

(주)이엠넥스

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1. Company Summary

EMNEX is specializing in the manufacture of electronic products that supply customers with best quality and service in the best condition with pleasant production environment.

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Company Contents



- : Samsung 1-ro 3-gil, Hwaseong-si, Gyeonggi-do, Korea. 18448 Address
- Number of employees : 106 people (Now a days)
- Representative : Young Wook Choi

Home Page : www. emnex.co.kr

- Business Status : Place_2,600m², Total floor space is 4,900m² New build start First basement level up to 4th aboveground Floors
- Turnover: '21yr: \$25.940,000, '22yr: \$34,210,000 '23yr: \$33,080,000 '24yr: \$34,580,000 (expected).
- Main Products : Controller (robot & elevator & railway vehicle), Driver (Servo, Stepping, inverter), X-RAY generator, Energy (BMS, ESS, Inverter..), Communication, Industrial Camera module .etc

[₩1,330/\$]



(Unit: thousand, \$)

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EMNEX Partnership

Industrial equipment



Medical



Others





EMNEX pictures

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2. Company History

- 1999 yr. Incorporation, Designated as a partner company of Samsung Electronics Co., Ltd. (Manufacturing and PCB Artwork)
- 2008 yr. Establishment of Research Institute (Attached)
- 2009 yr. Selected as a promising medium Company by Gyeonggi–do Governor Selected as an INNOBIZ Company _ Small and Medium Business Administration a director
- 2011yr. Enternce New building (2011, 10) basement 1st, aboveground floor 4th (Total floor space is 4,900^{m²})
- 2013 yr. Parts and material specializing company _ Ministry of Commerce, Industry and Energy Hyundai Rotem Co, Ltd, PWA "A grade" Registered as a certified company (GQR-2015)
- 2014 yr. ERP SYSTEM operation.
- 2015 yr. Hanwha System Co.,Ltd Registered as a defense industry company
- 2016 yr. Hanwha Precision Machinery Co.,Ltd, QSA/ QPA Pass (quality), manugacturing Factory registration ; PSE (Japan), CCC (China), UL (U.S.A), CSA (Canada)
- 2018 yr, ISO 9001 Certification (2018 yr, SAI GLOBAL), KSQ ISO9001



• 2019 yr, KSQ 9100 (AS 9100) Certification (2018 yr, KIWA KOREA),

(AS9100; certification defining the design and manufacture standard aerospace products including parts, components and assemblies 1

SEMES Co.,Ltd SSQ Quality Certification,

LG Electronics Co.,Ltd , Registered as a certified company, Robot PWA manufacuring start

- 2020 yr, Hanhwa Aerospace Co.,Ltd, KF-21, (Defense industry) registered as a certified company, PWA manufacturing start
 Collins Co.,Ltd (USA) Registered as a certified company
- 2021 yr, 3D X-RAY inspection M/C purchase

Flying Probe ICT purchase

X-RAY SMD component counter purchase

• 2023 yr, XRF (for ROHS, Hazardous Materials Analyzer) purchase

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3. Main Certification Status



(Research & Development Center)



(ISO9001 certification)



(AS 9100 certification)



(Promising Small and Medium Business) GyeonGi-Do Korea)



(INNOBIZ COMPANY)



(Parts and material specializing company)



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5. Main manufacturing items

Controller & Driver for Industry

Robot controller series for Industrial (30 items)



EMNEX is equipped from Samsung Electronics Co., Ltd (SEC), Samsung Display Co., Ltd. (SDC) with controller and 4 axis servo pack, 6-axis controller, AGV controller, Jetting Driver, etc… (PBA and SET products)

Application





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Motor driver and AGV controller etc..

InkJet system & for display and Test B'D etc for Semiconductor



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Communication

Optical transmission switching B'D for LTE















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Battery Management System (BMS) and Medical Measure B'D

EMnex^{*}

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Other



■ Industrial camera modules, SMT, AOI, SPI controller, etc…















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6. Manufacturing place

Material warehouse











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SMT Line (4 Line)

For PB_Free (ROHS)







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Manual Insert Line (DIP 4 Line)

For Lead_Free





Test Line









BGA Rework Station



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Selective Robot Soldering Line



Coating system Line

Customer Line



Ceiling type humidifying system



Squeegee blade washer and inspector



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Flying ICT Tester



Small Clean Room



PBA water washing M/C and Deionized (D/I) water maker



Sales Office





EMNEX ERP SYSTEM construct and Usage (example) _ EMNEX own code system of establishing.

