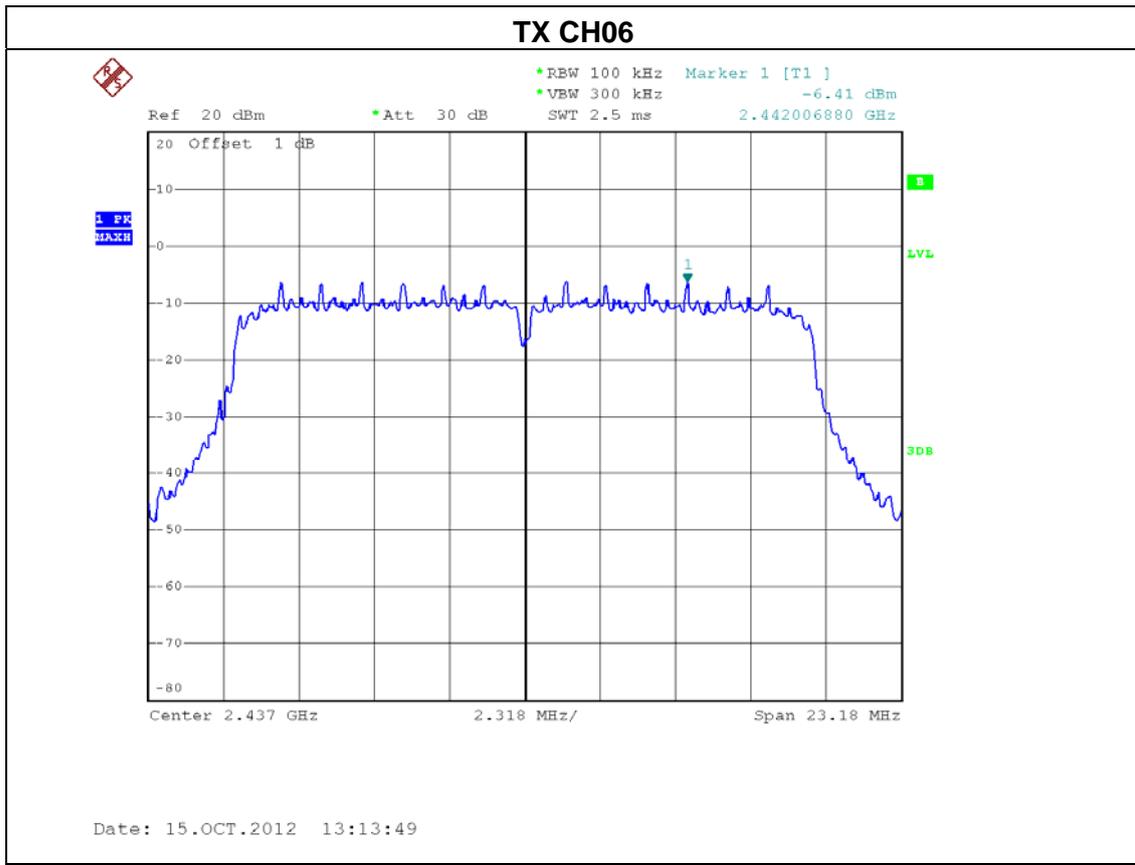


EUT :	Home Gateway	Model Name :	HG532t
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-20MHz /CH01, CH06, CH11 --ANT 2 – Dipole Antenna		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412 MHz	-20.58	8
CH06	2437 MHz	-21.61	8
CH11	2462 MHz	-21.85	8

Note: Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where  $BWCF = 10\log(3\text{ kHz}/100\text{ kHz}) = -15.2\text{ dB}$ .







EUT :	Home Gateway	Model Name :	HG532t
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-20MHz /CH01, CH06, CH11 –ANT1+ANT2 – Dipole Antenna		

Total (Ant 1 + Ant 2)					
Test Channel	Frequency (MHz)	Power density (dBm) (mW)		LIMIT (dBm)	PASS/FAIL
CH01	2412	-16.89	0.02	7	PASS
CH06	2437	-18.09	0.02	7	PASS
CH11	2462	-18.39	0.01	7	PASS

Remark :

- (1) The MIMO test requirement, RF conducted output power shall measure each transmitter chain by using channel power method.  
And after obtain each individual transmitter chain power, then sum the output power by using the following formula:  

