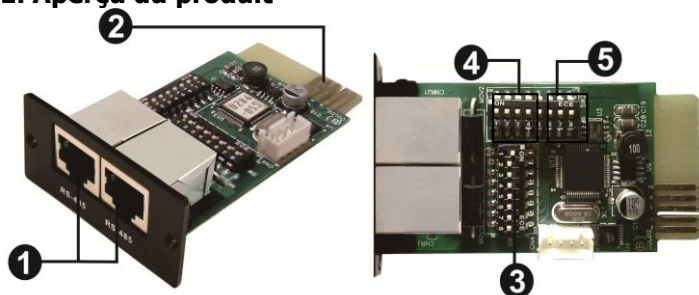


Nous vous remercions d'avoir acheté la carte Modbus. Ce manuel contient des instructions et des avertissements qui doivent être suivis pendant l'installation, le fonctionnement et le stockage de la carte. Veuillez conserver ce manuel pour toute référence ultérieure.

Précautions particulières

- Si la carte doit être stockée avant l'installation, le stockage doit se faire dans un endroit sec.
- La plage de température de stockage admissible est comprise entre -10°C et +70°C.

1. Aperçu du produit



- ❶ Port RS-485
- ❷ Doigts d'or
- ❸ Commutateur d'adresse
- ❹ Paramètre de communication
- ❺ Interrupteur de résistance

2. Présentation du produit

La carte Modbus fournit aux systèmes d'onduleurs UPS et PV la fonctionnalité de communication avec les PC via le protocole MODBUS :

- Implémente le protocole MODBUS RTU
- Fournit des fonctions MODBUS, notamment la lecture des registres de maintien et l'écriture des registres.
- Fournit une interface RS485
- Fournit une protection contre les surtensions

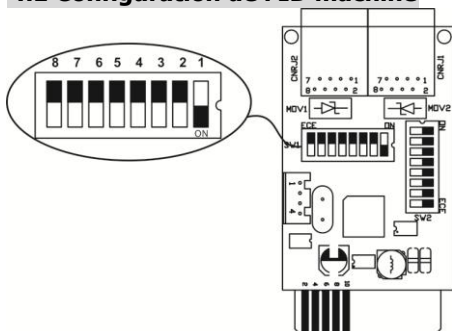
3. Installation et fonctionnement

Suivez les étapes ci-dessous pour installer et utiliser cette carte modbus :

1. Configurer l'ID Modbus (Se référer à la section 4.1 pour les détails)
2. Configurer le format de communication (Voir section 4.2 pour les détails)
3. Insérez cette carte Modbus dans le slot intelligent
4. Connecter la carte Modbus à l'ordinateur avec un câble RJ45, et il n'est pas nécessaire d'éteindre l'onduleur ou le convertisseur PV. (Se référer à la section 4.5 pour les détails)

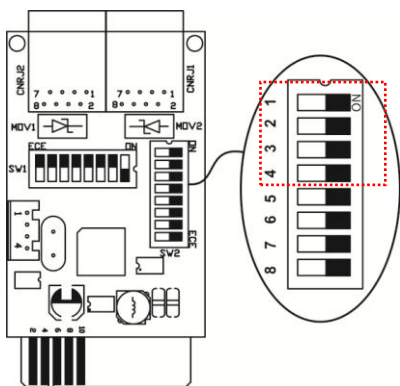
4. Configuration

4.1 Configuration de l'ID machine



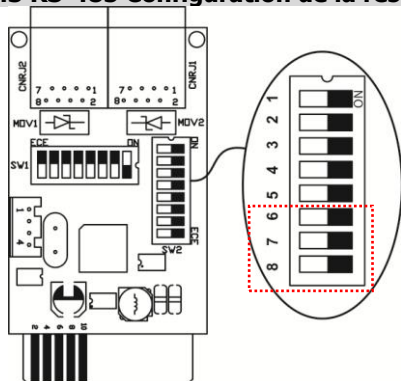
Il y a huit bits pour présenter l'ID de chaque carte. Utilisez SW1 pour régler l'ID de la machine. De gauche à droite, c'est 8 à 1. Comme indiqué, lorsque l'interrupteur est poussé vers le bas, le bit est mis à "un". Sinon, le bit est mis à zéro. L'ID de la carte modbus est fixé à 0x01 comme dans le tableau. Veuillez consulter l'annexe pour le détail du numéro d'identification et le réglage de SW1.