THINGS IN WAREL IN 비뉴 대이터 보기 (EX. Purchase order program) 풍목관리 성산 자재소요계획 구매발주 자재입고 자재함고 자재수를 재고관리 풍질 영업 기준정보 파일 🍋 📄 💾 🗙 🔜 🐺 🙆 조희 신규 저장 석적 인쇄 업계 Help . . 지지 소요량 지산 (MSP) 자재 소요량산을 현황 (방주처리) 비뉴 데이터 보기 334 파일 풍목관리 생산 자재소요계획 구매발주 자재입고 자재출고 자재수불 재고관리 통질 영업 기준정보 법인 유영남스 399C -----조리 신규 저장 식례 인쇄 인과 Help 맞조공장 (주)이영네스 > 741288 (EX. Materials management program) 32930 · MRP작업 선황 🗃 자재 소요량 현황 수입감사 등록 부적상 등록 및 번환 분위 변경 등록 및 번환 지지용고리스트 입고 확인 처리 작업기간 2014-11-01 NEC, LPD7 🗃 🖬 M > 전장창고 C104-0015-00 2014-11-27 전장방고 C183-0025-00 MAXIM, MA 입고공장 (주)이영넥스 풍용구부 MRP변호 작업일 carlle X 전장함고 C259-0075-07 BOURNS, N 입고왕고 건장양고 풍목대분류 2014-11-27 1411270005 전장상고 C330-0055-00 2014-11-27 1411270004 풍옥코드(*) - Bh 데이터 보기 전장성고 C065-000D-09 DEC, 1.5KE 납름기간 2014-11-27 2014-11-27 141127000 전장함고 C084-001D-09 TOSHIBA, 2014-11-27 거래처 25 봉유관리 생산 자재소요계획 구매발주 자재입고 자재물고 자재수불 재고관리 통질 영업 기준정: (EX. Quality Management program) 2014-11-27 1411270002 75247 C084-0030-09 TOSHIRA 2월 📄 💾 🗙 🔒 🐺 🙆 2월 신구 저장 석제 원의 함께 Helo 2014-11-27 1411270001 C094-003D-09 TL SN74HI 납중일자 납중의 동유코드 풍옥명 전장성고 ▶ 부품 Spec 등록 ▶ 부적합편활 2014-11-26 1411260005 NXP, 74HC > 2014-11-27 0K012-MDI C344-0035-07 전장창고 C094-006D-09 SEJUNG, ST-1102510 2014-11-26 1411260004 건장향고 C106-000D-09 ATMEL, AT 2014-11-27 EIDI C369-000D-00 3M, 10220-52A2PL 2014-11-26 1411260003 수입경사 등록 부여상 등록 및 친합 승격 변경 등록 및 친합 전장향고 C220-006D-09 ABCO, MOR 2014-11-27 턴미넷 C369-000D-00 3M. 10220-52A2PL 2014-11-26 1411250002 전장향고 C235-001D-09 BOURNS, 3 2014-11-27 EIDI넷 C369-001D-00 3M, 10120-3000PE 2014-11-26 1411260001 전장상고 WBMA, 470 2014-11-27 타미넷 C249-001D-07 C384-000D-00 3M, 10320-52F0-008 23 2014-11-25 1411250001 (주)()영네스 남류기가 2014-11-27 Ett 0 HAN BIOK 单71 LIAONING 2014-11-27 EIDIS 전장양교 C251-003D-09 24 5x80 C369-005D-06 3M, 10226-52A2PL #1 전장창고 2014-11-27 등록관리 생산 자재소요계획 구매범주 자재입고 자재물고 자재수를 제고관리 물질 영업 기준정보 2014-11-24 141124000 2582 C254-015D-09 SAMYOUN 2014-11-27 0(2)(7)3) HV14-0420-53 2014-11-24 1411240003 납중계 0 75247 C299-001D-09 HANAM, LE 2014-11-27 5NC7372 C173-0015-79 AD, AD8638AR17 2014-11-24 141124000 75 장성 7 C310-000D-09 KPS, ALP-1 TYCO, RTE 2014-11-27 SNC277; C179-0005-79 TL LM2903DR 🖻 납중 한환 (EX. Manufacturing technology program) 2014-11-24 141124000 전장참고 C356-000D-09 TYCO, RT3 2014-11-27 SNC237-2014-11-23 141123000 C183-0005-79 TL, LP3470M5-4.63/NC 뇌물차 898 남음수량 검사 전장창고 C356-002D-09 김 수의감사 등록 부의실 등록및 전환 설계 변경 등록 및 현황 2014-11-23 1411230001 C382-016D-09 BUIL, BI-38 2014-11-27 SNC改功 C221-0000-91 ABCO, MR 1/2W TB 18 > OHI & HOI (344-0035-07 SEJUNG, ST-1102510 견장성고 2432 G 43 93 54 2014-11-22 141122000 C369-000D-00 3M, 10220-52A2PL 2,000 C382-020D-09 BUIL 81-38 2014-11-27 SNC277 C221-001D-91 ABCO, MR 1/2W TB 24 EDI 전장창고 #개변공변호 CC-14-53-123 2014-09-23 변경율(뉴) 합의일자(6 변경달차 58 2014-11-21 141121000 MYUNGSUN 2014-11-27 제이순맥 C222-000D-64 SMART, PRN 1W 0.3 EDY C169-000D-00 3M, 10220-52A2PI 2,000 전장향고 C488-000D-09 2014-11-21 141121000 进资算(to) 記当留XK(to) 237# 종일개선 82 (주)이범색스 기구양고 PZ00-003D-00 ANTISTAT 2014-11-27 301순액 C221-0000-64 SMART, R 1W J 51K EDV C169-001D-00 7M. 10120-3008PF 100 1 공장구분 (주)()병역스 플레그램 고적사당당자 ROOTECH 회재경 전화상태 환클 2014-11-20 14112000 2258 동일계선 기구함고 C520-001D-01 ANY, 동군[2014-11-27 기호전자 C381-012D-06 HRS, A3-10PA-2DSA (1 EDM C184-000D-01 3M. 10320-52E0-008 100 🕅 2014-11-19 141119000 변경구분 대분류코드 医果及. 김성태 요청자 김민기 접수자 김성태 712077 C520-0010-06 FASTECH ED4 C169-005D-06 3M 10226-57A29L 100 0 2014-11-19 141119000 진행상태 고객사 모열명 A2300MAIN_REV3.53_82 ANY, ALAIS 견장함고 C578-000D-07 0162376 HV13-000D-64 DSE D048D04 REV1.0 10.000 2014-11-18 141118000 ROOTECH A2300MAIN_REV3.54_81(21 기구함고 C579-000D-64 4550 HV14-0420-53 A2750P-30A-MADI-Rev... 10 17 8558 2014-11-18 1411180002 전장함고 C106-0055-07 TL, TM532 🗃 입고정보 및 취소 변경사용 J16 TERMINAL-8LOCK 역지 개용 현상 관련 PCB 수정 SNCON C173-0015-79 AD. AD6638ARJZ 20 12 2014-11-18 1411180001 전망성고 C366-011D-07 Phoenix Co 입고변호 승편 입고공장 입고향고 전법상태 변경일자 설계변... 변경구분 건명 통목코드 통목명 사용자명 적용시험 홍목코드 SNCON C179-0005-79 TL UN2903DR 20 12 완물 2014-07-23 CC-14-53... 통잘처선 ROOTEC... HV14-013... A2300-... 김성태 변경 더욱 생산 부터 2014-11-17 141112000 1 (주)이업넥스 전장상교 (344-0035-07 C183-0005-79 TI, LP3470M5-4.63/NOPB 8925 HV14-013D-53 O A2300-MAIN-Rev3.54 고객사 ROOTECH(53 SNCEN 20 🖬 > 14112700022 진행 완결 2014-11-05 CC-14-87... 기울변경 누가 의료... N4_MA3H-... N4_MA... 김성태 2014-11-15 141115000 SNCER C221-000D-91 ABCO, MR 1/2W TB 180 F 2,500 2014-10-25 CC-14-88... 자체변경 BinCOM H... HBS-500_... HBS-50... 김연기 2408 B22M < mimute Record 1 of 29 in in in the second SNCTA C221-001D-91 ABCO, MR 1/2W/ TB 240 F 2,500 21 2014-10-27 CC-14-88... 자체변경 BinCOM S... SCP960-Re... SCP960... 값인기 상세내용 316 각종 사이즈 변경 MEDINE ----완공 2014-18-10 CC-14-90... 품질계전 InBody [... DNO2 DNO2 김민기 316 각종 사이즈 변경. Venion 변경 REV3.53 → REV3.54 PCB 가이드의 수정 일자 변경 조회 되었습니다 P1895.165.865 37.250 환글 2014-10-08 CC-14-90... 통질처럼 InBody 7... 김민기 완공 2014-16-24 CC-14-90... 자태면경 InBody _---김민기 mini Record 1 of 32 2/3 2014-05-16 CC-14-99... 72원명 문 HUVITZ ... 797 변경 사용 2014-05-17 CC-14-99... 기술변경 InBody 8... 완글 387 유지 🗃 부적합 연결관련 2/2 2014-06-30 CC-14-99... 자체면경 InBody [... 집민기 불림유형 수량 9/2 2014-07-02 CC-14-99... 기술여권 InBody 1... 297 반생일73 2014-11-27 2014-07-12 CC-14-99... 기술변경 Samsung... BSC3ISA-V... BSC3IS... 김연기 원급 A2300MAIN REV3.54 81 PCB 발주 장영 대표분당 2023 경장사항 2014-05-13 CC-14-58... 자평변경 Samsung... Canter BDA... Canter ... 같은기 도금 부식 병장수황 4970 212 2014-11-05 CC-14-62... 자체명경 SAT Digt... 2(9)7) 리도구부러짐 방송수량 4970 2014-11-05 CC-14-62... 자체변경 SAT Digt... 397 완글 - 44 완공 2014-11-05 CC-14-62... 자체면경 SAT Digt... 김민기 조황 되었습니다 통원수량 발생단) 블로우홈 한 한 의 부 시 512 2014-05-19 CC-14-74... 기술변경 NEXREAL... DM8168_L.. DM816... 김연기 주를 상세내용 \$1217 합의일자 합의내용 8/2 2014-07-24 CC-14-74 ... 73/8/4 2 NEXREAL ... DN368 DM368 2(9)71 22 1 00-14-53-123 음질그룹 · 유사현 환급 2014-08-09 CC-14-74... 품질거건 NEXREAL... DH/368 DM368 2(2) 2014-10-24 20141020 #88 삶두環 상이 2 00-14-53-123 구매그를 264 2014-09-29 적용관료 813 2014-08-27 CC-14-74... 73대명군 NEXREAL... DM8168 1... DM816... 김영기 포신 임시조치용용 3 (0-14-53-123 2013 742) 0.82 2014-09-30 기류 제고 소전호 전문 영향 2014-09-23 CC-14-74... 홍말해선 NEXREAL... DH368-CA... DH368-... 김연7 완글 4 CC-14-53-123 和正1副匠 경호석 丸수 SPEC OVER 완공 2014-10-01 CC-14-80... 총알해전 Raymedic... ALPHA_TH... ALPHA... 집민기 2014-10-13 표면 수축 5 CC-14-53-123 和조2IBE 완료 6 CC-14-53-123 제조기술 그룹 0.84 2014-09-24 8191 0.39 완결 2014-11-18 CC-14-80... 기술변경 Raymedic... ALPHA_MC... ALPHA... 김연기 7 00-14-53-123 생산관리 김용석 2014-09-23 2014-11-24 CC-14-80... 자형면경 Raymedic... ALPHA_MC... ALPHA... 김연기 20 71 8 CC-14-53-123 면구소 이상공 2014-09-23 건형 2014-11-26 CC14-86... 자체변경 인택경기... 김인기 완결 2014-09-19 CC14-99... 통합차건 BriCOM B... BPH-400.... 8PH-40... 김인기 20 9 (0-14-53-123 92 10 CC-14-53-123 和王3卧田 100 2014-09-23 **R**9 2014-18-30 CC-14-99... 통질계견 대노필 [L... 김민기 완물 (C.14.53.123 B74BE 2/2 1014.08.11 (7.14.47 7.9687 causes Record 1 of 196 Record 1 of 11 S# 9theup QHG200 (V1.0) stkim DNEX