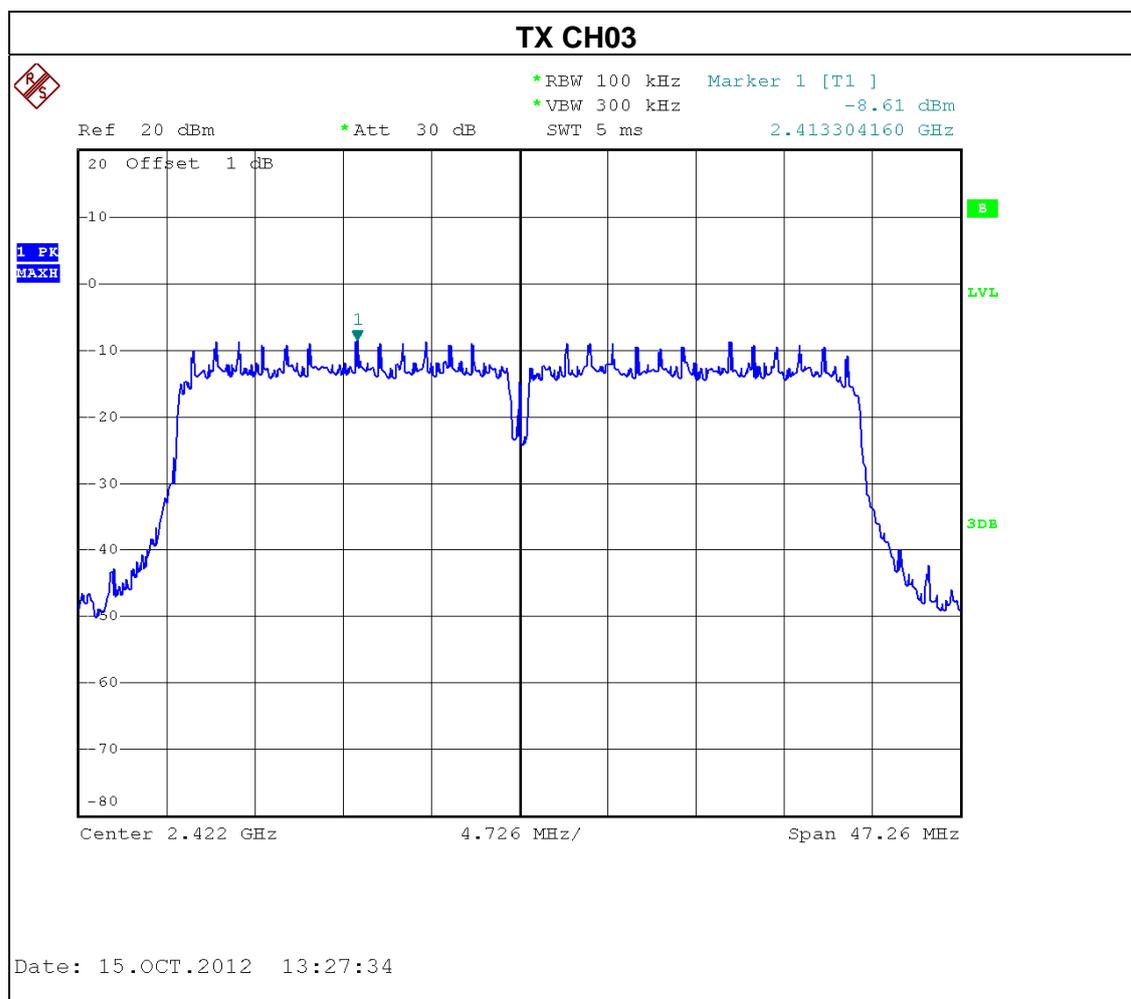
$$((\text{dBm}/\text{Chain 1})/10^{\text{Log}}) + ((\text{dBm}/\text{Chain 2})/10^{\text{log}}) + ((\text{dBm}/\text{ChainN})/10^{\text{log}}) =$$
 Combined peak output power in mW.
- (2) Dipole Antenna Gain=4.0 dBi. This EUT supports MIMO 2X2, any transmit signals are correlated with each other, so Directional gain =  $G_{\text{ANT}}+10\log(N)\text{dBi}$ , that is Directional gain= $4+10\log(2)\text{dBi}=7$ ; So, the out power limit is  $30-7+6=29$ ; and power density limit is  $8-7+6=7$

