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| Перв. примен. |  |  | Поз.  обозна-чение | | | * Наименование | | | | * Кол. | | * Примечание | | | |
|  |  | | |  | | | |  | |  | | | |
|  | BQ1 | | | * Пьезоэлемент HPM14A | | | | * 1 | | * SoniCrest | | | |
|  |  | | |  | | | |  | |  | | | |
|  |  | | | * *Конденсаторы* | | | |  | |  | | | |
|  | C1 | | | * TECAP, 10 мкФ, 16 В, тип B, 10% TAJC106K016B | | | | * 1 | | * Kingtronics | | | |
| Справочный № |  |  | C2 | | | * NPO 33пФ ±5% 50В 0603N330J50 | | | | * 1 | | * Murata Manufacturing | | | |
|  | C3, C4 | | | * TZB4Z250BB10, 4.0-25пФ | | | | * 2 | | * Murata Manufacturing | | | |
|  | C5… C8 | | | * X7R 0,1мкФ ±10% 50В 0603B104K500CT | | | | * 4 | | * Murata Manufacturing | | | |
|  |  | | |  | | | |  | |  | | | |
|  |  | | | * *Микросхемы* | | | |  | |  | | | |
|  | DD1 | | | * AT89S8252 | | | | * 1 | | * Atmel | | | |
|  | DD2…DD3 | | | * IN74AC163 | | | | * 2 | | * INTEGRAL | | | |
|  |  |  | DD4 | | | * DS1307 | | | | * 1 | | * Dallas Semiconductor | | | |
|  |  | | |  | | | |  | |  | | | |
|  | G1 | | | * Батарейный отсек CH075-2032 | | | | * 1 | | * CONNFLY | | | |
|  |  | | |  | | | |  | |  | | | |
|  | HG1 | | | * Дисплей NHD-0216K1Z-NS(RGB)-FBW-REV1 | | | | * 1 | | * Newhaven Display Intl | | | |
| Подпись и дата |  |  |  | | |  | | | |  | |  | | | |
|  |  | | | * *Резисторы* RC0402JR-071KL | | | |  | |  | | | |
|  | R1 | | | * 0.062Вт 0402 8.2, кОм 5% RC0402JR-078K2L | | | | * 1 | | * Yageo | | | |
|  | R2 | | | * 0.062Вт 0402 1 кОм, 5% | | | | * 1 | | * Yageo | | | |
| Инв. № дубл. |  |  | R3 | | | * 0.062Вт 0402 10 кОм, 5% RC0402JR-0710KL | | | | * 1 | | * Yageo | | | |
|  | R4 | | | * 0.062Вт 0402 1 кОм, 5% | | | | * 1 | | * Yageo | | | |
|  | R5…R13 | | | * 0.125Вт 0805 4.7 Ом, 5% RC0805JR-074R7L | | | | * 9 | | * Yageo | | | |
| Взам. инв. № |  |  | R14 | | | 3314G-1-103E, 10 кОм | | | | 1 | | Bourns Trimmers | | | |
|  |  | | |  | | | |  | |  | | | |
|  | SB1…SB17 | | | Кнопка тактовая L-KLS7-TS6601-17.0-180 | | | | 17 | | KLS Electronic | | | |
| Подпись и дата |  |  |  | | | | | | | | | | | | |
|  |  |  |  | |  |  | ГУИР.403423.001.ПЭ3 | | | | | | |
|  |  |  |  | |  |  |
|  | Изм. | Лист | № докум. | | Подп. | Дата |
| Инв. № подл. |  |  | Разраб. | |  | |  |  | Название устройства | | Лит. | | | Лист | Листов |
|  | Пров. | | Смирнова | |  |  |  | У |  | 1 | 2 |
|  | Нач. отд. | |  | |  |  | БГУИР гр. | | | | |
|  | Н.контр. | |  | |  |  | Перечень элементов | |
|  | Утв. | |  | |  |  |

Формат А4

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|  |  | Поз.  обозна-чение | | | Наименование | | | | Кол. | | Примечание | | |
|  | | |  | | | |  | |  | | |
| VD1…VD5 | | | Диод 1N4148, 500мА 75В | | | | 5 | | VISHAY | | |
|  | | |  | | | |  | |  | | |
|  | | | Разъёмные соединения | | | |  | |  | | |
