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EMC Test Report

Application for Grant of Equipment Authorization

Industry Canada RSS-Gen Issue 4 / RSS 210 Issue 8 FCC Part 15, Subpart E

Model: H44-100

FCC ID:	G95H44-100
APPLICANT:	Technicolor USA Inc. 101 W. 103rd St Indianapolis, IN 46290
TEST SITE(S):	National Technical Systems - Silicon Valley 41039 Boyce Road. Fremont, CA. 94538-2435
IC SITE REGISTRATION #:	2845B-4
REPORT DATE:	March 25, 2015
REISSUE DATE:	June 10, 2015
FINAL TEST DATES:	February 17, 19, 20 and 25, 2015
TOTAL NUMBER OF PAGES:	97

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REVISION HISTORY

Rev#	Date	Comments	Modified By
-	March 25, 2015	First release	
1.0	May 27, 2015	Clarified PSD measurement for MIMO modes. Clarified worse case for bandedge for SISO modes. Clarified spurious emissions results.	MEH
2.0	June 10, 2015	Clarified conducted emissions operation. Updated frequency stability reference and corrected typo in Duty Cycle	MEH

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SCOPE

An electromagnetic emissions test has been performed on the Technicolor USA Inc. model H44-100, pursuant to the following rules:

FCC Part 15, Subpart E requirements for UNII Devices

Conducted and radiated emissions data has been collected, reduced, and analyzed within this report in accordance with measurement guidelines set forth in the following reference standards and as outlined in National Technical Systems - Silicon Valley test procedures:

ANSI C63.10-2009 FCC General UNII Test Procedures KDB789033

The intentional radiator above has been tested in a simulated typical installation to demonstrate compliance with the relevant Industry Canada performance and procedural standards.

Final system data was gathered in a mode that tended to maximize emissions by varying orientation of EUT, orientation of power and I/O cabling, antenna search height, and antenna polarization.

Every practical effort was made to perform an impartial test using appropriate test equipment of known calibration. All pertinent factors have been applied to reach the determination of compliance.

OBJECTIVE

The primary objective of the manufacturer is compliance with the regulations outlined in the previous section.

Prior to marketing in the USA, all unlicensed transmitters and transceivers require certification. Receive-only devices operating between 30 MHz and 960 MHz are subject to either certification or a manufacturer's declaration of conformity, with all other receive-only devices exempt from the technical requirements.

Certification is a procedure where the manufacturer submits test data and technical information to a certification body and receives a certificate or grant of equipment authorization upon successful completion of the certification body's review of the submitted documents. Once the equipment authorization has been obtained, the label indicating compliance must be attached to all identical units, which are subsequently manufactured.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product which may result in increased emissions should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different line filter, different power supply, harnessing or I/O cable changes, etc.).

STATEMENT OF COMPLIANCE

The tested sample of Technicolor USA Inc. model H44-100 complied with the requirements of the following regulations:

FCC Part 15, Subpart E requirements for UNII Devices

Maintenance of compliance is the responsibility of the manufacturer. Any modifications to the product should be assessed to determine their potential impact on the compliance status of the device with respect to the standards detailed in this test report.

The test results recorded herein are based on a single type test of Technicolor USA Inc. model H44-100 and therefore apply only to the tested sample. The sample was selected and prepared by Steven Hershberger of Technicolor USA Inc.

DEVIATIONS FROM THE STANDARDS

No deviations were made from the published requirements listed in the scope of this report.

TEST RESULTS SUMMARY

UNII / LELAN DEVICES

Operation in the 5.15 – 5.25 GHz Band

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.407(a) (1)			11a: 18.9dBm (77.6mW)	24 dBm / 250mW	
(iv)	-	Output Power	n20: 21.8dBm (150.1mW)	(eirp < 30dBm)	Complies
			(Max eirp: 291.3mW)		
15.407 (a) (1)	-	Power Spectral Density	11a: 7.9 dBm/MHz n20: 10.4 dBm/MHz	11 dBm/MHz	Complies

Operation in the 5.25 – 5.35 GHz Band

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.407(a) (2)	-	26dB Bandwidth	20.6MHz minimum	N/A – limits output power if < 20MHz	N/A
15.407(a) (2)	-	Output Power	11a: 18.7dBm (74.1mW) n20: 21.5dBm (140.3mW) (Max eirp: 24.4 dBm / 272.3mW)	24 dBm / 250mW (eirp < 30dBm)	Complies
15.407(a) (2)	-	Power Spectral Density	11a: 7.4 dBm/MHz n20: 10.1 dBm/MHz	11 dBm/MHz	Complies

Operation in the 5.47 – 5.725 GHz Band

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.407(a) (2)		26dB Bandwidth	20.6MHz minimum	N/A – limits output power if < 20MHz	N/A
15.407(a) (2)	-	Output Power	11a: 19.0dBm (79.4mW) n20: 21.7dBm (148.2mW) (Max eirp: 25.3 dBm / 337.2mW)	24 dBm / 250mW (eirp < 30dBm)	Complies
15.407(a) (2)	-	Power Spectral Density	11a: 7.7 dBm/MHz n20: 10.3 dBm/MHz	11 dBm/MHz	Complies



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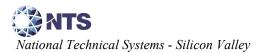
Operation in the 5.725 – 5.850 GHz Band						
FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)	
15.407(a)(3) / 15.407 (e)	-	6dB Bandwidth	16.3MHz minimum	> 500kHz	N/A	
15.407(a) (2)	-	Output Power	11a: 19.0dBm (79.4mW) n20: 22.0dBm (157.0mW) (Max eirp: 26.5 dBm /	30 dBm / 1000mW (eirp < 36dBm)	Complies	
			(Max enp. 20.5 dBm / 450.7 mW)			
15.407(a) (2)	-	Power Spectral Density	11a: 7.8 dBm/MHz n20: 10.6 dBm/MHz	30dBm/500kHz (27dBm/MHz)	Complies	

Requirements for all U-NII/LELAN bands

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.407	-	Modulation	Digital Modulation is used	Digital modulation is required	Complies
15.407(b) (5) / 15.209	-	Spurious Emissions	67.7 dBµV/m @ 5725.7 MHz (-0.6 dB)	Refer to page 21	Complies
15.407 (c)	-	Operation in the absence of information to transmit	Operation is discontinued in the absence of information	Device shall automatically discontinue operation in the absence of information to transmit	Complies
15.407 (g)	-	Frequency Stability	Frequency stability is better than 15ppm	Signal shall remain within the allocated band	Complies
15.407 (h1)	-	Transmit Power Control	TPC is not required as the device operates at below 500mW eirp	The U-NII device shall have the capability to operate with a mean EIRP value lower than 24dBm (250mW)	Complies
15.407 (h2)	RSS-210 A9.4	Dynamic frequency Selection (device without radar detection)	Refer to separate test report, reference R97755	Channel move time < 10s Channel closing transmission time < 260ms	Complies

GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS

FCC Rule Part	RSS Rule part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.203	-	RF Connector	Antennas are internal	Unique or integral antenna required	Complies
15.207	RSS GEN Table 3	AC Conducted Emissions	46.7 dBµV @ 0.444 MHz (-0.3 dB)	Refer to page 20	Complies
15.247 (b) (5) 15.407 (f)	RSS 102	RF Exposure Requirements	Refer to MPE calculations in separate exhibit	Refer to OET 65, FCC Part 1 and RSS 102	Complies



MEASUREMENT UNCERTAINTIES

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level and were calculated in accordance with UKAS document LAB 34.

Measurement Type	Measurement Unit	Frequency Range	Expanded Uncertainty
RF power, conducted (power meter)	dBm	25 to 7000 MHz	± 0.52 dB
RF power, conducted (Spectrum analyzer)	dBm	25 to 7000 MHz	± 0.7 dB
Conducted emission of transmitter	dBm	25 to 26500 MHz	± 0.7 dB
Conducted emission of receiver	dBm	25 to 26500 MHz	± 0.7 dB
Radiated emission (substitution method)	dBm	25 to 26500 MHz	± 2.5 dB
Radiated emission (field strength)	dDu\//m	25 to 1000 MHz	± 3.6 dB
Radiated emission (lield strength)	dBµV/m	1000 to 40000 MHz	± 6.0 dB
Conducted Emissions (AC Power)	dBµV	0.15 to 30 MHz	± 2.4 dB

EQUIPMENT UNDER TEST (EUT) DETAILS

GENERAL

The Technicolor USA Inc. model H44-100 is a satellite dish receiver/set-top-box. Since the EUT would be placed on a tabletop during operation, the EUT was treated as tabletop equipment during testing to simulate the end-user environment. The electrical rating of the EUT is 120 Volts, 60 Hz, 1.3 Amps.

The sample was received on February 12, 2015 and tested on February 17, 19, 20 and 25, 2015. The EUT consisted of the following component(s):

Company	Model	Description	Serial Number	FCC ID
Technicolor	H44-100	Set-top Box	A44LA5BG100113 (emc sample)	G95H44-100
DirectTV	EPS44R3-15	AC/DC Power Supply	CL44E1445A0360	N/A
DirectTV	EPS44R3-15	AC/DC Power Supply	CL44E1445A0364 (AC conducted emissions)	N/A

OTHER EUT DETAILS

The following EUT details should be noted: 20MHz only FCC "New" 5GHz rules 11a legacy data rates supported in 1Tx (with Tx diversity) HT20 - 2Tx DFS Client device Indoor device FCC approval only RF4CE radio - allows for simultaneous transmission Use of channel 144 is not supported by the product.

ANTENNA SYSTEM

Wifi: Airgain, Model N2420DS, 3.1dBi peak gain @ 2.44GHz; 2.8dBi peak gain @ 5.2GHz

Wifi: Airgain, Model N2415D2, 2.13dBi peak gain @ 2.44GHz; 2.88dBi peak gain @ 5.2GHz; 3.57 dBi peak gain @ 5.5GHz; 4.58dBi peak gain @ 5.8GHz RF4CE: 3.0dBi pcb trace antenna

ENCLOSURE

The EUT enclosure is primarily constructed of uncoated plastic. It measures approximately 21 cm wide by 21 cm deep by 4 cm high.

MODIFICATIONS

No modifications were made to the EUT during the time the product was at NTS Silicon Valley.

SUPPORT EQUIPMENT

The following equipment was used as local support equipment for testing:

		Radio		
Company	Model	Description	Serial Number	FCC ID
HP	Pavillion dv6000	Laptop	CNF73411TQ	N/A

Conducted Emissions						
Company Model Description Serial Number FCC ID						
Acer	S242HL	Monitor	40302364485	N/A		
Asian Power Devices	DA-40A19	AC/DC Adapter	YE561137310538543 00	N/A		
Seagate	SRD00F1	SSD	NA7090JC	N/A		
Verbatim	-	USB Thumb Drive	-	N/A		

The following equipment was used as remote support equipment for testing:

(Conducted Emissions)						
Company Model Description Serial Number FCC ID						
DirecTV SWM16R-03 16 channel SWM			49001337	N/A		
DirecTV	PI29R1-03	Power Inserter	YG29B1345B0238	N/A		

EUT INTERFACE PORTS

The I/O cabling configuration during testing was as follows:

Radio					
Por	Port Cable(s)				
From	То	Description	Shielded/Unshielded	Length(m)	
SAT IN (SWM-5)	not connected	-	-	-	
A/V Out	not connected	-	-	-	
Digital Audio Out	not connected	-	-	-	
HDMI	not connected	-	-	-	
USB	not connected	-	-	-	
Hard Drive	not connected	-	-	-	
Power Input	AC/DC Adapter	Multiconductor	Shielded	1.5	
Internal Header	USB-Serial Adapter Laptop	Multiconductor	Unshielded	1.0	

Note: For all radio tests, except AC conducted emissions, the EUT was connected to the laptop via a USB-to-serial adapter connected to an internal header. Preliminary testing showed no affect to the radio related emissions from the interface cables.

(Conducted Emissions)

Port		Cable(s)				
From	То	Description Shielded/Unshielded Length(n				
SAT IN (SWM-5)	SWM-16 (SWM2)	COAX	Shielded	10		
A/V Out	Resistive Terminator	6 Wire RC	Shielded	1		
Digital Audio Out	Resistive Terminator	RC Cable	Shielded	2		
HDMI	Monitor	Multiconductor	Shielded	1.5		
USB	Thumb Drive	Multiconductor	Shielded	2		
Hard Drive	SDD	Multiconductor	Shielded	0.2		
Power Input	AC/DC Adapter	Multiconductor	Shielded	1.5		

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AC Conducted Emissions

Additional on Support Equipment

Por	t	Cable(s)		
From	То	Description	Shielded/Unshielded	Length(m)
AC/DC Adapter (EUT)	AC Mains	2wire	Unshielded	1.5
Monitor - Power In	AC/DC Adapter	Multiconductor	Shielded	1.5
AC/DC Adapter (Monitor)	AC Mains	3wire	Unshielded	1.5
SWM-16 DC/Power	SWM-1	Coax	Shielded	1
SWM-16 SAT 99/101	Dish Antenna	Coax (x2)	Shielded	40
SWM-16 SAT103/110/119	Dish Antenna	Coax (x2)	Shielded	40
SWM-1 Power	AC Mains	2wire	Unshielded	1.5

EUT OPERATION

Radio testing: The EUT was configured to continuously transmit at the maximum output power on the noted channel. Testing was performed to confirm the worse case data rate for each mode tested, and is noted in the test data.

As the product supports simultaneous transmission from the Wifi and the RF4CE radios, additional testing was performed with both radios operating.

AC Conducted Emissions: The EUT was configured to transmit continuously on CH157, n20, maximum power. RF4CE was configured to continuous transmission at 2450MHz.

TEST SITE

GENERAL INFORMATION

Final test measurements were taken at the test sites listed below. Pursuant to section 2.948 of the FCC's Rules and section 3.3 of RSP-100, construction, calibration, and equipment data has been filed with the Commission and with industry Canada.

Site	Designation / Registration Numbers		Location
Site	FCC	Canada	Location
Chamber 3	US0027	2845B-3	41039 Boyce Road
Chamber 4	US0027	2845B-4	Fremont, CA 94538-2435

ANSI C63.4 recommends that ambient noise at the test site be at least 6 dB below the allowable limits. Ambient levels are below this requirement. The test site(s) contain separate areas for radiated and conducted emissions testing. Considerable engineering effort has been expended to ensure that the facilities conform to all pertinent requirements of ANSI C63.4.

CONDUCTED EMISSIONS CONSIDERATIONS

Conducted emissions testing is performed in conformance with ANSI C63.10. Measurements are made with the EUT connected to the public power network through a nominal, standardized RF impedance, which is provided by a line impedance stabilization network, known as a LISN. A LISN is inserted in series with each current-carrying conductor in the EUT power cord.

RADIATED EMISSIONS CONSIDERATIONS

The FCC has determined that radiation measurements made in a shielded enclosure are not suitable for determining levels of radiated emissions. Radiated measurements are performed in an open field environment or in a semi-anechoic chamber. The test sites are maintained free of conductive objects within the CISPR defined elliptical area incorporated in ANSI C63.4 guidelines and meet the Normalized Site Attenuation (NSA) requirements of ANSI C63.4.

MEASUREMENT INSTRUMENTATION

RECEIVER SYSTEM

An EMI receiver as specified in CISPR 16-1-1 is used for emissions measurements. The receivers used can measure over the frequency range of 9 kHz up to 2000 MHz. These receivers allow both ease of measurement and high accuracy to be achieved. The receivers have Peak, Average, and CISPR (Quasi-peak) detectors built into their design so no external adapters are necessary. The receiver automatically sets the required bandwidth for the CISPR detector used during measurements. If the repetition frequency of the signal being measured is below 20Hz, peak measurements are made in lieu of Quasi-Peak measurements.

For measurements above the frequency range of the receivers, a spectrum analyzer is utilized because it provides visibility of the entire spectrum along with the precision and versatility required to support engineering analysis. Average measurements above 1000MHz are performed on the spectrum analyzer using the linear-average method with a resolution bandwidth of 1 MHz and a video bandwidth of 10 Hz, unless the signal is pulsed in which case the average (or video) bandwidth of the measuring instrument is reduced to onset of pulse desensitization and then increased.

INSTRUMENT CONTROL COMPUTER

The receivers utilize either a Rohde & Schwarz EZM Spectrum Monitor/Controller or contain an internal Spectrum Monitor/Controller to view and convert the receiver measurements to the field strength at an antenna or voltage developed at the LISN measurement port, which is then compared directly with the appropriate specification limit. This provides faster, more accurate readings by performing the conversions described under Sample Calculations within the Test Procedures section of this report. Results are printed in a graphic and/or tabular format, as appropriate. A personal computer is used to record all measurements made with the receivers.

The Spectrum Monitor provides a visual display of the signal being measured. In addition, the controller or a personal computer run automated data collection programs which control the receivers. This provides added accuracy since all site correction factors, such as cable loss and antenna factors are added automatically.

LINE IMPEDANCE STABILIZATION NETWORK (LISN)

Line conducted measurements utilize a fifty microhenry Line Impedance Stabilization Network as the monitoring point. The LISN used also contains a 250 uH CISPR adapter. This network provides for calibrated radio frequency noise measurements by the design of the internal low pass and high pass filters on the EUT and measurement ports, respectively.



FILTERS/ATTENUATORS

External filters and precision attenuators are often connected between the receiving antenna or LISN and the receiver. This eliminates saturation effects and non-linear operation due to high amplitude transient events.

ANTENNAS

A loop antenna is used below 30 MHz. For the measurement range 30 MHz to 1000 MHz either a combination of a biconical antenna and a log periodic or a bi-log antenna is used. Above 1000 MHz, horn antennas are used. The antenna calibration factors to convert the received voltage to an electric field strength are included with appropriate cable loss and amplifier gain factors to determine an overall site factor, which is then programmed into the test receivers or incorporated into the test software.

ANTENNA MAST AND EQUIPMENT TURNTABLE

The antennas used to measure the radiated electric field strength are mounted on a nonconductive antenna mast equipped with a motor-drive to vary the antenna height. Measurements below 30 MHz are made with the loop antenna at a fixed height of 1m above the ground plane.

ANSI C63.10 specifies that the test height above ground for table mounted devices shall be 80 centimeters. Floor mounted equipment shall be placed on the ground plane if the device is normally used on a conductive floor or separated from the ground plane by insulating material from 3 to 12 mm if the device is normally used on a non-conductive floor as specified in ANSI C63.4. During radiated measurements, the EUT is positioned on a motorized turntable in conformance with this requirement.

INSTRUMENT CALIBRATION

All test equipment is regularly checked to ensure that performance is maintained in accordance with the manufacturer's specifications. All antennas are calibrated at regular intervals with respect to tuned half-wave dipoles. An exhibit of this report contains the list of test equipment used and calibration information.

TEST PROCEDURES

EUT AND CABLE PLACEMENT

The regulations require that interconnecting cables be connected to the available ports of the unit and that the placement of the unit and the attached cables simulate the worst case orientation that can be expected from a typical installation, so far as practicable. To this end, the position of the unit and associated cabling is varied within the guidelines of ANSI C63.10, and the worst-case orientation is used for final measurements.

CONDUCTED EMISSIONS

Conducted emissions are measured at the plug end of the power cord supplied with the EUT. Excess power cord length is wrapped in a bundle between 30 and 40 centimeters in length near the center of the cord. Preliminary measurements are made to determine the highest amplitude emission relative to the specification limit for all the modes of operation. Placement of system components and varying of cable positions are performed in each mode. A final peak mode scan is then performed in the position and mode for which the highest emission was noted on all current carrying conductors of the power cord.

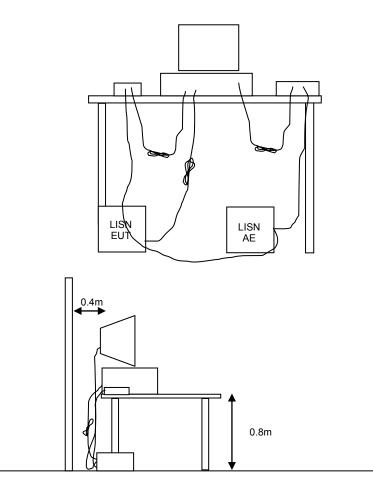


Figure 1 Typical Conducted Emissions Test Configuration



RADIATED EMISSIONS

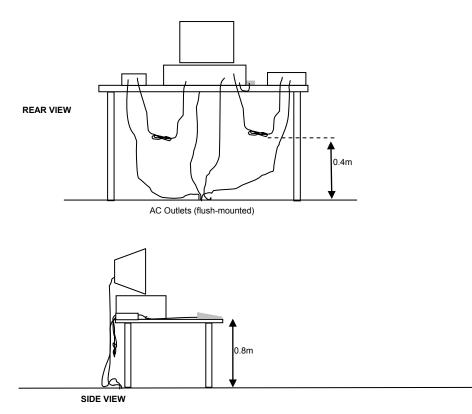
A preliminary scan of the radiated emissions is performed in which all significant EUT frequencies are identified with the system in a nominal configuration. At least two scans are performed, one scan for each antenna polarization (horizontal and vertical; loop parallel and perpendicular to the EUT). During the preliminary scans, the EUT is rotated through 360°, the antenna height is varied (for measurements above 30 MHz) and cable positions are varied to determine the highest emission relative to the limit. Preliminary scans may be performed in a fully anechoic chamber for the purposes of identifying the frequencies of the highest emissions from the EUT.

A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

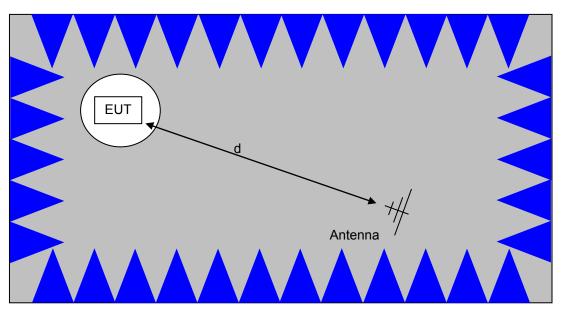
Final maximization is a phase in which the highest amplitude emissions identified in the spectral search are viewed while the EUT azimuth angle is varied from 0 to 360 degrees relative to the receiving antenna. The azimuth, which results in the highest emission is then maintained while varying the antenna height from one to four meters (for measurements above 30 MHz, measurements below 30 MHz are made with the loop antenna at a fixed height of 1m). The result is the identification of the highest amplitude for each of the highest peaks. Each recorded level is corrected in the receiver using appropriate factors for cables, connectors, antennas, and preamplifier gain.

When testing above 18 GHz, the receive antenna is located at 1 meter from the EUT and the antenna height is restricted to a maximum of 2.5 meters.



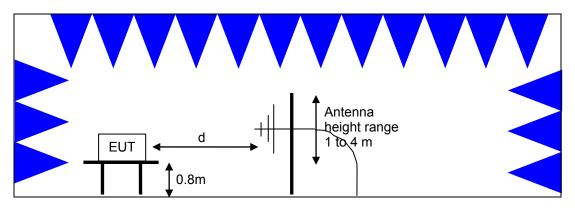


Typical Test Configuration for Radiated Field Strength Measurements



The anechoic materials on the walls and ceiling ensure compliance with the normalized site attenuation requirements of CISPR 16 / CISPR 22 / ANSI C63.4 for an alternate test site at the measurement distances used.

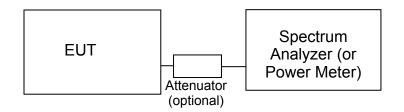
Floor-standing equipment is placed on the floor with insulating supports between the unit and the ground plane.



<u>Test Configuration for Radiated Field Strength Measurements</u> <u>Semi-Anechoic Chamber, Plan and Side Views</u>

CONDUCTED EMISSIONS FROM ANTENNA PORT

Direct measurements of power, bandwidth and power spectral density are performed, where possible, with the antenna port of the EUT connected to either the power meter or spectrum analyzer via a suitable attenuator and/or filter. These are used to ensure that the front end of the measurement instrument is not overloaded by the fundamental transmission.



Test Configuration for Antenna Port Measurements

Measurement bandwidths (video and resolution) are set in accordance with the relevant standards and NTS Silicon Valley's test procedures for the type of radio being tested. When power measurements are made using a resolution bandwidth less than the signal bandwidth the power is calculated by summing the power across the signal bandwidth using either the analyzer channel power function or by capturing the trace data and calculating the power using software. In both cases the summed power is corrected to account for the equivalent noise bandwidth (ENBW) of the resolution bandwidth used.

If power averaging is used (typically for certain digital modulation techniques), the EUT is configured to transmit continuously. Power averaging is performed using either the built-in function of the analyzer or, if the analyzer does not feature power averaging, using external software. In both cases the average power is calculated over a number of sweeps (typically 100). When the EUT cannot be configured to continuously transmit then either the analyzer is configured to perform a gated sweep to ensure that the power is averaged over periods that the device is transmitting or power averaging is disabled and a max-hold feature is used.

If a power meter is used to make output power measurements the sensor head type (peak or average) is stated in the test data table.

BANDWIDTH MEASUREMENTS

The 6dB, 20dB, 26dB and/or 99% signal bandwidth are measured using the bandwidths recommended by ANSI C63.10 and RSS GEN.

SPECIFICATION LIMITS AND SAMPLE CALCULATIONS

The limits for conducted emissions are given in units of microvolts, and the limits for radiated emissions are given in units of microvolts per meter at a specified test distance. Data is measured in the logarithmic form of decibels relative to one microvolt, or dB microvolts (dBuV). For radiated emissions, the measured data is converted to the field strength at the antenna in dB microvolts per meter (dBuV/m). The results are then converted to the linear forms of uV and uV/m for comparison to published specifications.

For reference, converting the specification limits from linear to decibel form is accomplished by taking the base ten logarithm, then multiplying by 20. These limits in both linear and logarithmic form are as follows:

CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(a), RSS GEN

The table below shows the limits for the emissions on the AC power line from an intentional radiator and a receiver.

Frequency (MHz)	Average Limit (dBuV)	Quasi Peak Limit (dBuV)
0.150 to 0.500	Linear decrease on logarithmic frequency axis between 56.0 and 46.0	Linear decrease on logarithmic frequency axis between 66.0 and 56.0
0.500 to 5.000	46.0	56.0
5.000 to 30.000	50.0	60.0

GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS

The table below shows the limits for the spurious emissions from transmitters that fall in restricted bands¹ (with the exception of transmitters operating under FCC Part 15 Subpart D and RSS 210 Annex 9), the limits for all emissions from a low power device operating under the general rules of RSS 310 (tables 3 and 4), RSS 210 (table 2) and FCC Part 15 Subpart C section 15.209.

Frequency Range (MHz)	Limit (uV/m)	Limit (dBuV/m @ 3m)
0.009-0.490	2400/F _{KHz} @ 300m	67.6-20*log ₁₀ (F _{KHz}) @ 300m
0.490-1.705	24000/F _{KHz} @ 30m	87.6-20*log ₁₀ (F _{KHz}) @ 30m
1.705 to 30	30 @ 30m	29.5 @ 30m
30 to 88	100 @ 3m	40 @ 3m
88 to 216	150 @ 3m	43.5 @ 3m
216 to 960	200 @ 3m	46.0 @ 3m
Above 960	500 @ 3m	54.0 @ 3m

FCC 15.407 (a) OUTPUT POWER LIMITS

The table below shows the limits for output power and output power density. Where the signal bandwidth is less than 20 MHz the maximum output power is reduced to the power spectral density limit plus 10 times the log of the bandwidth (in MHz).

Operating Frequency (MHz)	Output Power	Power Spectral Density
5150 – 5250 (client devices)	250 mW (24 dBm)	11 dBm/MHz
5250 - 5350 / 5470-5725	250 mW (24 dBm)	11 dBm/MHz
5725 – 5850	1 Watts (30 dBm)	27 dBm/MHz

For system using antennas with gains exceeding 6dBi, the output power and power spectral density limits are reduced by 1dB for every dB the antenna gain exceeds 6dBi.

SPURIOUS EMISSIONS LIMITS – UNII and LELAN DEVICES

The spurious emissions limits for signals below 1GHz are the FCC/RSS-GEN general limits. For emissions above 1GHz, signals in restricted bands are subject to the FCC/RSS GEN general limits. All other signals have a limit of -27dBm/MHz, which is a field strength of 68.3dBuV/m/MHz at a distance of 3m. For devices operating in the 5725-5850Mhz bands under the LELAN/UNII rules, the limit within 10MHz of the allocated band is increased to -17dBm/MHz.

¹ The restricted bands are detailed in FCC 15.205, RSS 210 Table 1 and RSS 310 Table 2

SAMPLE CALCULATIONS - CONDUCTED EMISSIONS

Receiver readings are compared directly to the conducted emissions specification limit (decibel form) as follows:

 $R_r - S = M$

where:

 $R_r = Receiver Reading in dBuV$

S = Specification Limit in dBuV

M = Margin to Specification in +/- dB

SAMPLE CALCULATIONS - RADIATED EMISSIONS

Receiver readings are compared directly to the specification limit (decibel form). The receiver internally corrects for cable loss, preamplifier gain, and antenna factor. The calculations are in the reverse direction of the actual signal flow, thus cable loss is added and the amplifier gain is subtracted. The Antenna Factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

A distance factor, when used for electric field measurements above 30MHz, is calculated by using the following formula:

 $F_d = 20*LOG_{10} (D_m/D_s)$

where:

 F_d = Distance Factor in dB D_m = Measurement Distance in meters D_s = Specification Distance in meters

For electric field measurements below 30MHz the extrapolation factor is either determined by making measurements at multiple distances or a theoretical value is calculated using the formula:

 $F_d = 40*LOG_{10} (D_m/D_s)$

Measurement Distance is the distance at which the measurements were taken and Specification Distance is the distance at which the specification limits are based. The antenna factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

The margin of a given emission peak relative to the limit is calculated as follows:

 $R_c = R_r + F_d$

and

 $M = R_c - L_s$

where:

 R_r = Receiver Reading in dBuV/m

 F_d = Distance Factor in dB

 R_c = Corrected Reading in dBuV/m

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- L_s = Specification Limit in dBuV/m
- M = Margin in dB Relative to Spec

SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION

Where the radiated electric field strength is expressed in terms of the equivalent isotropic radiated power (eirp), or where a field strength measurement of output power is made in lieu of a direct measurement, the following formula is used to convert between eirp and field strength at a distance of d (meters) from the equipment under test:

 $E = \frac{1000000 \sqrt{30 P}}{d}$ microvolts per meter

where P is the eirp (Watts)

For a measurement at 3m the conversion from a logarithmic value for field strength (dBuV/m) to an eirp power (dBm) is -95.3dB.

