

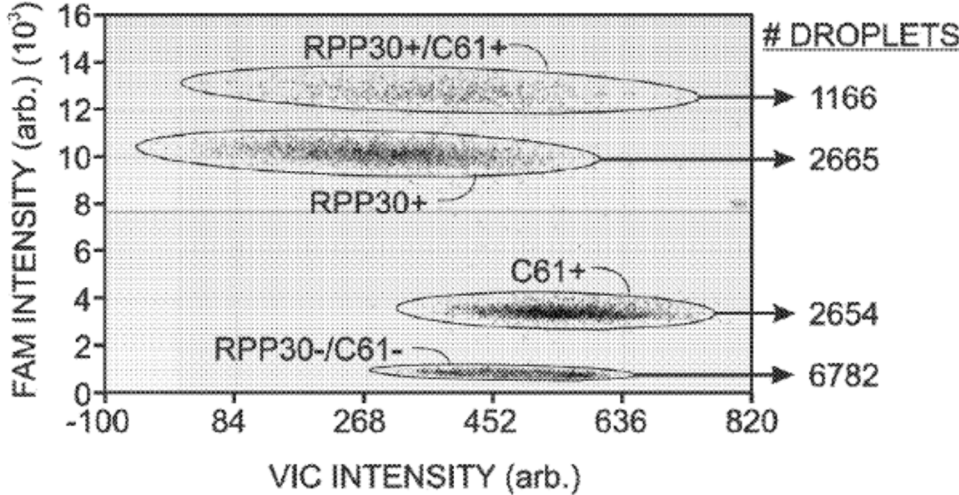
Appendix I

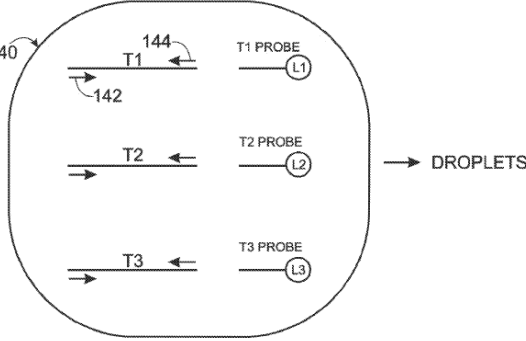
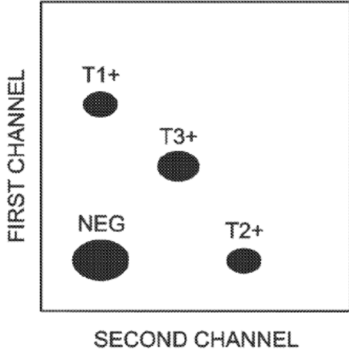
Invalidity of U.S. Patent No. 11,827,921

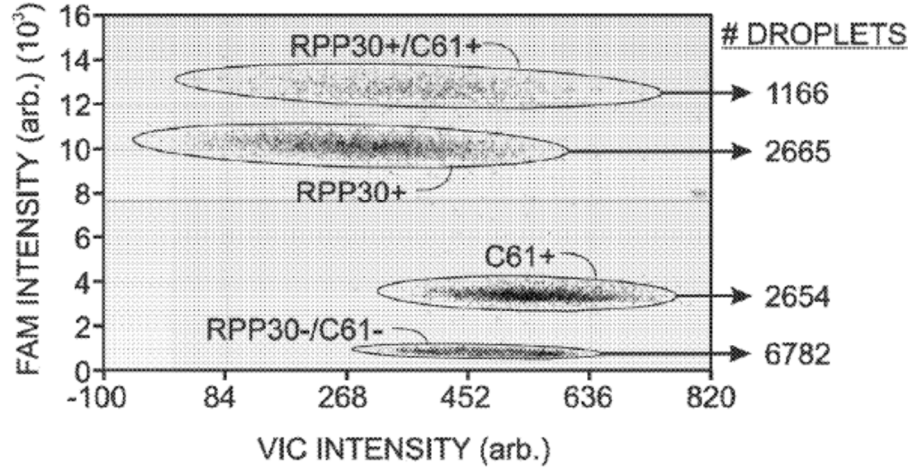
by U.S. Patent Publication 2013/0040841A1 (“Saxonov”)

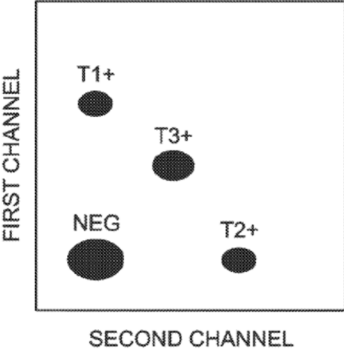
Based upon the claim interpretations Plaintiffs appear to be asserting and the applications of those interpretations to Bio-Rad’s products in Plaintiffs’ Patent Local Rule infringement contentions, Saxonov anticipates the ’921 Patent, or renders obvious, alone or in combination with other prior art identified in Bio-Rad’s Patent Local Rule invalidity contentions, the Asserted Claims at least as described by illustrative examples, below. These invalidity contentions are not an admission by Bio-Rad that the Accused Products, including any current or past versions of such products are covered by, or infringe these claims, particularly when they are properly construed. Nothing in these contentions should be interpreted as acquiescence to an assertion of a particular claim construction by Plaintiffs.

