

UNITED STATES COURT OF INTERNATIONAL TRADE

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OPTREX AMERICA, INC.,		:	
		:	
	Plaintiff,	:	
		:	Before: WALLACH, Judge
	v.	:	Court No.: 00-08-00382
		:	
UNITED STATES,		:	
		:	
	Defendant.	:	
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[Judgment for Defendant.]

Dated: February 27, 2006

Sonnenberg & Anderson, (Steven Patrick Sonnenberg and Michael Jason Cunningham) for Plaintiff Optrex America, Inc.

Peter D. Keisler, Assistant Attorney General; Barbara S. Williams, Attorney-in-Charge, International Trade Field Office; Amy M. Rubin, Trial Attorney, Commercial Litigation Branch, Civil Division, U.S. Department of Justice (Amy M. Rubin); and Beth C. Brotman, Office of Assistant Chief Counsel, International Trade Litigation, for Defendant United States.

FINDINGS OF FACT AND CONCLUSIONS OF LAW

FINDINGS OF FACT

1. The Court has jurisdiction over this action under 28 U.S.C. §1581(a).
2. Plaintiff, Optrex America, Inc. (“Optrex”), is the importer of record for the entries in issue.
3. The administrative protests underlying this action were timely filed and all liquidated duties and fees on the entries in issue have been paid.
4. The articles in issue were imported from Japan, Germany, China and Taiwan into the United States through the Ports of Detroit, Chicago and Los Angeles in 1998 and 1999.
5. The imported merchandise consists of articles referred to generally as “liquid crystal displays,” “liquid crystal devices” or “LCDs.”

6. The United States Customs Service (“Customs”)¹ liquidated the merchandise under various provisions, including subheading 8531.20.00, and subheading 9013.80.70, Harmonized Tariff Schedule of the United States (“HTSUS”).
7. Following discovery, Defendant, the United States (“the Government”) amended its answer to assert counterclaims under subheading 9013.80.70, subheading 9013.80.90, and subheading 8537.10.90, HTSUS.
8. The LCDs in issue are high technology products that utilize liquid crystals that respond to an electric field by twisting along their axes, thereby changing their optical qualities.
9. The LCDs in issue enable visual character displays, dot matrix displays and/or the display of information through icons.
10. Each imported LCD has an indium tin oxide layer deposited and patterned on the glass.
11. Optrex presented evidence at trial with respect to three types of LCDs: LCD panels, LCD modules and subassemblies that include an LCD module. The LCD modules in issue include both graphic display modules and character display modules.
12. All part numbers beginning with the prefix “DMC” describe character display modules.
13. The first three digits of a base part number beginning with “DMC” indicates the number of characters and the number of character lines (e.g., DMC-40401NY-LY is a 40 character by 4 line character display module.) Thus, the following part numbers are all LCD character display modules capable of displaying more than 80 characters at a time:

DMC-40401NY-LY, DMC-40457N, DMC-40457N-SEW-B, DMC-40457NYJ-LY-D,
DMC-40457NY-LY-B.

The above five part numbers are subject to Defendant's first alternative counterclaim under 9013.80.70, HTSUS. (Second Amended Answer in Court file.) All of the remaining character display modules in issue display 80 or fewer characters.
14. All part numbers beginning with the prefix “AM” describe segmented character display modules.
15. All part numbers beginning with the prefix “DMF” describe graphic display modules.

¹ Currently, U.S. Customs and Border Protection.

16. All part numbers beginning with the prefixes “FRS,” “FSD,” “FSS,” “FTD,” “FTS,” “GTD,” “NRD,” “NSD,” “NTD,” “NTX,” “VTD,” “VTS,” and “WSD” describe LCD panels (sometimes referred to as glass sandwiches). All of the part numbers subject to the Government's second alternative counterclaim are LCD panels.
17. In their condition as imported, the LCDs can not display data or accept input.
18. Some of the imported LCDs are “distribution parts” or are “sold through distribution,” which means that they are sold through stocking resellers of Optrex's products. These distributors include Pioneer, Apollo, Digikey, Norvell and Sager. Optrex does not always know the ultimate customer for distribution parts.
19. For some of Optrex’s products, according to Allen Houck, Optrex’s witness, “[a] custom product in Optrex terminology is a product that we do some design, some modification to another product to fit that customer's end application. So we may have another product that's similar that we maybe make some modifications to tailor it directly to their application.”
20. The drawings and specifications produced by Optrex for its LCDs do not specify a particular end use application.
21. Most of Optrex’s “standard” products were originally developed as custom products for particular customers.
22. The “ground-up” custom LCDs in issue that were later sold to other customers are not limited, by design, to a single end use application.

**FINDINGS RE: CUSTOM LCDs AND/OR LCDs SOLD TO A SINGLE CUSTOMER
DURING THE TIME PERIOD IN ISSUE**

23. AM-50090H-3-(N) is a character display module used in Motorola PCS cell phones.
24. AM-50702HU-T-3 is a character display module with 11 characters of 7 segments each plus icons used in Delco Electronics automotive trip odometers. This module has an alternative (Delco) part number - 16227389.
25. AM-50885HU-LA is a character display module with 11 characters of 7 segments each plus icons used in Delco Electronics automotive trip odometers.
26. DMC-16230NYU-LY-25 is a 16 character by 2 line character display module used in Wayne Systems credit card scanners for gas pumps.
27. DMC-16249N-SEB is a 16 character by 2 line character display module used in Federal

Express handheld terminals.

28. DMC-50037N-B-7, DMC-50037N-B-5 and DMC-50037N-B-6 are 40 character by 2 line character display modules used in Avaya/Lucent desktop phones.
29. DMC-50042-1 is a 16 character by 1 line character display module containing printed circuit contacts used in Data South dot matrix or ink jet printers. The printed circuit contacts are used to control certain printer functions.
30. DMC-50461 is a 20 character by 4 line character display module with three indicator light emitting diodes and printed circuit contacts used in Lexmark laser printers. The printed circuit contacts are used to control certain printer functions.
31. DMC-50777N-AAE, DMC-50777N-B, and DMC-50777N-B-F40 are 16 character by 2 line character display modules containing printed circuit contacts used in Lexmark laser printers. The printed circuit contacts are used to control certain printer functions.
32. Allen Houck testified that Part Nos. DMC-50461, DMC-50777N-AAE, DMC-50777N-B, DMC-50777N-B-F40 and DMC-50042-1 are substantially similar to the articles described in NY Ruling NY 816263.
33. Although the firmware on a particular printer which incorporates Optrex LCDs can be changed or upgraded, it would be changed or upgraded by an engineer or the manufacturer. In addition, with respect to the printers about which Optrex presented testimony, printing a test page executes a fixed program that already resides in the printer. In other words, in printing a test page, the user is selecting a function that is already built in to the printer.
34. DMC-50293H-LA is an 8 character by 2 line character display module used in Motorola PCS mobile phones.
35. DMC-50387NYL-LY-B is a 20 character by 2 line character display module with a micro-controller on board used in IBM point of sale displays.
36. DMC-50513N-LY-B-1-F40 is a 24 character by 2 line character display module used in Avaya desktop phones.
37. DMC-50553NJL-SLY-10 and DMC-50553NJL-SLY-11 are 12 character by 4 line character display modules with icons used in Motorola Iden cell phones.
38. DMC-50593NFJ-SLY-2 is a 12 character by 3 line character display module with icons used in a Lucent cell phone.