| XS1, XS2 | | | BNC7T-J-P-HN-RA-BH1 | | | | 2 | | Samtec Inc. | | |
| XS3 | | | DC-005 5.5мм - 2.1 мм | | | | 1 | | Shanhe | | |
|  | | |  | | | |  | |  | | |
|  | | | Кварцевые резонаторы | | | |  | |  | | |
| ZQ1 | | | HC49/4HSMX 12 МГц | | | | 1 | | IGD Frequency | | |
|  | | |  | | | |  | | Prodacts | | |
| ZQ2 | | | FC-135 32768 Гц | | | | 1 | | Sanyo Semicon | | |
|  | | |  | | | |  | | Device | | |
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| Взам. инв. № |  |  | | |  | | | | |  | |  | |
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| Инв. № подл |  |
|  |  |  | |  |  | ГУИР.403423.001.ПЭ3 | | | | | Лист |
|  |  |  | |  |  | 2 |
| Изм. | Лист | № докум. | | Подп. | Дата |

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| ***Формат*** | ***Зона*** | ***Поз.*** | | ***Обозначение*** | | | | ***Наименование*** | | | | | ***кол.*** | ***Примеч.*** | |
|  |  |  | |  | | | |  | | | | |  |  | |
|  |  |  | |  | | | | *Документация* | | | | |  |  | |
|  |  |  | |  | | | |  | | | | |  |  | |
| *А3* |  |  | | *ГУИР.403423.001 СБ* | | | | *Сборочный чертеж* | | | | | *1* |  | |
| *А2* |  |  | | *ГУИР.403423.001 ЭЗ* | | | | *Схема электрическая* | | | | | *1* |  | |
|  |  |  | |  | | | | *принципиальная* | | | | |  |  | |
| *А4* |  |  | | *ГУИР.403423.001 ПЭЗ* | | | | *Перечень элементов* | | | | | *2* |  | |
| *БЧ* |  |  | | *ГУИР.403423.001 Д1* | | | | *Технологическая схема сборки* | | | | | *1* |  | |
|  |  |  | |  | | | |  | | | | |  |  | |
|  |  |  | |  | | | | *Детали* | | | | |  |  | |
|  |  |  | |  | | | |  | | | | |  |  | |
| *A1* |  | *1* | | *ГУИР.758765.001* | | | | *Плата печатная* | | | | | *1* |  | |
|  |  |  | |  | | | |  | | | | |  |  | |
|  |  |  | |  | | | | *Прочие изделия* | | | | |  |  | |
|  |  |  | |  | | | |  | | | | |  |  | |
|  |  | *2* | |  | | | | Батарейный отсек CH075-2032 | | | | | 1 | G1 | |
|  |  |  | |  | | | | (CONNFLY) | | | | |  |  | |
|  |  |  | |  | | | |  | | | | |  |  | |
|  |  | *3* | |  | | | | Диод 1N4148, 500мА 75В | | | | | 5 | VD1…VD5 | |
|  |  |  | |  | | | | (VISHAY) | | | | |  |  | |
|  |  |  | |  | | | |  | | | | |  |  | |
|  |  | *4* | |  | | | | Дисплей NHD-0216K1Z- | | | | | 1 | HG1 | |
|  |  |  | |  | | | | NS(RGB)-FBW-REV1 | | | | |  |  | |
|  |  |  | |  | | | | (Newhaven Display Intl) | | | | |  |  | |
|  |  |  | |  | | | |  | | | | |  |  | |
|  |  |  | |  | | | | Кварцевые резонаторы | | | | |  |  | |
|  |  |  | |  | | | |  | | | | |  |  | |
|  |  | *5* | |  | | | | HC49/4HSMX 12 МГц | | | | | 1 | ZQ1 | |
|  |  | |  | |  |  | *ГУИР.* *403423.001* | | | | | | | | |  |
|  |  | |  | |  |  |  |
| *Изм* | *Лист* | | *№ докум* | | *Подп.* | *Дата* |  |
| *Разраб.* | | |  | |  |  | *Плата* | | *Лит* | | | *Лист* | | *Листов* | |
| *Пров.* | | | Смирнова | |  |  |  | *у* |  | *1* | | *3* | |