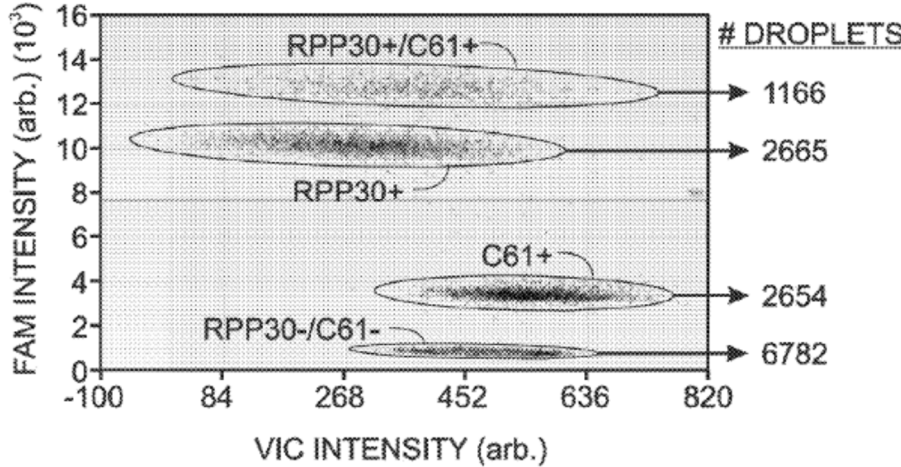
<u>Claim</u>	<u>Invalidity Analysis</u>
1. An assay that is capable of unambiguously detecting the presence or absence of each of at least M analytes,	Saxonov teaches the unambiguous detection of multiple analytes: “The present disclosure provides a system, including methods and apparatus, for performing a digital assay with multiplexed detection of two or more distinct targets in the same optical channel.” Saxonov ¶ 8. For example, Saxonov Fig. 5 depicts the detection of two analytes, unambiguously, alone and in combination in a single optical channel (color):

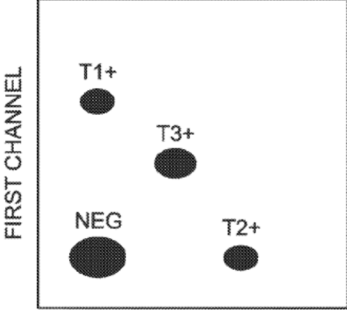
Claim	Invalidity Analysis
	Fig. 5  Saxonov teaches that the clusters representing different combinations of analytes may be “separated in two-dimensional intensity space and so in principle [are] more easily resolvable” by the use of more than one color or channel. Saxonov ¶ 20. And further teaches that signals in a single optical channel (color) may be from multiple targets “[o]ne or more signals may be created that are representative of light detected from the partitions, indicated at 48. The signal may represent an aspect of light, Such as the intensity of the light, detected in the same optical channel from reporters for two or more distinct targets. The signals optionally may include data collected in one or more different channels (e.g., in different wavelength ranges (color regimes) from reporters for the same and/or different targets). The light detected from each reporter may be light emitted from a luminophore. The light detected in a given channel may be detected with the same sensor at the same time such that light detected from different reporters is summed or accumulated without attribution to a particular reporter. Thus, the signal may be a composite signal that represents two, three, four, or more reactions and thus two, three, four, or more targets of the reactions.” Saxonov ¶ 36.

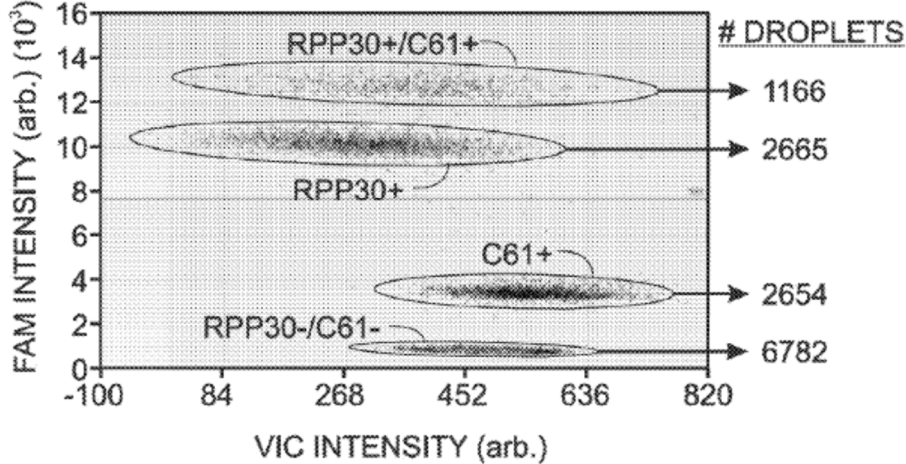
<u>Claim</u>	<u>Invalidity Analysis</u>
	<i>See also</i> Figure 7. Saxonov further discloses the use of more than one color to detect three analytes, for example, describing that each analyte “may be at least predominantly or substantially exclusively detectable in only one [color], or may be substantially detectable in two or more [colors].” Saxonov ¶ 79; <i>see also</i> Saxonov ¶¶ 76-79, Figs. 9, 10. Fig. 9  Fig. 10  In describing Figures 9 and 10, Saxonov describes detection of three analytes in two optical channels: “For example, L1 of the T1 probe is substantially detectable in the first channel but not the second channel, L2 of the T2 probe is

