CHANNEL ACCESS BASED ON AMBIENT LEVELS, 2 CHANNEL

XMit 2016.05.06

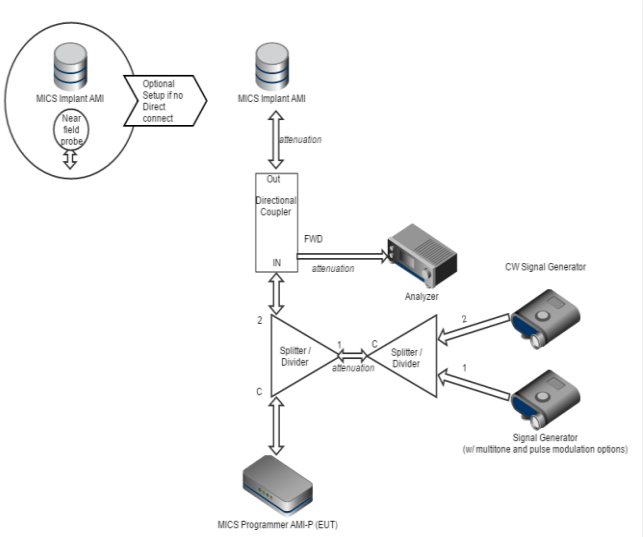
Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Probe - Near Field Set	ETS Lindgren	7405	IPO	NCR	NCR
Directional Coupler	Fairview Microwave	SMC4039-10	RGS	NCR	NCR
Power Divider/Combiner	Fairview Microwave Inc (SM electronics)	MP8451-2	IAD	NCR	NCR
Power Divider/Combiner	Fairview Microwave Inc (SM electronics)	MP8451-2	IAC	NCR	NCR
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	10/17/2017
Generator - Signal	Agilent	N5182A	TIF	8/12/2014	8/12/2017
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	9/18/2016
Attenuator	S.M. Electronics	SA26B-20	RFW	2/26/2016	2/26/2017
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	9/18/2016
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/24/2016	3/24/2017

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The EUT was configured according to the following block diagram:



The signal generator was set to multitone operation to cause equal interferance across the entire band. The amplitude of the multitone signals (out of operation region) were set to the LBT threshold of 10*LOG(Bandwidth) - 150 + Antenna Gain + 10 dB.

The intended frequency (Fc) was set to the LBT threshold - 3 dB. A least interferred channel (LIC) was set to the LBT threshold + 3 dB. The EUT was verified to transmit on Fc. The amplitude of Fc was then raised to the LBT threshold + 6 dB. The EUT was verified to transmit on LIC.

The spectrum analyzer was set to measure the transmit band of 402-405 MHz. Screen captures were provided to show the EUT behavior at the different LBT threshold levels.

CHANNEL ACCESS BASED ON AMBIENT LEVELS, 2 CHANNEL

NORTHWEST EMC

XMit 2016.05.06

EUT:	Model 3300			**Work Order:**	BSTN0663
Serial Number:	058			**Date:**	08/16/16
Customer:	Boston Scientific Corporation			**Temperature:**	23.4 °C
Attendees:	Pete Musto			**Humidity:**	60.1% RH
Project:	Laramie Vision			**Barometric Pres.:**	1019 mbar
Tested by:	Dustin Sparks	**Power:**	110VAC/60Hz	**Job Site:**	MN08

TEST SPECIFICATIONS	Test Method
EN 301 839 V2.1.1:2016	EN 301 839 V2.1.1:2016

COMMENTS

EUT bandwidth is 300000 Hz with an antenna gain of -5 dBi.

DEVIATIONS FROM TEST STANDARD

None

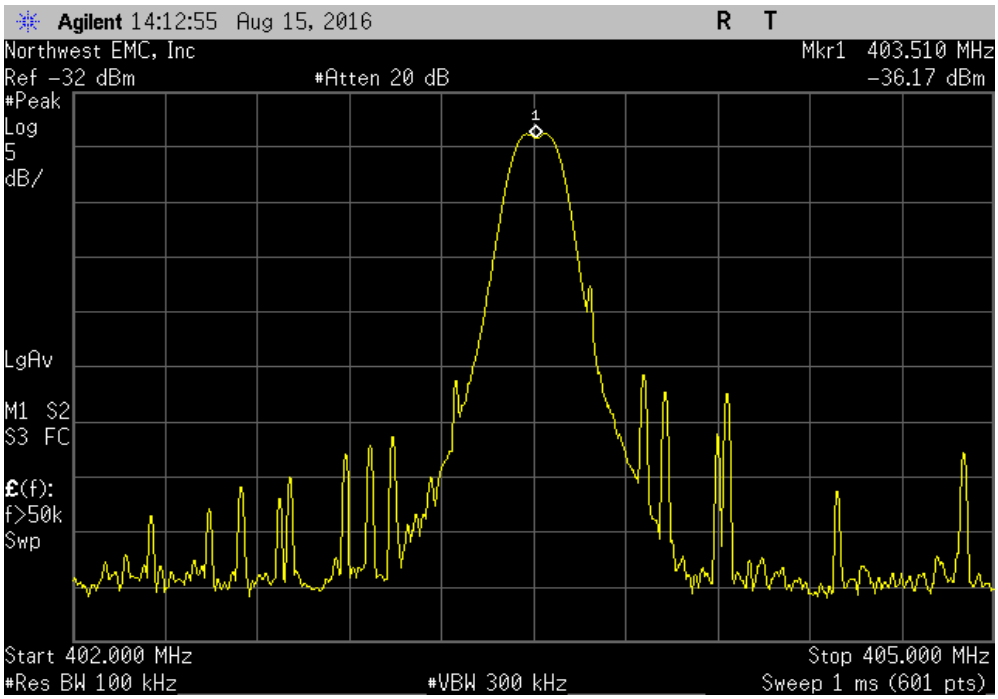
Configuration #	10	Signature

	Transmit on LIC?	Transmit on Fc?	Limit (LIC)	Result
Fc LBT Threshold -3 dB	No	Yes	No	Pass
Fc LBT Threshold +6 dB	Yes	No	Yes	Pass

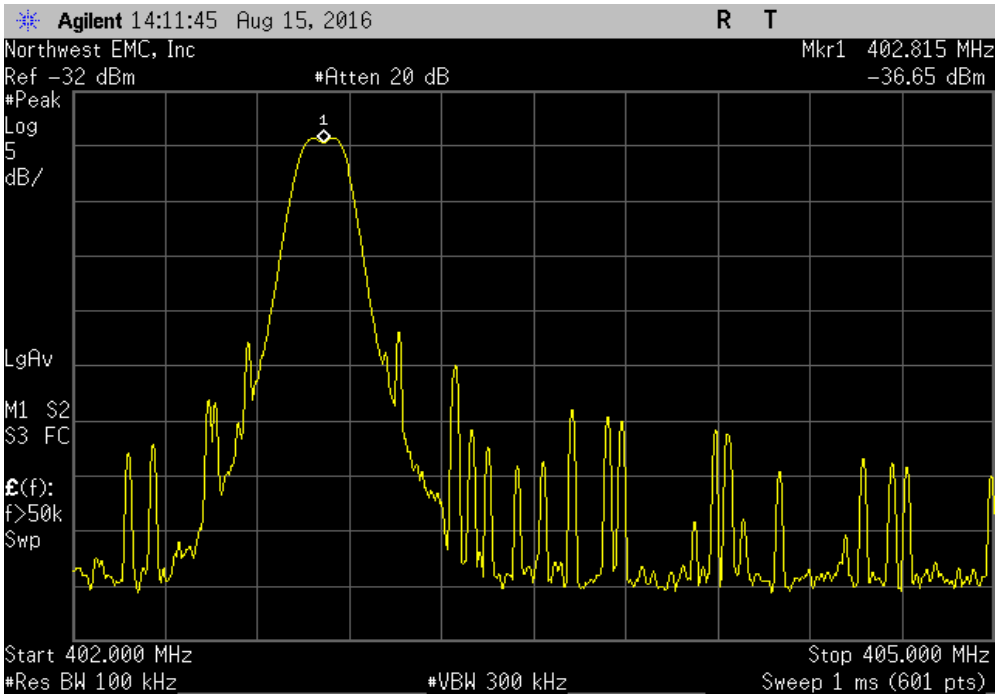
CHANNEL ACCESS BASED ON AMBIENT LEVELS, 2 CHANNEL

XMit 2016.05.06

Fc LBT Threshold -3 dB						
			Transmit on LIC?	Transmit on Fc?	Limit (LIC)	Result
			No	Yes	No	Pass

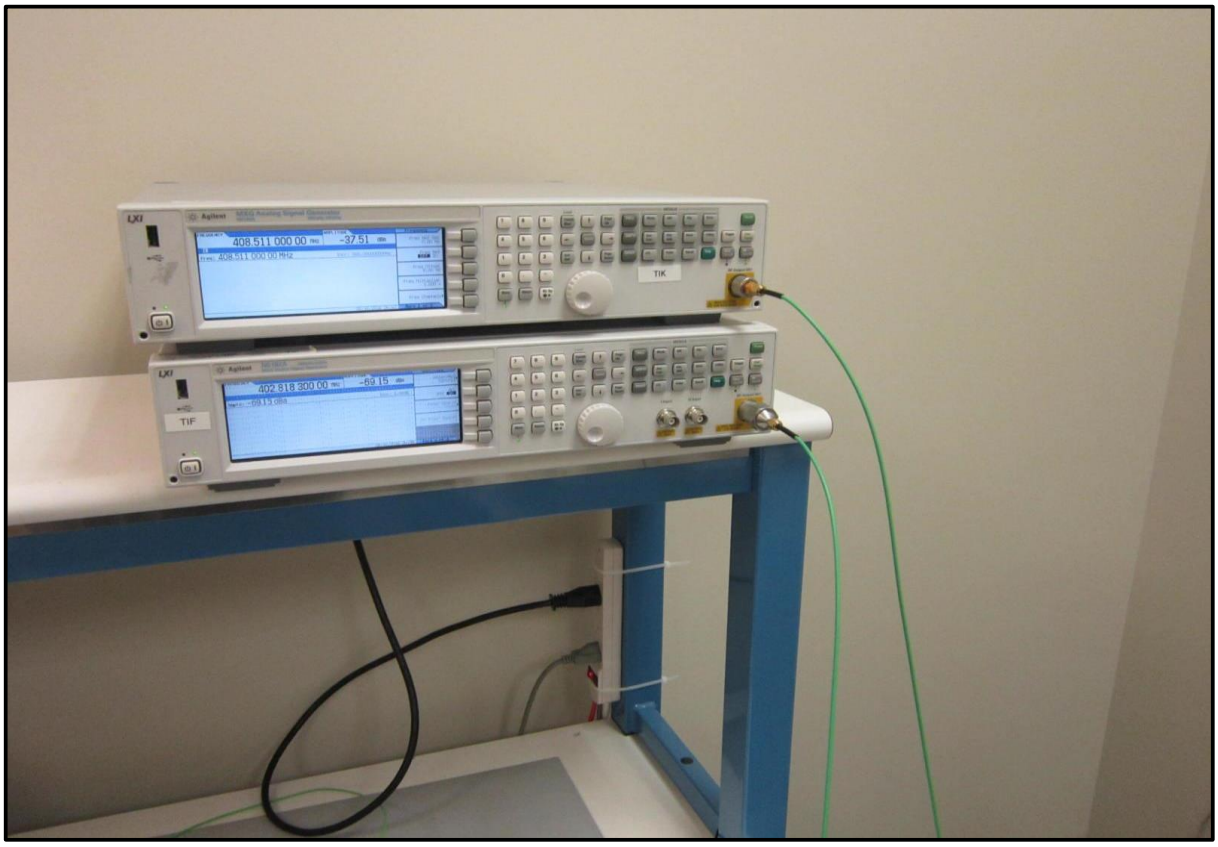


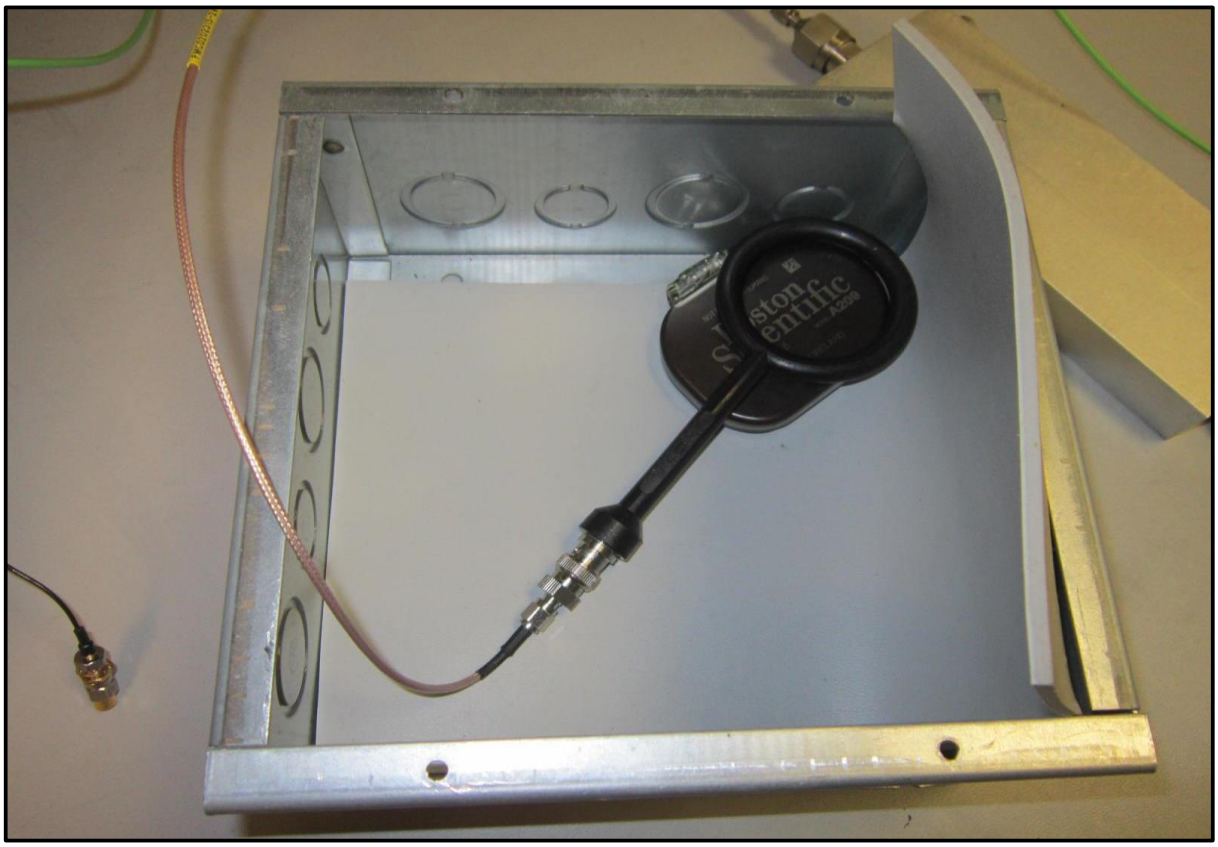
Fc LBT Threshold +6 dB						
			Transmit on LIC?	Transmit on Fc?	Limit (LIC)	Result
			Yes	No	Yes	Pass