39. DMC-50684NJ-SLY-3 is a 12 character by 2 line character display module with icons used in Motorola PCS cell phones.
40. DMC-50739-FW-1 is a 40 character by 2 line character display module with icons used in Xerox copiers.
41. DMC-50799NYU-SLY-B is a 16 character by 4 line character display module with printed circuit contacts used in Compaq file servers.
42. DMC-50799NYU-SLY-B-COM is a subassembly used in a Compaq file server that incorporates character display module DMC-50799NYU-SLY-B and contains printed circuit contacts and a rubber keypad with popple dome switches. The popple dome switches are not used to control the server or input information to the server.
43. DMC-50877NY-B is a 20 character by 2 line character display module with a built in microcontroller containing firmware used in NCR point of sale terminals. The user of the point of sale terminal cannot change or amend the functions of that device and any change to the firmware would typically be made by NCR.
44. DMC-50922NFJ-SLY-2 is a 12 character by 4 line character display module with icons used in Qualcomm cell phones.
45. DMC-50968N-B-1-F38 is a 16 character by 2 line character display module used in Avaya desktop phones.
46. DMC-50980NFJL-SLY is a 12 character by 4 line character display module with icons and popple dome switches used in Motorola Iden cell phones. The popple dome switches control the mode and menu selections.
47. DMC-51039NFJ-SLY is a 12 character by 4 line character display module with icons used in Qualcom cell phones.
48. DMF-50020NFU-FW is a 240 by 128 pixel graphic display module with printed circuit contacts used in Pitney Bowes scales.
49. DMF-50020NFU-FW-1 is a subassembly containing module DMF-50020NFU-FW as well as a rubber keypad with carbon pills used in Pitney Bowes scales.
50. DMF-50073NF-FW is a graphic display module supplied with an attached touch screen used in a Xerox document center. This part is subject to Defendant's third alternative counterclaim under 8537.10.90.
51. DMF-50082NY-SEW is a 320 x 40 pixel graphic display module used in SPX

Corporation hand held testing monitors.

52. DMF-50088NBU-FW is a 640 x 200 pixel graphic display module used in Micros Systems restaurant point of sale terminals.
53. DMF-50190N is a 128 x 64 pixel graphic display module used in Fisher Rosemont/Emerson flow meters.
54. DMF-50246NB-FW-3 is a 352 x 35 pixel graphic display module used in IPC/Global Crossings stock market turrets.
55. DMF-50247NB-FW is a 640 x 480 pixel graphic display module used in Micros Systems restaurant point of sale terminals.
56. DMF-50260NFU-FW-23 is a 640 x 480 pixel graphic display module used in Hewlett Packard medical equipment such as heart monitors. Hewlett Packard may have allowed Optrex to show and sell the same display to other customers, including Datascope.
57. DMF-50260NFU-FW-31 is a 640 x 480 pixel graphic display module used in Hewlett Packard/Agilent medical equipment such as heart monitors.
58. DMF-50260NF-FW-32 is a 640 x 480 pixel graphic display module used in Hewlett Packard medical equipment such as heart monitors.
59. There is nothing in the design of the LCDs that are used in Hewlett Packard medical monitors that limits the LCDs from being used only in those end use applications.
60. DMF-50331N-SLY is a 105 x 64 pixel graphic display module used by Primus in GTE airplane telephones.
61. DMF-50375N-SEW is a 120 x 64 pixel graphic display module used in Symbol Technologies hand held inventory scanners.
62. DMF-50386N-SLY is a 105 x 64 pixel graphic display module used in Primus airplane telephones.
63. DMF-50521NBU-FW is a 240 x 64 pixel graphic display module used in Wayne Systems credit card scanners on gas pumps.
64. DMF-50531NF-FW is a 320 x 240 pixel graphic display module used by Crestron Electronics in a touch screen terminal for its Smart Touch radio frequency wireless control system. This module is not imported with a touch screen.

65. DMF-50562NFU-FW is a 640 x 320 pixel graphic display module used in Hewlett Packard/Philips/Agilent medical monitoring equipment.
66. DMF-50573NB-FW is a 480 x 80 pixel graphic display module used in IPC/Global Crossings stock market turrets.
67. DMF-50646NFJ-SLY-1 is a 96 x 32 pixels graphic display module with icons, printed circuit contacts and a hall effect sensor used in Motorola PCS cell phones.
68. DMF-50656NY-T is a graphic display module with two 119 x 16 pixel sections plus icons used in a Motorola pager.
69. DMF-50772NCWJU-FW is a 240 x 128 pixel color graphic display module used in Garmin International aviation GPS devices.
70. DMF-50796H-LAR is a 45 x 28 pixel graphic display module used in Delco Electronics automotive message centers.
71. DMF-50824N-SLY and DMF-50824N-SLY-2 are 240 x 128 pixel graphic display modules used in Hewlett Packard external defibrillators. Allen Houck was unable to identify the differences between these two modules.
72. DMF-50831NJ is a 265 x 65 pixel graphic display module with printed circuit contacts used in Square D remote power switching systems.
73. DMF-50886NF-FW is a 640 x 200 pixel graphic display module used in Psion Teklogix vehicle mount terminals.
74. DMF-50897NFJ-SEB is a 192 x 272 pixel graphic display module containing a touch screen used in Motorola PCS cell phones. Any module with the base number 50897 would contain a touch screen.
75. DMF-50988NF-SLY is a 128 x 32 pixel graphic display module used in Sims Deltec infusion pumps.
76. DMF-50995N-1 is a 240 x 112 pixel graphic display module with printed circuit contacts used in Avaya Communications business telephones. The design of the LCDs that are used in Avaya telephones does not limit their use only to that end use.
77. DMF-50998NFJL-SLY-1 and DMF-50998NFJL-SLY-3 are 96 x 48 pixel graphic display modules with icons used in Motorola Iden cell phones.
78. DMF-51070NFJ-SLY and DMF-51070NFJ-SLY-AC are 96 x 32 pixel graphic display

modules with icons, a hall effect sensor and either popple dome switches or printed circuit contacts used in Motorola PCS cell phones. The popple dome switches and printed circuit contacts would be under the keypad and would control the operations of the cell phone.

79. DMF-51097NFJL-SLY DMF-51097NFJL-LY-AC, and DMF-51097NFJL-SLY-AD are 96 x 48 pixel graphic display modules with icons used in Motorola Iden cell phones.
80. F-51159NYJ-SEW-AA is a 120 x 64 pixel graphic display module used in Symbol Technologies hand-held scanners.
81. FRD-11555AAH is an LCD panel with 9 seven-segment characters plus icons used in Landis & Gyr/Siemens test equipment.
82. FRD-14181ABH-CD is an LCD panel with 3 fourteen-segment characters, 6 seven-segment characters and icons used in Landis & Gyr/Siemens voltage measuring meters.
83. FRS-10813AB and FRS-10813AB-CD are LCD panels with 5 seven-segment characters used by Red Lion Controls.
84. FRS-12280AC-CD is an LCD panel with 7 seven-segment characters and icons used in NCR scales.
85. FRS-13810AAPH-CD is an LCD panel with 3 seven-segment characters and icons used in Johnson Controls temperature-humidity sensing instrumentation products.
86. FSD-15130AAPH-CU is an LCD panel with 8 fourteen-segment characters and icons used in Matsushita Communications car audio systems.
87. FSD-15205AAF-CDA is an LCD panel with an attached flex cable, 8 seven-segment characters on 2 lines (total of 16 seven-segment characters) and icons used in Infinity Informatica Inc. cell phones.
88. FSD-15740AAH-CU is an LCD panel with 3 seven-segment characters, 1 two-segment character and icons used in Lowrance digital depth monitors.
89. FSD-16455AGPH-CU is an LCD panel with 10 seven-segment characters and icons used in Visteon trip odometers. This panel has an alternate (Visteon) part number - F8FF-10D922AB.
90. FTD-11501AGFH and FTD-11501ACFH are different revision levels of the same LCD panel that has 4 seven-segment characters and icons and they are used in Visteon Corporation automotive message centers. This panel has an alternate (Visteon) part

number - F6RF-10D922-BB.