| | | | | [1/2] | | | |
|-------------------------------------|--|--------|--|---|--|--|--|
| Division | Equipment name | Number | Equipment Maker | Etc., (SPEC) | | | |
| | Standard type mounter (SMT) | 4 | Hanwha Techwin | SM471 (2 units), SM471plus (2 units) | | | |
| | Multi type mounter (SMT) | 8 | Hanwha Techwin | SM482 (5 units), SM482plus (3 units) | | | |
| | SCREEN Printer | 4 | Sj Tech | H-520S (3 units) , HP-850S (1 unit) | | | |
| | Reflow M/C | 4 | Heller Korea | Heller MK1810 III (4 units), RoHS | | | |
| | Solder cream checker (3D SPI) | 4 | Ko Young Technology | Aspire-3 (3D SPI) 1 unit, KY8020-2L [3 units], | | | |
| SMT Line
(4 Line) | Vision inspector (Included 3D AOI) | 5 | Ko Young Technology | Zenith (3D AOI _In-Line) (4 Units | | | |
| (4 1110) | Router | 1 | Impact Enterprise | RRS-3100S (PCB Cutter, 500 x 500) | | | |
| | Nitrogen generator (N2) | 2 | Kyultron | N2 GENERATOR (3 Set) | | | |
| | Ceiling injection
Humidification system | 25 | Seil Ricoh | HU-CONSTM System, Humidity maintenance,
Installation all the field | | | |
| | Etc., equipment | 24 | NC Master, viscometer, squeegee blade washer, squeegee blade tester, Mask washe
LCR Meter system, etc | | | | |
| IMT (Dip) Line | Auto Soldering Machine | 4 | Shin Myung | SAS-620 (2units), SAS680LP (2 units) | | | |
| (Auto Soldering) | PCB washer | 1 | Aqueous (USA) | Pure water maker (DI WATER) and PCB washer | | | |
| (4 Line) | ICT M/C | 2 | OKANO(Japan), Samsung Electronics Co. | AT-01 (2 units) | | | |
| Robot Soldering Line | Selective Robot Soldering | 2 | InterSelect (Germany) | 2 port (Used fuel, Non fuel possible) | | | |
| (1 Line) | Pointer Robot soldering | 1 | MEIKO TECH (Japan) | 1 point Robot soldering machine | | | |
| Toot / Accombly / | Function Cell Line | 10 | self-production | Inspection / Simple assembly process | | | |
| Test / Assembly /
Packaging Line | ROOM for set assembly and
Inspection. | 6 | Customer room | Specified customers room | | | |
| Automatic coating | 3 Conformal Coated System | 3 | PVA (USA) , NANOJET | 3 Conformal Coated Robot System | | | |
| system (1 Line) | Underfill M/C | 1 | Core Tech | Underfill reflow | | | |