CHANNEL ACCESS BASED ON AMBIENT LEVELS, 2 CHANNEL

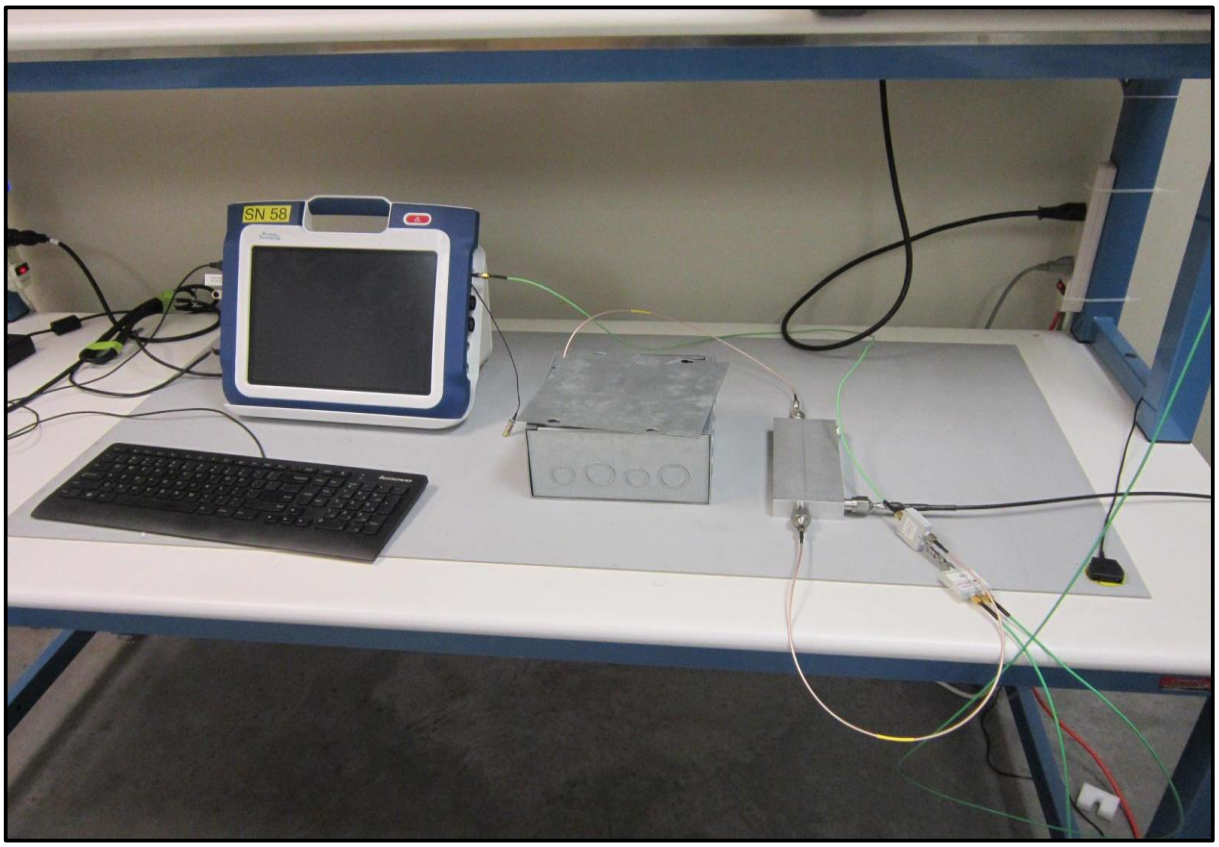
XMit 2016.05.06





CHANNEL ACCESS BASED ON AMBIENT LEVELS, 2 CHANNEL

XMit 2016.05.06



DISCONTINUATION OF A MICS SESSION, 10 CHANNEL

XMit 2016.05.06

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

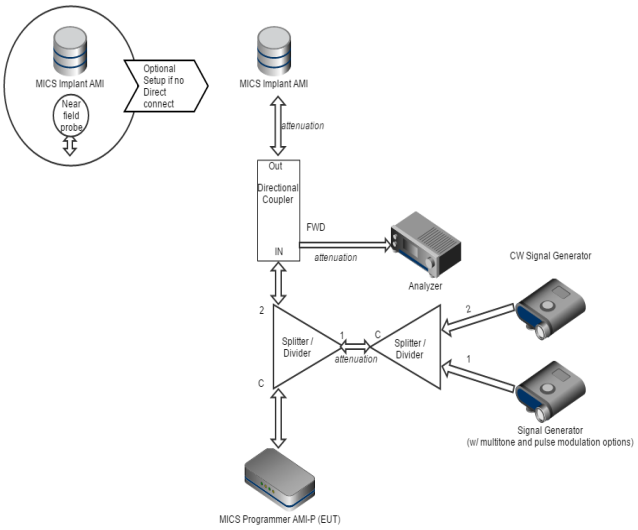
Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Probe - Near Field Set	ETS Lindgren	7405	IPO	NCR	NCR
Directional Coupler	Fairview Microwave	SMC4039-10	RGS	NCR	NCR
Power Divider/Combiner	Fairview Microwave Inc (SM electronics)	MP8451-2	IAD	NCR	NCR
Power Divider/Combiner	Fairview Microwave Inc (SM electronics)	MP8451-2	IAC	NCR	NCR
Generator - Signal	Agilent	E4422B	TGQ	3/17/2015	3/17/2018
Generator - Signal	Agilent	N5182A	TIF	8/12/2014	8/12/2017
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	9/18/2016
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	9/18/2016
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/24/2016	3/24/2017

TEST DESCRIPTION

A near-field probe was placed near the transmitter. A low-loss coaxial cable was used to connect the near-field probe to the spectrum analyzer. The EUT was configured according to the following block diagram:

The signal generator was set to multitone operation to cause equal interferance across the entire band. The amplitude of the multitone signals (out of operation region) were set to the LBT threshold of 10*LOG(Bandwidth) - 150 + Antenna Gain + 10 dB.

The intended frequency (Fc) was set to the LBT threshold + 6 dB. A least interferred channel (LIC) was set to the LBT threshold + 3 dB. The spectrum analyzer was set to measure the time between the removal of the MICS Implant AMI to when the EUT does not transmit on the LIC.



DISCONTINUATION OF A MICS SESSION, 10 CHANNEL

NORTHWEST EMC

XMit 2016.05.06

EUT:	Model 3300			**Work Order:**	BSTN0663
Serial Number:	058			**Date:**	08/08/16
Customer:	Boston Scientific Corporation			**Temperature:**	23.4 °C
Attendees:	Pete Musto			**Humidity:**	54.6% RH
Project:	Laramie Vision			**Barometric Pres.:**	1018 mbar
Tested by:	Dustin Sparks	**Power:**	220VAC/60Hz	**Job Site:**	MN02

TEST SPECIFICATIONS	Test Method
EN 301 839 V2.1.1:2016	EN 301 839 V2.1.1:2016

COMMENTS

EUT emissions bandwidth is 300000 Hz, 2.7 dBi antenna gain. Antenna port B, PRM application 3869 0.03.13

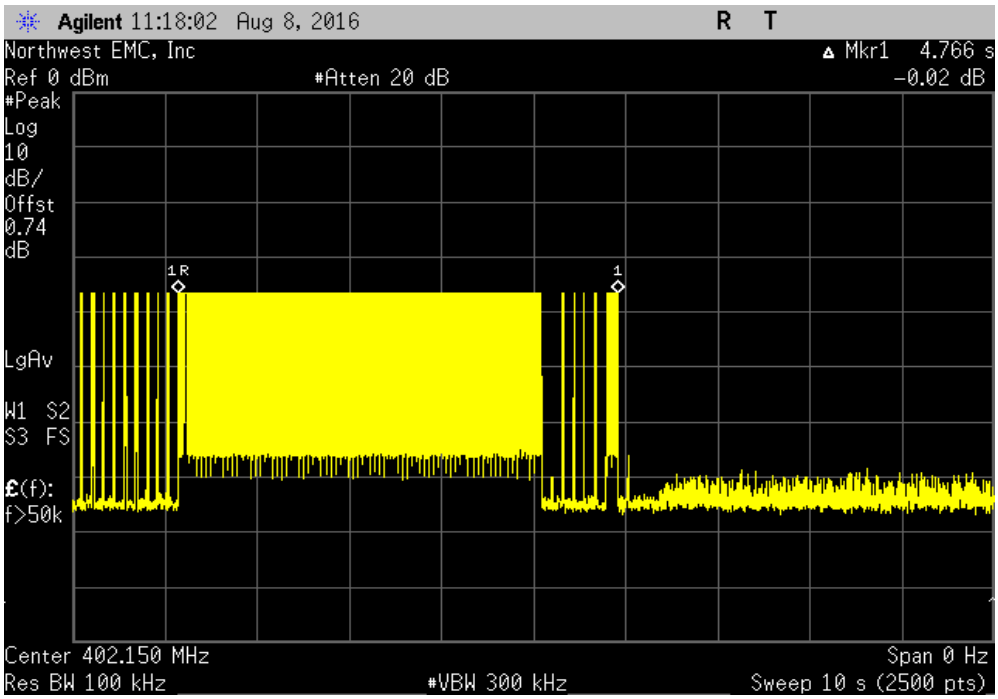
DEVIATIONS FROM TEST STANDARD

None

Configuration #	7	Signature

	Value (s)	Limit (s)	Result
20 Second Sweep	4.766	<= 5	Pass

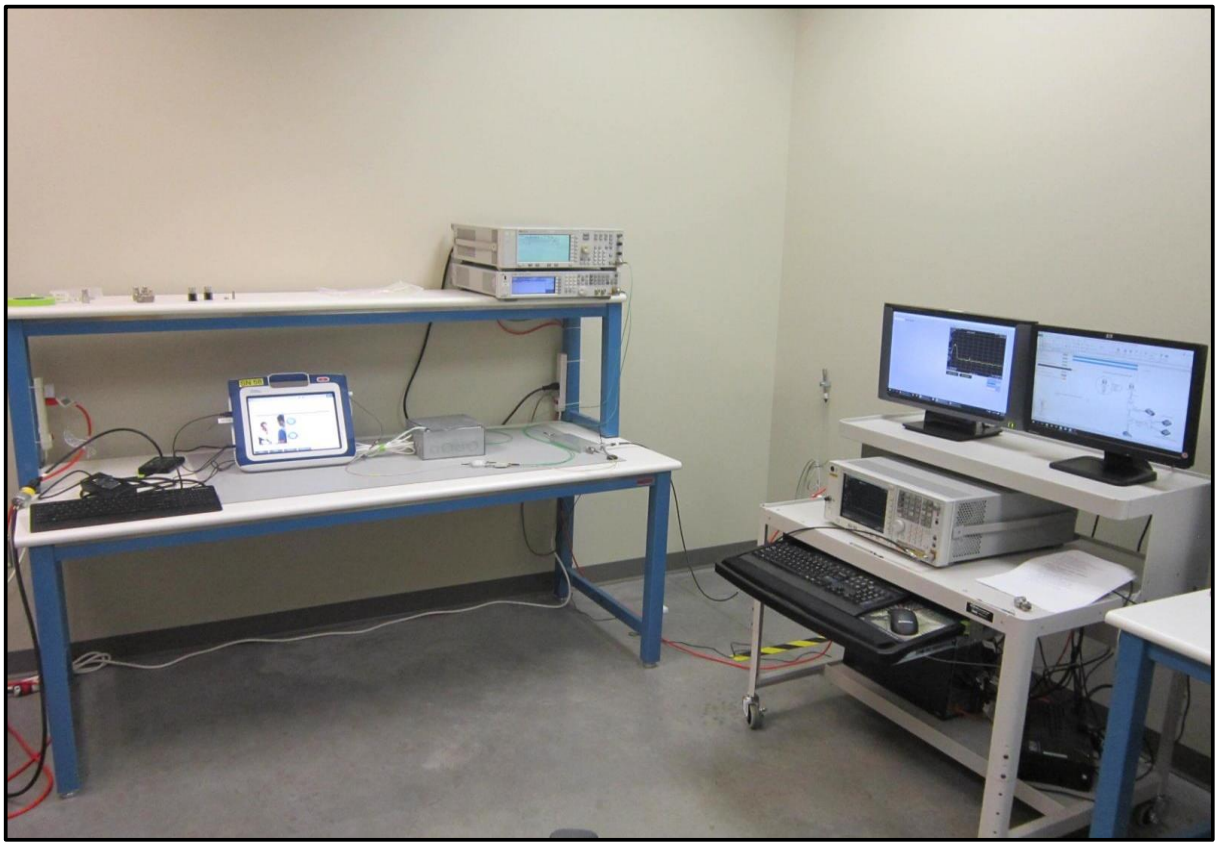
20 Second Sweep						
				Value (s)	Limit (s)	Result
				4.766	<= 5	Pass