91. FTD-12613ABH-CU is an LCD panel with 8 fourteen-segment characters and icons used in Visteon car audio systems. This panel has an alternate (Visteon) part number - F5RF-18B955BC.
92. FTD-13069AAPH-CU is an LCD panel with 4 seven-segment characters and icons used in Matsushita Communications car audio systems
93. FTD-13180AGH is an LCD panel used in Visteon automotive audio systems. This panel has an alternate (Visteon) part number - 95GP-18B55-AC.
94. FTD-13201AEFH-CUA is an LCD panel with 10 seven-segment characters, icons, and a transfective color filter used in Visteon odometer/message centers. This panel has an alternate (Visteon) part number - F5RF-10D922-AB.
95. FTD-13366ABPH-CU is an LCD panel with 3 seven-segment characters, 1 two-segment character and icons used in Delco car audio systems. This panel has an alternate (Delco) part number - 16197564.
96. FTD-14021ACPH-CU is an LCD panel with 4 seven-segment characters, 1 two-segment character and icons used in Matsushita Communications/Panasonic car audio systems.
97. FTD-14171ABPH-CU is an LCD panel with 4 seven-segment characters, 1 two-segment character and icons used in Delco car audio systems. This panel has an alternate (Delco) part number - 16210571.
98. FTD-15286AAPH is an LCD panel with 3 seven-segment characters and icons used in Delco automotive message centers. This part has an alternate (Delco) part number - 16235274.
99. FTD-15491AAPH-CU is an LCD panel with 4 seven-segment characters, 1 two-segment character and icons used in Panasonic car audio systems.
100. FTD-15664 is an LCD panel with 9 characters of varying numbers of segments plus icons used in Delco car audio systems. This panel has an alternate (Delco) part number - 16232895.
101. FTD-15979ABPH is an LCD panel with icons used in Visteon automotive message centers. This part has an alternate (Visteon) part number - 98BP-10D922-BB
102. FTD-16420ACD-CD is an LCD panel with a graphic area of 80 x 7 pixels, 4 seven-segment characters and icons used in Motorola pagers.

103. FTD-16455AAPH is an LCD panel with 10 seven-segment characters and icons used in Visteon automotive trip odometers. This panel has an alternate (Visteon) part number - F8FF-10D922-AA.
104. FTD-16766ABPH is an LCD panel with 6 seven-segment characters, icons and a color filter used in Visteon automotive trip odometers. This panel has an alternate (Visteon) part number - F8FF-10D922-BD.
105. FTD-17029AAPH is an LCD panel with 10 seven-segment characters and a color filter used in a Visteon/Ford Electronics combination automotive clock and odometer. This panel has an alternate (Visteon) part number - 98-BP-10D922-AC.
106. FTS-10813AA is an LCD panel with 5 seven-segment characters used by Red Lion Controls.
107. GMF-51048NFJ is an graphic display module used in the Home Wireless Networks portable telephone handset portion of a house wireless network system.
108. GMF-51076N-S is an 95 x 7 pixel chip on glass graphic display module with a flexible cable and icons used in American Telecom pagers.
109. IM-50888NF and IM-50888NF-1 are character display modules with 12 fourteen-segment characters used in Hewlett Packard/Agilent measurement and test equipment.
110. NSD-12766AAD-CL is a 320 x 200 pixel LCD panel used in Lowrance Electronics fish finders. Nothing in the design of the LCDs used only in Lowrance fish finders limits the LCDs to that end use application.
111. NSD-14379AA is a 64x128 pixel graphic LCD glass panel with icons used in Telxon Corporation hand held inventory scanners.
112. NSD-15129AAD-CL is a 160 x 160 pixel LCD panel used in a Lowrance Electronics handheld marine global positioning system ("GPS") navigational device.
113. NSD-15319AB is an LCD panel that was sold to Ultratec, Inc. for TTY cellular telephones.
114. NSD-15334AAD-CL is a 65 x 100 pixel LCD panel used in a Lowrance Electronics handheld GPS navigational device.
115. NSD-15920AAD-CL and NSD-15920ABD-CL are 160 x 160 pixel LCD panels used in Lowrance fish finders.

116. NSD-15921ABD-CL is a 240 x 240 pixel LCD panel used in Lowrance fish finders.
117. NSD-16595AED-CL is a 160 x 160 pixel LCD panel used in a Garmin fish finder. Nothing in the design of the LCDs used only in Garmin fish finders limits the LCDs to that end use application.
118. NSD-16598AAD is a 64 x 128 pixel LCD panel used in Lowrance fish finders.
119. NSD-16853AAD-CL is a 104 x160 pixel LCD panel used in Lowrance handheld GPS navigational devices.
120. NSD-16948ACD-CL is a 240 x 240 pixel LCD panel used in Garmin fish finders.
121. NSD-17010ABD-CD is an LCD panel with 60 x 28 pixels configured into 12 character x 4 lines plus icons used in Metro Electronics cell phones.
122. NSD-17024ABD-CL is a 320 x 200 pixel LCD panel used in Lowrance fish finders.
123. NSD-17403ABD-CL is a 64 x 128 pixel LCD panel used in Techsonic fish finders.
124. NSD-7399CXD-CD is a 128 x 112 pixel LCD panel used in Ametek construction machinery information centers.
125. NSD-7551 and NSD-7551AGD-CD are 128 x 128 pixel LCD panels used in Telxon microprocessor-driven hand held inventory terminals.
126. NTD-13787AXD-CL is an LCD panel with two 119 x 16 pixel graphic display areas and icons used in Motorola pagers.
127. NTD-15504AEHD-PCU is a 240 x 80 pixel LCD panel used in Garmin aviation transponders.
128. NTD-16210AB is an LCD panel with two 119 x 16 pixel graphic display areas, holographic filters and icons used in Motorola pagers.
129. NTX-15505AGH-QCD and NTD-15504AEHD-PCU are LCD panels which are individual cells of a double super twisted nematic display used in Garmin aviation GPS devices. NTX-15505AGH-QCD is a “dummy” cell and NTD-15504AEHD-PCU is an “active” cell.
130. VTS-8A80BGFHJ-CU is an LCD panel with icons used in Visteon automotive message centers. This panel has an alternate (Visteon) part number - F00F-10D922-AA.

131. WSD-14219AIPH-CU is an LCD panel with 6 seven-segment characters and icons used in Yazaki automotive trip odometers.
132. WSD-14282BGPH-CU is an LCD panel with 6 seven-segment characters and icons used in Denso Tennessee automotive trip odometers. This panel has an alternate (Denso) part number - TN461000-1280.
133. WSD-14282BAPH is an LCD panel with 6 seven-segment characters and icons used in Nippon Denso Tennessee automotive trip odometers. This part is a different revision level with a minor design change from WSD-14282BGPH-CU. This panel has an alternate (Denso) part number - TN461000-1190.
134. WSD-15550ABPH-CU is an LCD panel with 6 seven-segment characters and icons used in American Yazaki automotive trip odometers.
135. WSD-16071AAPH-CU is an LCD panel with icons used in Nippon Denso automotive thermometers. This panel has an alternate (Nippon Denso) part number - TN 461000-1450.
136. WSD-16770ACPZ-CD is an LCD panel with 6 seven-segment characters used in Delco Electronics odometers for Harley Davidson. This panel has an alternate (Delco) part number - 16242996.
137. WSD-17304ACPZD is an LCD panel with 11 dot matrix characters and icons used in Delphi automotive audio equipment.
138. DMC-24227N-B-24-F38, DMC-24227N-B-24-F38(I) and DMC-24227N-B-24-T are 24 character by 2 line character display modules. Although these particular modules are used in Avaya desktop telephones, all of the “24227” modules are very similar.
139. DMF-50036NF-FW is a 640 x 200 pixel graphic display module sold to Spectra Electronics, which repairs test equipment.
140. DMF-50036NF-FW-4 is a 640 x 200 pixel graphic display. Although no customers appeared on the shipped order detail for this part in plaintiff's Exhibit 1, Allen Houck testified that, to his knowledge, it was only sold to Toledo Scale, a company that makes scales. However, the base part, 50036, is sold through distribution. Also, the “dash-4” suffix indicates the addition of a Mitsumi connector, but such an addition would not cause this module to be dedicated for use in a scale.
141. DMF-50036NFU-FW-4 is a 640 x 200 pixel graphic display module sold to Toledo Scales. The “-4” version is “essentially the same as the base part number except it has a

different type connector.”