| Division | Equipment name | Number | Equipment Maker | Etc (SPEC) (2/2) | | | |
|-----------------------------|--|--------|--|--|--|--|--|
| | Baking OVEN | 2 | Byum jin / Core Tech | Bare PCB dryer | | | |
| Materials | Micro Dry | 3 | Seli Richo | Main material dehumidifier | | | |
| warehouse | High speed Micro Dry | 10 | Seli Richo | Main material dehumidifier (After opening rapidity dehumidification function) | | | |
| | Vaccum Packaging | 1 | JS pac | Vacuum packaging equipment | | | |
| | 3D CT X-RAY inspection M/C | 1 | SEC | Micro 3D CT X-Ray | | | |
| | Flying Probe ICT Tester | 1 | EMERIX | | | | |
| | Microscope Inspector | 2 | SOME TECH | CAMSCOPE | | | |
| | 40 times magnifying
microscope system | 4 | Sehyun Trading | Attach to Monitor function, capture possible | | | |
| | X-RAY SMD Component Counter | 1 | Nano Dream | | | | |
| Inspector & | Thermal shock tester | 1 | Byum jin | -20~80 ° c (Medium Chamber) | | | |
| Environmental | BGA Rework | 1 | REGEN I | BGA Reballing (BK-1450) | | | |
| equipment | Digital tensile strength meter | 1 | Yu Yu | Soldering removable test (component) | | | |
| | Large high temperature chamber | 1 | ALL THREE | 0 $^\circ\mathrm{C}$ – 80 $^\circ\mathrm{C}$ (400 x 300 x 250cm) | | | |
| | XRF (Hazardous Materials Analyzer)
(for ROHS) | 1 | Hitachi (japan) | EA1000 m | | | |
| | Thermo-hygrostat | 6 | Kiturami (Heating Cooling/Dehumidification) | PVU 50T7P1 (6 unit), Lage Type (120 \mbox{m}^2) | | | |
| | Static Tester | 2 | Shinhan High Tech | ESC-670 (Shoe Tester) | | | |
| | lon blower | 16 | DIT | For the removal of static electricity (2P, 3P) | | | |
| Clean Room | Small clean room | 1 | Clean Booth - Class 1,000, HEPA FILTER (1492 x 572 x 75T) | | | | |
| Other measuring instruments | Measuring instrument
and etc | 60 | BGA REWORK equipment, Calibrator, label prin
illuminometer, surface resistance meter, ree | ter, AC, DC POWER,, Analog Tester, Oscilloscope,
I counter, static test (HANDY), etc… | | | |