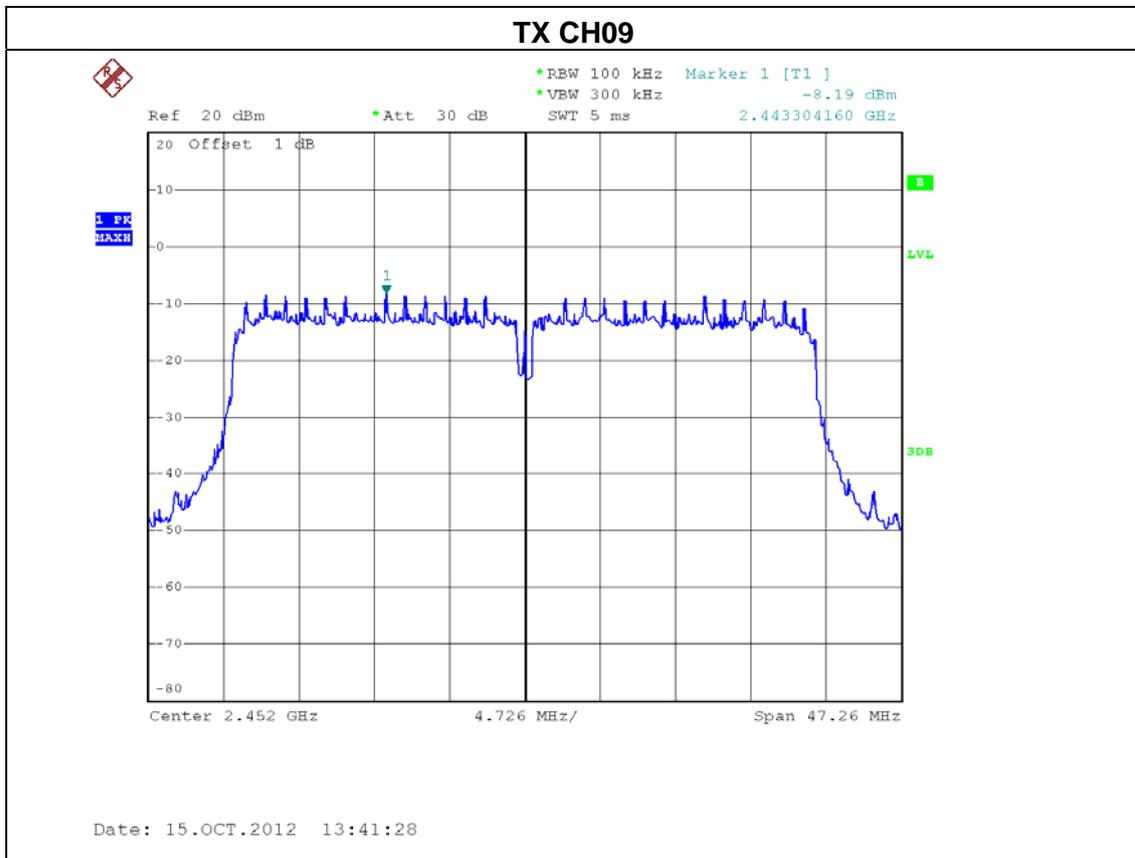
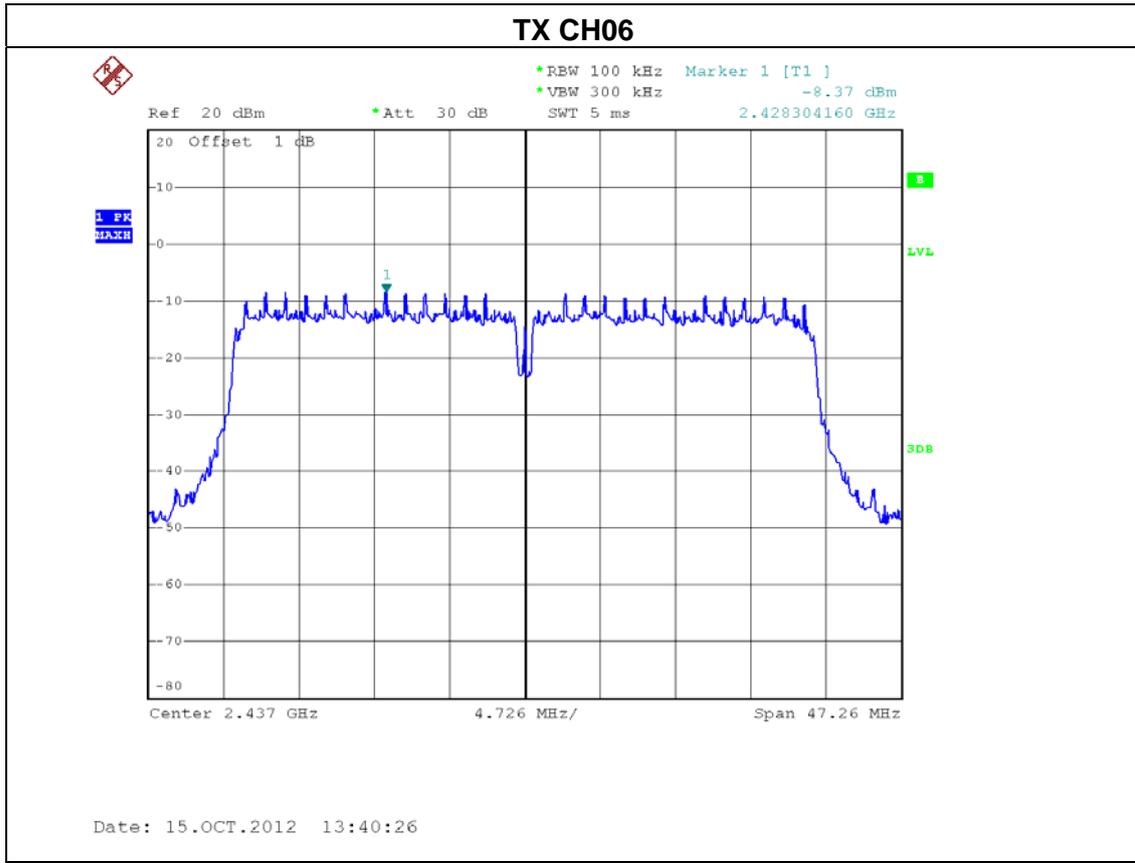


EUT :	Home Gateway	Model Name :	HG532t
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-40MHz /CH03, CH06, CH09—ANT 1 – Dipole Antenna		