Appendix A Test Equipment Calibration Data

Manufacturer	<u>Description</u> , 1,000 - 6,500 MHz, 12-Feb-15	<u>Model</u>	<u>Asset #</u>	Calibrated	Cal Due
EMCO Rohde & Schwarz	Antenna, Horn, 1-18 GHz EMI Test Receiver, 20 Hz-7 GHz	3115 ESIB7	487 1630	7/29/2014 6/21/2014	7/29/2016 6/21/2015
Radiated Emissions EMCO Rohde & Schwarz	, 1,000 - 6,500 MHz, 17-Feb-15 Antenna, Horn, 1-18 GHz EMI Test Receiver, 20 Hz-7 GHz	3115 ESIB7	786 1630	12/20/2013 6/21/2014	12/20/2015 6/21/2015
Radiated Emissions EMCO	, 1000 - 12,000 MHz, 17-Feb-15 Antenna, Horn, 1-18 GHz	3115	786	12/20/2013	12/20/2015
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1630	6/21/2014	6/21/2015
Hewlett Packard	Microwave Preamplifier, 1- 26.5GHz	8449B	2199	2/20/2014	2/20/2015
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	2238	9/16/2014	9/16/2015
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	2415	2/27/2014	2/27/2015
	, 1000 - 25,000 MHz, 18-Feb-15				
EMCO Hewlett Packard	Antenna, Horn, 1-18 GHz High Pass filter, 8.2 GHz (Purple System)	3115 P/N 84300- 80039	786 1767	12/20/2013 11/14/2014	12/20/2015 11/14/2015
Hewlett Packard	Head (Inc W1-W4, 1946 , 1947) Purple	84125C	1772	1/20/2015	1/20/2016
A. H. Systems	Purple System Horn, 18- 40GHz	SAS-574, p/n: 2581	2160	8/11/2014	8/11/2015
Hewlett Packard	Microwave Preamplifier, 1- 26.5GHz	8449B	2199	2/20/2014	2/20/2015
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	2238	9/16/2014	9/16/2015
Radiated Emissions	, 1,000 - 12,000 MHz, 19-Feb-15				
EMCO Hewlett Packard	Antenna, Horn, 1-18 GHz Microwave Preamplifier, 1- 26.5GHz	3115 8449B	786 2199	12/20/2013 2/20/2014	12/20/2015 2/20/2015
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2239	9/16/2014	9/16/2015
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	2240	9/16/2014	9/16/2015
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	2241	9/16/2014	9/16/2015
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	2415	2/27/2014	2/27/2015
	, 1,000 - 40,000 MHz, 20-Feb-15		700		
EMCO Hewlett Packard	Antenna, Horn, 1-18 GHz High Pass filter, 8.2 GHz	3115 P/N 84300-	786 1767	12/20/2013 11/14/2014	12/20/2015 11/14/2015
Hewlett Packard	(Purple System) Head (Inc W1-W4, 1946 , 1947) Purple	80039 84125C	1772	1/20/2015	1/20/2016
	<i>,</i> ,				



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Project number J97449 Reissue Date: June 10, 2015

	Repor	rt Date: March 25, 2	015 K	eissue Date: Jun	e 10, 2015
Manufacturer A. H. Systems	Description Purple System Horn, 18-	<u>Model</u> SAS-574, p/n:	<u>Asset #</u> 2160	<u>Calibrated</u> 8/11/2014	<u>Cal Due</u> 8/11/2015
Hewlett Packard	40GHz Microwave Preamplifier, 1- 26.5GHz	2581 8449B	2199	2/20/2014	2/20/2015
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2239	9/16/2014	9/16/2015
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	2240	9/16/2014	9/16/2015
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	2241	9/16/2014	9/16/2015
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	2415	2/27/2014	2/27/2015
Radiated Emissions	, 30 - 6,500 MHz, 22-Feb-15				
EMCO	Antenna, Horn, 1-18 GHz	3115	786	12/20/2013	12/20/2015
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1630	6/21/2014	6/21/2015
Sunol Sciences Com-Power	Biconilog, 30-3000 MHz Preamplifier, 1-1000 MHz	JB3 PAM-103	2237 2885	8/29/2014 10/22/2014	8/29/2016 10/22/2015
Radiated Emissions	, 30 - 6,500 MHz, 22-Feb-15				
EMCO	Antenna, Horn, 1-18 GHz	3115	786	12/20/2013	12/20/2015
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1630	6/21/2014	6/21/2015
	, 30 - 1,000 MHz, 23-Feb-15	100	4057	0/05/0044	0/05/0040
Sunol Sciences	Biconilog, 30-3000 MHz	JB3	1657	6/25/2014	6/25/2016
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1756	6/14/2014	6/14/2015
Hewlett Packard	9KHz-1300MHz pre-amp	8447F	2777	3/5/2014	3/5/2015
Radio Antenna Port	(Power and Spurious Emission	ns), 24-Feb-15 to 2	26-Feb-15		
Rohde & Schwarz	Signal Analyzer 20 Hz - 26.5 GHz	FSQ26	2327	4/28/2014	4/28/2015
Radiated Emissions	, 30 - 1,000 MHz, 27-Feb-15				
Sunol Sciences	Biconilog, 30-3000 MHz	JB3	1657	6/25/2014	6/25/2016
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7	ESIB7	1756	6/14/2014	6/14/2015
Lloudett Deekerd	GHz	04475	0777	2/5/2014	2/5/2015
Hewlett Packard	9KHz-1300MHz pre-amp	8447F	2777	3/5/2014	3/5/2015
	, 30 - 18,000 MHz, 01-Mar-15				
Sunol Sciences	Biconilog, 30-3000 MHz	JB3	1657	6/25/2014	6/25/2016
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1756	6/14/2014	6/14/2015
Hewlett Packard	Microwave Preamplifier, 1- 26.5GHz	8449B	2199	2/20/2015	2/20/2016
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	2415	2/27/2014	3/27/2015
Hewlett Packard EMCO	9KHz-1300MHz pre-amp Antenna, Horn, 1-18 GHz	8447F 3115	2777 2870	3/5/2014 8/20/2013	3/5/2015 8/20/2015
			_0.0	0,20,20,10	5,20,2010
	ns - AC Power Ports, 02-Mar-1				
EMCO	LISN, 10 kHz-100 MHz, 25A	3825/2	1292	2/13/2014	3/13/2015
EMCO	LISN, 10 kHz-100 MHz	3825/2	1293	2/13/2014	4/13/2015
Rohde & Schwarz	Pulse Limiter	ESH3 Z2	1594	5/15/2014	5/15/2015



Project number J97449 Reissue Date: June 10, 2015

	Repo	rt Date: March 25, 20	015 Re	eissue Date: Jun	
Manufacturer Rohde & Schwarz	<u>Description</u> EMI Test Receiver, 20 Hz-7 GHz	<u>Model</u> ESIB7	<u>Asset #</u> 1756	<u>Calibrated</u> 6/14/2014	<u>Cal Due</u> 6/14/2015
FCC	Decoupling Network	F-203I-DCN- 23mm	2457		N/A
Radiated Emissions	, 11,000 - 26,000 MHz, 02-Mar-1	5			
Hewlett Packard	Head (Inc W1-W4, 1946 , 1947) Purple	84125C	1772	1/20/2015	1/20/2016
A. H. Systems	Purple System Horn, 18- 40GHz	SAS-574, p/n: 2581	2160	8/11/2014	8/11/2015
Hewlett Packard	Microwave Preamplifier, 1- 26.5GHz	8449B	2199	2/20/2015	2/20/2016
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	2415	2/27/2014	3/27/2015
FCC	Decoupling Network	F-203I-DCN- 23mm	2457		N/A
EMCO	Antenna, Horn, 1-18 GHz	3115	2870	8/20/2013	8/20/2015



Appendix B Test Data

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WE ENGINEER S	UCCESS	E/	WC TEST Data
Client:	Technicolor USA, Inc.	Job Number:	J97449
Product	H44-100	T-Log Number:	T97497
		Project Manager:	Christine Krebill
Contact:	Steven Hershberger	Project Coordinator:	
Emissions Standard(s):	FCC 15.247/15.407/15.B	Class:	В
Immunity Standard(s):	-	Environment:	-

EMC Test Data

For The

Technicolor USA, Inc.

Product

H44-100

Date of Last Test: 3/4/2015

	E ENGINEER SUCCESS		
Client:	Technicolor USA, Inc.	Job Number:	J97449
Model	H44-100	T-Log Number:	Т97497
wouer.	1144-100	Project Manager:	Christine Krebill
Contact:	Steven Hershberger	Project Coordinator:	-
Standard:	FCC 15.247/15.407/15.B	Class:	N/A

Power vs. Data Rate

In normal operating modes the card uses power settings stored on EEPROM to set the output power. For a given nominal output power the actual transmit power normally is redcued as the data rate increases, therefore testing was performed at the data rate in the mode with this power to determine compliance with the requirements.

The following power measurements were made using a GATED average power meter and with the device configured in a continuous transmit mode on Chain 1 at the various data rates in each mode to verify the highest power mode:

Sample Notes

NTS

Sample S/N: L044A505250029 Driver: 5.99 RC188.10

> Date of Test: 2/12/2015 Test Engineer: Mark Hill Test Location: Lab #4

Mode	Data Rate	Power (dBm)	Chain	Power setting
	1	20.0	2	
	2	20.5	2	
802.11b	5.5	19.9	2	20.0
	11	19.9	2	
	2	21.3	1	
	6	19.2	2	
	9	19.3	2	
	12	19.3	2	
	18	19.2	2	
802.11g	24	19.3	2	20.0
	36	19.2	2	
	48	19.3	2	
	54	19.3	2	
	9	19.7	1	

Contact:				Job Number:					
ontact:	Steven Hers	: H44-100							T97497
		Steven Hershberger							Christine Krebill
andard:	FCC 15.247	-					Project	Coordinator:	
								Class:	N/A
				Mode Data Rate Power (dBm)		Chain	Power setting		
			6.			.42	2		MCS8
			1			.36	2	4	MCS9
			19			.27	2	4	MCS10
		2.11n	2			.17	2	20.0	MCS11
	201	MHz	3			.02	2	4	MCS12
			5 58			.01 .27	2	4	MCS13
			58			5.96	2	4	MCS14 MCS15
			0	-	10		2	<u>l</u>	
Te	Date of Test: st Engineer: sst Location:	: 2/12/2015 : Mark Hill			uring testing.	, included for	reference or	ıly.	
Te: Te cycle m	st Engineer: st Location: neasurement	: 2/12/2015 : Mark Hill	on the worse	Du case data ra	uty Cyc	cle	reference or	ıly.	
Te: Te cycle m	st Engineer: st Location: neasurement	: 2/12/2015 : Mark Hill : Lab #4 its performed	on the worse	Du e case data ra VBW setting	uty Cyc	cle	Lin Volt Cor Factor**	Min VBW for FS (Hz)	
Te: Te cycle m	st Engineer: st Location: neasurement surements ta	: 2/12/2015 : Mark Hill : Lab #4 its performed aken with ma	on the worse ximum RBW/ Duty Cycle	Du case data ra VBW setting Constant	uty Cyc	r. Pwr Cor	Lin Volt Cor	Min VBW	
Te: Te cycle m	st Engineer: est Location: neasurement surements ta Mode <u>11b</u> 11g	: 2/12/2015 : Mark Hill : Lab #4 its performed aken with ma Data Rate 2Mb/s 9Mb/s	on the worse ximum RBW/ Duty Cycle (x) 0.99 0.99	Du case data ra VBW setting Constant DC?	uty Cyc ate for powe s allowed. T (ms)	r. Pwr Cor Factor* 0 0	Lin Volt Cor Factor** 0 0	Min VBW for FS (Hz)	
Te: Te cycle m	st Engineer: est Location: neasurement surements ta Mode 11b	: 2/12/2015 : Mark Hill : Lab #4 its performed aken with ma Data Rate 2Mb/s	on the worse ximum RBW/ Duty Cycle (x) 0.99	Du e case data ra VBW setting Constant DC? Yes	uty Cyc ate for powe s allowed. T (ms)	r. Pwr Cor Factor*	Lin Volt Cor Factor** 0	Min VBW for FS (Hz)	

	LE ENOINEER SOCCESS		
Client:	Technicolor USA, Inc.	Job Number:	J97449
Model	H44-100	T-Log Number:	Т97497
MOUEI.	1144-100	Project Manager:	Christine Krebill
Contact:	Steven Hershberger	Project Coordinator:	-
Standard:	FCC 15.247/15.407/15.B	Class:	N/A

FCC 15.407 (UNII) Radiated Spurious Emissions

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

NTS

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. For radiated emissions testing the measurement antenna was located 3 meters from the EUT, unless otherwise noted.

Ambient Conditions:	Temperature:	22-24 °C
	Rel. Humidity:	33-38 %

Summary of Results

D "			Target	Passing	T. I.D. (1.1	
Run #	Mode	Channel	Power Setting	Power Setting	Test Performed	Limit	Result / Margin
	a (chain 1)	36 - 5180MHz	20.0	20	Restricted Band Edge at 5150 MHz	15.209	49.3 dBµV/m @ 5150. MHz (-4.7 dB)
1	a (chain 2)	36 - 5180MHz	20.0	20	Restricted Band Edge at 5150 MHz	15.209	51.7 dBµV/m @ 5150 MHz (-2.3 dB)
	n20 (2x2)	36 - 5180MHz	20.0	20	Restricted Band Edge at 5150 MHz	15.209	50.6 dBµV/m @ 5150 MHz (-3.4 dB)
2	a (chain 2)	64 - 5320MHz	20.0	20	Restricted Band Edge at 5350 MHz	15.209	48.0 dBµV/m @ 5350 MHz (-6.0 dB)
2	n20 (2x2)	64 - 5320MHz	20.0	20	Restricted Band Edge at 5350 MHz	15.209	49.4 dBµV/m @ 5350 MHz (-4.6 dB)
	a (chain 2)	100 -	20.0	20	Restricted Band Edge at 5460 MHz	15.209	48.4 dBµV/m @ 5458 MHz (-5.6 dB)
	a (Ghain 2)	5500MHz	20.0	20	Band Edge 5460 - 5470 MHz	15E	52.2 dBµV/m @ 5470 MHz (-1.8 dB)
3	n20 (2x2)	100 -	20.0	20	Restricted Band Edge at 5460 MHz	15.209	47.1 dBµV/m @ 5426 MHz (-6.9 dB)
5	1120 (272)	5500MHz	20.0	20	Band Edge 5460 - 5470 MHz	15E	63.6 dBµV/m @ 5469 MHz (-4.7 dB)
	a (chain 2)	140 - 5700MHz	20.0	20	Band Edge 5725MHz	15E	67.2 dBµV/m @ 5725 MHz (-1.1 dB)
	n20 (2x2)	140 - 5700MHz	20.0	20	Band Edge 5725MHz	15E	67.7 dBµV/m @ 5725 MHz (-0.6 dB)

		SUCCESS				EM	C Test Data
Client:	Technicolor	USA, Inc.				Job Number:	J97449
Madal	H44-100					T-Log Number:	Т97497
wouer.	1144-100					Project Manager:	Christine Krebill
Contact:	Steven Hers	hberger				Project Coordinator:	-
Standard:	FCC 15.247	/15.407/15.B				Class:	N/A
	L.						
Run #	Mode	Channel	Target Power Setting	Passing Power Setting	Test Performed	Limit	Result / Margin
	a (chain 2)	149 -	20.0	20	Band Edge 5725MHz	15E	74.3 dBµV/m @ 5724.7 MHz (-4.0 dB)
		5745MHz	20.0	20	Band Edge 5715MHz	132	64.4 dBµV/m @ 5711.3 MHz (-3.9 dB)
	n20 (2v2)	149 -	20.0	20	Band Edge 5725MHz	15E	77.1 dBµV/m @ 5724.4 MHz (-1.2 dB)
4	n20 (2x2)	5745MHz	20.0	20	Band Edge 5715MHz	IJE	64.4 dBµV/m @ 5714.8 MHz (-3.9 dB)
4	e (sheir 2)	165 -	20.0	20	Band Edge 5850MHz	455	66.8 dBµV/m @ 5851.1 MHz (-11.5 dB)
	a (chain 2)	5825MHz	20.0	20	Band Edge 5860MHz	15E	62.2 dBµV/m @ 5860.9 MHz (-6.1 dB)
		165 -	00.0	00	Band Edge 5850MHz	455	66.8 dBµV/m @ 5850.1 MHz (-11.5 dB)
	n20 (2x2)	5825MHz	20.0	20	Band Edge 5860MHz	15E	58.6 dBµV/m @ 5860.8 MHz (-9.7 dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Note

Data is provided for the UNII1 bandedges to show that both chains were evaluated for the 11a operation. This was repeated for the the other bands, with chain 2 always being the worse case. Only the chain 2 data is presented.



VE ENGINEER SUCCESS		
Technicolor USA, Inc.	Job Number:	J97449
H11 100	T-Log Number:	Т97497
1144-100	Project Manager:	Christine Krebill
Steven Hershberger	Project Coordinator:	-
FCC 15.247/15.407/15.B	Class:	N/A
	Technicolor USA, Inc. H44-100 Steven Hershberger FCC 15.247/15.407/15.B	Technicolor USA, Inc. Job Number: H44-100 T-Log Number: Project Manager: Project Coordinator: Steven Hershberger Project Coordinator:

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033

Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time Unless otherwise stated/noted, emission has duty cycle ≥ 98% and was measured using RBW=1MHz, VBW=10Hz, peak detector, linear average mode, auto sweep time, max hold.

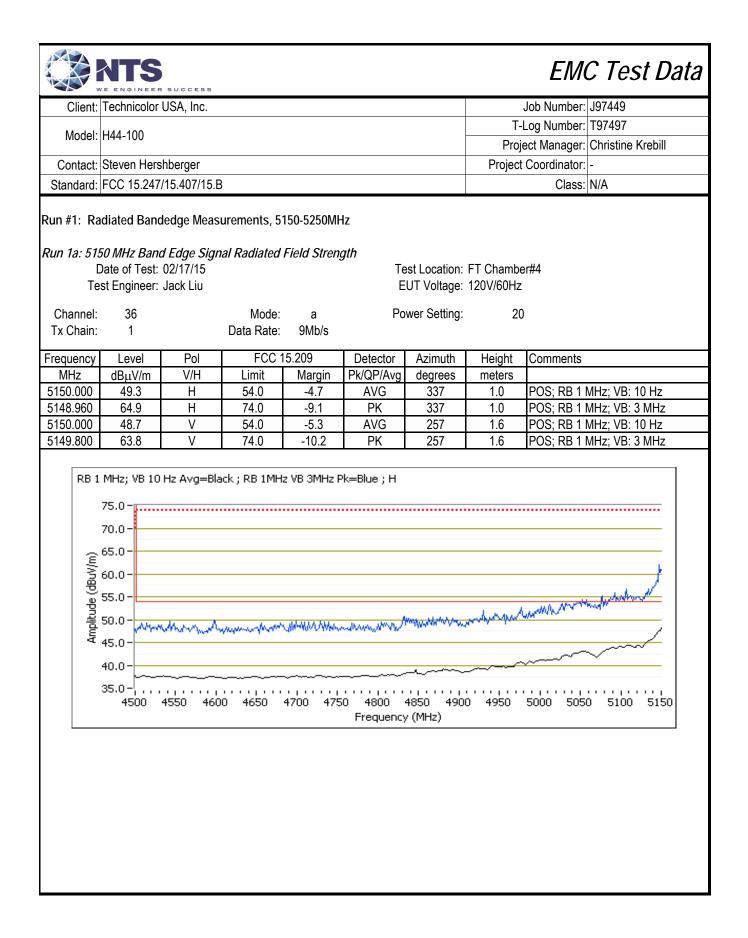
	Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
ſ	11a	9Mb/s	0.99	Yes	-	0	0	-
	n20	MCS8	0.978	Yes	-	0.10	0.19	-

Sample Notes

Sample S/N: L044A505250029 Driver: 5.99 RC188.10 Antenna: Airgain N2420DS / N2415D2

Measurement Specific Notes:

Note 1:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m) or -17dBm/MHz eirp (78.3dBuV/m) . The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector). Per KDB 789033 G 2) c) i) , compliance can be demonstrated by meeing the average and peak limits of 15.209, as an alternative.
Note 2:	Emission has duty cycle ≥ 98%, average measurement performed: RBW=1MHz, VBW=3MHz, RMS, Power averaging, auto sweep, trace average 100 traces
Note 3:	Emission has duty cycle < 98%, but constant, average measurement performed: RBW=1MHz, VBW=10Hz, peak detector, linear averaging, auto sweep, trace average 100 * 1/DC traces, measurement corrected by Linear Voltage correction factor
Note 6:	Plots of the average and peak bandedge do not account for any duty cycle correction. Refer to the tabluar results for final measurements.

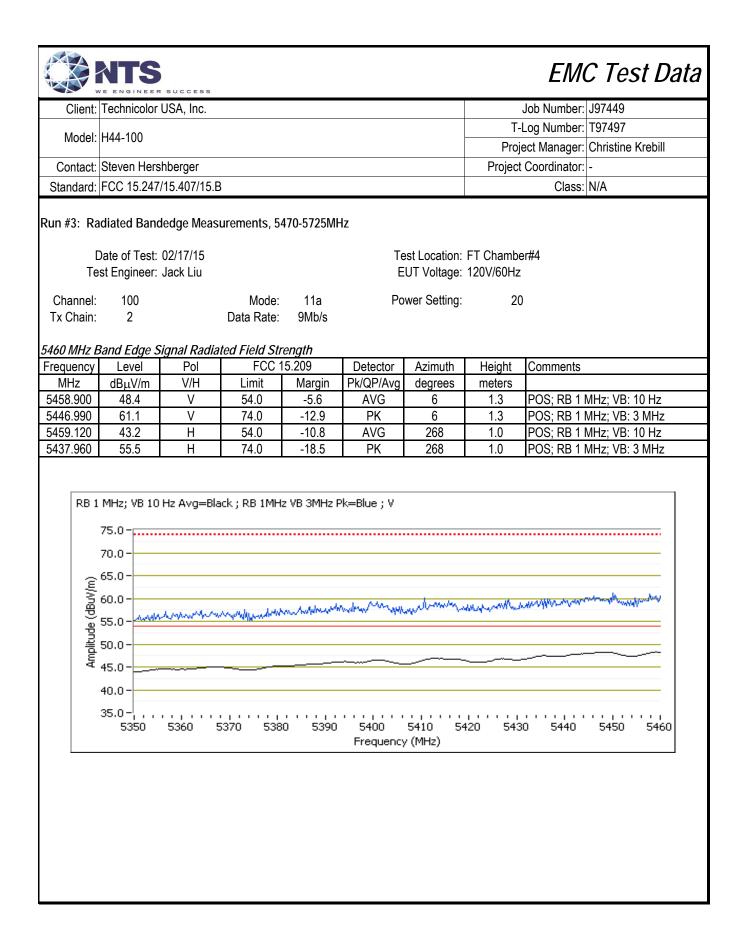


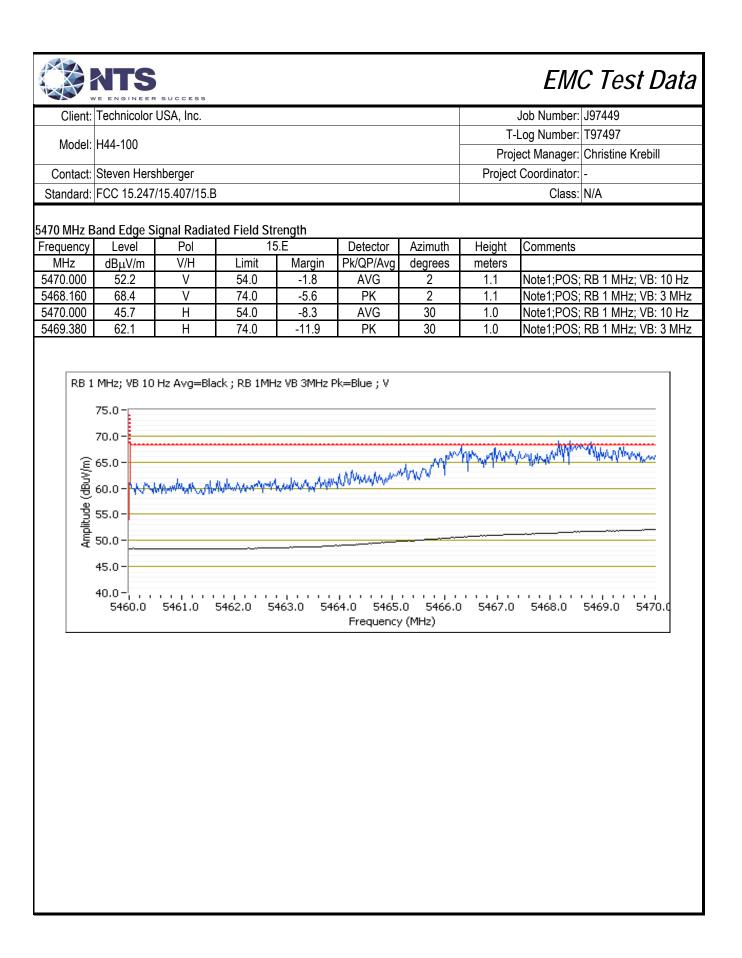
Unerit.	: Technicolor L	JSA, Inc.						Job Number:	J97449
Madal	: H44-100						T·	Log Number:	T97497
wouer.	. 144-100						Proj	ect Manager:	Christine Krebill
Contact:	: Steven Hersh	berger					Project	t Coordinator:	-
Standard:	: FCC 15.247/	15.407/15.E	3					Class:	N/A
)2/17/15	nal Radiated Mode: Data Rate:	Field Stren a 9Mb/s	Te E	st Location: UT Voltage: wer Setting:		<u>.</u>	
								-	
equency		Pol	FCC 1		Detector	Azimuth	Height	Comments	
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters		
150.000 147.440	51.7 67.7	V V	54.0 74.0	-2.3 -6.3	AVG PK	2	1.3 1.3		MHz; VB: 10 Hz MHz; VB: 3 MHz
150.000	45.9	 H	74.0 54.0	-0.3 -8.1	AVG	259	1.3		MHz; VB: 3 MHz
149.440	61.5	H	74.0	-12.5	PK	259	1.0		MHz; VB: 3 MHz
tude (dBuV/r	65.0 - 60.0 - 55.0 - 50.0 -	mahamh		hill hand hill have been a start where the second sec			~~~~	~~~~	munut
Ampli	40.0-	^	10 4650	4700 475	50 4800 Frequency	4850 490	0 4950	5000 505	5100 5150

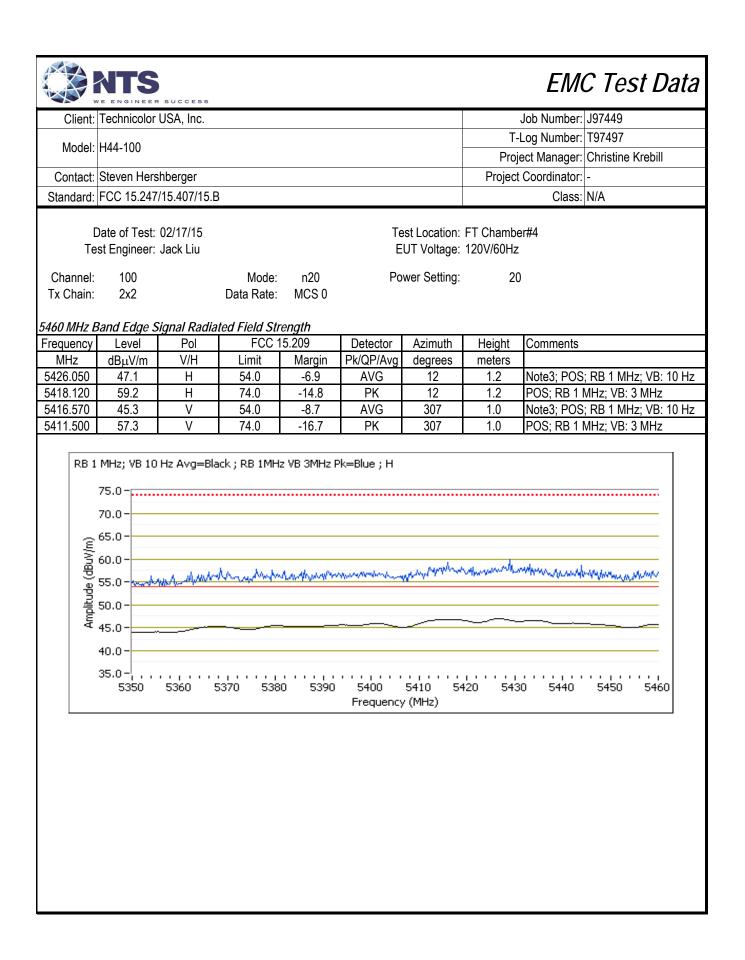
		SUCCESS						EMC Test Data
Client:	t: Technicolor USA, Inc.						Job Number: J97449	
Madal	1144 400						T-Log Number: T97497	
wodel:	H44-100						Project Manager: Christine Krebill	
Contact:	Steven Hershberger						Project Coordinator: -	
	: FCC 15.247/15.407/15.B						Class: N/A	
I	<i>50 MHz Band</i> Date of Test: est Engineer:	02/17/15	al Radiated	Field Stren	Te	est Location: UT Voltage:		
Channel: 36 Tx Chain: 2x2			Mode: n20 Power Setting Data Rate: MCS1			20		
Frequency	Level	Pol	FCC ²	15.209	Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
5150.000	50.6	V	54.0	-3.4	AVG	256	1.6	Note3; POS; RB 1 MHz; VB: 10 H
5149.920	64.1	V	74.0	-9.9	PK	256	1.6	POS; RB 1 MHz; VB: 3 MHz
5150.000	50.0	H	54.0	-4.0	AVG	334	1.0	Note3; POS; RB 1 MHz; VB: 10 H
5150.000	63.8	Н	74.0	-10.2	PK	334	1.0	POS; RB 1 MHz; VB: 3 MHz
Amplitude (dBuV/m)	65.0- 60.0- 55.0- 50.0-							
	45.0-							