| | Content | 2024 yr. | 2025 yr. | 2026 yr. | The present |
|-----------------------|--------------------------------------|--|--|--|---|
| | SMT Line (4 Line) | SMT, 4 Line operate1 Shifts | SMT 5 Line review2 Shifts review | SMT 6 Line review2 Shifts operate | A, D Line; Standard type B, C Line: Large type |
| | DIP Line (4 Line)_ Wave | 4 Line operate Pb (2) , Pb free (2) | 4 Line review Pb (1), Pb free (3) | 4 Line review Pb (1) , Pb free (3) | 1) A, B Line : Pb Line
2) C, D Line ; Pb Free (ROHS) |
| Equipment
and Line | Selective Solder Line
(1 Line) | 1 Line operateSelective (1) | 2 Line reviewSelective (2) | 2 Line operateSelective (3) | 1) Robot solder line operation
2) All used for Pb/ Pb Free |
| operation | Function Cell Line
(10 Line) | Function 10 Cell Line Test & Repair room | • Function 14 Line | • Function 17 Line | 1) Function design
2) Repair room (BGA Reball) |
| | Set test &
assembly (6) | Customer set room (6) (Set test & assembly) | Customer set room (9) (Set test & assembly) | Customer set room (9) (Set test & assembly) | Customer set room (6)
(space : 120 m²) |
| | Automatic coating line | Auto coating system (2 Line) | Auto coating system (2 Line) | Auto coating system (2 Line) | 3 Conformal Coated
Robot System |
| | Manufacturing | 45 | 50 | 55 | |
| Man
power | Purchase / Materials | 4/7 (11) | 12 | 13 | |
| operation | Quality / Manufactuein
Management | 7/2 (9) | 10 | 10 | |
| | Manufacturing
technology (Eng.) | 7 | 8 | 9 | |
| Total or | peration manpower | 72 | 80 | 87 | |