4.2 Configuration du format de communication



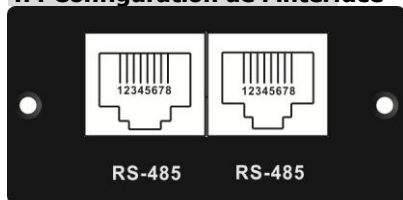
| Fonction | Réglage des bits | | Signification |
|--------------------|------------------|-----|--|
| Vitesse de baud | # 2 | # 1 | |
| | OFF | OFF | 2400bps |
| | OFF | ON | 4800bps |
| | ON | OFF | 9600bps |
| | ON | ON | 19200bps(défaut) |
| Contrôle de parité | # 4 | # 3 | |
| | OFF | OFF | Parité paire |
| | ON | OFF | Parité impaire |
| | OFF | ON | Pas de contrôle de parité 1 bit d'arrêt (Défaut) |
| | ON | ON | Pas de contrôle de parité 2 bits d'arrêt |

4.3 RS-485 Configuration de la résistance



| Fonction | Bit # | Réglage | Signification |
|---------------------------|-------|---------|------------------|
| Résistance vers le haut | # 6 | ON | Activer (Défaut) |
| | | OFF | Désactiver |
| Résistance vers le bas | # 7 | ON | Activer (Défaut) |
| | | OFF | Désactiver |
| Résistance de terminaison | # 8 | ON | Activer (Défaut) |
| | | OFF | Désactiver |

4.4 Configuration de l'interface

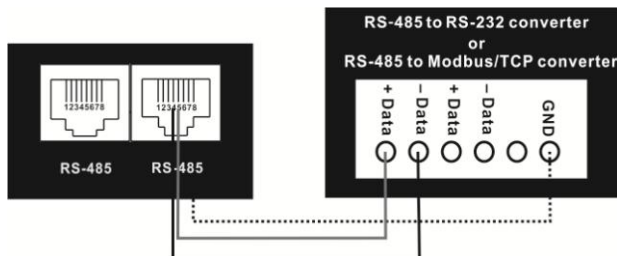


RS-485 Configuration des pins

| Pin | Fonction |
|-----|------------|
| 4 | RS-485 - B |
| 5 | RS-485 - A |
| 8 | GND |

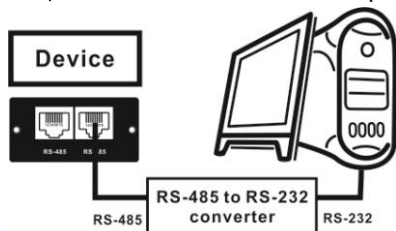
4.5 Connexion

Tout d'abord, veuillez utiliser un convertisseur RS485 vers RS 232 ou un convertisseur RS-485 vers Modbus/TCP comme convertisseur de média entre la carte Modbus et l'ordinateur. Veuillez suivre le tableau ci-dessous pour le câblage de connexion entre RJ45 et le convertisseur de média :

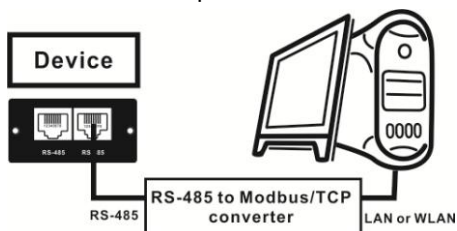


Connexion de câblage entre RJ45 et convertisseur de média

Ensuite, suivez le schéma ci-dessous pour connecter l'ordinateur personnel :