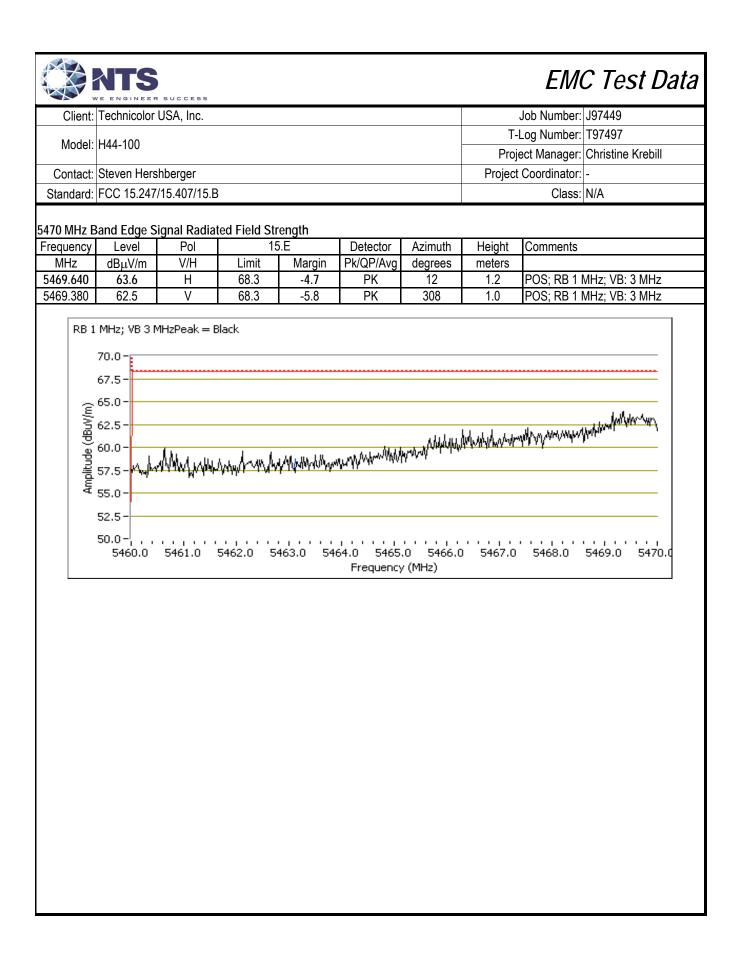
Client:	Technicolor I	JSA, Inc.						Job Number:	J97449
N4. 1.1	1144 400						T-	Log Number:	T97497
Model:	H44-100						Proj	ect Manager:	Christine Krebill
Contact:	Steven Hersl	nberger					Project	Coordinator:	-
Standard:	FCC 15.247/	15.407/15.E	3					Class:	N/A
I	adiated Band Date of Test: est Engineer: . 64	02/17/15	urements, 52 Mode:	250-5350M	Te E	est Location: UT Voltage: wer Setting:			
Tx Chain:	2	ianal Dadia	Data Rate:	9Mb/s		5			
requency	B <i>and Edge Sl</i> Level	<i>gnal Radia</i> Pol	FCC 1		Detector	Azimuth	Height	Comments	
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters		
350.000	48.0	V	54.0	-6.0	AVG	359	1.4	POS; RB 1	MHz; VB: 10 Hz
350.320	60.0	V	74.0	-14.0	PK	359	1.4		MHz; VB: 3 MHz
350.000	44.8	Н	54.0	-9.2	AVG	273	1.0		MHz; VB: 10 Hz
351.040	57.4	Н	74.0	-16.6	PK	273	1.0	POS; RB 1	MHz; VB: 3 MHz
Amplitude (dBuV/m)	40.0-	~	~						~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
	5350	5360 5	5370 538	0 5390	5400	5410 54	120 543	0 5440	5450 5460

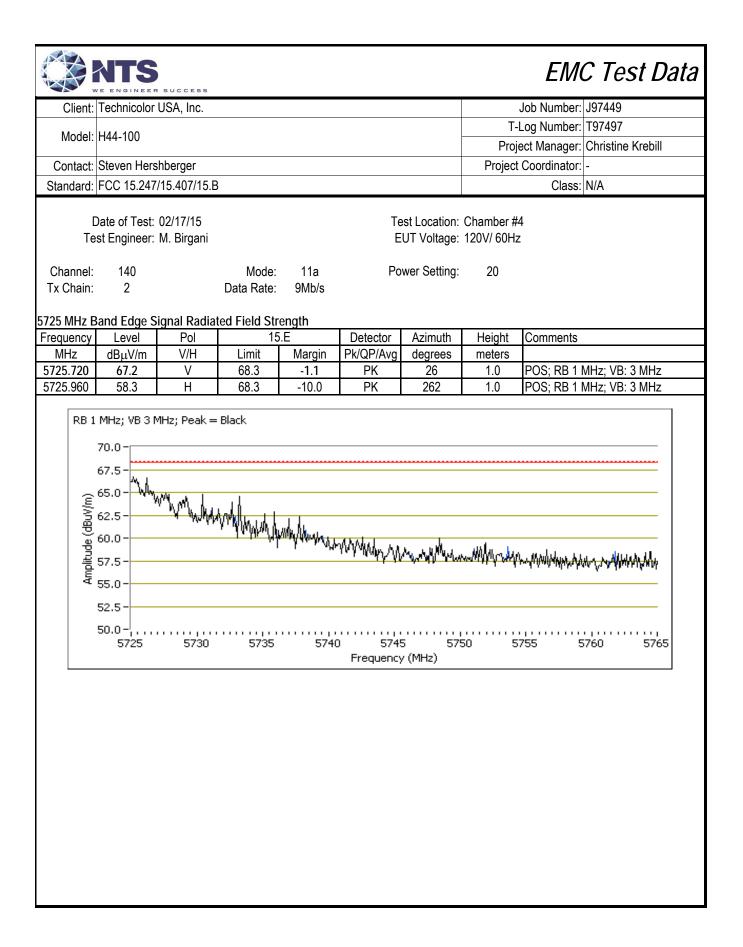
Client: Technicolor USA, Inc. Job Number: J97449 Model: H44-100 T-Log Number: T97497 Project Manager: Christine Krebi Project Coordinator: - Standard: FCC 15.247/15.407/15.B Class: N/A Channel: 64 Mode:: n20 Power Setting: 20 Tx Chain: 2x2 Data Rate: MCS0 MCS0 Standard: FCC 15.247/15.407/15.B Standard: FCC 15.247/15.407/15.B Class: N/A Channel: 64 Mode:: n20 Power Setting: 20 Tx Chain: 2x2 Data Rate: MCS0 MCS0 Standard: Frequency Level Pol FCC 15.209 Detector Azimuth Height Comments MHz dBµV/m V/H Limit Margin Pk/QP/Avg degrees meters 5350.000 49.4 H 54.0 -5.5 AVG 250 1.4 Note3: POS; RB 1 MHz; VB 30Hz YB 3351.840 61.9	Data
Model: H44-100 T-Log Number: T97497 Project Manager: Christine Krebi Contact: Steven Hershberger Project Coordinator: - Standard: FCC 15.247/15.407/15.B Class: N/A Channel: 64 Mode: n.20 Power Setting: 20 Tx Chain: 2x2 Data Rate: MCS0 MCS0 Standard: Frequency Level Pol FCC 15.209 Detector Azimuth Height Comments MHz dBµV/m V/H Limit Margin Pk/QP/Avg degrees meters 5350.000 49.4 H 54.0 -4.6 AVG 332 1.2 Note3; POS; RB 1 MHz; VB : 3 MHz 5350.000 48.5 V 54.0 -5.5 AVG 250 1.4 Note3; POS; RB 1 MHz; VB : 3 MHz 5351.840 61.9 V 74.0 -12.1 PK 250 1.4 POS; RB 1 MHz; VB : 3 MHz 60.0	
Model: H44-100 Project Manager Christine Krebi Contact: Steven Hershberger Project Coordinator: - Standard: FCC 15.247/15.407/15.B Class: N/A Channel: 64 Mode:: n20 Power Setting: 20 Tx Chain: 2x2 Data Rate: MCS0 Standated Field Strength Frequency Level Pol FCC 15.209 Detector Azimuth Height Comments MHz dBµU/m V/H Limit Margin Pk/QP/Avg degrees meters 5350.000 49.4 H 54.0 -4.6 AVG 332 1.2 Note3; POS; RB 1 MHz; VB 3 MHz 5350.000 48.5 V 54.0 -5.5 AVG 250 1.4 Note3; POS; RB 1 MHz; VB 3 MHz 5351.840 61.9 V 74.0 -12.1 PK 250 1.4 POS; RB 1 MHz; VB 3 MHz 60.0	
Contact: Steven Hershberger Project Coordinator: Standard: FCC 15.247/15.407/15.B Class: N/A Channel: 64 Mode: n20 Power Setting: 20 S350 MHz Band Edge Signal Radiated Field Strength Frequency Level Pol FCC 15.209 Detector Azimuth Height Comments MHz dBµV/m V/H Limit Margin Pk/QP/Avg degrees meters 5350.000 49.4 H 54.0 -4.6 AVG 332 1.2 Note3; POS; RB 1 MHz; VB 3 MHz 5350.000 48.5 V 54.0 -5.5 AVG 250 1.4 Note3; POS; RB 1 MHz; VB 3 MHz 5351.840 61.9 V 74.0 -12.1 PK 250 1.4 POS; RB 1 MHz; VB 3 MHz 70.0 60.0 - - - - - - - - - - - - - - - - - - - <	
Standard: FCC 15.247/15.407/15.B Class: N/A Channel: 64 Mode: n.20 Power Setting: 20 Tx Chain: 2x2 Data Rate: MCS0 20 3350 MHz Band Edge Signal Radiated Field Strength Frequency Level Pol FCC 15.209 Detector Azimuth Height Comments MHz dBµV/m V/H Limit Margin Pk/QP/Avg degrees meters 5350.000 49.4 H 54.0 -4.6 AVG 3322 1.2 Note3; POS; RB 1 MHz; VB: 3 MHz 5350.000 48.5 V 54.0 -5.5 AVG 250 1.4 Note3; POS; RB 1 MHz; VB: 3 MHz 5351.840 61.9 V 74.0 -12.1 PK 250 1.4 POS; RB 1 MHz; VB: 3 MHz 65.0	
Channel: 64 Mode: n20 Power Setting: 20 Tx Chain: 2x2 Data Rate: MCS0 5350 MHz Band Edge Signal Radiated Field Strength Environments Meight Comments Comments Meight Comments Meight Comments MHz dBµV/m V/H Limit Margin Pk/QP/Avg degrees meters 5350.000 49.4 H 54.0 -4.6 AVG 332 1.2 Note3; POS; RB 1 MHz; VB 3 MHz; VB 300 5350.000 48.5 V 54.0 -5.5 AVG 250 1.4 Note3; POS; RB 1 MHz; VB 3 MHz; VB 3351.840 61.9 V 74.0 -12.1 PK 250 1.4 Note3; POS; RB 1 MHz; VB 3 Mz; VB 3	
Tx Chain: 2x2 Data Rate: MCS0 S350 MHz Band Edge Signal Radiated Field Strength Frequency Level Pol FCC 15.209 Detector Azimuth Height Comments MHz dBµV/m V/H Limit Margin Pk/QP/Avg degrees meters 5350.000 49.4 H 54.0 -4.6 AVG 332 1.2 Note3; POS; RB 1 MHz; VB 3 MHz; VB 350.000 63.3 H 74.0 -10.7 PK 332 1.2 POS; RB 1 MHz; VB 3 MHz; VB 3550.000 48.5 V 54.0 -5.5 AVG 250 1.4 Note3; POS; RB 1 MHz; VB 3 MHz; VB 35351.840 61.9 V 74.0 -12.1 PK 250 1.4 POS; RB 1 MHz; VB 3 MHz; Mz; Mz; Mz; Mz; Mz; Mz; Mz; Mz; Mz; M	
5350 MHz Band Edge Signal Radiated Field Strength Frequency Level Pol FCC 15.209 Detector Azimuth Height Comments MHz dBµV/m V/H Limit Margin Pk/QP/Avg degrees meters 5350.000 49.4 H 54.0 -4.6 AVG 332 1.2 Note3; POS; RB 1 MHz; VB: 3 MHz 5350.000 63.3 H 74.0 -10.7 PK 332 1.2 POS; RB 1 MHz; VB: 3 MHz 5350.000 48.5 V 54.0 -5.5 AVG 250 1.4 Note3; POS; RB 1 MHz; VB: 3 MHz 5351.840 61.9 V 74.0 -12.1 PK 250 1.4 POS; RB 1 MHz; VB: 3 MHz 75.0 -	
Frequency Level Pol FCC 15.209 Detector Azimuth Height Comments MHz dBµV/m V/H Limit Margin Pk/QP/Avg degrees meters 5350.000 49.4 H 54.0 -4.6 AVG 332 1.2 Note3; POS; RB 1 MHz; VB 5350.300 63.3 H 74.0 -10.7 PK 332 1.2 POS; RB 1 MHz; VB: 3 MHz 5350.000 48.5 V 54.0 -5.5 AVG 250 1.4 Note3; POS; RB 1 MHz; VB: 3 MHz 5351.840 61.9 V 74.0 -12.1 PK 250 1.4 POS; RB 1 MHz; VB: 3 MHz 75.0	
Frequency Level Pol FCC 15.209 Detector Azimuth Height Comments MHz dBµV/m V/H Limit Margin Pk/QP/Avg degrees meters 5350.000 49.4 H 54.0 -4.6 AVG 332 1.2 Note3; POS; RB 1 MHz; VB 5350.300 63.3 H 74.0 -10.7 PK 332 1.2 POS; RB 1 MHz; VB: 3 MHz 5350.000 48.5 V 54.0 -5.5 AVG 250 1.4 Note3; POS; RB 1 MHz; VB: 3 MHz 5351.840 61.9 V 74.0 -12.1 PK 250 1.4 POS; RB 1 MHz; VB: 3 MHz 75.0	
MHz dBµV/m V/H Limit Margin Pk/QP/Avg degrees meters 5350.000 49.4 H 54.0 -4.6 AVG 332 1.2 Note3; POS; RB 1 MHz; VB 5350.000 5350.000 48.5 V 54.0 -5.5 AVG 250 1.4 Note3; POS; RB 1 MHz; VB 5351.840 61.9 V 74.0 -12.1 PK 250 1.4 Note3; POS; RB 1 MHz; VB: 3 MHz VB: 3 MHz 5351.840 61.9 V 74.0 -12.1 PK 250 1.4 POS; RB 1 MHz; VB: 3 MHz 75.0	
5350.000 49.4 H 54.0 -4.6 AVG 332 1.2 Note3; POS; RB 1 MHz; VB 5350.000 63.3 H 74.0 -10.7 PK 332 1.2 POS; RB 1 MHz; VB: 3 MHz; 5350.000 48.5 V 54.0 -5.5 AVG 250 1.4 Note3; POS; RB 1 MHz; VB 5351.840 61.9 V 74.0 -12.1 PK 250 1.4 POS; RB 1 MHz; VB: 3 MHz VB 1 MHz; VB 10 Hz Avg=Black ; RB 1 MHz VB 3MHz Pk=Blue ; H 75.0 - - - - 65.0 -	
5350.000 48.5 V 54.0 -5.5 AVG 250 1.4 Note3; POS; RB 1 MHz; VB 5351.840 61.9 V 74.0 -12.1 PK 250 1.4 POS; RB 1 MHz; VB: 3 MHz RB 1 MHz; VB 10 Hz Avg=Black ; RB 1MHz VB 3MHz Pk=Blue ; H 75.0	: 10 Hz
5351.840 61.9 V 74.0 -12.1 PK 250 1.4 POS; RB 1 MHz; VB: 3 MHz RB 1 MHz; VB 10 Hz Avg=Black ; RB 1MHz VB 3MHz Pk=Blue ; H 75.0 - - - - 70.0 - 65.0 - - - - 65.0 - - - - - 90 55.0 - - - - 91 45.0 - - - -	
RB 1 MHz; VB 10 Hz Avg=Black ; RB 1MHz VB 3MHz Pk=Blue ; H 75.0 - 70.0 - 65.0 - 65.0 - 90 55.0 - 91 45.0 -	
75.0 - 70.0 - 65.0 - (Winge) 55.0 - 99 50.0 - 45.0 -	<u>'</u>
40.0 - 35.0 - 30.0 - 5350 5360 5370 5380 5390 5400 5410 5420 5430 5440 5450 544 Frequency (MHz)	

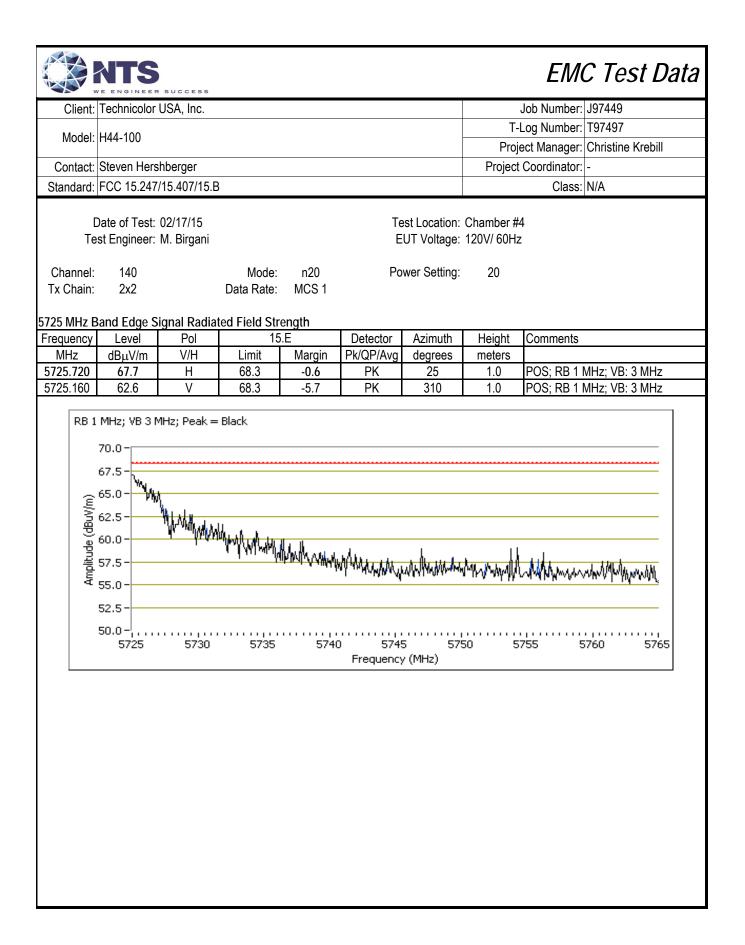


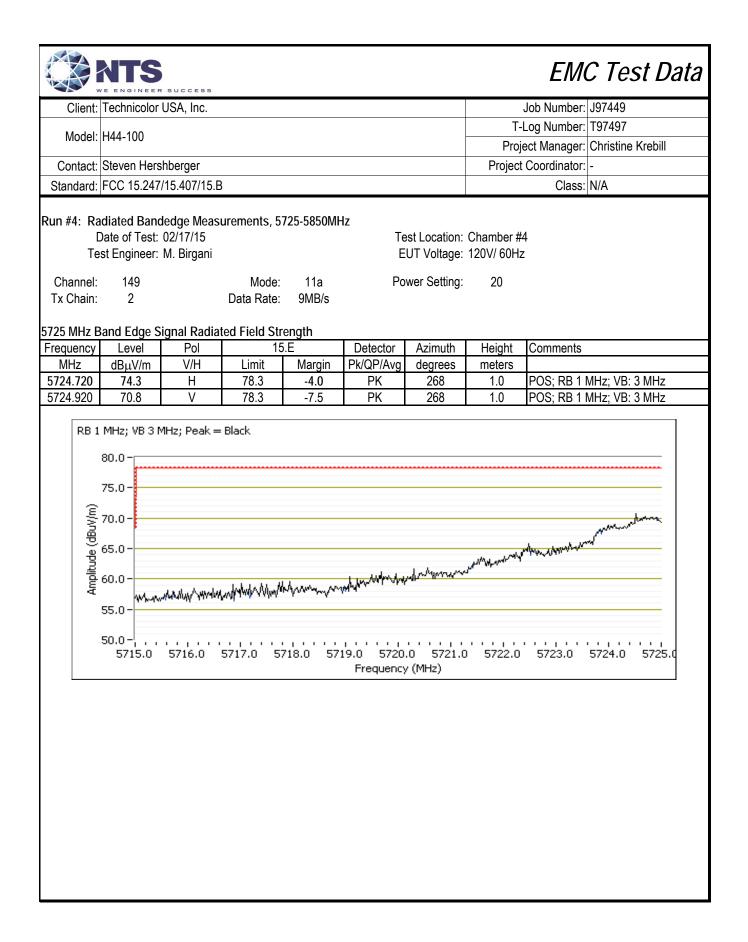


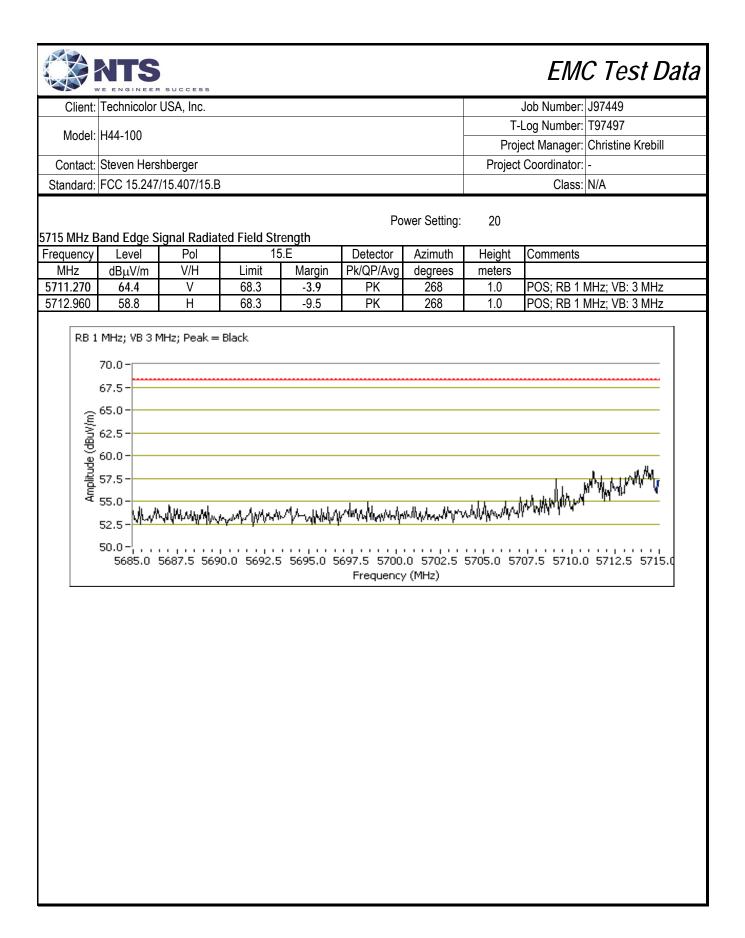


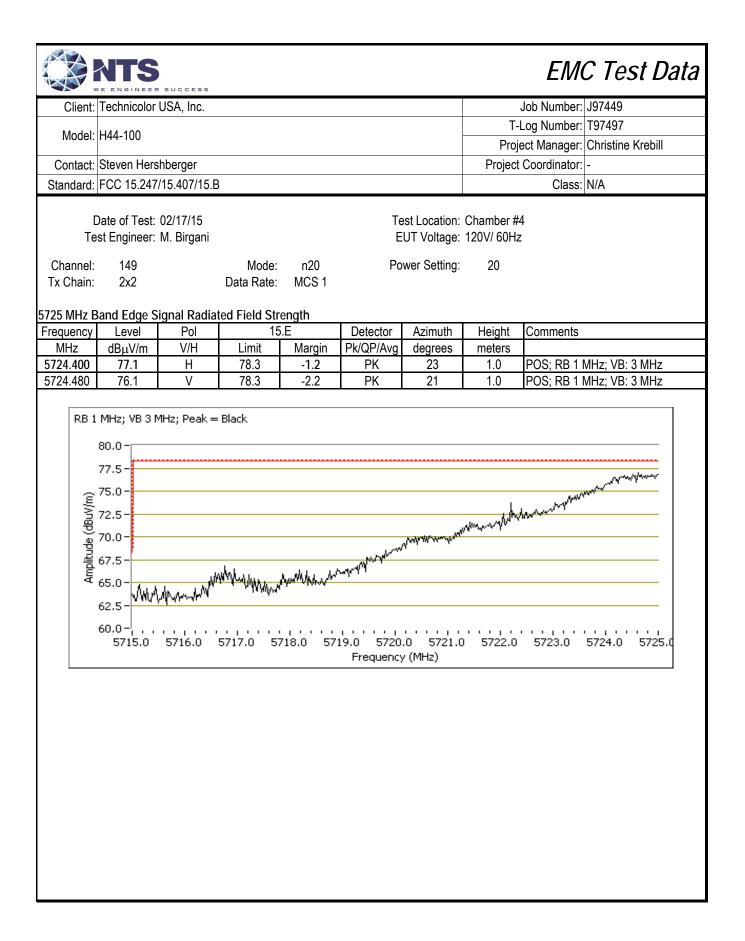


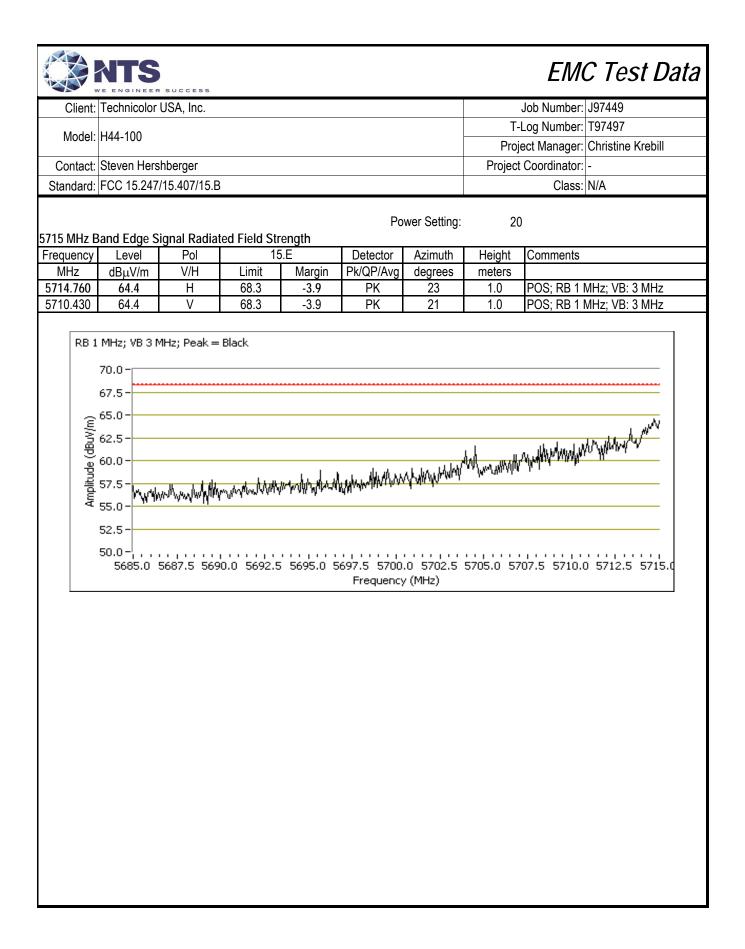










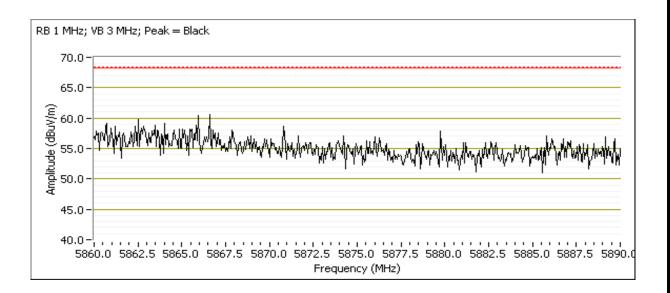


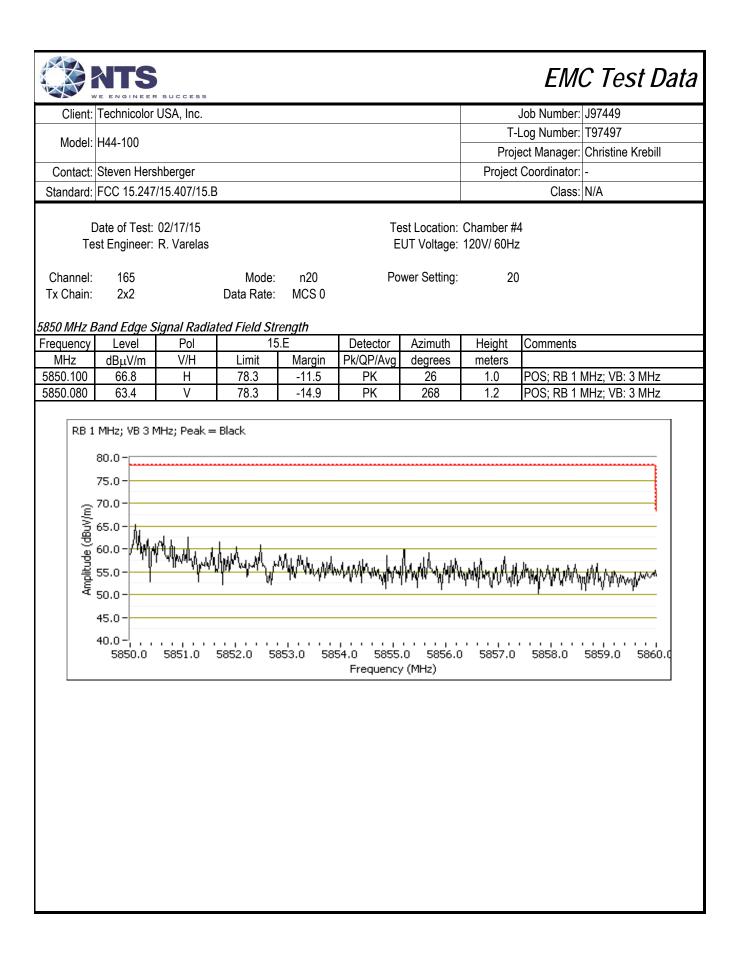
		SUCCESS						EM	C Test D	ata
Client:	Technicolor	USA, Inc.						Job Number:	J97449	
Madalı	1144 400						T-L	og Number:	T97497	
Model:	H44-100						Proje	ect Manager:	Christine Krebill	
Contact:	Steven Hers	shberger					Project	Coordinator:	-	
Standard:	FCC 15.247	/15.407/15.E	}					Class:	N/A	
	Date of Test: st Engineer:					est Location: UT Voltage:				
Channel: Tx Chain:	165Mode:11aPower Setting:202Data Rate:9MB/s									
			ted Field Str							
Frequency	Level	Pol	15		Detector	Azimuth	Height	Comments		
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters			
5851.100 5850.260	66.8 64.9	V H	78.3 78.3	-11.5 -13.4	PK PK	10 360	1.0 1.0		MHz; VB: 3 MHz MHz; VB: 3 MHz	
Amplitude (dBuV/m)	MHz; VB 3 1 80.0 - 75.0 - 65.0 - 60.0 - 55.0 - 50.0 - 45.0 - 40.0 - 5850.0	esenting the second	northe and the second		₩ [/] ₩ [/] ₩/₩/₩/ 54.0 5855 Frequency		м ////////////////////////////////////	т иницини `5858.0`	₩ ₩₩₩₩₩ 5859.0 5860.	C