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9. Quality Process

Quality improvement 150 Operation

Quality improvement 150 Operation

Incoming defe

1,500 PPN

Improve quality

150 plan

Market dei

O PPN

Ptocess de

150 PI

- market defect zero
- process defect 150ppm
- incoming defect 1,500ppm
- New customers and after mass production. Strengthening preventives activities and follow-up mass production
- Analysis & Improvement Tool
 - \rightarrow type analysis PARETO diagram
 - \rightarrow Trend management PPM management chart
- Way of Activity
 - \rightarrow Weekly quality meeting : Every Tuesday
 - \rightarrow Progress check meeting : Monthly
 - → Progress report : Monthly

Quality improvement strategy

- Customers require, Quality is 'zero defect' levels.
 - There is no defect in LOT but in case of one critical defect, require quality improvement report.
 - → In order to meet customer demand rather than simple
 'Reduction of defects' requires uniform manufacturing.



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Quality Improvement Promotion Organization



| Action | PM (QC) | Leading to quality improvement activity,
Education, Reporting, Output management, Support |
|--------|---------|--|
| | Member | Planning to quality improvement, progression, activity participation |

Quality improvement plan

Development ~ Initial producs quality stabilization

Initial quality stabilization of manufacturing products

- The time transfer production, Check the history and Issue point
- Share Issue point in development stage (quality, manu. technology, 1/2/3 part]
- When launching of new model products, Concentration for process quality

Manufacturing quality stabilization

Improve process quality

- Establish countermeasure to recurrence prevention from worst defect analysis
- Establish countermeasure after analysis, of the defect of operator error
- ① Operator quality awareness ② Check the system
- 3 Operation environment (3-way 5S) 4 Operator's body, psychological state

Customer Satisficaction

Establish a customer satisfication process

- Establishing a plan and improve problems by surveying customer satisfication.
- Establishing quality differentiation plan to applied to manufacturing line
- Establishing 3-way 5S operation plan to maintain manufacturing line need to ask the customer.



Incomming Inspection Process



Outgoing Inspection Process



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Check sheet for process flow (every lot)