| *Т.контр.* | | |  | |  |  | БГУИР гр. | | | | | | |
| *Н. Контр* | | |  | |  |  |
| *Утв.* | | |  | |  |  |
| ***Формат*** | ***Зона*** | ***Поз.*** | | ***Обозначение*** | | | | ***Наименование*** | | | | | ***кол.*** | ***Примеч.*** | |
|  |  |  | |  | | | |  | | | | |  |  | |
|  |  |  | |  | | | | (IGD Frequency Prodacts) | | | | |  |  | |
|  |  | *6* | |  | | | | FC-135 32768 Гц (Sanyo Semicon | | | | | *1* | *ZQ2* | |
|  |  |  | |  | | | | Device) | | | | |  |  | |
|  |  |  | |  | | | |  | | | | |  |  | |
|  |  | *7* | |  | | | | Кнопка тактовая L-KLS7- | | | | | *17* | *SB1…SB17* | |
|  |  |  | |  | | | | TS6601-17.0-180 (KLS Electronic) | | | | |  |  | |
|  |  |  | |  | | | |  | | | | |  |  | |
|  |  |  | |  | | | | *Конденсаторы* | | | | |  |  | |
|  |  |  | |  | | | |  | | | | |  |  | |
|  |  | *8* | |  | | | | TECAP, 10 мкФ, 16 В, тип B, | | | | | *1* | *C1* | |
|  |  |  | |  | | | | 10%TAJC106K016B (Kingtronics) | | | | |  |  | |
|  |  | *9* | |  | | | | NPO 33пФ ±5% 50В | | | | | 1 | *C2* | |
|  |  |  | |  | | | | 0603N330J50 (Murata | | | | |  |  | |
|  |  |  | |  | | | | Manufacturing) | | | | |  |  | |
|  |  | *10* | |  | | | | TZB4Z250BB10, 4.0-25пФ | | | | | *2* | *C3, C4* | |
|  |  |  | |  | | | | (Murata Manufacturing) | | | | |  |  | |
|  |  | *11* | |  | | | | X7R 0,1мкФ ±10% 50В | | | | | 4 | C5… C8 | |
|  |  |  | |  | | | | 0603B104K500CT (Murata | | | | |  |  | |
|  |  |  | |  | | | | Manufacturing) | | | | |  |  | |
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|  |  |  | |  | | | | *Микросхемы* | | | | |  |  | |
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|  |  | *12* | |  | | | | AT89S8252 (Atmel) | | | | | *1* | DD1 | |
|  |  | *13* | |  | | | | IN74AC163 (INTEGRAL) | | | | | *2* | DD2…DD3 | |
|  |  | *14* | |  | | | | DS1307 (Dallas Semiconductor) | | | | | *1* | DD4 | |
|  |  |  | |  | | | |  | | | | |  |  | |
|  |  | *15* | |  | | | | Пьезоэлемент HPM14A | | | | | *1* | BQ1 | |
|  |  |  | |  | | | | (SoniCrest) | | | | |  |  | |
|  |  |  | |  | | | |  | | | | |  |  | |
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|  | | |  | |  |  | *ГУИР.* *403423.001* | | | | | | | | *Лист* |
|  | | |  | |  |  | *2* |
| *Изм* | | | *Лист* | | *№ докум* | *Подп.* |
| ***Формат*** | ***Зона*** | ***Поз.*** | | ***Обозначение*** | | | | ***Наименование*** | | | | | ***кол.*** | ***Примеч.*** | |
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|  |  |  | |  | | | | Разъёмные соединения | | | | |  |  | |
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|  |  | *16* | |  | | | | BNC7T-J-P-HN-RA-BH1 | | | | | *2* | XS1, XS2 | |
|  |  |  | |  | | | | (Samtec Inc.) | | | | |  |  | |
|  |  | *17* | |  | | | | DC-005 5.5мм - 2.1 мм (Shanhe) | | | | | *1* | *XS3* | |
|  |  |  | |  | | | |  | | | | |  |  | |
|  |  |  | |  | | | | *Резисторы* RC0402JR-071KL | | | | |  |  | |