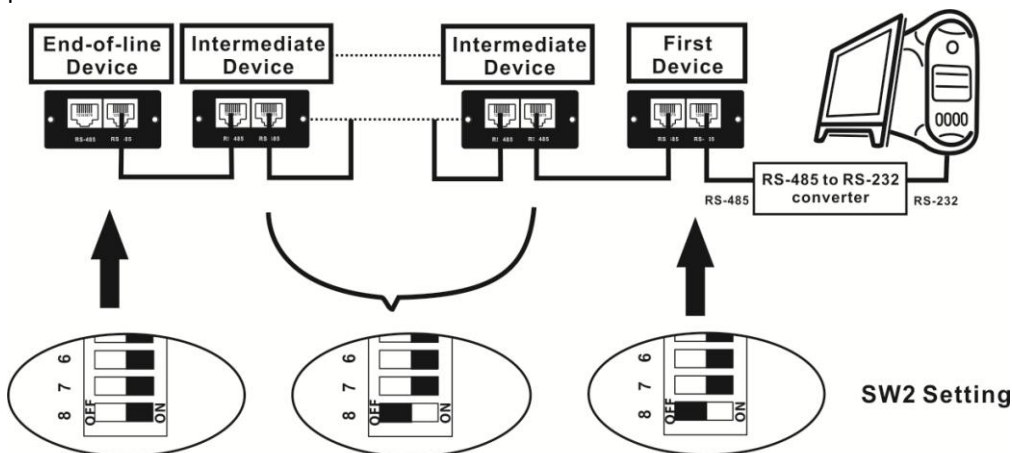
Utilisation du convertisseur RS-485 vers RS-232



Utiliser un convertisseur RS-485 vers Modbus/TCP

5. Surveillance multiple

Une seule carte modbus peut être utilisée dans un seul onduleur à la fois. Lorsque chaque onduleur est installé avec une carte modbus, il est possible de surveiller jusqu'à 31 onduleurs à partir d'un seul ordinateur.



SW2 Setting

End-of-line Device

| Bit # | Setting | Meaning |
|-------|---------|---------|
| # 6 | ON | Enable |
| # 7 | ON | Enable |
| # 8 | ON | Enable |

Intermediate Device

| Bit # | Setting | Meaning |
|-------|---------|---------|
| # 6 | ON | Enable |
| # 7 | ON | Enable |
| # 8 | OFF | Disable |

First Device

| Bit # | Setting | Meaning |
|-------|---------|---------|
| # 6 | ON | Enable |
| # 7 | ON | Enable |
| # 8 | OFF | Disable |

ANNEXE : Tableau de configuration de l'ID machine (SW1) √=ON x=OFF

| SW1 ID | Bit 1 | Bit 2 | Bit 3 | Bit 4 | Bit 5 | Bit 6 | Bit 7 | Bit 8 |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | √ | x | x | x | x | x | x | x |
| 2 | x | √ | x | x | x | x | x | x |
| 3 | √ | √ | x | x | x | x | x | x |
| 4 | x | x | √ | x | x | x | x | x |
| 5 | √ | x | √ | x | x | x | x | x |
| 6 | x | √ | √ | x | x | x | x | x |
| 7 | √ | √ | √ | x | x | x | x | x |
| 8 | x | x | x | √ | x | x | x | x |
| 9 | √ | x | x | √ | x | x | x | x |
| 10 | x | √ | x | √ | x | x | x | x |
| 11 | √ | √ | x | √ | x | x | x | x |
| 12 | x | x | √ | √ | x | x | x | x |
| 13 | √ | x | √ | √ | x | x | x | x |
| 14 | x | √ | √ | √ | x | x | x | x |
| 15 | √ | √ | √ | √ | x | x | x | x |
| 16 | x | x | x | x | √ | x | x | x |
| 17 | √ | x | x | x | √ | x | x | x |
| 18 | x | √ | x | x | √ | x | x | x |
| 19 | √ | √ | x | x | √ | x | x | x |
| 20 | x | x | √ | x | √ | x | x | x |
| 21 | √ | x | √ | x | √ | x | x | x |
| 22 | x | √ | √ | x | √ | x | x | x |
| 23 | √ | √ | √ | x | √ | x | x | x |
| 24 | x | x | x | √ | √ | x | x | x |
| 25 | √ | x | x | √ | √ | x | x | x |
| 26 | x | √ | x | √ | √ | x | x | x |
| 27 | √ | √ | x | √ | √ | x | x | x |
| 28 | x | x | √ | √ | √ | x | x | x |
| 29 | √ | x | √ | √ | √ | x | x | x |
| 30 | x | √ | √ | √ | √ | x | x | x |
| 31 | √ | √ | √ | √ | √ | x | x | x |
| 32 | x | x | x | x | x | √ | x | x |
| 33 | √ | x | x | x | x | √ | x | x |
| 34 | x | √ | x | x | x | √ | x | x |
| 35 | √ | √ | x | x | x | √ | x | x |
| 36 | x | x | √ | x | x | √ | x | x |
| 37 | √ | x | √ | x | x | √ | x | x |
| 38 | x | √ | √ | x | x | √ | x | x |
| 39 | √ | √ | √ | x | x | √ | x | x |