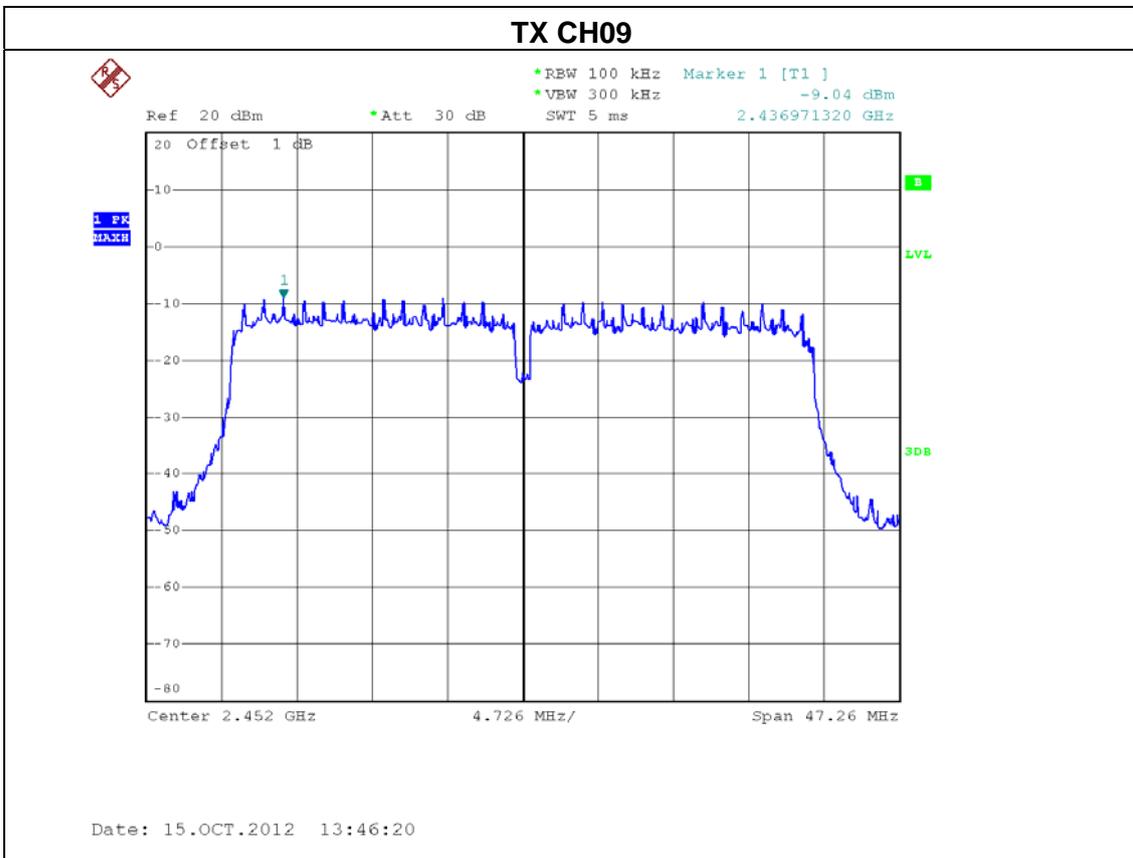
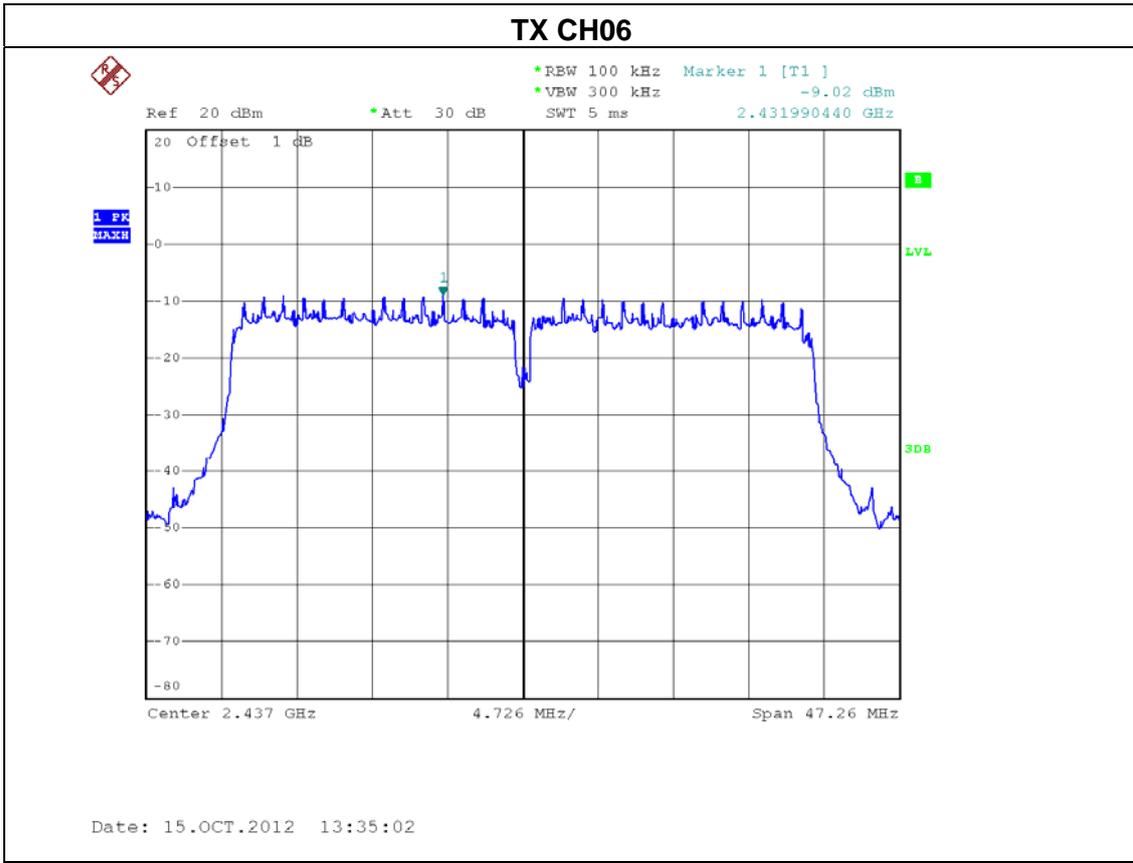
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH03	2422 MHz	-23.81	8
CH06	2437 MHz	-23.57	8
CH09	2462 MHz	-23.39	8