|  |  |  | |  | | | |  | | | | |  |  | |
|  |  | 18 | |  | | | | 0.062Вт 0402 8.2, кОм 5% | | | | | 1 | *R1* | |
|  |  |  | |  | | | | RC0402JR-078K2L (Yageo) | | | | |  |  | |
|  |  | *19* | |  | | | | 0.062Вт 0402 1 кОм, 5% (Yageo) | | | | | *1* | *R2* | |
|  |  | 20 | |  | | | | 0.062Вт 0402 10 кОм, 5% | | | | | 1 | *R3* | |
|  |  |  | |  | | | | RC0402JR-0710KL (Yageo) | | | | |  |  | |
|  |  | *21* | |  | | | | 0.062Вт 0402 1 кОм, 5% (Yageo) | | | | | *1* | R4 | |
|  |  | *22* | |  | | | | 0.125Вт 0805 4.7 Ом, 5% | | | | |  | R5…R13 | |
|  |  |  | |  | | | | RC0805JR-074R7L (Yageo) | | | | | *9* |  | |
|  |  | *23* | |  | | | | 3314G-1-103E, 10 кОм (Bourns | | | | | *1* | R14 | |
|  |  |  | |  | | | | Trimmers) | | | | |  |  | |
|  |  |  | |  | | | |  | | | | |  |  | |
|  |  |  | |  | | | | *Материалы* | | | | |  |  | |
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|  |  |  | |  | | | | *Краска МКЭ, белая ОСТ92-2.0-ПР3* | | | | | *0,02* |  | |
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|  | | |  | |  |  | *ГУИР.* *403423.001* | | | | | | | | *Лист* |
|  | | |  | |  |  | *3* |
| *Изм* | | | *Лист* | | *№ докум* | *Подп.* |

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| ***Формат*** | ***Зона*** | ***Поз.*** | | ***Обозначение*** | | | | ***Наименование*** | | | | | ***кол.*** | ***Примеч.*** |
|  |  |  | |  | | | |  | | | | |  |  |
|  |  |  | |  | | | | *Документация* | | | | |  |  |
|  |  |  | |  | | | |  | | | | |  |  |
| *А1* |  |  | | *ГУИР.403423.001 СБ* | | | | *Сборочный чертеж* | | | | | *1* |  |
| *А4* |  |  | | *БГУИР ЛП 1-39 02 02 002 Д1* | | | | *Ведомость курсового проекта* | | | | | *1* |  |
| *БЧ* |  |  | | *ГУИР.403423.001* | | | | *Ведомость спецификации* | | | | | *1* |  |
| *БЧ* |  |  | | *ГУИР.403423.001 Д1* | | | | *Ведомость покупных изделий* | | | | | *1* |  |
|  |  |  | |  | | | |  | | | | |  |  |
|  |  |  | |  | | | | *Сборочные единицы* | | | | |  |  |
|  |  |  | |  | | | |  | | | | |  |  |
| *А1* |  | *1* | | *ГУИР.301126.001* | | | | *Корпус* | | | | | *1* |  |
| *А1* |  | *2* | | *ГУИР.758744.001* | | | | *Плата* | | | | | *1* |  |
|  |  |  | |  | | | |  | | | | |  |  |
|  |  |  | |  | | | | *Стандартные изделия* | | | | |  |  |
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|  |  |  | |  | | | | *Винт М3х12 ГОСТ 4017-2013* | | | | | *4* |  |
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|  |  | |  | |  |  | ГУИР.403423.001 | | | | | | | |  |
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| *Изм* | *Лист* | | *№ докум* | | *Подп.* | *Дата* |  |
| *Разраб.* | | |  | |  |  | Название устройства | | *Лит* | | | *Лист* | | *Листов* |
| *Пров.* | | | *Смирнова* | |  |  |  | *у* |  | *1* | | *1* |
| *Т.контр.* | | |  | |  |  | БГУИР, гр. | | | | | |
| *Н. Контр* | | |  | |  |  |