142. DMF-5005NYJ-SLY-28 is a 240 x 64 pixel graphic display module. This module was sold through distribution and was used by Daniel Instruments for an industrial application. Allen Houck testified that he did not know if this module was sold only to Daniel Instruments.
143. DMF-50260NY-SFW is a 640 x 480 pixel graphic display module. This module was sold to Apollo Display which then sold it to Elite Entry Phone Company.

FINDINGS RE: LCDs ORIGINALLY DEVELOPED FOR A PARTICULAR CUSTOMER IDENTIFIED AT TRIAL BUT ULTIMATELY SOLD TO OTHERS

144. DMC-50070N-B-2 is a character display module. Although it was a custom module used in Avaya/Lucent desktop phones, it was also sold to General Dynamics.
145. DMF-5005NF-SEW is a 240 x 64 pixel graphic display module. Although the original customer for this module was Datascope, which is a medical monitoring equipment company, it is sold through distribution.
146. DMF-50260NF-FW-15 is a 640 x 480 pixel graphic display module. Although this module was designed in conjunction with Hewlett Packard (“HP”), it would not work in HP’s medical monitors and was eventually sold to many other customers.
147. DMF-50834NFJ-SEB is a 119 x 73 pixel graphic display module. Although the original design of this module was created for Symbol Technologies, it was also sold to Hand Held Products. These modules are used in hand held inventory scanners.
148. DMF-651ANB-FW-14 is a 640 x 200 pixel graphic display module. The original customer for this part was Datascope, which makes medical monitoring equipment. Allen Houck testified that there were some distribution parts in the “DMF-651 series” but did not know whether the “dash-14” version was one of them.
149. DMF-50174NFL-SFW-11 is a 320 x 240 pixel transflexive graphic display module. Although this module was originally intended to be used in Garmin GPS devices, it has been sold to several customers as well as through distribution and could be used for multiple applications. All of the modules with part numbers containing “50174” are “basically the same” and the differences with the modules discussed at trial involved such characteristics as the cable length and the background color.

FINDINGS RE: LCDs THAT ARE SOLD THROUGH DISTRIBUTION AND/OR TO MULTIPLE CUSTOMERS

150. DMF-50840NB-FW-AK is a 320 x 240 graphic display module that was sold through distribution to Pioneer Standard which, in turn, sold it to a company called Checkmate. Checkmate makes credit card reader terminals. This module has a black bezel which was added at Checkmate's request. Allen Houck does not know whether Pioneer Standard sold this module to customers other than Checkmate but he did state that it is not limited by design for use only in a touch screen terminal.
151. DMF-50840NB-FW is essentially identical to DMF-50840NB-FW-AK except that this module has a silver bezel. This module is sold to multiple customers, including Checkmate and Autotote. According to Allen Houck, "Autotote's product is, in a way, it's a POS system. They do -- they do the -- not the gambling machines themselves, but they do the register system where somebody's going to go trade in their chips or they are the gambling machines at the horse tracks, those types of products are what they do."
152. DMF-50262NF-FW-ME is a 640 x 400 pixel graphic display module. Although this module was co-developed with Marquette Electronics for medical monitors, it was sold to Marquette through a distributor, Pioneer Standard. There is nothing about the specific design that limits this module to being used only in medical monitors.
153. DMC-24227N-SEW-B-11 is a 24 characters by 2 line character display module sold through distribution. Although this module may be used in Lucent business telephones, it has no physical characteristics that would commit it to that use and may be used in other applications.
154. DMC-24227N-B is a 24 characters by 2 line character display module sold through distribution.
155. DMC-50747NF is a 16 character by 2 line character display module with a mounted controller chip sold through distribution to multiple customers.
156. DMF-5001NF, DMF-5001NY-LY and DMF-5003NB-FW are 160 x128 pixel graphic display modules sold through distribution.
157. DMF-50036NFU-FW is a 640 x 200 pixel graphic display module sold through distribution to multiple customers. One of the customers is Remanco, which uses the module for a restaurant point of sale (POS) terminal. According to Allen Houck, "some sort of microprocessor" would be required to operate this display.
158. DMF-50036ZNBU-FW is a 640 x 200 pixel graphic display module that was sold to Nautilus, which makes exercise equipment, and also sold through distribution.
159. DMF-50036ZNFU-FW is a 640 x 200 pixel graphic display module sold through distribution. One of the applications is Drason-Stadler clinical audiometers.

160. DMF-5005N-EW is a 240 x 64 pixel graphic display module used by Agilent/Hewlett Packard for medical monitors and also sold through distribution.
161. DMF-5005N is a 240 x 64 pixel graphic display module sold through distribution to a very large number of customers.
162. DMF-5005NYJ-LY is a 240 x 64 pixel graphic display module sold through distribution. One customer, Daniel industries, used it for a fuel measurement device but it could be used in other applications.
163. DMF-5005NY-LY is a 240 x 64 pixel graphic display module sold through distribution.
164. DMF-50081ZNB-FW and DMF-50081ZNB-FW-12 are 320 x 240 pixel graphic display modules sold through distribution to multiple customers.
165. DMF-50081ZNF-FW is a 320 x 240 pixel graphic display module sold through distribution to multiple customers.
166. DMF-5010NB-FW and DMF-5010NBU-FW are 240 x 64 pixel graphic display modules sold through distribution. One of the customers for DMF-5010NB-FW is Novometrics, which uses them for medical monitoring equipment. The only difference between these modules is the viewing angle.
167. DMF-50174ZNB-FW is a 320 x 240 pixel transmissive graphic display module that was sold to Triton Systems for use in an industrial controller application as well as through distribution.
168. DMF-50174ZNF-FW is a 320 x 240 pixel graphic display module sold primarily through distribution.
169. DMF-50260NY-SFW is a 640 x 480 pixel graphic display module. Although one of Optrex's customers for this module is Delphi Engineering, it is also sold by Apollo Display, which is a distributor. Allen Houck did not know to whom Apollo Display sold this module and was not certain of the Delphi Engineering application. However, according to Mr. Houck, this type of a display would be used with "microprocessor-based products."
170. DMF-50316NF-FW-1 is a 240 x 64 pixel graphic display module sold to Apollo Displays, a distributor.
171. DMF-50383NF-FW is a 640 x 480 pixel graphic display module sold to several specific customers as well as through distribution for multiple uses.