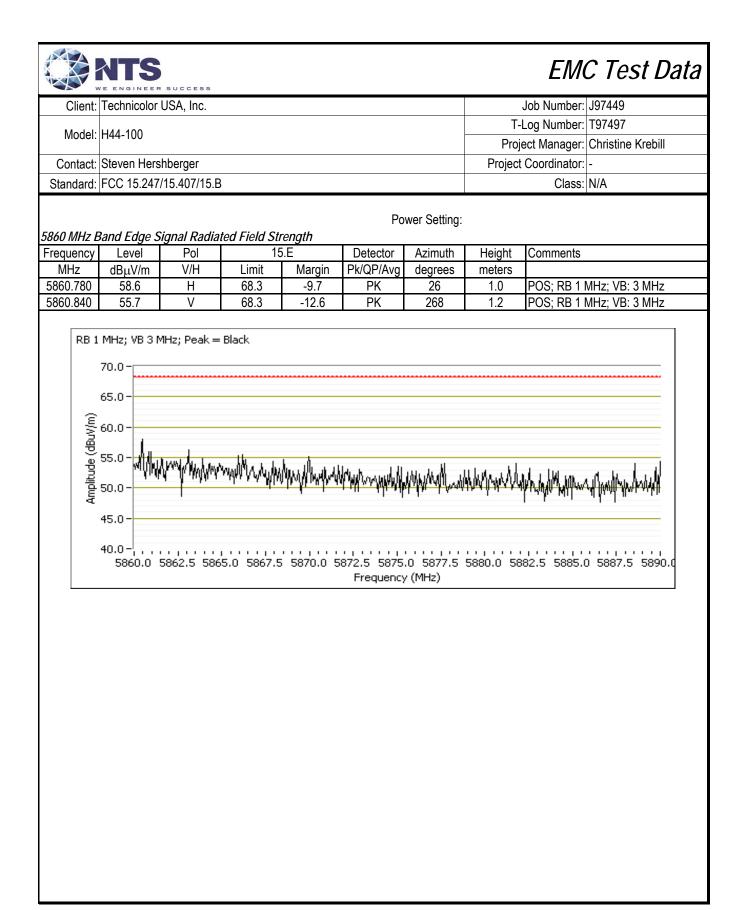
	E ENGINEER SUCCESS	EMO	C Test Data
Client:	Technicolor USA, Inc.	Job Number:	J97449
Madal	H44-100	T-Log Number:	Т97497
wouer.	H44-100	Project Manager:	Christine Krebill
Contact:	Steven Hershberger	Project Coordinator:	-
Standard:	FCC 15.247/15.407/15.B	Class:	N/A

5860 MHz Band Edge Signal Radiated Field Strength

	<u> </u>	5		- J.				
Frequency	Level	Pol	15	5.E	Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
5860.900	62.2	V	68.3	-6.1	PK	29	1.1	POS; RB 1 MHz; VB: 3 MHz
5884.350	54.7	Н	68.3	-13.6	PK	360	1.0	POS; RB 1 MHz; VB: 3 MHz







Client:	Technicolor	USA, Inc.				Job Number:	J97449			
						T-Log Number:	T97497			
Model:	H44-100					Project Manager:				
Contact [.]	Steven Hers	shberger				Project Coordinator:				
		/15.407/15.B				Class: N/A				
	R	SS 210 a	and FCC	15.407 (UNII) Radiated Sp	ourious Emissior	ıs			
est Spec	cific Detai	s								
ost opot	Objective:				perform final qualification	n testing of the EUT with	respect to the			
he EUT an		pport equipm			turntable for radiated spur					
		Ū	asurement a	antenna was	located 3 meters from the	EUI, unless otherwise r	noted.			
mbient	Condition	S:								
mbient	Condition	Т	emperature:							
(mbient)	Condition	Т	emperature: el. Humidity:							
		T Ri								
	Condition:	T Ri		35-38						
ummary	of Result	T Ri S		35-38 Passing	%	Limit	Result / Maroin			
		T Ri	el. Humidity:	35-38 Passing Power		Limit	Result / Margin			
ummary Run #	of Result	T Re S Channel	el. Humidity: Target Power	35-38 Passing Power Setting	%	Limit	Result / Margin			
ummary Run #	of Result	T Re S Channel	Target Power M modes to	35-38 Passing Power Setting determine the	% Test Performed		Result / Margin			
ummary Run # cans on "c	of Result Mode enter" chann	T S Channel el in all OFD 40 - 5200MHz	el. Humidity: Target Power	35-38 Passing Power Setting	% Test Performed e worst case mode. Radiated Emissions, 1 - 40 GHz	Limit FCC 15.209 / 15 E	50.6 dBµV/m @ 1150 MHz (-3.4 dB)			
ummary Run # cans on "c	of Result Mode enter" chann a	T R Channel el in all OFD 40 - 5200MHz 40 -	el. Humidity: Target Power <u>M modes to</u> 20	35-38 Passing Power Setting determine the 20	% Test Performed e worst case mode. Radiated Emissions, 1 - 40 GHz Radiated Emissions,	FCC 15.209 / 15 E	50.6 dBµV/m @ 1150 MHz (-3.4 dB) 51.8 dBµV/m @ 1150			
ummary Run # cans on "c	of Result Mode enter" chann a (chain 1) a (chain 2)	T R Channel el in all OFD 40 - 5200MHz 40 - 5200MHz	Target Power M modes to	35-38 Passing Power Setting determine the	% Test Performed e worst case mode. Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz		50.6 dBµV/m @ 1150 MHz (-3.4 dB) 51.8 dBµV/m @ 1150 MHz (-2.2 dB)			
ummary Run # cans on "c	of Result Mode enter" chann a (chain 1) a (chain 2) n20	T R Channel el in all OFD 40 - 5200MHz 40 - 5200MHz 40 -	el. Humidity: Target Power <u>M modes to</u> 20 20	35-38 Passing Power Setting determine the 20 20	% Test Performed e worst case mode. Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz Radiated Emissions,	FCC 15.209 / 15 E	50.6 dBµV/m @ 1150 MHz (-3.4 dB) 51.8 dBµV/m @ 1150 MHz (-2.2 dB) 51.6 dBµV/m @ 1150			
ummary Run # cans on "c 1 UNII-1	of Result Mode enter" chann a (chain 1) a (chain 2) n20 (2x2)	T Re Channel el in all OFD 40 - 5200MHz 40 - 5200MHz 40 - 5200MHz	el. Humidity: Target Power <u>M modes to 0</u> 20 20 20	35-38 Passing Power Setting determine the 20 20 20	% Test Performed e worst case mode. Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E FCC 15.209 / 15 E	50.6 dBµV/m @ 1150 MHz (-3.4 dB) 51.8 dBµV/m @ 1150			
ummary Run # cans on "c 1 UNII-1	of Result Mode enter" chann a (chain 1) a (chain 2) n20 (2x2) nts on low ar	T R Channel el in all OFD 40 - 5200MHz 40 - 5200MHz 40 - 5200MHz ad high chanr	el. Humidity: Target Power <u>M modes to</u> 20 20 20	35-38 Passing Power Setting determine the 20 20 20	% Test Performed e worst case mode. Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz mode.	FCC 15.209 / 15 E FCC 15.209 / 15 E FCC 15.209 / 15 E	50.6 dBµV/m @ 1150 MHz (-3.4 dB) 51.8 dBµV/m @ 1150 MHz (-2.2 dB) 51.6 dBµV/m @ 1150 MHz (-2.4 dB)			
ummary Run # cans on "c 1 UNII-1 easureme	of Result Mode enter" chann a (chain 1) a (chain 2) n20 (2x2) nts on low ar a	T R Channel el in all OFD 40 - 5200MHz 40 - 5200MHz 40 - 5200MHz ad high chann 36 -	el. Humidity: Target Power <u>M modes to</u> 20 20 20	35-38 Passing Power Setting determine the 20 20 20	% Test Performed e worst case mode. Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz mode. Radiated Emissions,	FCC 15.209 / 15 E FCC 15.209 / 15 E	50.6 dBµV/m @ 1150 MHz (-3.4 dB) 51.8 dBµV/m @ 1150 MHz (-2.2 dB) 51.6 dBµV/m @ 1150 MHz (-2.4 dB) 51.4 dBµV/m @ 1150			
ummary Run # cans on "c 1 UNII-1 easureme 2	y of Result Mode enter" chann a (chain 1) a (chain 2) n20 (2x2) nts on low ar a (chain 2)	T R Channel el in all OFD 40 - 5200MHz 40 - 5200MHz 40 - 5200MHz 36 - 5180MHz	el. Humidity: Target Power <u>V modes to</u> 20 20 20 20 20 20 20 20	35-38 Passing Power Setting determine the 20 20 20 -case OFDM	% Test Performed e worst case mode. Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz Mode. Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E FCC 15.209 / 15 E FCC 15.209 / 15 E FCC 15.209 / 15 E	50.6 dBµV/m @ 1150 MHz (-3.4 dB) 51.8 dBµV/m @ 1150 MHz (-2.2 dB) 51.6 dBµV/m @ 1150 MHz (-2.4 dB) 51.4 dBµV/m @ 1150 MHz (-2.6 dB)			
ummary Run # cans on "c 1 UNII-1 easureme	of Result Mode enter" chann a (chain 1) a (chain 2) n20 (2x2) nts on low ar a (chain 2) a	T R Channel el in all OFDI 40 - 5200MHz 40 - 5200MHz 40 - 5200MHz 40 - 5200MHz 40 - 5200MHz 40 - 5200MHz 48 -	Target Power M modes to 20 20 20 20 nels in worst	35-38 Passing Power Setting determine the 20 20 20 -case OFDM	% Test Performed e worst case mode. Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz Mode. Radiated Emissions, 1 - 40 GHz Radiated Emissions,	FCC 15.209 / 15 E FCC 15.209 / 15 E FCC 15.209 / 15 E	50.6 dBµV/m @ 1150 MHz (-3.4 dB) 51.8 dBµV/m @ 1150 MHz (-2.2 dB) 51.6 dBµV/m @ 1150 MHz (-2.4 dB) 51.4 dBµV/m @ 1150 MHz (-2.6 dB) 45.2 dBµV/m @ 4920			
ummary Run # cans on "c 1 UNII-1 easureme 2 UNII-1	y of Result Mode enter" chann a (chain 1) a (chain 2) n20 (2x2) nts on low ar a (chain 2) a (chain 2)	T Ref S Channel el in all OFDI 40 - 5200MHz 40 - 5200MHz 40 - 5200MHz 40 - 5200MHz 48 - 5240MHz	el. Humidity: Target Power <u>M modes to</u> 20 20 20 20 20 20 20 20 20 20 20	35-38 Passing Power Setting determine the 20 20 20 -case OFDM 20 20	% Test Performed e worst case mode. Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz Mode. Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E FCC 15.209 / 15 E FCC 15.209 / 15 E FCC 15.209 / 15 E	50.6 dBµV/m @ 1150 MHz (-3.4 dB) 51.8 dBµV/m @ 1150 MHz (-2.2 dB) 51.6 dBµV/m @ 1150 MHz (-2.4 dB) 51.4 dBµV/m @ 1150 MHz (-2.6 dB)			
ummary Run # cans on "c 1 UNII-1 easureme 2 UNII-1	y of Result Mode enter" chann a (chain 1) a (chain 2) n20 (2x2) nts on low ar a (chain 2) a (chain 2) enter" chann	T Ref Channel el in all OFD 40 - 5200MHz 40 - 5200MHz 40 - 5200MHz 40 - 5200MHz 48 - 5180MHz 48 - 5240MHz el in all OFD	el. Humidity: Target Power 20 20 20 20 20 20 20 20 20 20 20 20 20	35-38 Passing Power Setting determine the 20 20 -case OFDM 20 20 20 20 20	% Test Performed e worst case mode. Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz e worst case mode.	FCC 15.209 / 15 E FCC 15.209 / 15 E FCC 15.209 / 15 E FCC 15.209 / 15 E FCC 15.209 / 15 E	50.6 dBµV/m @ 1150 MHz (-3.4 dB) 51.8 dBµV/m @ 1150 MHz (-2.2 dB) 51.6 dBµV/m @ 1150 MHz (-2.4 dB) 51.4 dBµV/m @ 1150 MHz (-2.6 dB) 45.2 dBµV/m @ 4920 MHz (-8.8 dB)			
ummary Run # cans on "c 1 UNII-1 easureme 2 UNII-1 cans on "c	y of Result Mode enter" chann a (chain 1) a (chain 2) n20 (2x2) nts on low ar a (chain 2) a (chain 2) enter" chann a	T R Channel el in all OFD 40 - 5200MHz 40 - 5200MHz 40 - 5200MHz 40 - 5200MHz 48 - 5180MHz 48 - 5240MHz el in all OFD 60 -	el. Humidity: Target Power <u>M modes to</u> 20 20 20 20 20 20 20 20 20 20 20	35-38 Passing Power Setting determine the 20 20 20 -case OFDM 20 20	% Test Performed e worst case mode. Radiated Emissions, 1 - 40 GHz Radiated Emissions,	FCC 15.209 / 15 E FCC 15.209 / 15 E FCC 15.209 / 15 E FCC 15.209 / 15 E	50.6 dBµV/m @ 1150 MHz (-3.4 dB) 51.8 dBµV/m @ 1150 MHz (-2.2 dB) 51.6 dBµV/m @ 1150 MHz (-2.4 dB) 51.4 dBµV/m @ 1150 MHz (-2.6 dB) 45.2 dBµV/m @ 4920 MHz (-8.8 dB) 50.9 dBµV/m @ 1150			
Run # Cans on "c 1 UNII-1 easureme 2 UNII-1	y of Result Mode enter" chann a (chain 1) a (chain 2) n20 (2x2) nts on low ar a (chain 2) a (chain 2) enter" chann	T Ref Channel el in all OFD 40 - 5200MHz 40 - 5200MHz 40 - 5200MHz 40 - 5200MHz 48 - 5180MHz 48 - 5240MHz el in all OFD	el. Humidity: Target Power 20 20 20 20 20 20 20 20 20 20 20 20 20	35-38 Passing Power Setting determine the 20 20 -case OFDM 20 20 20 20 20	% Test Performed e worst case mode. Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz Radiated Emissions, 1 - 40 GHz e worst case mode.	FCC 15.209 / 15 E FCC 15.209 / 15 E FCC 15.209 / 15 E FCC 15.209 / 15 E FCC 15.209 / 15 E	50.6 dBµV/m @ 1150 MHz (-3.4 dB) 51.8 dBµV/m @ 1150 MHz (-2.2 dB) 51.6 dBµV/m @ 1150 MHz (-2.4 dB) 51.4 dBµV/m @ 1150 MHz (-2.6 dB) 45.2 dBµV/m @ 4920			

		RSUCCESS				EM	C Test Data
Client:	Technicolor	USA, Inc.				Job Number:	J97449
						T-Log Number:	T97497
Model:	H44-100					Project Manager:	Christine Krebill
Contact:	Steven Hers	shberger				Project Coordinator:	-
		/15.407/15.B				Class:	
Run #	Mode	Channel	Target Power	Passing Power Setting	Test Performed	Limit	Result / Margin
Measureme	nts on low ar	nd high chani	nels in worst	-case OFDM			
4	a (chain 2)	52 - 5260MHz	20	20	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	51.1 dBµV/m @ 1150.0 MHz (-2.9 dB)
UNII-2A	a (chain 2)	64 - 5320MHz	20	20	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	51.1 dBµV/m @ 1150.0 MHz (-2.9 dB)
Scans on "c	enter" chann		M modes to	determine the	e worst case mode.		
5	a (chain 2)	116 - 5580MHz	20	20	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	50.9 dBµV/m @ 1150.0 MHz (-3.1 dB)
UNII-2C	n20	116 - 5580MHz	20	20	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	51.7 dBµV/m @ 5371.0 MHz (-2.3 dB)
Measureme	nts on low ar	nd high chani	nels in worst	case OFDM			
6	n20	100 - 5500MHz	20	20	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	50.2 dBµV/m @ 1150.0 MHz (-3.8 dB)
UNII-2C	n20	140- 5700MHz	20	20	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	52.7 dBµV/m @ 5350.4 MHz (-1.3 dB)
Scans on "c	enter" chann		M modes to	determine the	e worst case mode.		
7	a (chain 2)	157 - 5785MHz	20	20	Radiated Emissions 1 - 40 GHz	FCC 15.209 / 15 E	50.6 dBµV/m @ 1150.0 MHz (-3.4 dB)
UNII-3	n20	157 - 5785MHz	20	20	Radiated Emissions 1 - 40 GHz	FCC 15.209 / 15 E	50.5 dBµV/m @ 1150.0 MHz (-3.5 dB)
Measureme	nts on low ar	nd high chani	nels in worst	-case OFDM	mode.		-
8	n20	149 - 5745MHz	20	20	Radiated Emissions 1 - 40 GHz	FCC 15.209 / 15 E	51.0 dBµV/m @ 1150.0 MHz (-3.0 dB)
UNII-3	n20	165 - 5825MHz	20	20	Radiated Emissions 1 - 40 GHz	FCC 15.209 / 15 E	50.8 dBµV/m @ 1150.0 MHz (-3.2 dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033 Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time Unless otherwise stated/noted, emission has duty cycle ≥ 98% and was measured using RBW=1MHz, VBW=10Hz, peak detector, linear average mode, auto sweep time, max hold.

	E ENGINEER SUCCESS	EMO	C Test Data
Client:	Technicolor USA, Inc.	Job Number:	J97449
Madal	H44-100	T-Log Number:	Т97497
woder.	H44-100	Project Manager:	Christine Krebill
Contact:	Steven Hershberger	Project Coordinator:	-
Standard:	FCC 15.247/15.407/15.B	Class:	N/A

Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
11a	9Mb/s	0.99	Yes	-	0	0	-
n20	MCS1	0.978	Yes	-	0.10	0.19	-

Sample Notes

Sample S/N: L044A505250029 Driver: 5.99 RC188.10 Antenna: Airgain N2420DS / N2415D2

Measurement Specific Notes:

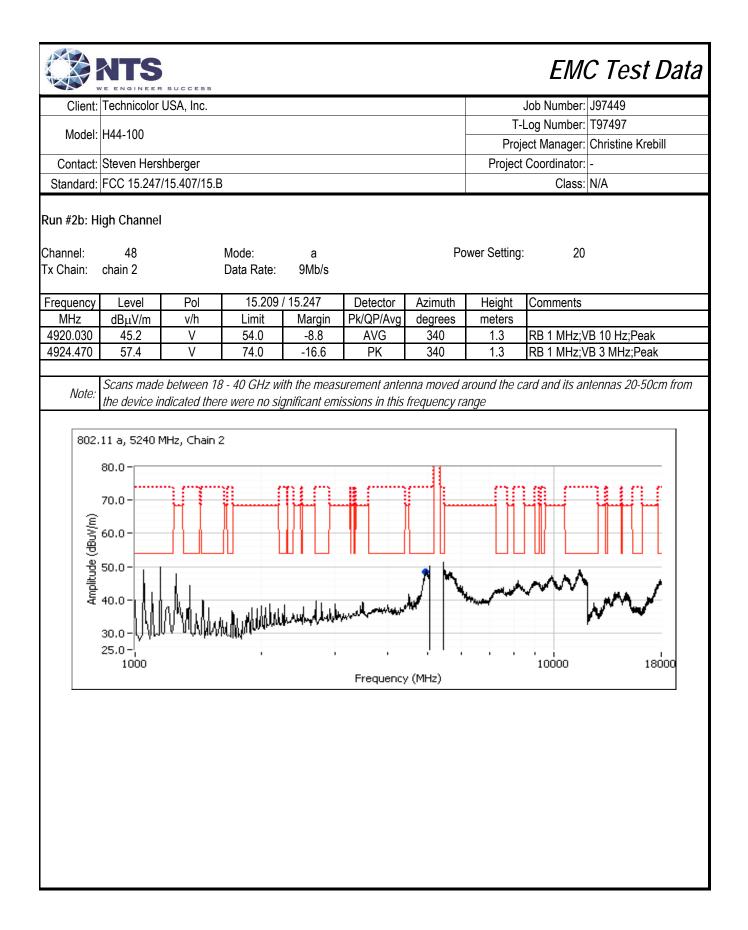
Note 1:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m) or -17dBm/MHz eirp (78.3dBuV/m) . The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector). Per KDB 789033 G 2) c) i) , compliance can be demonstrated by meeing the average and peak limits of 15.209, as an alternative.
Note 2:	For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 3:	Emission has duty cycle ≥ 98%, average measurement performed: RBW=1MHz, VBW=3MHz, RMS, Power averaging, auto
note 5.	sweep, trace average 100 traces
Note 4:	Emission has duty cycle < 98%, but constant, average measurement performed: RBW=1MHz, VBW=10Hz, peak detector,
Note 4.	linear averaging, auto sweep, trace average 100 * 1/DC traces, measurement corrected by Linear Voltage correction factor
Note 7:	Plots of the average and peak bandedge do not account for any duty cycle correction. Refer to the tabluar results for final
note 7.	measurements.

	: Technicolor l	JSA, Inc.						Job Number:	J97449
Mar al al							T-	Log Number:	T97497
woder	l: H44-100						Proj	ect Manager:	Christine Krebill
Contact	: Steven Hersł	nberger					Project	Coordinator:	-
Standard	: FCC 15.247/	15.407/15.E	}					Class:	N/A
T T	adiated Spuric Date of Test: 2 est Engineer: 5 Fest Location: 1 Center Channe	2/19/15, 2/2 Jack Liu / Ra FT Chambe	0/15 afael Varelas		C Cor	n the 5150-5 onfig. Used: ifig Change: UT Voltage:	2		
hannel: ‹ Chain:	40 chain 1		Mode: Data Rate:	a 9Mb/s		Po	wer Setting	20	
requency	/ Level	Pol	15.209) / 15E	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
150.030		V	54.0	-3.4	AVG	258	1.0		B 10 Hz;Peak
150.080		V	74.0	-21.9	PK	258	1.0	,	B 3 MHz;Peak
049.990		V	54.0	-5.1	AVG	62	1.3		B 10 Hz;Peak
049.970		V	74.0	-23.2	PK	62	1.3		B 3 MHz;Peak
250.000 250.070		V V	68.3 68.3	-20.4 -18.0	AVG PK	245 245	1.0 1.0		B 10 Hz;Peak B 3 MHz;Peak
802	2.11a, 5200 M 80.0 - 70.0 -				issions in this				
Amolitude (dBuV/m)	60.0 - 50.0 - 40.0 - 30.0 - 25.0 - 1000		N L		atter have not been a			· 10000	

	Technicolor I	SUCCESS						Job Number: J97449		
Oliont.		JSA, IIIC.						Log Number: T97497		
Model:	H44-100							ect Manager: Christine Krebill		
Contrati	Stoven Herel	horaor					-			
	Steven Hers	-	`				Project Coordinator: - Class: N/A			
Standard:	FCC 15.247/	15.407/15.6	3					Class: N/A		
≀un #1b: C	Center Chann	el								
Channel:	40		Mode:	а		Po	wer Setting	: 20		
	chain 2		Data Rate:	9Mb/s		10	wer ootting	. 20		
requency	Level	Pol	15.209	/ 15E	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
1149.990	51.8	V	54.0	-2.2	AVG	74	1.1	RB 1 MHz;VB 10 Hz;Peak		
1150.110	53.1	V	74.0	-20.9	PK	74	1.1	RB 1 MHz;VB 3 MHz;Peak		
050.010	48.8	V	54.0	-5.2	AVG	63	1.2	RB 1 MHz;VB 10 Hz;Peak		
050.010	50.5	V	74.0	-23.5	PK	63	1.2	RB 1 MHz;VB 3 MHz;Peak		
1960.250	48.2	V	54.0	-5.8	AVG	330	1.5	RB 1 MHz;VB 10 Hz;Peak		
943.450	59.3	V	74.0	-14.7	PK	330	1.5	RB 1 MHz;VB 3 MHz;Peak		
249.990	49.1	V	68.3	-19.2	AVG	247	1.0	RB 1 MHz;VB 10 Hz;Peak		
250.030	50.8	V	68.3	-17.5	PK	247	1.0	RB 1 MHz;VB 3 MHz;Peak		
7500.220 7503.150	41.6 52.7	V V	54.0 74.0	-12.4 -21.3	AVG PK	127 127	1.1 1.1	RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak		
1003.100	JZ.1	V	74.0	-21.3	Γſ	121	1.1	RB T WITZ, VB 5 WITZ, Feak		
Note:		<i>dicated the</i> Hz, Chain 2	re were no sig 2		issions in this		nge	erard and its antennas 20-50cm from		
Amplitude (dBuV/m)	60.0 -	<u>}\</u> ↑.				1.				

		SUCCESS						EMO	C Test Data
Client:	Technicolor	USA, Inc.						Job Number:	J97449
							T-	Log Number:	T97497
Model:	H44-100						Proj	ect Manager:	Christine Krebill
Contact:	Steven Hers	hberaer						Coordinator:	
	FCC 15.247		}				-,	Class:	
Run #1c: C Channel:	enter Chanr 40	nel	Mode:	n20		Do	wer Setting	: 20	
	40 2x2		Data Rate:	MCS1		ΓU	wer setting	. 20	
Frequency	Level	Pol	15.209		Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
1150.030	51.6	V	54.0	-2.4	AVG	73	1.1		B 10 Hz;Peak
1150.070	53.2	V	74.0	-20.8	PK	73	1.1		B 3 MHz;Peak
5001.220	42.6	V	54.0	-11.4	AVG	258	1.6		B 10 Hz;Peak, Note 4
5000.350	55.4	<u>V</u>	74.0	-18.6	PK	258	1.6		B 3 MHz;Peak
1050.000 1050.010	48.7 50.6	V V	54.0 74.0	-5.3 -23.4	AVG PK	62 62	1.3 1.3		B 10 Hz;Peak B 3 MHz;Peak
(dBuV/m)	the device in 11 n20, 520 80.0 - 70.0 - 60.0 - 50.0 - 40.0 -			gnificant em	issions in this	frequency ra			
	40.0	N WULLU	hullululululu	hustalian h	Frequency	(MHz)		10000	18000

	VE ENGINEER	SUCCESS							C Test Data
Client:	Technicolor l	JSA, Inc.					,	Job Number:	J97449
Model.	H44-100							_og Number:	
MOUEI.	1144-100						Project Manager: Christine Krebill		
	Steven Hersl	-					Project	Coordinator:	
	FCC 15.247/							Class:	N/A
ן Te Te	Date of Test: 2 est Engineer: est Location:	2/19/15, 2/2 Jack Liu / R	0/15 afael Varelas		Con	<i>I</i> ode: Wors onfig. Used: ifig Change: UT Voltage:	2	ו Run #1	
Channel:	ow Channel 36 chain 2		Mode: Data Rate:	a 9Mb/s		Po	wer Setting:	20	
Frequency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
1150.030	51.4	V	54.0	-2.6	AVG	74	1.1		'B 10 Hz;Peak
1150.020	52.7	V	74.0	-21.3	PK	74	1.1		B 3 MHz;Peak
4960.000 4944.170	45.5 57.4	V V	54.0 74.0	-8.5 -16.6	AVG PK	31 31	1.5 1.5		'B 10 Hz;Peak 'B 3 MHz;Peak
	11 a, 5180 M 80.0 - 70.0 - 60.0 - 50.0 - 40.0 - 30.0 - 1000			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	H. Jan Marriero M			10000	
					Frequency	/ (MHz)			



		R SUCCESS						EM	C Test Data
Client	Technicolor	USA, Inc.						Job Number:	J97449
M. 1.1	1144 400						T-I	Log Number:	T97497
Model:	: H44-100						Proje	ect Manager:	Christine Krebill
Contact:	Steven Hers	shberger					Project	Coordinator:	-
Standard:	FCC 15.247	/15.407/15.E	3					Class:	N/A
Te T	idiated Spuri Date of Test: est Engineer: est Location: Center Chann	2/19/15, 2/2 Jack Liu / R FT Chambe	20/15 afael Varelas		Cor	n the 5250-5 onfig. Used: nfig Change: UT Voltage:	2	and	
Channel: Tx Chain:	60 chain 2		Mode: Data Rate:	a 9Mb/s		Po	wer Setting:	20	
Frequency	Level	Pol	15.209	9 / 15E	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
1150.020	50.9	V	54.0	-3.1	AVG	255	1.0		'B 10 Hz;Peak
1149.860	53.2	V	74.0	-20.8	PK	255	1.0		'B 3 MHz;Peak
4919.970	44.1	V	54.0	-9.9	AVG	32	1.3		'B 10 Hz;Peak
4906.900	56.7	V	74.0	-17.3	PK	32	1.3	RB 1 MHz;V	'B 3 MHz;Peak
Wote: 802 Wmblitrde (dBuV/m)	the device in .11 a, 5300 f 80.0 - 70.0 -	ndicated the	re were no si		Frequency				18000