| 모델명 | ALPHA_MC | U | LOT수 | 1t,0 | | 납사양 | |
|----------------------|---|--|---|---|---|--------------|---------------|
| 7 # | 시작 일시 | 총소요 | LOT수 | 불량수 폐기 | | 자즉 | 전사 확인 |
| | 완료 일시 | 시간(분) | | 검사수 | | | 0140 |
| 자 재 불 출 | 2014.11.12 | | itro | | - | 017100 | |
| SMT | 12.08-50 101110 | | 120 | | | 2780 | ί 🦳 |
| SMT초도품 검사
(비전+육안) | 12. 18:50 | | 150 | 1 | | 西朝 | |
| A O I 검사 | 11.13 08:20
10:05 | - | 16 | 150 | | 2000 | |
| SMT VISUAL | 1.13 10:40
12:05 | | 160 | to | | A | 승애 |
| 수 삽 | 11. 15. 15:45
11. 16. 10:05 | | 150 | 150 | | 이 궁제 2년. | おっち (1/16) |
| 후 작 업 | 11.16 09:20
11:11 | | 110 | ito | | 전 | 0HA |
| 수삽 VISUAL | 11/19 14:40
19:00 | | 150 | 150 | | 01 + | - 2) |
| 조립 | | | | | | | |
| 기 능 겸 사 | 1/18. 08: 100 | | 150 | 14313 | | 0 23 | |
| 포 장 겸 사 | 11/19 11:50 | - | 110 | 146+ | u | 김 저희 | ÷. |
| 중점관리향목 | 1) 불량내역 : U10,U11 : Ven
MCU모행 ► C11
2) 포로커플러 주의 !!! 고객시
► TLP181 or LTV-356T로
전쟁 전체가 범진된 순액에
스백성(Didtiža,)으로는 사람
실제의 보드에서 유럽 결과
(언제 지그에서 Seturation
그 이상소로 나용 유럽 결과 | 51-0035-63,
는 검사 지그 -
만 사용 할 것
이 있는 교류카를
이 가능하지만,
실드에 따라 0.4
Woltage 가 0.7 | SIPEX,SP32
특성으로 인호
신비
러는 TLP185 로
아이시 0.77 문
다만으로 나용 | 32EEA-L
H TLP185사용물기
CE Saturation Voltag
아버하는것으로 전투되
같은 Pam 되지만, | + (고객사 귀
e 7) Max 0.3%
xx GLICt - | | |
| 구분 | | 공정 문 | 제점 및 | 개선 요구사 | 항 | | 작성자 |
| 자 재 불 출 | PCB : 140 EA | REV. (| (.00) | | | | 012300 |
| S M T | A line | | | | | | 2000 |
| SMT VISUAL | | _ | <mark>U11 오산</mark> | | | 1 Statistics | |
| 수 삽 | | | | | | | 2. mg < (1/16 |
| 후 작 업 | | | | 326 | SP3 | | |
| 수삽 VISUAL | | | | 920 g | 1 | 13341 | |
| 검 사 | | | | and the second | | 00000 | |
| 포 장 | | | 11111 | 11 | 661 | FEFF | |