172. DMF-50426NYJ-SLY is a 128 x 32 pixel graphic display module sold through distribution.
173. DMF-50773NF-FW is a 240 x 128 pixel graphic display module sold through distribution.
174. DMF-50840NF-FW-3 is a 320 x 240 graphic display module that is imported with a touch screen. Although it was originally developed for use in a receptionist's telephone, it is a distribution part and could be used in other types of devices. This module is subject to defendant's third alternative counterclaim.
175. DMF-50840NF-FW is a 320 x 240 graphic display module sold to Space Labs, Burdick and also through distribution to other customers. The applications for which this module is used include electrical chemical analysis multimeters and electrocardiograph machines.
176. DMF-50840NFL-SFW is a 320 x 240 graphic display module sold to several customers including Garmin, Techsonic, I-Con, and also sold through distribution. Although this module is used in GPS devices, it may be used in others as well.
177. DMF-50887NCJU-FW-1 is a 256 x 64 full color graphic display module. Although it was originally designed for an automotive message center application, it is sold to various customers, including distributors.
178. DMF-50961NF-FW is a 640 x 480 pixel graphic display module sold through distribution.
179. DMF-612NF-FW-9 is a 480 x 64 pixel graphic display module sold through distribution. Although Allen Houck testified that it is used by Amtote International, which makes gambling totalizer machines, he stated that it is possible that it is also sold by the distributor to other end customers.
180. DMF-660NK-EW is a 240 x 128 pixel graphic LCD display module sold to Datascope for medical monitoring equipment and also through distribution, possibly for applications other than medical equipment.
181. Although Optrex Part Nos. DMC-20434 and DMC-20434N-B are identified in Volume 2 of plaintiff's Exhibit 1 and Part Nos. DMC-20434HE, DMC-20481NY-LY, DMC-20481NY-LY-B and DMF-682ANF-EW are identified in Volume 9 of Plaintiff's Exhibit 1, Optrex had abandoned any claims with respect to these part numbers prior to trial.

182. Prior to trial, Optrex agreed to abandon its claims with respect to the following part numbers:

C-51148NU-SLY-AA, CBL50073B-UNIT, CCT-50081UNIT-S1, CMF-51048NFJ, COB-50796-C, COV-50739A, DMC-16105NY-LY, DMC-16106C, DMC-16117AN, DMC-16128NY-LY, DMC-16129, DMC-16129H, DMC-16129N-B, DMC-16129U, DMC-16188NY-LY, DMC-16202N-LY-B, DMC-16202N-LY-D, DMC-16202NYJ-LY-D, DMC-16202NY-LY, DMC-16202NY-LY1, DMC-16203NJ-D, DMC-16204N-LR-B, DMC-16205NY-LY, DMC-16207, DMC-16207N, DMC-16207N-B, DMC-16207N-EB, DMC-16230, DMC-16230H, DMC-16230N, DMC-16230NU-EB, DMC-16230NYJ-LY-D, DMC-16230NY-LY, DMC-16230NY-LY-B, DMC-16230NYU-LY, DMC-16433, DMC-16433H, DMC-16433N, DMC-16433N-SEW-B, DMC-20171, DMC-20203NY-LY-B, DMC-20215A, DMC-20261ANY-LY-B, DMC-20261NYJ-LY-D, DMC-20261NY-LY, DMC-20434, DMC-20434HE, DMC-20434N, DMC-20434N-B, DMC-20481NYJ-LY-D, DMC-20481NY-LY, DMC-20481NY-LY-B, DMC-20481NY-SLY-B-5, DMC-20481NYU-LY-B, DMC-2074NY-LY-B, DMC-40202NY-LY-B, DMC-40218N-B, DMC-40218N-SEW-B, DMC-40267NB-LY-B-8, DMC-40267NY-LY, DMC-40267NY-SLY-B, DMC-40401NY-LY, DMC-40457N, DMC-40457N-SEW-B, DMC-40457NYJ-LY-D, DMC-40457NY-LY-B, DMC-50218, DMC-50218N-B, DMC-50292NYJ-LY-D-1, DMC-50292NY-LY-B, DMC-50448N, DMC-50454NJ-SLY, DMC-50603NY-SLY-B, DMC-50697NFU-SLY-1, DMC-50697NFU-SLY-2, DMC-50787N, DMC-50995N-1, DMC-51008NFJ-SLA, DMC-51099N, DMF-50248N-SEW, DMF-50375N-SFW, DMF-50383NG-FW, DMF-50427NYJ-SLY, DMF-5064NFJ-SLY-1, DMF-50796-LAR, DMF-50893NYJL-SLY, DMF-50980NFJL-SLY, DMF-51026NYU-LY, DMF-51120GNFJ-AA, DMF-605NY-SEB-2, DMF-6104NB-EW, DMF-6104NB-FW, DMF-651ANY-EB, DMF-682AN-EW, DMF-682ANF-EW, DMF-682ANY-EB, DXC-NYU-SL, DXC-50799NYU-SLY-B, EL-161060-C, EL-16106C-C, EL-16117-C, EL-16433-W, F-51138NF-S-AA, GMF-51094NFHU-S, HLD-6116SPC-ED, L11-50-023, LG-50980A, LG-950980A, LGP-50980A, M-50888NF, S-12562-5M, TSW-50138B

183. The functions that can be performed by the end use devices for the LCDs in issue that were identified at trial are set by the manufacturer; the user of the end use device cannot add functions after sale.
184. A car owner would not be able to change the features of an odometer that incorporates any of the LCDs in issue.
185. Allen Houck did not believe that any of the end use devices that incorporate the LCDs in issue, other than computer servers, are capable of accepting new software applications that allow the end user to manipulate data.

186. Other than the computer servers, the end use devices for the LCDs in issue run off operating systems that perform the specific function for the specific device.
187. None of the following features, standing alone and in the absence of contractual obligations, would predestine an LCD for a particular end use application: the color of the bezel, the viewing angle, the backlight color, the impact resistance, the temperature sensitivity.
188. All of the LCD modules in issue whose end use applications were discussed at trial, other than those with permanently etched icons, could be used for other applications if the end use device were designed so that the module fit in it. That is what is done by the customers who purchase from Optrex's distributors.
189. The majority of the graphic display modules in issue are principally used for signaling.
190. When determining if an imported article is classifiable under Heading 8471, Customs applies the legal notes and the Explanatory Notes (“ENs”) and also considers the article's design, architecture and function. Customs only considers machines with a principal function of processing data to be “automatic data processing machines” of Heading 8471. According to Customs National Import Specialist (“NIS”) Eileen Kaplan, in conformity with the logical structure of the HTSUS, if the principal function of an article is something other than processing data, it can not be classified in Heading 8471, even if, in accomplishing its intended purpose, it happens to process data. Examples of provisions that encompass articles with principal functions other than data processing but which articles may process data in accomplishing their principal functions are the provisions that cover line telephony apparatus, radio telephony apparatus, radio navigational apparatus, measuring and checking apparatus, fuel pumps, cash registers, point of sale apparatus, and copiers. Under Customs' interpretation, Note 5(a) to Chapter 84 is used to exclude those articles that should be classified in these other provisions rather than in Heading 8471.
191. In explaining the basis for Optrex's position that the unknown end-use devices into which the “distribution parts” in issue satisfy Note 5(A)(a) to Chapter 84, HTSUS, Allen Houck stated: “the way we would operate with a standard type product is, you know, if we have a product that we know can go into certain types of products, we will sell them to multiple customers. We will sell them through distribution. However, looking at the interface structures, we’ve got a pretty good idea what it has to do to operate that product and, in the vast majority of these cases, you are going to need a microprocessor system to perform any type of practical solution to this.”
192. A microprocessor is a semiconductor chip, and a semiconductor chip is an integrated circuit.