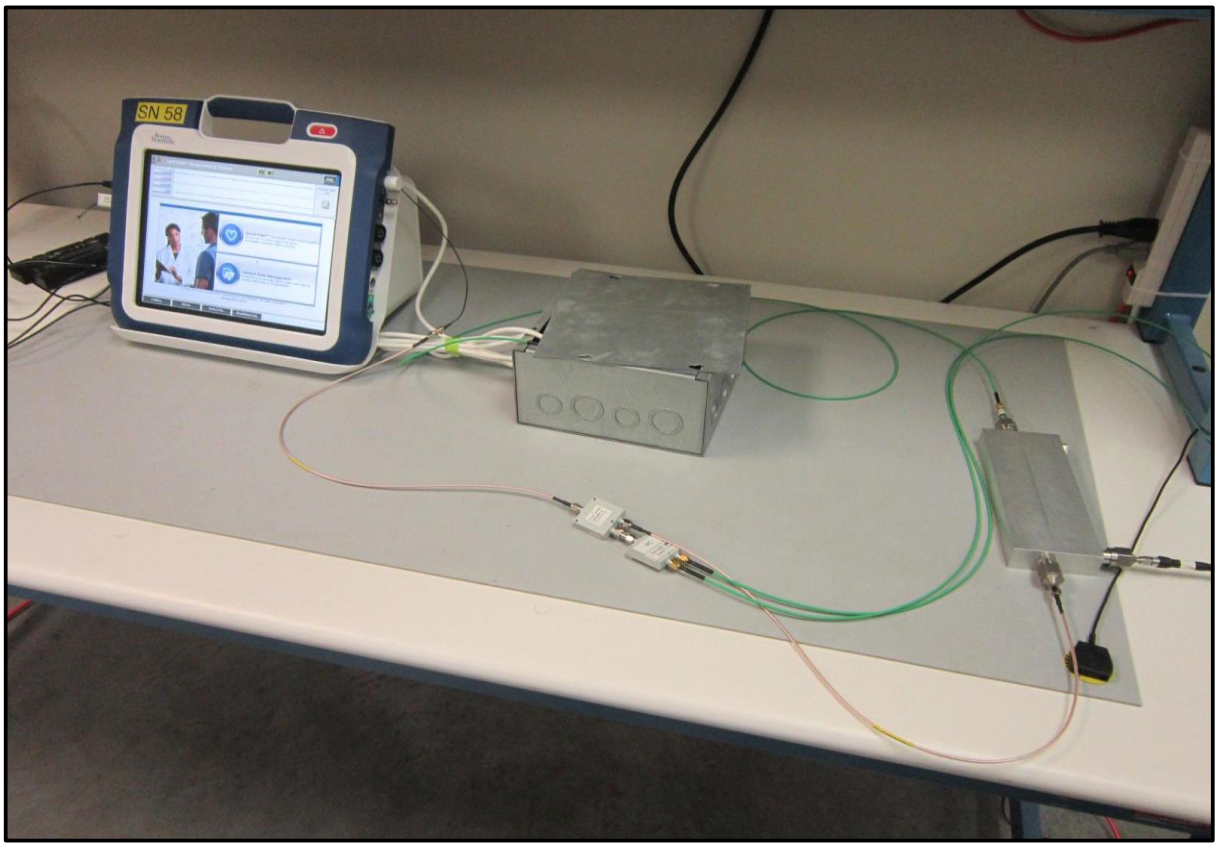


DISCONTINUATION OF A MICS SESSION, 10 CHANNEL

NORTHWEST EMC

XMit 2016.05.06

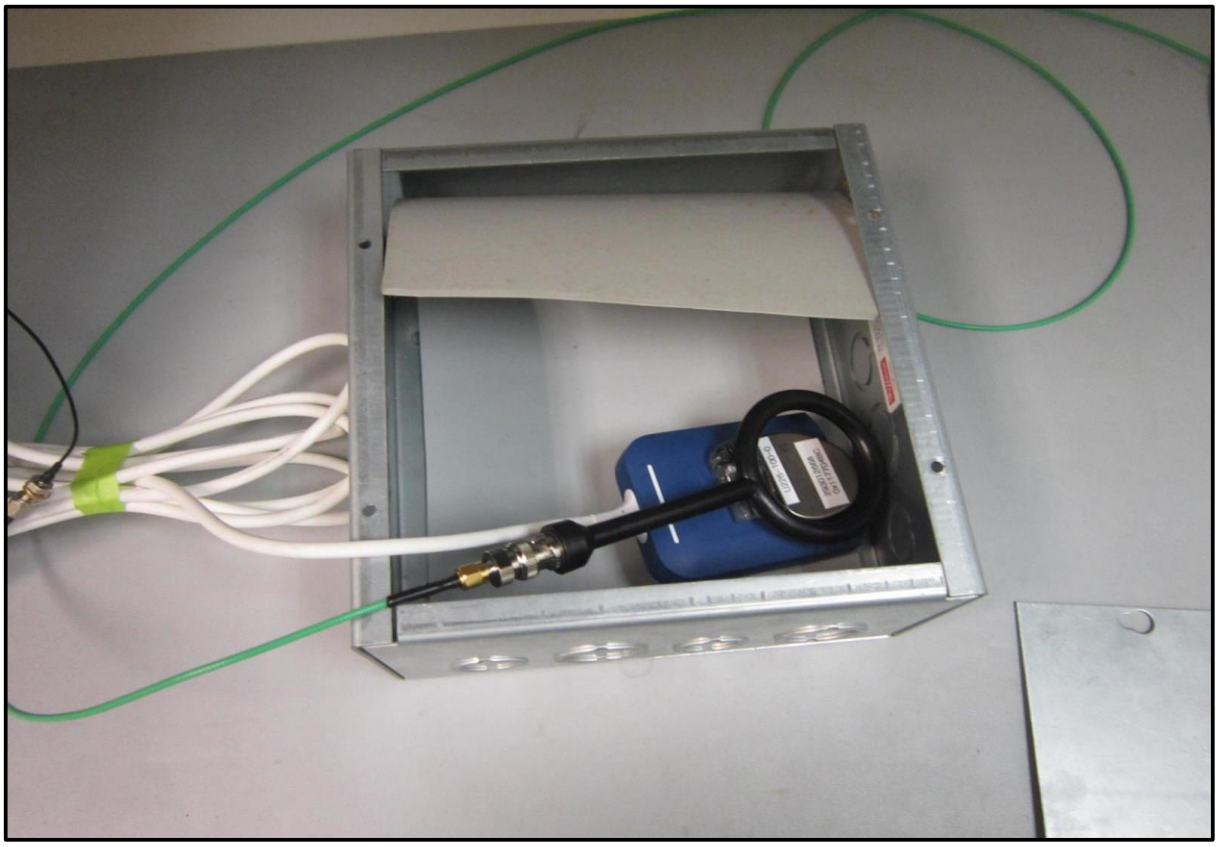


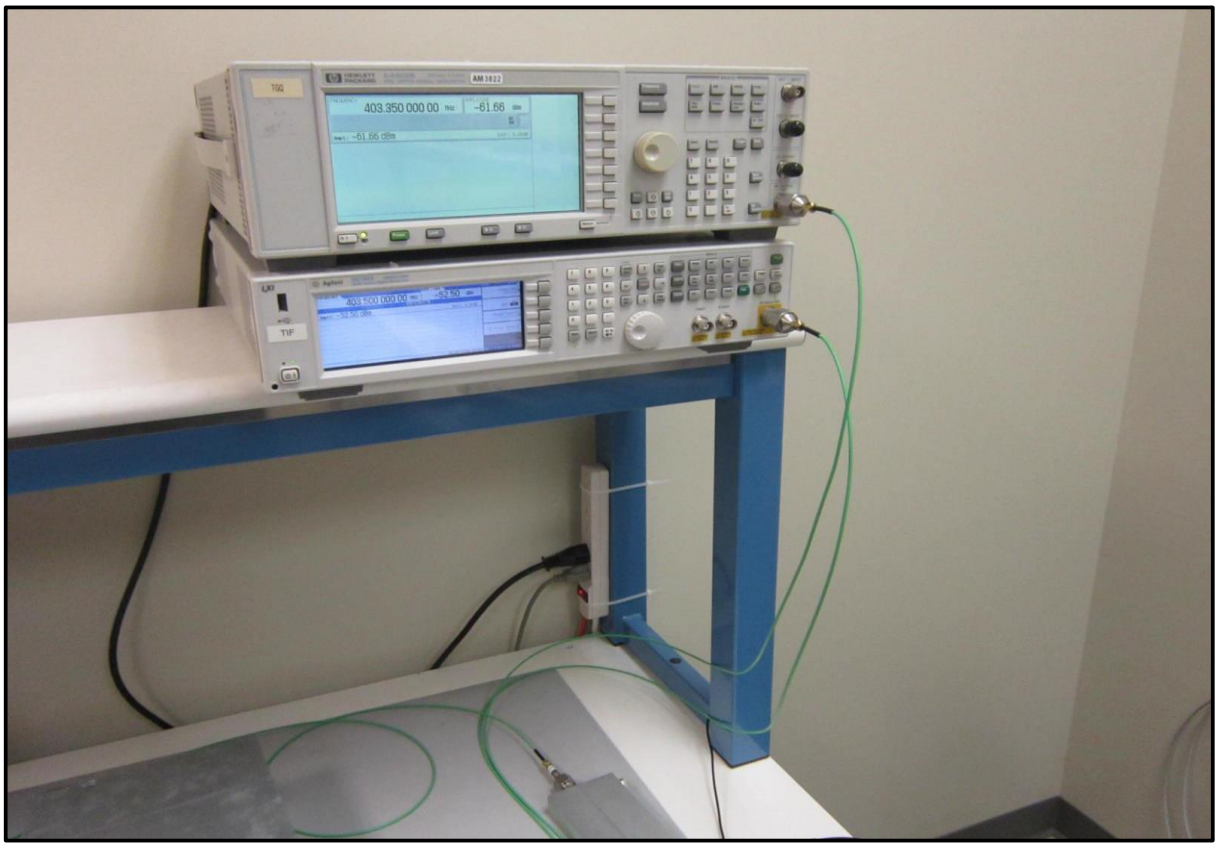


DISCONTINUATION OF A MICS SESSION, 10 CHANNEL

NORTHWEST EMC

XMit 2016.05.06





DISCONTINUATION OF A MICS SESSION, 2 CHANNEL

XMit 2016.05.06

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

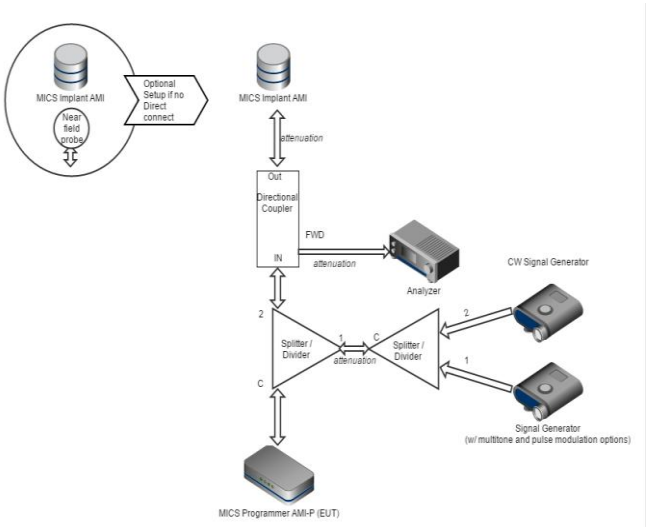
Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Probe - Near Field Set	ETS Lindgren	7405	IPO	NCR	NCR
Directional Coupler	Fairview Microwave	SMC4039-10	RGS	NCR	NCR
Power Divider/Combiner	Fairview Microwave Inc (SM electronics)	MP8451-2	IAD	NCR	NCR
Power Divider/Combiner	Fairview Microwave Inc (SM electronics)	MP8451-2	IAC	NCR	NCR
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	10/17/2017
Generator - Signal	Agilent	N5182A	TIF	8/12/2014	8/12/2017
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	9/18/2016
Attenuator	S.M. Electronics	SA26B-20	RFW	2/26/2016	2/26/2017
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	9/18/2016
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/24/2016	3/24/2017

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The EUT was configured according to the following block diagram:

The signal generator was set to multitone operation to cause equal interferance across the entire band. The amplitude of the multitone signals (out of operation region) were set to the LBT threshold of 10*LOG(Bandwidth) - 150 + Antenna Gain + 10 dB.

The intended frequency (Fc) was set to the LBT threshold + 6 dB. A least interferred channel (LIC) was set to the LBT threshold + 3 dB. The spectrum analyzer was set to measure the time between the removal of the MICS Implant AMI to when the EUT does not transmit on the LIC.



DISCONTINUATION OF A MICS SESSION, 2 CHANNEL

NORTHWEST EMC

XMit 2016.05.06

EUT:	Model 3300			**Work Order:**	BSTN0663
Serial Number:	058			**Date:**	08/16/16
Customer:	Boston Scientific Corporation			**Temperature:**	23.7 °C
Attendees:	Pete Musto			**Humidity:**	61% RH
Project:	Laramie Vision			**Barometric Pres.:**	1019 mbar
Tested by:	Dustin Sparks	**Power:**	110VAC/60Hz	**Job Site:**	MN08

TEST SPECIFICATIONS	Test Method
EN 301 839 V2.1.1:2016	EN 301 839 V2.1.1:2016

COMMENTS

EUT bandwidth is 300000 Hz with an antenna gain of -5 dBi. Communications session was interrupted at ~5 seconds into the 10 second single sweep.