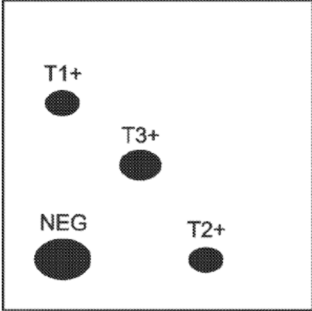
<u>Claim</u>	<u>Invalidity Analysis</u>										
	substantially detectable in the second channel but not the first channel, and L3 of the T3 probe is substantially detectable in both channels. More generally, L3 may generate a distinguishable intensity and/or a different ratio of signal intensities for amplification of the T3 target in each channel relative to the intensity and/or ratio produced by L1 for amplification of the T1 target and produced by L2 for amplification of the T2 target.” Saxonov ¶ 79. To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad’s invalidity contentions.										
wherein each of said at least M analytes is encoded as a value of one component of a fluorescent signal, thereby generating a coding scheme,	Saxonov teaches assays wherein each of the detected analytes is encoded as a value of one component of a fluorescent signal: Saxonov Figure 5 depicts the detection of two analytes in a single optical channel. Two analytes are encoded as a value (intensity) of the fluorescent signal in the FAM fluorophore as shown below. Fig. 5  <table border="1"><thead><tr><th>Population</th><th># DROPLETS</th></tr></thead><tbody><tr><td>RPP30+/C61+</td><td>1166</td></tr><tr><td>RPP30+</td><td>2665</td></tr><tr><td>C61+</td><td>2654</td></tr><tr><td>RPP30-/C61-</td><td>6782</td></tr></tbody></table>	Population	# DROPLETS	RPP30+/C61+	1166	RPP30+	2665	C61+	2654	RPP30-/C61-	6782
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<u>Claim</u>	<u>Invalidity Analysis</u>
	Saxonov further teaches assays where the targets are differentiated based on the fluorescent signals which they emit. “The assays may be extended in various ways. In some embodiments, the assays may involve analysis of more than two targets in the same channel. For example, an assay for three targets may generate eight clusters or populations of data, separated by intensity. In the same or other embodiments, some targets may be analyzed in one channel (e.g., a FAM channel), and one or more other targets may be analyzed in one or more other channels (e.g., a VIC channel). Three targets, two in a first channel and one in a second channel, would again generate eight clusters or populations of data, but they would be separated in a two-dimensional intensity space and so in principle more easily resolvable.” Saxonov ¶ 20. Saxonov further discloses the use of more than one color to detect three analytes, for example, describing that each analyte “may be at least predominantly or substantially exclusively detectable in only one [color].” Saxonov ¶ 79; <i>see also</i> Saxonov ¶¶ 76-79, Figs. 9, 10. Fig. 10  To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad’s invalidity contentions.

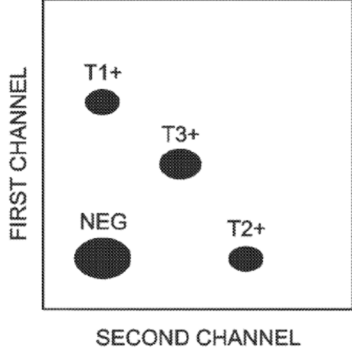
<u>Claim</u>	<u>Invalidity Analysis</u>
wherein said fluorescent signal comprises F wavelength components, and	Saxonov teaches assays wherein wavelength components are used to comprise a fluorescent signal: Figures 5, 7, and 10 show that one or more colors (wavelength components) can be used in a multiplexed assay. See, e.g., Figure 5, Saxonov ¶¶ 63-67: Fig. 5  C61-positive droplets have a cumulative intensity of ~3000 for the FAM wavelength component. RPP30-positive droplets have a cumulative intensity of ~10000 for the FAM wavelength component. Each positive droplet has a signal from the FAM wavelength component. Thus, the fluorescent signal produced comprises one wavelength component, F = 1. See, e.g., Figure 10, Saxonov ¶¶ 76-79:

<u>Claim</u>	<u>Invalidity Analysis</u>
	Fig. 10  The fluorescent signal comprises a first channel wavelength and a second channel wavelength, $F = 2$. Saxonov further teaches multiple wavelength components may be used in an assay. Saxonov ¶ 36 (“The signals optionally may include data collected in one or more different channels (e.g., in different wavelength regimes (color regimes) from reporters for the same and/or different targets), ¶ 37 (“Accordingly, optical channels that are different from each other may differ with respect to the wavelength/waveband of excitation light, with respect to the wavelength/waveband of emitted light that is detected, and/or with respect to the time interval during which emitted light is detected relative to each pulse of excitation light, among others.”), ¶ 49 (“FIG. 3 shows a pair of targets 80, 82 (‘Target 1’ and ‘Target 2’) and corresponding probes 84, 86 (‘Probe 1’ and ‘Probe 2’) that may be used to create a dedicated signal for each target in a digital PCR assay.”) ¶51 (“FAM, VIC, ROX, TAMRA and JOE” nat be suitable fluorophores (wavelength components)). To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad’s invalidity contentions.