193. Microcontrollers are microprocessors.
194. The microprocessor to which the LCD display would be connected acts as a central processing unit ("CPU") for the device incorporating the display.
195. In interpreting and applying Note 5(A)(a) to Chapter 84, Customs considers the "user" to be the end user, i.e., the person who purchases and/or uses the device, not the manufacturer or seller of the device.
196. Customs interprets the requirement in Note 5(A) to Chapter 84, HTSUS, that an "automatic data processing machine" must be "capable of" "being freely programmed in accordance with the requirements of the end user" as meaning that the design and architecture of the device is such that it can be programmed to perform functions that correspond to the requirements of the user for the usable life of the machine, not just at the point of sale or distribution. The machine should be able to be programmed to do whatever the user wants it to do, within that machine's capabilities, e.g., to do taxes, to prepare a spreadsheet or a financial report, to play video games or to do word processing. The fact that an automatic data processing machine may become obsolete does not alter its status as an ADP machine. Customs uses the phrases "capable of being freely programmed" and "freely programmable" interchangeably. By contrast, according to the opinion of Optrex's witness, Allen Houck, a device would satisfy this requirement just by having been programmed by the manufacturer, seller or distributor, even if the programs could not be varied according to changing requirements of the end user. In addition, Allen Houck, testified about end-use devices being "freely programmed," the term "freely" had no significance and he meant that the device could be "programmed."
197. Customs classifies machines with multiple functions, one of which is data processing, according to that machine's "principal function."
198. With respect to the requirement in Note 5(A)(a) to Chapter 84, HTSUS, that an "automatic data processing machine" must be "capable of" "performing arithmetical computations specified by the user," Customs does not look to machine functions when referring to "arithmetical computations," but, rather, to standard computations that the machine's user would want to perform such as addition and subtraction. Customs would look to see if the machine can accept applications, such as a calculating program or a tax program, that would allow the user to perform arithmetical computations.
199. If any of these Findings of Fact are more properly denominated Conclusions of Law they shall be deemed to be so.

**IV
CONCLUSIONS OF LAW**

1. Optrex has effectively abandoned its claims with respect to any and all part numbers encompassed by the entries at issue for which no evidence was presented at trial.

2. At the time relevant to this action, subheading 8531.20.00 encompassed:

8531 Electric sound or visual signaling apparatus (for example, bells, sirens, indicator panels, burglar or fire alarms), other than those of heading 8512 or 8530; parts thereof:

 8531.20.00 Indicator panels incorporating liquid crystal devices (LCD's) or light emitting diodes (LED's).

3. At the time relevant to this action, subheading 8537.10.90 encompassed:

8537 Boards, panels, consoles, desks, cabinets and other bases, equipped with two or more apparatus of heading 8535 or 8536, for electric control or the distribution of electricity, including those incorporating instruments or apparatus of chapter 90, and numerical control apparatus, other than switching apparatus of heading 8517:

 8537.10 For a voltage not exceeding 1,000 V:

 8537.10.90 Other.

4. At the time relevant to this action, subheadings 9013.80.70 and 9013.80.90 encompassed:

9013 Liquid crystal devices not constituting articles provided for more specifically in other headings; lasers, other than laser diodes; other optical appliances and instruments, not specified or included elsewhere in this chapter; parts and accessories thereof:

 9013.80 Other devices, appliances and instruments:

 9013.80.70 Flat panel displays other than for articles of heading 8528

 9013.80.90 Other.

5. At the time relevant to this action, subheading 8473.30.50, HTSUS encompassed:

8473 Parts and accessories (other than covers, carrying cases and the like) suitable for use solely or principally with machines of headings 8469 to 8472:

8473.30 Parts and accessories of the machines of heading 8471^[2]:

8473.30.50 Other.

6. According to the General Rules of Interpretation (“GRI”), HTSUS relevant to this action:

Classification of goods in the tariff schedule shall be governed by the following principles:

1. The table of contents, alphabetical index, and titles of sections, chapters and sub-chapters are provided for ease of reference only; for legal purposes, classification shall be determined according to the terms of the headings and any relative section or chapter notes and, provided such headings or notes do not otherwise require, according to the following provisions:

* * *

3. When, by application of rule 2(b) or for any other reason, goods are *prima facie*, classifiable under two or more headings, classification shall be effected as follows:

(a) The heading which provides the most specific description shall be preferred to headings providing a more general description. However, when two or more headings each refer to part only of the materials or substances contained in mixed or composite goods or to part only of the items in a set put up for retail sale, those headings are to be regarded as equally specific in relation to those goods, even if one of them gives a more complete or precise description of the goods.

* * *

² Heading 8471 covers: “Automatic data processing machines and units thereof; magnetic or optical readers, machines for transcribing data onto data media in coded form and machines for processing such data, not elsewhere specified or included.”

7. Additional U.S. Rule of Interpretation 1(c) provides:

In the absence of special language or context which otherwise requires - -

a provision for parts of an article covers products solely or principally used as a part of such articles but a provision for “parts” or “parts and accessories” shall not prevail over a specific provision for such part or accessory; . . .

8. Section XVI, HTSUS, includes Chapters 84 and 85. Note 2(a) to Section XVI provides, in relevant part:

Subject to Note 1 of this Section, Note 1 to Chapter 84 and Note 1 to Chapter 85, parts of machines (not being parts of the articles of heading No. 84.84, 85.44, 85.46 or 85.47) are to be classified according to the following rules:

- (a) Parts which are goods included in any of the headings of Chapters 84 and 85 (other than headings Nos. 84.85 and 85.48) are in all cases to be classified in their respective headings; . . .

9. Note 5 to Chapter 84, HTSUS, provides, in relevant part:

- (A) For purposes of heading 8471, the expression “automatic data processing machines” means:

- (a) Digital machines, capable of (1) storing the processing program or programs and at least the data immediately necessary for execution of the program; (2) being freely programmed in accordance with the requirements of the user; (3) performing arithmetical computations specified by the user; and (4) executing, without human intervention, a processing program which requires them to modify their execution, by logical decision during the processing run;

* * *

10. Note 2 to Chapter 90, HTSUS, provides, in relevant part:

2. Subject to Note 1 above, parts and accessories for machines, apparatus, instruments or articles of this chapter are to be classified according to the following rules:

- (a) Parts and accessories which are goods included in any of the headings of this chapter or of chapter 84, 85 or 91 (other than heading 8485, 8548 or 9033) are in all cases to be classified in their respective headings;

* * *

Pl. Ex. 6, 90-1.

11. The Explanatory Notes are the official interpretation of the scope of the Harmonized Commodity Description and Coding System (which served as the basis of the HTSUS) as viewed by the Customs Cooperation Council, the international organization that drafted that international nomenclature. While the ENs “do not constitute controlling legislative history,” they “nonetheless are intended to clarify the scope of HTSUS subheadings and to offer guidance in interpreting its subheadings.” Mita Copystar America v. United States, 21 F.3d 1079, 1082 (Fed. Cir. 1994).

12. The Explanatory Notes to Chapter 84, HTSUS, provide, in pertinent part:

* * *

Heading No. 84.71 does not cover machines incorporating or working in conjunction with an automatic data processing machine and performing a specific function. Such machines are classified in the headings appropriate to their respective functions or, failing that, in residual headings.

Pl. Ex. 7, 1136.

13. The Explanatory Notes to Heading 8471, HTSUS, provide, in pertinent part:

(I) AUTOMATIC DATA PROCESSING MACHINES AND UNITS THEREOF

Data processing consists in handling information of all kinds, in pre-established logical sequences and for a specific purpose or purposes.

Automatic data processing machines are machines which, by logically interrelated operations performed in accordance with pre-established instructions (program), furnish data which can be used as such or, in some cases, serve in turn as data for other data processing operations.

This heading covers data processing machines in which the logical sequences of the operations can be changed from one job to another, and in which the operation can be automatic, that is to say with no manual intervention for the duration of the task. . . .

They may be self-contained, all the elements required for data processing being combined in the same housing, or they may be in the form of systems consisting of a variable number of separate units.