DEVIATIONS FROM TEST STANDARD

None

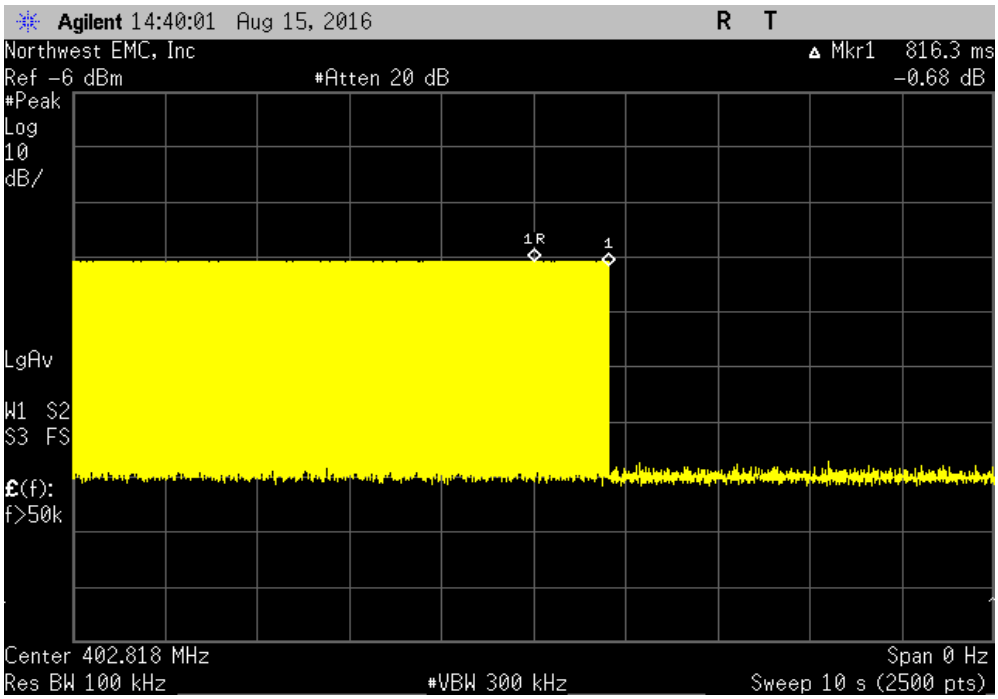
Configuration #	10	Signature Dustin Sparks

	Value (seconds)	Limit (seconds)	Result
10 Second Sweep	0.8163	<= 5	Pass

DISCONTINUATION OF A MICS SESSION, 2 CHANNEL

XMit 2016.05.06

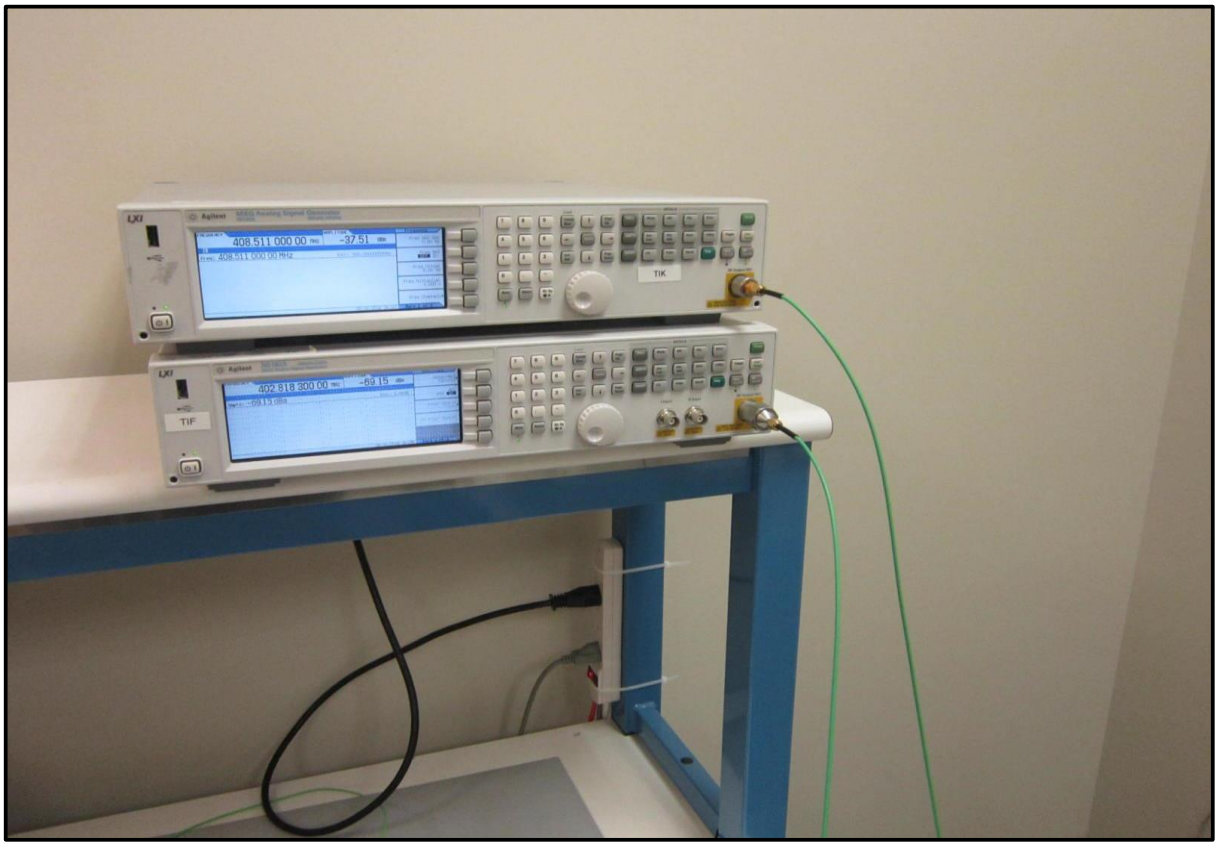
10 Second Sweep						
				Value (seconds)	Limit (seconds)	Result
				0.8163	<= 5	Pass

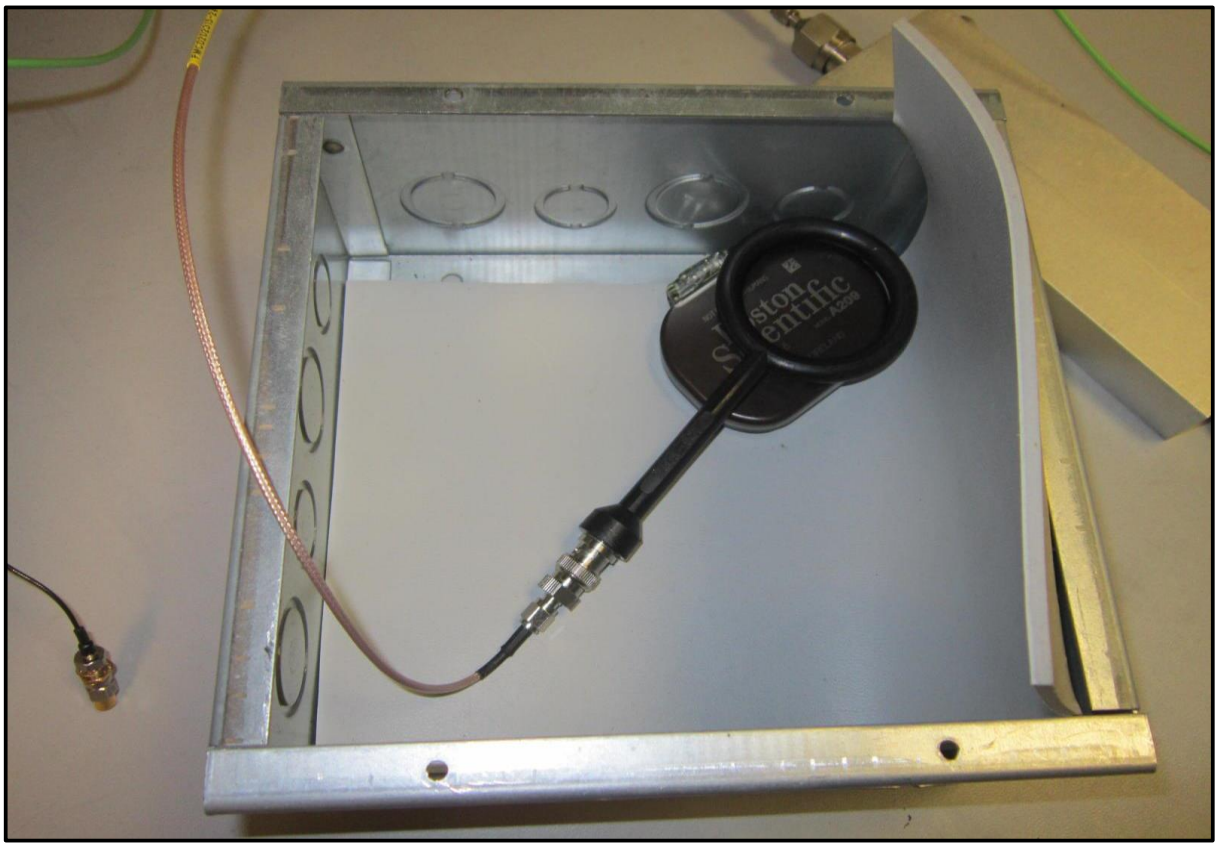


DISCONTINUATION OF A MICS SESSION, 2 CHANNEL

NORTHWEST EMC

XMit 2016.05.06

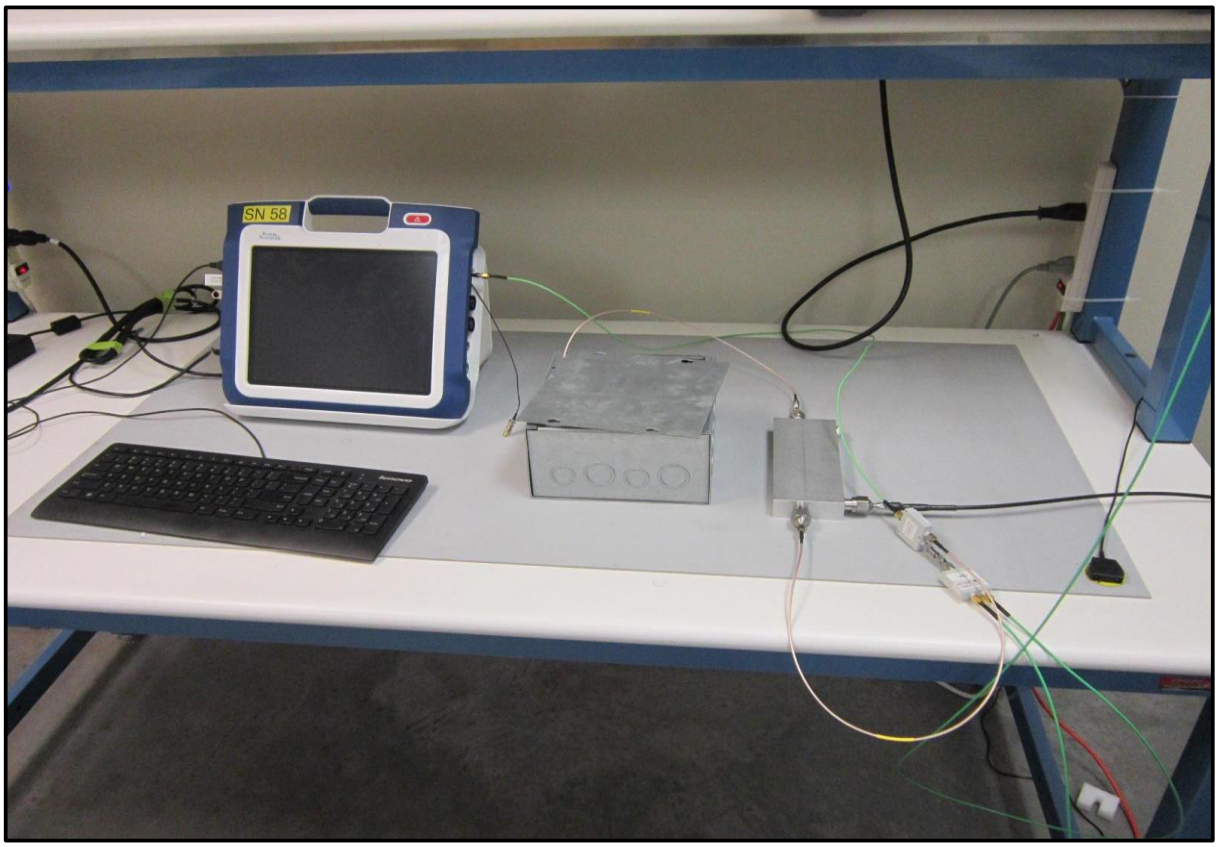




DISCONTINUATION OF A MICS SESSION, 2 CHANNEL

NORTHWEST EMC

XMit 2016.05.06



USE OF PRE-SCANNED ALTERNATIVE CHANNEL

XMit 2016.05.06

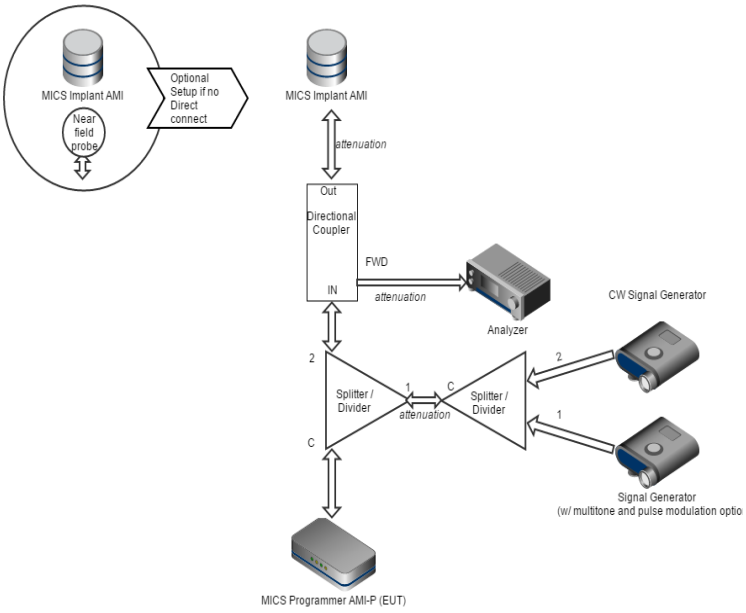
Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Probe - Near Field Set	ETS Lindgren	7405	IPO	NCR	NCR
Directional Coupler	Fairview Microwave	SMC4039-10	RGS	NCR	NCR
Power Divider/Combiner	Fairview Microwave Inc (SM electronics)	MP8451-2	IAD	NCR	NCR
Power Divider/Combiner	Fairview Microwave Inc (SM electronics)	MP8451-2	IAC	NCR	NCR
Generator - Signal	Agilent	E4422B	TGQ	3/17/2015	3/17/2018
Generator - Signal	Agilent	N5182A	TIF	8/12/2014	8/12/2017
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	9/18/2016
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	9/18/2016
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/24/2016	3/24/2017

TEST DESCRIPTION

A near-field probe was placed near the transmitter. A low-loss coaxial cable was used to connect the near-field probe to the spectrum analyzer. The EUT was configured according to the following block diagram:



The signal generator was set to multitone operation to cause equal interferance across the entire band. The amplitude of the multitone signals (out of operation region) were set to the LBT threshold of 10*LOG(Bandwidth) - 15(+ Antenna Gain + 10 dB.

