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 8 *United Microelectronics Corporation*

9 UNITED STATES DISTRICT COURT  
 10 NORTHERN DISTRICT OF CALIFORNIA  
 11 SAN FRANCISCO DIVISION

12 UNITED STATES OF AMERICA,

13 Plaintiff,

14 v.

15 UNITED MICROELECTRONICS  
 16 CORPORATION,

17 Defendant.

CASE NO. 3:18-CR-00465-MMC

**SENTENCING MEMORANDUM ON  
 BEHALF OF DEFENDANT UNITED  
 MICROELECTRONICS CORPORATION**

Date: October 28, 2020  
 Time: 2:15 p.m.  
 Location: Courtroom 7, 19th Floor  
 Judge: Hon. Maxine M. Chesney

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1 **I. INTRODUCTION**

2 The Indictment in this matter was announced on November 1, 2018. Since then, United  
3 Microelectronics Corporation (“UMC”) and the Department of Justice (“DOJ”) have had  
4 numerous discussions regarding the facts and circumstances surrounding the allegations in the  
5 Indictment. Following those discussions and after extensive plea negotiations, both parties have  
6 agreed that the appropriate resolution of this matter is that UMC will accept its legal  
7 responsibility for the actions of certain of its employees, which create legal liability for the  
8 company, and therefore will plead guilty to a Superseding Information, charging UMC with one  
9 count of possessing and receiving a trade secret belonging to Micron Technology, Inc.  
10 (“Micron”): namely, the material described in the Indictment as Trade Secret 5.

11 The proposed Plea Agreement is pursuant to Federal Rule of Criminal Procedure  
12 11(c)(1)(C) and requires the Court’s approval. The parties have agreed that the proposed  
13 resolution set forth in the Plea Agreement, including the agreed-upon sentence, is appropriate  
14 given the facts and circumstances of this case. UMC respectfully submits that the Plea  
15 Agreement, including the agreed-upon sentence, should be accepted by the Court as it is  
16 “sufficient, but not greater than necessary to reflect the seriousness of the offense, promote  
17 respect for the law, and provide just punishment; to afford adequate deterrence; [and] to protect  
18 the public....” *United States v. Carty*, 520 F.3d 984, 991 (9th Cir. 2008) (*en banc*) (quoting 18  
19 U.S.C. § 3553(a)). UMC submits this Sentencing Memorandum to assist the Court in its  
20 evaluation of the Plea Agreement and to provide additional information about UMC.

21 **II. UMC’S HISTORY AND BUSINESS**

22 UMC is a semiconductor foundry company headquartered in Taiwan with global offices  
23 and factories in Taiwan, Singapore, China, Japan, the United States, South Korea, and Europe,  
24 including an office in Sunnyvale, California. Since its inception in 1980, UMC has engaged in  
25 the research and development of sophisticated semiconductor process technologies. It currently  
26 has more than 19,000 employees world-wide, including in the United States, and approximately  
27 \$5.1 billion in annual revenue.

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1 UMC manufactures advanced integrated circuits and embedded memory products, which  
2 are used as components in a wide range of technology applications for its more than 700 global  
3 semiconductor customers. UMC plays a significant role in the semiconductor supply chain  
4 worldwide and in the United States, both as a supplier and as a customer. More than a third of  
5 UMC's revenue comes from the United States. U.S. companies with which UMC has had long-  
6 standing business relationships include Broadcom, Intel, Marvell, Qualcomm, Texas  
7 Instruments, Applied Materials, Cadence, KLA-Tencor, Lam Research, and Synopsys, among  
8 others. Recently, UMC also has worked with two other U.S. companies, General Motors and  
9 Ventec Life Systems, manufacturing an essential semiconductor component for ventilators being  
10 produced by those companies in response to the COVID-19 pandemic.

### 11 **III. UMC AND DRAM TECHNOLOGY**

12 The trade secret at issue in the Superseding Information (identified in the Indictment as  
13 Trade Secret 5) is related to dynamic random-access memory or DRAM technology. UMC  
14 became involved in the manufacture and production of DRAM in 1995. In the late 2000s,  
15 because of market saturation and untenable market conditions, UMC halted most of its DRAM  
16 activity and transitioned its engineers who had focused on DRAM into other aspects of UMC's  
17 business.