Such machines are described as digital, analogue or hybrid (analogue/digital), according to the method of processing the data.

This heading also covers separately presented constituent units of automatic data processing systems described above.

However, the heading excludes machines, instruments or apparatus incorporating or working in conjunction with an automatic data processing machine and performing a specific function. Such machines, instruments or apparatus are classified in the headings appropriate to their respective functions or, failing that, in residual headings (See Part (E) of the General Explanatory Note to this Chapter).

(A) DIGITAL MACHINES

* * *

The digital data processing machines of this heading must be capable of fulfilling simultaneously the conditions laid down in Note 5 (A) (a) to this Chapter. That is to say, they must be capable of:

- (1) Storing the processing program or programs and at least the data immediately necessary for the execution of the program;
- (2) Being freely programmed in accordance with the requirements of the user;
- (3) Performing arithmetical computations specified by the user; and
- (4) Executing, without human intervention, a processing program which requires them to modify their execution, by logical decision during the processing run.

Thus machines which operate only on fixed programs, that is programs which cannot be modified by the user, are excluded even though the user may be able to choose between a number of such fixed programs.

Part of the data and program or programs may be temporarily stored in auxiliary storage units such as those using magnetic discs or drums, magnetic tapes, etc. But these machines must have a main storage which is directly accessible for the execution of a particular program and which has a capacity at least sufficient to store those parts of the processing and translating programs and the data immediately necessary for the current processing run.

Digital data processing machines usually consist of a number of separately

housed interconnected units. They then form a “system”.

A complete digital data processing system must comprise, at least:

- (1) A central processing unit which generally incorporates the main storage, the arithmetical and logical elements and the control elements; in some cases, however, these elements may be in the form of separate units.
- (2) An input unit which receives input data and converts them into signals which can be processed by the machine.
- (3) An output unit which converts the signals provided by the machine into intelligible form (printed text, graphs, displays, etc.) or into coded data for further use (processing, control, etc.)

* * *

This heading also excludes:

* * *

- (c) Electronic integrated circuits and microassemblies, used as central processing units (known as “microprocessors”), memories, etc. (heading 85.42).

* * *

Pl. Ex. 7, 1297-1298, 1302.

14. The Explanatory Notes to Heading 8473, HTSUS, provide, in pertinent part:

Subject to the general provisions regarding the classification of parts (see the General Explanatory Note to Section XVI), this heading covers parts and accessories suitable for use solely or principally with the machines of heading 84.69, 84.70, 84.71 or 84.72.

Pl. Ex. 7, 1304.

15. The Explanatory Notes for Heading 8531, HTSUS, provide, in pertinent part:

With the exception of signalling apparatus used on cycles or motor vehicles (heading 85.12) and that for traffic controls on roads (heading 85.30), this heading covers all electrical apparatus used for signalling purposes, whether using sound for the transmission of the signal (bells, buzzers, hooters, etc.) or using visual indication (lamps, flaps, illuminated numbers, etc.), and whether operated by hand (e.g. door bells) or automatically (e.g. burglar alarms).

* * *

This heading includes, *inter alia*:

* * *

- (D) Indicator panels and the like. These are used (e.g., in offices, hotels and factories) for calling personnel, indicating where a certain person or service is required, indicating whether a room is free or not . . .

* * *

Pl. Ex. 7, 1381.

- 16. The Explanatory Notes for Heading 9013, HTSUS, provide, in pertinent part:

This heading includes:

- (1) Liquid crystal devices consisting of a liquid crystal layer sandwiched between two sheets or plates of glass or plastics, whether or not fitted with electrical connections, presented in the piece or cut to special shapes and not constituting articles described more specifically in other headings of the Nomenclature

* * *

Pl. Ex. 7, 1478.

- 17. For an LCD to be a “part” of an “automatic data processing machine,” the LCD must be dedicated for incorporation into a device that is, itself, an “automatic data processing machine.”
- 18. “Automatic data processing machines” are classifiable in Heading 8471 of the HTSUS.
- 19. In determining whether a good is classifiable under Heading 8471, HTSUS, the classifier must apply the Legal Notes to Section XVI and Chapter 84, HTSUS. Specifically, an imported article cannot be classified under Heading 8471 if it does not satisfy all of the criteria of Note 5(A)(a) to Chapter 84. The classifier may also be guided by the relevant ENs.
- 20. For most of the LCDs in issue, the basis for Optrex's claim that the LCDs in issue are classifiable as “parts” of “automatic data processing machines” in Heading 8473 is that each LCD has an interface that will connect the LCD to a microprocessor in an end-use device and the microprocessor satisfies the four criteria of Note 5(a) to Chapter 84,

HTSUS.

21. All microprocessors process data (Tr. II 790). However, the microprocessors that interface with the LCDs in issue and act as CPUs are not “automatic data processing machines” under Heading 8471. Tr. II. 878-879; Pl. Ex. 7, 1302. Such microprocessors (integrated circuits) are specifically provided for in Heading 8542, HTSUS. See EN 84.71.
22. Because the microprocessors contained in the end-use devices for the LCDs in issue are not themselves, “automatic data processing machines,” and Optrex has provided no other basis to find that the end use devices, other than the computer servers, are “automatic data processing machines” of Heading 8471, none of the end use devices could be classified in that tariff provision.
23. None of the descriptions of the specific end-use devices provided by Allen Houck demonstrates that these devices, other than the computer servers, satisfy the criteria of Note 5(A)(a) to Chapter 84, as explained below.
24. While there may be multiple definitions of the term “program,” (as well as the variations “programming,” “programming,” and “programmable”), for purposes of determining whether a particular machine satisfies Note 5(A)(a) to Chapter 84, Customs interprets that term as referring to an “application-type” program that has been written to do a specific function. Customs would not, for example, consider programming a video cassette recorder to be “programming” in the Heading 8471 sense because the “program” is “fixed” and already exists on firmware in the VCR and the user merely selects different aspect of that program from a menu or enters data into the machine.
25. Under Customs' interpretation of the relevant ENs, a machine that is limited to a specific function and does not handle “information of all kinds” is not an ADP machine. For example, a business telephone is not an ADP machine because it is not used to process or handle “information of all kinds.”
26. In accordance with the ENs to Heading 8471, machines which operate only on fixed programs, that is programs which cannot be modified by the user, are excluded from that heading even though the user may be able to choose between a number of such fixed programs.
27. Application programs are not “fixed” because they can be installed or deleted from a machine.
28. All of the end use devices identified at trial except, perhaps the computer servers, operate on programs that are fixed by the manufacturer and cannot be changed by the user of that device. Tr. II 672, 679. Thus, these devices would, if imported, be excluded from

classification in Heading 8471.