Model:H44-100T-Log Number:T97497Project Manager:Christine KrContact:Steven HershbergerProject Coordinator:Standard:FCC 15.247/15.407/15.BClass:N/AN/ARun #3b:Center ChannelChannel:60Mode:11n20Power Setting:20x Chain:2x2Data Rate:MCS1FrequencyLevelPol15.209 / 15EDetectorAguyA6.5V54.0-7.5AVG2261.6RB 1 MHz;VB 10 Hz;Pei4964.94057.6V74.0-16.4PK2261.6RB 1 MHz;VB 3 MHz;PeiNote:Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-5the device indicated there were no significant emissions in this frequency range802.11 n20, 5300 MHz, MIMO80.0 70.0 70.0 70.0 80.11 n20, 5300 MHz, MIMO	eak, Note
Project Manager: Christine Kr Contact: Steven Hershberger Project Coordinator: - Standard: FCC 15.247/15.407/15.B Class: N/A un #3b: Center Channel Class: N/A hannel: 60 Mode: 11n20 Power Setting: 20 x Chain: 2x2 Data Rate: MCS1 MCS1 Metric Manager: Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters Metric Manager: 20 MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters Metric Manager: 226 1.6 RB 1 MHz;VB 10 Hz;Perei 4959.980 46.5 V 54.0 -7.5 AVG 226 1.6 RB 1 MHz;VB 3 MHz;Perei 4964.940 57.6 V 74.0 -16.4 PK 226 1.6 RB 1 MHz;VB 3 MHz;Perei Mote: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-5 the device indicated there were no significant emissions in this frequency range 802.11 n2	eak, Note
Standard: FCC 15.247/15.407/15.B Class: N/A un #3b: Center Channel <td< td=""><td>eak</td></td<>	eak
un #3b: Center Channel hannel: 60 Mode: 11n20 Power Setting: 20 k Chain: 2x2 Data Rate: MCS1 requency Level Pol 15.209 / 15E Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 1959.980 46.5 V 54.0 -7.5 AVG 226 1.6 RB 1 MHz;VB 10 Hz;Per 1964.940 57.6 V 74.0 -16.4 PK 226 1.6 RB 1 MHz;VB 3 MHz;Per Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-5 the device indicated there were no significant emissions in this frequency range 802.11 n20, 5300 MHz, MIMO 80.0 70.0	eak
hannel: 60 Mode: 11n20 Power Setting: 20 x Chain: 2x2 Data Rate: MCS1 MCS1 Power Setting: 20 requency Level Pol 15.209 / 15E Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 1959.980 46.5 V 54.0 -7.5 AVG 226 1.6 RB 1 MHz;VB 10 Hz;Pei 1964.940 57.6 V 74.0 -16.4 PK 226 1.6 RB 1 MHz;VB 3 MHz;Pei Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-5 Measurement antenna moved around the card and its antennas 20-5 Measurement antenna moved around the card and its antennas 20-5 Note: Scans made between no significant emissions in this frequency range Measurement antenna moved around the card and its antennas 20-5 802.11 n20, 5300 MHz, MIMO Mac Mac Measurement antenna moved around the card and its antennas 20-5 90.0 Mac Mac Mac Mac Mac Mac Mac	eak
x Chain: 2x2 Data Rate: MCS1 irrequency Level Pol 15.209 / 15E Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters Meters 4959.980 46.5 V 54.0 -7.5 AVG 226 1.6 RB 1 MHz;VB 10 Hz;Pea 4964.940 57.6 V 74.0 -16.4 PK 226 1.6 RB 1 MHz;VB 3 MHz;Pea Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-5 the device indicated there were no significant emissions in this frequency range 802.11 n20, 5300 MHz, MIMO 80.0	eak
MHz dBμV/m v/h Limit Margin Pk/QP/Avg degrees meters 4959.980 46.5 V 54.0 -7.5 AVG 226 1.6 RB 1 MHz;VB 10 Hz;Pea 4964.940 57.6 V 74.0 -16.4 PK 226 1.6 RB 1 MHz;VB 3 MHz;Pea Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-5 the device indicated there were no significant emissions in this frequency range 802.11 n20, 5300 MHz, MIMO 802.11 n20, 5300 MHz, MIMO 80.0 - 70.0 - 70.0 - 70.0 -	eak
MHz dBμV/m v/h Limit Margin Pk/QP/Avg degrees meters 1959.980 46.5 V 54.0 -7.5 AVG 226 1.6 RB 1 MHz;VB 10 Hz;Pea 1964.940 57.6 V 74.0 -16.4 PK 226 1.6 RB 1 MHz;VB 3 MHz;Pea Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-5 the device indicated there were no significant emissions in this frequency range 802.11 n20, 5300 MHz, MIMO 802.11 n20, 5300 MHz, MIMO 80.0 -	eak
964.940 57.6 V 74.0 -16.4 PK 226 1.6 RB 1 MHz;VB 3 MHz;Pe Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-5 the device indicated there were no significant emissions in this frequency range 802.11 n20, 5300 MHz, MIMO 80.0	eak
Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-5 the device indicated there were no significant emissions in this frequency range 802.11 n20, 5300 MHz, MIMO 80.0 - 70.0 -	
Note: the device indicated there were no significant emissions in this frequency range 802.11 n20, 5300 MHz, MIMO 80.0 - 70.0 -	50cm fro
(W 60.0 - 90 50.0 - 40.0 - 30.0 - 10000 10000	13000
Frequency (MHz)	10000

Client:	Technicolor L	JSA, Inc.						Job Number: J97449
								Log Number: T97497
Model:	: H44-100							ect Manager: Christine Krebill
Contact	Steven Hersh	berger						Coordinator: -
	FCC 15.247/	-	3					Class: N/A
	adiated Spuri			40000 MHz	Operating N	Inde: Wors	e case from	
	Date of Test: 2			40000 1011 12		onfig. Used:		n Kun #5
Te	est Engineer: F	Rafael Vare	las / Jack Liu	I	Con	ifig Change:	-	
Т	est Location: F	T Chambe	er# 4		E	UT Voltage:	120V/60Hz	
Run #4a: L	ow Channel							
Channel:	52		Mode:	а		Po	wer Setting:	20
x Chain:	52 Chain 2		Data Rate:	a 9Mb/s		FU	wei Setting.	. 20
X Onum.			Data Nato.	01010/0				
Frequency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments
	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
MHz	FAA	V	54.0	-2.9	AVG	255	1.0	RB 1 MHz;VB 10 Hz;Peak
1149.990	51.1					255	1.0	DD 1 MUTIND 2 MUTIDOOK
1149.990 1150.010	52.3	V	74.0	-21.7	PK			RB 1 MHz;VB 3 MHz;Peak
1149.990 1150.010 4919.980	52.3 45.8	V V	54.0	-8.2	AVG	355	1.0	RB 1 MHz;VB 10 Hz;Peak
1149.990 1150.010 4919.980 4915.910	52.3 45.8 57.3	V V V	54.0 74.0	-8.2 -16.7	AVG PK	355 355	1.0 1.0	RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak
1149.990 1150.010 4919.980 4915.910 4999.940	52.3 45.8 57.3 45.8	V V V V	54.0 74.0 54.0	-8.2 -16.7 -8.2	AVG PK AVG	355 355 349	1.0 1.0 1.1	RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak
1149.990 1150.010 4919.980	52.3 45.8 57.3	V V V	54.0 74.0	-8.2 -16.7	AVG PK	355 355	1.0 1.0	RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak
1149.990 1150.010 4919.980 4915.910 4999.940 4999.690	52.3 45.8 57.3 45.8 57.1	V V V V V	54.0 74.0 54.0 74.0	-8.2 -16.7 -8.2 -16.9	AVG PK AVG PK	355 355 349 349	1.0 1.0 1.1 1.1	RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak
1149.990 1150.010 4919.980 4915.910 4999.940	52.3 45.8 57.3 45.8 57.1 <i>Scans made</i>	V V V V V between 18	54.0 74.0 54.0 74.0 74.0	-8.2 -16.7 -8.2 -16.9	AVG PK AVG PK	355 355 349 349 nna moved a	1.0 1.0 1.1 1.1 around the c	RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak
1149.990 1150.010 4919.980 4915.910 4999.940 4999.690	52.3 45.8 57.3 45.8 57.1 <i>Scans made</i>	V V V V V between 18	54.0 74.0 54.0 74.0 74.0	-8.2 -16.7 -8.2 -16.9	AVG PK AVG PK urement anter	355 355 349 349 nna moved a	1.0 1.0 1.1 1.1 around the c	RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak
1149.990 1150.010 4919.980 4915.910 4999.940 4999.690 <i>Note:</i>	52.3 45.8 57.3 45.8 57.1 <i>Scans made</i>	V V V V between 18 dicated ther	54.0 74.0 54.0 74.0 8 - 40 GHz wi re were no sig	-8.2 -16.7 -8.2 -16.9	AVG PK AVG PK urement anter	355 355 349 349 nna moved a	1.0 1.0 1.1 1.1 around the c	RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak
1149.990 1150.010 4919.980 4915.910 4999.940 4999.690 <i>Note:</i>	52.3 45.8 57.3 45.8 57.1 <i>Scans made the device ind</i>	V V V V between 18 dicated ther	54.0 74.0 54.0 74.0 8 - 40 GHz wi re were no sig	-8.2 -16.7 -8.2 -16.9	AVG PK AVG PK urement anter	355 355 349 349 nna moved a	1.0 1.0 1.1 1.1 around the c	RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak
1149.990 1150.010 4919.980 4915.910 4999.940 4999.690 <i>Note:</i>	52.3 45.8 57.3 45.8 57.1 <i>Scans made the device inc</i>	V V V V between 18 dicated ther	54.0 74.0 54.0 74.0 8 - 40 GHz wi re were no sig	-8.2 -16.7 -8.2 -16.9	AVG PK AVG PK urement anter	355 355 349 349 nna moved a	1.0 1.0 1.1 1.1 around the c	RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak
1149.990 1150.010 4919.980 4915.910 4999.940 4999.690 <i>Note:</i>	52.3 45.8 57.3 45.8 57.1 <i>Scans made the device ind</i> .11a, 5260 MH 80.0 -	V V V V between 18 dicated ther	54.0 74.0 54.0 74.0 3 - 40 GHz wi re were no sig	-8.2 -16.7 -8.2 -16.9	AVG PK AVG PK urement anter	355 355 349 349 nna moved a	1.0 1.0 1.1 1.1 around the c.	RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak
1149.990 1150.010 4919.980 4915.910 4999.690 <i>Note:</i> 802	52.3 45.8 57.3 45.8 57.1 <i>Scans made the device ind</i> .11a, 5260 Mł 80.0 –	V V V V between 18 dicated ther	54.0 74.0 54.0 74.0 3 - 40 GHz wi re were no sig	-8.2 -16.7 -8.2 -16.9 ith the meas gnificant em	AVG PK AVG PK urement anter issions in this	355 355 349 349 nna moved a	1.0 1.0 1.1 1.1 around the c.	RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak
1149.990 1150.010 4919.980 4915.910 4999.690 <i>Note:</i> 802	52.3 45.8 57.3 45.8 57.1 <i>Scans made the device ind</i> .11a, 5260 Mł 80.0 –	V V V V between 18 dicated ther	54.0 74.0 54.0 74.0 3 - 40 GHz wi re were no sig	-8.2 -16.7 -8.2 -16.9 ith the meas gnificant em	AVG PK AVG PK urement anter issions in this	355 355 349 349 nna moved a	1.0 1.0 1.1 1.1 around the c.	RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak
1149.990 1150.010 4919.980 4915.910 4999.690 <i>Note:</i> 802	52.3 45.8 57.3 45.8 57.1 <i>Scans made the device ind</i> .11a, 5260 Mł 80.0 –	V V V V between 18 dicated ther	54.0 74.0 54.0 74.0 3 - 40 GHz wi re were no sig	-8.2 -16.7 -8.2 -16.9 ith the meas gnificant em	AVG PK AVG PK urement anter issions in this	355 355 349 349 nna moved a	1.0 1.0 1.1 1.1 around the c.	RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak
1149.990 1150.010 4919.980 4915.910 4999.690 <i>Note:</i> 802	52.3 45.8 57.3 45.8 57.1 <i>Scans made the device ind</i> .11a, 5260 Mł 80.0 –	V V V V between 18 dicated ther	54.0 74.0 54.0 74.0 3 - 40 GHz wi re were no sig	-8.2 -16.7 -8.2 -16.9 ith the meas gnificant em	AVG PK AVG PK urement anter issions in this	355 355 349 349 nna moved a	1.0 1.0 1.1 1.1 around the c.	RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak
1149.990 1150.010 4919.980 4915.910 4999.690 <i>Note:</i> 802	52.3 45.8 57.3 45.8 57.1 <i>Scans made the device ind</i> .11a, 5260 Mł 80.0 – 70.0 – 50.0 –	V V V V between 18 dicated ther	54.0 74.0 54.0 74.0 3 - 40 GHz wi re were no sig	-8.2 -16.7 -8.2 -16.9 ith the meas gnificant em	AVG PK AVG PK urement anter issions in this	355 355 349 349 nna moved a	1.0 1.0 1.1 1.1 around the c.	RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak
1149.990 1150.010 4919.980 4915.910 4999.940 4999.690 <i>Note:</i>	52.3 45.8 57.3 45.8 57.1 <i>Scans made the device ind</i> .11a, 5260 Mł 80.0 –	V V V V between 18 dicated ther	54.0 74.0 54.0 74.0 3 - 40 GHz wi re were no sig	-8.2 -16.7 -8.2 -16.9 ith the meas gnificant em	AVG PK AVG PK urement anter issions in this	355 355 349 349 nna moved a	1.0 1.0 1.1 1.1 around the c.	RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak
1149.990 1150.010 4919.980 4915.910 4999.940 4999.690 <i>Note:</i> 802	52.3 45.8 57.3 45.8 57.1 <i>Scans made the device ind</i> .11a, 5260 MH 80.0 – 70.0 – 60.0 – 50.0 –	V V V V between 18 dicated ther	54.0 74.0 54.0 74.0 3 - 40 GHz wi re were no sig	-8.2 -16.7 -8.2 -16.9 ith the meas gnificant em	AVG PK AVG PK urement anter issions in this	355 355 349 349 nna moved a	1.0 1.0 1.1 1.1 around the c.	RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak
1149.990 1150.010 4919.980 4915.910 4999.690 <i>Note:</i> 802	52.3 45.8 57.3 45.8 57.1 <i>Scans made</i> <i>the device ind</i> .11a, 5260 MH 80.0 - 70.0 - 60.0 - 50.0 - 30.0 -	V V V V between 18 dicated ther	54.0 74.0 54.0 74.0 3 - 40 GHz wi re were no sig	-8.2 -16.7 -8.2 -16.9 ith the meas gnificant em	AVG PK AVG PK urement anter issions in this	355 355 349 349 nna moved a	1.0 1.0 1.1 1.1 around the c.	RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak
1149.990 1150.010 4919.980 4915.910 4999.690 <i>Note:</i> 802	52.3 45.8 57.3 45.8 57.1 <i>Scans made</i> <i>the device ind</i> .11a, 5260 MH 80.0 - 70.0 - 60.0 - 50.0 - 50.0 - 30.0 - 25.0 -	V V V V between 18 dicated ther	54.0 74.0 54.0 74.0 3 - 40 GHz wi re were no sig	-8.2 -16.7 -8.2 -16.9 ith the meas gnificant em	AVG PK AVG PK urement anter issions in this	355 355 349 349 nna moved a	1.0 1.0 1.1 1.1 around the c.	RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak
1149.990 1150.010 4919.980 4915.910 4999.690 <i>Note:</i> 802	52.3 45.8 57.3 45.8 57.1 Scans made the device ind .11a, 5260 MH 80.0 - 70.0 - 60.0 - 50.0 - 40.0 - 30.0 -	V V V V between 18 dicated ther	54.0 74.0 54.0 74.0 3 - 40 GHz wi re were no sig	-8.2 -16.7 -8.2 -16.9 ith the meas gnificant em	AVG PK AVG PK urement anter issions in this	355 349 349 349	1.0 1.0 1.1 1.1 around the c.	RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak

Client:	Technicolor l	JSA, Inc.						Job Number:	J97449
Madal	1144 400						T-	Log Number:	T97497
Model:	H44-100						Proj	ect Manager:	Christine Krebill
Contact:	Steven Hersh	nberger					Project	Coordinator:	-
Standard:	FCC 15.247/	15.407/15.8	3					Class:	N/A
n #4b: H annel:	igh Channel 64		Mode:	а		Po	wer Setting	: 20	
Chain:	Chain 2		Data Rate:	9Mb/s				. 20	
equency	Level	Pol	15.209/	15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
50.010	51.1	V	54.0	-2.9	AVG	254	1.0		'B 10 Hz;Peak
149.890	52.4	V	74.0	-21.6	PK	254	1.0		B 3 MHz;Peak
921.410	45.3	V	54.0	-8.7	AVG	336	1.1		B 10 Hz;Peak
921.630	56.9	V	74.0	-17.1	PK	336	1.1	RB 1 MHz;V	'B 3 MHz;Peak
(m//m)	70.0-								
Amplitude (dBuV/m)	50.0 - 40.0 - 30.0 - 25.0 - 1000	MALLA	4. Mpg(1444)	harshaldede	Frequency	/(MHz)		10000	1800

Client:	Technicolor	USA, Inc.						Job Number: J97449
Model:	H44-100						T-	Log Number: T97497
MOUEI.	1144-100						Proj	ect Manager: Christine Krebill
	Steven Hers						Project	Coordinator: -
Standard:	FCC 15.247/	15.407/15.8	3					Class: N/A
] Te Te	diated Spurid Date of Test: est Engineer: est Location: enter Chann	2/19/15, 2/2 Rafael Vare FT Chambe	0/15 las / Jack Liu		Cor	n the 5470-5 onfig. Used: ifig Change: UT Voltage:	2	
annel: Chain:	116 Chain 2		Mode: Data Rate:	a 9Mb/s		Po	wer Setting	20
requency	Level	Pol	15.209	9 / 15E	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
150.000	50.9	V	54.0	-3.1	AVG	254	1.0	RB 1 MHz;VB 10 Hz;Peak
150.020	52.3	V	74.0	-21.7	PK	254	1.0	RB 1 MHz;VB 3 MHz;Peak
371.640	47.9	V	54.0	-6.1	AVG	7	1.4	RB 1 MHz;VB 10 Hz;Peak
367.720	59.5	V	74.0	-14.5	PK	7	1.4	RB 1 MHz;VB 3 MHz;Peak
439.970	46.5	V	54.0	-7.5	AVG	178	1.8	RB 1 MHz;VB 10 Hz;Peak
440.120	53.6	V	74.0	-20.4	PK	178	1.8	RB 1 MHz;VB 3 MHz;Peak
919.620	43.8	V	54.0	-10.2	AVG	341	1.4	RB 1 MHz;VB 10 Hz;Peak
917.220	55.1	V	74.0	-18.9	PK	341	1.4	RB 1 MHz;VB 3 MHz;Peak
Amplitude (dBuV/m)	<i>the device in</i> 11a, 5580 M 80.0 - 70.0 -	dicated the	re were no sig		surement ante			and its antennas 20-50cm from

v v	VE ENGINEER	SUCCESS						EMO	
Client:	Technicolor	USA, Inc.						Job Number:	
Model.	H44-100							Log Number:	
Woder.	1144-100						Proj	ect Manager:	Christine Krebill
Contact:	Steven Hers	hberger					Project	Coordinator:	-
Standard:	FCC 15.247	/15.407/15.E	3					Class:	N/A
Run #5b: C Channel:	Center Chanr 116	nel	Mode:	11n20		Po	wer Setting	20	
Tx Chain:	2x2		Data Rate:	MCS1		10	wer oetang	20	
Frequency	Level	Pol	15.209) / 15E	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
5371.010	51.7	Н	54.0	-2.3	AVG	328	1.2		B 10 Hz;Peak, Note 4
5370.490	62.8	Н	74.0	-11.2	PK	328	1.2		B 3 MHz;Peak
7440.010	46.3	V	54.0	-7.7	AVG	179	1.9		B 10 Hz;Peak, Note 4
7440.040	54.5	V	74.0	-19.5	PK	179	1.9		B 3 MHz;Peak
1150.010	50.5	V	54.0	-3.5	AVG	256	1.0		B 10 Hz;Peak
1149.960	51.7	V	74.0	-22.3	PK	256	1.0	,	B 3 MHz;Peak
5077.290	45.0	V	54.0	-9.0	AVG	245	1.6		B 10 Hz;Peak, Note 4
5082.890	56.3	V	74.0	-17.7	PK	245	1.6		B 3 MHz;Peak
3719.980 3720.020	44.5 48.5	V V	54.0 74.0	-9.5 -25.5	AVG PK	273 273	1.7 1.7		B 10 Hz;Peak B 3 MHz;Peak
nplitude (dBuV/m)		ndicated the	re were no sig						tennas 20-50cm from
	30.0 - UW 25.0 - J 1000	17.1000000		1,44 -47.444.4*	Frequency	, , (MHz)		10000	18000

Client Technicolor USA, Inc. Job Number; J37449 Model: H44-100 T-Log Number; T37497 Contact: Steven Hershberger Project Coordinator; - Standard: FCC 15.247/15.407/15.B Class: NA Run #6: Radiated Spurious Emissions, 1,000 - 40000 MHz. Operating Mode: Worse case from Run #5 Date of Test: 2/19/15, 2/20/15 Config Change: - Test Engineer: Rafaited Spurious Emissions, 1,000 - 40000 MHz. Operating Mode: Worse case from Run #5 Date of Test: 2/19/15, 2/20/15 Config Change: - Test Location: FT Chamber#4 EUT Voltage: 120/K0Hz Run #6a: Low Channel EUT Voltage: 120/K0Hz Channel: 100 Mode: 11n20 Power Setting: 20 Tx Chain: 2x2 Data Rate: MCS1 MC MMz dBu//m Mult: Margin Pk/OP/Avg degrees meters 1150.010 50.2 V 54.0 -3.8 AVG 261 1.0 RB 1 MHz;VB 10 Hz;Peak, Mote 4 7343.320 40.2 V 54.0 -3.8 AVG 255 1.6 RB 1 MHz;VB 10 Hz;Peak, Mote 4 </th <th>0.11 /</th> <th></th> <th>JOAL</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>107110</th>	0.11 /		JOAL							107110
Model: H44-100 Project Manager Christine Krebili Contact: Steven Hershberger Project Coordinator: - - Standard: FCC 15.247/15.407/15.B Class: N/A Run #6: Radiated Spurious Emissions, 1,000 - 40000 MHz. Operating Mode: Worse case from Run #5 Class: N/A Run #6: Radiated Spurious Emissions, 1,000 - 40000 MHz. Operating Mode: Config Used: 2 Config Used: 2 Config Used: 2 Test Logineer: Rafel Varelas, Jack Liu Config Used: 2 Config Used: 2 Config Used: 2 Run #6a: Low Channel Chaine: 1100 Mode:: 11n20 Power Setting: 20 Frequency Level Pol 15.209 / 15.247 Detector Azimuth Height Comments MHz dBu/Vim Win Limit Margin PK/OP/Avg degrees meters 1150.010 50.2 V 54.0 -3.8 AVG 261 1.0 RB 1 MHz/VB 10 Hz;Peak, Note 4 2077.250 43.6 V 54.0 -10.4 AVG 255 1.6 RB 1 MHz/VB 3 MHz;Peak <td< td=""><td>Client:</td><td>lechnicolor</td><td>USA, Inc.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	Client:	lechnicolor	USA, Inc.							
Project Manager: Christine Krebill Contact: Steven Hershberger Standard: FCC 15 247/15 407/15.8 Run #6: Radiated Spurious Emissions, 1,000 - 40000 MHz. Operating Mode: Worse case from Run #5 Date of Test: 219/15, 2/20/15 Config. Used: 2 Test Enginee: Rafel Varelas / Jack Liu Config. Used: 2 Test Location: FT Chamber# 4 EUT Voltage: 120V/60Hz Run #6a: Low Channel Date of Test: 2/19/15, 2/20/15 Chain: 2x2 Data Rate: MCS1 Frequency Level Pol 15.209/15.247 Detector Azimuth Height Gomments MHz McS1 Messaw Mitz:VB 10 Hz;Peak T150.010 50.2 V 54.0 -3.8 AVG 261 1.0 RB 1 MHz;VB 10 Hz;Peak T149.880 51.2 V 74.0 -21.2 PK 261 1.0 RB 1 MHz;VB 3 MHz;Peak 707.250 43.6 V 54.0 -13.8 AVG 261 1.0 RB 1 MHz;VB 3 MHz;Peak 707.250 52.8 V 74.0 -21.2 PK 10.0 <td>Model:</td> <td>H44-100</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>•</td> <td></td>	Model:	H44-100							•	
Standard FCC 15.247/15.407/15.B Class: N/A Run #6: Radiated Spurious Emissions, 1,000 - 40000 MHz. Operating Mode: Worse case from Run #5 Date of Test: 2/19/15, 2/20/15 Config. Used: 2 Test Engineer: Rafael Varelas / Jack Liu Config. Used: 2 Test Engineer: Rafael Varelas / Jack Liu Config. Used: 2 Test Location: FT Chamber# 4 EUT Voltage: 120V/60Hz Run #6a: Low Channel Data Rate: MCS1 Chain: 2X2 Data Rate: MCS1 Frequency Level Pol 15.209 / 15.247 Detector Azimuth Height Comments MHz MS1 MISCIN VI Limit Margin 1150.010 50.2 V 54.0 -3.8 AVG 261 1.0 RB 1 MHz:VB 10 Hz;Peak 7343.202 40.2 V 74.0 -21.2 PK 173 1.0 RB 1 MHz:VB 3 MHz;Peak 7077.250 43.6 V 54.0 -13.8 AVG 255 1.6 RB 1 MHz:VB 3 MHz;Peak 5077.250										
Radiated Spurious Emissions, 1,000 - 40000 MHz. Operating Mode: Worse case from Run #5 Date of Test: 2/19/15, 2/20/15 Test Engineer: Rafael Varelas / Jack Liu Test Location: FT Chamber# 4 Config Change: - Test Location: FT Chamber# 4 Run #6a: Low Channel Channel: 100 Node: 11n20 Power Setting: 20 X chain: 2x2 Data Rate: MCS1 Frequency Level Pol 15:209/15:247 Detector Azimuth Height Comments MHz dBµV/m Vh Limit Margin Pk/QP/Avg degrees Test Level Pol 15:209/15:247 Detector Azimuth Height Comments MHz MHz OBIT Margin Pk/QP/Avg degrees Test Note 4 State of 1.0 RB 1 MHz/VB 10 Hz;Peak 1150:010 52.8 V 74.0 -21.2 PK 261 1.0 RB 1 MHz;VB 3 MHz;Peak S077.250 1.6 RB 1 MHz;VB 3 MHz;Peak S075.270 60.0 H 74.0 -17.8 PK 255<	Contact:	Steven Hers	hberger					Project	Coordinator:	-
Date of Test: 2/19/15, 2/20/15 Config. Used: 2 Test Engineer: Rafael Varelas / Jack Liu Config. Change: - Test Location: FT Chamber# 4 EUT Voltage: 120V/60Hz Run #6a: Low Channel Mode: 11n20 Power Setting: 20 Chain: 2x2 Data Rate: MCS1 Power Setting: 20 Frequency Level Pol 15.209 / 15.247 Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 1149.880 51.2 V 74.0 -22.8 PK 261 1.0 RB 1 MHz;VB 10 Hz;Peak 7343.20 40.2 V 54.0 -3.8 AVG 261 1.0 RB 1 MHz;VB 3 MHz;Peak 5077.205 52.8 V 74.0 -21.2 PK 173 1.0 RB 1 MHz;VB 10 Hz;Peak, Note 4 5075.960 56.2 V 74.0 -51.1 AVG 325 1.6 RB 1 MHz;VB 10 Hz;Peak, Note 4 5368.670 48.9 H 54.0 -5.1 AVG 328 1.2 RB 1 MHz;VB 3 MHz;Peak 60.0	Standard:	FCC 15.247/	/15.407/15.E	}					Class:	N/A
Ix Chain: 2x2 Data Rate: MCS1 IFrequency Level Pol 15.209 / 15.247 Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 1150.010 50.2 V 54.0 -3.8 AVG 261 1.0 RB 1 MHz;VB 10 Hz;Peak 7343.320 40.2 V 54.0 -13.8 AVG 173 1.0 RB 1 MHz;VB 10 Hz;Peak, Note 4 5077.250 43.6 V 74.0 -21.2 PK 173 1.0 RB 1 MHz;VB 30 Hz;Peak, Note 4 5077.250 43.6 V 54.0 -10.4 AVG 255 1.6 RB 1 MHz;VB 30 Hz;Peak, Note 4 5075.960 56.2 V 74.0 -51.1 AVG 225 1.6 RB 1 MHz;VB 30 Hz;Peak, Note 4 5375.270 60.0 H 74.0 -51.4 AVG 328 1.2 RB 1 MHz;VB 30 Hz;Peak, Note 4 5375.270 60.0 H 74.0 -14.0 PK 328 1.2 RB 1 MHz;VB 3	L Te Te	Date of Test: est Engineer: est Location:	2/19/15, 2/2 Rafael Vare FT Chambe	0/15 las / Jack Liu		Con	onfig. Used: ifig Change:	2	n Run #5	
MHz dB _µ U/m v/h Limit Margin Pk/QP/Avg degrees meters 1150.010 50.2 V 54.0 -3.8 AVG 261 1.0 RB 1 MHz;VB 10 Hz;Peak 7343.320 40.2 V 54.0 -13.8 AVG 173 1.0 RB 1 MHz;VB 3 MHz;Peak 7342.070 52.8 V 74.0 -21.2 PK 173 1.0 RB 1 MHz;VB 10 Hz;Peak, Note 4 5077.250 43.6 V 54.0 -10.4 AVG 255 1.6 RB 1 MHz;VB 3 MHz;Peak 5077.5960 56.2 V 74.0 -21.2 PK 173 1.0 RB 1 MHz;VB 3 MHz;Peak 5368.670 48.9 H 54.0 -5.1 AVG 328 1.2 RB 1 MHz;VB 10 Hz;Peak, Note 4 5375.270 60.0 H 74.0 -14.0 PK 328 1.2 RB 1 MHz;VB 3 MHz;Peak Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from 40.0					= .		Po	wer Setting:	20	
MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 1150.010 50.2 V 54.0 -3.8 AVG 261 1.0 RB 1 MHz;VB 10 Hz;Peak 1149.880 51.2 V 74.0 -22.8 PK 261 1.0 RB 1 MHz;VB 3 MHz;Peak 7343.320 40.2 V 54.0 -13.8 AVG 173 1.0 RB 1 MHz;VB 10 Hz;Peak, Note 4 7342.070 52.8 V 74.0 -21.2 PK 173 1.0 RB 1 MHz;VB 3 MHz;Peak 5077.250 43.6 V 54.0 -10.4 AVG 255 1.6 RB 1 MHz;VB 3 MHz;Peak 5075.960 56.2 V 74.0 -51 AVG 328 1.2 RB 1 MHz;VB 10 Hz;Peak, Note 4 5368.670 48.9 H 54.0 -5.1 AVG 328 1.2 RB 1 MHz;VB 3 MHz;Peak 5375.270 60.0 H 74.0 -14.0 PK 328 1.2	Frequencv	Level	Pol	15.209/	15.247	Detector	Azimuth	Height	Comments	
1150.010 50.2 V 54.0 -3.8 AVG 261 1.0 RB 1 MHz;VB 10 Hz;Peak 1149.880 51.2 V 74.0 -22.8 PK 261 1.0 RB 1 MHz;VB 3 MHz;Peak 7343.320 40.2 V 54.0 -13.8 AVG 173 1.0 RB 1 MHz;VB 10 Hz;Peak, Note 4 7342.070 52.8 V 74.0 -21.2 PK 173 1.0 RB 1 MHz;VB 10 Hz;Peak, Note 4 5077.250 43.6 V 54.0 -10.4 AVG 255 1.6 RB 1 MHz;VB 10 Hz;Peak Note 4 5075.960 56.2 V 74.0 -5.1 AVG 328 1.2 RB 1 MHz;VB 10 Hz;Peak, Note 4 5368.670 48.9 H 54.0 -5.1 AVG 328 1.2 RB 1 MHz;VB 3 MHz;Peak 5375.270 60.0 H 74.0 -14.0 PK 328 1.2 RB 1 MHz;VB 3 MHz;Peak Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from 4 60.0			v/h	Limit	Margin	Pk/QP/Avg				
7343.320 40.2 V 54.0 -13.8 AVG 173 1.0 RB 1 MHz;VB 10 Hz;Peak, Note 4 7342.070 52.8 V 74.0 -21.2 PK 173 1.0 RB 1 MHz;VB 3 MHz;Peak 5077.250 43.6 V 54.0 -10.4 AVG 255 1.6 RB 1 MHz;VB 10 Hz;Peak, Note 4 5075.960 56.2 V 74.0 -17.8 PK 255 1.6 RB 1 MHz;VB 3 MHz;Peak 5368.670 48.9 H 54.0 -5.1 AVG 328 1.2 RB 1 MHz;VB 10 Hz;Peak, Note 4 5375.270 60.0 H 74.0 -14.0 PK 328 1.2 RB 1 MHz;VB 3 MHz;Peak Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range Mote: Mote: Mote:	1150.010	50.2	V	54.0	-3.8	AVG		1.0	RB 1 MHz;V	B 10 Hz;Peak
7342.070 52.8 V 74.0 -21.2 PK 173 1.0 RB 1 MHz;VB 3 MHz;Peak 5077.250 43.6 V 54.0 -10.4 AVG 255 1.6 RB 1 MHz;VB 10 Hz;Peak, Note 4 5077.250 43.6 V 54.0 -10.4 AVG 255 1.6 RB 1 MHz;VB 10 Hz;Peak, Note 4 5075.960 56.2 V 74.0 -5.1 AVG 328 1.2 RB 1 MHz;VB 10 Hz;Peak, Note 4 5368.670 48.9 H 54.0 -5.1 AVG 328 1.2 RB 1 MHz;VB 10 Hz;Peak, Note 4 5375.270 60.0 H 74.0 -14.0 PK 328 1.2 RB 1 MHz;VB 3 MHz;Peak Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range 802.11 n20, 5500 MHz, MIMO 60.0 - <t< td=""><td>1149.880</td><td>51.2</td><td></td><td>74.0</td><td>-22.8</td><td>PK</td><td>261</td><td>1.0</td><td>RB 1 MHz;V</td><td>B 3 MHz;Peak</td></t<>	1149.880	51.2		74.0	-22.8	PK	261	1.0	RB 1 MHz;V	B 3 MHz;Peak
5077.250 43.6 V 54.0 -10.4 AVG 255 1.6 RB 1 MHz;VB 10 Hz;Peak, Note 4 5075.960 56.2 V 74.0 -17.8 PK 255 1.6 RB 1 MHz;VB 3 MHz;Peak, Note 4 5368.670 48.9 H 54.0 -5.1 AVG 328 1.2 RB 1 MHz;VB 10 Hz;Peak, Note 4 5375.270 60.0 H 74.0 -14.0 PK 328 1.2 RB 1 MHz;VB 3 MHz;Peak Sars made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range Sars made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range	7343.320	40.2		54.0	-13.8	AVG	173	1.0	RB 1 MHz;V	B 10 Hz;Peak, Note 4
5075.960 56.2 V 74.0 -17.8 PK 255 1.6 RB 1 MHz;VB 3 MHz;Peak 5368.670 48.9 H 54.0 -5.1 AVG 328 1.2 RB 1 MHz;VB 3 MHz;Peak, Note 4 5375.270 60.0 H 74.0 -14.0 PK 328 1.2 RB 1 MHz;VB 3 MHz;Peak Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range 802.11 n20, 5500 MHz, MIMO Image: state of the device indicated there were no significant emission of the device indicated there were no significant emission of the device indicated there were no significant emission of the device indicated there were no significant emission of the device indicated there were no significant emission of the device indicated there were no significant emission of the device indicated there were no significant emission of the device indicated there were no significant emission of th	7342.070	52.8		74.0	-21.2	PK	173	1.0	RB 1 MHz;V	B 3 MHz;Peak
5368.670 48.9 H 54.0 -5.1 AVG 328 1.2 RB 1 MHz;VB 10 Hz;Peak, Note 4 5375.270 60.0 H 74.0 -14.0 PK 328 1.2 RB 1 MHz;VB 3 MHz;Peak Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range Note: Seas made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range Note: Secans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range 802.11 n20, 5500 MHz, MIMO 80.0 - - 60.0 - - - - 90 - - - - - 91 - - - - - 92 - - - - - - 93 - - - - - -					-10.4				RB 1 MHz;V	B 10 Hz;Peak, Note 4
5375.270 60.0 H 74.0 -14.0 PK 328 1.2 RB 1 MHz;VB 3 MHz;Peak Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range 802.11 n20, 5500 MHz, MIMO 80.0										
Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range										
Note: the device indicated there were no significant emissions in this frequency range	5375.270	60.0	Н	74.0	-14.0	PK	328	1.2	RB 1 MHz;V	B 3 MHz;Peak
25.0	Amplitude (dBuV/m)	the device in 11 n20, 550 80.0 - 70.0 - 60.0 - 50.0 - 40.0 - 30.0 -	ndicated the	re were no sig				ange		