The intended frequency (Fc) was set to the LBT threshold - 3 dB. A least interferred channel (LIC) was set to the LBT threshold + 3 dB. The EUT was verified to transmit on Fc. While the session was still active a second least interferre channel (LIC2) was set to the LBT threshold - 2 dB. The amplitude of Fc was then raised to the LBT threshold + 6 dB.

The spectrum analyzer was set to measure the transmit band of 402-405 MHz. Screen captures were provided to show the EUT behavior at the different LBT threshold levels. The EUT was verified to transmit on LIC2 which shows that the EUT does not use pre-scanned alternate channels.

USE OF PRE-SCANNED ALTERNATIVE CHANNEL

NORTHWEST EMC

XMit 2016.05.06

EUT:	Model 3300			**Work Order:**	BSTN0663
Serial Number:	058			**Date:**	08/08/16
Customer:	Boston Scientific Corporation			**Temperature:**	23.3 °C
Attendees:	Pete Musto			**Humidity:**	54.2% RH
Project:	Laramie Vision			**Barometric Pres.:**	1018 mbar
Tested by:	Dustin Sparks	**Power:**	220VAC/60Hz	**Job Site:**	MN02

TEST SPECIFICATIONS	Test Method
EN 301 839 V2.1.1:2016	EN 301 839 V2.1.1:2016

COMMENTS

EUT emissions bandwidth is 300000 Hz, 2.7 dBi antenna gain. Antenna port B, PRM application 3869 0.03.13

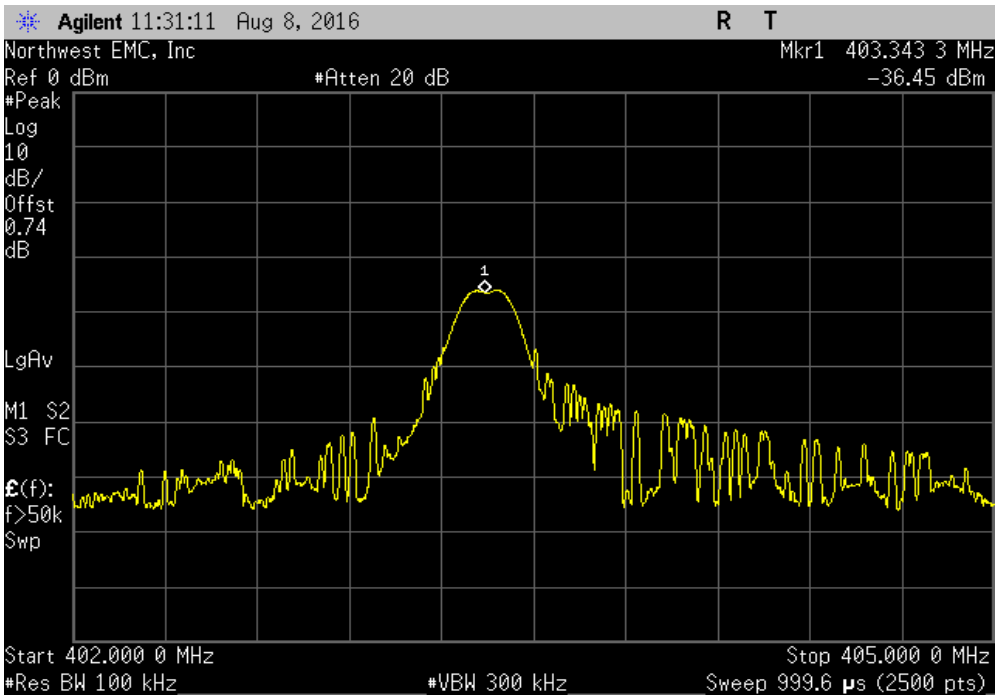
DEVIATIONS FROM TEST STANDARD

None

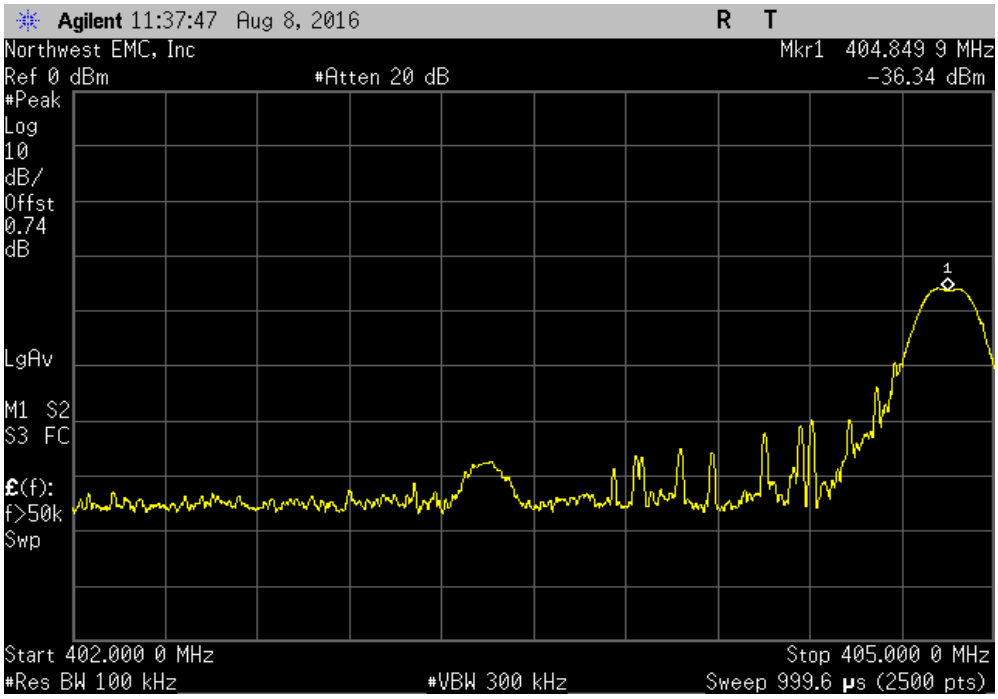
Configuration #	7	Signature Dustin Sparks

	Transmit on LIC	Transmit on LIC2	Transmit on Fc	Limit	Result
Initial on Fc	No	No	Yes	N/A	N/A
LIC2 Available	No	Yes	No	N/A	N/A

Initial on Fc						
		Transmit on LIC	Transmit on LIC2	Transmit on Fc	Limit	Result
		No	No	Yes	N/A	N/A



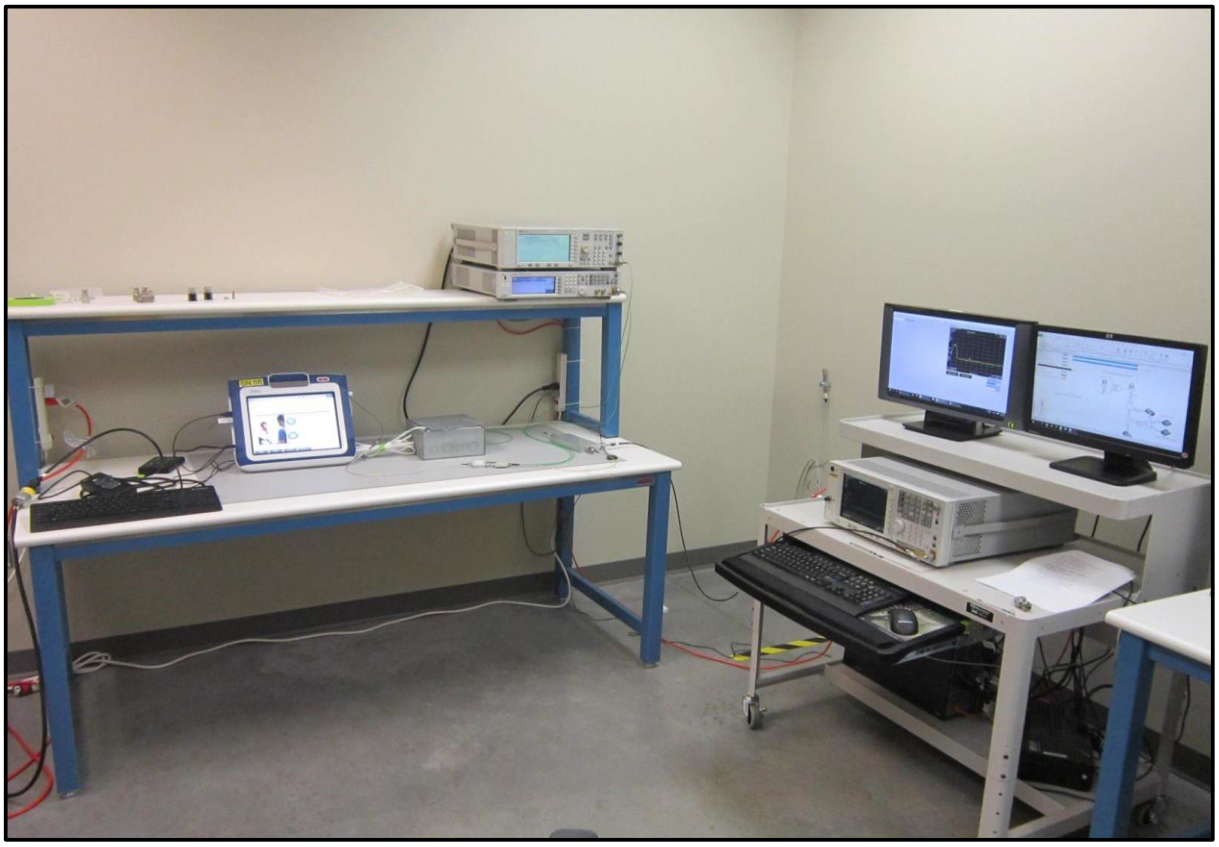
LIC2 Available						
		Transmit on LIC	Transmit on LIC2	Transmit on Fc	Limit	Result
		No	Yes	No	N/A	N/A