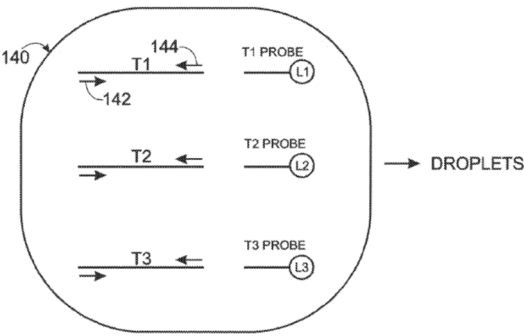
<u>Claim</u>	<u>Invalidity Analysis</u>
wherein said assay is capable of unambiguously detecting the presence or absence of each of said at least M analytes, in any combination of presence or absence, in a single sample volume, based on detection of said F wavelength components, when M is greater than F,	Saxonov teaches assays wherein targets are unambiguously detected in any combination of presence or absence in droplets based on detection in fewer wavelength components (colors) than there are analytes: Figures 5, 7, and 10 show that more analytes can be detected than there are wavelength components in an assay. See, e.g., Figure 5, Saxonov ¶¶ 63-67: Fig. 5  C61-positive droplets have a cumulative intensity of ~3000 for the FAM wavelength component. RPP30-positive droplets have a cumulative intensity of ~10000 for the FAM wavelength component. Each positive droplet has a signal from the FAM wavelength component. Thus, the fluorescent signal produced comprises one wavelength component, F = 1 and the number of analytes detected, M = 2.

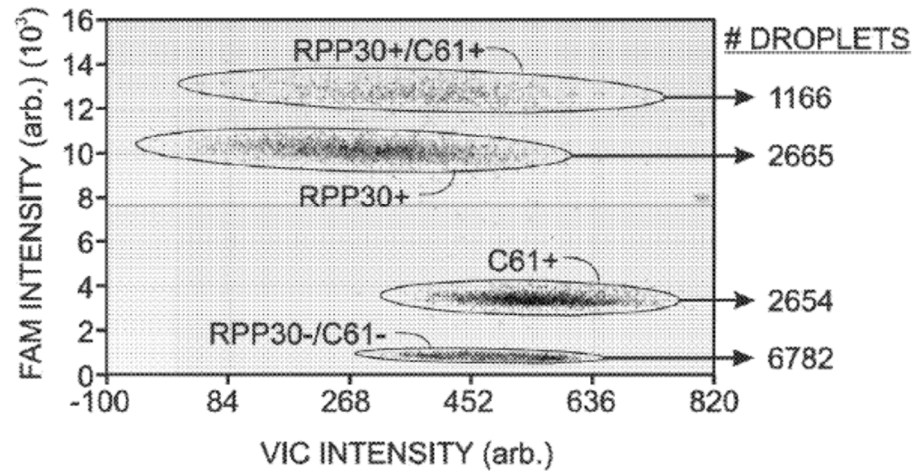
<u>Claim</u>	<u>Invalidity Analysis</u>
	<i>See also</i> Figure 7, depicting similarly two targets (RPP30 and C63) in a single wavelength component (FAM). Saxonov ¶¶ 72-75. <i>See, e.g.</i>, Figure 10, Saxonov ¶¶ 76-79: Fig. 10  SECOND CHANNEL The fluorescent signal comprises a first channel wavelength and a second channel wavelength, $F = 2$ and the number of analytes detected, $M = 2$. Further, Saxonov teaches that droplets exhibiting any combination of T1, T2, and T3 are also detected unambiguously, “[i]ntensities produced by exemplary populations or clusters of negative, T1-positive, T2-positive, and T3-positive droplets are identified by filled ellipses, with the size of each ellipse correspond ing to the number of droplets in each population. To simplify the presentation, double-positive populations (T1+/T2+, T1+/T3+, and T2+/T3+) and the triple-positive To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad’s invalidity contentions.
wherein the assay does not require the use of mass spectrometry or immobilization of said at least M analytes, and	Saxonov teaches the performance of the described assays without immobilization, physical separation or mass spectrometry:

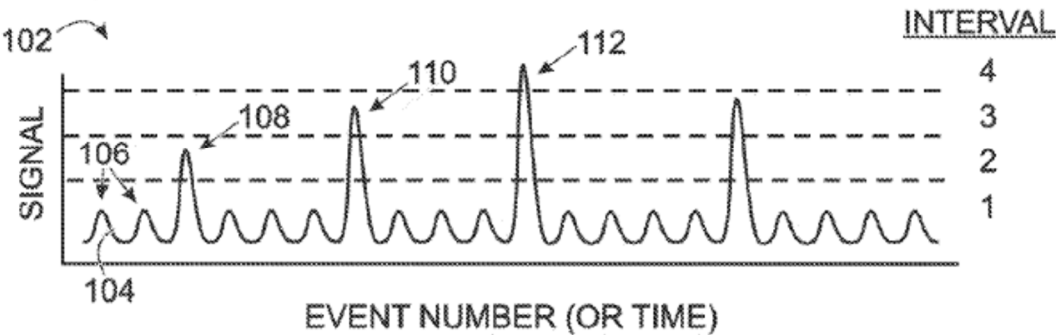
<u>Claim</u>	<u>Invalidity Analysis</u>
	The methods make no mention of physical separation, immobilization, or mass spectrometry. Specifically as to physical separation, although Saxonov teaches the formation of droplets, Saxonov teaches detecting and measuring multiple polynucleotide analytes in the same droplet, i.e., it does not teach physical separation of analytes. Saxonov ¶¶ 78-79, Figs. 9-10. To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad’s invalidity contentions.
wherein the analytes are amplified in the single sample volume.	Saxonov teaches the amplification of analytes in droplets: For example, Saxonov recites “[t]he droplets may be cycled thermally with a thermocycler to promote amplification of the targets in the droplets.” Saxonov ¶ 46. Further, Saxonov teaches amplification via PCR was known in the art and that PCR may be performed in the droplets. Saxonov ¶ 5 (“[d]igital assays frequently rely on amplification of a nucleic acid target in partitions to enable detection of a single copy of an analyte. Amplification may be conducted via the polymerase chain reaction (PCR), to achieve a digital PCR assay.”), ¶ 12 (“FIG. 4 is an exemplary graph showing a signal that may be created by detecting light emitted from the probes of FIG. 3 in a digital PCR assay performed in droplets, with the signal created by detecting light from each target together in the same channel from a fluid stream containing the droplets, in accordance with aspects of the present disclosure.” ¶ 53 (“FIG. 4 shows an exemplary graph 102 of data corresponding to an exemplary digital PCR assay for Target 1 and Target 2 performed in droplets.”), Figs 3-5. To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad’s invalidity contentions.
2. The assay of claim 1, wherein each of said at least M analytes is encoded as at least one first value in a first	Saxonov teaches assays wherein each of M analytes is encoded as a value in a first component and a second value in a second component of a fluorescent signal:

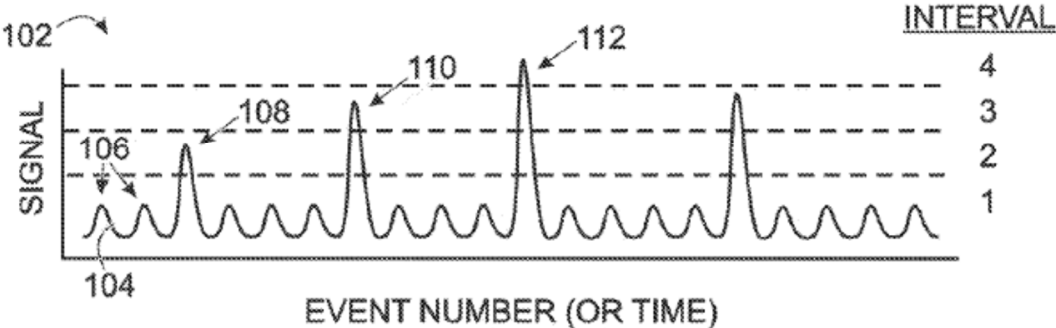
<u>Claim</u>	<u>Invalidity Analysis</u>
component of said fluorescent signal and at least one second value in a second component of said fluorescent signal.	<i>See supra</i> Claim 1 at “wherein each of said at least M...” and “wherein said assay is capable of...” Further, for example, Saxonov in describing Figure 10 recites “where data from the T1, T2, and T3 probes are collected in a first optical channel and a second optical channel and plotted as a function of intensity in the first channel (vertical axis) versus intensity in the second channel (horizontal axis), with intensities produced by exemplary populations or clusters of negative (NEG), T1-positive (T1+), T2-positive (T2+), and T3-positive (T3+) droplets represented by filled ellipses, in accordance with aspects of the present disclosure.” Saxonov ¶ 18. Fig. 10  The targets in the figure above are clearly encoded as at least some intensity value in a first component (first channel) and some intensity value in a second component (second channel). To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad’s invalidity contentions.
3. The assay of claim 2, wherein said first value is an intensity or range of intensities.	Saxonov teaches assays wherein the first value is an intensity: <i>See supra</i>, generally; <i>see also supra</i>, claim 2.