Client:	Technicolor	USA, Inc.						Job Number: J97449
Model	H44-100						T-	Log Number: T97497
woder.	H44-100						Proj	ject Manager: Christine Krebill
Contact:	Steven Hers	hberger					Project	t Coordinator: -
Standard:	FCC 15.247	/15.407/15.E	3					Class: N/A
hannel:	igh Channel 140 2x2		Mode: Data Rate:	11n20 MCS1		Ро	wer Setting	: 20
x Onam.	272		Data Nate.	WOOT				
Frequency	Level	Pol		/ 15.247	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.400	52.7	V	54.0	-1.3	AVG	256	1.3	RB 1 MHz;VB 10 Hz;Peak, Note
5351.970	64.8	V	74.0	-9.2	PK	256	1.3	RB 1 MHz;VB 3 MHz;Peak
3800.020	44.6	V	54.0	-9.4	AVG	265	1.9	RB 1 MHz;VB 10 Hz;Peak
3800.100	49.7	V	74.0	-24.3	PK	265	1.9	RB 1 MHz;VB 3 MHz;Peak
1150.000	51.2	V	54.0	-2.8	AVG	72 72	1.0	RB 1 MHz;VB 10 Hz;Peak
	50.0	\ /	740					
	52.6	V	74.0	-21.4	PK		1.0	RB 1 MHz;VB 3 MHz;Peak
7599.950	45.6	V	54.0	-8.4	AVG	168	2.1	RB 1 MHz;VB 10 Hz;Peak, Note
1150.020 7599.950 7600.020 <i>Note:</i>	45.6 54.2 <i>Scans made</i>	V V	54.0 74.0 8 - <i>40 GHz w</i>	-8.4 -19.8	AVG PK	168 168 nna moved a	2.1 2.1 around the c	
7599.950 7600.020 <i>Note:</i> 802. (w/\ngp) epinnild	45.6 54.2 <i>Scans made</i> <i>the device ir</i> 11 n20, 570 80.0 − 70.0 −	V V e between 18 adicated the	54.0 74.0 8 - 40 GHz w. re were no si	-8.4 -19.8	AVG PK	168 168 nna moved a	2.1 2.1 around the c	RB 1 MHz;VB 10 Hz;Peak, Note RB 1 MHz;VB 3 MHz;Peak

		SUCCESS						EM	C Test Da	ata
Client:	Technicolor	USA, Inc.						Job Number:	J97449	
Model:	H44-100							Log Number:		
model.	1144-100						Proje	ect Manager:	Christine Krebill	
Contact:	Steven Hers	hberger					Project	Coordinator:	-	
Standard:	FCC 15.247	/15.407/15.E	}					Class:	N/A	
I Te Te	diated Spuri Date of Test: Est Engineer: est Location: enter Chann	2/19/15, 2/2 Rafael Vare FT Chambe	0/15 las / Jack Liu		Cor	n the 5725-5 onfig. Used: fig Change: UT Voltage:	2	and		
Channel: Tx Chain:	157 Chain 2		Mode: Data Rate:	a 9Mb/s		Po	wer Setting:	20		
Frequency	Level	Pol	15.209	9 / 15E	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
1150.000	50.6	V	54.0	-3.4	AVG	296	1.0		/B 10 Hz;Peak	
1150.070	51.9	V	74.0	-22.1	PK	296	1.0		/B 3 MHz;Peak	
5360.110	42.0	V	54.0	-12.0	AVG	359	1.0		/B 10 Hz;Peak	
5358.070	53.3	V	74.0	-20.7	PK	359	1.0	1	/B 3 MHz;Peak	
3856.610	43.5 48.0	V	54.0 74.0	-10.5 -26.0	AVG PK	271 271	1.8 1.8		/B 10 Hz;Peak	
3856.580 4967.880	40.0	V	54.0	-20.0	AVG	209	1.0		/B 3 MHz;Peak /B 10 Hz;Peak	
4972.670	53.5	V	74.0	-20.5	PK	209	1.5		/B 3 MHz;Peak	
7713.320	46.0	V	54.0	-8.0	AVG	180	1.7		/B 10 Hz;Peak	
7713.370	52.5	V	74.0	-21.5	PK	180	1.7		/B 3 MHz;Peak	
		-							,,	
Note:		ndicated ther			urement anten issions in this			ard and its ar	ntennas 20-50cm f.	rom
		nz, chain z								
Amplitude (dBuV/m)	80.0 - 70.0 - 60.0 - 50.0 - 40.0 - 30.0 - 25.0 - 1000				Frequency	(MHz)		10000		

	RTS we engineer	SUCCESS						EMO	C Test Data
Client	Technicolor	USA, Inc.						Job Number:	J97449
Madal	: H44-100						T-	Log Number:	T97497
MOUEI	. 144-100						Proj	ect Manager:	Christine Krebill
Contact	Steven Hers	hberger					Project	Coordinator:	-
	FCC 15.247		3					Class:	N/A
Run #5b: (Channel:	Center Chanr 157	nel	Mode:	11n20		Po	wer Setting	20	
Tx Chain:	2x2		Data Rate:	MCS1			for courry	20	
Frequency	Level	Pol	15.209	9 / 15E	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
1150.020	50.5	V	54.0	-3.5	AVG	263	1.0		B 10 Hz;Peak
1150.030	52.4	V	74.0	-21.6	PK	263	1.0	,	B 3 MHz;Peak
5406.030	50.3	<u>H</u>	54.0	-3.7	AVG	0	1.0		B 10 Hz;Peak, Note 4
5411.970	61.9	H	74.0	-12.1	PK	0	1.0		B 3 MHz;Peak
3856.640	47.2	<u>Н</u> Н	54.0	-6.8	AVG	315	1.8		B 10 Hz;Peak
3856.570 5069.860	51.4 45.6	<u>н</u> V	74.0 54.0	-22.6 -8.4	PK AVG	315 246	1.8 1.0	,	B 3 MHz;Peak
5072.840	45.6 58.1	V	54.0 74.0	-0.4 -15.9	PK	246	1.0		B 10 Hz;Peak, Note 4 B 3 MHz;Peak
7713.350	41.6	V	54.0	-13.9	AVG	188	1.0	1	B 10 Hz;Peak, Note 4
7713.170	50.4	V	74.0	-23.6	PK	188	1.0		B 3 MHz;Peak
Wote: 802 Wmplitude (dBu/\/m)	the device in .11 n20, 578 80.0 - 70.0 - 60.0 - 50.0 - 40.0 - 30.0 -	dicated the	re were no sig		urement anter issions in this	frequency ra			tennas 20-50cm from
	25.0 - 1000		•		, Frequency	, II,		10000	18000

		SUCCESS						EMO	C Test Dat	
Client:	Technicolor l	JSA, Inc.		Job Number: J97449						
							T-Log Number: T		T97497	
Model:	H44-100							Project Manager: Christine Kre		
Contact:	Steven Hersł	nberger		Project Coordinator: -						
	FCC 15.247/	-	3	Class: N/A						
C Te: Te	Date of Test: 2 st Engineer: 1 est Location: 1	2/19/15, 2/2 Rafael Vare	0/15 las / Jack Liu		Con	Node: Wors onfig. Used: fig Change: UT Voltage:	2			
Channel: Tx Chain:	Low Channel149Mode:11n20Power Setting:202x2Data Rate:MCS1									
Frequency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
1149.990	51.0	V	54.0	-3.0	AVG	64	1.7	RB 1 MHz;V	B 10 Hz;Peak	
1150.080	52.5	V	74.0	-21.5	PK	64	1.7	RB 1 MHz;V	B 3 MHz;Peak	
5405.220	49.4	Н	54.0	-4.6	AVG	360	1.0	RB 1 MHz;V	B 10 Hz;Peak, Note 4	
5405.520	61.3	Н	74.0	-12.7	PK	360	1.0		B 3 MHz;Peak	
5081.150	45.1	Н	54.0	-8.9	AVG	337	1.0		B 10 Hz;Peak, Note 4	
5078.690	56.9	Н	74.0	-17.1	PK	337	1.0		B 3 MHz;Peak	
3830.020	43.3	H	54.0	-10.7	AVG	328	1.6		B 10 Hz;Peak	
3829.900	48.0	H	74.0	-26.0	PK	328	1.6		B 3 MHz;Peak	
7659.960	45.8	V	54.0	-8.2	AVG	175	2.0		B 10 Hz;Peak, Note 4	
7659.830	53.2	V	74.0	-20.8	PK	175	2.0	RB 1 MHZ;V	B 3 MHz;Peak	
802.1		dicated the	re were no sig		urement antei issions in this				tennas 20-50cm from	
(w/\ngp);	0.0-					 ア^\				
3	0.0	MMUUM	Manduluu	nshull hillion	Frequency			10000	18000	

		SUCCESS						EMO	C Test Data
Client:	Technicolor	USA, Inc.		Job Number:		J97449			
Madalı	1144 400			T-Log Number:		T97497			
Model:	H44-100							ect Manager:	Christine Krebill
Contact:	Steven Hers	hberger		Project Coordinator: -					
	FCC 15.247	-	}	Class: N/A					
Run #6b: H Channel:	igh Channel 165		Mode:	11n20		Po	wer Setting	20	
Tx Chain:	2x2 Data Rate: MCS1								
Frequency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
1150.010	50.8	V	54.0	-3.2	AVG	258	1.0		B 10 Hz;Peak
1150.060	52.5	V	74.0	-21.5	PK	258	1.0		B 3 MHz;Peak
5072.960	46.0	<u>V</u>	54.0	-8.0	AVG	247	1.7		B 10 Hz;Peak, Note 4
5074.870	58.2	V	74.0	-15.8	PK	247	1.7		B 3 MHz;Peak
7766.660	45.0	V	68.3	-23.3	AVG	173	1.9		B 10 Hz;Peak, Note 4
7766.860	51.9	<u>V</u>	68.3	-16.4	PK	173	1.9		B 3 MHz;Peak
3883.300	48.0	<u>H</u>	54.0	-6.0	AVG	136	1.9		B 10 Hz;Peak
3883.420	51.1	H	74.0	-22.9	PK	136	1.9		B 3 MHz;Peak
5391.870 5407.770	50.0 61.7	<u>Н</u> Н	54.0 74.0	-4.0 -12.3	AVG PK	8	1.3 1.3		B 10 Hz;Peak, Note 4 B 3 MHz;Peak
Wote: 802. (m/\/mgp)	<i>the device ir</i> 11 n20, 582 80.0 - 70.0 -	ndicated the	e were no si <u>(</u> 0		urement anter issions in this	frequency ra			tennas 20-50cm from
	30.0 - 25.0 - 1000	Ι Ν.ΝΥΥΝΥΥΝ	humm	llander Alender	Frequency	, , (MHz)		10000	18000

EMC Test Data

Client:	Technicolor USA, Inc.	Job Number:	J97449
Model	H44-100	T-Log Number:	T97497
MOUEI.	1144-100	Project Manager:	Christine Krebill
Contact:	Steven Hershberger	Project Coordinator:	-
Standard:	FCC 15.247/15.407/15.B	Class:	N/A

RSS-210 (LELAN) and FCC 15.407(UNII) Antenna Port Measurements Power, PSD, Peak Excursion, Bandwidth and Spurious Emissions

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

SUCCESS

When measuring the conducted emissions from the EUT's antenna port, the antenna port of the EUT was connected to the spectrum analyzer or power meter via a suitable attenuator to prevent overloading the measurement system. All measurements are corrected to allow for the external attenuators and cables used.

Ambient Conditions:

Temperature:	21.4 °C
Rel. Humidity:	39 %

Summary of Results

5			
Test Performed	Limit	Pass / Fail	Result / Margin
Power 5150 - 5250MHz	15 407(a) (1)	Dass	11a: 18.9dBm(77.6mW)
r ower, 3130 - 32300012	13.407 (a) (1)	F 855	n20: 21.8dBm(150.1mW)
PSD 5150 - 5250MHz	15 107(a) (1)	Dace	11a: 7.9 dBm/MHz
1 SB; 3130 - 32300012	13.407 (d) (1)	F 855	n20: 10.4 dBm/MHz
Power 5250 5350MHz	15 407(a) (2)	Dace	11a: 18.7dBm(74.1mW)
1 Gwei; 3230 - 3330imitz	13.407 (d) (Z)	F 855	n20: 21.5dBm(140.3mW)
DOD 5250 5350MH-	15 407(a) (2)	Dace	11a: 7.4 dBm/MHz
F 3D, 3230 - 33300012	() ()	F 855	n20: 10.1 dBm/MHz
	TPC required if EIRP≥		
Max FIRP	500mW (27dBm).		
	EIRP ≥ 200mW	-	EIRP = 24.4 dBm (272.3 mW)
5250 - 5550MI IZ	(23dBm) DFS threshold		
	= -64dBm.		
		Test Performed Limit Power, 5150 - 5250MHz 15.407(a) (1) PSD, 5150 - 5250MHz 15.407(a) (1) Power, 5250 - 5350MHz 15.407(a) (2) PSD, 5250 - 5350MHz 15.407(a) (2) PSD, 5250 - 5350MHz 15.407(a) (2) Max EIRP 500mW (27dBm). EIRP ≥ 200mW 23dBm) DFS threshold	Test PerformedLimitPass / FailPower, 5150 - 5250MHz15.407(a) (1)PassPSD, 5150 - 5250MHz15.407(a) (1)PassPower, 5250 - 5350MHz15.407(a) (2)PassPSD, 5250 - 5350MHz15.407(a) (2)PassMax EIRP 5250 - 5350MHzTPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold-

		SUCCESS			EMO	C Test Data
Client:	Technicolor	USA, Inc.		,	Job Number:	J97449
Madal	H44-100			T-L	og Number:	Т97497
Model.	1144-100			Proje	ect Manager:	Christine Krebill
Contact:	Steven Hers	hberger		Project	Coordinator:	-
Standard:	FCC 15.247	/15.407/15.B			Class:	N/A
Ru	n #	Test Performed	Limit	Pass / Fail	Result / Mar	
1	1	Power, 5470 - 5725MHz	15.407(a) (2)	Pass	11a: 19.0dB n20: 21.7dB	m(79.4mW) m(148.2mW)
1	1	PSD, 5470 - 5725MHz	15.407(a) (2)	Pass	11a: 7.7 dBr n20: 10.3 dE	
1	I	Max EIRP 5470 - 5725MHz	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold	-		dBm (337.2 mW)
1	1	Power, 5725 - 5850MHz	15.407(a) (3)	Pass		m (79.4mW) m (157.0mW)
1	1	PSD, 5725 - 5850MHz	15.407(a) (3)	Pass	11a: 7.8 dBr n20: 10.6 dE	
2	2	26dB Bandwidth	15.407(h)(2)	Pass	a: 20.83 MH n20: 20.91 N	
2	2	Minimum 6dB Bandwidth for UNII3 band	15.407(e)	Pass	a: 16.3 MHz n20: 17.6 M	

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033 D02 v01

Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
11a	9Mb/s	98.9%	Yes	-	0	0	-
n20	MCS13	97.8%	Yes	-	0.10	0.19	-

Sample Notes

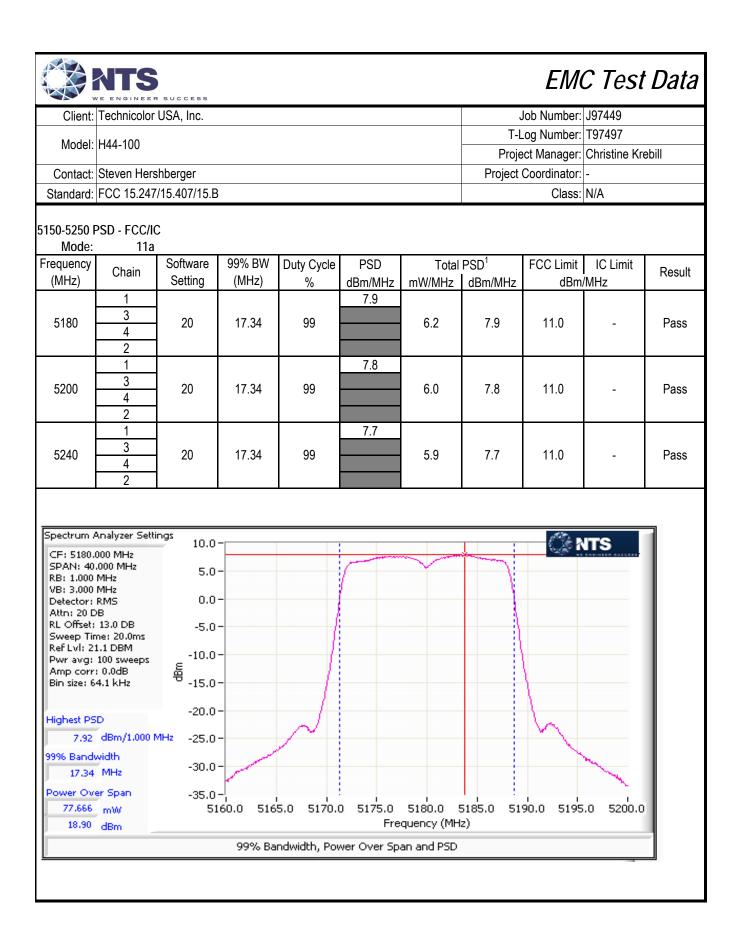
Sample S/N: L044A505250029 Driver: 5.99 RC188.10

Freq 1 2 3 4 BF Legacy CDD /Xpol (PWR) (5150-5250 2.80 2.88 No No No Yes No 2.88 <t< th=""><th></th><th></th><th>R SUCCESS</th><th></th><th></th><th></th><th></th><th></th><th>ЕМС</th><th>C Test</th><th>' Data</th></t<>			R SUCCESS						ЕМС	C Test	' Data
Model: H44-100 Project Manager: Christine Krebill Contact: Steven Hershberger Project Coordinator: - - Standard: FCC 15.247/15.407/15.B Class: N/A Run #1: Bandwidth, Output Power and Power Spectral Density - MIMO Systems Class: N/A Test Engineer: Rafed Varelas Config. Used: 1 - - Test Engineer: Rafed Varelas Config. Used: 1 - - Note 1: sweep 2* Span/RBW, sample RMS detector, power averaging on (transmitted signal was continuous) and power integration over 40 MHz (method SA-1 of KDB 789033). Note 2: PSD was measured using the same analyzer settings used for output power. - For 11n - Duty Cycle < 98%, constant duty cycle. Output power measured using a spectrum analyzer (see plots belo	Client:	Technicolor	USA, Inc.						Job Number:	J97449	
Contact: Steven Hershberger Project Manager: Christine KRebil Standard: FCC 15.247/15.407/15.B Class: IV/A Run #1: Bandwidth, Output Power and Power Spectral Density - MIMO Systems Date of Test: 2/25/2015 0:00 Config: Used: 1 Class: IV/A Run #1: Bandwidth, Output Power and Power Spectral Density - MIMO Systems Date of Test: 2/25/2015 0:00 Config: Used: 1 Class: IV/A Image: Christing Karl For 11a - Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, # of points Note 1: sweep ≥ 2*span/RBW, sample RMS detector, power averaging on (transmitted signal was continuous) and power integration over 40 MHz (method SA-1 of KDB 789033). Note 2: PSD was measured using the same analyzer settings used for output power. For 11n - Duty Cycle < 98%, constant duty cycle. Output power measured using a spectrum analyzer (see plots below). RBW=15% of OBW, VB23* RBW, RMS detector, power averaging on, and power integration over the OBW, trace a 100 traces (option SA-2, in KDB 789033). Measurement corrected by Pwr Cor Factor. Note 4: 99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB For MIMO systems the total output power and total PSD are calculated form the sum of the power depends on the ope (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the ope mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain and power or eachain. If the signal	Madal	1144 400						T-	Log Number:	T97497	
Standard: FCC 15.247/15.407/15.B Class: N/A Run #1: Bandwidth, Output Power and Power Spectral Density - MIMO Systems Date of Test: 225/2015 0:00 Config. Used: 1 Test Engineer: Rafael Varelas Config. Used: 1 Test Engineer: Rafael Varelas Config. Used: 1 Test Location: For 11a - Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, # of points Note 1: sweep 2 2*span/RBW, sample RMS detector, power averaging on (transmitted signal was continuous) and power integration over 40 MHz (method SA-1 of KDB 789033). Note 2: PSD was measured using the same analyzer settings used for output power integration over the OBW, VBc3* RBW, RMS detector, power averaging on, and power integration over the OBW, VBc3* RBW, RMS detector, power averaging on, and power integration over the OBW, trace a 100 traces (option SA-2, in KDB 789033). Note 4: 99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB For MIMO systems the total output power and total PSD are calculated form the sum of the products of gain and power one echain. If the signals on the non-otherent between the transmit chains then the gain used to deter the limits is the highest gain of the individual chains and the EIRP and limits for PSD/Output power depends on the ope chain. Note 5: 2.80 2.88 No No Yes No A 15150-5250 2.8	Model:	H44-100						Proj	ect Manager:	Christine Kr	ebill
Run #1: Bandwidth, Output Power and Power Spectral Density - MIMO Systems Date of Test: 2/25/2015 0:00 Config. Used: 1 Test Engineer: Rafael Varelas Test Location: FT Lab #4B EUT Voltage: 120V/60Hz For 11a - Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, # of points Note 1: sweep 2 "span/RBW, sample RMS detector, power averaging on (transmitted signal was continuous) and power integration over 40 MHz (method SA-1 of KDB 789033). Note 2: PSD was measured using the same analyzer settings used for output power. For 11n - Duty Cycle < 98%, constant duty cycle. Output power measured using a spectrum analyzer (see plots belo Note 3: RBW= 1-5% of OBW, VB≥3* RBW, RMS detector, power averaging on, and power integration over the OBW, trace a 100 traces (pition SA-2, in KDB 789033). Measurement corrected by Pwr Cor Factor. Note 4: 99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB For MIMO systems the total output power and total PSD are calculated form the sum of the products of gain and power on ea chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain. the limits is the highest gain of the individual chains and the EIRP and limits for PSD/Output power depends on the ope mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to det the limits is the highest gain of the individual chains and the EIRP and limits for PSD/Output power depends on the chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain the EIRP is the product of the effective gain and total power. <td>Contact:</td> <td>Steven Hers</td> <td>shberger</td> <td></td> <td></td> <td></td> <td></td> <td>Project</td> <td>Coordinator:</td> <td>-</td> <td></td>	Contact:	Steven Hers	shberger					Project	Coordinator:	-	
Date of Test: 2/25/2015 0:00 Config C.lused: 1 Test Engineer: Rafael Varelas Config C.lused: 1 Test Location: FT Lab #4B EUT Voltage: 120V/60Hz For 11a - Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, # of points Note 1: sweep 2 2*span.RBW, sample RMS detector, power averaging on (transmitted signal was continuous) and power integration over 40 MHz (method SA-1 of KDB 789033). Note 2: PSD was measured using the same analyzer settings used for output power. For 11n - Duty Cycle < 98%, constant duty cycle. Output power measured using a spectrum analyzer (see plots below).	Standard:	FCC 15.247	/15.407/15.B						Class:	N/A	
Note 1: sweep ≥ 2*span/RBW, sample RMS detector, power averaging on (transmitted signal was continuous) and power integration over 40 MHz (method SA-1 of KDB 789033). Note 2: PSD was measured using the same analyzer settings used for output power. For 11n - Duty Cycle < 98%, constant duty cycle. Output power measured using a spectrum analyzer (see plots belo Note 3: RBW= 1-5% of OBW, VB≥3* RBW, RMS detector, power averaging on, and power integration over the OBW, trace a 100 traces (option SA-2, in KDB 789033). Measurement corrected by Pwr Cor Factor.	l Te	Date of Test: est Engineer:	2/25/2015 0 Rafael Varel	:00	Spectral Der) Co	Config. Used: onfig Change:	None			
For 11n - Duty Cycle < 98%, constant duty cycle. Output power measured using a spectrum analyzer (see plots belo	Note 1:	sweep ≥ 2*s	span/RBW, s	ample RMS	detector, por	wer averagi		,		•	
Note 3: RBW= 1-5% of OBW, VB≥3* RBW, RMS detector, power averaging on, and power integration over the OBW, trace a 100 traces (option SA-2, in KDB 789033). Measurement corrected by Pwr Cor Factor. Note 4: 99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB For MIMO systems the total output power and total PSD are calculated form the sum of the powers of the individual c (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the ope mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to deter the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power one eachain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain the EIRP is the product of the effective gain and total power. Antenna Gain Information Freq Antenna Gain (dBi) / Chain BF MultiChain CDD Sectorized Dir G 5150-5250 2.80 2.88 No No Yes No 2.88 5470-5725 2.80 3.57 No No Yes No 4.58 For devices that support CDD modes Min # of spatial streams: 1 1 Max # of spatial streams: 2	Note 2:	PSD was m	easured usin	g the same a	analyzer setti	ngs used fo	r output power				
For MIMO systems the total output power and total PSD are calculated form the sum of the powers of the individual c (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the oper mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on ear chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain the EIRP is the product of the effective gain and total power. Antenna Gain Information Freq Antenna Gain (dBi) / Chain BF MultiChain Legacy CDD Sectorized Dir G 5150-5250 2.80 2.88 No No No Yes No 2.88 5470-5725 2.80 3.57 No No Yes No 3.57 5725-5880 2.80 4.58 No No Yes No 4.58 For devices that support CDD modes Min # of spatial streams: 1 Max # of spatial streams: 2		RBW= 1-5% 100 traces (of OBW, VB option SA-2,	8≥3* RBW, R in KDB 7890	MS detector, 033). Measu	, power aver rement corre	aging on, and ected by Pwr (power inte Cor Factor.	gration over th		
Note 5: (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the oper mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on ear chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain the EIRP is the product of the effective gain and total power. Antenna Gain Information Freq Antenna Gain (dBi) / Chain Freq MultiChain Antenna Gain (dBi) / Chain Freq MultiChain CDD Sectorized Jir G 10 / Xpol Provide the effective gain and total power. Antenna Gain (dBi) / Chain Freq MultiChain Legacy CDD Sectorized Dir G Sectorized No	Note 4:									f the individu	ual abaina
Freq Antenna Gain (dBi) / Chain BF MultiChain CDD Sectorized Dir G (PWR) O 5150-5250 2.80 2.88 No No No Yes No 2.88 5250-5350 2.80 2.88 No No No Yes No 2.88 5470-5725 2.80 3.57 No No No Yes No 2.88 5470-5725 2.80 3.57 No No No Yes No 3.57 5725-5880 2.80 4.58 No No No Yes No 4.58 For devices that support CDD modes Min # of spatial streams: 1 Max # of spatial streams: 2	Note 5:	mode of the the limits is chain. If the	MIMO device the highest g signals are o	 e. If the sign ain of the inconstruction coherent the 	als on the no lividual chain n the effectiv	on-coherent is and the E e antenna g	between the t IRP is the sum	ransmit chan of the proc	ins then the ducts of gain a	gain used to and power or	determine n each
Freq Antenna Gain (dBi) / Chain BF MultiChain CDD Sectorized Dir G (PWR) O 5150-5250 2.80 2.88 No No No Yes No 2.88 5250-5350 2.80 2.88 No No No Yes No 2.88 5470-5725 2.80 3.57 No No No Yes No 2.88 5470-5725 2.80 3.57 No No No Yes No 3.57 5725-5880 2.80 4.58 No No No Yes No 4.58 For devices that support CDD modes Min # of spatial streams: 1 Max # of spatial streams: 2	Antenna Ga	ain Informat	ion								
Freq 1 2 3 4 BF Legacy CDD /Xpol (PWR) (5150-5250 2.80 2.88 No No No Yes No 2.88 <t< td=""><td></td><td></td><td></td><td>n (dBi) / Chai</td><td>n</td><td></td><td>MultiChain</td><td></td><td>Sectorized</td><td>Dir G</td><td>Dir G</td></t<>				n (dBi) / Chai	n		MultiChain		Sectorized	Dir G	Dir G
5250-5350 2.80 2.88 No No No Yes No 2.88 5470-5725 2.80 3.57 No No No Yes No 3.57 5725-5880 2.80 4.58 No No No Yes No 4.58 For devices that support CDD modes Min # of spatial streams: 1 Max # of spatial streams: 2	Freq	1	2	3	4	BF	Legacy	CDD	/ Xpol	(PWR)	(PSD)
5470-5725 2.80 3.57 No No Yes No 3.57 5725-5880 2.80 4.58 No No No Yes No 4.58 For devices that support CDD modes Min # of spatial streams: 1 Max # of spatial streams: 2	5150-5250	2.80	2.88			No	No	Yes	No	2.88	5.89
5725-5880 2.80 4.58 No No Yes No 4.58 For devices that support CDD modes Min # of spatial streams: 1 Max # of spatial streams: 2	5250-5350	2.80	2.88			No	No	Yes	No	2.88	5.89
For devices that support CDD modes Min # of spatial streams: 1 Max # of spatial streams: 2	5470-5725	2.80	3.57			No	No	Yes	No	3.57	6.58
Min # of spatial streams: 1 Max # of spatial streams: 2	5725-5880	2.80	4.58			No	No	Yes	No	4.58	7.59
חיטנפ. דרפווחווומוץ חופמסטופווופוונס סוטשפע כוומוודד נט שפ שטו של כמשל וטו נווע דדמ טעטומנוטוו		Min # of spa Max # of spa	tial streams: tial streams:	1 2	in 1 to be w	orse case f	or the 11a op	eration			