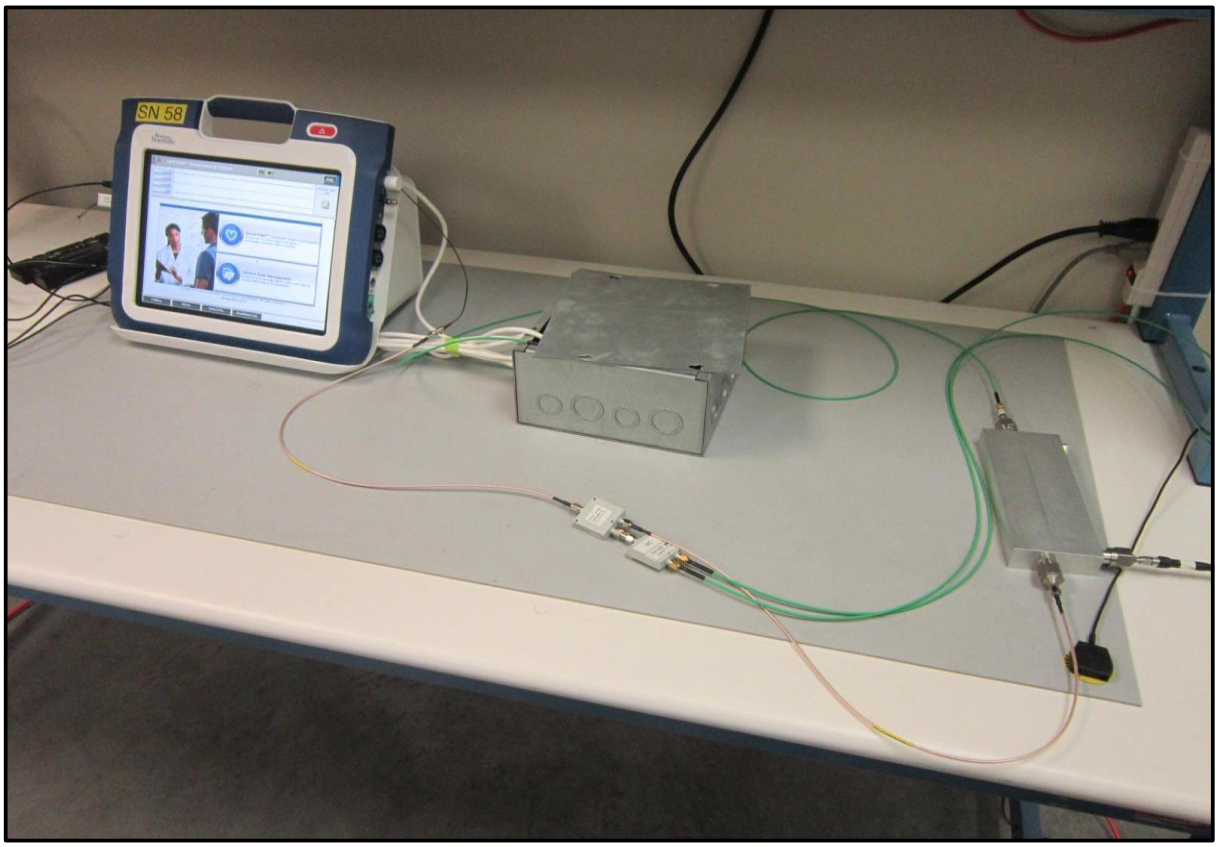


USE OF PRE-SCANNED ALTERNATIVE CHANNEL

NORTHWEST EMC

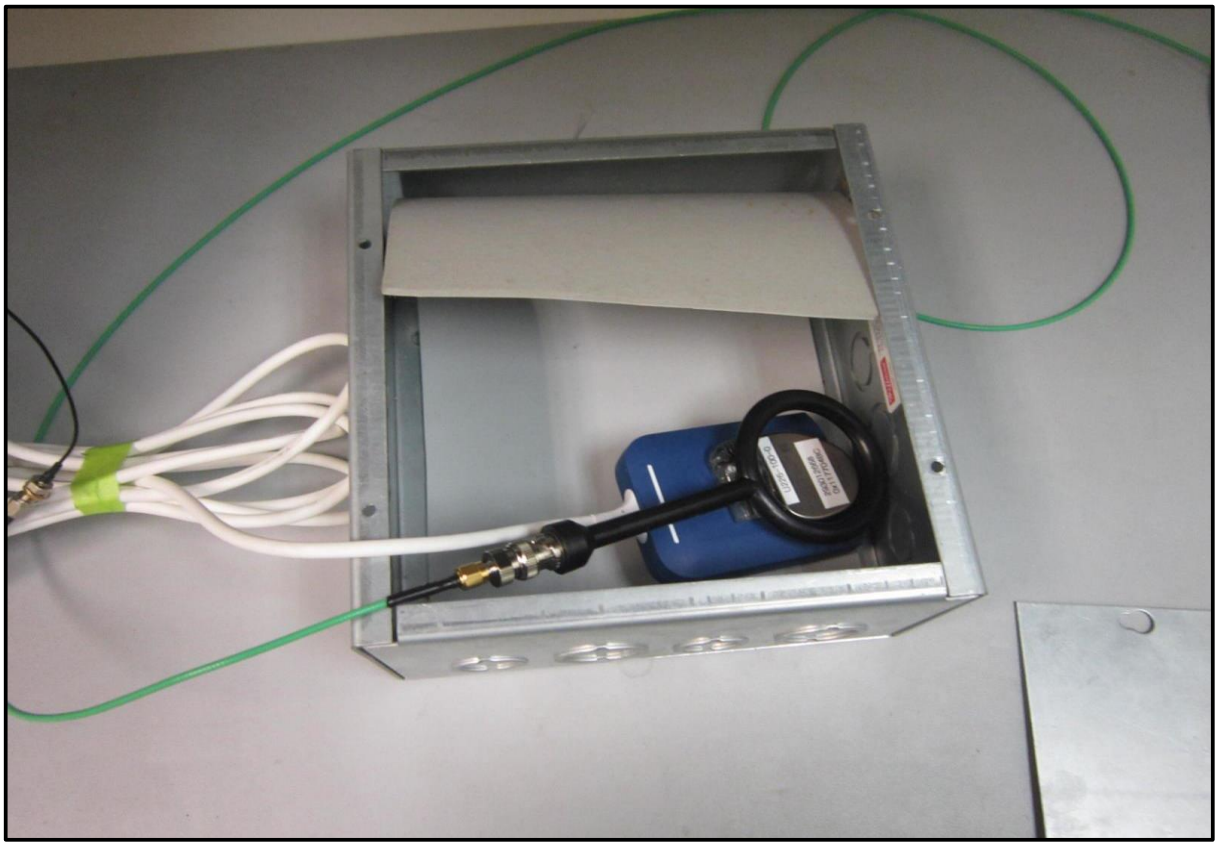
XMit 2016.05.06

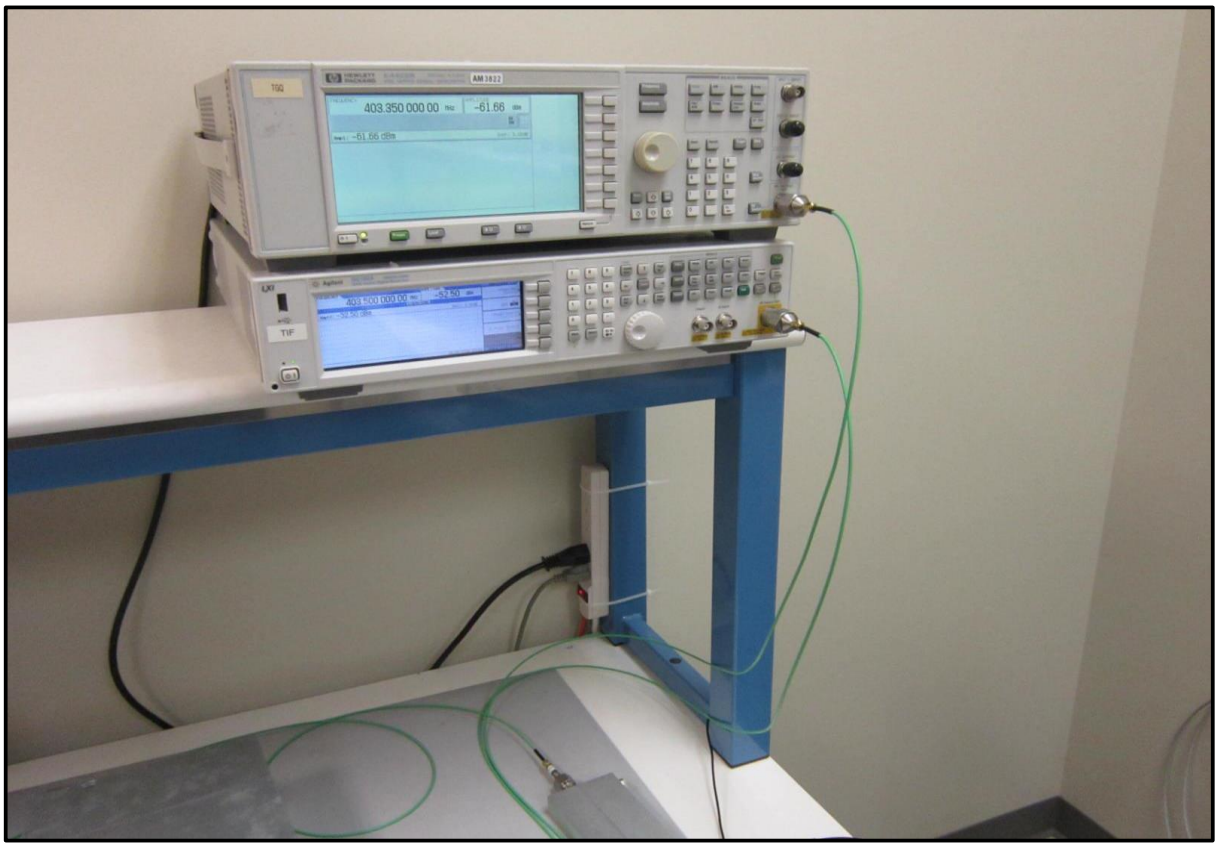




USE OF PRE-SCANNED ALTERNATIVE CHANNEL

XMit 2016.05.06





RECEIVER BLOCKING, 10 CHANNEL

XMit 2016.05.06

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	E4422B	TGQ	3/17/2015	3/17/2018
Directional Coupler	Fairview Microwave	SMC4039-10	RGS	NCR	NCR
Power Divider/Combiner	Fairview Microwave Inc (SM electronics)	MP8451-2	IAD	NCR	NCR
Power Divider/Combiner	Fairview Microwave Inc (SM electronics)	MP8451-2	IAC	NCR	NCR
Generator - Signal	Agilent	N5182A	TIF	8/12/2014	8/12/2017
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	9/18/2016
Attenuator	S.M. Electronics	SA26B-20	RFW	2/26/2016	2/26/2017
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	9/18/2016
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/24/2016	3/24/2017

TEST DESCRIPTION

The EUT was placed in a shielded enclosure to prevent communication with the support equipment's integral antenna. The signal generator was set to multitone operation to cause equal interferance across the entire band. The amplitude of the multitone signals (out of operation region) were set to the LBT threshold of 10*LOG(Bandwidth) - 150 + Antenna Gain + 10 dB.

The intended frequency (Fc) was set to the LBT threshold - 3 dB. The EUT was verified to transmit on Fc. An unmodulated test signal was applied from the signal generator at offsets of approximately +5 MHz and -5 MHz from the center frequency. The level of the signal generator was set to the LBT calculated access threshold + 35dB. The EUT was verified for its ability to initiate a communications session in the presence of an unwanted emission (the blocking signal.)

RECEIVER BLOCKING, 10 CHANNEL

NORTHWEST EMC

XMit 2016.05.06

EUT:	Model 3300			**Work Order:**	BSTN0663
Serial Number:	058			**Date:**	08/11/16
Customer:	Boston Scientific Corporation			**Temperature:**	23.2 °C
Attendees:	None			**Humidity:**	60.2% RH
Project:	Laramie Vision			**Barometric Pres.:**	1014 mbar
Tested by:	Dustin Sparks	**Power:**	230VAC/50Hz	**Job Site:**	MN08

TEST SPECIFICATIONS	Test Method
EN 301 839 V2.1.1:2016	EN 301 839 V2.1.1:2016

COMMENTS

Per customer request, blocking was performed to meet the requirements of EN 301 839 V2.1.1:2016. Fc = 403.35 MHz