Note: Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where  $BWCF = 10\log(3\text{ kHz}/100\text{ kHz}) = -15.2\text{ dB}$ .











EUT :	Home Gateway	Model Name :	HG532t
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-40MHz /CH03, CH06, CH09—ANT 1+ANT 2 – Dipole Antenna		

Total (Ant 1 + Ant 2)					
Test Channel	Frequency (MHz)	Power density		LIMIT (dBm)	PASS/FAIL
		(dBm)	(mW)		
CH03	2422	-20.79	0.01	7	PASS
CH06	2437	-20.87	0.01	7	PASS
CH09	2452	-20.78	0.01	7	PASS

Remark :

- (1) **The MIMO test requirement, RF conducted output power shall measure each transmitter chain by using channel power method.**  
 And after obtain each individual transmitter chain power, then sum the output power by using the following formula:  

$$((\text{dBm}/\text{Chain 1})/10^{\text{Log}}) + ((\text{dBm}/\text{Chain 2})/10^{\text{log}}) + ((\text{dBm}/\text{Chain N})/10^{\text{log}}) =$$
 Combined peak output power in mW.
- (2) **Dipole Antenna Gain=4.0 dBi. This EUT supports MIMO 2X2, any transmit signals are correlated with each other, so Directional gain =  $G_{\text{ANT}}+10\log(N)$ dBi, that is Directional gain=4+10log(2)dBi=7; So,the out power limit is 30-7+6=29; and power density limit is 8-7+6=7**