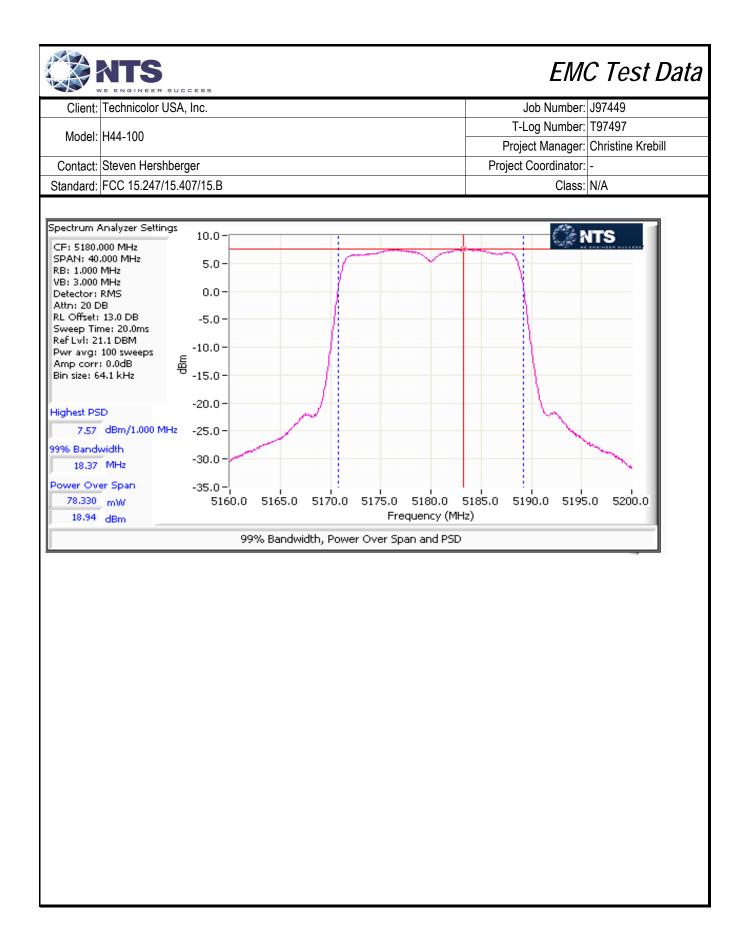
	NTS EM	IC Test Data
Client:	Technicolor USA, Inc. Job Numbe	r: J97449
Madal	H44-100 T-Log Numbe	r: T97497
woder.	Project Manage	r: Christine Krebill
Contact:	Steven Hershberger Project Coordinato	r: -
Standard:	FCC 15.247/15.407/15.B Class	: N/A
	DE - beenforming mode supported Multiphein Leggev - 902 11 leggev date rates supported for m	ultichain transmissions
Notes:	BF = beamforming mode supported, Multichain Legacy = 802.11 legacy data rates supported for m CDD = Cyclic Delay Diversity (or Cyclic Shift Diversity) modes supported, Sectorized / Xpol = anten cross polarized.	
Notes:	Dir G (PWR) = total gain (Gant + Array Gain) for power calculations; GA (PSD) = total gain for PSE FCC KDB 662911. Depending on the modes supported, the Array Gain value for power could be d value.	
Notes:	Array gain for power/psd calculated per DKB 662911 D01. Spatial Multiplexing with Nant=4, Nss=2 condition. Array gain = 10*log(4/2) = 3dB.	, for worse case
Notes:	For systems with Beamforming and CDD, choose one the following options: Option 1: Delays are optimized for beamforming, rather than being selected from cyclic delay table calculated based on beamforming criteria. Option 2: Antennas are paired for beamforming, and the pairs are configured to use the cyclic dela array gain assoicated with beamforming with 2 antennas (3dB), and the array gain assoicated with (3dB for PSD and 0 dB for power)	y diversity of 802.11; the
Notes:	For multiple output mode, the total PSD was calculated per KDB 662911. The maximum PSD value (in linear units).	e for each output summed

MIMO Device - 5150-5250 MHz Band - FCC

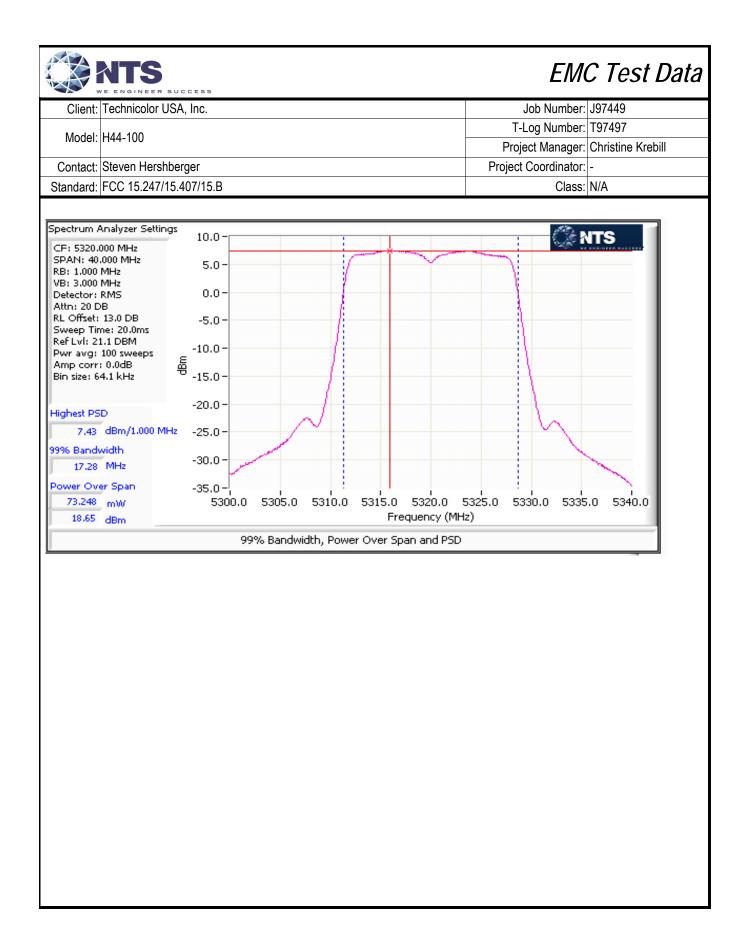
Mode:	11a						Max	EIRP (mW):	150.6	
Frequency	Chain	Software	26dB BW	Duty Cycle	Power ¹	Total I	Power	FCC Limit	Max Power	Result
(MHz)	Onain	Setting	(MHz)	%	dBm	mW	dBm	dBm	(W)	Result
5180	1 3 4 2	20	20.67	99	18.9	77.6	18.9	24.0		Pass
5200	1 3 4 2	20	20.67	99	18.9	77.6	18.9	24.0	0.078	Pass
5240	1 3 4 2	20	20.51	99	18.8	75.9	18.8	24.0		Pass



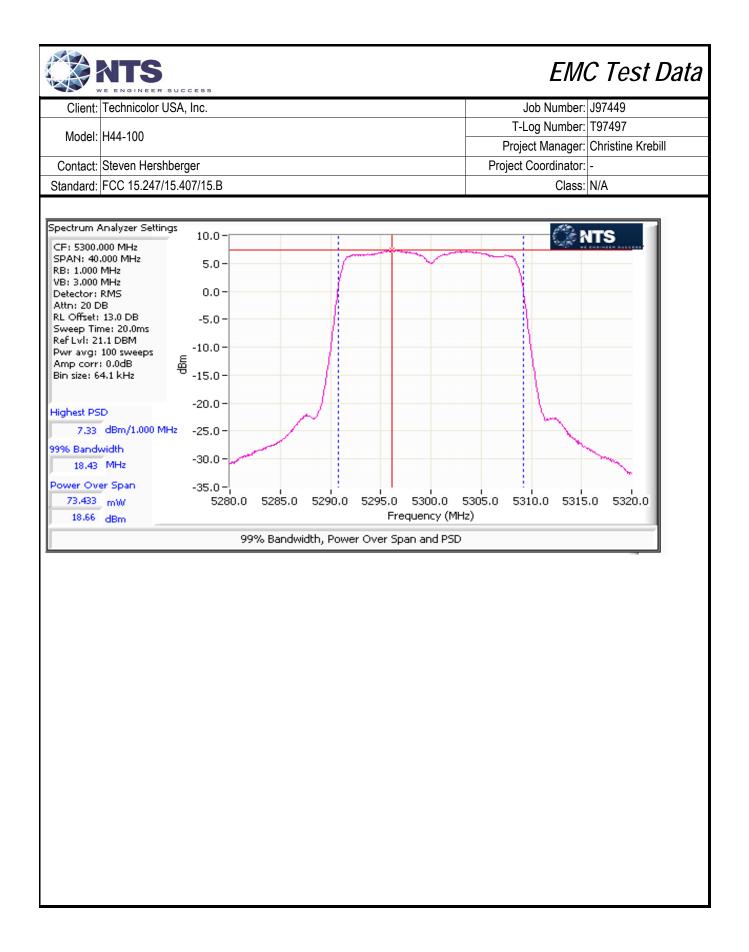
Client:	Technicolor	USA, Inc.					L. L	lob Number:	J97449	
Madal	H44-100						T-L	og Number:	T97497	
MOUEI.	H44-100						Proje	ect Manager:	Christine Kre	bill
Contact:	Steven Hers	hberger					Project	Coordinator:	-	
Standard:	FCC 15.247	/15.407/15.B	}					Class:	N/A	
	ce - 5150-52									
Mode:	n20		u-100				Max	EIRP (mW):	291.3	
requency	Chain	Software	26dB BW	Duty Cycle	Power ³	Total	Power		Max Power	Result
(MHz)	Chain	Setting	(MHz)	%	dBm	mW	dBm	dBm	(W)	i vesuit
	1				18.9					
5180	3	20	20.9	98		150.1	21.8	24.0		Pass
	2				18.4					
	1				18.9				ŀ	
5200	3	20	20.7	98		148.5	21.7	24.0	0.150	Pass
5200	4	20	20.7	30		140.0	21.1	24.0	0.150	1 433
	2				18.3 18.9				-	
					18.9					
	3									
5240	3	20	20.8	98		145.4	21.6	24.0		Pass
5240	3 4 2	20	20.8	98	18.1	145.4	21.6	24.0		Pass
5240	4	20	20.8	98		145.4	21.6	24.0		Pass
50-5250 I	4 2 PSD - FCC/I0		20.8	98		145.4	21.6	24.0		Pass
50-5250 I Mode:	4 2 PSD - FCC/I0 n20	2			18.1				IC Limit	
50-5250 I <u>Mode:</u> requency	4 2 PSD - FCC/I0	C Software	99% BW	Duty Cycle	18.1 PSD	Total	PSD ¹	FCC Limit		Pass
50-5250 I Mode:	4 2 PSD - FCC/I0 n20	2			18.1					
50-5250 I <u>Mode:</u> requency (MHz)	4 2 PSD - FCC/I0 n20 Chain 1 3	C Software Setting	99% BW (MHz)	Duty Cycle %	18.1 PSD dBm/MHz	Total mW/MHz	PSD ¹ dBm/MHz	FCC Limit dBm/	MHz	Result
50-5250 I <u>Mode:</u> equency	4 2 PSD - FCC/IC n20 Chain 1 3 4	C Software	99% BW	Duty Cycle	18.1 PSD dBm/MHz 7.6	Total	PSD ¹	FCC Limit		
50-5250 I <u>Mode:</u> requency (MHz)	4 2 PSD - FCC/IC n20 Chain 1 3 4 2	C Software Setting	99% BW (MHz)	Duty Cycle %	18.1 PSD dBm/MHz 7.6 7.0	Total mW/MHz	PSD ¹ dBm/MHz	FCC Limit dBm/	MHz	Result
50-5250 I <u>Mode:</u> requency (MHz) 5180	4 2 PSD - FCC/IO n20 Chain 1 3 4 2 1	Software Setting 20	99% BW (MHz) 18.43	Duty Cycle % 98	18.1 PSD dBm/MHz 7.6	Total mW/MHz 11.0	PSD ¹ dBm/MHz 10.4	FCC Limit dBm/ 11.0	MHz	Result
50-5250 I <u>Mode:</u> requency (MHz)	4 2 PSD - FCC/IC n20 Chain 1 3 4 2	C Software Setting	99% BW (MHz)	Duty Cycle %	18.1 PSD dBm/MHz 7.6 7.0	Total mW/MHz	PSD ¹ dBm/MHz	FCC Limit dBm/	MHz	Result
50-5250 I <u>Mode:</u> requency (MHz) 5180	4 2 PSD - FCC/IO n20 Chain 1 3 4 2 1	Software Setting 20	99% BW (MHz) 18.43	Duty Cycle % 98	18.1 PSD dBm/MHz 7.6 7.0 7.6 7.6 6.9	Total mW/MHz 11.0	PSD ¹ dBm/MHz 10.4	FCC Limit dBm/ 11.0	MHz -	Resul
50-5250 I <u>Mode:</u> requency (MHz) 5180	4 2 PSD - FCC/IC n20 Chain 1 3 4 2 1 3 4 2 1	Software Setting 20	99% BW (MHz) 18.43	Duty Cycle % 98	18.1 PSD dBm/MHz 7.6 7.0 7.0 7.6	Total mW/MHz 11.0	PSD ¹ dBm/MHz 10.4	FCC Limit dBm/ 11.0	MHz -	Result
50-5250 I <u>Mode:</u> requency (MHz) 5180	4 2 PSD - FCC/IO n20 Chain 1 3 4 2 1 3 4 2 1 3 4 2 1 3	Software Setting 20	99% BW (MHz) 18.43	Duty Cycle % 98	18.1 PSD dBm/MHz 7.6 7.0 7.6 7.6 6.9	Total mW/MHz 11.0	PSD ¹ dBm/MHz 10.4	FCC Limit dBm/ 11.0 11.0	MHz -	Result
50-5250 I <u>Mode:</u> requency (MHz) 5180 5200	4 2 PSD - FCC/IC n20 Chain 1 3 4 2 1 3 4 2 1	Software Setting 20 20	99% BW (MHz) 18.43 18.43	Duty Cycle % 98 98	18.1 PSD dBm/MHz 7.6 7.0 7.6 7.6 6.9	Total mW/MHz 11.0 10.9	PSD ¹ dBm/MHz 10.4 10.4	FCC Limit dBm/ 11.0	MHz - -	Result Pass Pass



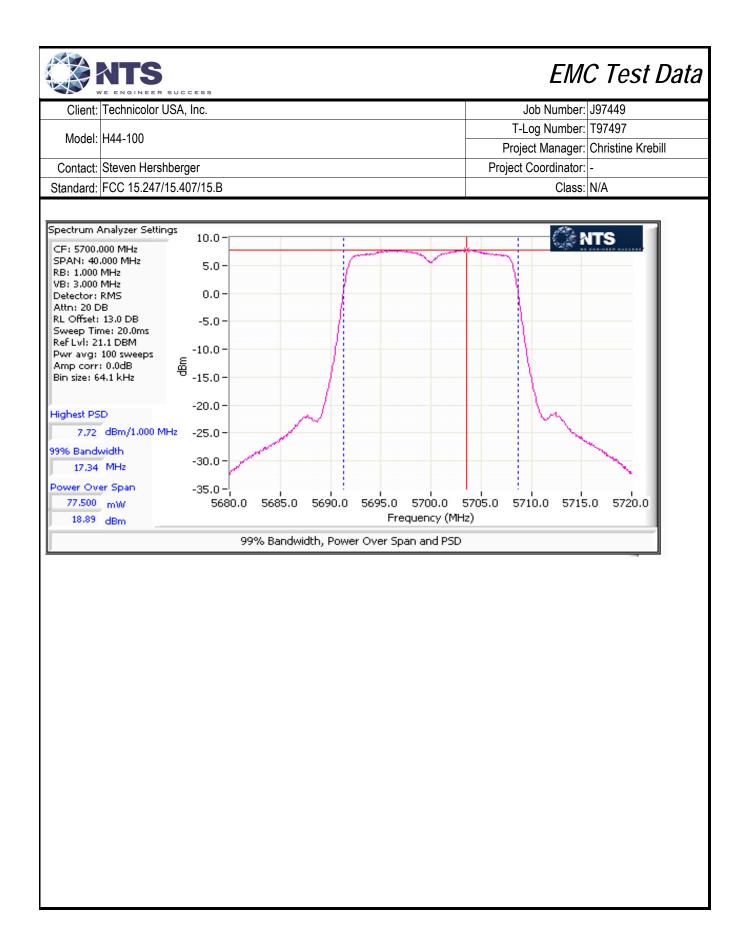
		SUCCESS						EM	C Test	Data
Client:	Technicolor	USA, Inc.					,	lob Number:	J97449	
Madalı	1144 400						T-L	og Number:	T97497	
woder:	H44-100						Proje	ct Manager:	Christine Kre	bill
Contact:	Steven Hers	hberger					Project	Coordinator:	-	
Standard:	FCC 15.247	/15.407/15.B						Class:	N/A	
MIMO Devid	ce - 5250-53	50 MHz Ban	d - FCC							
Mode:	11a							EIRP (mW):	143.8	
Frequency	Chain	Software	26dB BW	Duty Cycle		Total F			Max Power	Result
(MHz)		Setting	(MHz)	%	dBm	mW	dBm	dBm	(W)	
	1				18.6					
5260	3	20	20.59	99		72.4	18.6	24.0		Pass
	2									
	1				18.6					
5300	3	20	20.59	99		72.4	18.6	24.0	0.074	Pass
5300	4	20	20.59	99		12.4	10.0	24.0	0.074	Pass
	2									
	1				18.7					
5320	3	20	20.67	99		74.1	18.7	24.0		Pass
	4									
5250-5350 F Mode: Frequency (MHz)	PSD - FCC/IC 11a Chain	C Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total mW/MHz	PSD ¹ dBm/MHz	FCC Limit dBm	IC Limit /MHz	Result
, ,	1		. ,		7.4					
5260	3	20	17.34	99		5.5	7.4	11.0	-	Pass
5200	4	20	17.04	33		0.0	1.4	11.0	-	1 000
	2									
	1				7.4					
5300	3 4	20	17.28	99		5.5	7.4	11.0	-	Pass
	2									
	1				7.4					
5000	3	00	47.00	00		. .	7.4	44.0		D
5320	4	20	17.28	99		5.5	7.4	11.0	-	Pass
	2									



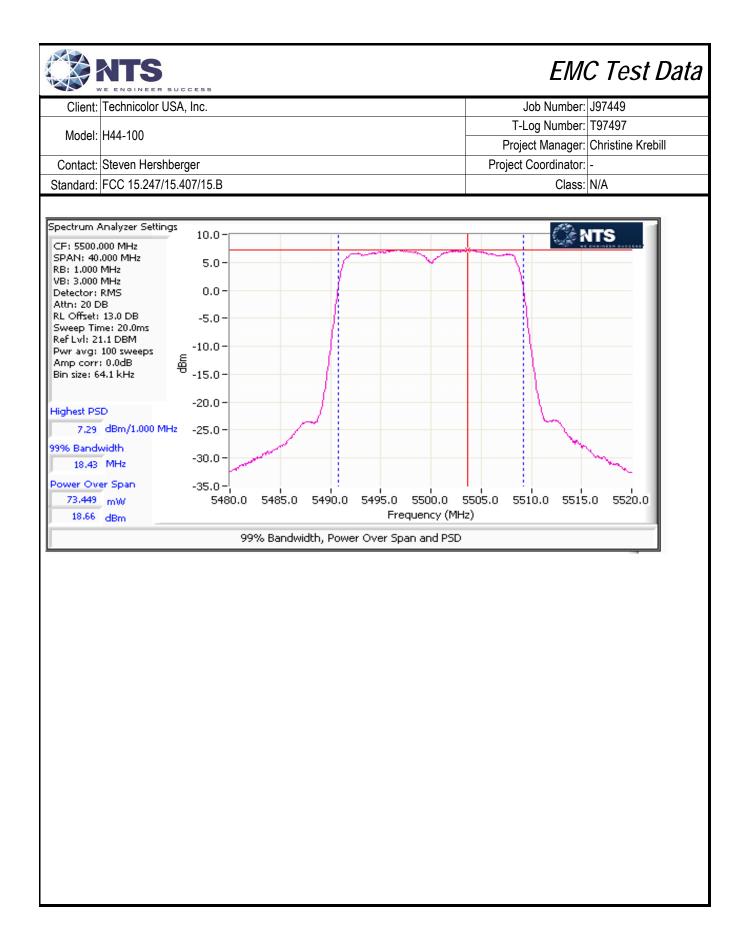
	Technicolor	USA, Inc.						lob Number:	J97449	
Madalı	1144 400						T-L	og Number:	T97497	
Model:	H44-100						Proje	ct Manager:	Christine Kre	bill
Contact:	Steven Hers	hberger					Project	Coordinator:	-	
Standard:	FCC 15.247	/15.407/15.B	}					Class:	N/A	
	ce - 5250-53	50 MHz Ban	d - FCC				Мах		070.0	
Mode: requency	n20	Software	26dB BW	Duty Cycle	Power ³	Total	Power ¹	EIRP (mW): FCC Limit	272.3 Max Power	
(MHz)	Chain	Setting	(MHz)	%	dBm	mW	dBm	dBm	(W)	Result
()	1		()	70	18.6	11100	0.Dill	QDIII	(**)	
5260	3	20	20.75	98		138.6	21.4	24.0		Pass
5200	4	20	20.75	50		100.0	21.4	24.0		1 433
	2				18.0 18.7					
	3				10.7					
5300	4	20	20.67	98		140.3	21.5	24.0	0.140	Pass
	2				18.0					
	1				18.6					
5320	3	20	20.83	98		138.6	21.4	24.0		Pass
	4				18.0					
250-5350 I <u>Mode:</u> Frequency (MHz)	PSD - FCC/IC n20 Chain	Software Setting	99% BW (MHz)	Duty Cycle %	dBm/MHz	Total mW/MHz	PSD ¹ dBm/MHz	FCC Limit dBm	IC Limit /MHz	Result
	1 3	20	18.43	98	7.2	9.9	10.0	11.0	-	Pass
5260	4				0.5					
× 7	4 2				6.5 7.3					
× 7	4	20	18.43	98	6.5 7.3 6.7	10.3	10.1	11.0	-	Pass



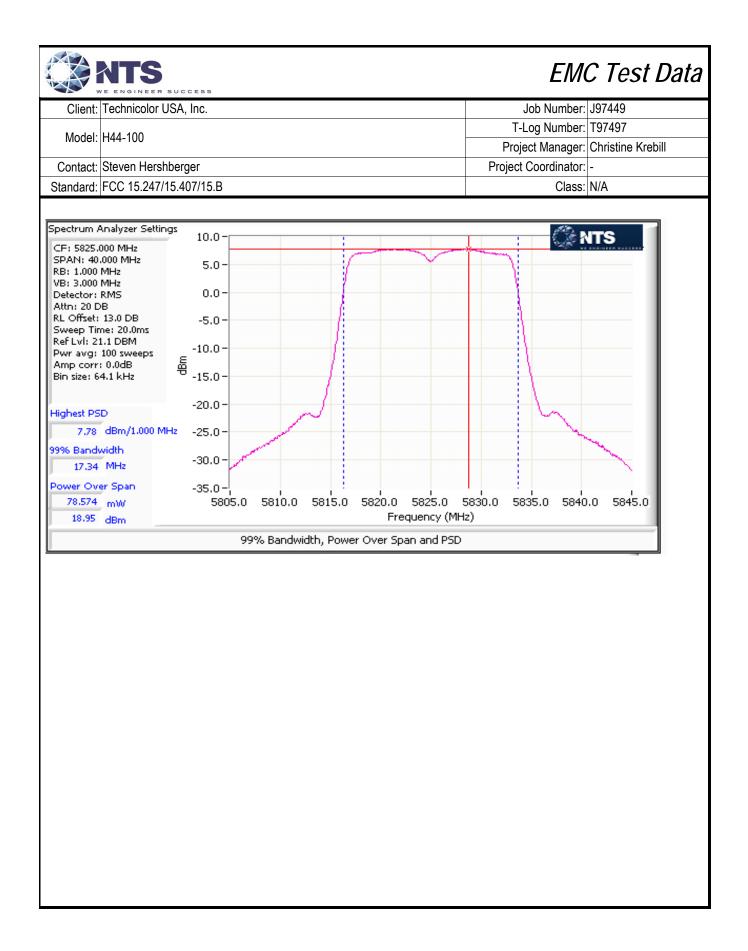
								Глл	C Toot	Data
		SUCCESS					1		C Test	Dala
Client:	Technicolor	USA, Inc.						Job Number:		
Model:	H44-100							og Number:		
									Christine Kre	bill
	Steven Hers	-					Project	Coordinator:		
Standard:	FCC 15.247	/15.407/15.B						Class:	N/A	
	ce - 5470-572	25 MHz Ban	d - FCC						400.0	
Mode:	11a	Software	26dB BW	Dut Out	Devue	T () I		EIRP (mW):	180.6 Max Power	
Frequency (MHz)	Chain	Software	260B BVV (MHz)	Duty Cycle	Power dBm	Total F		dBm	(W)	Result
	1	Setting	(1011 12)	%	18.5	mW	dBm	UDIII	(**)	
	3				10.0	=0.0	10 5			_
5500	4	20	20.59	99		70.8	18.5	24.0		Pass
	2									
	1				18.4					
5580	3	20	20.83	99		69.2	18.4	24.0	0.079	Pass
	4	-					-	-		
	2				19.0				-	
	3				19.0					
5700	4	20	20.83	99		79.4	19.0	24.0		Pass
	2									
5470-5700 I <u>Mode:</u> Frequency (MHz)	PSD - FCC/IC 11a Chain	C Software Setting	99% BW (MHz)	Duty Cycle	PSD dBm/MHz	Total mW/MHz	PSD ¹ dBm/MHz	FCC Limit	IC Limit /MHz	Result
()	1		()	70	7.3		QDITI/INITIZ	QDIII	//////12	
5500	3 4 2	20	17.28	99		5.4	7.3	10.4	-	Pass
	1				7.2					
5580	3	20	17.34	99		5.2	7.2	10.4	_	Pass
5500	4	20	17.34	33		J.Z	1.2	10.4	-	1 035
	2									
	1				7.7					
5700	3	20	17.34	99		5.9	7.7	10.4	-	Pass
	4									
	L								11	