DEVIATIONS FROM TEST STANDARD

None

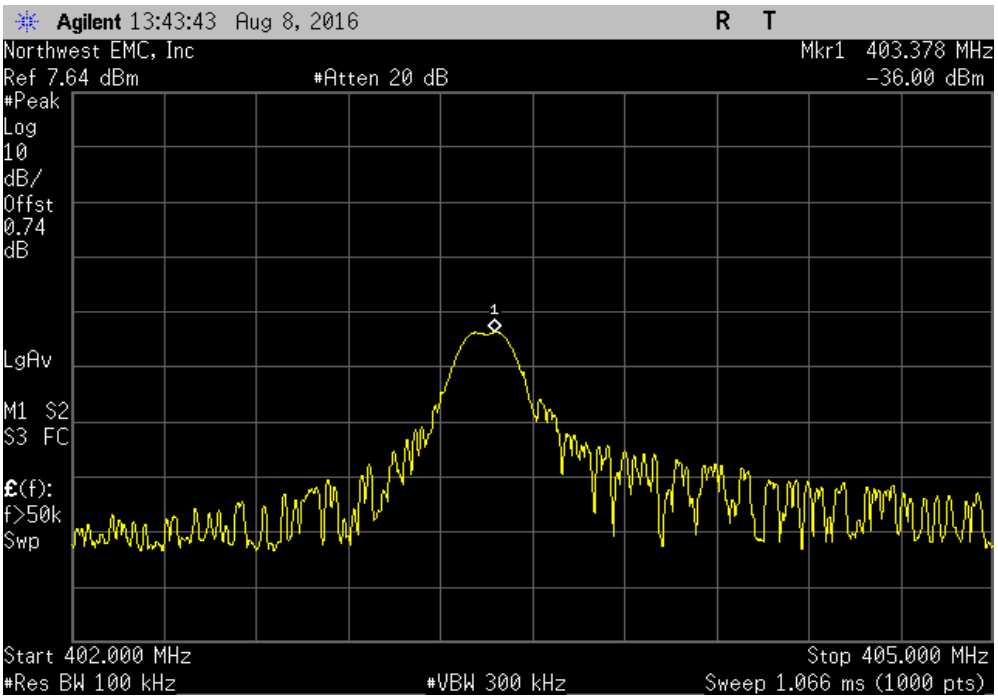
Configuration #	7	Signature

	Fc Blocked? (Yes/No)	Limit	Result
Fc + 5 MHz	No	No	Pass
Fc - 5 MHz	No	No	Pass

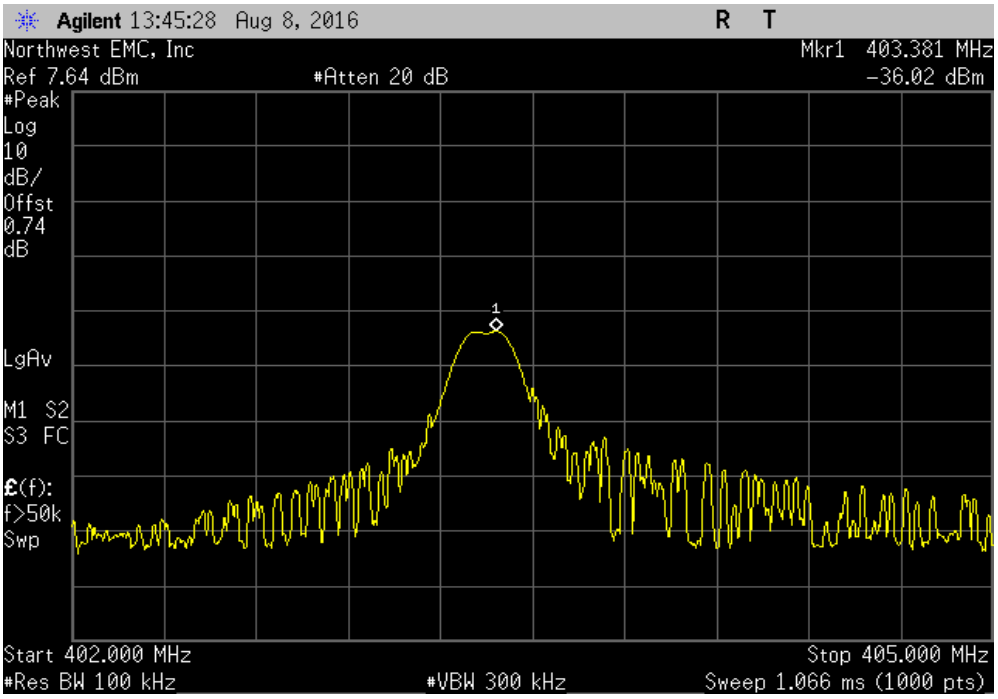
RECEIVER BLOCKING, 10 CHANNEL

XMit 2016.05.06

Fc + 5 MHz						
				Fc Blocked? (Yes/No)	Limit	Result
				No	No	Pass



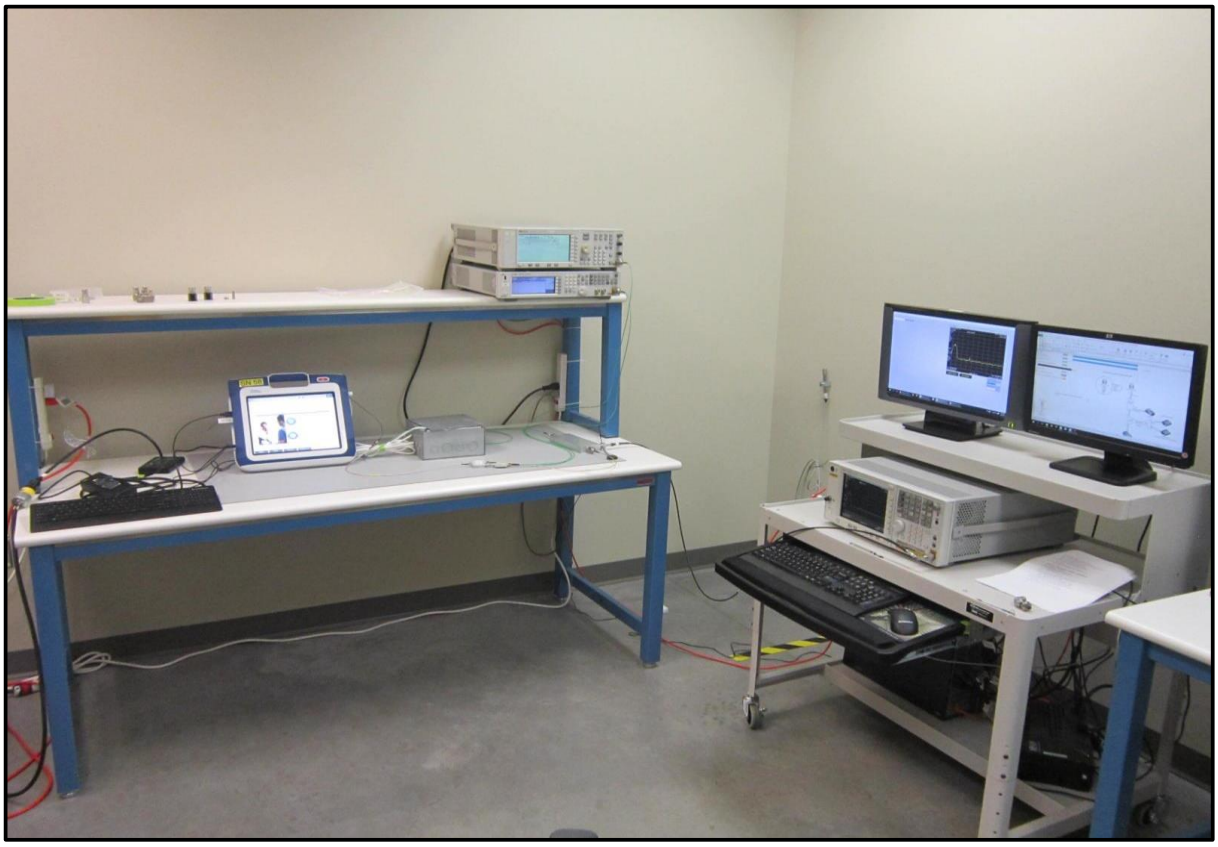
Fc - 5 MHz						
				Fc Blocked? (Yes/No)	Limit	Result
				No	No	Pass

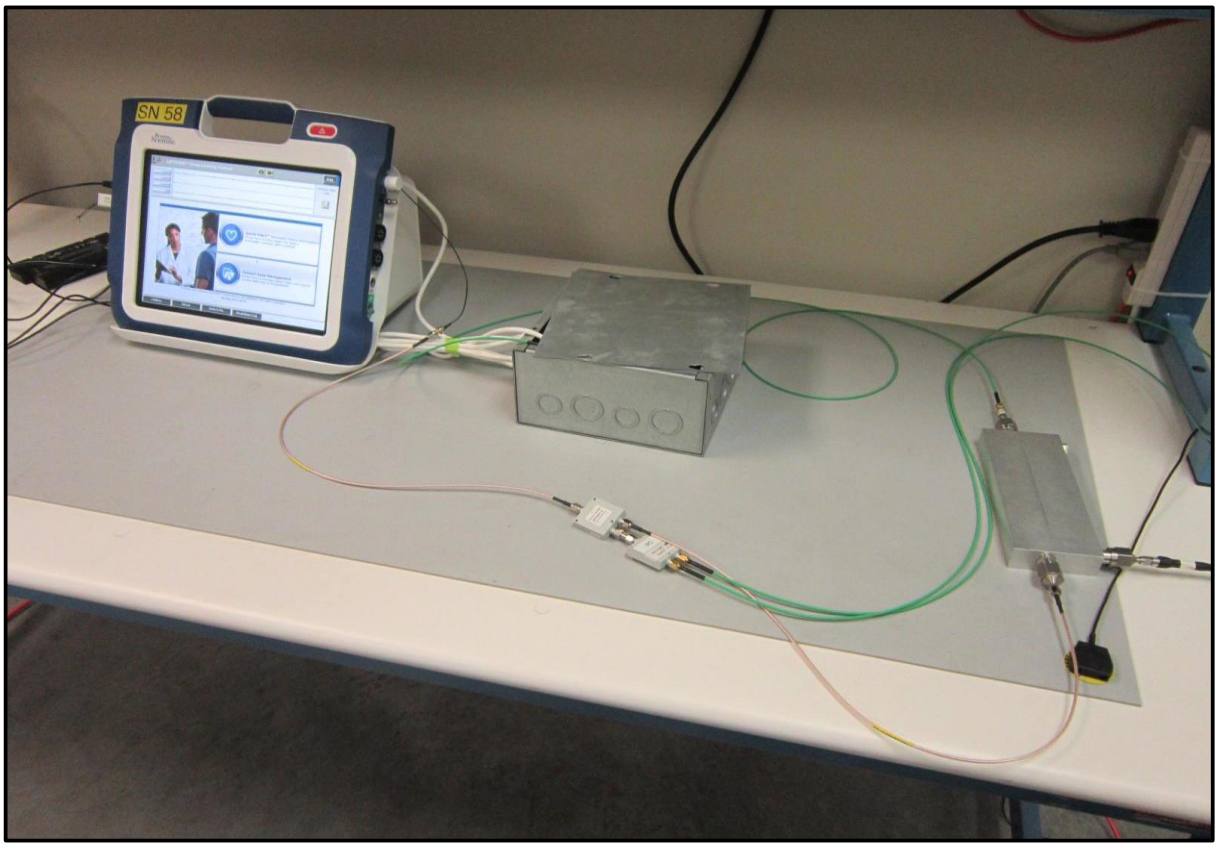


RECEIVER BLOCKING, 10 CHANNEL

NORTHWEST EMC

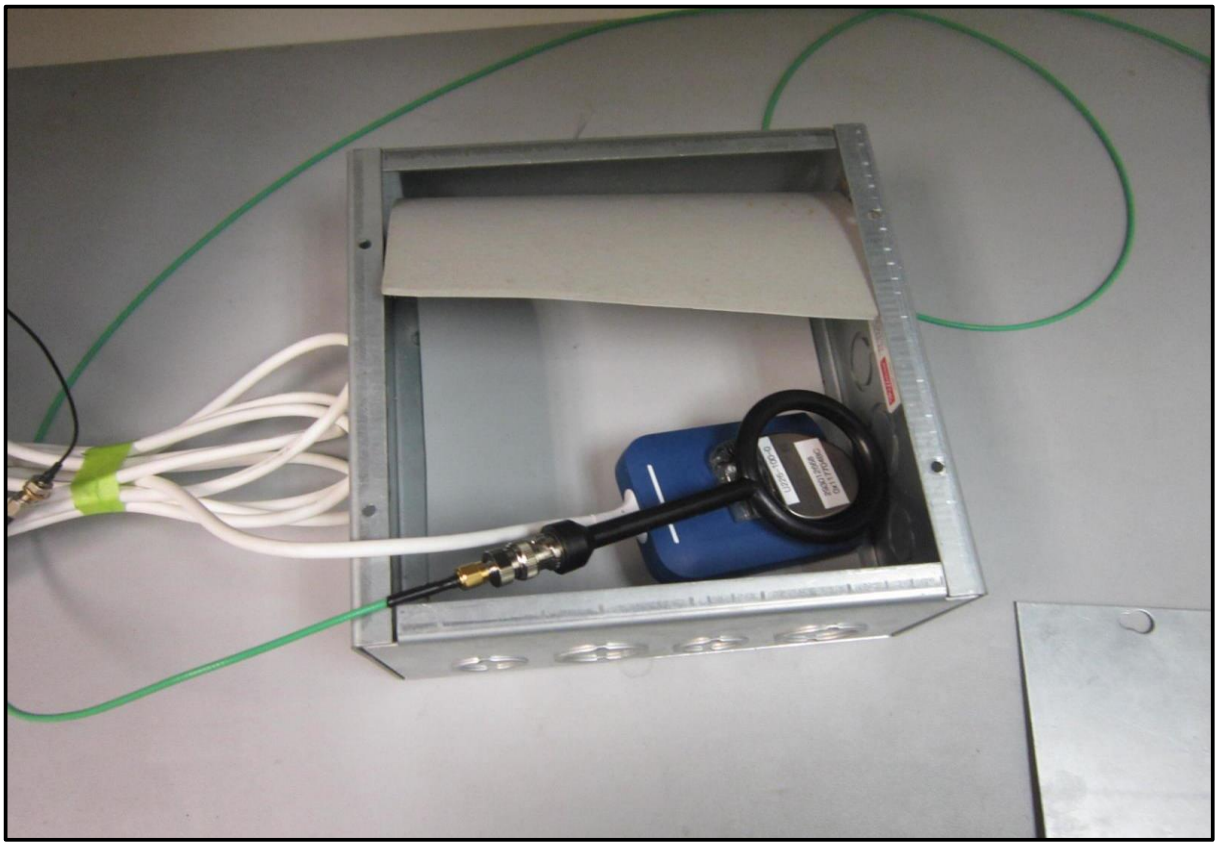
XMit 2016.05.06

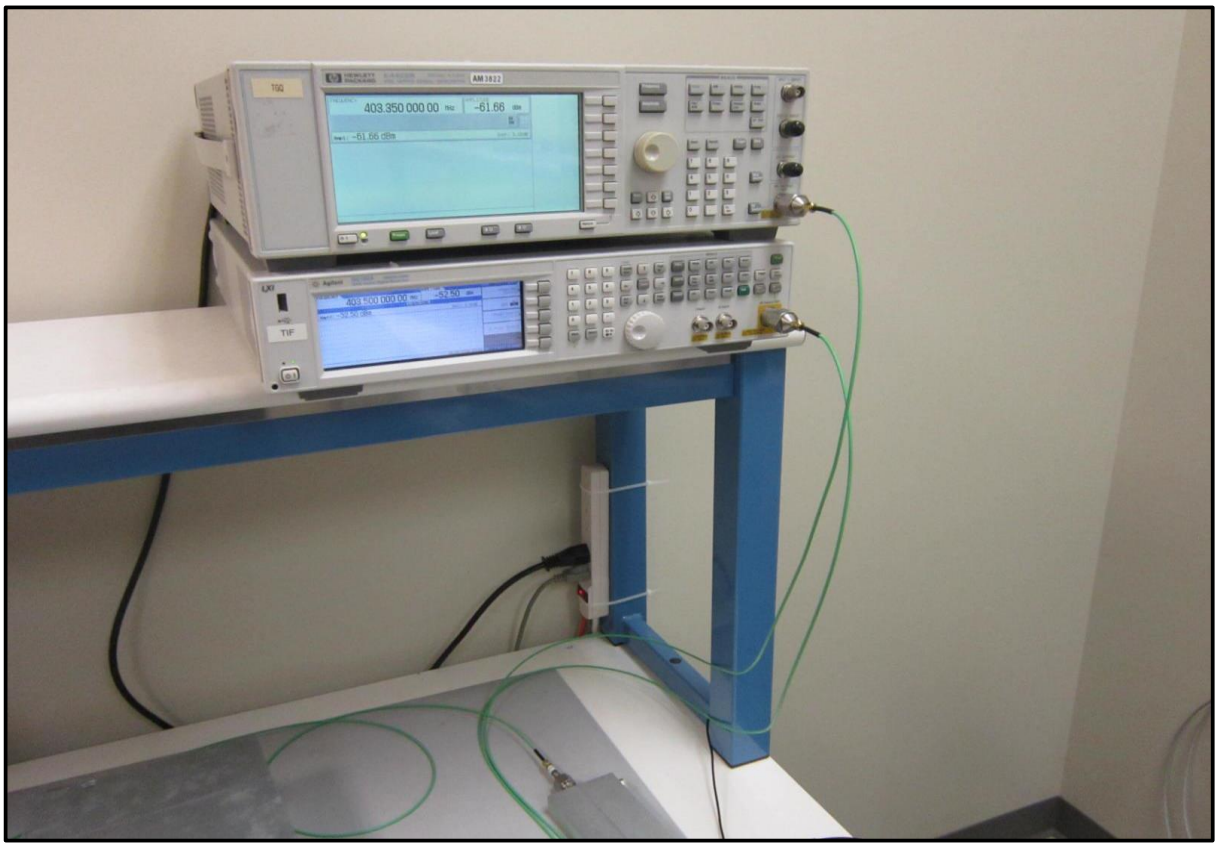




RECEIVER BLOCKING, 10 CHANNEL

XMit 2016.05.06





RECEIVER BLOCKING, 2 CHANNEL

XMit 2016.05.06

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Probe - Near Field Set	ETS Lindgren	7405	IPO	NCR	NCR
Directional Coupler	Fairview Microwave	SMC4039-10	RGS	NCR	NCR
Power Divider/Combiner	Fairview Microwave Inc (SM electronics)	MP8451-2	IAD	NCR	NCR
Power Divider/Combiner	Fairview Microwave Inc (SM electronics)	MP8451-2	IAC	NCR	NCR
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	10/17/2017
Generator - Signal	Agilent	N5182A	TIF	8/12/2014	8/12/2017
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	9/18/2016
Attenuator	S.M. Electronics	SA26B-20	RFW	2/26/2016	2/26/2017
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	9/18/2016
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/24/2016	3/24/2017

TEST DESCRIPTION

The EUT was placed in a shielded enclosure to prevent communication with the support equipment's integral antenna. The signal generator was set to multitone operation to cause equal interferance across the entire band. The amplitude of the multitone signals (out of operation region) were set to the LBT threshold of 10*LOG(Bandwidth) - 150 + Antenna Gain + 10 dB.