Check sheet for Initial products

| 0 | HUITTER T
검사일자 | 2014-11-26 | 초도품 | 성적 | 석 | | 신규 | 생산 | 119 269 | Melin
118 268 |
|-----------------------------|---|--|-------------|--------------------------------|----|--------|------|-------------------------|---|---------------------|
| 모델명 HTMC502J-MVB-Rev.B LOT수 | | | | | 46 | | | f # | 유연납 | |
| 4 | 고객사 | 한터 | 기술 | Line | | B-Line | | | 다 김 | 상순 |
| 10 | | Chec | k 사항 | | ОК | NG | 해당없음 | | 비고 | |
| 1 | 기술변경 및 | 생산자료 (PL, 작 | 업지도서) 최신VER | 확인 | 0 | | | VER: (HTM | MC502J-MVB-P | lev.B) |
| 2 | PCB 외관불량 | 량(패턴 벗겨짐, 휨 | l, 오염) 없을 것 | | 0 | | | | | |
| 3 | PCB 피듀셜 | 마크, Guide V-Cu | ɪt 누락 없을 것 | | 0 | | | | | |
| 4 | PCB 극성 Si | lk Print 오류 없을 | 것 | | 0 | | | 6 | | |
| 5 | SPI 과납, 소 | 납, 틀어짐 등 없을 | 것 | | 0 | | | | | |
| 6 | 부품 미출 시 | 고객사 승인 여부 | 부 확인 | | | | 0 | | | |
| 7 | 부품 Packag | je 오류 없을 것 | | | 0 | | | - | | |
| 8 | 부품 Spec S | 2류 없을 것 | | | 0 | | | | | |
| 9 | SMT 미삽 이 | 상 없을 것 | | | 0 | | | R55,R56,R5
BOTTOM - | R1,R17,R31,R 7,R58,R62,R64,I C40,R83,R84,R 106,R108,R111 | R66,
85,R89,R90, |
| 10 | SMT 오삽(프 | 더검사) 이상 없을 | 울것 | | 0 | | | | | |
| 11 | SMT 역삽(극 | 남성) 이상 없을 것 | | | 0 | | | | | |
| 12 | PCB 랜드 대 | 비 자재 Package | 오류 없을 것 (납 | 팸 상태) | 0 | | | | | |
| 13 | 마스크 개구 | 부 사이즈 대비 랜 | 드 오류 없을 것 | | 0 | | | | | |
| 14 | 핸들링(수탑) | 실장 POINT 이성 | 방없을 것 (중점관 | 2 POINT) | 0 | | | | | |
| 15 | 컨베이어 통 | 과 후 PSR 벗겨짐 | 오염등 PCB상태 | 이상없을 것 | 0 | | | - | | |
| 16 | BGA 오삽 , 역삽 , 미삽 , 들뜸 등 없을 것 | | | | 0 | | | AT91SAM | AN-4FGG6761
9260B-CU (U5) | 12.571) |
| | BGA 외관상태 (팝콘 및 IC 칼라짐) 이상 없을 것 | | | | 0 | | | | AN-4FGG6761
9260B-CU (U5) | (U4) |
| _ | | 납, 쇼트, 납젖음성 | 성 이상 없을 것 | | | | 0 | | | |
| 19 | Oscillator = | ት성 이상 없을 것 | | | 0 | - | - | | 24MHz, 3.3VD | C (OSC1) |
| | LED 점등, 색상 , 납땜 상태 이상 없을 것 | | | | 0 | | | SSC-GR10
(LD1,LD2,LI | 1 ; Green
D3,LD4,LD5,LD6 | ,LD7,LD8) |
| | | | 재 시 냉땜 여부 확 | 인 | 0 | - | | - | | |
| 22 | 매거진 간섭: | 으로 인한 PCB 프 | 손 없을 것 | | 0 | | | A2 (DA 2 | 54-DSA 2.54m | /11011 |
| 23 | HEADER PIN 부품 리드 평탄도 이상 없을 것(냉땜 확인) | | | | 0 | | | A2-2PA-2. | 54-DSA 2.54m
54-DSA 2.54m
2.54DSA,2.54m | m (HD2) |
| | 점관리향목
백사 요구사항) | 2. 유사 부품 주의.
TP578601DCQ [Re
TP578618DCQ [Re | | | | | | | | |
| NO | Ę | 문제점 | 임시조 | 치 | 7 | 배선 요청시 | 향 | 담당자 | 참고자료 | 개선여부 |
| 1 | AT915AM9260B-CU (U5)
1번 표식 IC상에 2개가 존재하여
작업시 실장 위치 흔동됨 | | 정풍자재 | 인지 확인 1 | 8. | | | | | |
| 2 | Crystal SSP-17-F, 32.768KHz (XT1)
현풍표 없이 수기 입고됨.
용량값 표기가 안되어 있음 | | | 현품표 부착 및 용량값동
정확한 정보 기입 요청. | | | | 1000-30 | | |

10. Design & Technology







- PCB artwork (design)
- □ NX7/ NX70/ NX700 PLC PCB ARTWORK
- □ ROBOT Controller PCB ARTWORK
- □ Servo Driver PCB ARTWORK
- □ OLED Encapsulation Inkjet driver (SG1024)
- □ LCD Encapsulation Inkjet driver (V1, V2, V3)
- Elevator controller board
- □ SMART GLASS Controller
- Inspection equipment and function jig
- □ PLC positioning module inspection equipment
- □ Firmware download Jig design
- \Box Inkjet driver function jig design
- $\hfill\square$ Elevator controller function jig design
- \Box LED Power mass production process jig design

- Plan and Engineering (technology]
- □ NX70/ NX700 PLC Enginering and CE/ UL approval
- □ I/O ASIC Development (circuit -> FPGA -> ASIC)
- □ Ultrasonic docking control module development.
- □ EtherCAT I/F & SERCOS module engineering
- □ Phase control B[,]D engineering
- □ AGV control system engineering
- □ Laser detector control system engineering
- □ Ultrasound Docking B'D development.
- □ OLED Inkjet driver (SG1024 driver) engineering
- \Box LCD Inkjet driver (Jet driver V1, V2) engineering
- □ OLED Inkjet driver (Jet driver V3) engineering
- □ Elevator controller board development.
- □ SMART GLASS Controller development.
- □ LED Power module development.
- □ OLED KM Driver (KM V1,V2,V3) engineering
- \Box Pulse DC Generator development .
- □ etc

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11. Manufacturing process diagram







12. EMNEX Business

EMNEX is capable of handling PCB artwork, parts purchase, assembly (SMT_ DIP process), testing, set assembly, packaging, and it supports from small lot production to mass production as below.

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Table tennis court



Cafeteria



Women's rounge



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