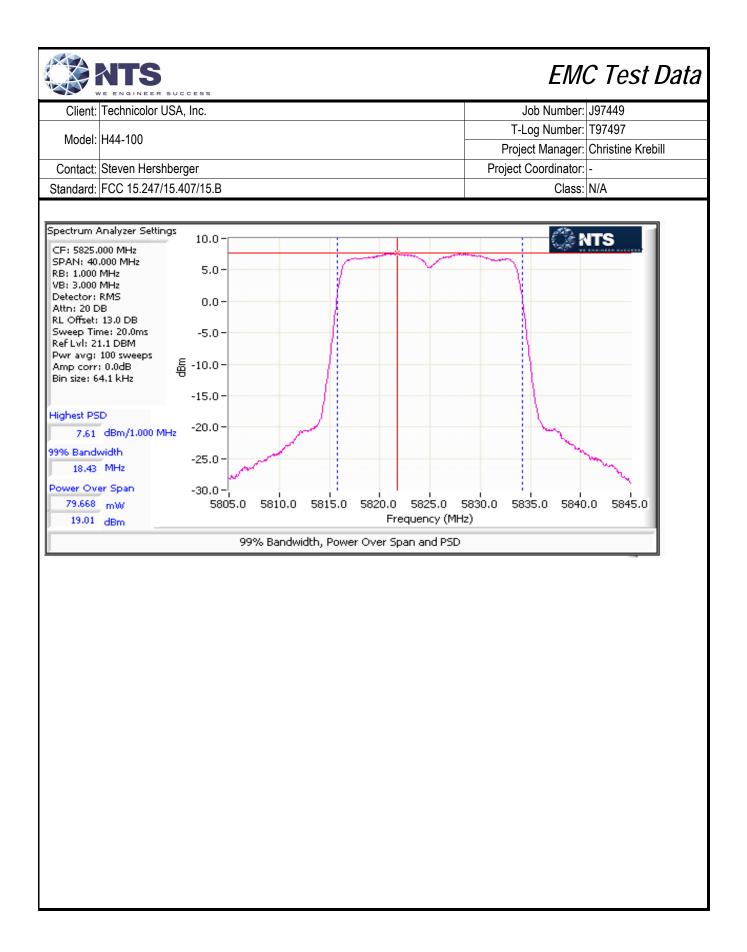
	ATS							FM	C Test	Data
Client:	Technicolor	SUCCESS						lob Number:		Data
		00/1, 110.						.og Number:		
Model:	H44-100							-	Christine Kre	bill
Contact [.]	Steven Hers	hberger						Coordinator:		
	FCC 15.247	-					110,000	Class:		
otanuaru.	10010.247	/10.407/10.D						01000.	11/7 (
IIMO Devi	ce - 5470-572	25 MHz Ban	d - FCC							
Mode:	n20							EIRP (mW):	337.2	
requency	Chain	Software	26dB BW	Duty Cycle	Power ³	Total F	Power ¹	FCC Limit	Max Power	Result
(MHz)	Ondin	Setting	(MHz)	%	dBm	mW	dBm	dBm	(W)	Result
	1				18.5					
5500	3	20	20.75	98		148.2	21.7	24.0		Pass
	4				18.7					
	1				18.1					
5500	3	00	00.00	00		400.0	04.0	04.0	0.140	Dees
5580	4	20	20.83	98		133.6	21.3	24.0	0.148	Pass
	2				18.2					
	1				17.9					
5700	3	19	20.83	98		129.1	21.1	24.0		Pass
	4				18.1					
Mode:	PSD - FCC/IC n20	C Software	99% BW	Duty Cycle	PSD	Total	PSD ¹	FCC Limit	IC Limit	
(MHz)	Chain	Setting	(MHz)	%	dBm/MHz	mW/MHz	dBm/MHz		/MHz	Result
× ,	1 3	Setting	(MHz)	%		mW/MHz	dBm/MHz	dBm	/MHz	
	1 3 4				dBm/MHz 7.1		_			Result Pass
(MHz)	1 3 4 2	Setting	(MHz)	%	dBm/MHz 7.1 7.3	mW/MHz	dBm/MHz	dBm	/MHz	
(MHz) 5500	1 3 4 2 1	Setting 20	(MHz) 18.43	98	dBm/MHz 7.1	mW/MHz 10.7	dBm/MHz 10.3	dBm 10.4	/MHz	Pass
(MHz)	1 3 4 2 1 3	Setting	(MHz)	%	dBm/MHz 7.1 7.3	mW/MHz	dBm/MHz	dBm	/MHz	
(MHz) 5500	1 3 4 2 1 3 4	Setting 20	(MHz) 18.43	98	dBm/MHz 7.1 7.3 6.7	mW/MHz 10.7	dBm/MHz 10.3	dBm 10.4	/MHz -	Pass
(MHz) 5500	1 3 4 2 1 3 4 2 1	Setting 20	(MHz) 18.43	98	dBm/MHz 7.1 7.3	mW/MHz 10.7	dBm/MHz 10.3	dBm 10.4	/MHz -	Pass
(MHz) 5500 5580	1 3 4 2 1 3 4 2 1 3	Setting 20 20	(MHz) 18.43 18.43	98 98 98	dBm/MHz 7.1 7.3 6.7 6.8	mW/MHz 10.7 9.7	dBm/MHz 10.3 9.9	dBm 10.4 10.4	/MHz - -	Pass Pass
(MHz) 5500	1 3 4 2 1 3 4 2 1	Setting 20	(MHz) 18.43	98	dBm/MHz 7.1 7.3 6.7 6.8	mW/MHz 10.7	dBm/MHz 10.3	dBm 10.4	/MHz -	Pass



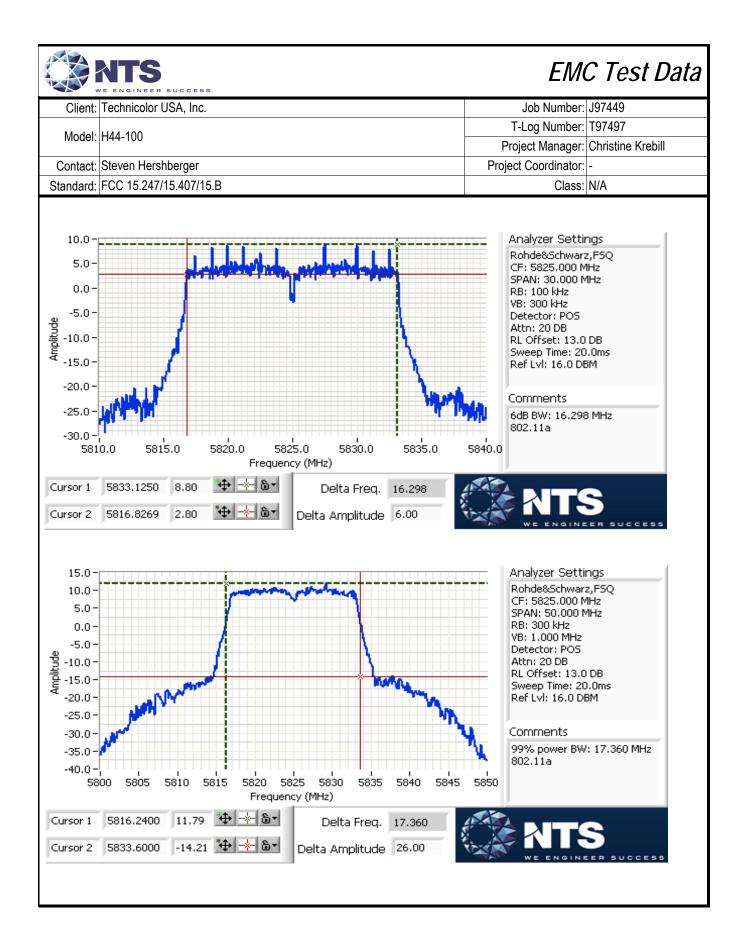
v		SUCCESS							1	
Client:	Technicolor	USA, Inc.						Job Number:		
Model.	H44-100							og Number:		
									Christine Kre	bill
	Steven Hers	-					Project	Coordinator:		
Standard:	FCC 15.247	/15.407/15.B	}					Class:	N/A	
MIMO Devid Mode:	ce - 5725-58! 11a	50 MHz Ban	d - FCC				Max	EIRP (mW):	227.9	
Frequency		Software	26dB BW	Duty Cycle	Power	Total F			Max Power	
(MHz)	Chain	Setting	(MHz)	%	dBm	mW	dBm	dBm	(W)	Result
. ,	1			,0	18.8		dBiii	dBiii	()	
5745	3	20		99		75.9	18.8	30.0		Pass
5145	4	20		33		13.3	10.0	50.0		1 000
	2				40.7				-	
	1 3				18.7					
5785	3 4	20		99		74.1	18.7	30.0	0.079	Pass
	2									
	1				19.0				1 F	
					19.0					
5825	3	20		99	19.0	79 /	19.0	30.0		Pass
5825		20		99	19.0	79.4	19.0	30.0		Pass
725-5850 F Mode:	3 4 2 PSD - FCC/IC 11a Chain		99% BW (MHz)	99 Duty Cycle %	PSD dBm/MHz		19.0 PSD ¹ dBm/MHz	FCC Limit	IC Limit 500kHz	Pass
725-5850 F Mode: Frequency	3 4 2 PSD - FCC/IC 11a Chain 1 3 4 2	Software		Duty Cycle	PSD dBm/MHz 7.6	Total	PSD ¹	FCC Limit		
5725-5850 F Mode: Frequency (MHz)	3 4 2 PSD - FCC/IC 11a Chain 1 3 4	Software Setting	(MHz)	Duty Cycle %	PSD dBm/MHz	Total mW/MHz	PSD ¹ dBm/MHz	FCC Limit dBm/5	500kHz	Result



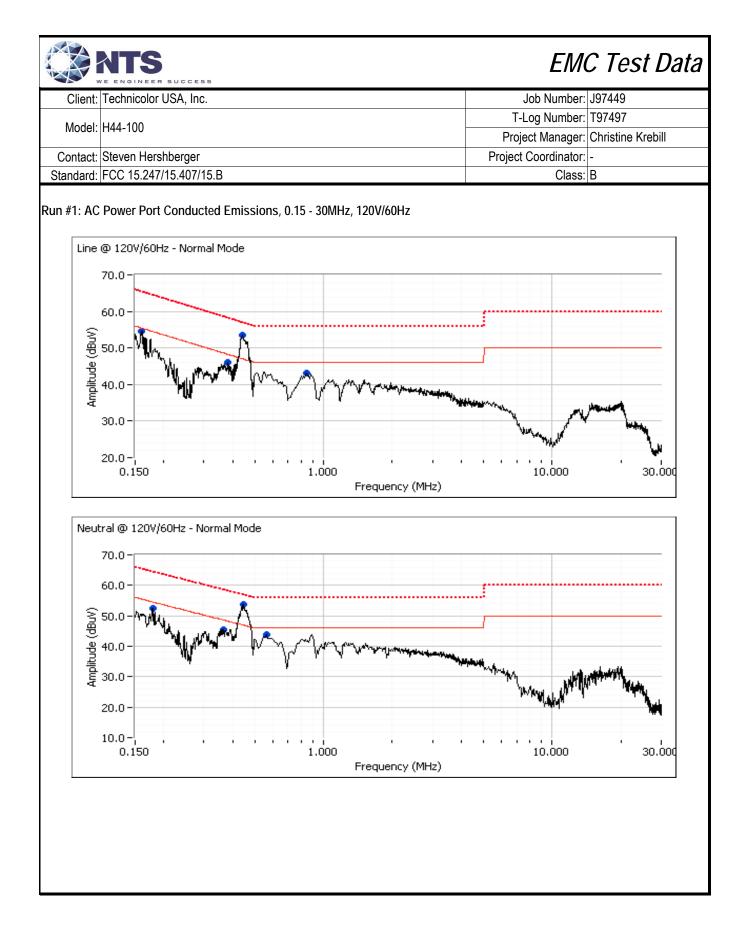
Client:	Technicolor	USA, Inc.					, i	Job Number:	J97449	
Model.	H44-100							og Number:		
									Christine Kre	bill
	Steven Hers	-					Project	Coordinator:		
Standard:	FCC 15.247	/15.407/15.B						Class:	N/A	
MIMO Devi	ce - 5725-58!	50 MHz Ban	d - FCC							
Mode:	n20							EIRP (mW):		
Frequency	Chain	Software	26dB BW	Duty Cycle	Power ³	Total F			Max Power	Result
(MHz)		Setting	(MHz)	%	dBm	mW	dBm	dBm	(W)	
	1				18.7					
5745	4	20		98		149.9	21.8	30.0		Pass
	2				18.6					
	1				18.7				[
5785	3	20		98		148.2	21.7	30.0	0.157	Pass
	4				18.5					
	1				19.0					
					10.0					
5005	3	20		00		157.0	00.0	20.0		Deee
5825	4	20		98		157.0	22.0	30.0		Pass
5825		20		98	18.7	157.0	22.0	30.0		Pass
5725-5850	4 2 PSD - FCC/I0			98	18.7	157.0	22.0	30.0		Pass
5725-5850 I Mode:	4	2	00% PM							Pass
725-5850 I Mode: Frequency	4 2 PSD - FCC/I0	C Software	99% BW (MHz)	Duty Cycle	PSD	Total	PSD ¹	FCC Limit		Pass
725-5850 I Mode:	4 2 PSD - FCC/IO n20 Chain	2	99% BW (MHz)		PSD dBm/MHz		PSD ¹	FCC Limit	IC Limit 00kHz	
725-5850 I Mode: Frequency (MHz)	4 2 PSD - FCC/I0 n20	C Software Setting	(MHz)	Duty Cycle %	PSD	Total mW/MHz	PSD ¹ dBm/MHz	FCC Limit dBm/5	00kHz	Result
725-5850 I Mode: Frequency	4 2 PSD - FCC/IO n20 Chain 1	C Software		Duty Cycle	PSD dBm/MHz	Total	PSD ¹	FCC Limit		
5725-5850 I Mode: Frequency (MHz)	4 2 PSD - FCC/IC n20 Chain 1 3 4 2	C Software Setting	(MHz)	Duty Cycle %	PSD dBm/MHz 7.4 7.2	Total mW/MHz	PSD ¹ dBm/MHz	FCC Limit dBm/5	00kHz	Result
5725-5850 I <u>Mode:</u> Frequency (MHz) 5745	4 2 PSD - FCC/IO n20 Chain 1 3 4 2 1	Software Setting 20	(MHz) 18.43	Duty Cycle % 98	PSD dBm/MHz 7.4	Total mW/MHz 11.0	PSD ¹ dBm/MHz	FCC Limit dBm/5	00kHz	Result
725-5850 I Mode: Frequency (MHz)	4 2 PSD - FCC/I0 n20 Chain 1 3 4 2 1 3	C Software Setting	(MHz)	Duty Cycle %	PSD dBm/MHz 7.4 7.2	Total mW/MHz	PSD ¹ dBm/MHz	FCC Limit dBm/5	00kHz	Result
5725-5850 I <u>Mode:</u> Frequency (MHz) 5745	4 2 PSD - FCC/IO n20 Chain 1 3 4 2 1	Software Setting 20	(MHz) 18.43	Duty Cycle % 98	PSD dBm/MHz 7.4 7.2	Total mW/MHz 11.0	PSD ¹ dBm/MHz 10.4	FCC Limit dBm/5 28.4	00kHz -	Result Pass
5725-5850 I <u>Mode:</u> Frequency (MHz) 5745	4 2 PSD - FCC/IC n20 Chain 1 3 4 2 1 3 4 2 1	Software Setting 20	(MHz) 18.43	Duty Cycle % 98	PSD dBm/MHz 7.4 7.2 7.4	Total mW/MHz 11.0	PSD ¹ dBm/MHz 10.4	FCC Limit dBm/5 28.4	00kHz -	Result Pass
725-5850 I <u>Mode:</u> Frequency (MHz) 5745 5785	4 2 PSD - FCC/IO n20 Chain 1 3 4 2 1 3 4 2 1 3 4 2 1 3	Software Setting 20 20	(MHz) 18.43 18.43	Duty Cycle % 98 98	PSD dBm/MHz 7.4 7.2 7.4 7.4 7.1	Total mW/MHz 11.0 10.9	PSD ¹ dBm/MHz 10.4 10.4	FCC Limit dBm/5 28.4 28.4	00kHz -	Result Pass Pass
5725-5850 I <u>Mode:</u> Frequency (MHz) 5745	4 2 PSD - FCC/IC n20 Chain 1 3 4 2 1 3 4 2 1	Software Setting 20	(MHz) 18.43	Duty Cycle % 98	PSD dBm/MHz 7.4 7.2 7.4 7.4 7.1	Total mW/MHz 11.0	PSD ¹ dBm/MHz 10.4	FCC Limit dBm/5 28.4	00kHz - -	Result Pass



Client:	Technicolor	USA, Inc.				J	lob Number: J	97449
Madal	1144 400					T-L	og Number: T	97497
wodel:	H44-100					Proje	ect Manager: C	hristine Krebil
Contact:	Steven Hers	hberger				Project (Coordinator: -	
Standard:	FCC 15.247/	15.407/15.B					Class: N	I/A
	andwidth Mea							
	Date of Test:				Config. Used:			
	-	Rafael Varelas			nfig Change:			
10	est Location:	FT Lad #4B		t	EUT Voltage:	120V/60HZ		
Mode:	11a							
		Hz band (UNII3)	-					
	Testing per	formed on port:	2 Bandwid	lth (MHz)		tina (M⊔→)	l	
	Setting	Frequency (MHz)	6dB	99%	6dB	ting (MHz) 99%		
	20	5745	16.4	17.3	100kHz	300kHz		
	20	5785	16.3	17.3	100kHz	300kHz		
	20	5825	16.3	17.4	100kHz	300kHz		
	Power Setting 20	Frequency (MHz) 5745 5785	6dB 17.6	th (MHz) 99% 18.0	6dB 100kHz	ting (MHz) 99% 300kHz		
	20	5785	17.6	18.1	100kHz	300kHz		
	20	5825	17.7	18.2	100kHz	300kHz		
	6dB BW: RE	3W=100kHz, VBW ≥ 3*R	BW. peak de	etector. max	hold. auto sw	eep time.		
Note 1:		BW=1-5% of of 99%BW,					ep time.	



	E ENGINEER S	UCCESS			E IVI	C Test Dat
Client:	Technicolor US	SA, Inc.			Job Number:	J97449
Model	H44-100			T·	-Log Number:	T97497
wouer.	1144-100			-		Christine Krebill
	Steven Hershb	-		Project	t Coordinator:	
Standard:	FCC 15.247/15	5.407/15.B			Class:	В
D Tes	sp 0ate of Test: 3/2 st Engineer: Al		perform final qualificat Config. Use Config Chang	tion testing of f	the EUT with r	respect to the
or tabletop nd 80cm fro ne semi-ane assed throu	om the LISN. echoic chamber ugh a ferrite cla	EUT was located on a wooden tabl A second LISN was used for all loca Any cables running to remote sup mp upon exiting the chamber.	al support equipment. port equipment where	Remote supp	oort equipmen	t was located outside
for tabletop nd 80cm fro ne semi-ane assed throu Ambient (equipment, the om the LISN. echoic chamber ugh a ferrite cla Conditions:	EUT was located on a wooden tabl A second LISN was used for all loca Any cables running to remote sup	al support equipment.	Remote supp	oort equipmen	t was located outside
For tabletop ind 80cm fro ne semi-ane assed throu Ambient (Summary	equipment, the om the LISN. echoic chamber ugh a ferrite cla Conditions: of Results	EUT was located on a wooden tabl A second LISN was used for all loca Any cables running to remote sup mp upon exiting the chamber. Temperature: Rel. Humidity:	al support equipment. port equipment where 22 °C 37 %	Remote supp e routed throug	port equipmen h metal condu	t was located outside
or tabletop nd 80cm fro ne semi-ane assed throu Ambient (Summary Run	equipment, the om the LISN. echoic chamber ugh a ferrite cla Conditions: of Results	EUT was located on a wooden tabl A second LISN was used for all loca Any cables running to remote sup mp upon exiting the chamber. Temperature: Rel. Humidity: Test Performed	al support equipment. port equipment where 22 °C 37 % Limit	Remote supp e routed throug Result	port equipmen h metal condu Margin	t was located outside uit and when possible
For tabletop ind 80cm fro ne semi-ane assed throu Ambient (Summary	equipment, the om the LISN. echoic chamber ugh a ferrite cla Conditions: of Results	EUT was located on a wooden tabl A second LISN was used for all loca Any cables running to remote sup mp upon exiting the chamber. Temperature: Rel. Humidity:	al support equipment. port equipment where 22 °C 37 %	Remote supp e routed throug	port equipmen h metal condu Margin	t was located outside



		USA, Inc.					Job Number	: J97449
Model		,					T-Log Number	: T97497
	H44-100						Project Manager	
Contact	Steven Hers	shberaer					Project Coordinator	
		//15.407/15.B					Class	
						l		
Preliminary	/ peak readi	ngs capture	d during pre	-scan (peak	readings v	s. average lim	it)	
Frequency	Level	AC		207	Detector	Comments		
MHz	dBµV	Line	Limit	Margin	QP/Ave			
0.159	54.6	Line 1	55.4	-0.8	Peak			
0.383	46.1	Line 1	48.2	-2.1	Peak			
0.443	53.4	Line 1	47.0	6.4	Peak			
0.842	43.2	Line 1	46.0	-2.8	Peak	ļ		
0.177	52.5	Neutral	54.5	-2.0	Peak			
0.365	45.4	Neutral	48.6	-3.2	Peak			
0.444 0.553	53.8 43.8	Neutral Neutral	47.0 46.0	6.8 -2.2	Peak Peak			
0.000	10.0	Houtai	10.0	6.6	1 out			
inal quasi	-peak and a	verage readi	ings					
	-	verage readi AC		207	Detector	Comments		
Frequency MHz	-	AC Line	15. Limit	Margin	QP/Ave			
Frequency MHz 0.444	Level dBµV 46.7	AC Line Neutral	15. Limit 47.0	Margin -0.3	QP/Ave AVG	AVG (0.10s)		
Frequency MHz 0.444 0.443	Level dBµV 46.7 46.4	AC Line Neutral Line 1	15. Limit 47.0 47.0	Margin -0.3 -0.6	QP/Ave AVG AVG	AVG (0.10s) AVG (0.10s)		
Frequency MHz 0.444 0.443 0.444	Level dBµV 46.7 46.4 53.6	AC Line Neutral Line 1 Neutral	15. Limit 47.0 47.0 57.0	Margin -0.3 -0.6 -3.4	QP/Ave AVG AVG QP	AVG (0.10s) AVG (0.10s) QP (1.00s)		
Frequency MHz 0.444 0.443 0.444 0.443	Level dBµV 46.7 46.4 53.6 53.3	AC Line Neutral Line 1 Neutral Line 1	15. Limit 47.0 47.0 57.0 57.0	Margin -0.3 -0.6 -3.4 -3.7	QP/Ave AVG AVG QP QP	AVG (0.10s) AVG (0.10s) QP (1.00s) QP (1.00s)		
Frequency MHz 0.444 0.443 0.444 0.443 0.365	Level dBµV 46.7 46.4 53.6 53.3 36.8	AC Line Neutral Line 1 Neutral Neutral	15 Limit 47.0 47.0 57.0 57.0 48.6	Margin -0.3 -0.6 -3.4 -3.7 -11.8	QP/Ave AVG AVG QP QP AVG	AVG (0.10s) AVG (0.10s) QP (1.00s) QP (1.00s) AVG (0.10s)		
Frequency MHz 0.444 0.443 0.444 0.443 0.365 0.842	Level dBµV 46.7 46.4 53.6 53.3 36.8 33.0	AC Line Neutral Line 1 Neutral Line 1 Line 1	15. Limit 47.0 47.0 57.0 57.0 48.6 46.0	Margin -0.3 -0.6 -3.4 -3.7 -11.8 -13.0	QP/Ave AVG AVG QP QP AVG AVG	AVG (0.10s) AVG (0.10s) QP (1.00s) QP (1.00s) AVG (0.10s) AVG (0.10s)		
Frequency MHz 0.444 0.443 0.444 0.443 0.365 0.842 0.365	Level dBµV 46.7 46.4 53.6 53.3 36.8 33.0 45.2	AC Line Neutral Line 1 Neutral Line 1 Neutral Neutral	15. Limit 47.0 47.0 57.0 57.0 48.6 46.0 58.6	Margin -0.3 -0.6 -3.4 -3.7 -11.8 -13.0 -13.4	QP/Ave AVG AVG QP QP AVG AVG QP	AVG (0.10s) AVG (0.10s) QP (1.00s) QP (1.00s) AVG (0.10s) AVG (0.10s) QP (1.00s)		
Frequency MHz 0.444 0.443 0.444 0.443 0.365 0.842 0.365 0.553	Level dBµV 46.7 46.4 53.6 53.3 36.8 33.0 45.2 32.0	AC Line Neutral Line 1 Neutral Line 1 Neutral Neutral Neutral	15. Limit 47.0 47.0 57.0 57.0 48.6 46.0 58.6 46.0	Margin -0.3 -0.6 -3.4 -3.7 -11.8 -13.0 -13.4 -14.0	QP/Ave AVG QP QP AVG AVG QP AVG	AVG (0.10s) AVG (0.10s) QP (1.00s) QP (1.00s) AVG (0.10s) AVG (0.10s) QP (1.00s) AVG (0.10s)		
Frequency MHz 0.444 0.443 0.443 0.444 0.443 0.365 0.842 0.365 0.553 0.553	Level dBµV 46.7 46.4 53.6 53.3 36.8 33.0 45.2 32.0 41.8	AC Line Neutral Line 1 Neutral Line 1 Neutral Neutral Neutral Neutral	15 Limit 47.0 47.0 57.0 57.0 48.6 46.0 58.6 46.0 56.0	Margin -0.3 -0.6 -3.4 -3.7 -11.8 -13.0 -13.4 -14.0 -14.2	QP/Ave AVG QP QP AVG AVG QP AVG QP	AVG (0.10s) AVG (0.10s) QP (1.00s) QP (1.00s) AVG (0.10s) AVG (0.10s) QP (1.00s) QP (1.00s)		
Frequency MHz 0.444 0.443 0.443 0.444 0.443 0.365 0.842 0.365 0.553 0.553 0.383	Level dB _µ V 46.7 46.4 53.6 53.3 36.8 33.0 45.2 32.0 41.8 33.9	AC Line Neutral Line 1 Neutral Line 1 Neutral Neutral Neutral Line 1 Line 1	15. Limit 47.0 47.0 57.0 57.0 48.6 46.0 58.6 46.0 58.6 46.0 56.0 48.2	Margin -0.3 -0.6 -3.4 -3.7 -11.8 -13.0 -13.4 -14.0 -14.2 -14.3	QP/Ave AVG QP QP AVG AVG QP AVG QP AVG	AVG (0.10s) AVG (0.10s) QP (1.00s) QP (1.00s) AVG (0.10s) AVG (0.10s) QP (1.00s) AVG (0.10s) QP (1.00s) AVG (0.10s)		
Frequency MHz 0.444 0.443 0.443 0.365 0.842 0.365 0.553 0.553 0.383 0.383	Level dBµV 46.7 46.4 53.6 53.3 36.8 33.0 45.2 32.0 41.8 33.9 43.9	AC Line Neutral Line 1 Neutral Line 1 Neutral Neutral Neutral Line 1 Line 1 Line 1	15. Limit 47.0 47.0 57.0 57.0 48.6 46.0 58.6 46.0 58.6 46.0 58.6 46.0 58.2	Margin -0.3 -0.6 -3.4 -3.7 -11.8 -13.0 -13.4 -14.0 -14.2 -14.3 -14.3	QP/Ave AVG QP QP AVG AVG QP AVG QP AVG QP	AVG (0.10s) AVG (0.10s) QP (1.00s) AVG (0.10s) AVG (0.10s) QP (1.00s) AVG (0.10s) QP (1.00s) AVG (0.10s) QP (1.00s) QP (1.00s)		
requency MHz 0.444 0.443 0.443 0.443 0.365 0.842 0.365 0.553 0.553 0.553 0.383 0.383 0.383 0.177	Level dBµV 46.7 46.4 53.6 53.3 36.8 33.0 45.2 32.0 41.8 33.9 43.9 40.0	AC Line Neutral Line 1 Neutral Line 1 Neutral Neutral Neutral Line 1 Line 1 Neutral	15. Limit 47.0 47.0 57.0 57.0 48.6 46.0 58.6 46.0 58.6 46.0 58.6 46.0 58.2 58.2 58.2 54.6	Margin -0.3 -0.6 -3.4 -3.7 -11.8 -13.0 -13.4 -14.0 -14.2 -14.3 -14.3 -14.3 -14.6	QP/Ave AVG QP QP AVG AVG QP AVG QP AVG QP AVG	AVG (0.10s) AVG (0.10s) QP (1.00s) AVG (0.10s) AVG (0.10s) QP (1.00s) AVG (0.10s) QP (1.00s) AVG (0.10s) QP (1.00s) AVG (0.10s) QP (1.00s)		
Frequency MHz 0.444 0.443 0.443 0.365 0.842 0.365 0.553 0.553 0.553 0.383 0.383 0.177 0.842	Level dBµV 46.7 46.4 53.6 53.3 36.8 33.0 45.2 32.0 41.8 33.9 43.9 40.0 41.1	AC Line Neutral Line 1 Neutral Line 1 Neutral Neutral Neutral Neutral Line 1 Line 1 Neutral Line 1	15. Limit 47.0 47.0 57.0 57.0 48.6 46.0 58.6 46.0 58.6 46.0 58.6 46.0 58.2 58.2 58.2 54.6 56.0	Margin -0.3 -0.6 -3.4 -3.7 -11.8 -13.0 -13.4 -14.0 -14.2 -14.3 -14.3 -14.3 -14.6 -14.9	QP/Ave AVG QP QP AVG QP AVG QP AVG QP AVG QP AVG QP	AVG (0.10s) AVG (0.10s) QP (1.00s) QP (1.00s) AVG (0.10s) AVG (0.10s) QP (1.00s) AVG (0.10s) QP (1.00s) AVG (0.10s) QP (1.00s) AVG (0.10s) QP (1.00s)		
Frequency MHz 0.444 0.443 0.443 0.365 0.842 0.365 0.553 0.553 0.553 0.383 0.383 0.383 0.177	Level dBµV 46.7 46.4 53.6 53.3 36.8 33.0 45.2 32.0 41.8 33.9 43.9 40.0	AC Line Neutral Line 1 Neutral Line 1 Neutral Neutral Neutral Line 1 Line 1 Neutral	15. Limit 47.0 47.0 57.0 57.0 48.6 46.0 58.6 46.0 58.6 46.0 58.6 46.0 58.2 58.2 58.2 54.6	Margin -0.3 -0.6 -3.4 -3.7 -11.8 -13.0 -13.4 -14.0 -14.2 -14.3 -14.3 -14.3 -14.6	QP/Ave AVG QP QP AVG AVG QP AVG QP AVG QP AVG	AVG (0.10s) AVG (0.10s) QP (1.00s) AVG (0.10s) AVG (0.10s) QP (1.00s) AVG (0.10s) QP (1.00s) AVG (0.10s) QP (1.00s) AVG (0.10s) QP (1.00s)		



End of Report

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