#### 18 **A. DRAM Development Project**

19 In 2015, based on UMC's previous experience in DRAM development and external  
20 market research data showing long-term growth potential for the specialty DRAM niche market,  
21 UMC decided to engage in that market. UMC also believed that enhancing its DRAM capability  
22 would allow it to broaden its logic product offerings in the future (some logic products  
23 incorporate niche DRAM technology). Internal discussions about possible DRAM process  
24 technology development began at UMC in December 2015. At that time, Samsung was  
25 recognized as the DRAM industry leader, in terms of both technology and market share.  
26 Samsung's market-leading DRAM products used a 3x2 memory cell layout. By contrast,  
27 Micron's DRAM products on the market in 2015-2016 used a different, 2x3 memory cell layout.

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1 By late December 2015 or early January 2016, UMC had decided that it would use a 3x2  
2 memory cell layout (similar to Samsung's, which had been in mass production for several years)  
3 for its DRAM process technology, not the 2x3 memory cell layout used by Micron in its 25 nm  
4 and other DRAM products, which also had been on the market for several years.

5 In early 2016, UMC had discussions with representatives of what later became Fujian  
6 Jinhua Integrated Circuit Co., Ltd. ("Jinhua"), a company later established in Jinjiang, China,  
7 regarding the development and transfer of DRAM process technology. As described in the Plea  
8 Agreement, on May 13, 2016, UMC and Jinhua executed a written Cooperation Agreement that  
9 had been pre-approved by the Taiwan Economic Ministry Investment Committee. Under  
10 Taiwan law, Taiwanese companies must seek government approval for such joint activities with  
11 companies from China, and they are prohibited from exporting their most advanced technologies  
12 to China; instead, any exported technology must be at least one generation behind the most  
13 current technology.

14 The Cooperation Agreement called for UMC and Jinhua to jointly develop two  
15 generations of DRAM process technology, F32nm (first generation) and F32Snm (second  
16 generation). The DRAM technology nodes to be developed were not new, leading-edge  
17 technology, but would be similar to DRAM technology nodes that had been in mass production  
18 for several years as of 2016. While UMC would develop and jointly own the DRAM process  
19 technology, it did not intend to produce or manufacture DRAM.

20 UMC planned to employ approximately 300 highly-skilled engineers and others to work  
21 on the DRAM process development project. Many engineers transferred internally from existing  
22 UMC R&D and logic technology sections. To recruit non-UMC personnel, UMC hired a  
23 corporate recruiter and recruited engineers with DRAM experience. As a result of that effort,  
24 UMC hired engineers who had previously worked at various companies based in Taiwan, Korea,  
25 and Japan, including Micron's Taiwanese subsidiary Micron Memory Taiwan Co., Ltd.  
26 ("MMT"), AMEC, Hynix, Macronix, Samsung, Winbond, and Nanya.

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1           **B.       Certain Employee Conduct**

2           In violation of UMC policies and UMC employment agreements they signed, two former  
3 MMT employees, Kenny Wang and JT Ho, brought with them to UMC materials from former  
4 employers, including materials alleged in the Indictment to be Micron trade secrets.

5           In August 2016, the UMC DRAM project team was working on the development of  
6 Design Rules for the F32nm DRAM process technology. A key feature of this UMC technology  
7 was the UMC-designed 3x2 memory cell—as distinguished from the 2x3 memory cell featured  
8 in the Micron 25nm DRAM products then on the market. On one occasion in August 2016,  
9 contrary to UMC’s policies, Kenny Wang took some parameters from Micron’s 25nm Design  
10 Rules (Trade Secret 5) and input those parameters into an early draft of the UMC F32nm Design  
11 Rules. The parameters input by Kenny Wang into this early draft comprised a small percentage  
12 of the UMC F32nm Design Rules being developed by UMC’s engineers.