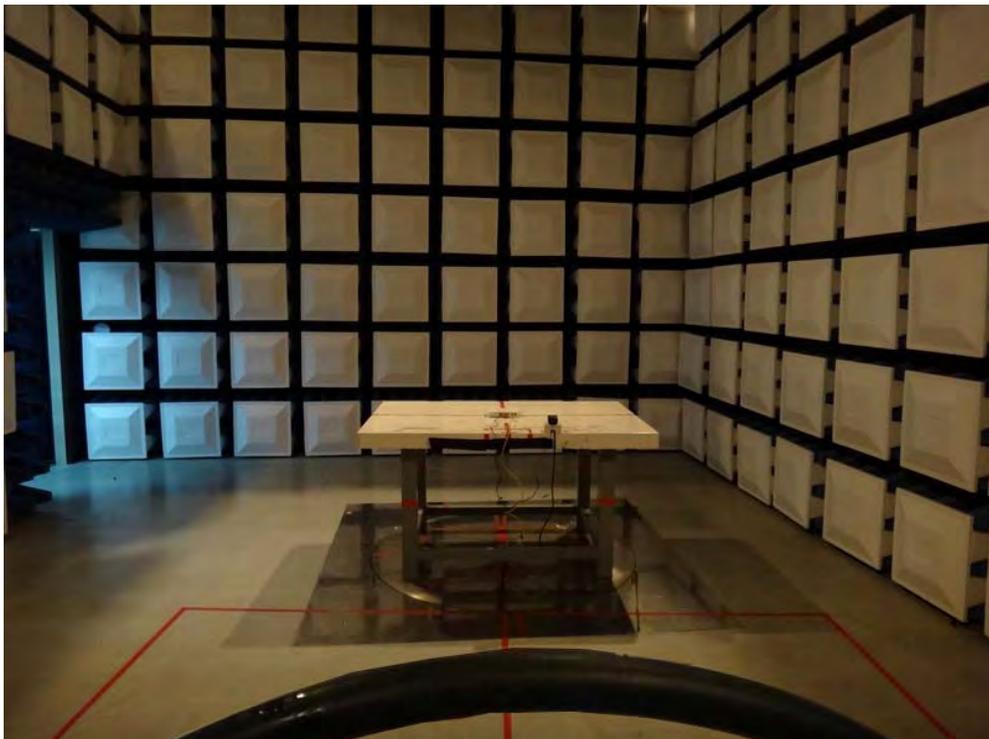
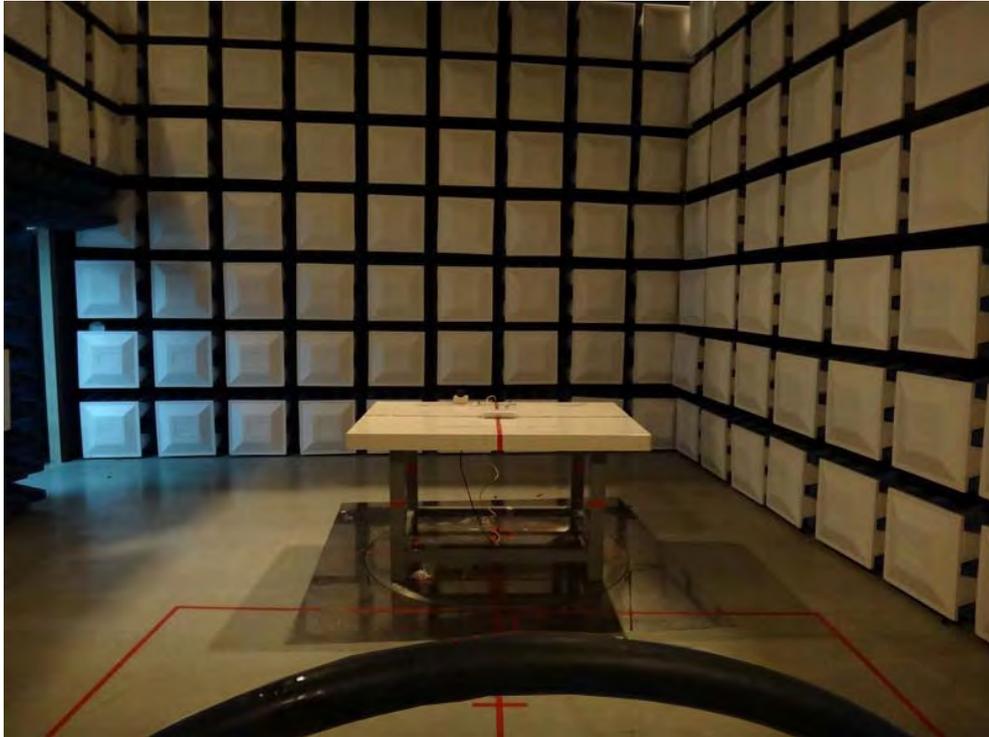
**9. EUT TEST PHOTO**

**Conducted