29. Customs' manner of determining the classification of articles of Heading 8471 is correct as a matter of law and fact.
30. The requirement in Note 5(A)(a) to Chapter 84, HTSUS, that an “automatic data processing machine” must be “capable of” “performing arithmetical computations specified by the user” is not satisfied if the device in question only performs mathematical calculations automatically when the user engages a particular feature of the device but does not actually specify the arithmetical computations to be performed.
31. The Court finds that the imported articles are not parts of automatic data processing machines because none of the identified end use devices into which the LCDs will be incorporated satisfies the tariff definition of “automatic data processing machines” in Note 5(A)(a) to Chapter 84. Specifically, none of these products can satisfy the requirement that an ADP machine must be “capable of” “being freely programmed in accordance with the requirements of the user” and, while Optrex has demonstrated that each of the identified end use devices performs arithmetical computations in accomplishing its principal purpose, it failed to demonstrate that any of the end use devices other than perhaps the computer servers, are capable of performing arithmetical computations specified by the user.
32. Even if the end use devices could satisfy the tariff definition of ADP machine, however, Optrex's claim that all of its LCDs are “parts” of ADP machines would still fail since, under various legal notes and Additional U.S. Rule of Interpretation 1(c), the claimed “parts” provision (Heading 8473) cannot prevail over specific provisions such as those for “liquid crystal devices” (Heading 9013), “control panels” (Heading 8473), or “signaling apparatus” (Heading 8531).
33. In determining whether an article is classifiable under subheading 9013.80, which covers liquid crystal devices, not constituting articles provided for more specifically in other headings, Customs first looks to see if the article is more specifically described by another provision. With respect to graphic display modules, Customs would first consider whether the module is classifiable as an ADP display in Heading 8471 or as a visual signaling apparatus in Heading 8531. If the article is classifiable in either of these other headings, that is where Customs would classify it; if not, the article would be classified in Heading 9013.
34. Customs relied on the decisions in Sharp Microelectronics Technology, Inc. v. United States, 20 CIT 793, 932 F. Supp. 1499 (1996), aff'd, 122 F.3d 1446 (Fed. Cir.1997) (“Sharp”) to classify LCD panels and, based on that decision, such panels would be classified in subheading 9013.80.90, which provides for, among other things, “other” “liquid crystal devices not constituting articles provided for more specifically in other

headings.” Sharp confirms Customs' position that the provision for liquid crystal devices was more specific than a “parts” provision. Moreover, the existence of etched icons would not alter Customs' analysis because the icons would not change the fact that the articles are liquid crystal devices in accordance with the definition provided in the Explanatory Notes.

35. The Optrex LCD panels are the same type of merchandise as was at issue in Sharp. Specifically, as in Sharp, each of Optrex's LCD panels contain two rectangular ultra flat glass substrates; the interior of the glass between the substrates is filled with liquid crystals, the glass substrates have inner surfaces that have been coated with indium tin oxide and etched, the interior of each glass substrate is covered with a processed alignment layer which causes the liquid crystal molecules to align in a fixed direction, the substrates are hermetically sealed together and, for many of the panels, when the glass substrates are joined, the electrodes are perpendicular to each other, creating a matrix.
36. As here, the plaintiff in Sharp claimed that its LCD panels were classifiable as “parts of ADP machines” of Heading 8473 rather than as “liquid crystal devices not constituting articles provided for more specifically in other headings” in Heading 9013.
37. In Sharp, the court stated:

When determining relative specificity, the court looks at the provision with “requirements which are more difficult to satisfy and which describe the article with the greatest degree of accuracy and certainty.” . . . As added guidance, additional U.S. Rule of Interpretation 1(c) provides that “a provision for ‘parts and accessories’ shall not prevail over a specific provision for such part or accessory.” The court finds that Heading 9013 contains a specific provision for liquid crystal devices and thus is more specific than the part provision under Heading 8473.

932 F. Supp. at 1507 (citation omitted).
38. The Court of Appeals for the Federal Circuit affirmed this court's relative specificity analysis in Sharp, which concluded that the claimed parts provision was less specific than Heading 9013.
39. With respect to the Optrex LCDs that are “glass panels” and not “modules,” the Sharp case is directly on point because Optrex's complaint claims only that the glass panels (and all of the other articles in issue) are classifiable as “parts” of ADP machines, the same claim discussed at length in both Sharp decisions.
40. Because, under Sharp, basic LCD glass panels are classifiable under Heading 9013, the imported articles identified by Allen Houck as LCD panels are classifiable in that heading. Moreover, because they do not fall within any of the more specifically

descriptive subheadings (e.g., periscopes, lasers) and are not sufficiently advanced to constitute “flat panel displays,” “magnifiers” or “door viewers,” they are properly classifiable as “other” “Other devices, appliances and instruments” in subheading 9013.80.90, HTSUS.

41. In order for an LCD module to be eligible for classification as an indicator panel incorporating a liquid crystal device under subheading 8531.20.00, HTSUS, Customs has consistently taken the position that the module must belong to a class or kind of merchandise that is principally used and/or limited by design to signaling.
42. To be classifiable as an indicator panel incorporating a liquid crystal device under subheading 8531.20.00, HTSUS, the articles must belong to the class or kind of merchandise that is principally used to display limited information that is easily understood by the person viewing it.
43. With respect to the classification of character display modules, Customs has developed a guideline for determining if a character display module is principally used for signaling. In accordance with this guideline, which has been dubbed the “80 character rule,” if a character display module can display no more than 80 characters, then, in the absence of any information to the contrary, it is deemed to belong to the class or kind of merchandise that is principally used for signaling.
44. The “80 character rule” is entitled to some deference as reasonable under Skidmore v. Swift & Co., 323 U.S. 134 (1944), since it has been consistently applied since the early 1990s and provides rational and useful guidance in determining whether a particular LCD module is classifiable in Heading 8531 or in, for example, Heading 9013, which, at the time of the entries in issue, carried a higher duty rate.
45. Customs' position with respect to the characteristics of articles classifiable in Heading 8531 is in harmony with the examples in the ENs to Heading 8531, which states, in pertinent part:

With the exception of signaling apparatus used on cycles or motor vehicles . . . and that for traffic controls on roads . . ., this heading covers all electrical apparatus used for signaling purposes, whether using sound for the transmission of the signal (bells, buzzers, hooters, etc.) or using visual indication (lamps, flaps, illuminated numbers, etc.), and whether operated by hand (e.g. door bells) or automatically (e.g. burglar alarms).

This heading includes, *inter alia*:

* * *

46. Customs' position with respect to the characteristics of articles classifiable in Heading 8531 also comports with the court's interpretation of the term "indicator panel" in E.M. Chemicals v. United States, 920 F.2d 910, 913 (Fed Cir. 1990):³

. . . an indicator panel is properly classified under Item 685.70 if it merely conveys information. A & A Int'l, Inc. v. United States, 5 CIT 183, 187-89 (1983). We agree with this interpretation of Item 685.70. An LCD, as a signaling device or an indicator panel, may simply convey information or notify the user of a specific event. An LCD may operate in this manner in normal or abnormal circumstances. . . The terms "indicator panels" or "signaling devices" simply denote objects that "indicate" or "signal" . . . We therefore hold, as a matter of law, that the language "indicator panels ... [or] other ... visual signaling apparatus," in Item 685.70, includes devices that signal or indicate generally . . .

47. Optrex has failed to demonstrate that Customs' position with respect to the characteristics of articles classifiable in Heading 8531 is incorrect.

³ E.M. Chemicals was decided under the Tariff Schedules of the United States ("TSUS") which, unlike the HTSUS, had no express provision for liquid crystal displays such as Heading 9013, and the issue in that case was whether imported liquid crystals were classifiable as "parts of indicator panels" or as a chemical mixture. Thus, although the definition of "indicator panel" applied in that case is useful, the Court of Appeals determined, in effect, that all LCDs that were not incorporated within specific end-use products such as "watches, clock radios, calculators, computers, gas pumps, meters, various medical and scientific instrumentation, toys, and automobile dashboards" (920 F.2d at 911) at the time of importation were "indicator panels." In enacting the HTSUS, which does contain a specific provision for liquid crystal displays, Congress recognized that such articles are not all used as indicator panels.

48. With respect to part numbers DMF-50073NF-FW and DMF-50840NF-FW-3, which are graphic display modules that are imported with touch screens attached, because these “touch screen” modules possess the characteristics of control panels of Heading 8537, defendant's third alternative counterclaim is granted.
49. If any of these Conclusions of Law are more properly denominated Findings of Fact they shall be deemed to be so.

Dated this 27 day of February, 2006.

/s/ Evan J. Wallach
Evan J. Wallach, Judge
United States Court of International Trade