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4. The assay of claim 2, wherein said coding scheme is made nondegenerate by enumerating every legitimate result that can be obtained from said coding scheme, identifying each legitimate result that is degenerate, and eliminating at least one potential analyte code from said coding scheme to eliminate degeneracy.	Saxonov teaches assays wherein the assay enumerates every legitimate result and produces results with no degeneracy: <i>See supra</i> claim 1 at “wherein each of said at least M...” and “wherein said assay is capable of...” For example, Saxonov Figure 5 teaches an assay wherein all legitimate results, C61+, RPP30+, C61+/RPP30+ and negative droplets with no degeneracy. Fig. 5 <table border="1"><thead><tr><th>Population</th><th># DROPLETS</th></tr></thead><tbody><tr><td>RPP30+/C61+</td><td>1166</td></tr><tr><td>RPP30+</td><td>2665</td></tr><tr><td>C61+</td><td>2654</td></tr><tr><td>RPP30-/C61-</td><td>6782</td></tr></tbody></table>	Population	# DROPLETS	RPP30+/C61+	1166	RPP30+	2665	C61+	2654	RPP30-/C61-	6782
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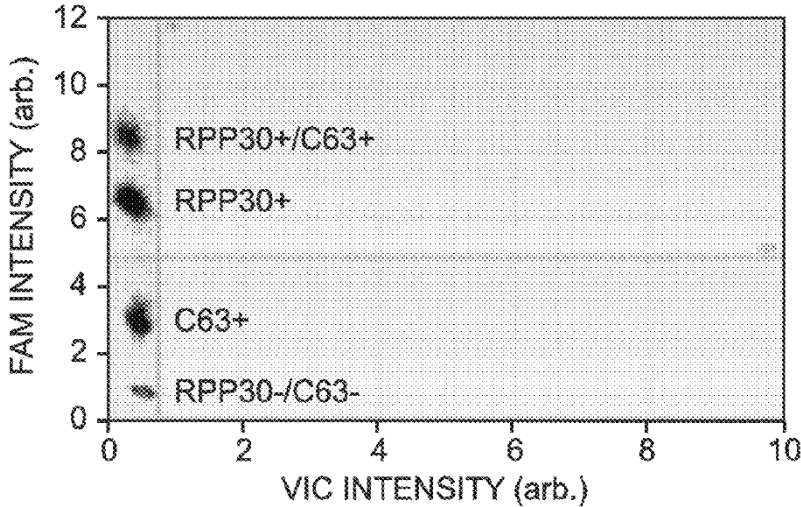
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	To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad’s invalidity contentions.
5. The assay of claim 1, wherein said detecting is performed with reagents comprising hybridization probes.	Saxonov teaches assays that detect analytes using hybridization probes: Saxonov discloses the use of oligonucleotide probes that “may provide target specificity by hybridization” to each of the targets. Saxonov ¶¶ 49-50, Figs. 3, 9. For example, “FIG. 3 shows a pair of targets 80, 82 (‘Target 1’ and ‘Target 2’) and corresponding probes 84, 86 (‘Probe 1’ and ‘Probe 2’) that may be used to create a dedicated signal for each target in a digital PCR assay.” Saxonov ¶ 49, Figs. 3, 5. Saxonov further recites “Each oligonucleotide [probe] may provide target specificity by hybridization predominantly or at least substantially exclusively to only one of the two targets.” Saxonov ¶ 50. <i>See also</i> Figure 9. Fig. 9  The diagram illustrates a droplet containing three target sequences (T1, T2, T3) and their corresponding probes (L1, L2, L3). Target T1 is shown with a double-stranded structure, with one strand labeled 140 and the other 142. A probe labeled 144 is shown hybridizing to the 142 strand. Target T2 is shown as a single-stranded sequence. Target T3 is shown as a single-stranded sequence. Probes L1, L2, and L3 are shown as single-stranded sequences, each labeled with a circled letter (L1, L2, L3). An arrow points from the droplet to the word 'DROPLETS'.

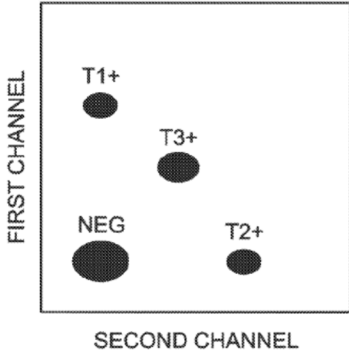
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6. The assay of claim 5, wherein said hybridization probes comprise one or more hybridization probes specific for different analytes and comprising an identical fluorophore or combination of fluorophores.	Saxonov teaches assays wherein the hybridization probes comprise an identical fluorophore or combination of fluorophores: <i>See supra</i>, generally, <i>see supra</i> Claims 1, 5. For example, Figure 5 shows the use of two target specific hybridization probes, each probe containing a FAM fluorophore. Fig. 5  <table><tr><th>Population</th><th>FAM INTENSITY (arb.) (10³)</th><th>VIC INTENSITY (arb.)</th><th># DROPLETS</th></tr><tr><td>RPP30+/C61+</td><td>~13</td><td>~84</td><td>1166</td></tr><tr><td>RPP30+</td><td>~10</td><td>~268</td><td>2665</td></tr><tr><td>C61+</td><td>~4</td><td>~452</td><td>2654</td></tr><tr><td>RPP30-/C61-</td><td>~1</td><td>~636</td><td>6782</td></tr></table>	Population	FAM INTENSITY (arb.) (10³)	VIC INTENSITY (arb.)	# DROPLETS	RPP30+/C61+	~13	~84	1166	RPP30+	~10	~268	2665	C61+	~4	~452	2654	RPP30-/C61-	~1	~636	6782
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	To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad’s invalidity contentions.
7. The assay of claim 5, wherein said fluorescence signal from said hybridization probes are used to construct a chromatogram.	Saxonov teaches assays wherein the fluorescence signal detected from the probes is used to construct a chromatogram: For example, see Figure 4: Fig. 4  To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad’s invalidity contentions.
8. The assay of claim 1, wherein said signal is generated during a polymerase chain reaction.	Saxonov teaches assays wherein the fluorescent signal is generated during a polymerase chain reaction:

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	For example, see Figure 4 and description. Saxonov ¶ 53 (“FIG. 4 shows an exemplary graph 102 of data corresponding to an exemplary digital PCR assay for Target 1 and Target 2 performed in droplets.”): Fig. 4  Further, Saxonov recites “Accordingly, light detected from the fluorophore may increase when the associated oligonucleotide binds to the amplified target to increase the separation between the fluorophore and the quencher, or when the probe is cleaved and the fluorophore and quencher become uncoupled during target amplification, among others... Moreover some embodiments may be constructed without a quencher so long as the fluorescence and so the signal changes upon amplification.” Saxonov ¶ 52. To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad’s invalidity contentions.
9. The assay of claim 1, wherein at least one of said analytes is encoded by at least one additional value, wherein said at least one additional value is selected	Saxonov teaches assays wherein at least one of the analytes is encoded by an additional value that is an intensity or a different wavelength component.

<u>Claim</u>	<u>Invalidity Analysis</u>										
from the group consisting of a value from at least one additional component of said signal, a value from at least one component of an additional signal, and combinations thereof.	<i>See supra</i>, generally, <i>see supra</i> claim 1 at “wherein each of said at least M...” and “wherein said assay is capable of...” For example, Figures 5 and 7 depict two targets, with one exhibiting a greater intensity than the other, which constitutes an “additional value” of an additional intensity “component” in said signal. Fig. 5 <table border="1"><thead><tr><th>Population</th><th># DROPLETS</th></tr></thead><tbody><tr><td>RPP30+/C61+</td><td>1166</td></tr><tr><td>RPP30+</td><td>2665</td></tr><tr><td>C61+</td><td>2654</td></tr><tr><td>RPP30-/C61-</td><td>6782</td></tr></tbody></table>	Population	# DROPLETS	RPP30+/C61+	1166	RPP30+	2665	C61+	2654	RPP30-/C61-	6782
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	Fig. 7  Further, Saxonov teaches that assays may be extended, including by encoding targets in more than one fluorophore, reciting “[t]he assays may be extended in various ways. In some embodiments, the assays may involve analysis of more than two targets in the same channel. For example, an assay for three targets may generate eight clusters or populations of data, separated by intensity. In the same or other embodiments, some targets may be analyzed in one channel (e.g., a FAM channel), and one or more other targets may be analyzed in one or more other channels (e.g., a VIC channel). Three targets, two in a first channel and one in a second channel, would again generate eight clusters or populations of data, but they would be separated in a two-dimensional intensity space and so in principle more easily resolvable.” Saxonov ¶ 20. Further, Figure 10 depicts an analyte, T3, that exhibits a signal in both a first and second channel: [0018] Fig. 10. Description. Shows a droplet that is exhibits some level of fluorescence in two channels. See Saxonov ¶ 18, Fig. 10.

<u>Claim</u>	<u>Invalidity Analysis</u>
	Fig. 10  To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad’s invalidity contentions.
10. The assay of claim 1, wherein at least one of said analytes comprises a polynucleotide.	Saxonov teaches assays for the detection of polynucleotide analytes: <i>See supra</i>, generally, <i>see supra</i>, claims 1, 5, 6. Specifically, for example, Saxonov recites that targets may be able to determine a “copy number (CN) and copy number variation” both of which are dependent on polynucleotides. Saxonov ¶ 43. To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad’s invalidity contentions.

<u>Claim</u>	<u>Invalidity Analysis</u>
11. The assay of claim 1, further comprising transmitting information concerning the presence or absence of at least one of said analytes through a computer network.	Saxonov teaches transmitting information concerning the presence or absence of polynucleotide analytes through a computer network: Saxonov depicts a number of images that would require a computer to generate. <i>See e.g.</i>, Saxonov ¶¶ 63-67, Fig. 5. Further, Saxonov explicitly teaches a “data processing assembly,” Saxonov ¶ 45, that “communicates with and controls operation of any suitable combination of the assemblies,” <i>Id.</i>, and that these assemblies may be “operatively connected to one another.” <i>Id.</i> To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad’s invalidity contentions.
12. The assay of claim 1, wherein at least one step of said assay is performed using a computer and wherein said computer is connected to a thermal cycler.	Saxonov teaches assays wherein a step is performed using a computer and that computer is on a thermal cycler: Saxonov teaches that the methods use an “[a]pparatus 60 [that] may include a partitioning assembly, such as a droplet generator 62 (“DG”), a thermal incubation assembly, such as a thermocycler 64 (“TC”), a detection assembly (a detector) 66 (“DET”), and a data processing assembly...” Saxonov ¶ 45. To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad’s invalidity contentions.
13. The assay of claim 1, wherein said coding scheme is innately nondegenerate or non-degenerate by construction.	Saxonov teaches assays that are non-degenerate: <i>See supra</i>, generally, <i>see supra</i> claim 1 at “wherein each of said at least M...” and “wherein said assay is capable of...” and <i>see supra</i> claims 2, 4.