Measurement Photos  
Integral Antenna**



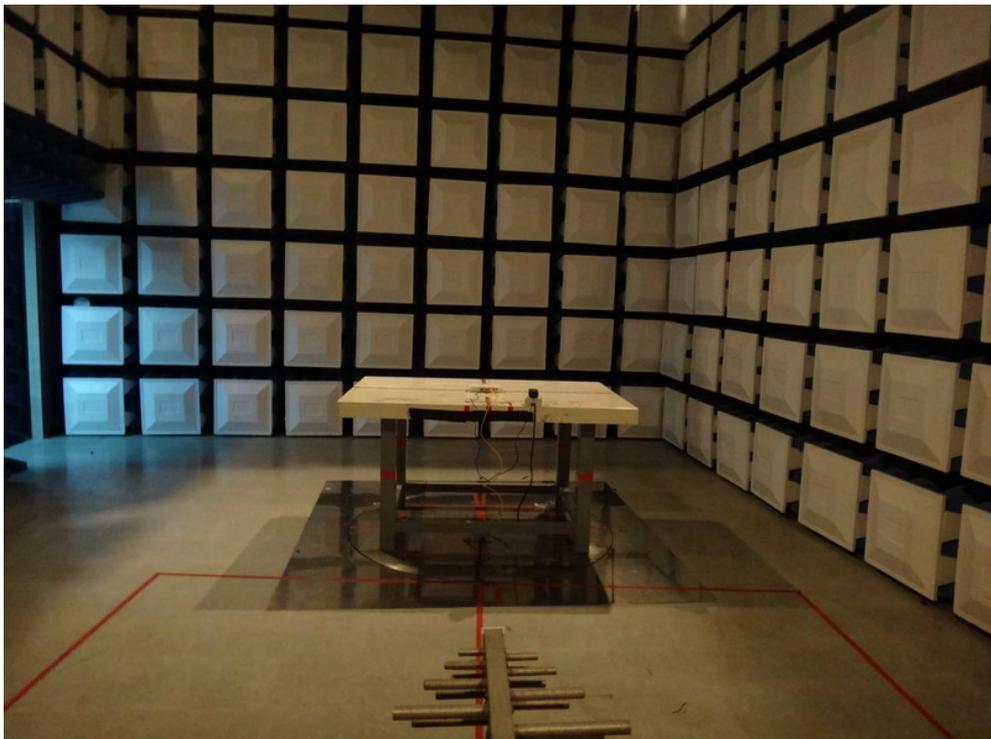
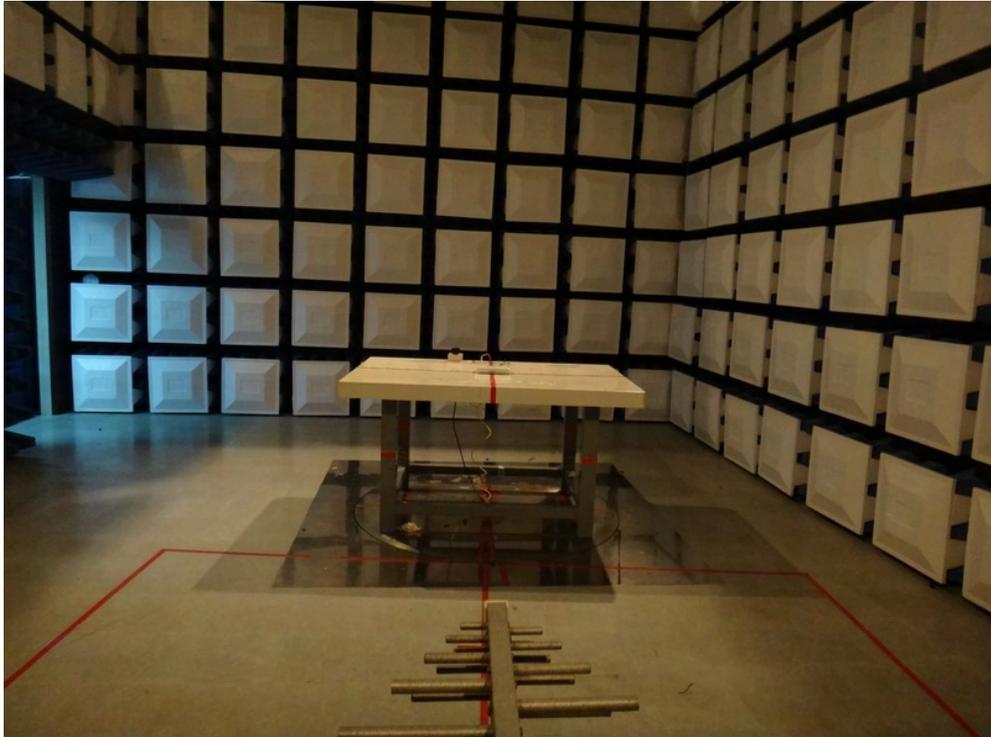