13           In December 2015, Stephen Chen, then a Senior Vice President of UMC, was told by the  
14 UMC information technology department that it had found log files containing “Micron” file  
15 names on JT Ho’s laptop, and thereafter approved applications by JT Ho and another former  
16 MMT employee to obtain public laptops with USB accessibility.

17           **IV.     TAIWAN INVESTIGATION AND SUBSEQUENT DEVELOPMENTS**

18           On February 7, 2017, Taiwan authorities conducted a raid at UMC’s facilities in Tainan  
19 and at Kenny Wang’s dormitory and residence. As a result of the raid, UMC top management  
20 learned for the first time about the relevant actions of Stephen Chen, Kenny Wang and JT Ho.

21           Following the raid, UMC directed that any potential Kenny Wang Micron inputs be  
22 removed and replaced. UMC transferred the first tranche of DRAM process technology to  
23 Jinhua in September 2018. No DRAM products ever have been produced or sold by UMC or  
24 Jinhua in connection with UMC’s DRAM project.

25           During the relevant period, Stephen Chen, JT Ho, and Kenny Wang were UMC  
26 employees. UMC acknowledges that it is liable for the conduct of its employees under United  
27 States law and, accordingly, takes responsibility for that conduct.

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1 **V. TAIWAN PROCEEDINGS**

2 Following the February 2017 raid in Taiwan, the Taiwan investigation and proceedings  
3 continued for several years, culminating in a criminal trial against UMC, JT Ho, Kenny Wang  
4 and a third UMC employee not charged in the U.S. case. The trial proceedings in Taiwan lasted  
5 from January until April 2020.

6 On June 12, 2020, after hearing extensive testimony and oral argument, the Taiwan court  
7 issued a 182-page written decision, which included thousands of pages of appendices. In that  
8 decision, the court found that portions of Micron's 25nm Design Rule (Trade Secret 5) were  
9 divulged or leaked to UMC in violation of the Taiwan Trade Secret Law. As to UMC, the court  
10 found it guilty under Article 13-4 of Taiwan Trade Secret Law for failure to exercise requisite  
11 caution to prevent the crimes of the UMC employees named as individual defendants, who were  
12 convicted under other provisions of the Taiwan Trade Secret law. The court imposed a fine on  
13 UMC of \$100 million NTD (approximately \$3,500,000 USD). The Taiwan court denied the  
14 prosecutor's request for an order requiring UMC to disgorge \$700 million USD, finding there  
15 was no evidence in the case showing that UMC had used the Micron 25 nm Design Rules (Trade  
16 Secret 5) or that UMC had provided the Micron 25 nm Design Rules (Trade Secret 5) to Jinhua.<sup>1</sup>

17 **VI. CONCLUSION**

18 In light of the facts outlined in the Plea Agreement and discussed above, the parties agree  
19 that the sentence in the proposed Plea Agreement satisfies the 18 U.S.C. § 3553 factors and  
20 should be accepted by the Court. UMC has accepted full responsibility for the actions of its  
21 employees, has done an extensive investigation of the underlying facts, and has cooperated with  
22 the government, including providing information about facts discovered in its internal  
23 investigation. The parties agree that the Sentencing Guidelines calculations submitted by DOJ,  
24 including the \$28 million USD gain amount, are appropriate, and that the \$60 million USD fine  
25 with a term of non-supervised probation, is a sentence sufficient, but not greater than necessary,  
26 to reflect the seriousness of the offense, promote respect for the law, and provide just

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28 <sup>1</sup> At Micron's request, the Taiwan prosecutor is appealing the court's decision. UMC and the individual defendants also have filed appeals. Those appeals are pending.

1 punishment; to afford adequate deterrence; and to protect the public. Accordingly, UMC  
2 respectfully requests that the Court accept the proposed Plea Agreement.

3 Dated: October 21, 2020

Respectfully submitted,

4 LATHAM & WATKINS LLP  
5 Leslie R. Caldwell  
6 Tyler P. Young  
E. Wistar Wilson

7 By           /s/ Leslie R. Caldwell            
8 Leslie R. Caldwell

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10 *United Microelectronics Corporation*

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