The intended frequency (Fc) was set to the LBT threshold - 3 dB. The EUT was verified to transmit on Fc. An unmodulated test signal was applied from the signal generator at offsets of approximately +5 MHz and -5 MHz from the center frequency. The level of the signal generator was set to the LBT calculated access threshold + 35dB. The EUT was verified for its ability to initiate a communications session in the presence of an unwanted emission (the blocking signal.)

RECEIVER BLOCKING, 2 CHANNEL

NORTHWEST EMC

XMit 2016.05.06

EUT:	Model 3300			**Work Order:**	BSTN0663
Serial Number:	058			**Date:**	08/16/16
Customer:	Boston Scientific Corporation			**Temperature:**	23.5 °C
Attendees:	Pete Musto			**Humidity:**	60.2% RH
Project:	Laramie Vision			**Barometric Pres.:**	1019 mbar
Tested by:	Dustin Sparks	**Power:**	230VAC/50Hz	**Job Site:**	MN08

TEST SPECIFICATIONS	Test Method
EN 301 839 V2.1.1:2016	EN 301 839 V2.1.1:2016

COMMENTS

Per customer request, blocking was performed to meet the requirements of EN 301 839 V2.1.1:2016. Fc = 403.5108 MHz

DEVIATIONS FROM TEST STANDARD

None

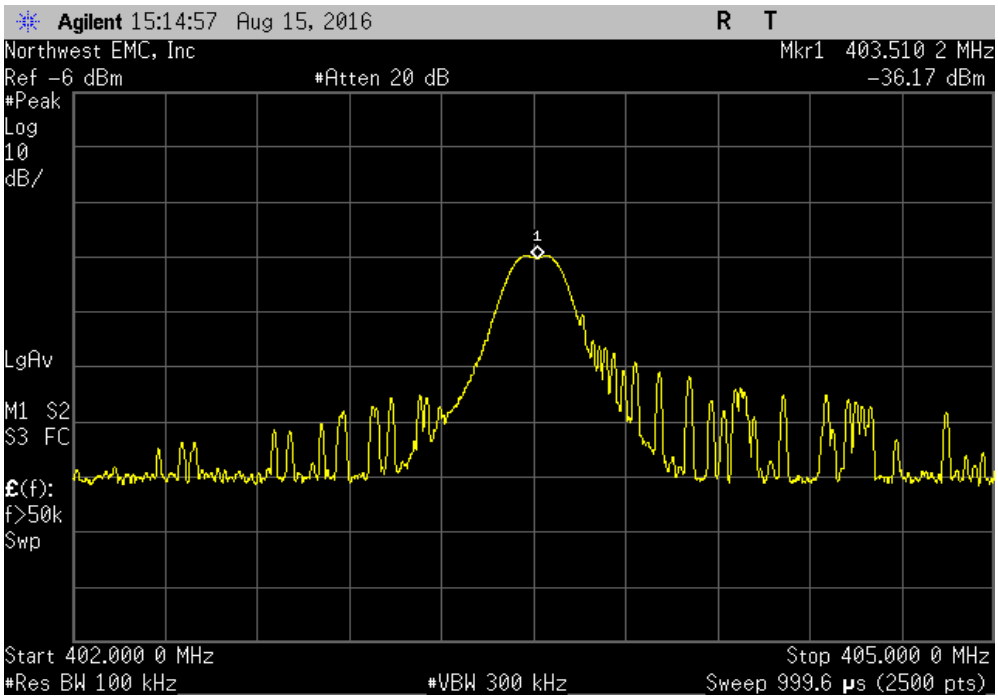
Configuration #	10	Signature Dustin Sparks

	Fc Blocked? (Yes/No)	Limit	Result
Fc - 5 MHz	No	No	Pass
Fc + 5 MHz	No	No	Pass

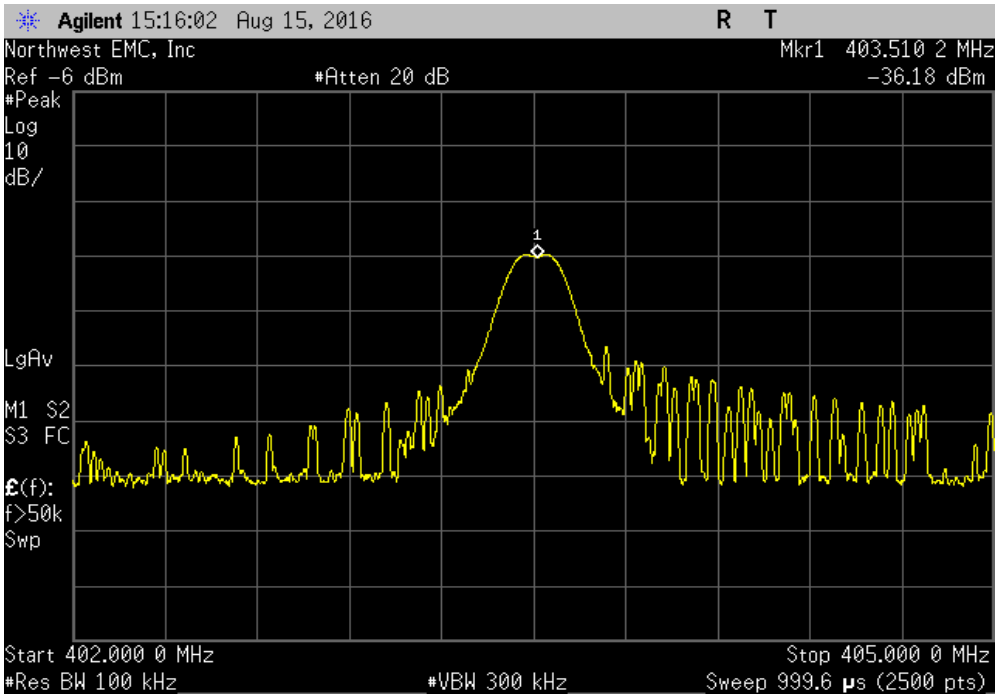
RECEIVER BLOCKING, 2 CHANNEL

XMit 2016.05.06

Fc - 5 MHz						
				Fc Blocked? (Yes/No)	Limit	Result
				No	No	Pass

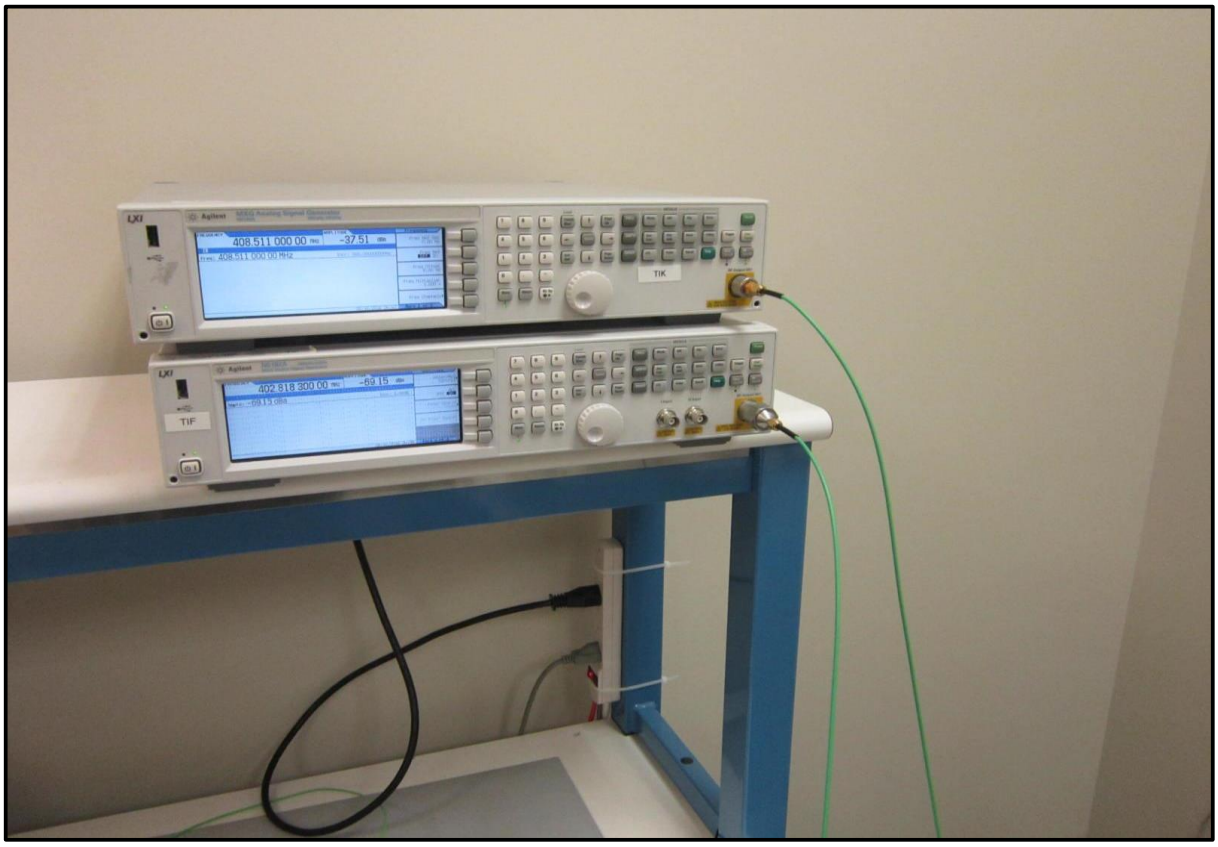


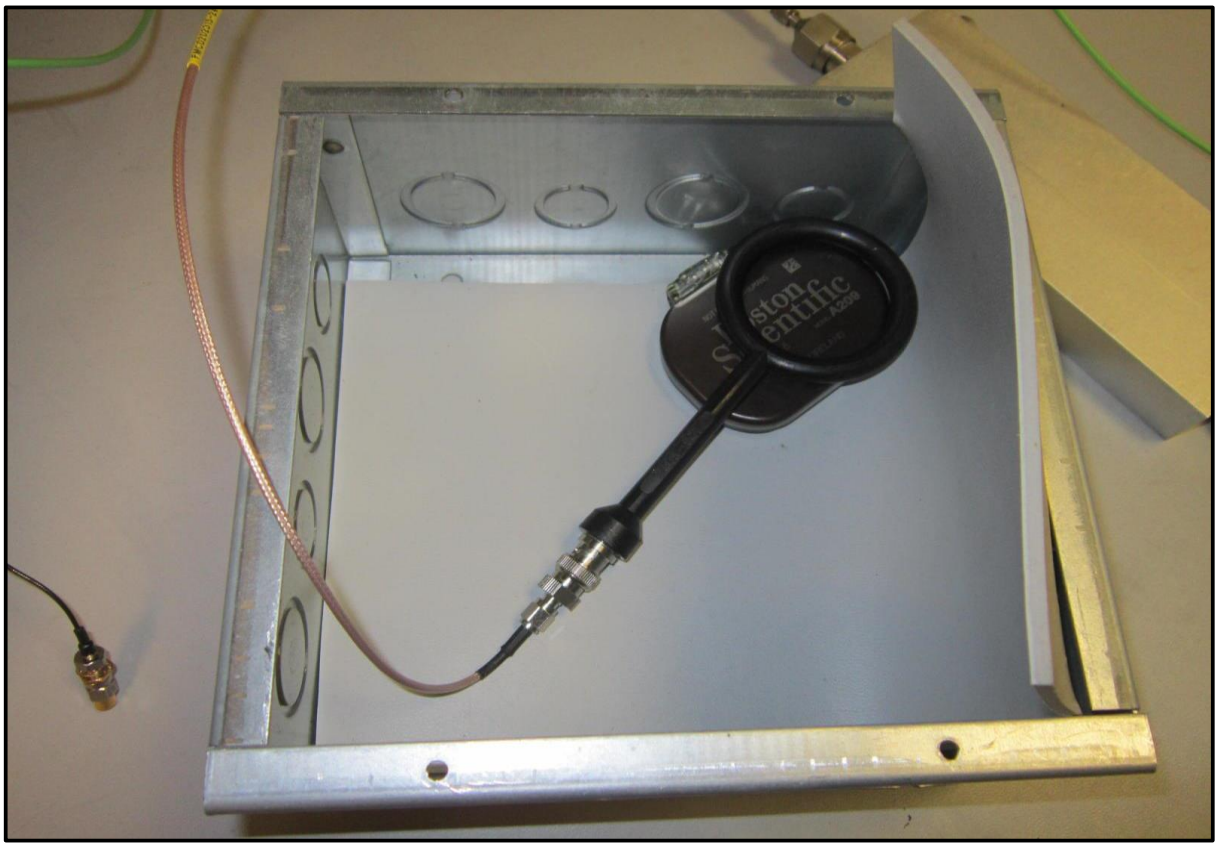
Fc + 5 MHz						
				Fc Blocked? (Yes/No)	Limit	Result
				No	No	Pass



RECEIVER BLOCKING, 2 CHANNEL

XMit 2016.05.06





RECEIVER BLOCKING, 2 CHANNEL

XMit 2016.05.06