**Radiated Measurement Photos  
9K~30MHz  
Integral Antenna**



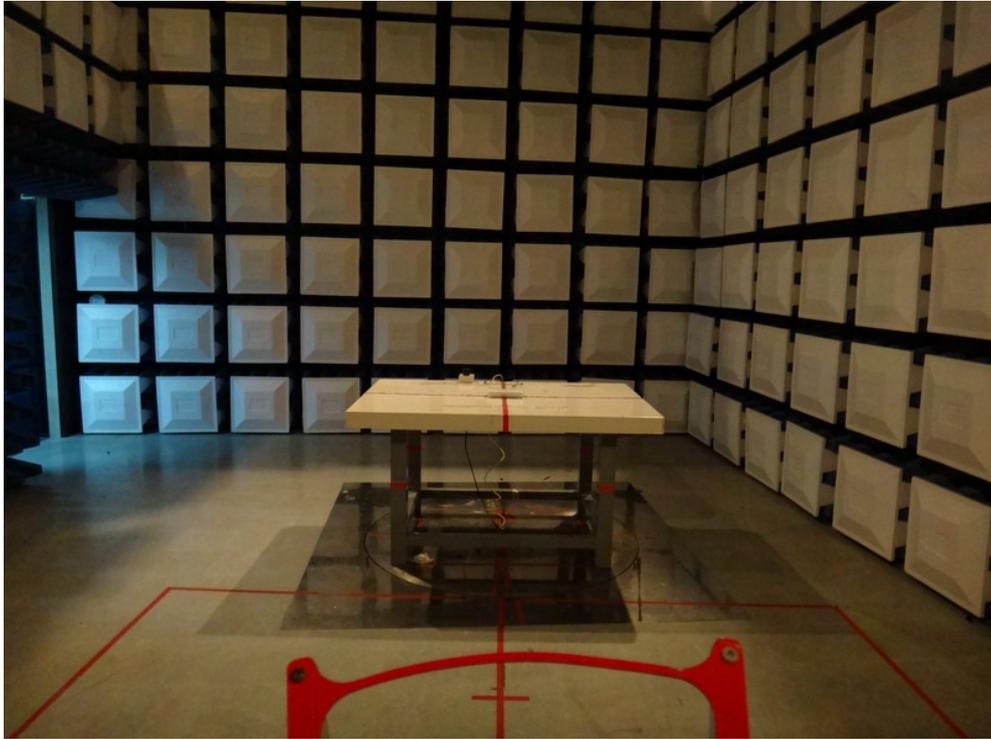


**Radiated Measurement Photos  
30~1000MHz  
Integral Antenna**





**Radiated Measurement Photos  
Above 1000MHz  
Integral Antenna**

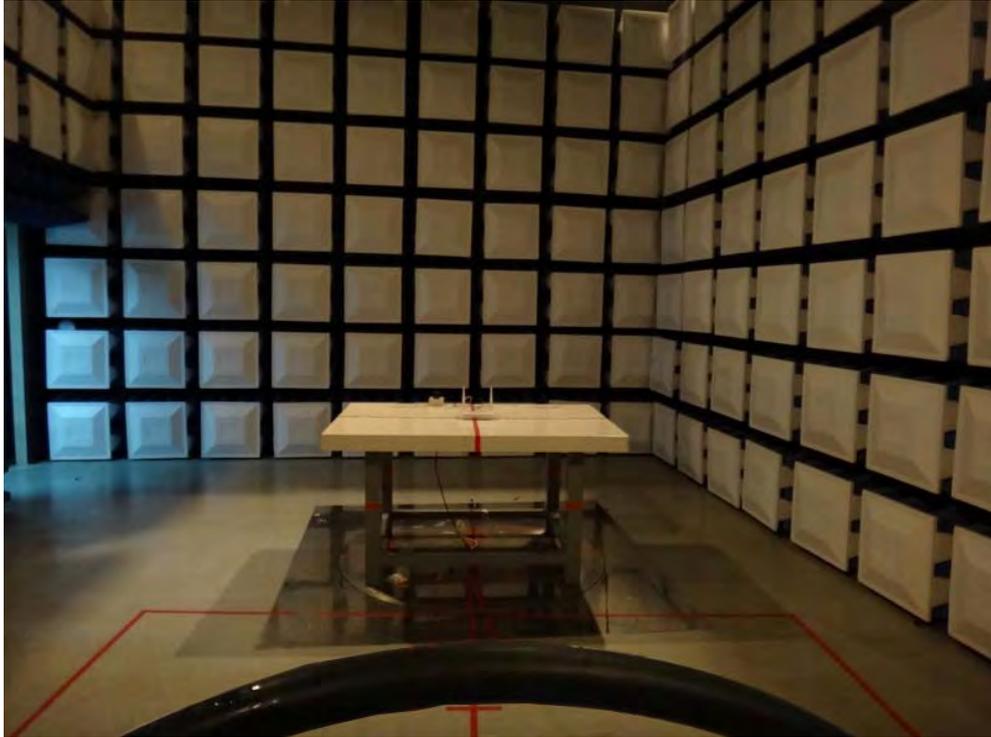


**Conducted Measurement Photos  
Dipole Antenna**



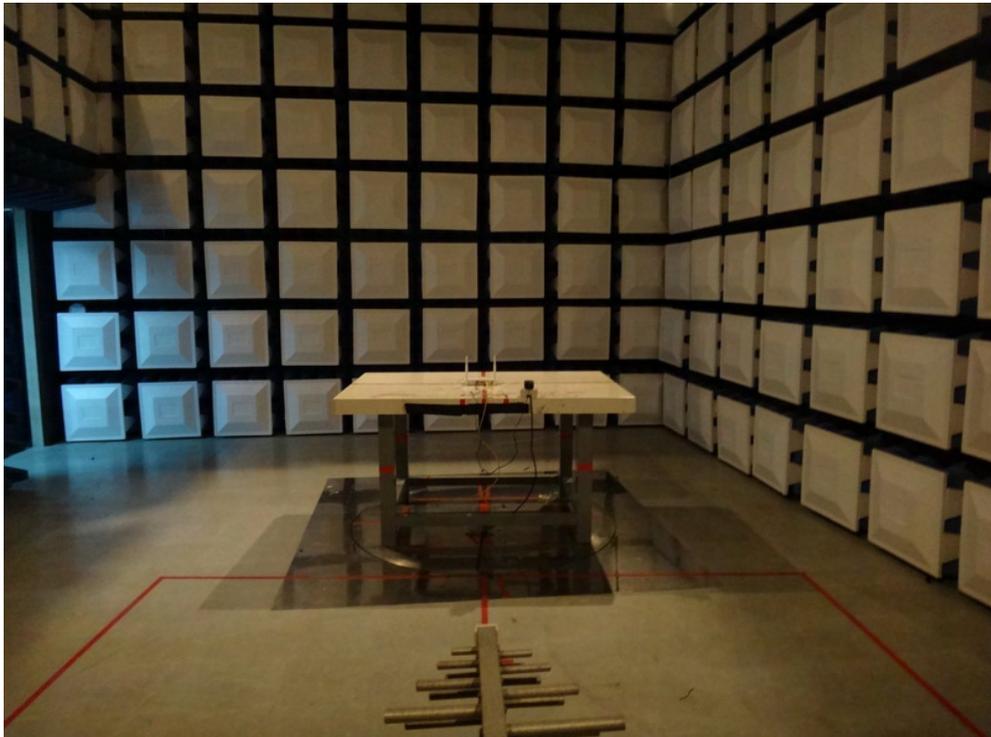


**Radiated Measurement Photos  
9K~30MHz  
Dipole Antenna**





**Radiated Measurement Photos  
30~1000MHz  
Dipole Antenna**





**Radiated Measurement Photos  
Above 1000MHz  
Dipole Antenna**