<u>Claim</u>	<u>Invalidity Analysis</u>
	To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad’s invalidity contentions.
14. A kit for detecting the presence or absence of at least M analytes by generating a single cumulative measurement, comprising analyte-specific reagents, wherein:	Saxonov teaches kits for detecting the presence or absence of analytes based on a single cumulative measurement with analyte-specific reagents: <i>See supra</i>, generally, <i>see supra</i> claim 1. To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad’s invalidity contentions.
a. each of said at least M analytes is encoded as a value of one component of a fluorescent signal, thereby generating a coding scheme, wherein each of said at least M analytes is represented in said coding scheme by said value, and wherein said encoding is performed in a manner that eliminates degeneracy; and	Saxonov teaches kits wherein M analytes are encoded as a component of a fluorescent signal in a manner that eliminates degeneracy: <i>See supra</i>, generally, <i>see supra</i> claim 1, <i>see supra</i> claims 2, 4-7. To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad’s invalidity contentions.
b. each of said analyte-specific reagents, when contacted with a sample comprising its corresponding analyte, generates the value;	Saxonov teaches kits wherein analyte specific reagents generate a signal value when contacted with its corresponding analytes: <i>See supra</i>, generally, <i>see supra</i> claim 1, <i>see supra</i> claims 5-7.

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wherein said kit is capable of unambiguously detecting the presence or absence of each analyte of M analytes in a single sample volume, in any combination of presence or absence, and wherein the kit does not require the use of mass spectrometry or immobilization of said M analytes, and	Saxonov teaches kits wherein analytes are unambiguously detected without immobilization or mass spectrometry: <i>See supra</i>, generally, <i>see supra</i> claim 1. To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad's invalidity contentions.
wherein the analytes are simplified in the single sample volume.	Saxonov teaches amplification of targets in a sample volume: <i>See supra</i>, generally; <i>see also supra</i>, claim 1. To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad's invalidity contentions.
15. The kit of claim 14, wherein said fluorescent signal comprises F wavelength components and said kit is capable of unambiguously detecting the presence or absence of M analytes, in any combination of presence or absence, when M is greater than F.	Saxonov teaches the non-degenerate detection of the presence or absence of polynucleotide analytes in a sample solution volume, in any combination of presence or absence: <i>See supra</i>, generally; <i>see also supra</i>, claim 1.

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16. The kit of claim 14, wherein said analyte-specific reagents comprise a plurality of hybridization probes.	Saxonov teaches the non-degenerate detection of the presence or absence of polynucleotide analytes in a sample solution volume, in any combination of presence or absence: <i>See supra</i>, generally; <i>see also supra</i>, claims 5-7 and preamble. To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad’s invalidity contentions.
17. The kit of claim 16, wherein said plurality of hybridization probes comprise a fluorophore, and wherein said plurality of hybridization probes are specific for different analytes.	Saxonov teaches the non-degenerate detection of the presence or absence of polynucleotide analytes in a sample solution volume, in any combination of presence or absence: <i>See supra</i>, generally; <i>see also supra</i>, claims 5-7 and preamble. To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad’s invalidity contentions.
19. The kit of claim 14, wherein the analyte-specific reagents are each present at a different amount in the kit.	Saxonov teaches a kit wherein analyte-specific reagents are present in different amounts: For example, Saxonov recites “In some embodiments, preparation of the sample may include combining the sample with reagents for amplification and for reporting whether or not amplification occurred. Reagents for amplification may include any combination of primers for the targets, dNTPs and/or NTPs, at least one enzyme (e.g., a

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	polymerase, a ligase, a reverse transcriptase, or a combination thereof, each of which may or may not be heat-stable), and/or the like. Accordingly, preparation of the sample may render the sample (or partitions thereof) capable of amplification of each of one or more targets, if present, in the sample (or a partition thereof). Reagents for reporting may include reporters for each target of interest. Accordingly, preparation of the sample for reporting may render the sample capable of reporting, or being analyzed for, whether or not amplification has occurred, on a target-by-target basis, and optionally the extent of any such amplification. The reporters each may be a labeled probe that includes a nucleic acid (e.g., an oligonucleotide) labeled with a luminophore. Such as a fluorophore.” Saxonov ¶ 26. Further, Saxonov recites “there may be more or less of one probe than the other in the sample.” Saxonov ¶ 51. To the extent Saxonov is argued by Plaintiffs or found by the Court to not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious as described in Bio-Rad’s invalidity contentions.