| | | | | | | | | |
|----|---|---|---|---|---|---|---|---|
| 40 | x | x | x | √ | x | √ | x | x |
| 41 | √ | x | x | √ | x | √ | x | x |
| 42 | x | √ | x | √ | x | √ | x | x |
| 43 | √ | √ | x | √ | x | √ | x | x |
| 44 | x | x | √ | √ | x | √ | x | x |
| 45 | √ | x | √ | √ | x | √ | x | x |
| 46 | x | √ | √ | √ | x | √ | x | x |
| 47 | √ | √ | √ | √ | x | √ | x | x |
| 48 | x | x | x | x | √ | √ | x | x |
| 49 | √ | x | x | x | √ | √ | x | x |
| 50 | x | √ | x | x | √ | √ | x | x |
| 51 | √ | √ | x | x | √ | √ | x | x |
| 52 | x | x | √ | x | √ | √ | x | x |
| 53 | √ | x | √ | x | √ | √ | x | x |
| 54 | x | √ | √ | x | √ | √ | x | x |
| 55 | √ | √ | √ | x | √ | √ | x | x |
| 56 | x | x | x | √ | √ | √ | x | x |
| 57 | √ | x | x | √ | √ | √ | x | x |
| 58 | x | √ | x | √ | √ | √ | x | x |
| 59 | √ | √ | x | √ | √ | √ | x | x |
| 60 | x | x | √ | √ | √ | √ | x | x |
| 61 | √ | x | √ | √ | √ | √ | x | x |
| 62 | x | √ | √ | √ | √ | √ | x | x |
| 63 | √ | √ | √ | √ | √ | √ | x | x |
| 64 | x | x | x | x | x | x | √ | x |
| 65 | √ | x | x | x | x | x | √ | x |
| 66 | x | √ | x | x | x | x | √ | x |
| 67 | √ | √ | x | x | x | x | √ | x |
| 68 | x | x | √ | x | x | x | √ | x |
| 69 | √ | x | √ | x | x | x | √ | x |
| 70 | x | √ | √ | x | x | x | √ | x |
| 71 | √ | √ | √ | x | x | x | √ | x |
| 72 | x | x | x | √ | x | x | √ | x |
| 73 | √ | x | x | √ | x | x | √ | x |
| 74 | x | √ | x | √ | x | x | √ | x |
| 75 | √ | √ | x | √ | x | x | √ | x |
| 76 | x | x | √ | √ | x | x | √ | x |
| 77 | √ | x | √ | √ | x | x | √ | x |
| 78 | x | √ | √ | √ | x | x | √ | x |
| 79 | √ | √ | √ | √ | x | x | √ | x |
| 80 | x | x | x | x | √ | x | √ | x |
| 81 | √ | x | x | x | √ | x | √ | x |

| | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|
| 82 | x | √ | x | x | √ | x | √ | x |
| 83 | √ | √ | x | x | √ | x | √ | x |
| 84 | x | x | √ | x | √ | x | √ | x |
| 85 | √ | x | √ | x | √ | x | √ | x |
| 86 | x | √ | √ | x | √ | x | √ | x |
| 87 | √ | √ | √ | x | √ | x | √ | x |
| 88 | x | x | x | √ | √ | x | √ | x |
| 89 | √ | x | x | √ | √ | x | √ | x |
| 90 | x | √ | x | √ | √ | x | √ | x |
| 91 | √ | √ | x | √ | √ | x | √ | x |
| 92 | x | x | √ | √ | √ | x | √ | x |
| 93 | √ | x | √ | √ | √ | x | √ | x |
| 94 | x | √ | √ | √ | √ | x | √ | x |
| 95 | √ | √ | √ | √ | √ | x | √ | x |
| 96 | x | x | x | x | x | √ | √ | x |
| 97 | √ | x | x | x | x | √ | √ | x |
| 98 | x | √ | x | x | x | √ | √ | x |
| 99 | √ | √ | x | x | x | √ | √ | x |
| 100 | x | x | √ | x | x | √ | √ | x |
| 101 | √ | x | √ | x | x | √ | √ | x |
| 102 | x | √ | √ | x | x | √ | √ | x |
| 103 | √ | √ | √ | x | x | √ | √ | x |
| 104 | x | x | x | √ | x | √ | √ | x |
| 105 | √ | x | x | √ | x | √ | √ | x |
| 106 | x | √ | x | √ | x | √ | √ | x |
| 107 | √ | √ | x | √ | x | √ | √ | x |
| 108 | x | x | √ | √ | x | √ | √ | x |
| 109 | √ | x | √ | √ | x | √ | √ | x |
| 110 | x | √ | √ | √ | x | √ | √ | x |
| 111 | √ | √ | √ | √ | x | √ | √ | x |
| 112 | x | x | x | x | √ | √ | √ | x |
| 113 | √ | x | x | x | √ | √ | √ | x |
| 114 | x | √ | x | x | √ | √ | √ | x |
| 115 | √ | √ | x | x | √ | √ | √ | x |
| 116 | x | x | √ | x | √ | √ | √ | x |
| 117 | √ | x | √ | x | √ | √ | √ | x |
| 118 | x | √ | √ | x | √ | √ | √ | x |
| 119 | √ | √ | √ | x | √ | √ | √ | x |
| 120 | x | x | x | √ | √ | √ | √ | x |
| 121 | √ | x | x | √ | √ | √ | √ | x |
| 122 | x | √ | x | √ | √ | √ | √ | x |
| 123 | √ | √ | x | √ | √ | √ | √ | x |

| | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|
| 124 | x | x | √ | √ | √ | √ | √ | x |
| 125 | √ | x | √ | √ | √ | √ | √ | x |
| 126 | x | √ | √ | √ | √ | √ | √ | x |
| 127 | √ | √ | √ | √ | √ | √ | √ | x |
| 128 | x | x | x | x | x | x | x | √ |
| 129 | √ | x | x | x | x | x | x | √ |
| 130 | x | √ | x | x | x | x | x | √ |
| 131 | √ | √ | x | x | x | x | x | √ |
| 132 | x | x | √ | x | x | x | x | √ |
| 133 | √ | x | √ | x | x | x | x | √ |
| 134 | x | √ | √ | x | x | x | x | √ |
| 135 | √ | √ | √ | x | x | x | x | √ |
| 136 | x | x | x | √ | x | x | x | √ |
| 137 | √ | x | x | √ | x | x | x | √ |
| 138 | x | √ | x | √ | x | x | x | √ |
| 139 | √ | √ | x | √ | x | x | x | √ |
| 140 | x | x | √ | √ | x | x | x | √ |
| 141 | √ | x | √ | √ | x | x | x | √ |
| 142 | x | √ | √ | √ | x | x | x | √ |
| 143 | √ | √ | √ | √ | x | x | x | √ |
| 144 | x | x | x | x | √ | x | x | √ |
| 145 | √ | x | x | x | √ | x | x | √ |
| 146 | x | √ | x | x | √ | x | x | √ |
| 147 | √ | √ | x | x | √ | x | x | √ |
| 148 | x | x | √ | x | √ | x | x | √ |
| 149 | √ | x | √ | x | √ | x | x | √ |
| 150 | x | √ | √ | x | √ | x | x | √ |
| 151 | √ | √ | √ | x | √ | x | x | √ |
| 152 | x | x | x | √ | √ | x | x | √ |
| 153 | √ | x | x | √ | √ | x | x | √ |
| 154 | x | √ | x | √ | √ | x | x | √ |
| 155 | √ | √ | x | √ | √ | x | x | √ |
| 156 | x | x | √ | √ | √ | x | x | √ |
| 157 | √ | x | √ | √ | √ | x | x | √ |
| 158 | x | √ | √ | √ | √ | x | x | √ |
| 159 | √ | √ | √ | √ | √ | x | x | √ |
| 160 | x | x | x | x | x | √ | x | √ |
| 161 | √ | x | x | x | x | √ | x | √ |
| 162 | x | √ | x | x | x | √ | x | √ |
| 163 | √ | √ | x | x | x | √ | x | √ |
| 164 | x | x | √ | x | x | √ | x | √ |
| 165 | √ | x | √ | x | x | √ | x | √ |

| | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|
| 166 | x | ✓ | ✓ | x | x | ✓ | x | ✓ |
| 167 | ✓ | ✓ | ✓ | x | x | ✓ | x | ✓ |
| 168 | x | x | x | ✓ | x | ✓ | x | ✓ |
| 169 | ✓ | x | x | ✓ | x | ✓ | x | ✓ |
| 170 | x | ✓ | x | ✓ | x | ✓ | x | ✓ |
| 171 | ✓ | ✓ | x | ✓ | x | ✓ | x | ✓ |
| 172 | x | x | ✓ | ✓ | x | ✓ | x | ✓ |
| 173 | ✓ | x | ✓ | ✓ | x | ✓ | x | ✓ |
| 174 | x | ✓ | ✓ | ✓ | x | ✓ | x | ✓ |
| 175 | ✓ | ✓ | ✓ | ✓ | x | ✓ | x | ✓ |
| 176 | x | x | x | x | ✓ | ✓ | x | ✓ |
| 177 | ✓ | x | x | x | ✓ | ✓ | x | ✓ |
| 178 | x | ✓ | x | x | ✓ | ✓ | x | ✓ |
| 179 | ✓ | ✓ | x | x | ✓ | ✓ | x | ✓ |
| 180 | x | x | ✓ | x | ✓ | ✓ | x | ✓ |
| 181 | ✓ | x | ✓ | x | ✓ | ✓ | x | ✓ |
| 182 | x | ✓ | ✓ | x | ✓ | ✓ | x | ✓ |
| 183 | ✓ | ✓ | ✓ | x | ✓ | ✓ | x | ✓ |
| 184 | x | x | x | ✓ | ✓ | ✓ | x | ✓ |
| 185 | ✓ | x | x | ✓ | ✓ | ✓ | x | ✓ |
| 186 | x | ✓ | x | ✓ | ✓ | ✓ | x | ✓ |
| 187 | ✓ | ✓ | x | ✓ | ✓ | ✓ | x | ✓ |
| 188 | x | x | ✓ | ✓ | ✓ | ✓ | x | ✓ |
| 189 | ✓ | x | ✓ | ✓ | ✓ | ✓ | x | ✓ |
| 190 | x | ✓ | ✓ | ✓ | ✓ | ✓ | x | ✓ |
| 191 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | x | ✓ |
| 192 | x | x | x | x | x | x | ✓ | ✓ |
| 193 | ✓ | x | x | x | x | x | ✓ | ✓ |
| 194 | x | ✓ | x | x | x | x | ✓ | ✓ |
| 195 | ✓ | ✓ | x | x | x | x | ✓ | ✓ |
| 196 | x | x | ✓ | x | x | x | ✓ | ✓ |
| 197 | ✓ | x | ✓ | x | x | x | ✓ | ✓ |
| 198 | x | ✓ | ✓ | x | x | x | ✓ | ✓ |
| 199 | ✓ | ✓ | ✓ | x | x | x | ✓ | ✓ |
| 200 | x | x | x | ✓ | x | x | ✓ | ✓ |
| 201 | ✓ | x | x | ✓ | x | x | ✓ | ✓ |
| 202 | x | ✓ | x | ✓ | x | x | ✓ | ✓ |
| 203 | ✓ | ✓ | x | ✓ | x | x | ✓ | ✓ |
| 204 | x | x | ✓ | ✓ | x | x | ✓ | ✓ |
| 205 | ✓ | x | ✓ | ✓ | x | x | ✓ | ✓ |
| 206 | x | ✓ | ✓ | ✓ | x | x | ✓ | ✓ |
| 207 | ✓ | ✓ | ✓ | ✓ | x | x | ✓ | ✓ |

| | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|
| 208 | x | x | x | x | ✓ | x | ✓ | ✓ |
| 209 | ✓ | x | x | x | ✓ | x | ✓ | ✓ |
| 210 | x | ✓ | x | x | ✓ | x | ✓ | ✓ |
| 211 | ✓ | ✓ | x | x | ✓ | x | ✓ | ✓ |
| 212 | x | x | ✓ | x | ✓ | x | ✓ | ✓ |
| 213 | ✓ | x | ✓ | x | ✓ | x | ✓ | ✓ |
| 214 | x | ✓ | ✓ | x | ✓ | x | ✓ | ✓ |
| 215 | ✓ | ✓ | ✓ | x | ✓ | x | ✓ | ✓ |
| 216 | x | x | x | ✓ | ✓ | x | ✓ | ✓ |
| 217 | ✓ | x | x | ✓ | ✓ | x | ✓ | ✓ |
| 218 | x | ✓ | x | ✓ | ✓ | x | ✓ | ✓ |
| 219 | ✓ | ✓ | x | ✓ | ✓ | x | ✓ | ✓ |
| 220 | x | x | ✓ | ✓ | ✓ | x | ✓ | ✓ |
| 221 | ✓ | x | ✓ | ✓ | ✓ | x | ✓ | ✓ |
| 222 | x | ✓ | ✓ | ✓ | ✓ | x | ✓ | ✓ |
| 223 | ✓ | ✓ | ✓ | ✓ | ✓ | x | ✓ | ✓ |
| 224 | x | x | x | x | x | ✓ | ✓ | ✓ |
| 225 | ✓ | x | x | x | x | ✓ | ✓ | ✓ |
| 226 | x | ✓ | x | x | x | ✓ | ✓ | ✓ |
| 227 | ✓ | ✓ | x | x | x | ✓ | ✓ | ✓ |
| 228 | x | x | ✓ | x | x | ✓ | ✓ | ✓ |
| 229 | ✓ | x | ✓ | x | x | ✓ | ✓ | ✓ |
| 230 | x | ✓ | ✓ | x | x | ✓ | ✓ | ✓ |
| 231 | ✓ | ✓ | ✓ | x | x | ✓ | ✓ | ✓ |
| 232 | x | x | x | ✓ | x | ✓ | ✓ | ✓ |
| 233 | ✓ | x | x | ✓ | x | ✓ | ✓ | ✓ |
| 234 | x | ✓ | x | ✓ | x | ✓ | ✓ | ✓ |
| 235 | ✓ | ✓ | x | ✓ | x | ✓ | ✓ | ✓ |
| 236 | x | x | ✓ | ✓ | x | ✓ | ✓ | ✓ |
| 237 | ✓ | x | ✓ | ✓ | x | ✓ | ✓ | ✓ |
| 238 | x | ✓ | ✓ | ✓ | x | ✓ | ✓ | ✓ |
| 239 | ✓ | ✓ | ✓ | ✓ | x | ✓ | ✓ | ✓ |
| 240 | x | x | x | x | ✓ | ✓ | ✓ | ✓ |
| 241 | ✓ | x | x | x | ✓ | ✓ | ✓ | ✓ |
| 242 | x | ✓ | x | x | ✓ | ✓ | ✓ | ✓ |
| 243 | ✓ | ✓ | x | x | ✓ | ✓ | ✓ | ✓ |
| 244 | x | x | ✓ | x | ✓ | ✓ | ✓ | ✓ |
| 245 | ✓ | x | ✓ | x | ✓ | ✓ | ✓ | ✓ |
| 246 | x | ✓ | ✓ | x | ✓ | ✓ | ✓ | ✓ |
| 247 | ✓ | ✓ | ✓ | x | ✓ | ✓ | ✓ | ✓ |